

# EPRIB Basics

Garry Schneider, 2 March 2010

The following are some basic EPIRB operating rules and recommendations drawn from Coast Guard, NOAA and manufacturer information:

- For maritime operation buy a 406 MHz full size EPIRB with a built in GPS receiver or one that links to your on-board GPS: Ask for a Category. I, (automatic activating/deployment) satellite 406MHz EPIRB with on board (integral) GPS.
- Register the new EPIRB unit or 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](http://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 EPIRB. Ensure that your registration number corresponds to the unit registered. You can establish continuous web access to your registration with the unit number and a password and then update your registration with contact information, satellite phone, trip plans, etc. on the web at [www.beaconregistration.noaa.gov](http://www.beaconregistration.noaa.gov).
- Test the unit according to the manufacturer's recommended schedule and procedure. DO NOT 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 (50 sec. for a non-GPS beacon and 100 sec. for a GPS beacon) can be enough for a satellite to receive an initial burst of information and begin a search.
- Have the batteries replaced at a manufacturer approved facility every five years, or at the manufacturer's recommended interval, or immediately upon return to shore should the unit be activated during an emergency. Some units now have user-replaceable batteries.
- Once the unit is turned on in a rescue situation, leave it on until rescued.
- If the vessel carries more than one 406 EPIRB, do not activate more than one in the first 72 hours unless you have good reason to believe that the batteries or transmitter in the first unit are out of date or damaged.
- 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 activated 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 can only be activated manually. They are also registered to the owner and thus their activation does not supply a number that brings up the vessel's description and equipment information.
- The new "Spot" units have not been as extensively proven in rescue situations as the 406 EPIRBs. They have neither a 121.5 or a 406 locator signal nor a strobe light. They report your emergency to a private company which may not have all of the assets available that the CG can immediately call on. Perhaps the "Spot" system might best be carried as a back up until the SAR community has further experience with it. Some new GPIRBS are pairing with systems that will allow an "I'm OK" message.

- 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 finding capacity is 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 EPIRBS will now NOT result in a search!
  - 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.
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- PLBs are not an accepted as the EPIRB required by ISAF Offshore Special Regulations
  - Rental GPIRBS and EPIRBS are available from several safety equipment companies.
  - There are two ways of giving a GPS position to an EPIRB/GPIRB. One is from a boat provided external source before the EPIRB/GPIRB is removed from it's rack and the other is from an internal GPS that activates when the EPIRB/GPIRB is deployed. The internal GPS beacons have the advantage of not being dependant on the boat's GPS being operational and they continuously update the position of the beacon until SAR forces arrive or they are turned off. They can however take up to 10 minutes after EPIRB/GPIRB activation to acquire GPS position that is then added to the distress message which started at activation.
  - 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 position. In comparison, GPS beacons have a accuracy of .05 nm/110 yards radius which is a .008 sq nm search area with an estimated 2-15 minute SAR notification time. They eliminate the waiting time required for the traditional low-earth orbiting satellites to obtain a fix through Doppler shift and add and update GPS position in the distress message being sent by the GPIRB.

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