Tait Orca 5020
Conventional Portable Radio
User Guide

5020

Getting Started

First Use of Radio

① IMPORTANT
Long condition the battery. Refer to the Battery Charger User Guide.

② Install the Antenna

③ Install the Battery

Short Condition the battery every week.

④ Turn on radio, adjust speaker volume, select channel.

⑤ Press PTT to Talk. Release to Listen.

Radio Configuration

Your Tait Orca radio has been configured for your requirements by your authorised Tait Dealer or your company administrator. Therefore, some functions will vary in operation or will not be available. The configuration information can be written onto this User Guide.

Batteries

Use Tait Orca 5000 NiCd/NiMH batteries or Tait Orca Elan/Excel/Eclipse NiCd/NiMH batteries. For more information on batteries, refer to the Battery Care Guide.

IMPORTANT
Do not put Tait Orca 5000 batteries into older battery chargers. Tait Orca 5000 NiCd/NiMH batteries are ONLY for Tait Orca battery chargers with software version 2.07+.

Parts

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

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Printed in New Zealand   M5020-200-00-052

Making Calls

To make a call, select a Channel then press PTT to talk. Alternatively, use a Function Key.

When you select a Scan Group of Channels, scanning for activity will begin automatically.

3 Methods to Select a Channel or a Scan Group:

◆Keypad
SELECT CHANNEL — Select Channel Mode

Dial Number

To Cancel: 12 — Short press / Long press
To Select: Short press

◆Scroll Keys
SELECT CHANNEL — Select Channel Mode

Scroll to Select

Short press for normal scroll. Long press for fast scroll.

◆16-way Selector
Turn to select from the first 16 in the list.

Using the PTT
Press PTT to talk to all persons on the same Channel. Release PTT to listen.
You can only transmit or receive on one Channel at a time.

Channel is busy: Wait

Standard Operation
The illustration shows the recommended method for standard operation. Use the upper microphone to speak.

Handset Operation
The illustration shows the recommended method for handset operation. Use the lower microphone to speak.

Make a call using a Function Key

Use a short press or a long press to operate the function keys 1, 2, and 3. See Radio Configuration.

Function Key 1
Function Key 2

Press PTT to talk. Release PTT to listen.

Function Key 3 or Action List

External Function Keys 1 and 2

Slow flash

Selcall Calls

Variable Selcall

Select a Selcall Channel.

Select Dial Selcall from F3 Action List or Menu

F — DIAL SELCALL

Short press

Dial the Selcall number:

12 — Short press   — Long press

Short press

Press PTT to talk. Release PTT to listen.

Preset/Fixed Selcall

Select a Selcall Channel.

Select the appropriate Function Key to make the call.

Short press or Long press
◆ Preset Call #1 (Selcall)
◆ Preset Call #2 (Selcall)
◆ Fixed Selcall Sequence

Press PTT to talk. Release PTT to listen.

Emergency Calls and One Touch Selcalls

You may need to Select a Selcall Channel.

Select the appropriate Function Key to make the call.

Short press or Long press
◆ Emergency Call (Selcall)
◆ One Touch Call. This uses the first Alpha Symbol, which can be configured as a Selcall call.

Press PTT to talk. Release PTT to listen.

Deferred Callback for Selcall If busy, the call will be sent when Channel is free: up to 15 tries (if configured).

To cancel the call:
Change Channel or turn radio off.

To exit Selcall: Long press

Receive a Selcall Call

Press PTT to talk. There is usually no need to respond to a Group Selcall.

Example:
CALL   JANE
STAT 00
— Caller Identity
— Call status

Receive a Status Message

Example:
CALL   JANE
AT LUNCH
— Caller identity

Status Message (8 characters) or Status Number 00 to 99

Radio Configuration

Alpha Symbols

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

F3 Action List

F
1
2
3

Radio Identification

Group Information

Emergency Call Numbers

Phonetic Alphabet

Alpha	A
Bravo	B
Charlie	C
Delta	D
Echo	E
Foxtrot	F
Golf	G
Hotel	H
India	I
Juliet	J
Kilo	K
Lima	L
Mike	M
November	N
Oscar	O
Papa	P
Quebec	Q
Romeo	R
Sierra	S
Tango	T
Uniform	U
Victor	V
Whisky	W
X-ray	X
Yankee	Y
Zulu	Z

16-way Selector

1	9
2	10
3	11
4	12
5	13
6	14
7	15
8	16

Battery / Status Icons

- Battery 100% charged
- Battery 60% charged
- Battery Low
- DTMF Mode on
- Monitor Mode on
- Scroll
- Handset Mode on
- 16-way Selector

- Scanning for activity or signal
- Activity found on channels
- Transmit at normal power
- Transmit at low power Max.1W
- Channel is busy: Wait
- RSSI. Signal strength indicator. Also for contrast indication.

- Antenna
- Function Key 1
- Function Key 2
- PTT. Press to Talk, Release to Listen.
- Function Key 3 or Action List

CHAN — Channel Select Mode
JIM — Caller ID
01/07 — Queue: Call # of # (15 maximum)
RTA — Repeater Talk Around

- On/Off and Volume
- LED
- Speaker
- Standard Microphone
- Menu scroll keys: Backwards / Forwards
- Display
- Clear, Cancel or Back in Menu
- Menu, Select, Toggle (on/off) or Send (make call)
- Alphanumeric Keypad
- SDM
- Handset Microphone

Menu

Long press to Select Menu or Exit Menu. When in Menu, short press to Select or to Toggle a function e.g. on/off

Menu scroll keys: Forwards and Backwards. Long press is fast scroll.

Short press — Delete single character, Cancel or Back in Menu.

Long press — Delete line of characters. Delete queued calls. Delete SDM. Exit without saving.

MENU

QUEUED CALLS
01/07
Select call
(a) Return call — Short press
(b) Read status or message — Long press
(c) Delete call or message (not automatic) — Long press

Normal Call = "blank"
Priority Call = P
Short Data Message (SDM) = M
Status Call = S

MENU   JOHN
P 01/07
— Caller identity not for SDM unknown = no ID
Call 1 of 7

SELECT CHANNEL
Select Channel mode. Then select a Channel or a Scan Group.

SEND SELCALL
1 SELECT STATUS — Select status label from list. LUNCH...
2 DIAL SELCALL — Dial number. Press to make call.

SEND DTMF
Dial number. If buffered, press to make call. To send A, B, C or D commands, press the PTT key whilst pressing 2, 5, 8 or 0.
DTMF 123465

DTMF Dial Tone Multi-Frequency. International standard. Tones are used to dial direct to a landline. Example: communicating with telebanking systems.

ALPHA SYMBOLS
Select from list. It can be a Channel, Selcall call, DTMF call, Status call, or combination. Short press to make the call.

SEND SDM
ENTER SDM:
SDM TO.....
Short press

ENTER ID:
>>>>0000BASE
Short press

1. Enter a Short Data Message
2. Confirm
3. Enter the Radio Identification
4. Send the SDM

Receive an SDM (Short Data Message)
Long press to display message
Scroll to read message
Delete message

SDM is always queued. Only one SDM can be queued.

Menu

USER SETTINGS
- HANDSET ► Handset mode: on/off
- LOW PWR ► Transmit at low power: on/off
- KEYLOCK ► Keypad locked   Long press to unlock
- DTMF ► DTMF dialling mode: normal/buffered
- ECONOMY ► Economy mode: on/off
- SQUELCH ► Squelch: city/country
- MONITOR ► Monitor (signalling override): on/off
- SQ OVRD ► Squelch Override: on/off

ALERT SETTINGS
- TONES ► Radio Tones: on/off
- LEVEL ► Volume of Radio Tones: high/low
- KEYTONE ► Keypress Tones: on/off

DISPLAY SETTINGS
- NIGHT ► Night use mode: on/off
- RSSI ► RSSI. Signal strength indicator: on/off
- ADJUST CONTRAST ► Adjust contrast of display

ADV SETTINGS
Long press: Exit & Save
Exit No Save

PROGRAM GROUP ► Scan Group ► Channel ► Membership: Short press
Y N T P1 P2
YN Yes/No: Member P1 P2 Priority 1/2 Ch. T Default Transmit Ch.

PROGRAM FS-GROUP ► Channel ► Membership: Short press
S NS P1 P2
S NS Selected /Not Selected P1 P2 Priority 1/2 Channel

GROUP FULL
16/15 Channels maximum. Remove a Channel (N/NS).

CANNOT DELETE
2 Channels minimum. Add a Channel (Y/S).

CANNOT CHANGE
Set other Channel to P1/P2/T then original P1/P2/T becomes Y/S.

FS Flexiscan
FSCN Flexiscan is active
FSPR Flexiscan program

PROGRAM SIGNAL ► Select Channel then the CTCSS/DCS sub-audible signalling used on the Channel, from the list.

VERSION INFO ►
FW VER Firmware
HW VER Hardware
MAIN DB Database
CAL DB Calibration

Radio Configuration

	F1		F2		F3		External	
	Short Press	Long Press	Short Press	Long Press	Short Press	Long Press	1	2
Disabled								
Tones: Beeps on / off								
Economy Mode Control on / off								
One Touch Call (First Alpha Symbol)								
Channel's DTMF Preset								
Fixed Selcall Sequence								
Program Flexiscan Group								
Toggle Flexiscan on /off								
Preset Call #1 (Selcall)								
Preset Call #2 (Selcall)								
Emergency (Selcall)								
Nuisance Delete								
Repeater Talk Around on / off								
Repeater Access Tone								
Handset Mode on / off								
Low Power on / off								
Keypad Locked Long press to unlock								
Toggle Monitor on / off								
Disable Monitor								
Squelch Override on / off								
Backlighting on / off								
Night Use on / off								
Adjust Contrast of Display								

Handset Mode   Volume + −

Inactivity seconds =

Alphanumeric Search

Type in the word you want. The radio will search and display the closest match.

ABC — Short press   ABC — Long press   To exit search, long press once or twice.

WORD   ABC1 ABC2...

When the word is displayed you can also scroll the list.

Conventional Features

Backlighting
When you press a key, backlighting is turned on. It turns off after 1-10 seconds of no activity. Set via a function key.

Night Use mode
If on, the keypad backlighting is turned on when there is activity on the channel or if the keypad or selector is used. Turns off after 1 to 10 seconds of no activity. Set via the Menu.

Handset mode
Speaker volume is reduced so that radio can be held near to the ear like a cellphone. Press PTT to talk, release PTT to listen.

Monitor mode
Listen to all traffic and all groups on a channel. Monitor mode automatically turns off after a preset time.
It can be reset by the despatcher or when some types of calls are made.
It can be configured to override Selcall (Selcall mute) or both Selcall and CTCSS/DCS.

Squelch
Squelch allows reception of intellgible signals that are above the factory-set signal threshold, thus reducing noise. Set via the Menu to city or country.

Squelch Override
This overrides the squelch feature so that all signals are made audible. This may improve the signal reception in marginal areas, but will likely increase noise. It cannot be activated when a scan group is selected. Set via a function key.

Nuisance Delete
If a Channel in a Scan group is busy for a long time and you do not want to listen to the conversation, you can temporarily remove it from the scanning regime using Nuisance Delete.
To apply Nuisance Delete to the currently selected Channel, press the function key (if configured). This will remove the currently selected Channel from the scanning regime. Select the Scan Group again to reset and remove Nuisance Delete.
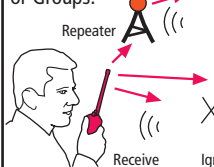
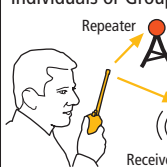### Standard Mode
Users on the same Channel can hear the message.

Receive
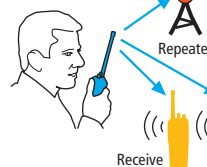
CTCSS/DCS Mode
Sub-audible tones enable specific calls to Channels or Groups.

Receive   Ignore

Selcall Mode
Audible tones (beeps) enable selective calls to be made to Individuals or Groups.

Receive

Indicators

Slow flash = every 2 seconds
Medium flash = every 1 second
Fast flash = four per second

Flash fast — Medium pitch beep, short duration, twice. **Radio power-up sequence**	**Steady** — **Transmit at normal power**
Flash medium — **Transmit at low power**	**Flash slow** — **Handset mode**
Medium pitch beep, short duration. **Function turned on**	Low pitch beep, short duration. **Function turned off**
Steady — **Channel is busy** / **Flash medium** — **Monitor or Squelch Override**	**Flash slow** — **Economy mode**
Flash fast — Medium pitch warble, long duration, repeating.	**CALL** — **Call received but not answered or queued** Press PTT to return the call.
Flash slow RTA — **Repeater talk around (RTA)**	**Steady** — **Scan Group for activity or greatest signal strength** / **Flash medium** — **Activity detected on a Scan Group**
Medium pitch beep, long duration, three times. **Call time is almost up, 10 seconds to go**	Low pitch beep, for 1.5 seconds. **Transmit timer has expired**
Low pitch beep, long duration. **No transmit** Channel is busy or transmit is inhibited by Selcall muting. Wait or use a free channel.	Medium pitch beep, short duration, two times. **Squelch Override**

Accessory Use

Installing the Battery   Removing the Battery

Using the radio, lapel microphone and carry case

SAFETY
Do not use battery chargers in hazardous atmospheres under any circumstances.
Only use approved Intrinsically Safe (IS) accessories with IS radios.

Installing the D-clip
① ② ③ ④

Removing the D-clip
① ② ③

Accessories

Contact your authorised Tait Dealer

Antennas

6-Way Multi-Charger

Battery Charger   Battery

Belt Loop

D-Clip

Accessory Connector Kits   Leather Carry Cases

Accessory Adaptors

Earphones, Palm and Lapel Microphones

Headphones

Speaker Microphones

Servicing and Programming Kits   Car Kit

Looking after your Radio

◆ Your radio does not require routine maintenance. However, it is a sophisticated electronic device and should be treated with care.

◆ Clean the radio, accessories and charger weekly using a clean dry lint-free cloth. When cleaning, do not use solvents, detergents, alcohol, aerosol sprays or petroleum-based products.

◆ Clean the electrical contacts on the battery and charger weekly using a fibre glass pencil, or the graphite tip of a type 4h (#4) or harder pencil.

◆ Do not put the radio and accessories in fluids.

◆ Do not drop the radio onto hard surfaces, place it down carefully.

◆ Do not use if the radio, antenna or accessories are damaged.

◆ Repairs and modifications must only be carried out by a Tait approved dealer.

◆ Always have the D-Clip or protective cover installed to protect the radio from dust ingress and electrostatic discharges.

Performance

To maintain the optimum performance of the radio:
◆ Use only the supplied antenna.
◆ Use only the radio and accessories for their design purpose.
◆ Use only accessories that are approved by Tait Electronics Ltd.
◆ Avoid high temperatures. If the temperature exceeds 80°C (176°F) the radio will make two short high-pitched beeps and will not work. Temperatures above 90°C (194°F) cause permanent damage to the radio.

To maintain the optimum performance of the battery:
◆ Charge the battery as soon as the radio gives the 'low battery' warning.
◆ Short condition the battery weekly.
◆ Long condition the battery only for the following reasons: on first use, if performance is poor, and after more than two weeks of storage.
◆ Do not charge a battery that has had little or no use.
◆ Do not leave charged batteries in the charger for more than a day.
◆ Turn the radio off when it is unattended for long periods.

Recycle
Recycle batteries that are of no use. Contact your authorised Tait dealer for advice.

Troubleshooting

If the display is blank after turning on the radio and the radio turns itself off automatically after a few minutes, it is likely there is no power.

Fast flash. Radio is incorrectly configured. Contact your authorised Tait dealer or your company administrator.

ERROR XX Contact your authorised Tait dealer or your company administrator.

Slow flash. Low pitch beep, short duration, every 5 seconds. Battery is low. Charge the battery.

Low pitch beep for 10 seconds. Battery is too low to operate the radio. Turn off the radio. Charge the battery.

High pitch beep, short duration, two times. Temperature is too high. Turn off the radio and allow the radio to cool down in a cool place.

Checklist
◆ Is the radio turned on?
◆ Is the correct channel selected?
◆ Is the battery installed on the radio?
◆ Is the battery charged?
◆ Is the antenna damaged?
◆ Is the battery charger working properly?

Fast flash. High pitch beeps. Radio is stunned. Contact the despatcher.

Call Information
ACK RECEIVED STATUS 32
Acknowledgement and status received from recipient of call.

NO ACKNOWLEDGE
No Acknowledge. Recipient has not acknowledged your call.

Security
KEYPAD LOCKED
Keypad lock is on.
Long press to unlock

ENTER CODE
Enter Security PIN code using keypad (personal identification number).

Belt Loop

① Install the Belt Loop
②
③

Remove by peeling apart

Note for Accessories
To use the belt loop, the accessory needs the D-clip fitting.
For example: a lapel microphone.

Carry Case

Installing the Radio and Carry Case
① Install the Radio
② Install the Carry Case
③ Install the clip

Removing the Radio and Carry Case
② Slide the Carry Case upwards
Rotate the Carry Case by 180 degrees
① Unfasten the Clip and remove the Radio
③

Safety Precautions

◆ When transmitting, hold the radio microphone 25–50mm (1–2 inches) from your mouth.
◆ When transmitting, keep the antenna at least 25mm (1 inch) from any part of your body, especially your face and eyes.
◆ Turn off the radio where radio waves could interfere with electronic devices.
◆ Turn off the radio at fuel/gas stations.
◆ Turn off the radio in an area where detonators/explosives are being used.
◆ Turn off the radio before boarding/leaving an aircraft and whilst on board an aircraft.
◆ Do not use the radio whilst driving vehicles or operating machinery.
◆ Do not use earphones or headsets at high volume levels.
◆ Do not transmit in frequency bands used by distress beacons, such as 406–406.1 MHz.
◆ Do not put the radio, battery or accessories in liquids as they will be damaged.
◆ Do not allow children to play with the radio; it is not a toy.

Hazardous Atmospheres
A hazardous atmosphere has the potential for fire or explosion from dusts, gases, liquids and solids. Make sure of the following in hazardous atmospheres:
◆ Only use approved Intrinsically Safe (**IS**) radios, batteries and other accessories. Refer to the service manual for a list of approved items.
◆ Do not use battery chargers in hazardous atmospheres.
◆ Turn off and do not use non-approved radios.
◆ Only use **IS** batteries with **IS** radios.
◆ Do not use damaged or cracked radios.
◆ Do not modify **IS** radios.

Intrinsically Safe

Electromagnetic Interference
Turn off the radio where radio waves could interfere with electronic devices. Some facilities use equipment that is sensitive to Electromagnetic Interference such as: hospitals, medical centres, aircraft and some industrial facilities. Only use your radio in these situations if the radio is qualified for use in such areas.

Note: The warning below applies to FCC approved radios in 800 MHz and 900 MHz frequency bands:

FCC RF Exposure Limits
This product generates radio frequency energy during transmissions. It is classified by the FCC as suitable for general population use in an uncontrolled exposure environment. The following conditions apply to the use of this radio:
◆ It must only be used with authorised accessories and antennas.
◆ Do not exceed a duty cycle ratio of 20% transmit mode to standby or receive modes. The radio is in transmit mode when the PTT key on the radio is pressed and the TX indicator LED is lit.