



EPRIB Basics

Garry Schneider, 25 Feb 2012

Below are some basic EPRIB guidelines drawn from Coast Guard, NOAA and manufacturers' information:

- For maritime operation buy a 406 MHz full size EPRIB with a built in GPS receiver: Consider a Category I, (auto releasing/activating) 406MHz EPRIB with integral GPS. 406 EPRIBs are also available that link directly to your on board GPS receiver. These will give out your position in the first burst before the GPS unit built into the EPRIB has been able to acquire satellites and obtain a fix. (Think of this model as adding suspenders to your belt.). Automatic releasing EPRIBs have a hydrostatic release system that ensures the EPRIB will be released/activated in the event of immersion. Category II EPRIBS are known as "manual deployment", since they do not have this hydrostatic release feature, but both are automatically activated by immersion in water once out of their brackets and both will float upright. Both categories can be activated manually, in or out of their brackets. Consider the need for a clear view of the sky when activating the EPRIB. Ensure the EPRIB is in an area where it can be readily accessed in an emergency.
- Register the new EPRIB unit, and any PLB unit, directly with the NOAA using the form provided with your purchase as **required**. Web registration at www.sarsat.noaa.gov/beacon.html is quicker and allows web updating as needed. Filling in all of the information relevant to your vessel and providing reliable emergency contact phone numbers can mean that a search will start for you several hours earlier than for an unregistered EPRIB. Ensure that your *registration* number corresponds to the *actual* number on the unit.
- You can establish web access to your registration with the EPRIB's unit number and a password. You may then update your registration with contact information, satellite phone number, trip plans, etc. on the web at www.beaconregistration.noaa.gov. The trip plan is not a "float plan" in the sense that a search will start for you if you do not close the plan. However, if you activate your EPRIB, SAR will have immediate access to your filed trip plan and it may give them crucial information regarding your likely position, course and number of people on board. Activation with a filed trip plan would enable SAR to immediately access resources for rescue rather than start by calling the contact information provided.
- **Read the instruction manual** with the 406 unit in front of you so that you will know how to activate it in the dark. The units do not all turn on the same way. Note that the standard requires *two* actions to activate the unit in order to avoid accidental activation. EPRIBS float upright, and they have lanyards to allow them to be attached to a life raft. They will use the water around them as a ground plane to ensure their transmitted signal's effective strength. Once the unit is turned on in a rescue situation, leave it on until you are rescued.

- Test the unit according to the manufacturer's recommended schedule and procedure. DO NOT fully activate the unit to test it.
- In the event of accidental activation, immediately shut off the unit, if possible. Then call the local Coast Guard and tell them of the activation or call the National CG SAR command center number: **1-800-323-7233**. Even a very short period of EPIRB operation can be enough for a satellite to receive an initial burst of information and trigger a search.
- Have the batteries replaced at a manufacturer approved facility every five years, or immediately upon return to shore should the unit be activated. These approved facilities will perform a number of checks to assure that your unit is fully operational and water tight.
- Rental EPIRBs are available from several safety equipment companies.
- The differences between an EPIRB and GPIRB are significant. Non-GPS beacons have an accuracy of 2.3 nm radius which is a 12.5 sq. nm search area and they average 1 Hour SAR notification time in calculating your position. In comparison, GPS beacons have an accuracy of .05 nm/110 yards radius which is a .008 sq. nm search area with an estimated 2-15 minute SAR notification time. GPIRBs eliminate the waiting time required for the traditional low-earth orbiting satellites to obtain fixes through Doppler shift. GPIRBs also update your GPS position in the distress message if your location changes from current or wind drift.
- In the event of a true "medical emergency", a situation that threatens loss of life or limb, activate the EPIRB. A MAYDAY call should include EPIRB activation. SAR will attempt to contact you via radio or sat phone. Ensure you also activate your DSC radio, since rescue may be more readily available from vessels in your area.

Personal Locator Beacons, PLBs

- PLBs are not accepted as the EPIRB required by ISAF Offshore Special Regulations.
- While a smaller Personal Locator Beacon, PLB, is an excellent safety item for each crew member to carry, it is not a substitute for a self-releasing, water-activated, Cat. I 406 EPIRB or a Cat. II 406 manually released EPIRB. The PLB units have only half the battery life of the EPIRB, some do not have a flashing locator light, most do not float upright, and they can only be activated manually. They are also registered to the owner rather than to the vessel. Thus their activation does not supply an identification number that brings up the vessel's description and equipment information. However, by updating the registration on line to indicate passage on a vessel, additional information can be provided to include the name of the vessel, sailor in a race, etc.
- Some PLBs have an internal GPS receiver located on the front of the long face of

the unit. To function properly, these must be held with the uncoiled 406 antenna pointing up but with the face of the unit also pointing up. This requires that the uncoiled 406 antenna be at right angles to the face of the PLB. This differs from the way we hold a normal hand held VHF unit with both the long axis of the unit and the antenna upright.

- There is a new category designated "SEND" devices for Satellite Emergency Notification Developed. Included in this category are "Spot" units, which have not been as extensively proven in rescue situations as the 406 EPIRBs. They have neither a 121.5, 406 locator signal nor a strobe light. They report your emergency to a private company which does not have all of the assets available of the COSPAS-SARSAT system. The new Iridium In-Reach and the Briartek Cerebrus are part of the SEND category. Some new GPIRBS and PLBs are pairing with systems that will allow an "I'm OK" message., such as the ACR 406Link. This incorporates a send message with the test function of the EPIRB unit. Technology is rapidly evolving and it is important to monitor changes.
- A number of devices have been developed to address the need for MOB notification. Some alerts to the helm have been available for a number of years. There is a new category soon to be available in the US that will utilize an AIS signal to provide an alert on DSC radio and AIS receivers.
- As of 1 DEC 2006 Inmarsat EPIRB service is no longer provided.
- As of Jan 2007, operation of Class A, B or S (121.5 MHz_ EPIRBS is prohibited in the United States. Newer direction finders are using the 406 signal.
- As of January 2009 the satellite system that was used to monitor the Class B, 121.5 MHz EPIRBS was shut down. Activating your old 121 MHz or 243 MHz EPIRB will now NOT result in a search!

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