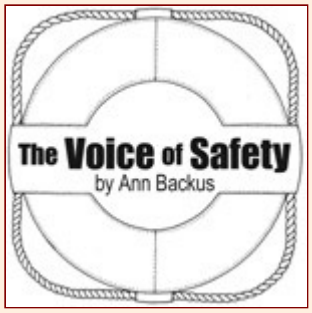
FISHERMEN'S VOICE

Homepage Back to January 2007 Issue

Replace Your 121.5 MHz EPIRB With the 406 MHz Model Now

by Ann Backus

Ann Backus, MS is an Instructor in Occupational Health at Harvard School of Public Health, 665 Huntington Ave., Boston MA 02115, 617/432-3327, abackus@hohp.harvard.edu



Search and Rescue (SAR) is serious business. Timeliness and accuracy are essential for a successful mission. Technology has made great strides in the last several years, to the point where satellites and transmitting beacons can team up to give rescuers very precise data about vessels, planes, and people in distress.

In order to take advantage of the new technology, use of the 121.5/243 MHz electronic beacons has been discontinued by the US Coast Guard. As of January 1, 2007, only the 406 MHz EPIRB meets the requirement for an emergency locator in the maritime environment. Consequently, if you carry or are required to carry an EPIRB, you must change over immediately to the 406 KHz unit, if you have not already done so. An even better upgrade would be to purchase a GPIRB, which contains a Global Positioning System (GPS), and therefore, the capability of transmitting exact longitude and latitude coordinates.

The NOAA website www.noaa.gov contains an informative slideshow entitled "The 121.5/243 MHz Phase-out." According to this slideshow, the 121.5 MHz beacons were electronic location transmitters originally designed for military aircraft in the 1950s. These beacons were part of the SARSAT system of satellites in which a signal from a 121.5 beacon would be picked up by one or several satellites, transmitted to a land-based terminal, then transmitted to a mission control center, and finally to a rescue coordination center. As clever as this was, the process was not very rapid or very accurate.

What do we gain with 406 MHz?
Currently, NOAA reports that only 1 in 8 121.5 MHz signals actually comes from beacons; with the 121.5 MHz signals, before an emergency response can be launched, the beacon-initiated signals have to be sorted out from the false signals. Precious search and rescue time is lost. The 406 MHz EPIRBs are digital instruments, and as such, have identification codes that will allow the COSPAS/SARSAT system to distinguish between signals from beacons and interference signals from miscellaneous unrelated sources. The 406 MHz units also have a unique identifier/serial number for each beacon, which, when properly registered by the vessel owner, gives the rescue coordinating center information about the vessel and the contact information of the owner.

The coverage for the 406 MHz units is global and instantaneous. Reception and transmission of the 406 signal is not hindered by the "line of sight" requirement of the 121.5 unit. The global capability of the 406 MHz unit cuts down the search area from 50 square miles to 2-3 square miles, and reduces search time from about 12 hours to 2-3 hours, according to NOAA. A new version of the 406, the GPIRB, has GPS capability, and transmits the longitude and latitude coordinates as a component of its signal. A signal from a GPIRB allows rapid SAR response to the exact location of the distress. A 406 MHz GPIRB is the unit of choice for the quickest and most accurate response and is recommended by the U.S. Coast Guard.

Who are the players?
The National Search and Rescue Committee, made up of the Departments of Interior, Defense, Transportation, Commerce (NOAA), Homeland Security (USCG), NASA, and the Federal Communications Commission, is implementing the phase-out of the 121.5/243 MHz units. As a component of the phase-in of the 406 MHz EPIRB, the US Coast Guard has mandated that 406 MHz EPIRBs be installed on certain commercial fishing

vessels, SOLAS class vessels, and large passenger-carrying vessels as of January 1, 2007. By the time you read this article, if you are required to have an EPIRB, it must be one that transmits on 406 MHz frequency.

Cost of EPIRBs and GPIRBs
Local marine supply stores have the 406 EPIRBs in stock. An autorelease 406 EPIRB without GPS can be purchased for under $700. Given that EPRIBs with an integrated GPS (Global Positioning System) navigaton receiver are now available, the best choice is a 406 EPIRB with GPS; they sell for under $1000. The additional $300 is well worth the expense given that the EPIRB with GPS (sometimes referred to as GPIRB) offers the SAR team the exact longitude and latitude coordinates of the beacon, and therefore cuts response time to the time it takes to get a plane, helicopter, or Coast Guard vessel to the location of the beacon.

The Importance Of Registration
In order to be useful, the owner must register the unique serial number of their 406 EPIRB. Registration instructions are available with the unit, as well as online. The data provided by the owner of the EPIRB during registration allows the rescue team to know the name of the owner and which vessel is in distress. As mentioned above, beacons with an integrated GPS provide exact coordinate location, but they, too, must be registered.

Disposal Of Old 121.5MHz Units
Before disposing of a unit, be sure it is disabled by removing the batteries and recycling them or disposing of them according to local regulations. If you have questions about disposal, you may consult your local USCG marine safety office.

For More Information
The NOAA/SARSAT office can be reached by phone at 1/301-457-5678 x 114 or by letter to NOAA/SARSAT, E/SP3, Room 3320, FB4, 5200 Auth Road, Suitland, MD 20746. There are various very helpful websites available, such as: www.sarsat.noaa.gov, and www.navcen.gov/marcomm/gmdss/default.htm. The GMDSS (Global Maritime Distress and Safety System) website has a large amount of information and a clickable EPIRB Information section on the menu bar.

Homepage Archives Subscriptions Advertising