

KENWOOD

INSTRUCTION MANUAL



VHF FM TRANSCEIVER

TK-2360

UHF FM TRANSCEIVER

TK-3360

Kenwood Corporation

© B62-2208-00 (M)
09 08 07 06 05 04 03 02 01 00

THANK YOU

We are grateful you have chosen **Kenwood** for your land mobile radio applications.

NOTICES TO THE USER

- ◆ Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.
- ◆ Illegal operation is punishable by fine and/or imprisonment.
- ◆ Refer service to qualified technicians only.

SAFETY: It is important that the operator is aware of and understands hazards common to the operation of any transceiver.

Firmware Copyrights

The title to and ownership of copyrights for firmware embedded in Kenwood product memories are reserved for Kenwood Corporation.

PRECAUTIONS

- Do not charge the transceiver and battery pack when they are wet.
- Ensure that there are no metallic items located between the transceiver and the battery pack.
- Do not use options not specified by **Kenwood**.
- If the die-cast chassis or other transceiver part is damaged, do not touch the damaged parts.
- If a headset or headphone is connected to the transceiver, reduce the transceiver volume. Pay attention to the volume level when turning the squelch off.
- Do not place the microphone cable around your neck while near machinery that may catch the cable.
- Do not place the transceiver on unstable surfaces.
- Ensure that the end of the antenna does not touch your eyes.
- When the transceiver is used for transmission for many hours, the radiator and chassis will become hot. Do not touch these locations when replacing the battery pack.
- Always switch the transceiver power off before installing optional accessories.
- The charger is the device that disconnects the unit from the AC mains line. The AC plug should be readily accessible.

**WARNING**

Turn the transceiver power off in the following locations:

- Near blasting sites.
- In airplanes. (Any use of the transceiver must follow the instructions and regulations provided by the airline crew.)
- Where restrictions or warnings are posted regarding the use of radio devices, including but not limited to medical facilities.
- Near persons using pacemakers.

**CAUTION**

- Do not disassemble or modify the transceiver for any reason.
- Do not place the transceiver on or near airbag equipment while the vehicle is running. When the airbag inflates, the transceiver may be ejected and strike the driver or passengers.
- Do not transmit while touching the antenna terminal or if any metallic parts are exposed from the antenna covering. Transmitting at such a time may result in a high-frequency burn.
- If an abnormal odor or smoke is detected coming from the transceiver, switch the transceiver power off immediately, remove the battery pack from the transceiver, and contact your **Kenwood** dealer.
- Use of the transceiver while you are driving may be against traffic laws. Please check and observe the vehicle regulations in your area.
- Do not expose the transceiver to extremely hot or cold conditions.
- Do not carry the battery pack (or battery case) with metal objects, as they may short the battery terminals.
- Danger of explosion if the battery is incorrectly replaced; replace only with the same type.

INFORMATION CONCERNING THE BATTERY PACK

The battery pack includes flammable objects such as organic solvent. Mishandling may cause the battery to rupture producing flames or extreme heat, deteriorate, or cause other forms of damage to the battery. Please observe the following prohibitive matters.



DANGER

- **Do not disassemble or reconstruct battery!**

The battery pack has a safety function and protection circuit to avoid danger. If they suffer serious damage, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not short-circuit the battery!**

Do not join the + and – terminals using any form of metal (such as a paper clip or wire). Do not carry or store the battery pack in containers holding metal objects (such as wires, chain-necklace or hairpins). If the battery pack is short-circuited, excessive current will flow and the battery may generate heat or smoke, rupture, or burst into flame. It will also cause metal objects to heat up.

- **Do not incinerate or apply heat to the battery!**

If the insulator is melted, the gas release vent or safety function is damaged, or the electrolyte is ignited, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not use or leave the battery near fires, stoves, or other heat generators (areas reaching over 80°C/ 176°F)!**

If the polymer separator is melted due to high temperature, an internal short-circuit may occur in the individual cells and the battery may generate heat or smoke, rupture, or burst into flame.

- **Avoid immersing the battery in water or getting it wet by other means!**

If the battery becomes wet, wipe it off with a dry towel before use. If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.



DANGER

- **Do not charge the battery near fires or under direct sunlight!**

If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Use only the specified charger and observe charging requirements!**

If the battery is charged in unspecified conditions (under high temperature over the regulated value, excessive high voltage or current over regulated value, or with a remodelled charger), it may overcharge or an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not pierce the battery with any object, strike it with an instrument, or step on it!**

This may break or deform the battery, causing a short-circuit. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not jar or throw the battery!**

An impact may cause the battery to leak, generate heat or smoke, rupture, and/or burst into flame. If the battery's protection circuit is damaged, the battery may charge at an abnormal current (or voltage), and an abnormal chemical reaction may occur.

- **Do not use the battery pack if it is damaged in any way!**

The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not solder directly onto the battery!**

If the insulator is melted or the gas release vent or safety function is damaged, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not reverse the battery polarity (and terminals)!**

When charging a reversed battery, an abnormal chemical reaction may occur. In some cases, an unexpected large amount of current may flow upon discharging. The battery may generate heat or smoke, rupture, or burst into flame.

**DANGER**

- **Do not reverse-charge or reverse-connect the battery!**

The battery pack has positive and negative poles. If the battery pack does not smoothly connect with a charger or operating equipment, do not force it; check the polarity of the battery. If the battery pack is reverse-connected to the charger, it will be reverse-charged and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not touch a ruptured and leaking battery!**

If the electrolyte liquid from the battery gets into your eyes, wash your eyes out with fresh water as soon as possible, without rubbing your eyes. Go to the hospital immediately. If left untreated, it may cause eye-problems.

**WARNING**

- **Do not charge the battery for longer than the specified time!**

If the battery pack has not finished charging even after the regulated time has passed, stop it. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not place the battery pack into a microwave or high pressure container!**

The battery may generate heat or smoke, rupture, or burst into flame.

- **Keep ruptured and leaking battery packs away from fire!**

If the battery pack is leaking (or the battery emits a bad odor), immediately remove it from flammable areas. Electrolyte leaking from battery can easily catch on fire and may cause the battery to generate smoke or burst into flame.

- **Do not use an abnormal battery!**

If the battery pack emits a bad odor, appears to have different coloring, is deformed, or seems abnormal for any other reason, remove it from the charger or operating equipment and do not use it. The battery may generate heat or smoke, rupture, or burst into flame.

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UNPACKING AND CHECKING EQUIPMENT

Note: These unpacking instructions are for use by your **Kenwood** dealer, an authorized **Kenwood** service facility, or the factory.

Carefully unpack the transceiver. If any items are missing or damaged, file a claim with the carrier immediately.

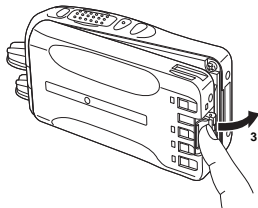
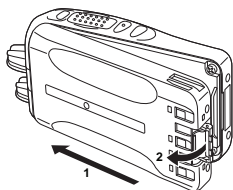
SUPPLIED ACCESSORIES

Belt clip	1
Speaker/ microphone jacks cap	1
Speaker/ microphone locking bracket	1
Stopper (4-channel: white)	1
Stopper (8-channel: gray)	1
Stopper (12-channel: black)	1
Instruction manual	1

PREPARATION

INSTALLING/ REMOVING THE (OPTIONAL) BATTERY PACK

- 1 Match the guides of the battery pack with the grooves on the upper rear of the transceiver, then firmly press the battery pack in place.
- 2 Lock the safety catch to prevent accidentally releasing the battery pack.
- 3 To remove the battery pack, lift the safety catch, press the release latch, then pull the battery pack away from the transceiver.



Note:

- ◆ For battery pack charging procedures and usage, refer to the battery charger Instruction Manual.
 - ◆ Before charging a battery pack that is attached to the transceiver, ensure that the safety catch is firmly closed.
-

INSTALLING/ REMOVING ALKALINE BATTERIES



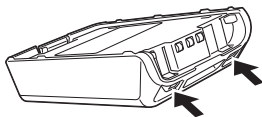
WARNING

- ◆ Do not install batteries in a hazardous environment where sparks could cause an explosion.
- ◆ Never discard batteries in fire; extremely high temperatures can cause batteries to explode.
- ◆ Do not short circuit the battery case terminals.
- ◆ Do not use rechargeable batteries.

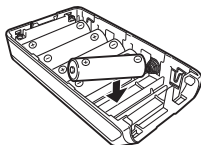
Note:

- ◆ If you do not plan to use the transceiver for a long period, remove the batteries from the battery case.
 - ◆ This battery case has been designed for transmitting at a power of approximately 1 W (the low power setting on your transceiver). If you want to transmit a stronger signal (using the high power setting on your transceiver), use an optional rechargeable battery pack.
-

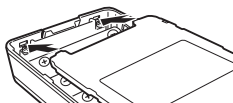
- 1 To open the battery case, press on the two tabs on the upper rear of the case, then pull the two halves apart.



- 2 Insert 6 AA (LR6) Alkaline batteries into the battery case.
- Be sure to match the polarities with those marked in the bottom of the battery case.

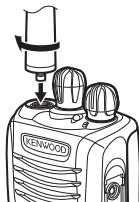


- 3 Align the tabs of the cover with the base, then push down on the cover until it locks in place.



INSTALLING THE (OPTIONAL) ANTENNA

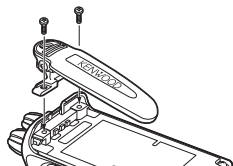
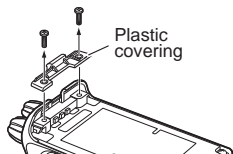
Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.



INSTALLING THE BELT CLIP

Note: When first installing the belt clip, you must remove the battery pack from the rear of the transceiver.

- 1 Remove the 2 screws from the rear of the transceiver, then remove the small, plastic black covering that was held in place.
- 2 Insert the belt clip mount into the space on the rear of the transceiver.
- 3 Using the 2 screws, affix the belt clip in place.



CAUTION

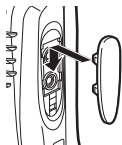
- When the belt clip is not installed, leave the plastic covering in place.
- Do not use glue which is designed to prevent screw loosening when installing the belt clip, as it may cause damage to the transceiver. Acrylic ester, which is contained in these glues, may crack the transceiver's back panel.

INSTALLING THE CAP OVER THE SPEAKER/ MICROPHONE JACKS

Install the cap over the speaker/ microphone jacks when not using an optional speaker/ microphone.

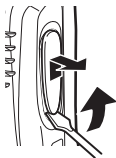
Note: To keep the transceiver water resistant, you must cover the speaker/ microphone jacks with the supplied cap.

- 1 Place the cap over the jacks so that the locking tabs insert into the transceiver grooves.



- 2 While holding the cap in place, push it towards the bottom of the transceiver until the tabs on the cap click into place.

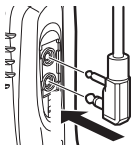
- To remove the cap, hold the top of the cap in place with your finger while inserting a 3 mm or smaller flat blade screwdriver under the bottom of the cap. Slowly slide the screwdriver in until its tip touches the tab inside the cap, then gently pry the cap up (handle of screwdriver moving away from the transceiver) to remove the cap.



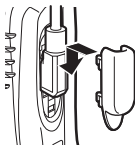
INSTALLING THE (OPTIONAL) SPEAKER/ MICROPHONE

Note: The transceiver is not fully water resistant when using a speaker/ microphone or headset.

- 1 Insert the speaker/ microphone plugs into the speaker/ microphone jacks of the transceiver.



- 2 Place the locking bracket over the speaker/ microphone plugs so that the locking tabs insert into the transceiver grooves.



- 3 While holding the locking bracket in place, push it towards the bottom of the transceiver until the tabs on the bracket click into place.

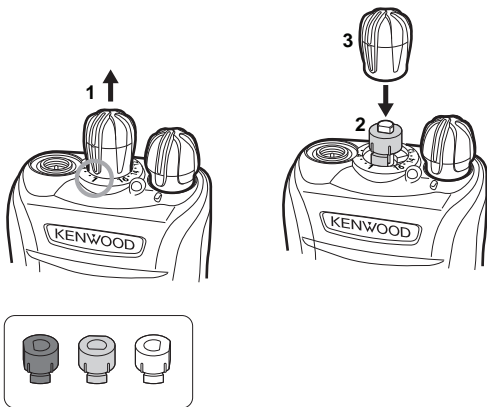
- To remove the locking bracket, push the bracket up from the base.



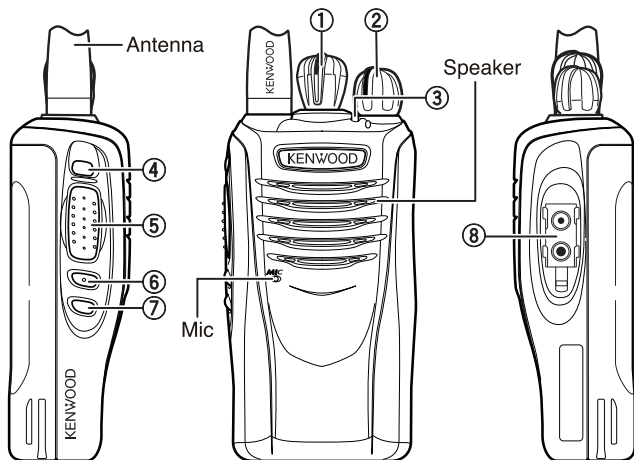
INSTALLING THE CHANNEL STOPPER

There are 3 types of stoppers available, depending on the number of channels used (4 channel type: white, 8 channel type: gray, and 12 channel type: black).

- 1 Set the Selector knob to channel 1, then pull the Selector knob off the transceiver.
 - If the Selector is not positioned at channel 1, the Selector knob may not install correctly and the channel may be unable to be changed.
- 2 Insert the appropriate channel stopper.
- 3 Reinsert the Selector knob.



ORIENTATION



- ① **Channel Selector**
Rotate to select a channel.
- ② **Power switch/ Volume control**
Rotate to turn the transceiver ON/OFF and to adjust the volume.
- ③ **Transmit/ Receive/ Battery low indicator**
If enabled by your dealer, lights red while transmitting, green while receiving a call, and orange when receiving an optional signaling call (2-tone, DTMF signaling, etc.). Blinks red when the battery power is low while transmitting.
- ④ **Auxiliary key**
Press or hold to activate its programmable function {page 8}.
- ⑤ **PTT (Push-To-Talk) switch**
Press and hold this switch, then speak into the microphone to call a station.

- ⑥ **Side 1 key**
Press or hold to activate its programmable function {page 8}.
- ⑦ **Side 2 key**
Press or hold to activate its programmable function {page 8}.
- ⑧ **Speaker/ microphone jack**
Connect a speaker/ microphone or headset here {page 5}.
Otherwise, keep the supplied cap in place.

PROGRAMMABLE AUXILIARY FUNCTIONS

Your dealer can program the **Auxiliary, Side 1, and Side 2** keys each with 1 or 2 of the following functions. Because each key can be programmed with up to 2 functions, there are 2 methods of accessing the programmed functions. Functions can be accessed by either pressing the key or by pressing and holding the key. Ask your dealer for details.

■ **None**

No function has been programmed.

■ **2-tone**

Press this key to send the 2-tone code assigned to it.

■ **Autodial**

Press this key to call the DTMF number that has been programmed onto your selected channel. Your dealer may program different DTMF numbers on different channels.

■ **Battery Indicator**

Press this key to announce the current battery energy level. Battery level 4 (green LED) means the battery is full, level 3 (orange LED) is sufficient, level 2 (red LED) is low, and level 1 (flashing red LED) is very low.

■ Emergency

Press and hold this key to enter Emergency mode. When the transceiver enters Emergency mode, it will change to the Emergency channel and begin transmitting based on your dealer settings.

Note: This function can be programmed only on the Auxiliary key.

■ Key Lock

Press this key to lock and unlock the transceiver keys. While Key Lock is activated, you cannot use the **Auxiliary**, **Side 1**, **Side 2**, and microphone PF keys.

Note: You can still use the following key functions when Key Lock is activated: Emergency, Lone Worker, Monitor, Monitor Momentary, Squelch Off, Squelch Off Momentary, Key Lock, PTT + Autodial, PTT + 2-tone.

■ Lone Worker

Press this key to toggle the Lone Worker function ON or OFF. If the transceiver is not operated for the pre-programmed time, it will emit a Lone Worker tone. Subsequently, if no operation is performed while the tone is emitted, the transceiver will enter Emergency mode.

■ Low Transmit Power

Press this key to change the transmit power on the current channel to low power, to conserve battery energy.

■ Monitor

Press this key to deactivate QT or DQT signaling. Press this key again to return to normal operation.

■ **Monitor Momentary**

Press and hold this key to deactivate QT or DQT signaling. Release the key to return to normal operation.

■ **Paging**

After selecting your desired FleetSync channel, press this key to transmit your PTT List ID, to request a call.

■ **Priority Channel Select**

Press this key to set the currently selected channel as the Priority channel. During Scan, the transceiver will automatically change to the Priority channel when a call is received on that channel, even if a call is being received on a normal channel.

■ **Scan**

Press this key to toggle Scan ON and OFF. While scanning, the transceiver checks for a signal on each channel and only stops if a signal is present.

■ **Scan Temporary Delete**

When scan pauses at an undesired channel, you can temporarily remove that channel from the scanning sequence by pressing this key.

■ **Scrambler**

Press this key to toggle the Scrambler function ON and OFF. The Scrambler allows you to hold conversations in complete privacy by encrypting your transmitted signals.

■ **Squelch Off**

Press this key to hear background noise. Press this key again to return to normal operation.

■ Squelch Off Momentary

Press and hold this key to hear background noise. Press this key again to return to normal operation.

■ Status 1/ Status 2

Press the **Status 1** or **Status 2** key to transmit the status message assigned to them.

■ Talk Around

Press this key to toggle the Talk Around function ON and OFF. Talk Around allows you to communicate directly with other transceivers without the use of a repeater, as long they are not too far away or there are no geographical obstacles in the way.

BASIC OPERATIONS

SWITCHING POWER ON/OFF

Turn the **Power** switch/ **Volume** control clockwise to switch the transceiver ON.

Turn the **Power** switch/ **Volume** control counterclockwise fully to switch the transceiver OFF.

ADJUSTING THE VOLUME

Rotate the **Power** switch/ **Volume** control to adjust the volume. Clockwise increases the volume and counterclockwise decreases it.

SELECTING A CHANNEL

Select your desired channel using the Selector knob. Each channel is programmed with settings for transmitting and receiving.

TRANSMITTING/ RECEIVING

- 1 Select your desired channel.
- 2 Press the key programmed as **Monitor** or **Squelch Off** to check whether or not the channel is free.
 - If the channel is busy, wait until it becomes free.
- 3 Press the **PTT** switch and speak into the microphone. Release the **PTT** switch to receive.
 - For best sound quality, hold the transceiver approximately 1.5 inches (3 ~ 4 cm) from your mouth.
 - If signaling has been programmed on the channel, you will hear a call only if the received signal matches your transceiver settings.

SCAN

Scan monitors for signals on the transceiver channels. While scanning, the transceiver checks for a signal on each channel and only stops if a signal is present.

To begin scanning, press the key programmed as **Scan**.

- When a signal is detected on a channel, Scan pauses at that channel. The transceiver will remain on the busy channel until the signal is no longer present, at which time Scan resumes.

To stop scanning, press the **Scan** key again.

Note: To use Scan, there must be at least 2 channels in the scan sequence.

PRIORITY SCAN

If a Priority channel has been programmed, the transceiver will automatically change to the Priority channel when a call is received on that channel, even if a call is being received on a normal channel.

If the Priority channel has been set as Operator Selectable by your dealer, you can set a new channel as the Priority channel by selecting your desired channel and pressing the key programmed as **Priority Channel Select**.

TEMPORARY CHANNEL LOCKOUT

During scan, you can temporarily remove specific channels from the scanning sequence by pressing the key programmed as **Scan Temporary Delete** while Scan is paused at the undesired channel.

- The channel is no longer scanned. However, when scanning is ended and restarted, the channels are reset and deleted channels will again be in the scanning sequence.

SCAN REVERT

The Scan Revert channel is the channel selected when you press the **PTT** switch to transmit during scan. Your dealer can program one of the following types of Scan Revert channels:

- **Selected:** The last channel selected before scan.
- **Selected + Talkback:** Same as “Selected”, plus you can respond to calls on the channel at which scan is paused.
- **Priority:** The Priority channel.
- **Priority + Talkback:** Same as “Priority”, plus you can respond to calls on the channel at which scan is paused.
- **Last Called + Selected:** The last channel on which you receive a call or the last channel selected before scan, whichever operation occurred latest.

FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION

FleetSync is an Alphanumeric 2-way Paging Function, and is a protocol owned by **Kenwood** Corporation.

Note: If set up by your dealer, your transceiver may use the MDC-1200 feature in place of FleetSync. MDC-1200 and FleetSync cannot be operated simultaneously.

SELCALL (SELECTIVE CALLING)

A Selcall is a voice call to a station or group of stations.

■ Transmitting

- 1 Select your desired FleetSync channel.
 - Your dealer can program different ID codes on different channels.
- 2 Press the **PTT** switch and begin your conversation.

■ Receiving

If enabled by your dealer, an alert tone will sound and the LED will blink when a Selcall has been received.

To respond to the call, press the **PTT** switch and speak into the microphone.

■ Identification Codes

An ID code is a combination of a 3-digit Fleet number and a 4-digit ID number. Each transceiver has its own ID.

PAGING CALL

- 1 Select your desired FleetSync channel.
- 2 Press the key programmed as **Paging** to transmit your PTT List ID, to request a call.

STATUS MESSAGE

You can transmit pre-programmed Status messages by pressing the keys programmed as **Status 1** or **Status 2**. Status messages are 2-digit codes ranging from 10 to 99 (80 ~ 99 are reserved for special messages).

VOICE OPERATED TRANSMISSION (VOX)

VOX operation allows you to transmit hands-free. This feature can be activated or deactivated by your dealer.

VOX GAIN LEVEL

- 1 Connect a headset to the transceiver.
- 2 With the transceiver power off, press and hold the **Side 1** key for 2 seconds while turning the transceiver power ON.
 - The LED flashes red and green.
- 3 Press the **Side 1** key to increase the VOX Gain level, and the **Side 2** key to decrease the level.
 - The VOX Gain can be adjusted from levels 1 to 10 and off.
- 4 While adjusting the level, speak into the headset microphone to test the sensitivity level. (Your voice is not transmitted during this test procedure.)
 - When sound is recognized, the LED lights orange.
- 5 Press the **PTT** switch to save the setting.

VOX OPERATION

- 1 Connect a headset to the transceiver.
- 2 To transmit, simply speak into the microphone.
 - The transceiver recognizes sound levels depending on the VOX Gain level. If it is too sensitive, it will transmit when there is noise in the background. If it is not sensitive enough, it will not pick up your voice when you begin speaking.
- 3 When you finish speaking, transmission ends.

BACKGROUND OPERATIONS

Your dealer can activate a variety of transceiver functions to perform without any additional operation on your part.

TIME-OUT TIMER (TOT)

The Time-out Timer is used to prevent you from using a channel for an extended duration. If you continuously transmit for a preset time, the transceiver will stop transmitting and an alert tone will sound. Release the **PTT** switch.

BATTERY SAVER

The Battery Saver decreases the amount of power used when a signal is not being received and no operations are being performed.

LOW BATTERY WARNING

Low Battery Warning alerts you when the battery needs to be recharged. Your dealer can set an alert tone to sound and the LED indicator to blink red when the battery power is low. Recharge or replace the battery pack at this time.

PTT ID

PTT ID is the transceiver unique ID code which is sent each time the **PTT** switch is pressed and/or released.

COMPANDER

If programmed by your dealer for a channel, the compander will remove excessive noise from transmitted signals, to provide higher clarity of signals.

BUSY CHANNEL LOCKOUT (BCL)

If BCL is set up by your dealer, you will be unable to transmit if the channel is already in use. Use a different channel or wait until the channel becomes free.

VOICE ANNOUNCEMENT

When turning on the transceiver power and when changing the channel, an audio voice will announce the selected channel and the channel's VOX and scrambler settings.

QUIET TALK (QT)/ DIGITAL QUIET TALK (DQT)

Your dealer may have programmed QT or DQT signaling on your transceiver channels. A QT tone/ DQT code is a sub-audible tone/code which allows you to ignore (not hear) calls from other parties who are using the same channel.

STUN CODE

This function is used when a transceiver is stolen or lost. When the transceiver receives a call containing a stun code, the transceiver becomes disabled. The stun code is cancelled when the transceiver receives a call with a revive code.

OPTIONAL SIGNALING

Your dealer may also program several types of optional signaling for your transceiver channels.

2-tone Signaling: 2-tone Signaling opens the squelch only when your transceiver receives a call containing matching 2 tones.

DTMF Signaling: DTMF Signaling opens the squelch only when the transceiver receives a call containing a matching DTMF code.

FleetSync Signaling: Refer to “SELCALL (SELECTIVE CALLING)” on page 14.

MDC-1200: MDC-1200 is a data system using Audio Frequency Shift Keying (AFSK).