

# A BOATER'S GUIDE TO EPIRBs



BEFORE • DURING • AFTER  
YOUR NEXT VOYAGE

## INCLUDING

- SET UP
- TESTING
- ACTIVATION
- BATTERY HEALTH
- TERMINOLOGY
- AND MUCH MORE!



# EPIRBs, and the Basics

## What is an EPIRB?

An Emergency Position Indicating Radio Beacon or EPIRB is an emergency communication device of last resort. Designed for placement on vessels, these devices are built to become portable once a distress situation occurs. As such they are battery powered, lightweight, and featuring radio transmission capabilities. With the benefit of time, EPIRBs have advanced to feature new technologies and innovations, while maintaining the high standards for quality and safety needed to assist in rescue all over the world.



## EPIRB versus PLB: What is the Difference?

Generally speaking, for boaters an EPIRB is preferred over a Personal Locator Beacon (PLB). EPIRBs once placed in the water will operate autonomously by self-activating and floating upright in a transmitting position. Because of their simplicity, it is easy to educate crew members on their operation. With bigger batteries for longer transmission life, EPIRB are essential for long distance transits. PLBs require more effort to operate, as they must be manually activated and be held out of the water to function properly even though they are water proof. PLBs are however small enough to carry on your persons so they are well suited for single handed boaters or crew members who are routinely out of site of the Captain. The best beacon to have is the beacon you have with you when you need it.



**EPIRB**

Emergency Position Indicating Radio Beacon



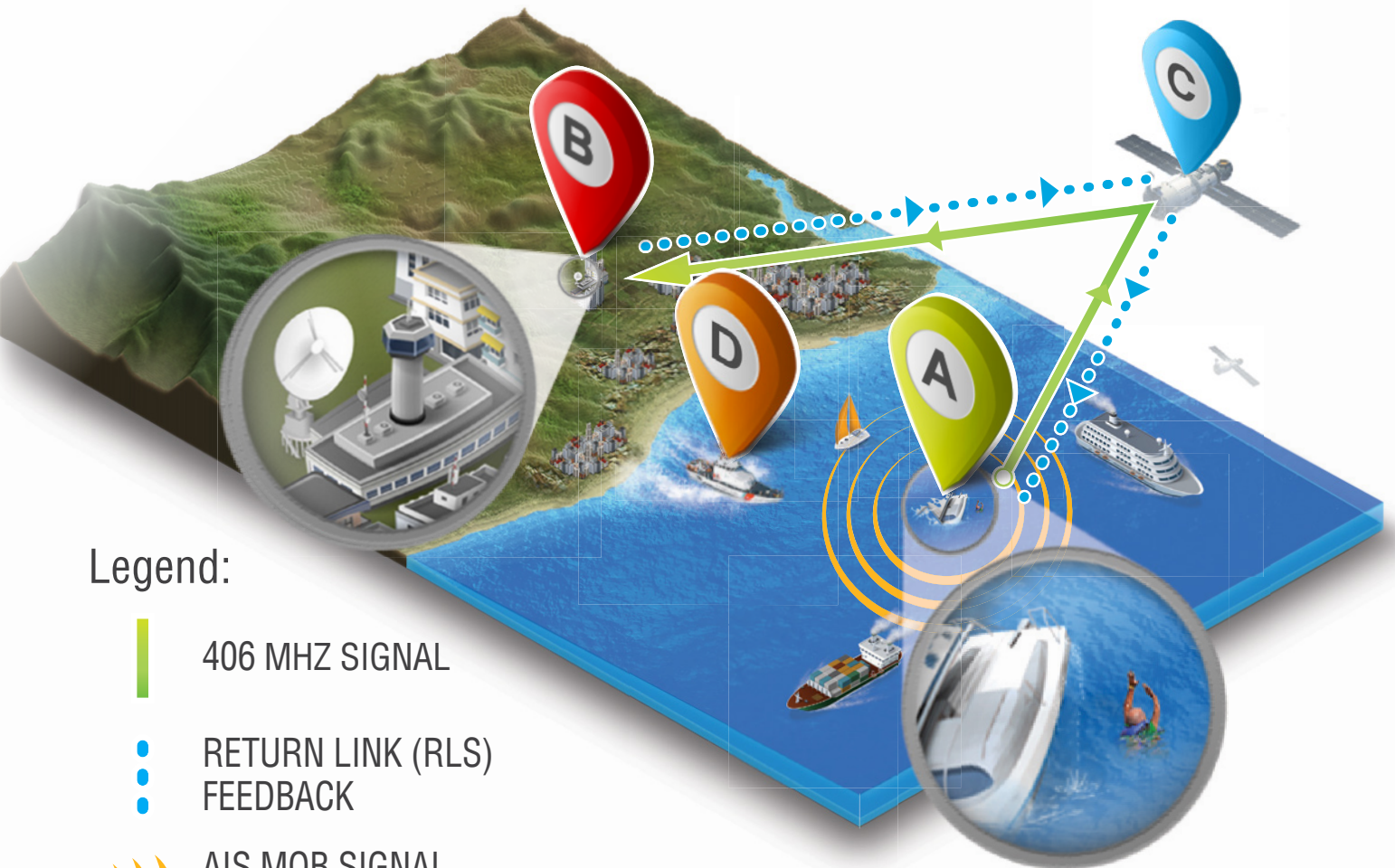
**PLB**

Personal Locator Beacon




	<b>EPIRB</b> Emergency Position Indicating Radio Beacon	<b>PLB</b> Personal Locator Beacon
<b>Buoyancy</b>	Floats in an upright position to transmit. Performs best while floating.	Not required to float. Floating versions only float so it can be retrieved if dropped in water. Unit needs to be held out of the water or attached high on a PFD for best transmission.
<b>Transmission Requirements</b>	Minimum of 48 hours at temperatures down to -4°F (-20°C). Longer in nominal temperatures.	Minimum of 24 hours at temperatures down to -4°F (-20°C). Longer in nominal temperatures.
<b>Activation</b>	Either manually activated OR Automatically activated when out of its bracket and in the water.	Manually activated.
<b>Strobe Light</b>	Required to have strobe light and IR strobe light.	Not required to have strobe light and IR strobe light, but most have at least a strobe.
<b>Mounting Options</b>	Mounted in a bracket (automatic or manual deployment), or carried in a ditch bag.	Worn or carried on a person.
<b>Registration</b>	Registered to the vessel.	Registered to the person.

# HOW DOES IT WORK?

406 MHz, Return Link Service (RLS), AIS, Global Coverage and User Awareness



Legend:

-  406 MHz SIGNAL
-  RETURN LINK (RLS) FEEDBACK
-  AIS MOB SIGNAL & 121.5 MHz HOMING

- A**  EPIRB IS ACTIVATED  
406 MHz
- B**  MISSION CONTROL CENTER COORDINATES RESCUE
- C**  RETURN LINK (RLS) CONFIRMATION
- D**  RESCUE RESPONSE IS SENT  
121.5 MHz  
 AIS  
AIS ENABLED EPIRBs WILL SEND OUT AN AIS ALERT SIGNAL TO LOCAL VESSELS

**Building a better network:** With RLS, 406 MHz, 121.5 MHz, and AIS EPIRBs create a dependable and proven link to rescuers.



# Category I vs. Category II

## Which EPIRB bracket is right for me?

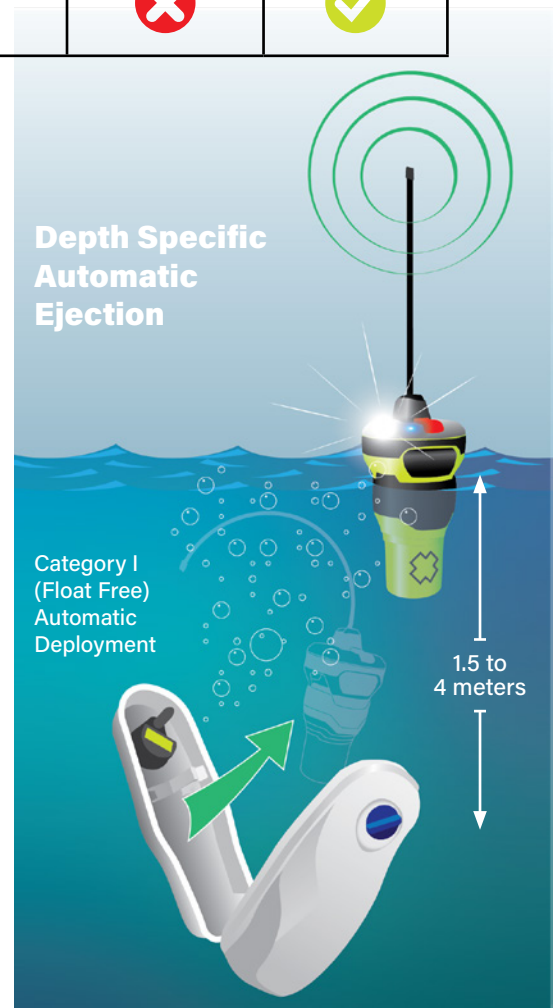
- Category I EPIRB - Automatic Float Free or manually deployed
- Category II EPIRB - Manually deployed

EPIRBs have different categories that define which type of bracket the EPIRB uses	Category I	Category II
Bracket automatically deploys EPIRB when vessel sinks allowing it to float free	✓	✗
Contains a Hydrostatic Release Unit (HRU)	✓	✗
Built-in deactivation water sensor to prevent false alarms	✓	✓
Manual activation of beacon	✓	✓
Protects EPIRB from outside environment	✓	✗
Recommended mounting inside in protected environment	✗	✓

The Category I bracket (Float Free) is designed to release an EPIRB when the Hydrostatic Release Unit (HRU) in the bracket is submerged in water to a depth of 5 to 13 feet (1.5 - 4m). The regulation specifies a range of depth for deployment to allow for different water temperatures which will affect the release depth. The Hydrostatic Release Unit needs to be replaced every two years.

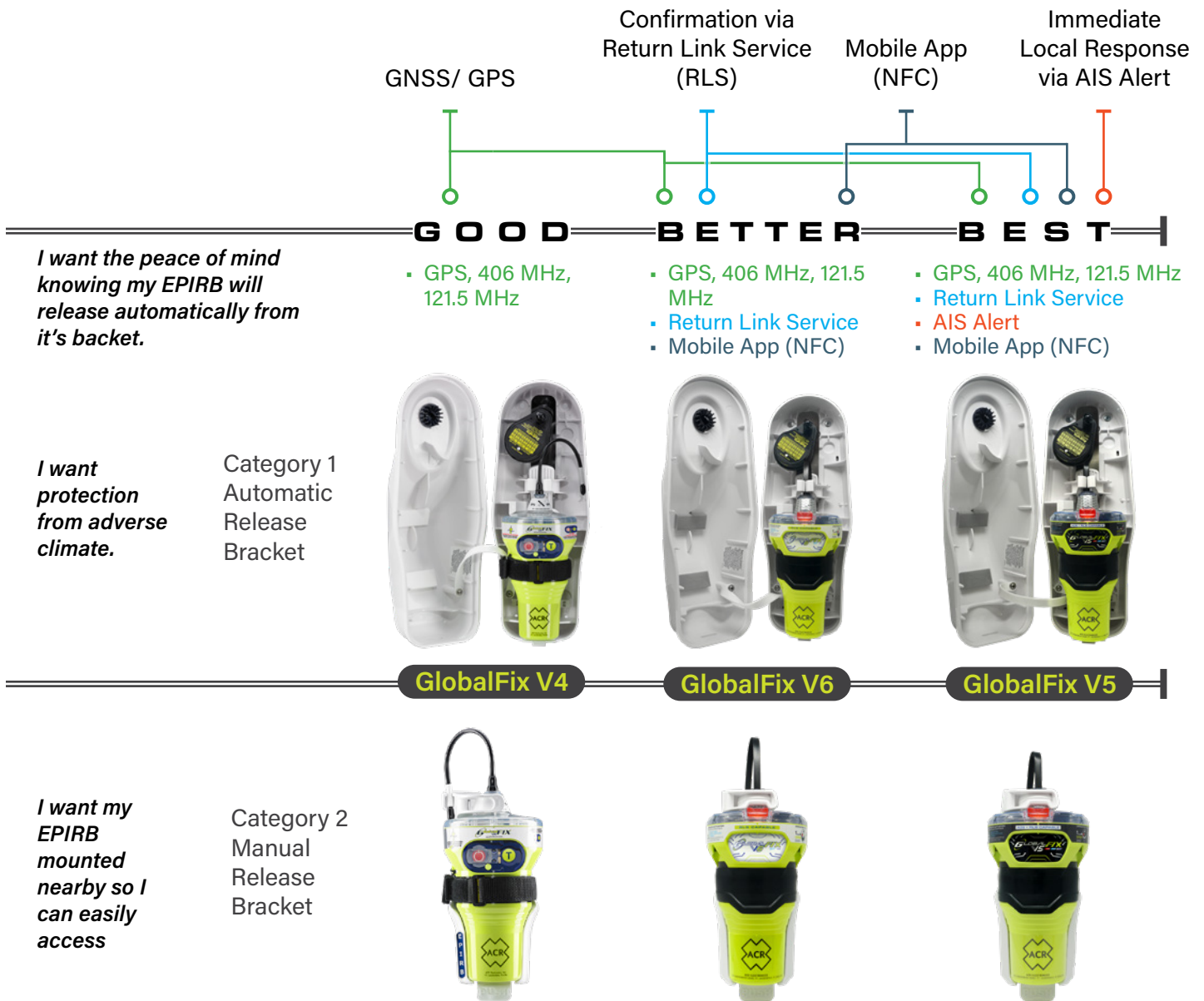
In an emergency, the EPIRB will release from its bracket, float to the surface and alert search and rescue that you need immediate help.

EPIRBs in a Category II bracket need to be manually deployed and activated. They can be mounted above or below deck, in a location that is protected from outside influences (i.e. green water, traffic impacts, cabin doors, etc). Some people prefer to keep their beacon in a RapidDitch™ Abandon Ship Bag without the bracket which is OK if the bag is going to be in a dry spot on the boat.



# What EPIRB is Right For Me?

## Some Key Factors for EPIRB Purchase



You may also want to consider an **ACR Electronics Personal Locator Beacon** as a backup for your EPIRB and the primary safety beacon for yourself when on deck alone.

**Personal Locator Beacons** have multiple applications and can be used on your boat, plane, or on any outdoor adventures you take.

# Mounting Recommendations

## Recommended

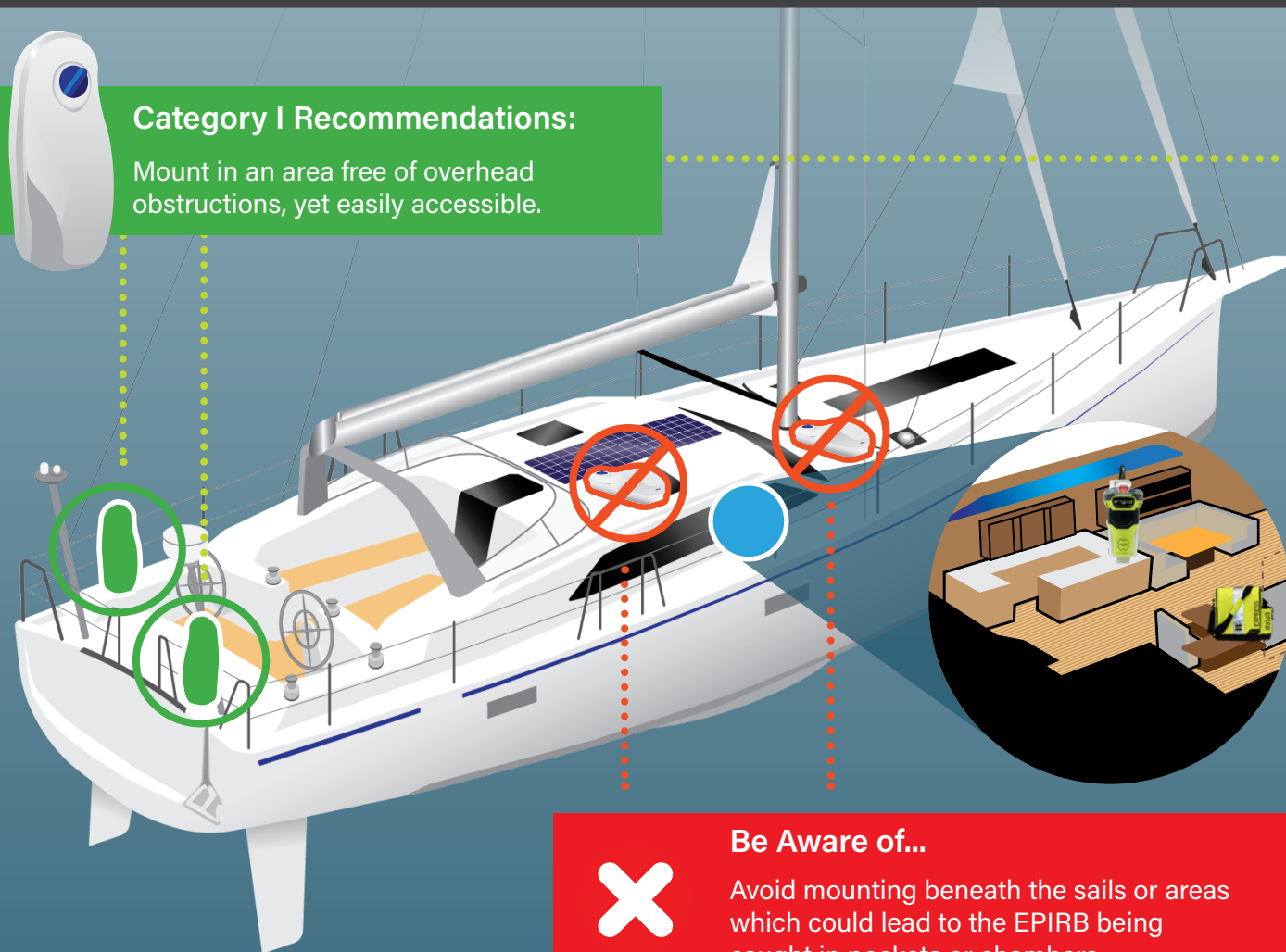
- Areas that are highly visible and in reach
- Inside DitchBag with all safety gear
- Next to life raft

## Not Recommended

- Avoid door jambs, walkways or obstructed areas
- Avoid areas prone to flooding & fires
- Avoid mounting Cat I EPIRB's inside the vessel cabin or with any overhead obstructions
- Compass safe distance 1m

## Category I Recommendations:

Mount in an area free of overhead obstructions, yet easily accessible.



## Be Aware of...



Avoid mounting beneath the sails or areas which could lead to the EPIRB being caught in pockets or chambers

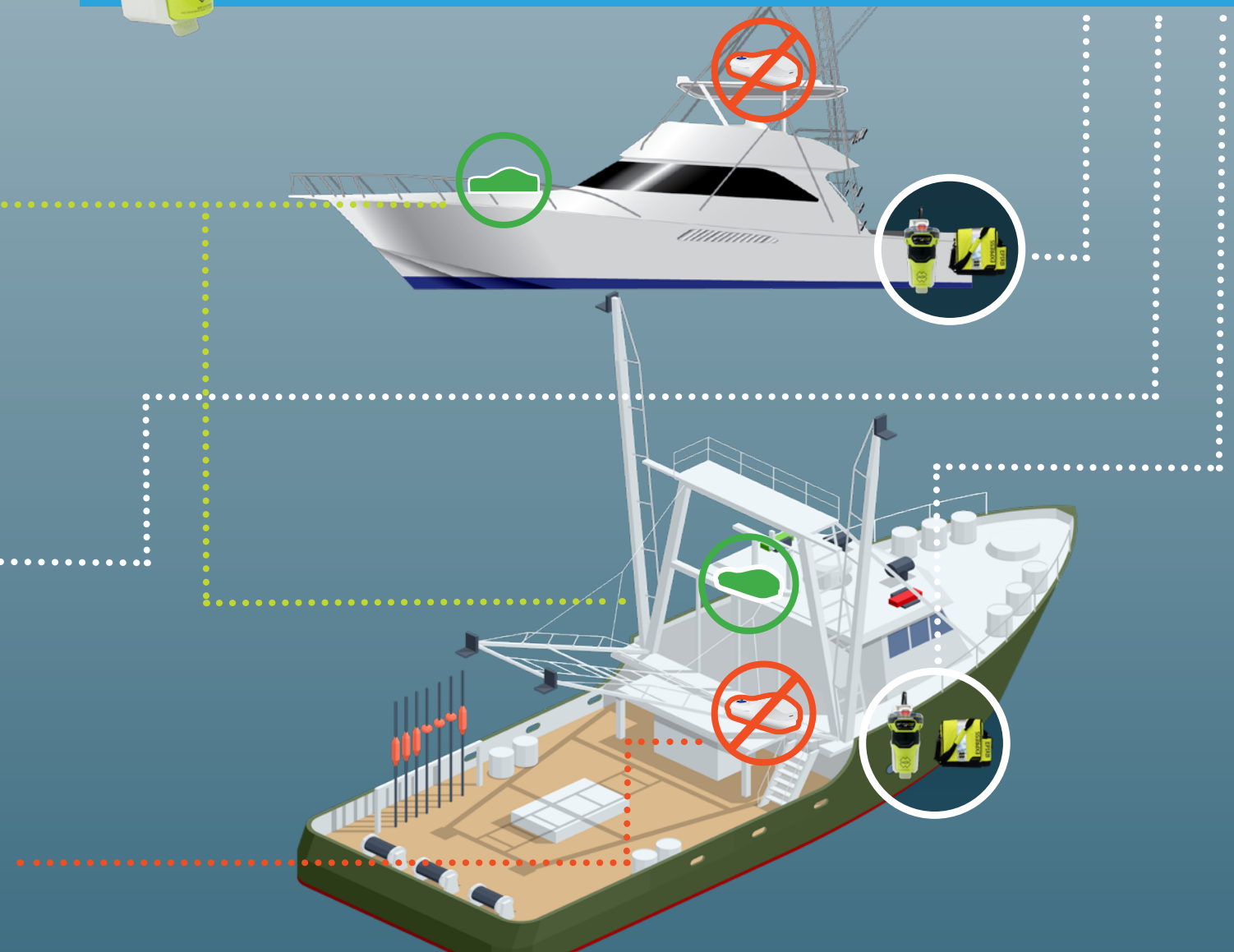
## Storage and Equipment Security

Be sure to store your EPIRB in a location where it can be easily accessed and also be safe from false or accidental activation. While the activation area may be shielded by a plastic cover, water activation may still be possible unless stored properly in the Category I or Category II Bracket.



## Category II Recommendations:

Additionally you can mount a Category II (manual release) EPIRB in the most accessible location. It is recommended to mount inside in a protected environment. Store your EPIRB in a Ditchbag supplied with essential safety gear so that all of your safety equipment is located in one place or mount in an accessible location. Avoid mounting on walkways.



## Here are some helpful tips!

**Magnetic Care** - Keep Category I and Category II brackets at least 3 feet from a compass or strong stereo speakers since the brackets include a magnetic switch.

**Beware RADAR (Cat 1)** - Don't mount EPIRBs in a radar transmitting beam.

**Stay in Place** - Remember; an EPIRB will transmit distress signals any time it is removed from its bracket and submerged in water.

**Just in Case** - Most EPIRBs go back to the manufacturer every five to ten years for a full test and a fresh battery. Replace auto-deployed hydrostatic triggers in Category I brackets every two years right aboard the boat.

# Global Registration

## You are **REQUIRED** to register your **EPIRB** with your local authority

It is a legal requirement to register your EPIRB with your national authority. Failure to do so may result in prosecution. Accurate registration will help the authorities if your EPIRB is activated and may speed up your rescue.

To register your beacon, contact your national registration authority via post, email or online. Provide your **15 digit HEX ID (UIN)**, **5 digit checksum** if required, your contact details and emergency contact information. Some countries also require additional information such as boat type and identification or alternative emergency contacts.

For UK registrations go to: [www.gov.uk/406beacon](http://www.gov.uk/406beacon)

For USA registration go to: [www.beaconregistration.noaa.gov](http://www.beaconregistration.noaa.gov)

For Australia go to: [www.amsa.gov.au/beacons](http://www.amsa.gov.au/beacons)

For New Zealand go to: [www.beacons.org.nz](http://www.beacons.org.nz)

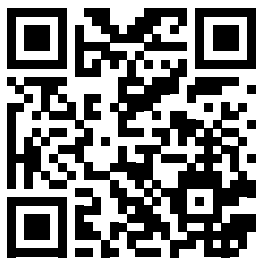
Details of other authorities may be found at:

[www.406registration.com/countriessupported.aspx](http://www.406registration.com/countriessupported.aspx)

**SUPPORT SEARCH AND RESCUE!  
REGISTER YOUR BEACON!**

For more information please visit:

<https://www.acrartex.com/register-beacon/>



Link Shortcut  
Scan Here

**It is important to make sure that registration details are kept up-to-date and that the authority is advised of change of ownership or disposal of your EPIRB.**

# Testing Your Beacon

## Why It's Important?

Monthly testing of your EPIRB is recommended to ensure it is in good working order if needed in an emergency.

## Types of EPIRB Tests?

### Self Test

Users are recommended to perform periodic self tests which consist of internal checks that verify operational functionality of the key beacon performance characteristics. See your beacon manual for the maximum number of tests and the recommended time interval between tests.

### GPS/GNSS Test

Users are recommended to perform periodic GPS/GNSS tests to verify internal GPS engine viability. A GPS test physically turns the GPS receiver on and downloads the beacon's position. See your beacon manual for the maximum number of GPS tests and the recommended time interval between tests.

## How to Test



For specific testing and activation instructions please refer to the EPIRB manual or manufacturer's website.

Below are links for ACR EPIRB manuals:

- [GlobalFix V4](#)
- [GlobalFix V5](#)
- [GlobalFix V6](#)



Link Shortcut  
Scan Here



# The Benefit of GPS/ GNSS, and AIS

Reduce the search radius down to 10m

&

Reduce the notification time from typically less than 1 hour down to a few minutes!

The Cospas-Sarsat satellite system uses 3 different satellites. The GEOSAR satellites are stationary over the equator, if your beacon has GPS coordinates, these satellites instantly alert Search and Rescue of your position in as little as 2-3 minutes.

The LEOSAR satellites are low earth orbiting and typically every hour one flies over your location. These satellites use Doppler shift principles to calculate your position to send to Search and Rescue. However, the notification time can be typically less than 1 hour while you wait for one to orbit over you.

MEOSAR satellites are Global Navigation Satellite System (GNSS) satellites in medium-altitude earth orbit (MEO). Their primary function is to provide signals from space that transmit positioning and timing data to GNSS receivers. The receivers then use this data to determine location. MEOSAR satellites offer near instantaneous global detection and improved location accuracy.

SIGNAL RANGE 121.5 MHZ - 12 KM / 7.45 MILES

SIGNAL RANGE AIS ALERT - 8 KM / 5 MILES

SIGNAL ACCURACY 406 MHZ - 2.5 KM / 1.55 MILES

SIGNAL ACCURACY

406 MHZ + GPS  
100 M / 0.06 MILES

AIS + GPS  
10 M / 0.06 MILES

Want more recommendations on what safety gear you should have on board?

Check out: [www.ACRelectronics.com](http://www.ACRelectronics.com)



# Product Support

## ACR Customer Portal

<https://www.acrartex.com/register/>

Information of where to register your beacon can be found at the above link on the ACR Electronics website.

The information provided during registration, including emergency contact details, allows Search & Rescue organizations to gather as much information as possible in the event of an activation. This information could include, for example, the type and size of vessel, the possible number of people onboard who could be at risk, including children or vulnerable adults or perhaps any potential health or medical requirements that may be required upon rescue. Gathering vital information could be key to saving your, or a loved one's, life!

So register your EPIRB and help Search & Rescue to help you

## Need Help with Your EPIRB?

Contact us with your questions or comments. We're open to help and assist resolving your emergency communication issue.

Our contact information is as follows:

-  **Online:** [www.acrartex.com/support](http://www.acrartex.com/support)
-  **Phone:** 1-954-981-3333
-  **Email:** [TechSupport@acrartex.com](mailto:TechSupport@acrartex.com)



