User Manual

EPIRB

VOXMARIS

Simulador GMDSS

Vox Maris

GMDSS Simulator

Vox Maris is a technical training tool. It is a PC-based simulator to train sea-faring people in the use of GMDSS communications equipment, within a controlled and safe environment.

Vox Maris simulates the functionality of marine radio and satellite communications equipment according to the operational norms determined by The International Telecommunication Union. It also emulates real conditions of the marine radio communications such as noises, attenuation by distance in terrestrial and ionospheric propagation, and different types of sound effects from communication.

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Chapter I

Introduction

1   Introduction

The COSPAS - SARSAT is a service of polar-orbiting satellites through which are received and relayed distress alerts from satellite EPIRB determining the location of these.

An EPIRB (Emergency Position Indicating Radio Beacon) has the capacity to transmit a distress alert through the service of polar-orbiting satellites working in the 406 MHz or, if the vessel is dedicated to travel within the scope of Inmarsat system coverage, through the service of Inmarsat geostationary satellites working in the 1.6 GHz.

An EPIRB must be:

· installed on the ship in an easily accessible place
· ready to be manually released and be transported by a person to a survival craft
· able to escape and float if the ship is sinking, automatically activated when it is afloat
· able to activate it manually

1.1   Application

This EPIRB (Emergency Position Indicating Radio Beacon) is designed for use in maritime emergencies, and is approved for these contingencies. Use it only in situations of grave and imminent danger. Intentional false alerts may result in penalties.

1.2   Registration

This EPIRB must be registered with the appropriate national authority.

Failure to register may slow the rescue and lead to loss of life.

Every EPIRB is pre-programmed with a unique identity before it reaches the customer. This is done by the manufacturer or, in some cases, the distributor. The identity includes a 3 digit country code. This is the country that takes responsibility for storing that particular EPIRB's registration details. In most cases this is the country to which the vessel is flagged. The country programmed into your EPIRB can be found from its rear identity label. You **must** register with this country.
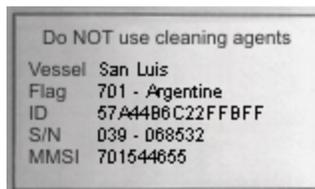
The label also contains the Vessel name, the unique identification number (ID), the serial number (S/N) and MMSI.

When you activate your EPIRB in an emergency, the nearest maritime search and rescue coordination centre (MRCC) will receive the message and decode the country

code (eg 701 Argentina). They will then access the registration database for that country and expect to find details of your vessel, its radio equipment and who to contact. If they fail to find this information, this may slow down any rescue.

How to register an EPIRB

Three registration forms are provided, two are for future use and one must be completed immediately. These forms are pre-printed with your EPIRB's identity; all you have to do is complete details of your vessel and provide contact numbers. Wherever possible the forms are also pre-printed with the correct mailing address and a faxback number. If your form does not have a mailing address, contact your supplier. When you have completed the form, you can choose to fax it or mail it.

1.3   How does the system work?

The picture below shows the operating fundamentals of EPIRBs - COSPAS / SARSAT system.
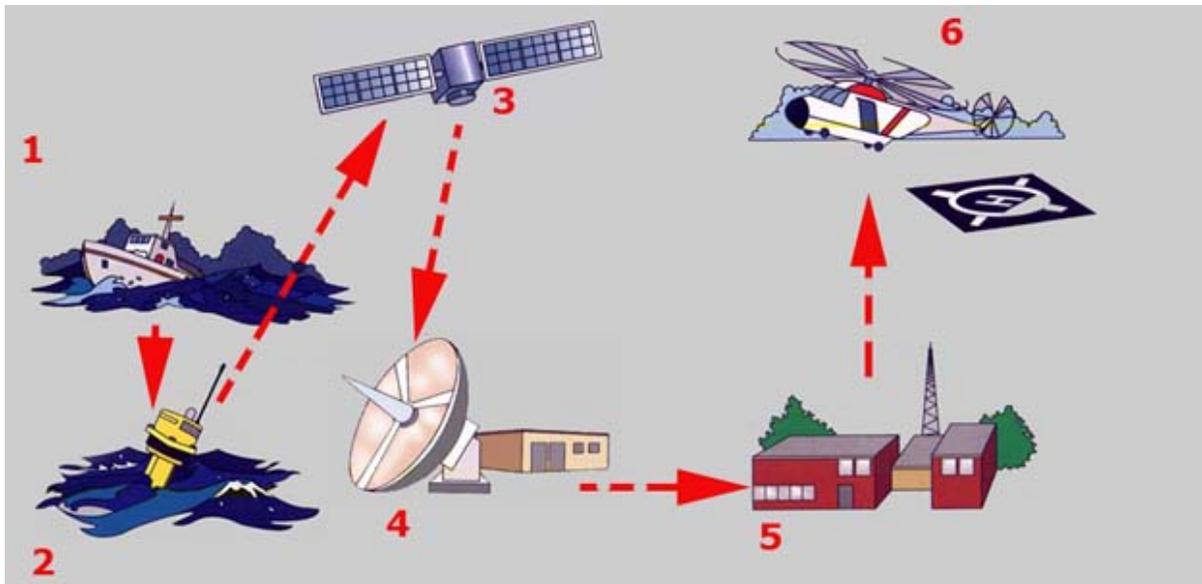
|	
1	In an emergency situation, the EPIRB is activated in manually or automatically mode.
2	The EPIRB transmits an "emergency code" and activates the strobe light indicating that is in operation.
3	The signal is received by a COP-SARSAT satellite and is sent to the nearest station.
4	The station calculates the EPIRB location and decrypts the identification code.

5	The central rescue station uses the identification code to determine the type of ship, its owner, size and contacts for emergencies. The Rescue Centres are contacted and alerted to start the rescue operation.
6	SAR organisms locates the EPIRB using the information of the exact position, the signal emitted 121.5 MHz and the strobe light.

1.4   Activation

In an emergency:

· Remove the EPIRB completely from its bracket or enclosure.
· Hold the lanyard spool and throw the EPIRB into the water where it will self-activate.
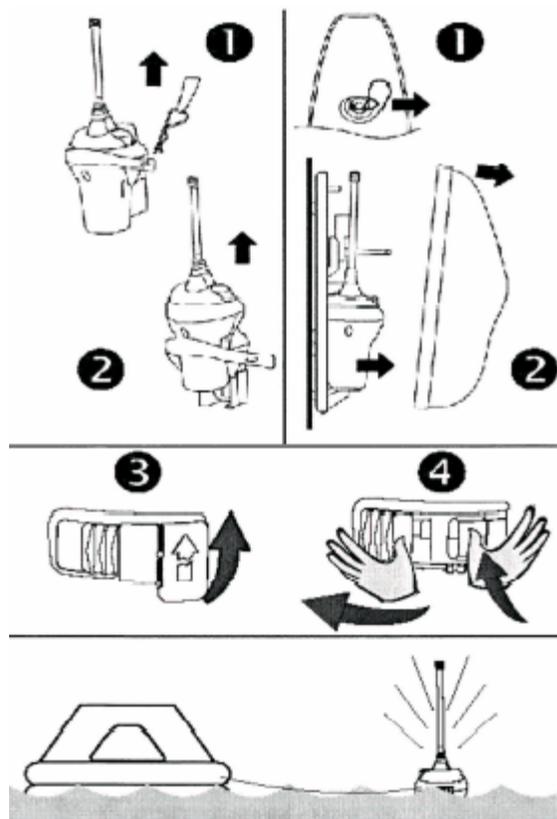
OR

· If time permits, pull the tear-off tab up, then press the activation button and slide the switch left.

OR

· Held down the Test button for 20 seconds.

Chapter **II**

Components - Funcionality

2 Components - Funcionality

The EPIRB is a powerful self-contained distress transmitter. It is powered by a Lithium battery that has a replacement interval of 5 years. An EPIRB is intended to be a one-shot device; once activated it will operate for at least 48 hours. It operates best while floating in water, but it can also be operated while on board a vessel or in a liferaft.

The key components of an EPIRB are:

Antenna

This is a flexible whip. It must be near vertical when operating.

Strobe light

These are the bright white LEDs visible through the clear lens dome. When the EPIRB is activated they will flash every few seconds.

When the EPIRB is activated the strobe will start to flash immediately, but the EPIRB will not make any distress transmissions for 50 seconds. This gives you a chance to turn off if you activated it accidentally. During this time the red LED illuminates continuously. When the red LED starts to flash, the 50 seconds delay has passed and distress transmissions have started.
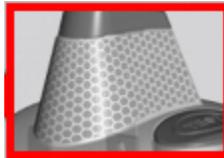
Red LED

Visible through the clear lens dome at the rear of the EPIRB. This stays on or flashes to show which mode the EPIRB is in.
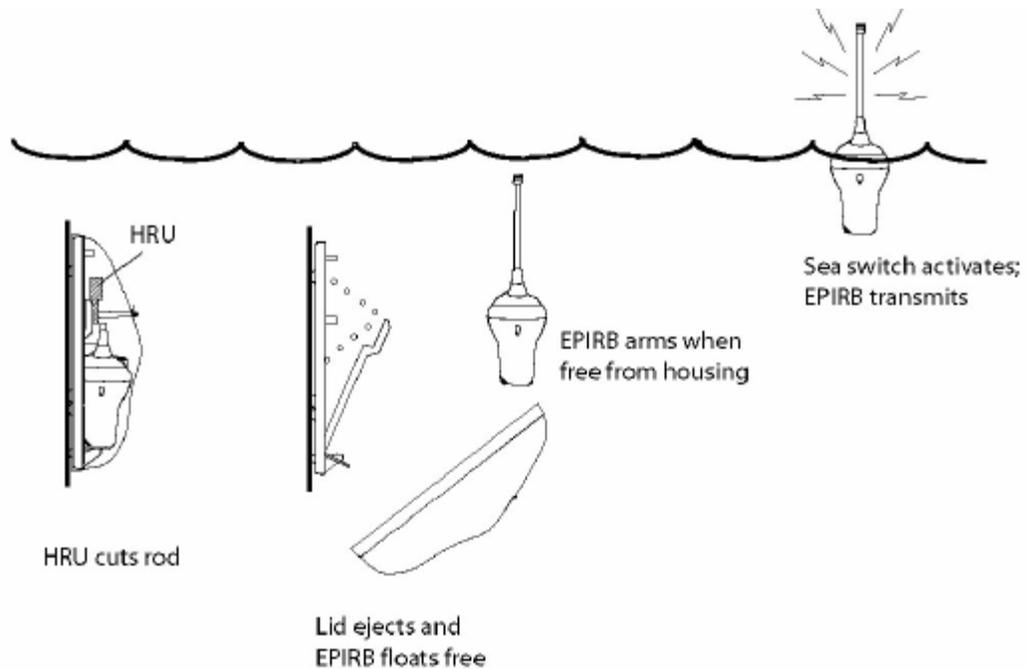
Green LED

Where fitted (beside the red LED), this flashes when the GPS acquires a position fix.

Sea switch

The two studs on the sides of the EPIRB are sea switch contacts. Submerge these in water to activate the EPIRB automatically.

HRU

HRU cuts rod

Lid ejects and
EPIRB floats free

EPIRB arms when
free from housing

Sea switch activates;
EPIRB transmits

Activation Switch

This slide switch is protected against accidental activation by a red tear-off seal.

The EPIRB can be activated manually pulling the tear-off tab upwards to release the switch, then push the switch in and move it fully left.

Test

This button enables the user to run test sequences to verify the readiness of the EPIRB.

As an important item of safety equipment, your EPIRB should be checked regularly. The EPIRB has a built-in test capability that can be used as a confidence check. This self-test confirms that the battery is healthy, that the GPS receiver and both distress

transmitters are functional and that the strobe light is operational. The self-test should be performed monthly, but not more frequently.

To do this, perform the following steps:

· Press the TEST button until the red LED lights, then release the button.

· The EPIRB will test its internal components and then make test transmissions at 121.5 and 406 MHz monitoring the transmitter output.

· If all tests are successful, the buzzer will sound and the red and white strobe LEDs will flash together a number of times.

· If any test is unsuccessful, nothing will flash and the red LED will go out.

This button also allows the activation of the EPIRB, if held down for 20 seconds.

Lanyard

Pull the lanyard spool down to free it. Use the cord to tether the EPIRB to a survival craft.