



**LED Indicator**

See inside back cover, or pages 10 to 11.

**Speaker/Microphone**

**Volume Keys**

**Function Keys**

Preprogrammed functions. See pages 14 to 15.

**PTT Key**

(Press-To-Talk)  
Press to transmit, release to receive.

**Display**

See pages 12 to 13.

**Keypad**

See pages 9 to 10.

- 🎵 Call
- 📶 Channel
- 📞 DTMF
- 🔊 Monitor
- Ⓢ Status
- 📁 Menu
- Ⓐ Alpha
- ⏻ Power
- ✖ Clear
- ⬅ Scroll Left
- ➡ Scroll Right
- ↵ Enter

**Handset Microphone**

In handset mode. See page 51.

**Tait Electronics Ltd Software Licence Agreement**

By opening this product package and/or using the product, you agree to be bound by the terms of the Tait Electronics Ltd Software Licence Agreement. Please refer to the back of this manual for complete information on the Tait Electronics Ltd Software Licence Agreement.

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## Important Charging Information

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- Turn your radio off before charging.
- New batteries must be fully charged before first use.
- Replace or recharge your battery as soon as the radio indicates the battery is low.

### Use of Green Conditioning Button

(Fast charger only)

The green button on the fast charger is the conditioning button and is only used for short and long conditioning. See “Conditioning Using the Fast Charger” on page 57 for more information.

- Short condition your NiCd battery weekly.
- Long condition the battery following prolonged storage or if battery performance has deteriorated.
- Do not press the conditioning button if you just want to charge the battery. Only press the conditioning button when you want to initiate short or long conditioning.






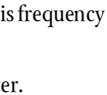
### For More Information...

Complete information on batteries and battery chargers is provided in “Charging and Caring for Batteries” on page 54.

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## Safety Warnings

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- Do not hold the radio with its antenna close to or touching any part of your body, especially your face and eyes, when transmitting. 
- Switch the radio off at petrol filling stations. 
- Switch the radio off in the vicinity of explosive devices, such as at a quarry that uses blasting techniques. 
- Use of a handheld microphone or radio while driving is not permitted in some countries. Check the vehicle regulations in the area where you are driving. 
- Use only Tait Orca battery chargers to charge your radio battery. 
- If using the radio with an earphone or headset, avoid using unnecessarily high volume levels. 
- Frequency band 406 to 406.1 MHz is reserved for use by distress beacons. Transmissions should not be made within this frequency band.
- Do not immerse your Tait Orca radio in water.

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**Tait Electronics Ltd has made every effort to ensure the accuracy of the information in this manual. However, Tait Electronics Ltd reserves the right to update the radio and/or this manual without notice.**

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## Getting Started

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Your Tait Orca handportable radio is preprogrammed to suit your communication needs. If you are unsure which of the features described in this manual are available on your radio, consult your system manager or the person who programmed your radio.

The custom features programmed for your radio may be listed on the “Custom Settings” page on the inside back cover of this manual.

When you receive your Tait Orca handportable radio, make sure all items you ordered are included. Typically, you should receive the following:

- Tait Orca handportable radio unit
- Battery pack
- Antenna
- Belt clip
- Charger
- Plug pack
- *User’s Manual*

If any parts are damaged or missing, report this to your local Tait dealer immediately.

### Installing the Antenna

Before using the radio, connect the antenna to the socket at the top of the radio.

### Charging the Battery Before First Use

The battery pack must be fully charged before you first use the radio. It is highly recommended that the battery also be put through a long conditioning cycle after the initial charge and before use. Putting the battery through a long conditioning cycle will maximise the battery’s initial capacity.

If using the fast charger or multi-charger, the battery will fully charge within four hours. If using the trickle charger, the battery will fully charge within 16 hours. The trickle charger is not recommended for NiMH battery packs.

For more information on charging and conditioning the battery, see “Charging and Caring for Batteries” on page 54.

## Installing and Removing the Battery Pack

To fit the battery pack to the radio, insert the bottom edge of the battery pack into the two slots at the back of the radio. Push the battery pack towards the radio. It should snap into place.

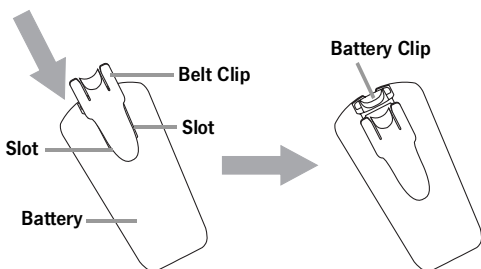
To remove the pack, push the battery catch down and from the sides pull the battery away from the radio.

## Installing a Belt Clip

Two types of belt clip are available for Tait Orca radios:

- 38 mm belt clip; and
- 55 mm spring loaded belt clip.

For both types of belt clip, slide the belt clip into the two slots on the top of the battery. Push down until the clip snaps into place.

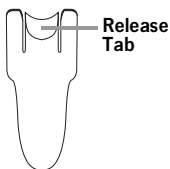




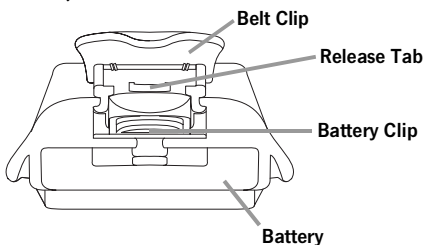
## Removing a Belt Clip

Both belt clips have been designed to avoid accidental removal. However, they can be replaced if required.

To remove the 38 mm belt clip, insert the end of a flat-bladed screwdriver under the edge of the release tab (right) without forcing it. Gently lift the release tab up, then slide the belt clip away from the battery.



To remove the 55 mm belt clip, lie the battery on a flat surface. Insert the end of a flat-bladed screwdriver under the release tab (shown below) and lift. Slide the belt clip away from the battery.



Should the small battery clip come loose while removing either belt clip, it can easily be refitted by sliding it into the slot at the top of the battery until it snaps into place.

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# Radio Controls and Indicators

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Your Tait Orca handportable controls and indicators include the side panel keys, keypad and various radio indicators.

Some keys can have functions assigned to both short and long presses. A short keypress is defined as less than one second. You may need to experiment to become familiar with the duration of short and long keypresses.

## Side Panel Keys




The side panel keys include:






- Function keys 1 and 2 for access to preprogrammed functions. See “Programmable Function Key Settings” on page 14 for more information on the options that can be preprogrammed for the function keys.
- PTT (press-to-talk) key for making the radio transmit each time you talk.
- Up and down keys, for controlling volume.

## Keypad

Keys 0 to 9 (A-Z) are used for dialling numbers and entering data. Other key functions are outlined below.

Functions marked \* must be preprogrammed in order to operate.

Symbol	Key Name	Function
	Call	Short: Enter Selcall dialling mode*. Long: Send a preset Selcall call*.
	Channel	Short: Enter channel selection mode. Long: Turn repeater talk around* on and off.
	DTMF	Short: Enter DTMF entry mode*. Long: Send a preset DTMF call*.

Symbol	Key Name	Function
	Monitor	Short: Turn monitor on and off. Note that the radio may be preprogrammed so that monitor cannot be activated. If this is the case, a short press of this key will always turn monitor off, if it is active. Long: Turn squelch override* on and off.
<b>S</b>	Status	Short: Enter status entry mode*. Long: Enter SDM entry mode*.
	Menu	Short: Enter user menu entry mode*.
<b>α</b>	Alpha	Short: Enter alphanumeric entry mode*.
	On/off/clear	Short: Clears the last entry. Long: Turns the radio on and off.
	Scroll	Scrolling.
	Enter	End an entry or make a selection.
<b>*</b>	Star	For group and DTMF dialling*.
<b>#</b>	Hash	For group and DTMF dialling*.

## Radio Indicators

In combination, the radio's LED indicator, audible signals and display window provide you with information on the state of your radio.

Radio indicators are summarised on the “Radio Indicators” page on the inside back cover of this manual.

### LED Indicators

The radio's LED is the main indicator for displaying the state the radio is in. Other indicators provide additional information intended to supplement that provided by the LED.

“Slowly flashing” is one flash every 2 seconds, “Moderately flashing” is one flash every second, and “Rapidly flashing” is four flashes every second.

<b>Colour</b>	<b>Rate</b>	<b>Meaning</b>
Red	Steady	Transmitting.
Red	Slowly flashing	Battery low. Radio will also emit low-pitched beeps. Recharge or replace as soon as possible.
Red	Moderately flashing	Low power transmit mode active.
Red	Rapidly flashing	Radio is stunned. Radio will also emit very high-pitched beeps. Contact your despatcher.
Red	Two rapid flashes	The power-up sequence is complete. Radio will also emit two medium-pitched beeps.
Green	Steady	Channel busy.
Green	Slowly flashing	Economy mode active.
Green	Moderately flashing	Monitor or squelch override active.
Amber	Steady	Radio is scanning or voting a group of channels for activity or greatest signal strength.
Amber	Slowly flashing	Repeater talkaround active.
Amber	Moderately flashing	Activity detected on one of a group of channels being scanned.
Amber	Rapidly flashing	A Selcall call has been received.
Red/Green	Slowly flashing	Handset mode active.
Red/Green	Rapidly flashing	Radio programmed incorrectly or faulty. Contact your Tait dealer.

## Audible Signals

Your radio may be preprogrammed so that whenever you press a key, the radio will beep to indicate whether or not the action you wish to carry out is permitted.

A short, medium-pitched beep indicates that an action or selection is valid, whereas a long, low-pitched beep indicates that the action or selection is not valid.

Common audible signals are summarised on the “Radio Indicators” page on the inside back cover of this manual.

Audible signals may be disabled at radio programming time, and a function key may be programmed to turn audible signals on and off. The radio may also be programmed so that audible signals can be turned on and off using the user menu’s **SOUND** option. See “Using the Menu” on page 32 for more information on user menu options.

## Display Messages

A typical display is shown below.














The upper lefthand corner of the display shows the mode the radio is currently in. In this example, **CHAN** indicates the radio is in channel selection mode. The lower lefthand corner gives additional information on the status of the radio. In this example, **RTA** indicates the radio is in repeater talk around mode.

The panel on the righthand side shows data for the current radio operation, and characters may be single- or double-height. In this example, **CHAN9** indicates what channel the radio is currently operating on. When you enter data for a specific function, such as dialling a call, the information will appear in this panel.

The bottom line of the display shows a series of icons that give additional information on the state of the radio. The meaning of these icons is outlined in “Display Icons” on page 13.


Throughout this user’s manual, messages that appear in the display are shown in **BOLD ALLCAPS**.

## Display Icons

Icon	Meaning
	Flashing: Recharge the battery.
	Steady: The battery is charged.
	Steady: The radio is in DTMF dialling mode.
	Steady: Monitor or squelch override is active.
	Steady: Scrolling is permitted.
	Steady: The radio is scanning a group of channels for activity. Flashing: Activity has been found on a group of channels being scanned.
	Flashing: The radio is transmitting at normal power.
	Steady: Low power transmit mode is active. Flashing: The radio is transmitting at low power.
	Steady: Handset mode is active.
	Steady: An auxiliary device is operating.
	Steady: The selected channel is busy.

## Battery Life Indicator

The battery life indicator in the lower lefthand corner of the display shows how charged the battery is. Note that while the battery is charging and for up to half an hour after removing the radio from the charger, the battery indicator will not accurately reflect how charged the battery is.




When the battery is low, the low battery icon () will flash, the radio will emit a low-pitched beep every five seconds and the LED indicator will slowly flash red. See “Charging and Caring for Batteries” on page 54 for recharging instructions.

To preserve battery life, it is recommended that you turn off the radio when it is unattended, or use economy mode (see “Other Features” on page 50), if it has been programmed.

## Programmable Function Key Settings

Functions marked \* are described more fully in “Other Features” on page 50. Some functions are not permitted in some countries.

Function	Description
Audible Indicators	Turns audible indicators on and off.
Backlighting*	Turns backlighting on. Backlighting will turn off after a preprogrammed time.
Channel's DTMF Preset	Sends the DTMF preset call assigned to the current channel.
Contrast Adjustment*	Allows you to adjust the display contrast.
Disable Monitor	Turns off the monitor facility, if it is active. A short press of the monitor key (🔊) disables the monitor facility.
Economy Mode*	Turns economy mode on and off.
Emergency	Activates emergency mode.
Handset Mode*	Turns handset mode on and off.
Keypad Lock*	Locks the keypad so the keys cannot be activated accidentally; a short press of the on/off/clear key (🔇/🔴) turns off keypad lock. What keys are locked depends on how the radio was preprogrammed; however, the on/off/clear key (🔇/🔴) cannot be locked.
Low Power Transmit*	Changes the transmit power from medium or high to low. Pressing the key again returns the transmit power to the preprogrammed level. Channels can also be preprogrammed for low power.
Night Use*	Turns night operation mode on and off.
Nuisance Delete	Temporarily deletes the current channel from the scanning regime.
One Touch	Sends a preset Selcall call or DTMF call, or selects a channel.

Function	Description
Preset Call	Sends the preset Selcall call assigned to the current channel.
Repeater Access Tone	Sends the repeater access tone to key up the transmitter.
Repeater Talk Around	Allows you to bypass normal repeater operation and communicate directly with another radio. Pressing the key again or changing to another channel turns off repeater talk around. The radio may be preprogrammed so that a long press of the channel key (  ) turns repeater talk around on and off.
Squelch Override	Turns the squelch override on and off so the user can hear all activity on a channel, including noise. The radio may be preprogrammed so that a long press of the monitor key (  ) turns squelch override on and off.
Toggle Monitor	Turns monitor on and off so the user can hear all traffic on a channel. A short press of the monitor key (  ) disables the monitor facility.
Volume Control	Controls volume in handset mode.



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## Basic Operation

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This section describes the basic operation of your radio, including turning the radio on and off, adjusting volume, selecting channels, and making and receiving calls.

### Turning the Radio On and Off

A long press of the on/off/clear key (⓪/✕) turns the radio on and off. To preserve battery life, it is recommended that you turn off the radio when it is not in use.

When you turn on the radio, you may need to enter a personal identification number (PIN) before you can use the radio. If you get the message **ENTER CODE**, enter your assigned PIN, which will be up to five digits long, then press the enter key (↵). If you do not know your PIN, consult your system manager or the person who programmed your radio.

Once the power-up sequence is complete, the LED will flash red twice and the radio will give two short, medium-pitched beeps. The radio will then display a message such as **TAIT ORCA RADIO**.

### Adjusting Volume

Adjust the volume of speech, indicators and confidence tones using the volume up/down keys (▲/▼).

When you first press one of the volume keys, the message **VOL** will appear in the upper lefthand corner of the display. The series of bars indicates the volume level.



You may need to adjust the volume level for speech when you receive your first call.

## Operating Modes

Once the power-up sequence is complete, the message in the upper lefthand corner of the display will indicate which operating mode the radio is in.

What modes are available depends on how your radio was programmed. The radio can be preprogrammed to enter the same mode each time it powers up or to enter that last used when the radio was previously turned off.

## Selecting a Channel

To change channels, the radio must be in channel selection mode (**CHAN** in the upper lefthand corner of the display). If not, give a short press of the channel key ( $\Upsilon$ ). The message **CHAN** and the scrolling permitted icon ( $\leftarrow\rightarrow$ ) will appear. The name of the current channel or group will be displayed, e.g. **BASE**.

To select another channel or group, you can either:

- scroll through the available channels using the scroll key ( $\blacktriangleleft/\blacktriangleright$ ) and select the desired channel; or
- key in the desired channel number.

If the channel selected is busy, the LED will glow green and the channel busy icon ( $\Psi$ ) will appear in the display. Wait until the channel is free before transmitting.

The available channels may include one or more scan groups (see “Scanning and Voting Groups” on page 21). If when you select a channel the radio gives two short, high-pitched beeps, then that channel was the last one activity was found on during scanning.


Note that you cannot change channels while transmitting.

## Receiving a Call




Your radio will remain quiet until there is valid activity on the channel your radio is currently on (see “What You Hear On a Channel” on page 19). When you hear your own call sign, respond promptly by pressing the PTT key and replying.

## Making a Call

Select the desired channel as described above.

If the channel is busy, you will not normally be able to transmit; if you try to transmit, the radio will sound a low-pitched warning beep. You may not be able to hear the activity, but the LED will glow green and the channel busy icon (  ) will appear in the display. You can activate the monitor function to listen to channel activity.

When the channel is clear, hold down the PTT (press-to-talk) key and speak clearly into the radio. Identify yourself and the party you are calling using the call signs you have been assigned. Release the PTT key when you have finished talking.

While you are transmitting, the LED will glow red and the transmitting icon (  ) will flash. If you are transmitting at low power, the low power icon (  ) will flash. While the other party is transmitting, the LED will glow green and the channel busy icon (  ) will appear in the display.

If Selcall mute is programmed for a particular channel, you will only be able to make Selcall calls on that channel until the monitor function is activated and the channel is clear.


## Transmit Timer

Your radio is programmed with a transmit timer that limits the amount of time you can transmit continuously. If the radio gives three medium-pitched beeps, the transmit timer is about to expire. Ten seconds later, the radio will automatically stop transmitting. You will have to release the PTT before you can transmit again. The radio may be programmed to prevent transmission for a period after the transmit timer has expired.

If Selcall mute is programmed for a particular channel, you will only be able to make Selcall calls. See “Monitor” on page 19 for more information on the monitor function and the Selcall mute.

## What You Hear On a Channel

What traffic you hear on a channel depends on how your radio was programmed. A channel can be programmed so that you hear all conversations on a channel (no signalling), or your user group may be segregated from others using various types of signalling (CTCSS, DCS or Selcall).

When your group is segregated, you will not hear other groups talking on the current channel unless the monitor function is active (see below). If the channel is busy, the LED will glow green and the channel busy icon (  ) will appear in the display.

### CTCSS and DCS


CTCSS (continuous tone controlled subaudible signalling) and DCS (digitally coded squelch) signalling use subaudible tones to isolate your calls so you only hear activity for your group.


### Selcall


Selcall (selective calling) uses audible tones to isolate your calls and direct calls to specific individuals within a group. You may hear the Selcall tones at the beginning of a transmission.

### Monitor

Monitor lets you hear all conversations on a channel, including those outside your group. Once activated, monitor will automatically turn off after a preprogrammed time period, and can also be reset by your dispatcher or when some types of calls are received. Your radio may be programmed so that monitor is activated when your radio is turned on or when you send some types of calls.

While monitor is active, the LED will moderately flash green and the monitor icon (  ) will appear in the display.

Monitor may be turned on and off by a short press of the monitor key (  ), or it may be assigned to a function key. Your radio may be programmed so that a press of the monitor key



() or assigned function key will only deactivate monitor, if it is active.

Monitor can be programmed to override both CTCSS/DCS signalling and Selcall signalling or only Selcall signalling (Selcall mute).

If a particular channel is programmed with Selcall mute, you will only be able to hear traffic that matches your Selcall identity and you will only be able to make Selcall calls. Turn on monitor to hear all traffic and make calls other than Selcall calls.

## Squelch Override

The radio's squelch allows reception of a signal only when it is above a factory-set threshold so that only intelligible signals will be made audible. Activating squelch override can sometimes improve reception of a signal in marginal signal strength areas.

If programmed, squelch override can be turned on and off by a long press of the monitor key () , or it may be assigned to a function key. While squelch override is active, the LED will moderately flash green and the monitor icon () will appear in the display.

Squelch override cannot be activated when a scan group is selected, and will automatically be turned off when you change to a scan group.

## Custom Channel Signalling

Your radio may be preprogrammed so that you can change the CTCSS or DCS signalling used on a channel. For more information, see “Programmable Channel Signalling” on page 39.

## Scanning and Voting Groups

A series of channels may be grouped together so that the radio can scan through them looking for activity. Groups are selected the same way as channels, and while a scanning or voting group is selected, the LED will glow amber, and the group name and scanning icon (🔄) will be displayed, as shown below.



When a busy channel is detected and the signalling is valid (see “What You Hear On a Channel” on page 19), the LED will flash amber, the scanning icon (🔄) will flash and the radio will stop on that channel. The name of the captured channel will be displayed rather than the group name and you will be able to hear the transmission. Scanning will resume when the channel is no longer busy or the signalling is no longer valid.

One or two priority channels may also be set. These channels are scanned more often than other channels and are scanned periodically when a non-priority channel is busy.

Voting works the same way as scanning, except the group's member channels carry the same traffic and the radio searches for and stops on the channel with the strongest signal.

### Nuisance Delete

If a channel is busy for a long time and you do not wish to hear the conversation, you can temporarily delete it from the scanning regime if one of the function key settings is programmed for nuisance delete. Pressing the assigned function key deletes the currently held channel from the regime. When the scan group is next selected, the deleted channel will again be part of the group.

## Custom Scanning and Voting Groups

Your radio may be preprogrammed so that you can change the mix of channels that belong to your scanning and voting groups. For more information, see “Programmable Scanning and Voting Groups” on page 35.

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## Selcall (Selective Calling)

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Selcall (selective calling) segregates a group of users from others on a channel using a set of audible tones. Because each radio has a unique identity, you can direct calls to individuals within your own group and make different types of calls. An emergency call may also be preprogrammed.

### Receiving a Selcall Call

When a call is received that contains your radio's identity, the radio will give a ringing tone and the LED indicator will flash amber. The ringing tone is preprogrammed, and the radio will give different ringing tones when different types of calls are received. The display will flash **CALL** and the caller's identity and status may be displayed.



If the caller's identity is displayed, it will be as a name or a number, depending on how your radio was preprogrammed. If status is displayed, it will be as a message (for example, **AT WORK**) or a number (00 to 99). See the person who programmed your radio for the meaning of different status numbers.

To accept the call, press the PTT key and begin speaking. If the call is a group call, there is usually no need to respond.

### Making a Selcall Call

You can make Selcall calls in two ways:

- make one of the preset calls that may be programmed for your radio; or
- dial the number desired.



## Preset Selcall Calls

There are three different types of preset Selcall calls that may be programmed for your radio:

- Two preset Selcall calls can be assigned to each channel that has Selcall. If programmed, these calls will be assigned to a function key, and each channel that has Selcall may have different preset calls. To make one of these calls, change to the desired channel and press the assigned function key.
- A single one-touch Selcall call may also be assigned to one of the function keys. It is not necessary to change channels to send this call; simply press the assigned function key.
- Each channel that has Selcall can also have an additional preset Selcall call assigned. To make this call, change to the desired channel and give a long press of the call key (🎵).

When the called party responds, proceed with your conversation.

## Dialling Selcall Calls

If you are unsure what numbers you can dial, consult your system manager or the person who programmed your radio. If you know your system's group tone, you can also make a call to a group of users.

To dial a Selcall call:

- Switch to a channel that has Selcall programmed.
- Give a short press of the call key (🎵) to enter Selcall dialling mode.
- The message **CALL** will appear in the display, and the last number dialled may also appear. If the number displayed is that you wish to call, press the enter key (↵).
- If you wish to call another number, enter up to eight digits, then press the enter key (↵).

While you are transmitting, the LED will glow red and the transmitting icon (📡) will flash. If you are transmitting at low power, the low power icon (📡) will flash.

When the called party responds, proceed with your conversation.

## Emergency Call

One of the preset Selcall calls programmed for your radio may be an emergency call. If programmed, the emergency call will be assigned to a function key.

Pressing the function key sends an emergency sequence to a preprogrammed party, usually your dispatcher. It is not necessary to change channels to send the emergency call.

When in emergency mode, the radio cycles between receiving and transmitting so that your dispatcher can hear activity near the radio and so decide how to respond. All radio indicators will remain unchanged.

The radio can be reset to normal operation remotely by your dispatcher or by turning the radio off, then on again.

## Status Messages

Depending on how your radio was programmed, you may be able to attach a pre-defined status message to each call you make. These messages are defined at the time your radio is programmed.

Status messages indicate your current activity or location, and up to 100 may be programmed for your radio. Each message is assigned a number, from 00 to 99, and a name of up to eight characters, such as **ENROUTE**, **AT LUNCH** or **AT HOME**.

Your radio may be preprogrammed to transmit a status message with each Selcall call you make. This can sometimes be a preset one rather than one you select, depending on how your radio was programmed.

## Assigning a Status Message to Your Calls

You can assign a status message by:

- scrolling through the list of available messages and selecting one; or
- entering the number of the required message.

The status message selected may be sent with your outgoing calls, and with the automatic acknowledgement your radio may send in response to incoming calls.

To select a status message from the list of messages:

- Give a short press of the status key (**S**) to enter status entry mode. The message **STAT** will appear in the display, and the scrolling permitted icon (◀→) will appear.
- Using the scroll key (◀/▶), scroll through the list of status messages until the desired message is shown.
- Press the enter key (↵) to confirm your choice.

To select a status message by entering in a status number:

- Give a short press of the status key (**S**) to enter status entry mode. The message **STAT** will appear in the display, and the scrolling permitted icon (◀→) will appear.
- Using the keypad, enter the desired status digit, from 00 to 99. If the number entered corresponds to a preprogrammed messages, the message will then be displayed.
- Press the enter key (↵) to confirm your choice.

If the status number entered does not correspond to a preprogrammed status number, the radio will revert to the last status number selected.

The status message selected may be sent with the next Selcall call.

You can exit status entry mode by a press of any of the mode keys.

## Other Selcall Features

Other Selcall features that may be preprogrammed are:

- deferred calling;
- immediate callback;
- no acknowledgement retries;
- called unit status display; and
- call queuing.

### Deferred Calling

If the channel you are making a call on is busy, the radio may be preprogrammed to store the call and send it again once the channel is free. The radio will give a low-pitched beep if the channel is busy, and will then give two long, medium-pitched beeps at regular intervals until the channel is free and the call can be sent.

If the call is being resent and you wish to cancel it, press any key.

### Immediate Callback

If you did not answer a call and call queuing is disabled or the call queue is full, the LED will rapidly flash amber and the display will flash **CALL**. The caller's identity and status may also be displayed. If the caller's identity is displayed, you can call back the caller by a press of the enter key (↵).

### No Acknowledgment Retries

When you send a call and there is no reply, your radio may be programmed so that the call will be resent up to 15 times. If the called radio does not acknowledge, the display will show **NO ACKNOWLEDGE**.

If the call is being resent and you wish to cancel it, press any key.

## Called Unit Status Display

When you call another radio, it may respond with an auto acknowledge message that lets you know the radio is on and in range. If the auto acknowledge contains a status message, your radio may be preprogrammed to display that message.

The message will be displayed as shown below.



## Call Queuing

If you are unable to answer your incoming calls immediately, your radio may be preprogrammed to store up to 10 calls so that you can call them back later.

To access the call queue:

- Give a short press of the menu key (☰). The radio will switch into user menu entry mode, with **MENU** in the upper lefthand corner of the display.
- Using the scroll key (◀/▶), scroll through the list of options until the **QUEUE** option is displayed. Note that the **QUEUE** option will not be available if there are no calls queued. If a call has been queued, the radio will automatically switch to user menu entry mode and display the call queue option after a period of inactivity.
- Press the enter key (↵) to select the **QUEUE** option.

The first call in the queue will be displayed.



The caller's identity is shown (**DAVEW**), together with the number of calls in the queue (**07**) and the call's position in the

queue (01). The **P** indicates that the call is a priority call. You can:

- Press the enter key (↵) to return the call. The radio will automatically switch to the channel the call was received on and send the call.
- Give a short press of the on/off/clear key (⓪/✕) to delete the call from the queue. If this is the only call in the queue, the radio will automatically leave the call queue.
- Press any other mode key to leave the call queue without making any calls.

Individual and priority calls will be queued when they remain unanswered, or if another call is received before the previous unanswered call is queued or answered.

More recent calls are stored further down in the queue than older calls, and priority calls will be placed in the queue ahead of individual calls.

Individual calls will be queued until the queue is full, in which case incoming calls will not be stored. If the incoming call is a priority call, however, the most recent individual call will be discarded from the queue.

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## DTMF Calls

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DTMF (dual tone multiple frequency) is the tone-based system used in the world's telephone networks. If your system has access to the public switched telephone network or other networks that make use of DTMF tones, your radio can make a call to a telephone or send control codes to a remote device.

There are two ways to make DTMF calls:

- preset DTMF calls; and
- dialled DTMF calls.

### Preset DTMF Calls


There are two different types of preset DTMF calls that may be programmed for your radio.

- A preset DTMF call can be assigned to one of the function keys or to a long press of the DTMF key (  ). To send the call, select the channel the DTMF call is assigned to and press the assigned key. Different preset calls may be available on different channels.
- A single one-touch DTMF call may also be assigned to one of the function keys. It is not necessary to change channels to send this call; simply press the assigned function key.

### Dialled DTMF Calls

Consult your system manager or the person who programmed your radio for what DTMF strings you can dial. They will consist of DTMF tones 0 to 9, \* and #, and perhaps tones A to D.

If you wish to dial tones A to D, your radio may be programmed so that you can use the PTT key as a “shift” key in conjunction with the numeric keys as follows:

- PTT +  = A

- PTT + **5**<sup>JKL</sup> = B
- PTT + **8**<sup>TUV</sup> = C
- PTT + **0** = D

So pressing the PTT key, holding it, then pressing the **2**<sup>ABC</sup> key enters tone A in the DTMF string.

You can also send a pause by pressing the PTT, holding it, and then pressing the **1-** key. A hyphen will be entered in the display to indicate a pause.

Depending on how your radio was programmed, the digits may be transmitted as you dial them (normal dialling) or once the string has been entered in full and you have pressed the enter key (**↵**) (buffered dialling).

To send a DTMF string:

- Make sure the radio is in DTMF dialling mode (**DTMF** in the upper lefthand corner of the display). If not, give a short press of the DTMF key (**☎**).
- The message **DTMF** will appear in the display. The last call dialled may also appear, and if this is the call you wish to make, press the enter key (**↵**).
- If you wish to call another number, enter the required DTMF string then press the enter key (**↵**).

When the called party responds, proceed with your conversation.



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## Using the Menu

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The user menu options allow you to personalise the way your radio operates. The options available are described in “User Menu Entry Mode Options” on page 33. Some or all of these options may be programmed for your radio. If you are not sure what options are available, you can enter user menu entry mode and view the options available. To leave user menu entry mode, press another mode key.

To enter user menu entry mode, give a short press of the menu key (D). The message **MENU** will appear in the display, together with the first option and its current state, for example:



Scroll through the options using the scroll key (◀/▶), and select an option by pressing the enter key (↵). Most options have two options that are changed by pressing the enter key (↵). Some options take you into an operating mode. These options are:

- **QUEUE** (see “Call Queuing” on page 28);
- **CONTRST ADJUST** (see “Contrast Adjustment” on page 50);
- **PROGRAM GROUP** (see “Programmable Scanning and Voting Groups” on page 35); and
- **PROGRAM SIGNAL** (see “Programmable Channel Signalling” on page 39).

For these options, pressing the enter key (↵) allows you to access these features. See the pages cited above for more information.

## User Menu Entry Mode Options

Options marked \* can also be preprogrammed to a function key.

Display	Settings	Description
KEYTONE	ON/OFF	Keypress Confidence Tones. Keypress confidence tones are the tones heard when a keypad button or function key is pressed.
SOUND*	ON/OFF	Audible Indicators*. Audible indicators include keypress confidence tones, received call signals, low battery and high temperature warnings, the transmit timer, the unanswered call signal, but not DTMF tones. If keypress confidence tones are ON but this option is OFF, keypress confidence tones will effectively be disabled.
SOUND	HIGH/LOW	Audible indicators level. This option sets the volume of the radio's audible indicators, including keypress confidence tones. The audible indicators option must be ON for this option to have an effect.
DTMF	NORMAL/ BUFFERED	DTMF Dialling Type. When a DTMF call is made, the string is either transmitted separately as each individual key is pressed (NORMAL dialling) or in its entirety once the enter key is pressed (BUFFERED dialling).
ECONOMY*	ON/OFF	Economy Mode Control*. Economy mode is used to reduce the radio's power consumption when it is idle.
SQUELCH	COUNTRY/ CITY	Squelch Setting Control. This option allows you to switch between CITY and COUNTRY squelch settings for all channels.
HANDSET*	ON/OFF	Handset Mode*. Handset mode allows you to use the radio as a telephone handset.
KEYPAD*	LOCKED/ UNLOCKED	Keypad Lock*. The keypad lock prevents accidental operation by locking the keypad so that only a certain set of keys can be used. What keys are locked depends on how your radio was programmed. Keypad lock can be deactivated by a short press of the on/off/clear key (⓪/✕).

<b>Display</b>	<b>Settings</b>	<b>Description</b>
LIGHT*	ON/OFF	Night Use*. When this option is ON, backlighting will be turned on whenever a key is pressed or when a call is received. Backlighting will remain on for only a few seconds unless further activity is detected.
RSSI	ON/OFF	RSSI Indicator. When this option is ON, the RSSI (received signal strength indicator) level will be shown in the lower lefthand corner of the display when activity is detected on a channel.
LOW PWR*	ON/OFF	Low Power Transmit Control*. When this option is ON, transmissions on the currently selected channel will be made at low power rather than at the preprogrammed power level.

## Programmable Scanning and Voting Groups

Your radio may be preprogrammed so that you can change the mix of channels that belong to your scanning and voting groups.

You can:

- remove channels from the group;
- add new channels;
- change characteristics of channels, e.g. priority or default transmit channels.

### Starting the Programming Session

To start a group programming session:

- Give a short press of the menu key (☰). The radio will switch into user menu entry mode, with **MENU** in the upper lefthand corner of the display.
- Using the scroll key (◀/▶), scroll through the list of options until **PROGRAM GROUP** is displayed. Note that this option will not be available if no groups were specified as user programmable at radio programming time.
- Press the enter key (↵) to select the **PROGRAM GROUP** option.

The name of the first programmable group will be displayed.



**GPGM** indicates that the radio is in group programming mode.

Scroll through the groups listed using the scroll key (◀/▶) until the group you wish to change is shown, then press the enter key (↵).

The display will then show the first channel programmed for the radio.



**CHAN1** is the name of the channel, and the message in the lower lefthand corner indicates the channel's group membership as follows:

- **Y** indicates that the channel is a member of the group being programmed.
- **P1** indicates that the channel is a member of the group being programmed and is the first priority channel for that group. This channel will be scanned in preference to other channels, even when activity is found on other channels.
- **P2** indicates that the channel is a member of the group being programmed and is the second priority channel for that group. This channel will be scanned in preference to other channels, even when activity is found on other channels, unless that channel is the **P1** channel.
- **T** indicates that the channel is a member of the group being programmed and is the default transmit channel for that group. A default transmit channel cannot be set in a group that has **P1** and **P2** channels assigned.
- **N** indicates that the channel does not belong to the group being programmed.

So in the example above, **CHAN1** is a member of **GROUP10** and is the first priority channel for that group.

## Changing a Channel's Group Membership

You can change the channel's group membership by a short press of the enter key (↵), which will toggle between the available values. For example, to remove a channel from the

current group, give short presses of the enter key (↵) until **N** is displayed, then scroll to the next channel.

The following rules apply.

- A group can contain up to 16 channels, but must have at least two channels.
- If you try to add a channel to a group that is already full, the message **GROUP FULL** will appear. You must first remove another channel from the group before adding a new channel.
- If there are only two channels remaining in the group and you try to delete one, the message **CANNOT DELETE** will appear. You must first add a new channel to the group before you can remove the other channel.
- Priority groups must have a **P1** channel assigned, and dual priority groups must have a **P1** and **P2** channel assigned. If you try to change the value of a **P1** or **P2** channel, you will get the message **CANNOT CHANGE**. To assign a new priority channel, scroll to the desired channel and set its value as **P1** or **P2**. The previous **P1** or **P2** channel will then simply be a member of the group (value **Y**).
- A group that has a default transmit channel assigned must have one channel set to **T**. If you try to change the value of that channel, you will get the message **CANNOT CHANGE**. Set the desired default transmit channel to **T** and the previous default channel will then simply be a member of the group (value **Y**).

## Exiting the Programming Session

To exit the programming session and save the new group information:

- give a long press of the enter key (⏏); or
- give a press of any of the mode keys.

Changes to the group will then be effective.

Note that the radio will also save the new group information and exit the group programming mode after 10 seconds of inactivity.

To exit programming session without saving the new group information, give a short press of the on/off/clear key ( **⏻** / **✖** ). Changes to the group will not be saved.

If a group was selected at the time the group programming session was started, all scanning or voting activity will be suspended during the programming session.

## Programmable Channel Signalling

Your radio may be preprogrammed so that you can change the subaudible signalling (CTCSS/DCS) used on a channel.

To change the signalling used on a channel:

- Give a short press of the menu key (☰). The radio will switch into user menu entry mode, with **MENU** in the upper lefthand corner of the display.
- Using the scroll key (◀/▶), scroll through the list of options until **PROGRAM SIGNAL** is displayed. Note that this option will not be available if no preset signals were defined at radio programming time.
- Press the enter key (↵) to select the **PROGRAM SIGNAL** option.

The name of the first channel will be displayed.



**SPGM** indicates that the radio is in signal programming mode. Scroll through the channels listed using the scroll key (◀/▶) until the channel you wish to change is shown, then press the enter key (↵).

The display will show the first of a series of signal labels, for example, **SIG1**.



If you do not know what CTCSS or DCS values these labels correspond to, check with your system manager or the person who programmed your radio.

Scroll through the signal labels listed using the scroll key (◀/▶) until the one you wish to apply to the channel is



shown, then press the enter key (↵). The channel will then be permanently updated with the new signalling and the old signalling will be lost.

The next channel will then be displayed. If you wish to change the signalling for that channel or any other channel, follow the procedure outlined above. If you wish to exit the programming session, press one of the mode keys.

If during the programming session no activity is detected on the radio for 10 seconds, the radio will automatically leave signal programming mode.

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## Alphanumeric Entry Mode

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Alphanumeric entry mode allows you to select and execute up to 20 preprogrammed command sequences, called alpha symbols. An alpha symbol can:

- change to a specific channel;
- dial a Selcall or DTMF call;
- change the radio's status; or
- any combination of these three tasks.

### Entering Alphanumeric Entry Mode

Enter alphanumeric entry mode by giving a short press of the alpha key (α). The message **ALPH** will appear in the display, and the scrolling permitted icon (↔) will appear.



If you have not used alphanumeric entry mode before, the first symbol in the list will be displayed. Otherwise, the symbol for the last command sequence carried out will be displayed.

### Selecting and Executing an Alpha symbol

You can either:

- select the desired alpha symbol from the list of those available; or
- search for a specific alpha symbol by entering its label via the keypad.

Once you have selected an alpha symbol, pressing the enter key (↵) executes the associated sequence of commands.


You can exit alphanumeric entry mode at any time by a press of any of the mode keys.

## Selecting From the List

To select an alpha symbol from the list, use the scroll key (◀/▶) to scroll through the list of sequences until the desired sequence is shown. Press the enter key (↵) to confirm your choice and carry out the associated command sequence.

## Searching For a Specific Alpha Symbol

To search for a specific alpha symbol, sequentially press the keys that match the characters in the alpha symbol's label. An example of the searching process is shown on the next page.

The alphanumeric keys each correspond to a set of numbers and letters. For example, the  key corresponds to 7, P, Q, R and S, and so that if you press the key once, the search will be narrowed to alpha symbol labels that begin with 7, P, Q, R and S.

If the radio cannot uniquely identify a label, it will display a question mark for each character entered. If at any point you enter an incorrect character, give a short press of the on/off/clear key (⓪/✕) to clear the character last entered.

Once you have entered enough characters to uniquely identify the label, the radio will display that label. If this is the alpha symbol you wish to select, press the enter key (↵) to initiate the command sequence.

If once you have entered the desired sequence the display continues to show question marks, the radio has not been able to match the alpha symbol label you entered. Check your spelling and try again, or try scrolling through the alpha symbols list.

## Example: Searching For a Specific Alpha Symbol

Press Key	Display Reads	Explanation
<b>Q</b>	<b>CHARLIE</b>	Enter alphanumeric entry mode. The last symbol invoked (CHARLIE) is displayed.
<b>2<sup>ABC</sup></b>	<b>?</b>	2 represents 2, A, B and C. The radio cannot yet determine a unique label so displays ?
<b>2<sup>ABC</sup></b>	<b>??</b>	The radio cannot yet determine a unique label.
<b>7<sup>PQRS</sup></b>	<b>BASE</b>	The unique label has been identified.
<b>←</b>	<b>BASE</b>	The command sequence associated with the label BASE will now be carried out.

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## Short Data Messages

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Your radio may be preprogrammed to receive and send short data messages (SDMs).

### Receiving an SDM

When your radio receives an SDM, the message **SDM** will flash in the lower lefthand corner of the display and the radio will give three short, medium-pitched beeps. To read the message, give a long press of the enter key (↵).

The message will appear across both rows of the display. Use the scroll key (◀/▶) to read the whole message. To display the message from the start, hold the PTT and press the left arrow key (◀). To display the message from the end, hold the PTT and press the right arrow key (▶).

When you have finished reading the message:

- Give a short press of the on/off/clear key (Ⓢ/✕) to delete the message. The radio will revert to the mode it was in before you viewed the message.

OR

- Press any of the mode keys. The message will remain in memory. To read the message again, give a long press of the enter key (↵).

### Sending an SDM

There are four steps involved in sending an SDM:

- entering SDM entry mode;
- creating and editing the SDM;
- entering the receiver's identity; and
- sending the SDM.

If at any point you wish to cancel the SDM, press any of the mode keys to exit SDM entry mode.

If you wish to send an SDM on a channel that has Selcall, refer to the section “Sending an SDM on a Selcall System” on page 48.

## Data Entry

Data for the SDM and receiver’s identity is entered using the alphanumeric keypad as follows:

- Pressing a key toggles it between the values shown on the keypad. For example, a single press of the **7PQRS** key will select 7, two presses will select P and so forth.

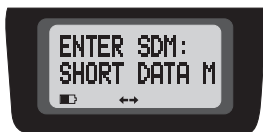
Note: The **0** key toggles between a 0 and a blank space.

- To move onto the next entry position, press another key or, if you wish to enter a letter from the same key, use the scroll key (◀/▶) to move to the next data entry position.
- To move up or down a line, hold the PTT and press the desired scroll key (◀/▶).
- If you enter a letter incorrectly, use the scroll key (◀/▶) to move back to the incorrect letter and enter the correct one, or give a short press of the on/off/clear key (⓪/✕), which will delete the selected character and move all other characters back one position.
- To insert a character, hold the PTT and press a data entry key. A space will be inserted at the cursor. To edit this space, release the PTT and press the desired data key.

## Entering SDM Entry Mode

Give a long press of the status key (**S**) to enter SDM entry mode.

The message **ENTER SDM:** will appear in the screen, together with the beginning of the last message sent, which will flash. If you have not sent an SDM before, a default message will be shown.



## Creating and Editing the SDM

There are three options for creating and editing the SDM.

- To send the existing SDM as it is, press the enter key (**↵**), which will move you on to the next step, “Entering the Receiver’s Identity”.
- To edit the existing SDM, use the scroll key (**◀/▶**) to move through the characters and change them as described in “Data Entry” above. When you first press the scroll key (**◀/▶**), the display will change so that the message is displayed across two lines. Once the message is complete, press the enter key (**↵**).

Note: Simply pressing an alphanumeric key to enter data will also clear the display, so if you wish to edit the existing message you must be sure to first press the scroll key (**◀/▶**) before pressing any of the alphanumeric keys to edit the message.

- To enter a new SDM, give a short press of the on/off/clear key (**⓪/✕**), which will clear the display and position the cursor at the top left of the display. Start entering data as described in “Data Entry” above. When the message is complete, press the enter key (**↵**).

The SDM can be up to 32 characters long, and the end of the message will be indicated by four arrows (<<<<). These arrows cannot be edited.

## Entering the Receiver's Identity

Once you have entered the SDM, a press of the enter key (↵) will take you on to the next stage, entering the receiver's identity.



The receiver's identity for the last SDM transmission will be displayed across the bottom line, which will flash. If the receiver identity displayed is that whom you wish to send the SDM to, go on to the next step, "Sending the SDM".

If you wish to enter a new receiver's identity, either give a short press of the on/off/clear key (⓪/✕) to clear the display, then start entering data, or simply start entering data. The receiver's identity entered must be eight characters long. If you wish to enter a receiver's identity of fewer than eight characters, enter zeros first. For example, if the receiver's identity is BASE, enter 0000BASE.

Entering a \* is equivalent to entering a group tone, and pressing the hash key (#) will fill the remaining positions in the receiver's identity with \* tones.

When you have finished entering the receiver's identity, go on to "Sending the SDM".

## Sending the SDM

Press the enter key (↵) to send the SDM. While the SDM is being sent, the LED will glow red and the transmitting icon (⚡) will flash. If you are transmitting at low power, the low power icon (⚡) will flash. The radio will then return to the start of SDM entry mode in preparation for sending another message.



Your radio may be preprogrammed to inform you of the status of the SDM transmission. If so, the display will read **SDM TRANSMIT OK** once the message has been transmitted successfully. If the transmission fails, the display will instead read **SDM TRANSMIT FAILED**. Transmission may fail if the receiver's radio is not turned on, is out of range or has not been programmed correctly.

## **Sending an SDM on a Selcall System**

If you are sending an SDM on a channel that has Selcall, you must first send a data status message to the receiving radio so that it is ready to receive the SDM. You can do this by making a status call to the receiving radio. However, it is recommended that you first enter the SDM following the instructions in "Creating and Editing the SDM" on page 46.

When you have created the SDM, press the enter key (**↵**), which will take you on to entering the receiver's identity. At this point, give a short press of the status key (**S**) to enter status entry mode. The SDM you entered will be saved and will be displayed the next time you enter SDM entry mode.

Select the data status message following the instructions in "Assigning a Status Message to Your Calls" on page 26. Your radio may be programmed so that the message is called **DATA**. If you are not sure if your radio has been preprogrammed with a data status message, consult your system manager or the person who programmed your radio.

You must then send a Selcall call containing a status message to the radio to which you wish to send the SDM. See your system manager or the person who programmed your radio if you do not know how to send a Selcall call containing a status message.

If the receiving radio is on and in range, your radio will give a ringing tone to indicate when the other radio is ready to receive the SDM. The receiving radio will remain in that state for 10 seconds.

- Give a long press of the status key (**S**). The SDM message you entered last will appear.

- Press the enter key (↵) to move on to entering the receiver's identity.
- Enter the receiver's identity as described in "Entering the Receiver's Identity" on page 47.
- Press the enter key (↵). The SDM will be sent as described in "Sending the SDM" on page 47.

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## Other Features

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Note that some features are not permitted in some countries.

### Backlighting

Control of backlighting for the display can be assigned to a function key. Pressing the assigned function key turns backlighting on. Backlighting will remain on for only a few seconds.

Backlighting can also be activated by turning on the night use feature (see below).

### Night Use

When the radio is programmed for night use, backlighting will be turned on whenever a key is pressed or when a call is received. Backlighting will remain on for only a few seconds unless further activity is detected.

Night use can be toggled on and off by the press of an assigned function key or through the user menu's **LIGHT** option. See "User Menu Entry Mode Options" on page 33 for more information.

### Contrast Adjustment

If the radio's display is too light or too dark, you can adjust the LCD contrast using the contrast adjustment function.

The contrast adjustment function is accessed by a press of a function key or through the user menu's **CONTRST ADJUST** option. See "User Menu Entry Mode Options" on page 33 for more information. The message **CONTRAST ADJUSTMENT** will appear in the display. Use the scroll key (◀/▶) to adjust the contrast to the desired level.

The radio will automatically return to its previous mode of operation after a few seconds of inactivity.

## Economy Mode

Economy mode can extend battery life when there is little or no activity on the radio. When in economy mode, the radio will cycle between the receive state and a standby state once there has been no activity for a preprogrammed period.

Receiving or sending a call returns the radio to the fully active state.

Economy mode may be permanently enabled. It can also be toggled on and off by the press of an assigned function key or through the user menu's **ECONOMY** option. See "User Menu Entry Mode Options" on page 33 for more information.

While economy mode is active, the LED will slowly flash green.

## Handset Operation

The radio can be operated as a normal radio where you hold the radio with the microphone about 15 cm away from your mouth. It can also be operated like a telephone handset in noisy environments or when privacy is required. While in handset mode, the radio's handset microphone will operate. Note that the radio can be preprogrammed so that the handset microphone is also the default microphone.

Ensure that while using the radio in handset mode, you do not hold the speaker pressed against your ear and the antenna does not touch your body.

Handset mode can be toggled on and off by the press of an assigned function key or through the user menu's **HANDSET** option. See "User Menu Entry Mode Options" on page 33 for more information. Your radio may be preprogrammed so that handset mode will automatically turn off after a period of inactivity.

While handset mode is active, the LED will slowly flash red and green. The handset icon (☎) will appear in the display.

## Volume Override

Your radio may be preprogrammed so that the function keys are used as volume up and down keys while in handset mode.

## Keypad Lock

The keypad lock prevents accidental operation by locking the keypad so that only a certain set of keys can be used. What keys are locked depends on how your radio was programmed, but the on/off/clear key (⓪/✕) can never be locked. If a call is received while the keypad is locked, press any key to answer the call.

Keypad lock can be activated by the press of an assigned function key or through the user menu's **KEYPAD** option. See "User Menu Entry Mode Options" on page 33 for more information. Keypad lock can be deactivated by giving a short press of the on/off/clear key (⓪/✕).

While the keypad is locked, the radio will give a long, low-pitched beep and display the message **KEYPAD LOCKED** whenever you press a locked key.

## Low Power Transmit

If you are using your radio in conditions where signal strength is high, you can extend battery life by transmitting at low power.

While low power transmit is active, transmissions will be made at low power rather than at the preprogrammed power level. Note that some channels may be preprogrammed to always transmit at low power.

Low power transmit can be toggled on and off by the press of an assigned function key or through the user menu's **LOW PWR** option. See the section "User Menu Entry Mode Options" on page 33 for more information.

The low power icon (⚡) will appear in the display while low power transmit mode is active. When you transmit, the LED will moderately flash red and the low power icon (⚡) will flash.

## Repeater Talk Around

If the repeater is busy or you are out of range of the repeater, you can communicate directly with another radio by using repeater talk around.

Repeater talk around can be toggled on and off by the press of an assigned function key. The radio may be programmed so that a long press of the channel key (↵) toggles repeater talk around on and off.

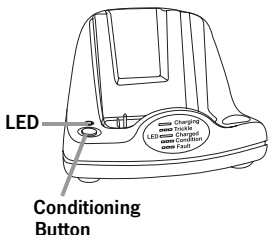
Give a press of the assigned function key or a long press of the channel key (↵) to activate repeater talk around. While repeater talkaround is active, the LED will slowly flash amber. The message **RTA** will appear in the lower lefthand corner of the display.

To turn off repeater talk around, press the function key again, give a long press of the channel key (↵), or change to another channel.

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## Charging and Caring for Batteries

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There are three types of chargers available for Tait Orca radios: a desktop fast charger (left), a desktop trickle charger and a multi-charger. The trickle charger does not have a conditioning button, but is otherwise identical in appearance to

the fast charger. The multi-charger is made up of six fast chargers and can be used on a desktop or mounted on a wall. Instructions for using the fast charger also apply to the multi-charger.

A vehicle kit is also available for charging the radio from a vehicle's power supply. Instructions for charging the battery using the vehicle kit are supplied with the vehicle kit.

Batteries can be recharged attached to the radio or as a separate unit. The radio must be turned off to ensure a full charge.

### Charging the Battery Before First Use

The battery pack must be fully charged before you first use the radio. It is highly recommended that the battery also be put through a long conditioning cycle after the initial charge and before use. Putting the battery through a long conditioning cycle will maximise the battery's initial capacity.

---

### Important Charging Information

- Turn your radio off before charging.
  - New batteries must be fully charged before first use.
  - Replace or recharge your battery as soon as the radio indicates the battery is low.
-


## Use of Green Conditioning Button

(Fast charger only)

The green button on the fast charger is the conditioning button and is only used for short and long conditioning. See “Conditioning Using the Fast Charger” on page 57 for more information.

- Short condition your NiCd battery weekly.
- Long condition the battery following prolonged storage or if battery performance has deteriorated.
- Do not press the conditioning button if you just want to charge the battery. Only press the conditioning button when you want to initiate short or long conditioning.

## Low Battery Warning

When the battery is low, the low battery icon () will flash, the radio will give a low-pitched beep every five seconds and the LED will slowly flash red. Recharge or replace the battery as soon as possible. When the battery gets too low, the radio will display the message **BATTERY IS FLAT** and will give a low-pitched beep for ten seconds. The radio will then stop operating.

Note that while the battery is charging and for up to half an hour after removing the battery from the charger, the radio's battery indicator will not accurately reflect how charged the battery is.

## Using the Fast Charger

The fast charger can be used to:

- charge batteries; or
- condition batteries.



## Fast Charger LED States

LED	Meaning
Steady Red	Battery charging.
Flashing Red	Battery not seated properly in charger, battery or charger contacts dirty, or battery faulty. If this occurs at the end of a long condition, consult your Tait dealer.
Steady Green	Battery charged.
Flashing Green	Battery trickle charging.
Steady Amber	Charge suspended until battery temperature is within correct range.
Flashing Amber	Battery being short or long conditioned.

## Charging Using the Fast Charger

Charging using the fast charger involves three stages.

- The fast charge stage quickly brings the battery up to near its full capacity. The charger LED will glow red.
- The trickle charge stage slowly tops up the battery until it is at its full capacity, which is typically 1 1/2 hours. The charger LED will flash green.
- The standby charge stage keeps the battery at its full capacity, as long as the radio is turned off. The charger LED will glow green.

The battery can be charged separately or attached to the radio. The radio must be turned off to ensure a full charge.

### *To Charge the Battery Using the Fast Charger*

- Turn off the radio.
- Insert the battery/radio into the charger.
- The charger LED will glow amber for three seconds, then red.
- When the charger LED glows green, the battery is charged.

## Charge Times

Battery Type	Fast Charge Time	Trickle Charge Time
1100 mAh NiCd (TOPB100)	up to 1 1/2 hours	1 1/2 hours
1500 mAh NiCd (TOPB200)	up to 2 hours	1 1/2 hours
1850 mAh NiMH (TOPB300)	up to 2 1/2 hours	1 1/2 hours

### Conditioning Using the Fast Charger

Two conditioning functions are available on the fast charger, a short conditioning cycle and a long conditioning cycle.

The short conditioning cycle discharges the battery, then charges it. Regularly recharging a battery that has not been completely discharged will eventually affect its ability to hold a full charge. For best battery performance, short conditioning should be carried out once a week. This will take about 4 to 8 hours, depending on how much use the battery has had.

**NOTE:** Do not use the short conditioning cycle on a new battery without first fully charging it.

The long conditioning cycle discharges and charges the battery a number of times. Long conditioning will take about 24 hours. If the charger LED flashes red, consult your Tait dealer.

A long conditioning cycle may be necessary when:

- the battery performance has deteriorated; or
- if a battery has been stored for a long time.

### To Short Condition the Battery

- Turn off the radio.
- Insert the battery/radio into the charger.
- When the charger LED glows red, press the conditioning

button until the indicator flashes amber.

- Release the conditioning button.

Once the battery has been discharged, it will charge normally. The battery is ready to be used again when the charger LED glows green.

### *To Long Condition the Battery*

- Turn off the radio.
- Press and hold the conditioning button while inserting the battery/radio in the charger.
- Continue holding the conditioning button until the charger LED flashes amber.
- Release the conditioning button.

The battery is ready to be used again when the indicator glows green.

## **Using the Trickle Charger**

The trickle charger is only recommended for charging NiCd batteries. NiMH batteries should be charged using a fast charger.

The battery can be charged separately or attached to the radio. If attached to the radio, the radio should be turned off while the battery is charging. The trickle charger cannot be used for conditioning batteries.

### To Charge the Battery Using the Trickle Charger

- Turn off the radio.
- Insert the battery/radio into the charger.
- Make sure the charger LED glows red. The LED will continue to glow red throughout charging.
- The battery will be fully charged in about 16 hours.

You can leave the battery in the charger until you next need to use the radio. However, leaving the battery in the charger

for extended periods (longer than a weekend) is not recommended.

## Preserving Battery Life

- Replace or recharge the battery as soon as the radio indicates the battery is low.
- Avoid recharging a full battery that has had little or no use. Overcharging the battery will reduce the life of the battery.
- Avoid leaving the battery in a charger for more than a few days.
- Turn the radio off when it is unattended for long periods.
- Use only a Tait-recommended charger.
- Maintain an ambient temperature of between 5°C and 40°C during recharging. Optimum battery performance will be obtained between 15°C and 25°C.
- Do not allow the battery contacts to become short-circuited. This may happen if a metallic object such as a coin or paper clip comes into contact with both battery contacts.
- The battery pack is a sealed unit and is not serviceable. Do not attempt to open it.

## Disposing of Used NiCd Batteries

NiCd batteries contain a small amount of the metal cadmium, a potentially toxic substance that must be disposed of properly. When no longer in use, contact your Tait dealer for recycling details.

## Troubleshooting

*When inserting the battery/radio in the charger, the charger LED is not as expected.*

- Make sure the battery/radio is seated properly in the charger.
- Check that the charger is properly plugged in.

- Check that the battery and charger contacts are clean.

*The charger LED glows amber.*

The radio is too hot or too cold for charging.

- Safe range for charging is 5°C to 40°C, and optimum battery performance will be obtained between 15°C and 25°C. The battery will start charging when the battery temperature is within the range 5°C to 40°C.

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## Basic Maintenance

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Your Tait Orca handportable requires no regular maintenance other than ensuring that the battery has sufficient charge and that no damage has occurred to the antenna or the battery pack.

### General Care

- Wipe the battery contacts, accessory connector contacts and radio display with a dry lint-free cloth to remove any dirt, oil or grease.
- Use a cloth dampened with clean water to clean the radio's case and display lens, but do not immerse the radio in fluids.
- Do not allow the radio to come into contact with detergents, alcohol, aerosol sprays or petroleum-based products as they may permanently damage the case.
- Avoid high temperatures. If the radio overheats, it will cease to function. You will hear two short high-pitched beeps.

### Troubleshooting

If you are experiencing difficulty operating your Tait Orca handportable, review “Basic Operation” on page 16 and check the following items:

- Is the battery firmly attached to the radio?
- Is the battery sufficiently charged?
- Is the battery charger working properly?
- Is the antenna damaged?

If all appears to be in order but your radio still fails to operate properly, consult your local Tait dealer for assistance.

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## Accessories

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Tait offers a large range of accessories to increase communication efficiency with your Tait Orca handportable.

- Antennas
- Audio accessories
  - Lapel speaker microphones
  - Headsets
- Carrying accessories
  - 38mm belt clip
  - 55mm spring loaded belt clip
  - Heavy duty carry case
  - Heavy duty holster
- Batteries
  - 1100 mAh NiCd battery pack
  - 1500 mAh NiCd battery pack
  - 1850 mAh NiMH battery pack
- Battery chargers
  - Desktop fast charger
  - Desktop trickle charger
  - Multi-charger
  - Vehicle kit

Contact your local Tait dealer for more information.

To fit some accessories to the radio, you will need to remove the rear accessory cover. Remove the battery, then insert the end of a key underneath the bottom edge of the accessory cover. Lift to remove the cover.

When attaching or removing an accessory, ensure that the lever is in the upright position. Once the accessory is in position, rotate the lever 90 degrees counterclockwise to lock it in place.

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## Specifications

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Size L x W x H  
(including 1100 mAh  
NiCd battery) 44 mm x 62 mm x 153 mm

Typical weight  
(including 1100 mAh  
NiCd battery) 520 g

Battery voltage 7.5 V nominal

Transmitter power 136-174 MHz: 5 W  
174-530 MHz: 4 W

Receive sensitivity better than -117 dBm

Audio power >0.5 W into 16 ohms

Antenna connector SMA

For full details of the technical specifications of the radio, refer to the *Service Manual* or to your nearest Tait dealer.



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# Tait Electronics Ltd

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Tait’s entire liability and the Licencee’s exclusive remedy shall be:

1. The replacement of any diskette not meeting Tait “limited warranty” and which is returned to Tait or an authorised agent or subsidiary of Tait with a copy of the Licencee’s purchase receipt; or
2. If a diskette is supplied and if Tait is unable to deliver a replacement diskette that is free from defects in material or workmanship, the Licencee may terminate this Agreement by returning the Software to Tait.

3. In no circumstances shall Tait be under any liability to the Licencee, or any other person whatsoever, for any direct or consequential damage arising out of or in connection with any use or inability of using the Software.
4. Tait warrants the operation of the Software only with the operating system for which it was designed. Use of the Software with an operating system other than that for which it was designed may not be supported by Tait, unless otherwise expressly agreed by Tait.

## **General**

The Licencee confirms that it shall comply with the provisions of law in relation to the Software.

## **Law and Jurisdiction**

This Agreement shall be subject to and construed in accordance with New Zealand law and disputes between the parties concerning the provisions hereof shall be determined by the New Zealand Courts of Law. Provided however Tait may at its election bring proceedings for breach of the terms hereof or for the enforcement of any judgement in relation to a breach of the terms hereof in any jurisdiction Tait considers fit for the purpose of ensuring compliance with the terms hereof or obtaining relief for breach of the terms hereof.

## **No Dealings**

The Licencee may not sublicense, assign or transfer the licence or the program except as expressly provided in this Agreement. Any attempt otherwise to sublicense, assign or transfer any of the rights, duties or obligations hereunder is void.

## **No Other Terms**

The Licencee acknowledges that it has read this agreement, understand it and agree to be bound by its terms and conditions. The Licencee further agrees that this is the complete and exclusive statement of the agreement between it and Tait in relation to the Software which supersedes any proposal or prior agreement, oral or written and any other communications between the Licencee and Tait relating to the Software (LS-589).

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# My Custom Settings

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## Function Key Settings

Short Press

Long Press

F1: \_\_\_\_\_

\_\_\_\_\_

F2: \_\_\_\_\_

\_\_\_\_\_

## Selcall Settings

Your Selcall ID: \_\_\_\_\_

## Commonly Used Channels/Groups

Position

Settings

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# Radio Indicators

## LED:

 steady

 flashing

## Sound:

pitch:

 high

 medium

 low











































duration:

 short

 long

... repeating

Display messages are shown in ALLCAPS, e.g. CALL

	Display	Sound	Meaning
Start-up/basic operation	  + message such as TAIT ORCA RADIO	 x 2	You have just turned on the radio. The power-up sequence is complete.
	 +  flashing		The radio is transmitting.
	 +  flashing		The radio is transmitting at low power.
	 fast + CALL flashing	ringing tone*	A call has been received.
	 fast + CALL flashing		A call has been received but not answered.
	 + 		Activity has been detected on a channel.
			You cannot transmit because the channel is busy or transmission is inhibited by Selcall muting. Wait until it is free to transmit or use a channel that is clear.
		 x 3	The transmit timer is about to expire. In 10 seconds, the radio will stop transmitting. Release the PTT key before transmitting again.
	 for 1.5 seconds	The radio has stopped transmitting because the transmit timer has expired. Release the PTT key before transmitting again.	
Scanning	 + 		The radio is scanning a group of channels for activity or greatest signal strength.
	 medium +  flashing		The radio has detected activity on one of a group of channels being scanned.
Functions			A function has been turned on.
			A function has been turned off.
	 slow + RTA		Repeater talk around is active.
	 medium + 		Low power transmit is active.
	 slow		Economy mode is active.
	  slow + 		Handset mode is active.
		 x 2	Squelch override has been turned on.
			Squelch override has been turned off.
	 medium + 		Monitor or squelch override is active.
Warnings	 slow +  flashing + BATTERY IS FLAT	 every 5 seconds	The battery is low. Recharge or replace the battery as soon as possible.
		 10 seconds	The battery is too low to operate the radio. The radio will automatically switch off. Recharge or replace the battery.
		 x 2	The temperature is too high. You should stop transmitting and allow the radio to cool down.
	 fast + RADIO DISABLED		The radio is stunned. Contact your dispatcher.
	  fast	  x 2	The radio has been programmed incorrectly or is faulty. Contact your Tait dealer.

\*The ringing tone is preprogrammed. The radio will give different ringing tones when different types of calls are received.