IDENTIFICATION AND RECOVERY SYSTEM FOR SUBMARINE FLEETS

orca® S-10
SUBMARINE BEACON

ORCA S10 User Manual

BriarTek
INCORPORATED

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OWNER INFORMATION

Owner or organization name:	
Beacon COSPAS-SARSAT 15HEX ID CODE:	

1. INTRODUCTION

1.1. General Safety Instructions

This manual describes physical and chemical processes that might cause injury or death to personnel or damage to equipment if not used properly. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety and equipment protection. Prior to performing any task, the WARNINGs, CAUTIONs, and NOTEs included in that task shall be reviewed and understood.

1.2. Warnings, Cautions, and Notes

WARNINGs and CAUTIONs are used in this manual to highlight operating or maintenance procedures, practices, conditions, or statements that are considered essential to the protection of personnel (WARNING) or equipment (CAUTION).

WARNINGs and CAUTIONs immediately precede the step or procedure to which they apply. WARNINGs and CAUTIONs consists of four parts: (1) heading (WARNING, CAUTION, or icon –see Hazardous Materials Warnings on page 7); (2) a statement of the hazard; (3) minimum precautions; and (4) possible result if disregarded.

NOTEs are used in this manual to highlight operating or maintenance procedures, practices, conditions, or statements that are not essential to protection of personnel or equipment. Notes might precede or follow a step or procedure, depending upon the information to be highlighted. The headings used and their definitions are as follows:

WARNING
Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., that, if not strictly observed, could result in injury, death, or long-term health hazards to personnel.

CAUTION
Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., that, if not strictly observed, could result in damage to, or destruction of equipment and loss of mission effectiveness.

NOTE
Highlights an essential operating or maintenance procedure, condition, or statement.

1.3. Overview of the COSPAS-SARSAT (C/S) System

Figure 1.1

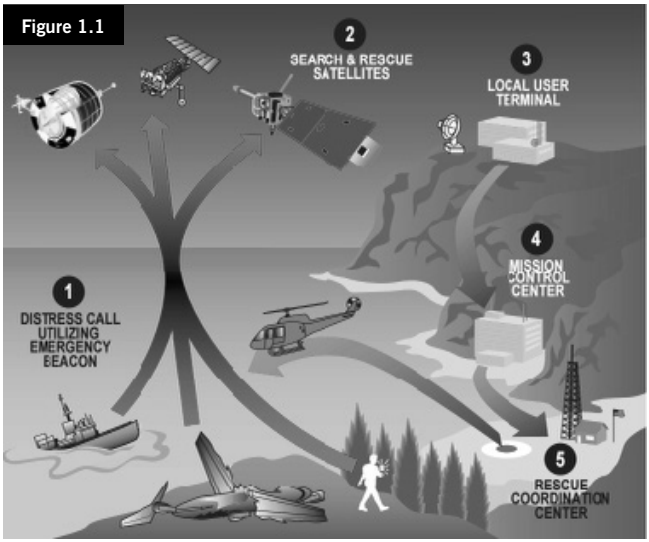


Illustration Copyright COSPAS-SARSAT

1. In situations of "grave and imminent danger" when lives are at risk, emergency beacons are activated.

2. The beacon signal, with its unique identification number (HEX ID) is transmitted and detected by the nearest satellite overhead.

3. An alert is sent to the nearest local user terminal (LUT).

4. The alert is processed by the nearest mission control centre (MCC).

   If the beacon is registered, registration details are provided to the Joint Rescue Coordination Centre (JRCC) in the country in which the beacon is both activated and registered.

   If the beacon is activated in the Australian search and rescue region, then the details are forwarded to AMSA's JRCC in Canberra.

5. The JRCC is notified and begins to arrange the search and rescue operation.

   If your beacon is registered, AMSA will ring your emergency contacts immediately for information regarding your whereabouts.

6. Search and rescue authorities commence search operations as soon as possible.

2. GENERAL

2.1. Proper Use of a Personal Locator Beacon (PLB)

WARNING
This PLB is for use in an emergency only! This means situations of grave and imminent danger when lives are at risk. Do not activate except in an emergency. To verify PLB function, use the test function of the device.

2.2. Reporting False Alarms

Report PLB false alarms by the most expedient means to the nearest search and rescue authorities. The information that should be reported includes:

- PLB 15-Hex ID
- Date
- Time
- Duration
- Cause of activation
- Location at time of deactivation

2.3. Registration

Online registration is preferred, but it can also be performed by mail or fax using the registration card provided with the PLB. The websites below include instructions for transferring ownership of a beacon as well as decommissioning the beacon

Australia	New Zealand
Online registration: www.amsa.gov.au/beacons Beacon Registration Section Australian Maritime Safety Authority GPO Box 2181 Canberra City ACT 2601 Fax: International +61 2 9332 6323 Email: ausbeacon@amsa.gov.au Local: 1800 406 329 Phone: +61 2 6279 5766 or 1 800 406 406	Online registration: www.beacons.org.nz Rescue Coordination Centre New Zealand PO Box 30050, Lower Hutt 5040 Fax: +64 4 577 8041 Email: 406registry@maritimenz.govt.nz Phone: +64 4 577 8042

Advice to owners of PLBs:

Registration of 406 MHz satellite PLBs with the PLB registration section of the *national authority*[1] is mandatory because of the global alerting nature of the system.

The information provided in the registration card is used only for rescue purposes.

Fill in the owner registration card immediately upon completion of the sales transaction. Mail the registration card immediately.

If the beacon is to enter service immediately, complete the registration card and fax the information to the *national authority*. The original card must still be mailed to the relevant *national authority* for hard-copy reference and filing.

If the current owner is transferring the beacon to a new owner, the current owner is required to inform the *national authority* by letter, facsimile or telephone of the name and address of the new owner.

The subsequent owner of the beacon is required to provide the *national authority* with the information as shown in the owner registration card.

This obligation transfers to all subsequent owners.

2.4. Storage

PLBs are intended to be carried on the body of the user. In the case of a submarine escape PLB, the beacon should be attached via a tether to each submarine escape suit.

2.5. Specifications

Minimum operating life:	24 hours
Battery shelf life achievable at +20°C:	5 years
Operating Temperature Range:	-20°C to +55°C
Storage Temperature Range:	-30°C to +70°C
Battery Type:	CR123A (Qty: 4)

1 The words “national authority” should be replaced with Australian Maritime Safety Authority for Australian registration, and “Rescue Coordination Centre New Zealand” for registration in New Zealand.

2.6. Test and Battery Replacement Periodicity

Test:	Minimum every year, Maximum every month
Battery Replacement:	• On or before the expiration date on the device • After each activation • New expiration date should be 5 years from date of battery replacement

CAUTION

Limit self-testing as much as possible to avoid unnecessarily draining the batteries.

2.7. Shipping

Never ship a PLB with batteries installed to eliminate the possibility of inadvertent activation during shipping.

WARNING

When shipping CR123A lithium batteries, certain packaging and labelling standards are required under UN requirements because lithium batteries are considered hazardous goods.

2.8. Disposal

The Australian Maritime Safety Authority advise the correct way to dispose of an expired or unwanted beacon is to take them to Battery World. Battery World will, for a small fee, safely disable the beacon and recycle the battery and beacon components. A list of Battery World store locations can be found here: http://www.batteryworld.com.au/store-list.

If you are not able to take your beacon to a Battery World outlet, remove the batteries and discard the battery door to disable the beacon from being used again.

2.9. Warranty

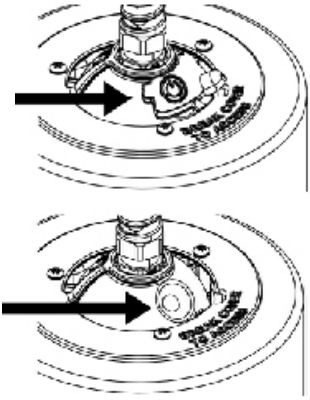
BriarTek will provide a one-year warranty on the ORCA® MOBI system following the date of original purchase. If a component fails to function properly during its warranty period (one year), the manufacturer will proceed according to its warranty as follows: BriarTek Inc. guarantees each product it distributes to be free from defective materials and workmanship and agrees to remedy any such defect, or to furnish a new or equal part in exchange (at its option) for a period of one year from the date the component is purchased. For an exchange of the product, please contact BriarTek at 703-548-7892 or on the web at www.briartek.com and a customer service representative will provide the necessary instructions.

This warranty is void if:

- Any component has been subject to misuse or improper installation by a non-BriarTek employee or a non-BriarTek certified technician, or has been repaired or altered by a non-BriarTek employee or a non-BriarTek certified technician.
- Any component fails to function properly after being put into service due to something other than defective materials or workmanship, i.e. excessive temperature, humidity or shock while component is in storage.

3. OPERATION

3.1. Activation



Procedure

1. Break power switch cover to expose power recess
2. Push antenna tip (which has an embedded magnet) into the power switch recess and hold for approximately 5 seconds to activate the beacon. A flashing light will indicate the device is activated.

Transmission Behavior

1. The device will send out a 406 MHz emergency distress transmission on a 50 second interval. Between 406 transmission, the device will transmit a 121.5 MHz homing transmission and search for GPS.

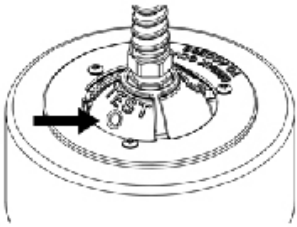
3.2. Deactivation

Procedure

Push antenna tip into the TEST switch recess and hold for 5 seconds to deactivate beacon. When the strobe stops flashing the device is deactivated.

CAUTION
Replace the batteries after the PLB is deactivated. Batteries should always be replaced after the PLB is operated for any purpose other than a test.

3.3. Self Test



Procedure

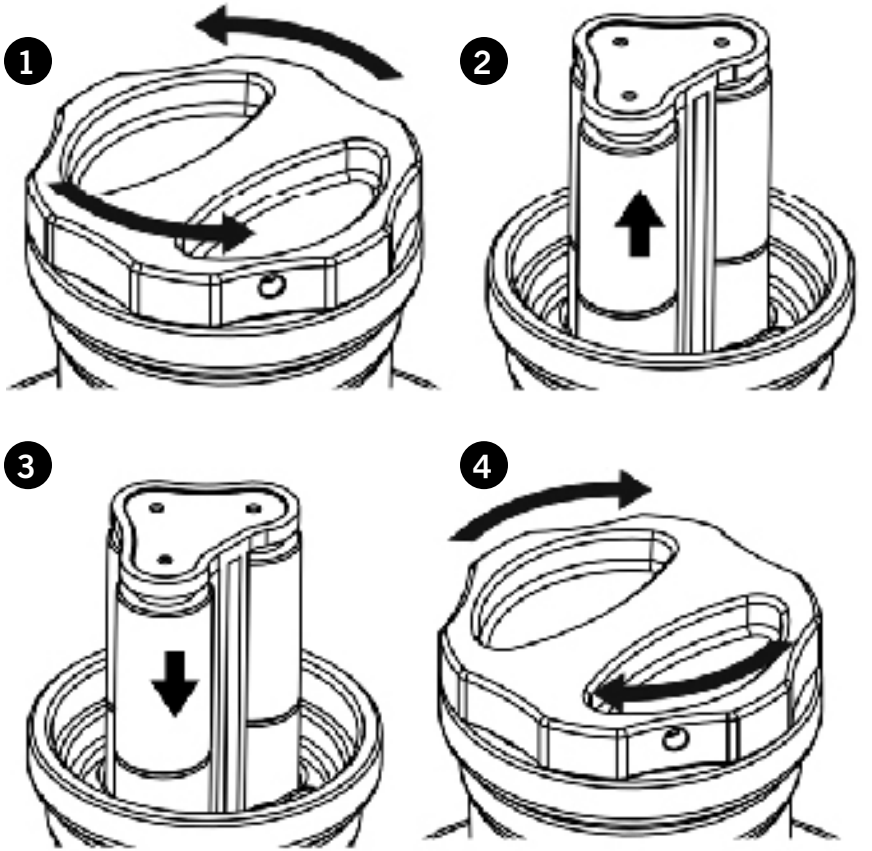
To run a quick test not including the GNSS position, push antenna tip into the test recess and hold for 1 second. Release after light flashes. The device will send a test transmission and perform internal checks.

Indicator Light:

1. Slow flash = test initiated
2. Solid, then off = test pass
3. Solid, then fast flash = hardware failure
4. Solid, then slow flash = low battery

3.4. Battery Change

1. Unscrew cap on the bottom of the device to expose the battery pack.
2. Disconnect battery pack and remove from battery compartment.
3. Connect fresh battery pack and install in battery compartment.
4. Screw cap back onto bottom of the device.
5. Perform a self test to ensure batteries are connected and working properly.



4. DOCUMENT REVISION HISTORY

Rev:	A	**Prepared By:**	Alex
Date:	5/24/17	**Approved By:**	
Description:	Initial release		

Rev:	B	**Prepared By:**	
Date:	2/26/18	**Approved By:**	
Description:	Update to reflect replaceable batteries		

Rev:	C	**Prepared By:**	Scott
Date:	4/8/18	**Approved By:**	
Description:	Reformatted document to match others		

Rev:		**Prepared By:**	
Date:		**Approved By:**	
Description:			

Rev:		**Prepared By:**	
Date:		**Approved By:**	
Description:			

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