



Mobile Communications



MDR™ SERIES GE-MARC V • E TRUNKED MOBILE RADIO

TABLE OF CONTENTS

SAFETY INFORMATION	3
OPERATING PROCEDURES	4
CONTROLS AND INDICATORS	6
EXTENDED FEATURES	11
BASIC OPERATION	13
Removing And Replacing Handset	13
Turning The Radio On/Off	13
Volume Adjustment	14
Area Selection	14
Group Selection	14
Placing A Dispatch Call	15
Placing An Interconnect Or Dispatch Overdial Call	16
Ending A Call	16
Receiving A Call	17
Direct Mode Operation	18
Conventional Mode Operation	18
Horn Alert	19
Call Timer	19
Last Digit Clear And Display Clear	19
Storing Numbers	20
Recalling Numbers	20
Hotkeys	21
Last Number Redial	21
Locking The MDR Mobile Radio	22
Unlocking The Mobile	22
Backlight	22
External Speaker	22
Call Hold (mute)	22
Simplex Operation	22
DTMF Digit Length	23
Delay After DTMF STAR (*)	23
MAINTENANCE AND BASIC CARE	23
AVAILABLE OPTIONS	24
FREQUENTLY CALLED NUMBERS	25

SAFETY INFORMATION

The operator of any mobile should be aware of certain hazards common to the operation of vehicular radio transmission.

A list of possible hazards are:

1. Explosive Atmospheres

Just as it is dangerous to fuel a vehicle with the motor running, be sure to turn the radio off while fueling the vehicles. Do not carry containers of fuel in the trunk of the vehicle when the radio is mounted in the trunk.

2. Interference to Vehicular Electronics Systems

Electronic fuel injection systems, electronic antiskid braking systems, etc., are typical of the type of electronic devices that may malfunction due to the lack of protection from radio frequency energy present when transmitting. If the vehicle contains such equipment, consult the dealer for the make of the vehicle and enlist his aid in determining if such electronics circuits perform normally when the radio is transmitting.

3. Dynamite Blasting Caps

Dynamite blasting caps may be caused to explode by operating a radio within 500 feet of the blasting caps. Always obey the "**Turn Off Two Way Radios**" signs posted where dynamite is being used. When transporting blasting caps in your vehicle:

- a. Carry the blasting caps in a closed metal box with a soft lining.
- b. Leave the radio **OFF** whenever the blasting caps are being put into or removed from the vehicle.

4. Radio Frequency Energy

To prevent burns or related physical injury from radio frequency energy, do not operate the transmitter when anyone outside of the vehicle is within two feet of the antenna.

5. Liquefied (LP) Gas Powered Vehicles

Mobile radio installations in vehicles powered by liquefied petroleum gas with the LP gas container in the trunk or other sealed-off space within the interior of the vehicle must conform to the National Fire Protection Association standard (NFPA) 58 which requires that:

- a. Space containing the radio equipment shall be isolated by a seal from the space containing the LP gas container and its fittings.
- b. Outside filling connections shall be used for the LP gas container.
- c. The LP gas container shall be vented to the outside of the vehicle.

SAFE DRIVING RECOMMENDATIONS FOR USERS OF MOBILE RADIOS*

Read the literature on the safe operation of your unit.

- Keep both hands on the steering wheel and the handset in its cradle whenever the vehicle is in motion.
- Place calls only when vehicle is stopped. Use on-hook dialing and recall dialing to speed the time it takes to call.
- When talking from a moving vehicle is unavoidable, drive in the slower lane. Keep conversation brief.
- If conversation requires taking notes or complex thought, stop the vehicle in a safe place and continue your call.
- Whenever you use a mobile radio you should exercise caution.

*As recommended by the AAA

OPERATING PROCEDURES

Two-way FM radio systems must be operated in accordance with the rules and regulations of the Federal Communications Commission (FCC). As an operator of two-way radio equipment, you must be thoroughly familiar with the rules that apply to your particular type of radio operation. Following these rules will help to eliminate confusion, assure the most efficient use of existing radio channels, and result in a smoothly functioning radio network.

When using your two-way radio remember these rules:

1. It is a violation of FCC rules to interrupt any distress or emergency message. And, as your radio operates in much the same way as a telephone "party line", always listen to make sure that the line is clear - that no one else is on the air - before sending messages. If someone is sending an emergency message - such as reporting a fire, or asking for help in an accident - **KEEP OFF THE AIR!** Emergency calls have priority over all other messages.
2. Use of profane or obscene language is prohibited by Federal law.
3. It is against the law to send false call letters, or a false distress or emergency message.
4. The FCC requires that you keep conversations brief and confine them to business. To save time, use coded messages whenever possible.
5. Using your radio to send personal messages (except in an emergency) is a violation of the FCC rules. You may send only those messages that are essential for the operation of your business.
6. It is against the Federal law to repeat or otherwise make known anything you overhear on your radio. Conversations between others sharing your channel must be regarded as confidential.
7. The FCC also requires that you identify yourself at certain times by means of your call letters. Refer to the rules that apply to your particular type of operation for the proper procedure.

NOTE

The GE-MARC system is already automatically identified and does not require identifying yourself.

8. No changes or adjustments shall be made to the equipment except by an authorized or certified electronic technician.

CONTROLS AND INDICATORS

MISCELLANEOUS KEYS

POWER

The **POWER** key is located on the lower left corner of the handset. When pressed once the radio performs a self test and will beep three times. The display will momentarily display the frequency set and then display the AREA and GROUP currently selected. If an error has been encountered, ERROR# will be displayed. (Contact your authorized service representative if an error message is displayed). Press **POWER** button again to turn the radio off.

PTT (Push To Talk)

The **PTT** button is located on the left side of the handset. This key must be held down to transmit during simplex operation.

VOL(UP)

The **VOL(UP)** key is located on the left side of the handset. Press **VOL(UP)** to increase the volume level.

VOL(DOWN)

The **VOL(DOWN)** key is located just under the **VOL(UP)** key on the left side of the handset. Press **VOL(DOWN)** to decrease the volume level.

NOTE

When **VOL(UP)** or **VOL(DOWN)** is depressed, the volume is momentarily displayed in the Alphanumeric display (e.g., VOL=15). VOL 15 is the maximum volume level. After the radio has been turned off the last volume level is retained and is the default volume level after the radio is powered on.

FUNCTION KEYPAD



- The **SEND** key is a momentary switch that is pressed to initiate a call. When pressed, the number in the display is sent. If no number is displayed, the last number dialed is sent.



- Press once to clear the last digit entered or hold for one second to clear the entire number.



- Press to terminate the active call.



- Used to recall numbers from memory locations.



- Used to store numbers in memory locations.



- "**Hotkeys**" used in quick dialing 3 of the most frequently called numbers or emergency numbers.



- Activates Extended Features (Used with associated secondary keys).

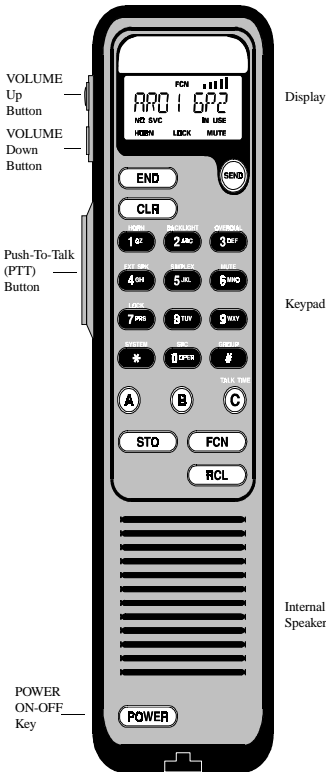
NUMERIC KEYPAD



- **0 OPER** - are used to enter telephone numbers and activate extended features.



- Is used to ramp through and select areas while calls are **not** in progress. During a call ***** is used to send the DTMF (Dual Tone Multi-Frequency) tone for *. In dispatch mode ***** is used to bring up the dial tone.



- Is used to ramp through and select groups and channels. This function is only active while calls are **not** in progress. During a call **#** is used to send the DTMF tone for #. In the Telephone Interconnect mode, **#** is used to end the call.

DISPLAY INDICATORS

A Liquid Crystal Display (LCD) displays telephone numbers and messages associated with call processing and feature processing. The display has eight 14-segment alphanumeric characters and other dedicated status indicators.

ALPHANUMERIC STATUS INDICATORS

BUSY - Indicates an attempt to place a call has been made but the selected GE-MARC system does not have any available channels. If the "Call Retry" option has been enabled during radio initialization by the system operator, the radio will retry at 5 second intervals, up to 15 times unless the **END** key is pressed or a channel is acquired, or an out-of-range condition occurs.

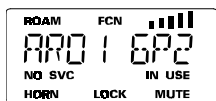
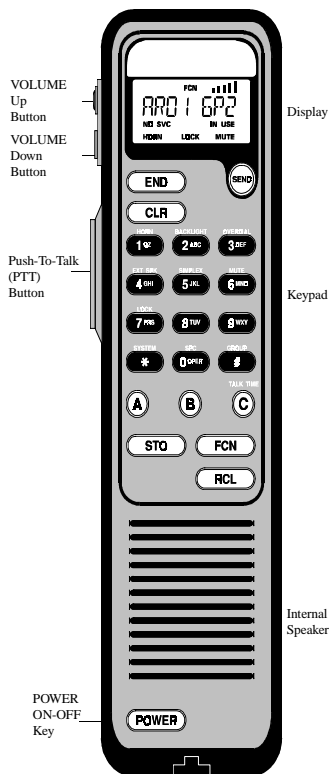
RETRYING - Indicates the radio is attempting to establish a channel.

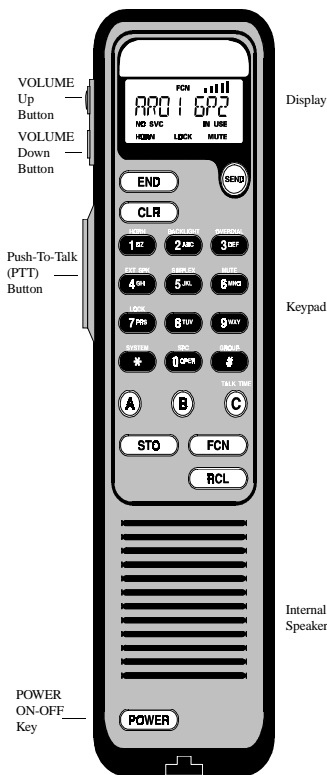
WAIT - Indicates the radio is acquiring a channel after call origination has begun.

STATUS INDICATORS

NO SVC - Indicates a transmission request has been made and the call can not be completed. This may be because the unit is out of the service area of the selected GE-MARC system.


ROAM - Indicates the mobile is on channel in the conversation mode.





FCN - Indicates the **FCN** key has been pressed for extended features. The next key pressed will select an extended feature.

IN USE - Is displayed when the radio is transmitting in either simplex or duplex modes of operation.

 - In conventional or direct mode all 5 bars are lit to indicate the presence of a carrier (on channel RF signal).

In the trunked mode the bars are used separately as a call counter. Each bar informs the user that an unanswered call has been received (up to 5 total). The display indicates the last received unanswered caller's area/group name.

HORN - Indicates when the horn alert is active.

MUTE - Indicates when the transmit audio Mute feature is active (duplex mode only).

LOCK - Indicates when the Lock function has been activated. If the unit is locked before it is turned off, then - **LOCK** - will be displayed when the unit is powered up again.

AUDIBLE INDICATORS

SELF CHECK TEST ALERT - Three beeps are sounded after the radio is turned on to indicated that the radio has passed the self diagnostic test. The display will show **PASSED** for one second.

CALL RECEIVED ALERT (Trunked mode only) - A short, high frequency tone is sounded when you receive a group call. A two-tone alert is sounded when receiving an individual call.

NOTE

The radio can be preprogrammed to mute the call received alert tones.

CALL ORIGINATE ALERT (Trunked mode only) - **WAIT** will momentarily be displayed when a call is being placed. Then a three-tone alert is sounded to indicate the call origination is complete. This indicates a channel was acquired and is ready for normal conversation.

SYSTEM BUSY (Trunked mode only) - A low frequency tone is sounded for one second after attempting to place a trunked call and **BUSY** will be displayed. This indicates that the GE-MARC system is busy and you should try again later. If the "Call Retry" option has been enabled during radio initialization by the system operator, the radio will retry at 5 second intervals, up to 15 times unless **END** key is pressed or a channel is acquired, or an out-of-range condition occurs.

OUT OF RANGE ALERT (Trunked mode only) - If the **NO SVC** status indicator is displayed and five beeps are sounded after attempting to place a trunked call, then the radio is out of range of the GE-MARC system. If the beeps sound when the radio is within known range of the system, the radio may need servicing (even though the self diagnostic test passed at power on).

INVALID CALL ORIGINATE ALERT (Trunked mode only) - A low frequency tone is sounded for one second immediately after pressing the handset **PTT** and the display does not show **WAIT**. This indicates a call was attempted within a group that is not enabled for call originate

CARRIER CONTROL TIMER (Trunked and Conventional modes) A pulsed tone signal is sounded after the handset **PTT** is pressed continuously for a preprogrammed time in trunked mode. After nine seconds of pulsing the alert tone, the radio unkeys the transmitter and communications are interrupted. While the tone is pulsing, the user can release and press the **PTT** again to reset the timer and resume the conversation. In conventional mode, the radio unkeys and beeps until the **PTT** switch is released. In Duplex mode a quick two note alert is heard at the interval of the Carrier timer to let the user know that interval has elapsed (i.e., every 1 minute if CCT = 1.0 minute) and repeated at every time interval.

GE-MARC SYSTEM TONES - The GE-MARC system may give other tones to alert the user of system time-out, etc. Contact your GE-MARC system operator for details about these alert tones.


EXTENDED FEATURES

Press the **FCN** key first then one of the following keys.

<u>KEY</u>	<u>Function</u>	<u>Comments</u>
1 QZ	HORN	Enables/Disables the horn alert feature.
2 ABC	BACKLIGHT	Enables/Disables the backlight. FCN/2 turns ON. FCN/2 again, turns OFF.
3 DEF	OVERDIAL	Enables overdial mode for placing/storing dispatch overdial calls.
4 GHI	EXTERNAL SPEAKER	Enables/disables the external speaker in duplex and simplex.
5 JKL	SIMPLEX	Disables duplex, allows simplex operation.
6 MNO	MUTE	Enables/disables microphone mute during duplex operation.
7 PPS	LOCK	Enables the LOCK feature. (Providing a lock code has been pre programmed).
8 TUV	LENGTH	Allows DTMF length to be program-med from keypad (100-450 milliseconds).
9 WXY	DELAY	Allows Delay after DTMF star (*) to be programmed from keypad (0 - 7 seconds).
0 OPER	SPC	Selects special call tone set for encoding (if programmed).
*	SYSTEM	Changes the direction of area ramp. If the area number is known (i.e. 1 - 36) it may be entered in the display. Then by pressing * that area will become the new selected area.



GROUPS/ CHANNELS

Changes the direction of group/channel ramp. If the group/channel number is known (i.e. 1 - 9) it may be entered in the display. Then by pressing  that group/channel will become the new selected group/channel.



TESTMODE

Allows testmode to be entered (unless disabled by pre-programming).



UNUSED



TALK TIME

Displays call timer (active if call is in progress, last call length if call is not in progress).

VOL(UP)

VOLUME UP

Sets the volume at the max setting.
[VOL - 15].

VOL(DOWN)

VOLUME DOWN

Sets the volume at the min setting.
[VOL - 00].

BASIC OPERATION

REMOVING AND REPLACING HANDSET

The positive latch handset holder may be mounted vertically or horizontally without worry of the handset being easily dislodged. The large knurled nut on the bottom of the holder may be loosened and the holder adjusted for the operator's comfortable usage. Tighten the knurled nut securely after the holder is adjusted.

Remove the handset by grasping it and simultaneously pressing the release button on the handset holder, while lifting upward and away from the holder. Replace it in the holder with the top portion of the handset resting in the latch depression and press the handset firmly onto the holder until the latch mechanism snaps into place.



Figure 1 - Removing and Replacing Handset

TURNING THE RADIO ON/OFF

The radio is powered **ON** by depressing the green **POWER** key located on the bottom of the handset. A self diagnostic test is performed when the radio is first turned **ON**. When testing is complete the Area and Group information is displayed on the handset alphanumeric display for the AREA and GROUP last selected. To turn the radio **OFF** depress the green **POWER** key again. If power is removed for less than 0.5 hours and radio was **ON**, the radio will return to **ON** status when power is reconnected.

NOTE

Should the 3 beep alert not sound and / or the display shows **ERROR** after powering on the radio, contact your service representative.

POWER
ON-OFF
Key



VOLUME ADJUSTMENT

The user may adjust the volume at any time using the **VOL(DOWN)** and **VOL(UP)** buttons located on the side of the handset. If the volume is adjusted while a call is in progress, no audible beeps will be heard; however, a momentary visual reminder of the volume setting will be displayed. (e.g., **[VOL = 07]**). If there is no call in progress, a short beep will be heard, in addition to the visual indication. After one second the volume message will be replaced by the selected area and group name. In addition to the user selected volume off-hook is saved separately from the user selected volume on-hook.

NOTE

When **VOL(UP)** or **VOL(DOWN)** is depressed, the volume is momentarily displayed in the Alphanumeric display (e.g., **[VOL=15]**. VOL 15 is the maximum volume level. After the radio has been turned **OFF** the last volume level is retained and is the default volume level after the radio is powered **ON**.

AREA SELECTION

The desired AREA can be selected by pressing and releasing the ***** key. This will increment the displayed area to the next AREA available. The user may also depress the **FCN** key and then the ***** key to reverse the direction of the AREA selection. The area may also be entered directly by entering the desired area number and then pressing the ***** key.

GROUP SELECTION

The desired GROUP can be selected by pressing and releasing the **#** key. The direction of ramping can be changed by pressing the **FCN** key and then pressing the **#** key. The GROUP may also be entered directly by entering the desired GROUP number and then pressing the **#** key.

PLACING A DISPATCH CALL

NOTES

If you plan on a lengthy call (or several calls), the vehicle engine should be running to maintain battery charge.

As each key is pressed on the keypad, the display should be observed before proceeding to the next key. Pressing keys too rapidly in succession could result in incomplete or incorrect calls.

1. The user must first select the desired AREA and GROUP.
2. The user can place a dispatch call by pressing the **PTT** switch located on the side of the handset (or remove the handset from its holder when the pre-programmed option has been enabled).
3. The display will change from the selected AREA and GROUP to [**WAIT**] while the radio is acquiring a repeater.
4. The radio will sound a three-tone alert signal when you can begin the conversation.
5. If the radio is out of the range of the selected system, 4 short and 1 long beep will be heard and the **NO SVC** status indicator will be displayed for approximately 20 seconds. While the **NO SVC** status indicator is displayed, no attempts can be made to place a call. If a new area is selected the **NO SVC** indicator goes out and the call can now be attempted in the new service area. If all available repeaters are busy when the call is attempted, the user will hear 1 long beep and the word [**BUSY**] will appear in the display. If the call retry option was enabled by the system operator, [RETRYING] will appear in the display instead of the [**BUSY**] indication.
6. The selected area and group will be displayed again once the call is completed.

PLACING AN INTERCONNECT OR DISPATCH OVERDIAL CALL

There are four different ways to place an interconnect or dispatch overdial call.

1. To place a dispatch overdial call the user must first press the **FCN** key and then the **3 DEF** key. **[OVERDIAL]** will be displayed. The user must then manually dial the dispatch ID (2 or 4 tone sequence; e.g., **[-1809]** or **[18092310]**). The sequence will be preceded by the overdial prompt **[—]**. Then press the **SEND** key.
2. The **SEND** key can be pressed which will automatically redial the last phone number or dispatch ID.
3. The user can recall previously stored dispatch IDs and phone numbers from memory and then press the **SEND** key.
4. The user can remove the handset from its holder (preprogrammed option). If a dispatch overdial number was not entered, prior to removing the handset from the holder, the radio will acquire a channel. After the channel has been acquired, recall or enter the desired number and press the **SEND** key. If entering a dispatch number takes more than 5 seconds, depress the **PTT** switch periodically to keep the channel active while the ID sequence is being entered.

ENDING A CALL

The call can be ended three ways:


1. Pressing the **END** key.
2. A system disconnect or time out occurs. During a dispatch call the time out occurs after 6 seconds of channel silence. During an interconnect call the time out occurs after 30 seconds of channel silence.
3. Returning the handset to the holder (a pre-programmed option).


NOTE

If a channel disconnect occurs before the conversation has ended, the call must be initiated again. To avoid confusion it is recommended that a procedure be set up so that the originator of the call is the one designated to re-establish communications. Two or more operators originating a call simultaneously may acquire two different channels making communication impossible.



RECEIVING A CALL

When a call is received by the radio, the radio decodes the call. A single alert tone will sound indicating a GROUP call has been received or a two tone alert will sound if an INDIVIDUAL call has been received. The display will show the user the AREA and GROUP when receiving a group call and the AREA and INDIVIDUAL decode when an INDIVIDUAL call is received.

If a simplex dispatch call is desired, simply pick up the handset and use the **PTT** switch to transmit to the caller. If the call is an interconnect call, press the  key to answer the call and place the unit in duplex.





Duplex operation must be enabled by the system operator for the tone set being used during duplex mode. If Auto-interconnect is enabled for the AREA and the Individual tone set being decoded, the user may enter duplex by removing the handset from the cradle. If the handset has already been removed from the cradle when the call is received, the user must press the  into duplex.

NOTE





Pressing the  key and then the  key during duplex operation will toggle the radio into simplex mode.

DIRECT MODE OPERATION

The Direct Mode provides short range, line of sight communications for radios having the talk around option installed. In the Direct (or talk around) mode, the radio is not operational on the GE-MARC system.

1. Using the  key, select the direct mode AREA. The GROUP key  has no effect in the direct mode frequency set.
2. Before making a call, determine if the channel is in use. Press  key to momentarily disable the squelch to monitor the channel. Also, removing the handset from the holder allows you to monitor the channel without disabling the squelch (Busy Tone is disabled). The  status indicator in the display will also show if the channel is in use.
3. Press the **PTT** switch and send your message.

CONVENTIONAL MODE OPERATION

1. Using the  key, select the conventional mode AREA. If more than one channel is available in the conventional AREA, press the  key to select the channel (up to 9 channels may be available in one conventional AREA).
2. Before making a call, determine if the channel is busy by pressing the  key momentarily to disable the squelch and monitor the channel for activity. Also removing the handset from the holder disables Channel Guard allowing you to monitor the channel without disabling the squelch. The  status indicator in the display will be active if the channel is in use.
3. Press the **PTT** switch and send your message.

HORN ALERT

If your radio has the horn alert option; it can be preprogrammed to beep the vehicle horn when a call is received. (In trunked mode operation only).

This function can be enabled and disabled by pressing the **FCN** key and then pressing the **key**. With the alarm enabled, when a call is received, the radio will first sound a pulsed alert warning tone for 3 seconds and then begin blowing the horn 5 times (2 seconds on, and four seconds off, for 30 seconds). Pressing the handset PTT key during the pulsed alert tone will prevent blowing the horn. The horn alert will remain enabled for subsequent calls until disabled.

CALL TIMER

The call timer displays the length of time the conversation in progress, or most recent call, has taken. To display the call timer during a conversation, press the **FCN** key and then press the **C** key. The timer will be displayed and will be operational. The call timer may be viewed after a call has been completed by pressing the **FCN** key and then pressing the **C** key. The timer can be removed from the display by pressing the **CLR** key.

LAST DIGIT CLEAR AND DISPLAY CLEAR

To clear the last digit entered in the display, momentarily depress the **CLR** key. To clear the entire display, depress the **CLR** key and hold for one second.

STORING NUMBERS

The number of dial locations (10, 20, 30, 40, or 50) available to the user is pre-programmed by the system operator. The maximum number of digits stored in any location is 15. The user can store phone numbers and dispatch IDs by following these steps:

1. The user must first key in the telephone number, or dispatch over dial tone sequence, from the keypad.
2. The user must then press the **STO** key.
3. [**ADDR XX**] will be displayed where **XX** is the next available storage address.
4. If the suggested memory location is OK, then press the **STO** key. This will store the number and return the radio to normal operation.
5. If the displayed address is not acceptable, key in the memory location (1-50, depending on the number of locations enabled by pre-programming). The **A** , **B** or **C** HOTKEYS are also valid memory locations.

NOTE

If a number already exists in the memory location entered, then the new number will replace it. If all locations have something programmed in them the prompt [**FULL**] will be displayed.

RECALLING NUMBERS

The user can recall numbers previously stored by following these steps:

1. The user must first press the **RCL** key.
2. The memory location of the desired number is then keyed in (1-50, depending on the number of locations enabled by the system operator or HOTKEY **A** , **B** or **C**). The dispatch or phone number will be displayed. If the number is greater than 8 digits long then the first 8 digits will be displayed for one second and then the last eight digits will be

displayed and remain in the display. If a location does not have anything in it, [**EMPTY**] will be displayed.

NOTE

There are 3 HOTKEYS (**A** , **B** and **C**) available for storing your most frequently called numbers. When used to initiate a call, these locations are recalled and dialed simply by pressing the HOTKEY. Pressing **RCL** key is not required.

NOTE

When specifying repertoire locations, using either **RCL** or **STO** key, the user need not enter the 0 preceding locations **1** through **9** (i.e., **RCL** - **3 DEF**). However, if the entire number is specified, the action will be taken immediately. If the user presses just the last digit, then the action will not be taken for one second. This allows the user time to enter the second digit (i.e., **RCL 32**).

HOTKEYS

Pressing **A** , **B** or **C** key will automatically recall and dial the number stored at that location without further user intervention.

LAST NUMBER REDIAL

The user can press the **SEND** key with an empty display and the radio will dial the last dialed number. By pressing the **RCL** key twice, the user can display the last number dialed. After displaying the number, the user can redial by pressing the **SEND** key.

LOCKING THE MDR MOBILE RADIO

The user may choose to lock the radio by pressing the **FCN** key and then the **7 PRS** key. The lock status indicator will be displayed. If the unit is turned off and then on again while it is locked, [- **LOCK** -] will be displayed. In this mode no calls can be originated or received. This feature is operational only if a lock code is entered during initial programming by the system operator. Lock codes can be 1 to 7 digits long. The lock feature is only operational when a call is not in progress.

UNLOCKING THE MOBILE

After the mobile has been locked the user may unlock the mobile by keying in the lock code. If an incorrect digit is entered simply start over with the correct code. If the lock code is forgotten, contact the system operator.

BACKLIGHT

The backlight function can be toggled **ON** or **OFF** by pressing the **FCN** key and then the **2 ABC** key. The intensity of the backlight cannot be changed

EXTERNAL SPEAKER

To enable the external speaker, press the **FCN** key and then the **4 GHI** key. Toggling this function provides the user with the capability to have private conversations or allow other passengers in the vehicle to hear the conversation. After power ON, the external speaker is enabled while in conventional mode and disabled during trunked mode.

CALL HOLD (MUTE)

The user can Enable or Disable the microphone, so that the called party cannot hear your conversation, by pressing the **FCN** key and then the **6 MNO** key. This feature is only available in duplex operation.

SIMPLEX OPERATION

The user can choose to terminate duplex operation and still maintain the interconnect call in progress by pressing the **FCN** and then pressing the **5 JKL** key. This returns the radio to the simplex mode of operation. To return to duplex, the user can press the ***** key.

DTMF DIGIT LENGTH

The user can change the duration of the **DTMF** tones by pressing the **FCN** key then the **8^{tuv}** key. The prompt **[LENGTH?]** is displayed and the radio waits for the user to enter a value between 2 and 9. If an out of range value is entered, the radio will display the correct range; i.e. **[RNG= 2-9]**. The user can then enter the desired value. The numbers entered represent 50-millisecond intervals (i.e. 100 - 450 milliseconds).

DELAY AFTER DTMF STAR (*)

The user can also change the delay after the **DTMF** ***** is sent. This value can be changed by pressing the **FCN** key and then the **9^{wxy}** key. The prompt **[DELAY?]** is returned and the radio waits for the user to enter the desired value between 0 and 7 seconds. If an out of range value is entered, the radio will display the correct range; i.e. **[RNG= 0-7]**. The user can then enter the desired value.

MAINTENANCE AND BASIC CARE

ANTENNA REMOVAL

It is strongly recommended that your antenna be removed from its mounting prior to passing through an automatic car wash in order to prevent antenna and/or vehicle damage. See your antenna instruction guide for instructions on how to safely remove the antenna from its mounting.

FUSE REPLACEMENT

Your radio unit is protected by one or more fuses located in the cables connected to the vehicle power sources(s). If the radio fails to operate, the problem may be a defective fuse. You should replace the fuse(s) with a similar type and size (see list below). These fuses may be obtained from your supplier or most electrical supply stores. However, if the trouble persists (continues to blow fuses or inoperative radio), check with your supplier.

Radio Power - Orange lead

15 amp Fast Blow Type AGC15

Ignition Sense - Red lead

2 amp Fast Blow Type AGC2

JUMP STARTING YOUR VEHICLE

Before jump starting or charging the vehicle battery, it is strongly suggested that the main power fuse located in the Orange lead be removed. This will insure that the radio is protected from damage in the battery charging process. Replace fuse when charging is completed.

CLEANING INSTRUCTIONS

The handset may be cleaned with a damp cloth, using a mild solution of liquid detergent and water or with a soft cloth and furniture polish. Never use an abrasive or a petroleum based solvent cleaner.

CAUTION

Do not spill liquids on the handset or immerse the handset into any liquid.

AVAILABLE OPTIONS

The following equipment options are available for the radio. Refer to your radio supplier for ordering information.

OPTION	DESCRIPTION	PART NUMBER
PMAN1L	800 MHz roof mount antenna with TNC connector	19B209568P5
PMCC1H	Handset extension cable (no coil), 18 feet, requires option PMCN1A	19B801636P1
PMCC3S	Handset cable (coiled), 6 feet stretched	19D901619P4
PMCC9M	External speaker cable, 18 inches	19A149590P8
PMCD1W	External speaker cable, 16 feet, requires option PMZM1K	19A149590P10
PMCD7Z	External option cable, 3 feet	19C851585P14
PMCD9A	Power cable, 18 feet	19B801358P17
PMCN1A	In line connector	19A705839P1
PMLS1F	Speaker, MIL-STD-810C & D, 5 x 5", requires options PMCD7Z & PMCC9M	19A149590P1
PMPD1A	Noise Suppression kit	19148539G1
PMSU1C	Alarm (horn) relay kit, requires	19A705499P1
PMTA1B	Talk-around kit	344A3803G2
PMZM1K	External speaker kit requires option PMCD7Z, includes options PMLS1F and PMCC9M	
PMZM5V	Handset extension cable kit, includes options PMCC3S, PMCC1H and PMCN1A (2)	

FREQUENTLY CALLED NUMBERS

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WARRANTY

- A. Ericsson GE Mobile Communications Inc. (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that Equipment manufactured by Seller shall be free from defects in material, workmanship and title, and shall conform to its published specifications. With respect to any Equipment not manufactured by Seller (except for integral parts of Seller's Equipment to which the warranties set forth above shall apply), Seller gives no warranty, and only the warranty, if any, given by the manufacturer shall apply. Batteries are excluded from this warranty but are warranted under a separate Nickel-Cadmium Battery Warranty.
- B. Seller's obligations set forth in Paragraph C below shall apply only to failures to meet the above warranties (except as to title) occurring within the following periods of time from date of sale to the Buyer and are conditioned on Buyer's giving written notice to Seller within thirty (30) days of such occurrence:
1. for fuses, incandescent lamps, vacuum tubes and non-rechargeable batteries, operable on arrival only.
 2. for parts and accessories (except as noted in B.1) sold by Seller's Service Parts Operation, ninety (90) days.
 3. for all other Equipment of Seller's manufacture, one (1) year.
- C. If any Equipment fails to meet the foregoing warranties, Seller shall correct the failure at its option (i) by repairing any defective or damaged part or parts thereof, or (ii) by making available at Seller's factory any necessary repaired or replacement parts. Any repaired or replacement part furnished hereunder shall be warranted for the remainder of the warranty period of the Equipment in which it is installed. Where such failure cannot be corrected by Seller's reasonable efforts, the parties will negotiate an equitable adjustment in price. Labor to perform warranty service will be provided at no charge during the warranty period only for the Equipment covered under Paragraph B.3. To be eligible for no-charge labor, service must be performed by an authorized General Electric Service Station or other Servicer approved for these purposes either at its place of business during normal business hours, for mobile or personal equipment, or at the Buyer's location, for fixed location equipment. Service on fixed location equipment more than thirty (30) miles from the Service Station or other approved Servicer's place of business will include a charge for transportation. Equipment located outside the Continental United States is not eligible for no-charge labor.
- D. Seller's obligations under Paragraph C shall not apply to any Equipment, or part thereof, which (i) has been modified or otherwise altered other than pursuant to Seller's written instructions or written approval or, (ii) is normally consumed in operation or, (iii) has a normal life inherently shorter than the warranty periods specified in Paragraph B, or (iv) is not properly stored, installed, used, maintained or repaired, or, (v) has been subjected to any other kind of misuse or detrimental exposure, or has been involved in an accident.
- E. The preceding paragraphs set forth the exclusive remedies for claims (except as to title) based upon defects in or nonconformity of the Equipment, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of other warranties, whether oral, written, expressed, implied or statutory. NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.

This warranty applies only within the United States.



EricssonGEMobileCommunicationsInc.
Mountain View Road • Lynchburg, Virginia

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1/91 Printed in U.S.A.

EMERGENCY NUMBERS

Police

State Police

Fire

Poison Control

Ambulance


**Life Saving and
Rescue Squad**



EricssonGEMobileCommunicationsInc.
Mountain View Road • Lynchburg, Virginia


ADDENDUM TO LBI-38950

The MDR Series Mobile Radio Unit can be supplied and used with two different handsets. One handset (344A3783P2) has a Push-to-Talk (PTT) button on the left side located below the VOLUME UP/DOWN buttons. This button must be held down to transmit during simplex operation.

The second type of handset (344A3783P3) does not have this PTT button. On this handset the  key has been programmed to function as the PTT operation. This key must be held down to transmit during simplex operation..

When using the procedures in this manual, use the corresponding button or key for the PTT function as determined by the type of handset used with the MDR radio unit.

For example:

3. Press  and send the message. (Using the 344A3783P3 handset.)
3. Press **PTT** and send the message. (Using the 344A3783P2 handset.)

Ericsson Inc.

Private Radio Systems

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