MOTOROLA

GP580 Ex Portable Radio
BASIC USER GUIDE
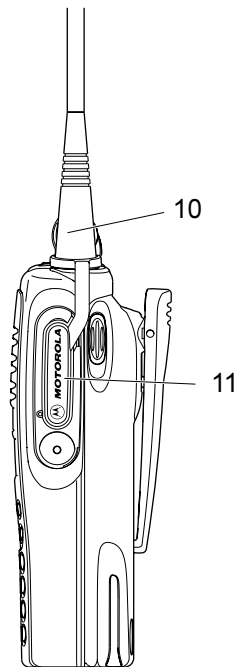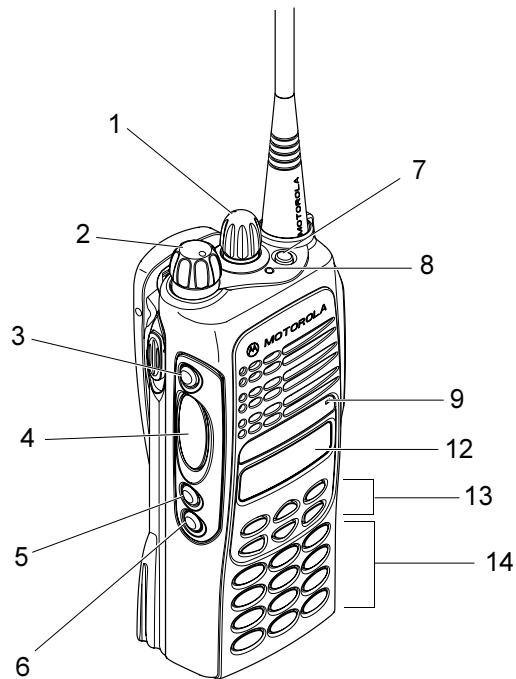
CONTENTS

RADIO OVERVIEW

This user guide covers the operation of the GP580 Professional Portable Radio.

<table>
<tr><td>⚠️ Caution</td><td>Before using this product, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet 6864117B25 enclosed with your radio.</td></tr>
</table>

ATTENTION!

This radio is restricted to occupational use only to satisfy ICNIRP RF energy exposure requirements. Before using this product, read the RF energy awareness information and operating instructions in the Product Safety and RF Exposure booklet (Motorola Publication part number 6864117B25) to ensure compliance with RF energy exposure limits.

OPERATION AND CONTROL FUNCTIONS

Radio Controls

Refer to the illustrations on the inside front cover.

1. **Mode Selector Knob**
   Used to select the required operation mode.

2. **On-Off / Volume Knob**
   Used to turn the radio on or off, and to adjust the radio's volume.

3. **Side Button 1/Select Key (programmable)**
   Recommended for the Monitor Button. Also functions as the select key when programming your radio's lists.

4. **Push to Talk (PTT) Button**
   Press and hold down this button to talk, release it to listen.

5. **Side Button 2 (programmable)**

6. **Side Button 3 (programmable)**

7. **Top Button (programmable)**
   Recommended as Emergency button.

8. **LED Indicator**
   The indicator LED on top of the radio indicates radio operating conditions.

With PTT switch pressed (radio transmitting)	
Continuous red LED	Normal transmission.
LED unlit	Radio is not transmitting.
Blinking red light	Low battery (conventional mode only; programmable from the CPS)
With PTT switch released (radio receiving)	
Blinking red light	Mode busy (conventional mode only).
Blinking green light	Receipt of a telephone call, Private Conversation call, or Call Alert page.

9. **Microphone**
Speak clearly into the microphone when sending a message.

10. **Antenna**

11. **Accessory Connector**
Connects headsets, remote speaker/microphones and other accessories. Replace attached dust cover when not in use.

12. **LCD Screen**

13. **Menu Keys**

14. **Keypad**

Programmable Buttons

Several of your radio buttons can be programmed (by using the Customer Programming Software — CPS) to activate the radio features.

Programmable buttons are

- Top button
- Three side buttons

Check with your dealer or Motorola representative for a complete list of the functions your radio's programmable buttons support.

The following table below the functions available by

- **short press** - quickly pressing and releasing the programmable buttons, or
- **long press** - pressing and holding the programmable buttons for a period of time before releasing, or
- **hold down**- pressing and holding down the programmable buttons while checking status or making adjustments.

Button	Short Press	Long Press	Hold Down
Permanent Monitor/ Monitor	—	Continually monitors the selected channel.	Monitors the selected channel for any activity.
Volume Set	—	—	Sounds a tone for adjusting the radio's volume level.
Scan	Toggles between the start/stop of the Scan operation.	—	—
Nuisance Delete	Temporarily deletes an unwanted non-priority active scan member.	—	—
Search	Makes a system search.		
Light	Turns on/off your radio's backlight.	—	—
Emergency	Enters Emergency mode.	Leaves Emergency mode.	—
Call	Enters or exits a Private call.		
Page	Enters or exits a Call Alert.		
Call Response	Respond to or exit from a Private Call or Call Alert.	—	—
Phone	Enters or leaves Phone mode.	—	—

Keypad Keys

(1)	(2 abc)	(3 def)
(4 ghi)	(5 jkl)	(6 mno)
(7 pqrs)	(8 tuv)	(9 wxyz)
(*)	(0)	(#)
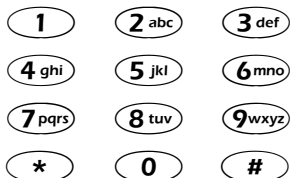
These keys are used when dialing a phone number, making a radio call or entering information for programming the radio's lists.

The following table shows the character cycle for each key, when entering information for programming the radio's lists.

Key	Number of Times the Key is Pressed					
	1	2	3	4	5	6
(0)	0					
(1)	1	Blank space				
(2 abc)	A	B	C	2		
(3 def)	D	E	F	3		
(4 ghi)	G	H	I	4		
(5 jkl)	J	K	L	5		
(6 mno)	M	N	O	6		
(7 pqrs)	P	Q	R	S	7	
(8 tuv)	T	U	V	8		
(9 wxyz)	W	X	Y	Z	9	
(*)	*					
(#)	#	-	+	.	/	\

Note: The sequence in the table above is valid when entering information on a blank display. However, when editing existing information, the above sequence may differ. For instance, if the last character entered is a "**R**", pressing (7 pqrs) to enter the next character, would start the character cycle at "**S**" and **NOT** at "**P**".

• When editing existing information, pressing (1) would **ALWAYS** start the character cycle at the "*blank space*" and **NOT** at "**1**".

Menu Keys

Softkey 1 Softkey 2 Softkey 3

Left Home Right
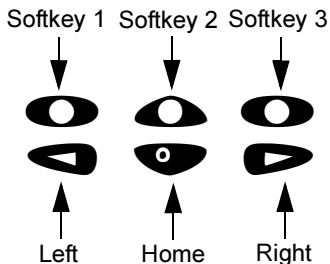
Selecting a Feature

A unique feature of your radio is its use of the display to give you quick access to many of the radio's features without having to have a dedicated key for each feature.

The names of the features (CALL, MUTE, etc.) are shown on the display, three at a time. Selection of features is controlled by the three keys directly below the feature names: the left key controls the left feature, the middle key controls the middle feature, and the right key controls the right feature.

Softkeys (○○○)

When already in Menu Mode, these keys are used to make Menu selections.

Left and Right Arrow Keys (◁▷)

The left and right arrow keys are used to scroll the display forward or backward through the radio's features and lists. There is no end point to the list, so if you continue to scroll in one direction, the display will "wrap around" back to the beginning of the list. If you hold either key down, the display will scroll at a faster rate until the key is released.

The left arrow key is also used for editing when you are entering information manually from the keypad.

Pressing the left arrow key, when editing numeric information (such as telephone numbers), will backspace, and erase the display, one character at a time. If you have erased all the digits, an additional press of the left arrow key will return the display to the pre-programmed list.

Pressing the left arrow key, when editing alphabetic information (such as member's names), will move the cursor one step to the left.

HOME Key (○)

The HOME key will always return you to the home (default) display. In most cases, this is the current mode. In addition, if you are using a feature that requires it, pressing the HOME key will also cause information to be saved in memory before going to the home display. Some radio features will automatically go to the home display when they are completed,

RADIO OVERVIEW

without having to press the HOME key, thus reducing the number of key presses required.

Menu Display

The menu items can be displayed in normal video or in reversed video (programmable through the CPS). All the menu items in the examples in this manual are shown in reversed video.

The order in which the menu items are displayed is programmable. Thus, the order of the menu items on your radio may differ from those shown here in this manual. In such a situation, press the relevant softkey to make your menu selections. All descriptions of functions and displays after the selection are valid.

LCD Screen and Icons
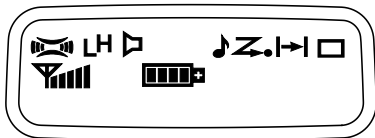
Displays mode selected, channel, menu, and radio status information. The top two screen rows show radio status indicator symbols, explained in the following table.

Symbol	Name and Description
(◖▨◗)	**XPAND™ Indicator** Indicates that your radio has the companding feature activated.
LH	**Power Level Indicator** L lights up when your radio is configured to transmit in Low Power. H lights up when your radio is configured to transmit in High Power.
◻	**Carrier Squelch Indicator** Indicates when the active conventional mode is being monitored in the carrier squelch mode; ON = BEING MONITORED/ OFF = NOT BEING MONITORED.
♪	**Call Received** Flashes when a call or page is received.
Z	**Scan Indicator** Indicates when the radio is scanning; ON = SCANNING/OFF =NOT SCANNING.
Z.	**Priority Scan** The presence of a dot along with the scan annunciator indicates the receiving of a priority mode; BLINKING DOT = PRIORITY 1 SOLID DOT = PRIORITY 2.

Symbol	Name and Description
⊢→⊣	**Direct** Indicates whether you are talking directly to another radio (talkaround), or through a repeater; ON = DIRECT OFF = REPEATER.
☐	**Programming/Viewing Mode** Indicates when the radio is in the programming or viewing mode; ON = IN VIEWING MODE BLINKING = IN PROGRAMMING MODE.
▼ꜰꜰ	**Signal Quality Indicator** Shows the radio signal quality. Five bars indicates the best signal (Smart Zone Only).
▥▯	**Battery Level Indicator** Shows the remaining charge in your battery, based on how many bars are displayed. Flashing, indicates flat battery.

Alert Tone Indications

Your radio generates a number of audible tones to indicate radio operating conditions:

- Low Battery – A low-battery condition is indicated by a high-pitched, cricket-like "chirp-chirp" when the PTT switch is released following a transmission.

- Successful Power-Up – A short, medium-pitched tone when the radio is first turned on indicates that the radio has passed its power-up self test and is ready for use.
- Unsuccessful Power-Up – A short, low-pitched tone when the radio is first turned on indicates that the radio has failed its power-up self test and is not ready for use. Contact your service representative for service.
- Transmit on Receive-Only Mode – If you press the PTT switch while tuned to a "receive-only" mode, you will hear a continuous, low-pitched alert tone, indicating that no transmission is possible on this mode. This tone will continue until the PTT switch is released.
- Transmit Inhibit on Busy Mode – If you press the PTT switch while the mode is busy, you will hear a continuous, low-pitched alert tone, indicating that no transmission is possible on this mode. This tone will continue until the PTT switch is released.
- Transmit Inhibit on Flat Battery – If you press the PTT while the battery is flat, you will hear a continuous, low pitched alert tone, indicating that transmission is impossible.
- Invalid Mode – A continuous, low-pitched tone is heard when an invalid or unprogrammed operation is attempted on the radio.

- Valid (Good) Key Press – A short, medium-pitched tone when a keypad key is pressed indicates that the key press was accepted.
- Invalid (Bad) Key Press – A short, low-pitched tone when a keypad key is pressed indicates that the key press was rejected.
- Emergency Alarm Entry – A short, medium-pitched tone when the emergency button is pressed indicates that the radio has entered the emergency mode.
- Emergency Alarm/Call Exit – A continuous, medium-pitched tone when the radio is in the emergency mode indicates that the radio has exited the emergency mode.
- Failsoft (Trunked Systems Only) – A faint "beeping" tone every ten seconds indicates that the radio is operating in the failsoft mode.
- Time-Out Timer Warning – Your radio's time-out timer limits the length of your transmission time. When you are pressing the PTT switch (transmitting), a short, low-pitched warning tone will sound four seconds before the allotted time will expire.
- Time-Out Timer Timed-Out – If you hold down the PTT switch longer than the time-out timer's allotted time, a continuous, low-pitched tone will sound, indicating that your transmission has been cut off. This tone will continue until the PTT switch is released.

- Phone Busy – A "bah-bah-bah-bah" tone when telephone interconnect is accessed indicates that all available modes are busy and the radio is in queue for the next available phone line.
- Call Alert (Page) Received – A group of four medium-pitched tones every five seconds indicates that your radio has received a Call Alert page.
- Call Alert (Page) Sent – A single medium-pitched tone (central acknowledge), followed by a group of four medium-pitched tones indicates that a Call Alert page sent by your radio has been received by the target radio.
- Private Conversation Call Received – A group of two medium-pitched tones indicates that your radio has received a Private Conversation call. This sequence is repeated every five seconds for approximately 20 seconds for enhanced Private Conversation.
- Trunked System Busy (Trunked Systems Only) – A "bah-bah-bah-bah" tone when a trunked system is accessed indicates that all available channels are busy and the radio is in queue for the next available channel.
- Call Back (Trunked Systems Only) – A group of three medium-pitched tones (di-di-dit) indicates that a talkgroup is now available for your previously requested transmission.

GETTING STARTED

BATTERY INFORMATION

Battery Care and Tips

This product is powered by a lithium-ion rechargeable battery.

The following battery tips will help you obtain the highest performance and longest cycle life from your Motorola rechargeable battery.

- Charge your new battery overnight (**14-16 hours**) before using it to obtain maximum battery capacity and performance.

- Charging in non-Motorola equipment may lead to battery damage and void the battery warranty.

- When charging a battery that is attached to the radio, turn the radio off to ensure a full charge.

- The battery should be at about 25°C (room temperature) whenever possible. Charging a cold battery (below 10°C) may result in leakage of electrolyte and ultimately, in failure of the battery.

- Charging a hot battery (above 35°C) results in reduced discharge capacity, affecting the performance of the radio. Motorola rapid-rate battery chargers contain a temperature-sensing circuit to ensure that the battery is charged within these temperature limits.

- New batteries can be stored up to two years without significant cycle loss. Store new/unused batteries in a cool dry area.

- Batteries which have been in storage should be charged overnight.

- Do not return fully charged batteries to the charger for an "extra boost". This action will **significantly** reduce cycle life.

- Do not leave your radio and battery in the charger when not charging. Continuous charging will shorten battery life. (Do not use your charger as a radio stand.)

- For optimum battery life and operation use only Motorola brand chargers. They were designed to operate as an integrated energy system.

Recycling or Disposal of Batteries

Motorola endorses and encourages the recycling of all re-chargeable batteries. Contact your local Motorola dealer for further information.

Charging the Battery

If a battery is new, or its charge level is very low, indicated by battery level indicator showing one or no segments, you will need to charge the battery before you can use it in your radio.

Note: Batteries are shipped uncharged from the factory. New batteries could prematurely indicate full charge, charge a new battery for 14-16 hours before initial use.

Charger LED	Status
Red	Battery is charging
Green	Battery is fully charged
Flashing Red *	Battery is unchargeable
Flashing Yellow	Charger is getting ready to charge
Flashing Green	Battery is 90% charged

* Battery is damaged. Please contact your dealer.

1. Place the radio with the battery attached, or the battery alone, in the charger.

2. The charger's LED indicates the charging progress.

Battery chargers will charge only the Motorola authorized batteries listed below; other batteries will not charge.
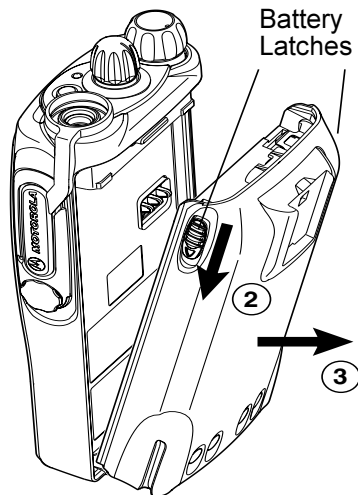
Part No.	Description
NNTN5510_R	Lithium-Ion

ACCESSORY INFORMATION

Attaching the Battery

Removing the Battery

Slots

Battery Latches
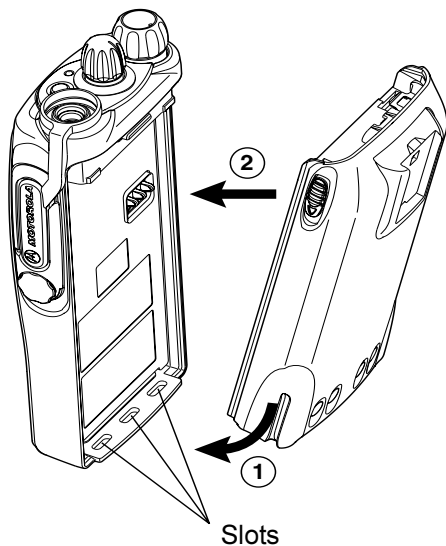
1. Fit the extensions at the bottom of the battery into the slots at the bottom of the radio's body.

2. Press the top part of the battery towards the radio until you hear a click.

1. Turn off the radio, if it is turned on.

2. Slide the battery latches, on both sides of the battery, downwards.

3. Pull the top part of the battery away from the radio's body, and remove the battery.
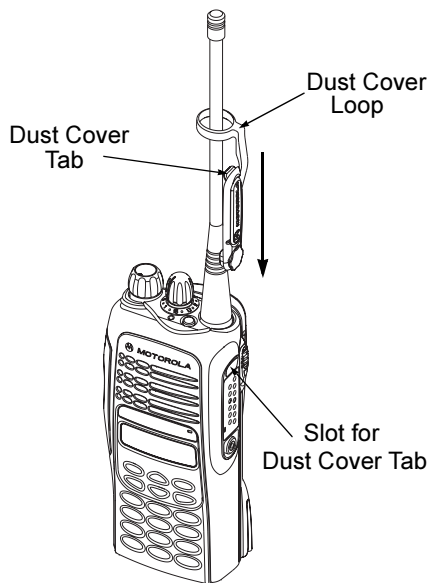
GETTING STARTED

Attaching the Antenna

Removing the Antenna
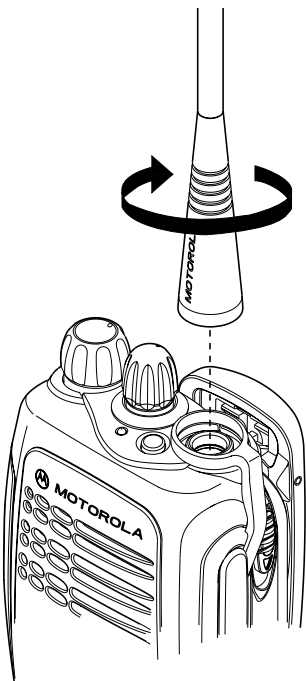
1. Align the threaded end of the antenna with the radio's antenna connector.

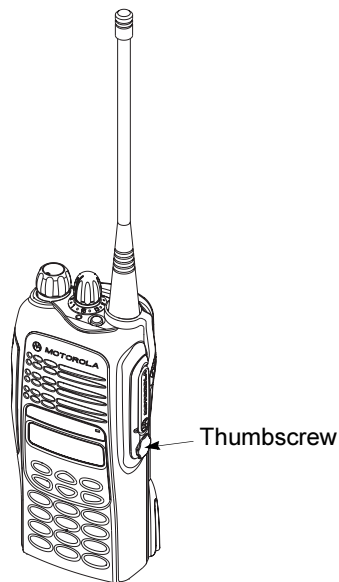2. Turn the antenna clockwise to fasten it.
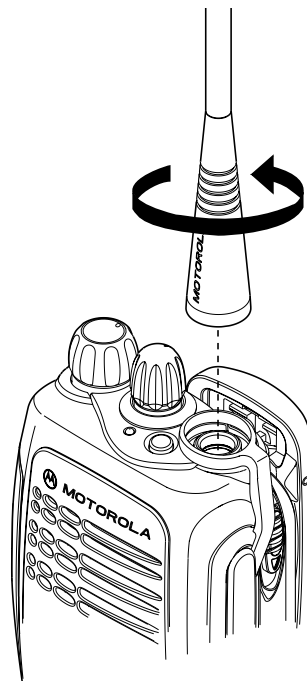
• Turn the antenna counterclockwise until you can remove it.

13   **English**

Attaching the Dust Cover

1. Place the dust cover loop over the attached antenna.

2. Slide the loop all the way down to the base of the antenna.

3. Insert the dust cover tab into the slot above the connector.

4. Tighten the thumbscrew to hold the cover in place. **DO NOT** overtighten the thumbscrew.
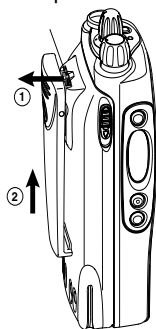
Caution: The following section on attaching/ removing Belt Clips - excludes the ATEX radios which must use the mandatory carry case)

Attaching the Belt Clip

1. Align the grooves of the belt clip with those of the battery.

2. Press the belt clip downwards until a click is heard.
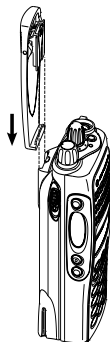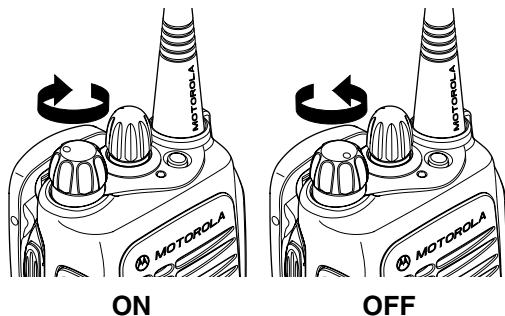
Belt Clip Tab

Removing the Belt Clip

1. Use a key to press the belt clip tab away from the battery.

2. Slide the belt clip upwards to remove it.

RADIO OPERATION

Turning The Radio On or Off

ON   **OFF**

To turn the radio on, turn the **On-Off/Volume Control** knob clockwise.

To turn the radio off, turn the **On-Off/Volume Control** knob counterclockwise until you hear a click.

Adjusting the Radio's Volume

Turn the **On-Off/Volume Control** knob to adjust the volume level.

Listen until you hear a transmission, then adjust the volume control for a comfortable listening level.

Or, if a button is programmed for "volume set," press this button and adjust the volume to a comfortable listening level.

Radio Self Test

Turn the radio on by rotating the volume control clockwise. The radio goes through a power-up self check and, if it passes the check, the display momentarily shows "SELF TEST." A good-power-up, high-pitched tone sounds to indicate that the radio has passed the self check.

If the radio fails the self check, the display shows "ERROR XX/XX" (where XX/XX is an alphanumeric error code), accompanied by a bad-power-up, low-pitched tone. Turn the radio off, check the battery, and turn the radio back on. If the radio still does not pass the self check, a problem exists in the radio. Contact your nearest Motorola Service Shop.

*   The power-up self check verifies that the radio's microprocessor-based systems are working, but it does not check all of the rf components, nor does it check the operation of all customer-specific features. Motorola recommends that the functionality of the radio be periodically checked by an authorized Motorola service shop.

BASIC RADIO CALLS

This section outlines the basic functions of your radio. Throughout this section, the display below

(PLANT POLICE)

is used to indicate the radio's home display.

SELECTING A ZONE AND MODE

A *mode* is a channel or talkgroup and all the features that are programmed to it. A *zone* is a grouping of modes that is selected using the menu keys. Before you use your radio to receive or send messages, you should first select the desired zone and mode.

Selecting a Zone

1. Press � until *ZONE* is displayed.

   (ZONE MUTE CALL)

2. Press ● (the soft-key below *ZONE*). The current zone name blinks on the display.

   For example
   (PLANT POLICE)

3. Press ▶ until the desired zone name is displayed.
   —*or*—
   Enter the number of the desired zone.

   For example
   (CITY POLICE)

4. Press ◉ .

5. The displayed zone is the new selected zone.

   (CITY POLICE)

Selecting a Mode

1. Turn the *mode selector knob* to the desired mode.

2. The display shows the selected mode's name.

   For example
   (PLANT MODE 1)

3. If the selected mode is unprogrammed, an invalid-mode tone is heard until a valid programmed mode is selected.

   (UNPROGRAMMED)

RECEIVING A CALL

1. Turn the radio on and select the desired zone and mode (see *Selecting a Zone and Mode*).

2. Your radio is now set to receive calls on the selected mode.

MAKING A CALL

Conventional Modes

1. Turn the radio on and select the desired conventional zone and mode (see *Selecting a Zone and Mode*).

2. Press and hold the PTT switch on the side of the radio and speak slowly and clearly into the microphone area. The red LED lights continuously when the radio is transmitting.

3. When you have finished talking, release the PTT to listen.

Note: Do not interrupt another user. If the present mode is programmed to receive PL, ensure that the mode is not in use by pressing the monitor button to listen for activity.

• If the mode-busy feature is enabled, a blinking red LED on receive (PTT released) indicates that the mode is currently busy.

• If a mode is programmed for receive only, any attempt to transmit on that mode will cause an invalid-mode tone to sound until the PTT switch is released.

Trunked Modes

1. Turn the radio on and select the desired trunked zone and mode (see *Selecting a Zone and Mode*).

2. Press and hold the PTT switch on the side of the radio and speak slowly and clearly into the microphone area. The red LED lights when the radio is transmitting. When you have finished talking, release the PTT to listen.

Note: If you hear a busy signal (a low-frequency "bah-bah-bah-bah"), release the PTT switch and wait for a call-back tone (sounds like "di-di-dit"). When you hear the call-back tone you will have three seconds to press the PTT switch. This allows you to make another call without getting a busy signal.

• If a continuous talk-prohibit tone is heard when the PTT switch is pressed, transmission is not possible. The radio may be out of range.

Low-Battery Alert

Your radio emits an alert tone when a low-battery condition is detected.

Coded Squelch Operation

Tone Private-Line (PL), Digital Private-Line (DPL), and carrier squelch operation are all available in your radio, on a per-mode basis. When in carrier squelch operation, all traffic on the mode is heard. When in PL or DPL operation, your radio responds to only those messages intended for you. When this feature is mode-slaved, PL, DPL, or carrier squelch is programmed to each mode.

Whenever the radio is operating in carrier squelch, the display will show ⊐.

Variable RF Power Level (Selected Models Only)

Radios can have more than one power level. High power can be programmed on modes where high power is permitted, and low power can be programmed on all other modes. The high-/low-power feature can be selected via the menu keys.

FAILSOFT OPERATION (TRUNKED SYSTEMS ONLY)

The "failsoft" system ensures continual radio communications capability during a trunked system failure. Your radio will automatically go into failsoft operation, if the central trunking controller fails for any reason. While in failsoft operation, your radio will transmit and receive on a predetermined frequency on a conventional mode. When the trunked system returns to normal operation, the radio will automatically leave the failsoft operation and return to trunked operation.

During failsoft operation,

1. You will hear a faint "beeping" sound every ten seconds.	Alternates between ⊏ FAILSOFT ⊐ and ⊏ PLANT POLICE ⊐

2. Your radio becomes unsquelched.

MUTING THE KEYPAD TONES

The radio's keypad tones, normally heard each time a keypad key is pressed, can be turned off (muted) or on (unmuted) at your discretion. To use the keypad mute feature

1. Press ▭ until *MUTE* is displayed.

(ZONE MUTE CALL)

2. Press ⬤ (the soft-key below *MUTE*).

You will see the current mute state momentarily.

(TONES ON)

or

(TONES OFF)

Then

(ON   OFF)

3. Press the softkey below the desired mute state (on or off). The radio returns to the home display.

(PLANT POLICE)

Note: Pressing ⬤ or the PTT switch will exit this menu without changing the mute selection.

BASIC RADIO CALLS