



McMurdo R3 VHF

**maritime aeronautical
VHF RADIO**

OWNERS MANUAL

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1. Description

The "McMurdo Marine R3" Radio is a rugged portable handheld transceiver designed for ship to aircraft emergency communication. It operates at the primary and auxiliary aeronautical emergency frequencies 121.5 and 123.1 MHz. The internal primary single cell lithium battery combines a minimum of replacement cost and typically 24 hrs of normal operation (90% standby, squelched receiver, 5% receive audio, 5% transmit).

A minimum of controls makes the operation simple and safe, even by unskilled persons. The un-breakable leaf antenna unfolds automatically before operation. The metal housing provides optimum electrical performance (EMC/EMI) and the best mechanical protection.

The transceiver complies with the TS 101089 v1.1.1 (1997-09) technical specification.

2. Specifications

McMurdo Part Number : 87-002

General

Operating frequencies : 121.5MHz (primary)
: 123.1 MHz (auxiliary)
Modulation : AM (A3E)
Frequency accuracy : ± 2 kHz
Nominal operating voltage : 2.8V

Transmitter

Transmitter carrier power : 0.1 WEIRP
Transmitter spurious : $< 0.25 \mu\text{W}$

Receiver

Receiver sensitivity : $< 30 \text{ dBuV}$ for 12dB SINAD (30% AM, 1 kHz)
Receiver max. input level: $> 120 \text{ dBuV}$ for $< 10\%$ harmonic distortion

2. Specifications (contd)

Receiver (contd)

Selectivity/blocking	: >70 dB	
Receiver antenna emission	: <2nW	(9kHz to 2 GHz)
Audio level	: >200 mW	(1.26Vrms / 8Ω)
Audio bandwidth	: 300 Hz to 3kHz	(typical)

Environmental

Dry heat	: +55°C, storage +65°C	(131°F, storage 149°F)
Damp heat	: +40°C @ 93%relative humidity	
Low temperature	: -20°C, storage -25°C	(-4°F, storage -13°F)
Drop onto hard surface	: 1m (3.3 ft)	

Mechanical

Size ex. antenna	: 210x77x40mm	(8.3x3x1.6 in)
Weight	: 970 g	(2.1 lbs.)

Antenna

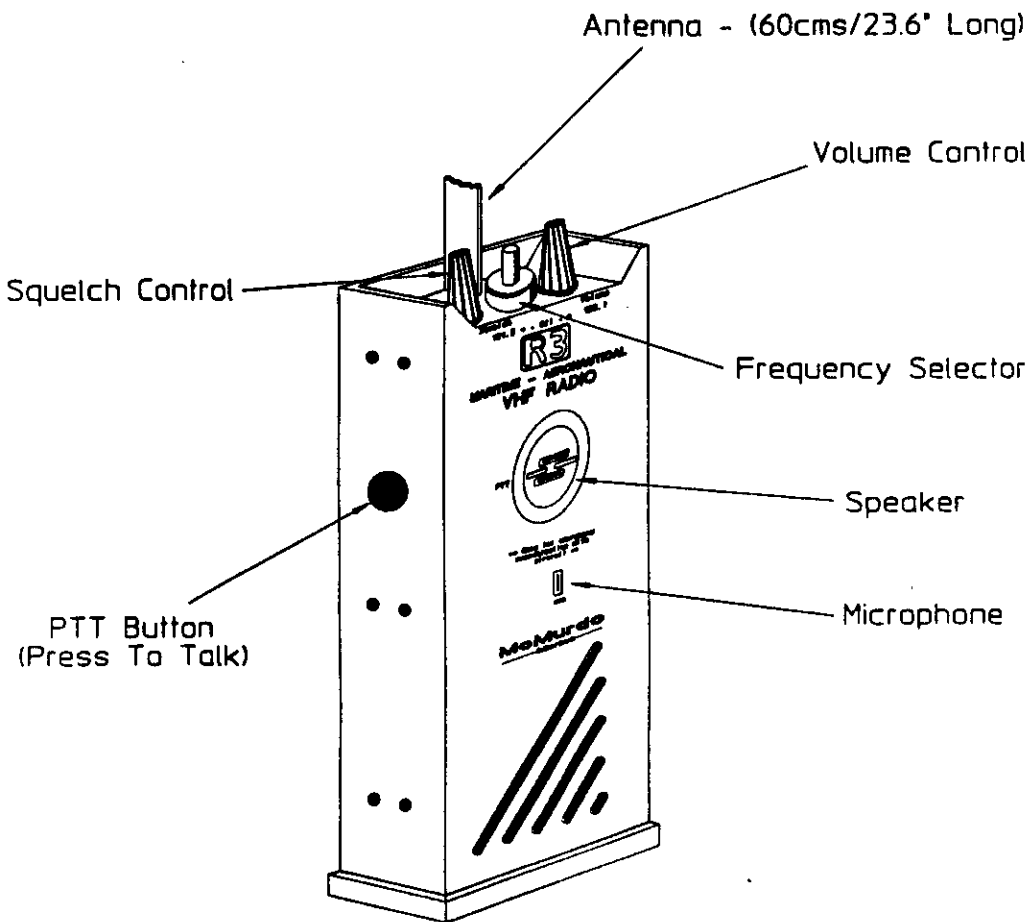
Construction	: Synthetic rubber cover stainless steel leaf	
Length	: 60 cm,L/4	(23.6 in)
Antenna gain	: -3dBi	

Battery

Type	: Lithium Sulphur Dioxide	
Battery shelf life	: 5year	
Life time	: 10 hrs operation (80% standby, 10% receive audio, 10% transmit)	
Size	: Size "D", 34 x 59 mm	(1.4 x 2.3 in)

3. Operation

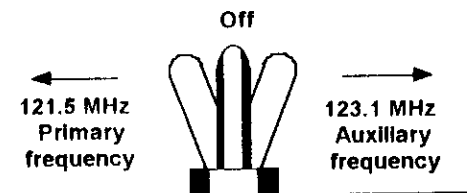
3.2 Location of Controls



3. Operation

3.2 Switching on

The antenna must be fully extended before operation. The transceiver is turned on by the frequency selector located at the top of the transceiver. Move the selector to the left for 121.5 MHz (the primary aeronautical distress frequency) and to the right for 123.1 MHz (the auxiliary frequency).



3.3 Squelch and volume

Turn the "squelch" fully counter clockwise (CCW) to activate the speaker. Set the "volume" to a desired audio level. The "squelch" may then be turned clockwise (CW) until the point where the noise just disappears. When a signal is received, the "squelch" will open and the signal will be heard.

Notice that even if the squelch has turned the audio off, the receiver is still active, and will discharge the internal batteries.

3.4 Transmitting

To transmit, push the PTT-button (Push To Talk) located on the left hand side. Talk into the microphone at the front, below the speaker. The transceiver is only for "simplex" operation push to talk, release to listen. The receiver will not work until the PTT is released. Once contact has been established, both parties should switch to the Auxiliary Frequency channel to free up the distress channel for other traffic.

4. Maintenance

4.1 Battery replacement

Turn off the transceiver. Open the battery cover by removing the four screws. Remove and unplug the battery. Replace the new battery and reassemble the cover. Date of expire must be noted at the back side of the transceiver (usually four years after replacement). Avoid short-circuiting the battery. Old batteries should be disposed as special waste.

Do not try to charge the Lithium battery as it may explode!

4.2 Fuse

The negative battery circuit of the transceiver is fused for security reasons. This fuse will blow if the positive terminal of the battery by accident is shorted to ground. The fuse is located on the printed circuit board, at the left hand side of the battery. Fuse rating: 3A, size 1206. Fuse type F1206B3R00FWTR (AVX) or equ. To be replaced only by Authorised persons.

4.3 Passivation of batteries

If the radio appears not to be working, this may be due to an effect known as 'Passivation' which affects the batteries as a result of being in storage, a long time. This means if the Radio is not used for long periods, this effect may be observed. The batteries will automatically recover from this state after a few seconds of use. **To overcome this effect, the Radio will need to be switched 'on and off' a few times (possibly 5 to 6 times) to break through the passivation layer.**

4.4 ESD

Use an Electro-static Discharge – safe work station during battery replacement and other service.

5.

WARRANTY

This product is covered by a 12 month non-transferable manufacturer's limited warranty commencing on the date of purchase. The warranty covers faulty materials and workmanship during manufacture, but excludes normal wear and tear, wilful damage, negligence, abnormal conditions and failure to follow manufacturer's instructions.

The manufacturer shall not be liable for any consequential loss or damage caused by a defective product. A copy of the full warranty conditions is available upon request. This warranty statement does not affect your statutory rights.

Claims under warranty should be directed to your local dealer with supporting proof of purchase. Technical advice and information on local dealers can be obtained from the address given below.

McMurdo Ltd

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Record Serial No of your R3 : _____

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