

# EPIRB vs. GPIRB: Faster rescue results

With recent improvements in global positioning technology, fishermen now have the opportunity to better their chances of recovery on the high seas by upgrading their 406 MHz EPIRB (Emergency Position Indicating Radio Beacon) to a 406 MHz GPIRB, which is the acronym for an EPIRB with Global Positioning System (GPS) capabilities.

As most fishermen know, the ability to determine the position of a 406 MHz EPIRB sending an emergency distress signal is based on the movement of satellites in orbit above the earth.

The land-based receiver of the emergency radio signal hears the greatest number of signal bursts from the emergency beacon when the satellite receiving those bursts is directly above

the emergency beacon. As the satellite moves away, the receiver notices that the frequency of the bursts drops off.

This is analogous to what happens when we hear a train. When the train is closest to us, the pitch or frequency of the whistle is highest. As the train moves away, the pitch of the whistle drops quite abruptly. This frequency drop is known as the Doppler Shift and was first described by German physicist Christian Doppler in 1842.

It may actually take us a while to notice when a train is nearby. Once we realize it, we may know the general location of the train and the direction in which it is moving, but not its exact location.

Similarly, EPIRBs provide the land-based receiver with a general location and direction of movement of the radio beacon on a vessel or in the sea.

However, the time required to get a fix on the location is somewhat long, and the location of the radio beacon cannot be pinpointed more exactly than about three nautical miles.

## Enter the GPIRB

Now, however, manufacturers have begun to integrate GPS technology into the 406 MHz EPIRB beacon. An integrated unit broadcasts not only the distress signal as the EPIRB does, but also – within minutes – broadcasts the *exact*

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latitude and longitude intercept, accurate to within 30 meters, which is roughly 100'.

Moreover, the "lat/long" location is updated frequently as long as the beacon is operable.

The advantages of the GPIRB are many. The fix is quick, the location is exact, and the location is updated. With GPS information, search and rescue teams can know the exact location of the GPIRB and, presumably, of the fishermen in their life raft – hopefully with survival suits on.

## Requirements

The Commercial Fishing Industry Vessel Safety Act of 1988 requires all commercial fishing vessels operating on the high seas, meaning beyond the three-mile territorial sea line, to carry a 406 MHz EPIRB, Category I or Category II.

Vessels less than 36' in length must carry a 406 MHz Category II unit, while vessels greater than 36' must carry a Category I unit. Vessels longer than 36'

with a builder's certificate stating that the vessel buoyancy is such that the flooded boat will remain afloat, may carry a 406MHz of either category.

GPIRBs come in both Category I and Category II models.

## What you should know

Anyone looking to purchase either an EPIRB or a GPIRB should be aware that the instruments in the satellites that process homing signals from emergency beacons using the 121.5 MHz frequency are being phased out of the Cospas-Sarsat Program.

Russian satellites will no longer recognize 121.5 MHz in 2006 and US satellites won't as of Feb. 1, 2009. EPIRBs using this frequency as a homing frequency are still on the market but they will not be useful in a few years.

It's also important to understand that units with a GPS interface, rather than an integrated GPS, plug into an onboard GPS system. They will transmit the initial GPS location but cannot update it once separated from the onboard unit.

A 406 MHz GPIRB costs between \$950 and \$1,000, about \$300 more than a standard 406 MHz EPIRB. However, that extra \$300 may mean the difference between rapid rescue and protracted rescue, which in these winter months can be the difference between life and death.

It might be a good New Year's resolution to decide to purchase a GPIRB.

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## \$30,500 in SCHOLARSHIPS

### SPECIAL 30th ANNIVERSARY MAINE FISHERMEN'S FORUM SCHOLARSHIP APPLICATION

P.O. BOX 288 TEL: (207) 442-7700  
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The Maine Fishermen's Forum Board of Directors has approved the establishment of a scholarship fund to benefit immediate family members (son/daughter, or a grandson/granddaughter) of someone actively involved in Maine's fishing industry. Undergraduates attending a two or four year college who are in at least the second year of their program will be eligible. Applications will be accepted through February 28, 2005. Thirty (30) scholarships in the amount of \$1000 each, plus one additional special \$500 scholarship donated by US Sen. Olympia Snowe, will be awarded by a random drawing to be held during the 30th Annual Maine Fishermen's Forum. Sorry, previous winners are no longer eligible.

Do you qualify? Two requirements:

- Are you a Sophomore or in at least your second year of your program?
- Do you have an immediate family member actively participating in Maine's seafood industry?

What do you need to apply? Two requirements:

- Complete the following application and send to the address at the bottom.
- Provide a transcript or letter of current attendance along with the application

#### STUDENT INFORMATION

Student Name \_\_\_\_\_  
 Street/Mailing Address \_\_\_\_\_ Home Phone \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ Email \_\_\_\_\_

#### SCHOOL INFORMATION

College/University Name \_\_\_\_\_ Expected Year of Graduation \_\_\_\_\_  
 Registrar's Street/Mailing Address \_\_\_\_\_ School Phone \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 School Standing (circle one) Freshman Sophomore Junior Senior

#### MAINE SEAFOOD INDUSTRY FAMILY MEMBER INFORMATION

Name \_\_\_\_\_ Relationship \_\_\_\_\_  
 Street/Mailing Address \_\_\_\_\_ Phone \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ Email \_\_\_\_\_  
 Vessel Name or Commercial License Number \_\_\_\_\_  
 Describe participation in the Maine seafood industry \_\_\_\_\_

Information should be sent before the February 28, 2005 deadline to:

**Maine Fishermen's Forum Scholarship Committee, P.O. Box 288, Bath, ME 04530**

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It might be a good New Year's resolution to decide to purchase a GPIRB. By putting \$83 aside each month in 2005, you could recover the entire cost by next December. If you ever had to use it, you would recover the cost in minutes.

### FISH SAFE:

- Purchase a GPIRB if you don't have one already, even if it is not required for your vessel.
- Replace your existing EPIRB with a GPIRB.
- Test these units monthly, as required.

## Bluefin

*Continued from page 15A*

Manuel said the influx of fishermen into the area had been a big shot in the arm for the local economy and the WBA wanted them to know they were welcome.

He proposed forming an alliance of bluefin associations that can speak with a clear, unified voice and lobby Congress to amend the Magnuson-Stevens Fishery Conservation and Management Act to require NMFS to publish proposed regulations prior to the start of the fishing year and to get NMFS to set the same catch reporting standards for the recreational fishery as now applies to the commercial fishery.

"I told them we're going to have our differences on quota issues," Manuel said, "but it's important that we stick together." ■