



MCMURDO S20 AIS MOB Device Instructions

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MCMURDO S20 AIS MOB Device Instructions



Product Information

Specifications

- **Product:** McMurdo S20 & Kannad Marine R10 AIS MOB Devices
- **Issue No:** MG018
- **Date:** 22nd January 2016

Introduction

Scope:

This document provides the instructions to enable routine servicing of the S20 & R10 AIS MOB units.



Servicing Equipment

The following tools and equipment are required to carry out the servicing detailed in this manual. Only authorized

and trained people are allowed to perform maintenance & service on these products. We advise it is good practice that records of any maintenance or service performed are maintained.

Equipment: AIS receiver

Hand tools:

- Calibrated torque driver with attachments: 60 cNm
- Small cross-headed screwdriver (No. 1 Pozidrive)

Antistatic Precautions

The electronics section of the product is sensitive to electrostatic discharge (ESD) which can cause immediate or hidden long-term damage. It is important that the PCB is only handled under suitable antistatic conditions. A fully grounded workstation, which has conductive surfaces to avoid the build-up of static charge, should be used. As a minimum, the operator must be connected to a good earth point through a resistance of 1M Ω . This is usually achieved by wearing a suitable wrist strap.

Safety Notices

The product has been assessed as presenting a negligible hazard in a sealed serviceable state.

Safety Analysis

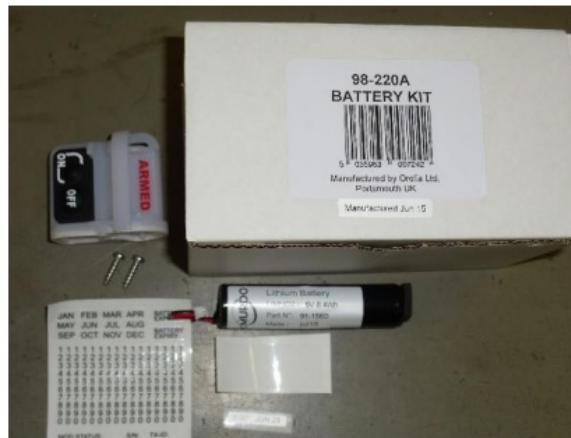
Hazard Cause	Hazard Identification	Precautions
Lithium battery	Explosive risk, corrosive fumes, fire	Handle appropriately, avoid contact
Biological hazards, Radiofrequency	Physiological hazard	Avoid close or prolonged exposure
Radiation	Do not touch the antenna during transmissions	

Hazard cause Hazard identification Precautions:

Lithium battery Explosive risk, corrosive fumes, fire, Handle appropriately, avoid contact Biological hazard, Radio frequency, Physiological hazard Avoid close or prolonged exposure. Radiation

- Lithium battery Explosive risk, corrosive fumes, fire, Handle appropriately, avoid contact
- Biological hazard, Radiofrequency, Physiological hazard Avoid close or prolonged exposure. Radiation
- Do not touch the antenna during transmissions

Battery Kit Contents



- Qty 1 x LED cap with gasket seal fitted
- Qty 1 x Battery with foam pad fitted
- Qty 2 x M3 Screws
- Qty 1 Date label
- Qty 1 Clear Media
- Qty 1 Marking Label

Precautions

- **Foreign Object Debris:**
Ensure the beacon is free of FOD before fitting the cap.
- **Anti-Static:**
Ensure full anti-static precautions are applied.

Product Usage Instructions

Disassembly

Step 1: Remove the activation cap

The beacon will activate. Switch off the beacon by...

Step 2: Remove the LED cap by removing screws

Remove 2 off screws to remove the LED cap.

Step 3: Remove the battery

The PCB & foil insert do not need to be removed. Dispose of the battery in a sensible and considerate manner, and in accordance with local regulations. The LED cap and gasket are not reusable and should be disposed of.

Assembly

- **Step 1:**
 - Ensure the Foam Pad to the bottom of the cell pack
 - Make sure the foam pad is properly placed at the bottom of the cell pack.

DISASSEMBLY

- Remove the activation cap. The beacon will activate. Switch off the beacon by pushing and holding the 'Off' button – the beacon should switch off after approximately 3 seconds.

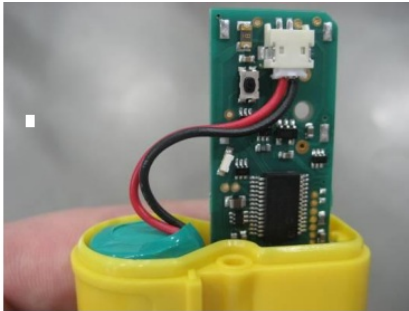
NOTE: Do not allow the beacon to operate for longer than 15 seconds.



- Remove LED cap by removing 2 off Screws.



- Remove the battery. The PCB & foil insert do not need to be removed.



Note: The battery should be disposed of in a sensible and considerate manner, and in accordance with local regulations. Also the LED cap and gasket are not reusable and should be disposed of.

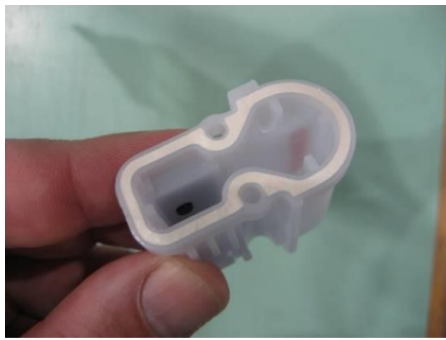
ASSEMBLY

- Ensure the Foam Pad to the bottom of the cell pack.

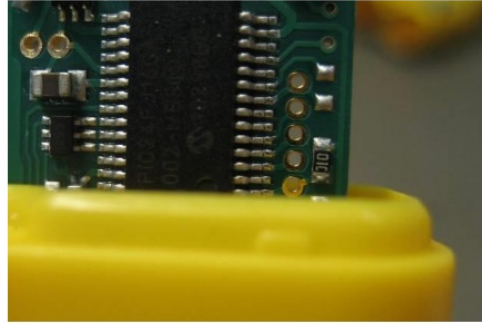


- Ensure the replacement Sealing Gasket is fitted to the replacement LED cap assembly.

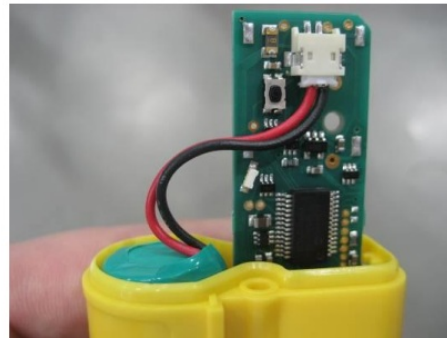
Note: Ensure the gasket is seated correctly or product may fail the leak test.



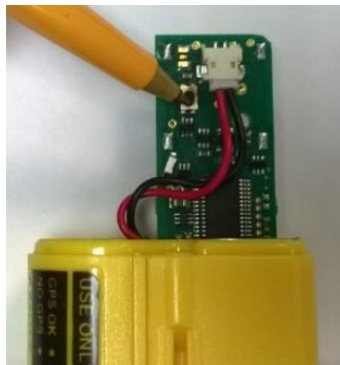
- Ensure the PCB assembly is seated correctly.



- Fit battery assembly into casing, care should be taken to ensure foil insert is not damaged. Position the wires as shown. Connect the battery to the PCB.



- De-press the battery counter reset button, the LED and buzzer will operate for a duration of 1 second when indicating a successfully reset.



- Fit LED cap – ensuring the wires are not trapped; secure with 2 off Screws. Tighten to 60cNm.



- Perform an ON/OFF test by pushing and releasing the 'On' button. The beacon should flash at least once and a beep should be heard with each flash. Switch off the beacon by pushing and holding the 'Off' button – the

beacon should switch off after approximately 3 seconds.

NOTE: Do not allow beacon to operate for longer than 15 seconds.



LEAK TEST

Overview:

- At this stage a gross leak test unit plunged into warm water is recommended.
- Note: The leak test must be completed before the full function test.
- Use hot water at 60°C ±5°C (140°F ± 9°F)
- Cooler water will not raise the air pressure enough.
- Hotter Water may damage the unit.

Instructions:

- It is best to remove lanyard (if fitted).
- Remove the Red cap and deploy the antenna (the unit will then turn on so turn it off before proceeding)
- Immerse the unit in the hot water.
- Dislodge ALL trapped air from the screw holes etc.
- During the next 5 minutes, rotate the unit and check for any escaping bubbles
 - **NB.** If there is any sign of water ingress (bubbles are seen escaping), quickly remove the unit from the water
- If no bubbles are observed, remove unit from water and thoroughly dry
- Refit removed parts.

Any escape of bubbles must be corrected by Disassembly, rebuild and re-test. A new sealing kit will be required.

Drying times

A gross leak may still lead to water inside the unit. If this occurs, then disassemble the unit and dry its component parts in an oven at +40°C to +60°C. Most parts will dry in a few hours, However the battery pack traps water and should be left in the oven for at least 16 hours. The oven is necessary, as the battery will not dry out if left at room temperature.

CAUTION: DO NOT EXCEED 70°C – RISK OF EXPLOSION



LABELLING

- Fit the new battery date & over stick label, and check that serial number and TX ID is still legible.

FINAL ASSEMBLY

- Fold the antenna around body & reattach the activation cap. The beacon will activate. Switch off the beacon by pushing and holding the 'Off' button – the beacon should switch off after approximately 3 seconds.

NOTE: Do not allow beacon to operate for longer than 15 seconds.



PERFORM LONG TEST

Overview

Full system check including GPS activation and live test message transmission.

- Requires a clear view of the sky.
- Ensure GPS Zone on unit is not obstructed.
- Perform away from busy sea areas where the test transmission could confuse other AIS users.
- It is recommended to use a McMurdo M15 AIS receiver with an AIS viewer running on Windows PC or similar AIS receive equipment to verify correct transmission after service.

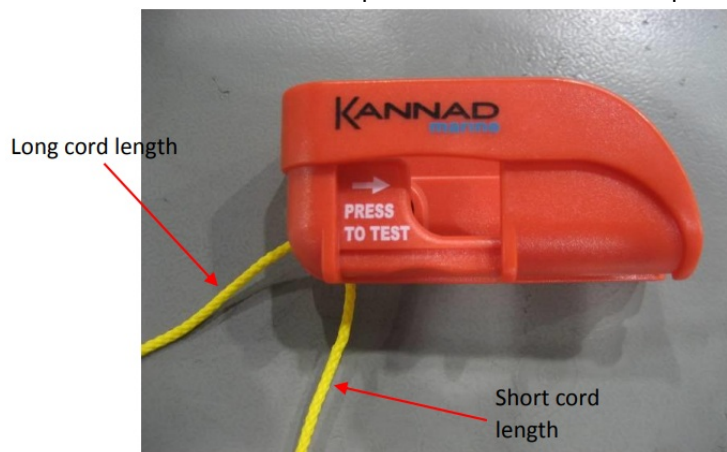
Instructions:

- Press and hold OFF for 10secs until 2sec long flash.
- Unit will flash every 1sec until GPS fix is achieved.
- After 1 minute a SART test message is sent, which will be visible to all AIS systems within range.
- At the end of the test, 3 long flashes indicates the test is successful. No flashes indicates the test has failed.

CHECKING THE RIGGING OF THE PULL LANYARD

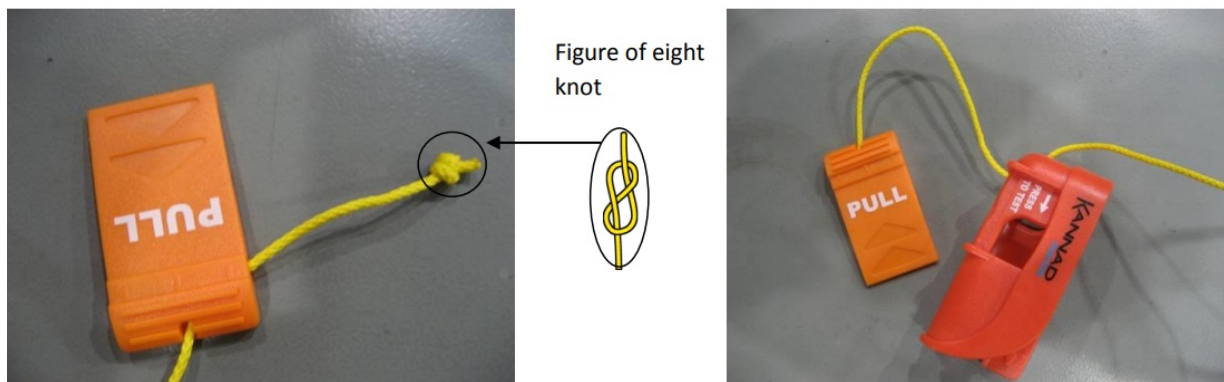
Overview

Activation Cap should look like as shown below with the pre tied knot inside the cap.



Instructions:

- Arming Tab should be attached to the shorter end of the cord with a figure of 8 knot. Pull tight to hide the knot inside the tab like this:



- Fit the activation cap to the beacon – note this will switch on the beacon, so once fitted press and hold the 'off' button to switch off the beacon.
- Function testing of the auto switch:
- Remove the activation cap and ensure the beacon switches on automatically, switch off the beacon as above.
- Replace activation cap and switch off beacon.



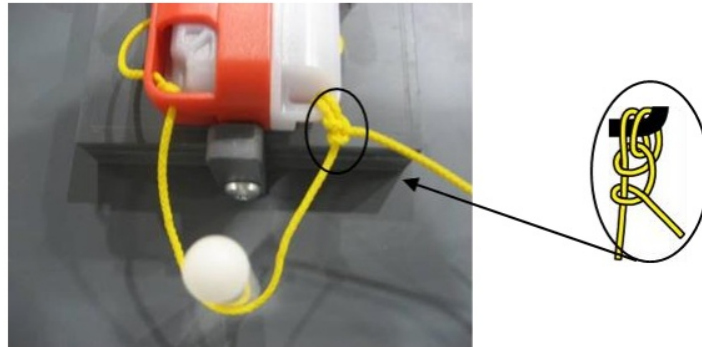
- Fit the arming tab to the cap.



Rigging of the long lanyard length to the white body

The unit may be rigged for either manual-only activation or semi-automatic depending on the user requirement. Semi-automatic operation requires an activation force created by the inflation of the lifejacket pulling off the red cap, which releases the antenna and turns the unit ON. Therefore, two methods of rigging the lanyard are permissible as follows.

For manual activation, the lanyard is tied onto the white section of the body using a 'fisherman's bend' knot. The loop length needs to be approximately 80mm to allow for the removal of the activation cap.



Rigged for semi-automatic operating according to the lifejacket manufactures guidance notes. When preparing the unit ready for lifejacket semi-automatic activation it is not necessary to tie of the lanyard to the white section as this will be done by the lifejacket installer. The free end of the longer length of the lanyard need not be attached at this time.

Note: For detail of how to install the unit into the lifejacket always refer to the life jacket manufactures original document.

Contact Information:

Should you have any questions or concerns, please contact us on the methods below:

Tel: +44 (0)2392 623900

Email: service.uk@mcmurdogroup.com

Orolia Ltd, Silver Point, Airport Service Rd, Portsmouth, Hants, PO3 5PB, United Kingdom **Tel:** +44 (0) 23 9262 3900 **Fax:** +44 (0) 23 9262 3998 **Email:** service.uk@mcmurdogroup.com

- To be carried out immediately
- To be carried out during normal service
- To be carried out if required
- To be carried out only on PCB repair
- For information only

FAQ's

Can I perform maintenance or service on the McMurdo S20 & Kannad Marine R10 AIS MOB devices myself?

No, only authorized and trained people are allowed to perform maintenance & service on these products.


How should I dispose of the battery?

The battery should be disposed of in a sensible and considerate manner, and in accordance with local regulations.

Are the LED cap and gasket reusable?

No, the LED cap and gasket are not reusable and should be disposed of.

Documents / Resources

	<p>MCMURDO S20 AIS MOB Device [pdf] Instructions S20 AIS MOB Device, S20, AIS MOB Device, MOB Device, Device</p>
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References

- [Seas Of Solutions – Supporting Safer Sailing, Anytime – Everywhere](#)
- [User Manual](#)