



## Monthly EPIRB Inspection Procedures

As Recommended by NOAA and the U.S. Coast Guard

*The following information has been developed by the NOAA SARSAT Office and the U.S. Coast Guard Office of Search and Rescue to provide EPIRB owners and maintainers a generic list of recommended procedures for conducting monthly EPIRB inspections. These inspection procedures are intended to provide general guidance and do not supersede the recommended procedures provided by the International Maritime Organization or by the EPIRB manufacturer. All owners and maintainers should follow the inspection and self-testing procedures of their EPIRB manufacturer accordingly.*

### INTRODUCTION

EPIRBs are subject to possibly the most demanding requirements of any shipborne equipment. Despite prolonged periods of continuous exposure to extreme weather conditions, with minimal maintenance attention, they are required to be ready to work without flaw, first time, in an emergency. EPIRB equipment design has developed to the point where exceptionally high effectiveness and reliability have become the norm, but such a demanding level of reliability can only be assured over a long period of time by a program of testing and maintenance which, although it need not be frequent or expensive, must be rigorously applied and conducted.

For all compulsory vessels that are required to carry 406 MHz EPIRBs in U.S. waters (that is, all vessels over 300 gross tons, all commercial fishing vessels regardless of tonnage operating in waters greater than 3 nmi offshore, and all inspected vessels engaged in transporting 6 or more persons for hire regardless of tonnage) mandatory testing of a vessel's 406 MHz EPIRB is required on a monthly basis.

When inspecting and conducting the monthly test on an EPIRB it is important to exercise

extreme caution so as not to produce an inadvertent activation. Many false distress alerts continue to be caused by human error during the testing and maintenance of EPIRBs and their ancillary devices, as well as through mishandling by inexperienced persons. Vessel inspectors, EPIRB manufacturers, and service engineers report a worrying number of cases where equipment has been found incorrectly setup, or poorly maintained. This is of particular concern since it is unlikely to be apparent to the crew that the equipment may not work in an emergency.

***Throughout the inspection and testing process, great care must be taken to avoid the transmission of a false distress alert.***

### INSPECTING YOUR EPIRB

Inspecting your EPIRB is one of the most important tests you can provide to your vessel's suite of safety equipment. The EPIRB is exposed to the elements at all times yet must be able to perform properly at a moment's notice. For that reason, your EPIRB and its ancillary devices should be inspected monthly to ensure that they are always ready to work.

## I. Inspection of the EPIRB Housing

The first test of an EPIRB should be to inspect the unit housing the EPIRB. 406 MHz EPIRBs should be fitted in an unobstructed 'float free' mounting and positioned away from any overhead obstructions to reduce the risk of the EPIRB becoming trapped when released. In such a mounting the EPIRB should be held in place by a Hydrostatic Release Unit (HRU), an Automatic Release Mechanism (ARM) or a manual release bracket. In the case of the HRU, it is designed to sense the increasing water pressure if a vessel sinks and at a predetermined depth (usually 3-5 meters) the HRU releases the mount, allowing the EPIRB to float to the surface.

### Category I vs. Category II Beacons

If the EPIRB is a Category I beacon, the mounting unit will allow the EPIRB to switch itself on as it is released, so it will operate automatically if the vessel sinks.

Category II EPIRBs differ in that they are not released automatically via the HRU. They activate manually or thru immersion in water.

## II. Expiration Date

If the EPIRB is retained in its mount or casing by an HRU, then the expiration date or service date label on the HRU should be noted and clearly visible. ***These units must be replaced every 2 years*** including any associated plastic bolts, rods, springs, and/or spacing washers. The HRU should be free of any signs of corrosion, cracking, water ingress, etc. Any damage should be repaired in accordance with the manufacturers procedures, replaced.

## III. EPIRB Lanyard

Presence of a firmly attached lanyard in good condition should also be verified. The lanyard should be neatly stowed, and must not be tied to the vessel or the mounting bracket.

## IV. Checking for Physical Damage

The EPIRB should be examined thoroughly for any physical damage. If there appears to be any damage, corrosion, cracking, water ingress, etc. the EPIRB should be replaced with a backup immediately. In turn, this replacement EPIRB should meet each of the inspection and testing criteria listed here as well.

## V. Proper Registration

An inspection of the EPIRB registration decal from NOAA should also be inspected for all U.S.A-coded EPIRBs. The registration decal should be properly placed on the EPIRB and clearly visible for U.S. Coast Guard inspectors. If there appears to be any damage to the decal, NOAA should be notified immediately. U.S. law requires that all 406 MHz EPIRBs must be properly registered with NOAA. Every two years NOAA will seek an update of the registration information to ensure accuracy. However, if at anytime the registration information does change (such as a new phone number, new address, new emergency contact, etc.) NOAA ***must*** be informed immediately.

## VI. EPIRB Battery

The expiration date of the EPIRB's battery should also be inspected. This is usually given on the EPIRB manufacturer's label or on another plate affixed to the EPIRB. Battery life for most EPIRBs is 5 years. ***The battery must be replaced on or before the expiration date or if the EPIRB has been used in an emergency regardless of the length of time.*** EPIRB batteries are designed to operate the beacon for a minimum of 48 hours and therefore must always be fully charged.

### SELF-TESTING YOUR EPIRB

After the EPIRB has been properly inspected, a self-test of the EPIRB can be conducted following the instructions provided by the EPIRB manufacturer. It is important that the manufacturer's instructions be followed to

ensure that your EPIRB is working properly and to avoid an accidental activation.

## **VII. Self-Test Switch**

Most EPIRBs have a visible test switch that is usually spring loaded so it cannot be left on inadvertently and thus reduce the life of the battery. A light will indicate that the test circuits are operating correctly. Sometimes this light will also activate the strobe light. It is recommended that the self-test switch be held for no more than 2 flashes of the strobe light or no longer than 1 minute after the first self-test mode burst transmission.

When operating a 406 MHz EPIRB self-test, the EPIRB is allowed to radiate a single burst which is specially coded so that it is ignored by the COSPAS-SARSAT system. ***The EPIRB must never be tested by actual operation.*** If it is accidentally activated in the transmit mode, then it should be turned off at once and the false alert cancelled by calling the nearest U.S. Coast Guard Station and have them contact the nearest Rescue Coordination Center.

## **VIII. Log-Keeping**

For compulsory vessels all EPIRB tests must be logged. Usually this is recorded in the GMDSS Station Log which requires compulsory vessels to conduct and record tests of the vessel's GMDSS system on a routine basis. The GMDSS Station Log is required under U.S. Code of Federal Regulations 47, Part 80.

## **IMPORTANT!**

When used in an emergency, some EPIRBs must be floating in the water for their antenna to operate at peak efficiency. The EPIRB manufacturer's instructions will indicate if the EPIRB should be operating afloat or if it can be kept inside the liferaft. In either event, once the EPIRB is activated in a distress situation leave it switched on until you have been rescued or until the batteries are exhausted. There have been many cases reported where people kept turning the EPIRB on and off in an attempt to prolong

the life of the battery. Doing this could actually be a detriment to the EPIRB and the satellites that are trying to determine your position. ***Once the EPIRB is turned on, leave it on...the satellites will hear you!***

## **FOR MORE INFORMATION**

For more information on specific EPIRB testing and inspection procedures please contact your EPIRB manufacturer.

For more information on EPIRB registration and the Search & Rescue Satellite-Aided Tracking (SARSAT) system, please visit NOAA's SARSAT website at: [www.sarsat.noaa.gov](http://www.sarsat.noaa.gov), or call 301-817-4515 (toll-free at 1-888-212-7283).

Additional information may also be found at the U.S. Coast Guard's Office of Search & Rescue website at: [www.uscg.mil/hq/g-o/g-opr/sar.htm](http://www.uscg.mil/hq/g-o/g-opr/sar.htm) or by calling 202-267-1943.