



# National Transportation Safety Board

Washington, D. C. 20594

Safety Recommendation

*Log M-351*

Date: February 1, 1989

In reply refer to: M-89-6 through -8

Honorable Dennis Patrick  
Chairman  
Federal Communications Commission  
1919 M Street, N.W.  
Washington, D.C. 20554

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On January 18, 1988, the fishing vessel WAYWARD WIND with six crewmembers arrived about 25 miles south of Kodiak Island, Alaska. A crewmember then notified the captain that the after deck was under water. The captain ordered the deckhand to tell the crew to don exposure suits, and the mate on watch sent a distress message to the U.S. Coast Guard. The captain attempted to pump one or more compartments, but the vessel continued to sink by the stern, and the captain recognized that the vessel could not be saved. After the crew had donned their exposure suits, they entered the water. The captain's wife took the vessel's class B emergency position indicating radio beacon (EPIRB) with her into the water. The vessel sank stern first about 1/2 hour after the crew entered the water.

Alerted by the distress message, a Coast Guard C-130 aircraft arrived at the search area, located the source of the EPIRB signal, and dropped flares to mark the location of the signal. Later, a Coast Guard helicopter found the captain's wife and the deckhand. The bodies of the remaining four crewmembers were recovered a few hours later by the fishing vessel, COUGAR. The estimated value of the WAYWARD WIND was \$500,000.<sup>1</sup>

The class B EPIRB, which the owner of the WAYWARD WIND voluntarily had on board, transmitted its distress signal on the proper frequency once it was activated by the crewmember. The C-130 pilot reported that the EPIRB signal was weak; this was probably due to the fact that the vessel owner had allowed the battery (with a recommended service life of 2 years) to remain in the EPIRB more than 10 months beyond the recommended battery change date. Nonetheless, the C-130 was able to detect and locate the EPIRB when it approached the position reported by the WAYWARD WIND. The National Transportation Safety Board believes that in this case, the EPIRB transmitted effectively and its use saved two lives.

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<sup>1</sup>For more detailed information, read Marine Accident Report--*Sinking of the U.S. Fishing Vessel Wayward Wind in the Gulf of Alaska, Kodiak Island, Alaska, January 18, 1988* (NTSB/MAR-89/01).

An examination of the EPIRB revealed that it would not float upright as assembled, but floated on its side with its antenna in the water. Removal of a styrofoam spacer under the battery allowed the battery to settle lower in the EPIRB and the EPIRB then floated upright. Operating instructions obtained from the manufacturer after the accident clearly showed that the styrofoam spacer should be placed on top of the battery. However, there might be occasions when changing the battery that the directions are not readily available. Also, this case illustrates how easy it is to assemble this model EPIRB incorrectly and to destroy its capability to float upright and transmit the distress signal. Directions for installing batteries in battery-operated items ranging from children's toys to complicated electronic equipment commonly are embossed or bonded on such devices. The Safety Board believes that an item of vital safety equipment like an EPIRB should have the directions for installing the battery embossed or bonded on the EPIRB and that the directions should carry a prominent warning that the battery must be connected before placing the EPIRB in service.

While the Federal Communications Commission (FCC) regulations for EPIRBs (Title 47 Code of Federal Regulations (CFR) 80.1051-80.1055) require class A EPIRBs to float upright and to activate automatically, the regulations do not contain any such requirement for class B EPIRBs. Both class A and B EPIRBs are similar in appearance and many mariners may believe that the only difference between them is that class B EPIRBs must be activated manually. This belief may be reinforced by the *Vessel Safety Manual*<sup>2</sup> since it recommends that every fishing vessel operating more than 20 miles off shore should carry either a class A or class B EPIRB. This belief is not dispelled by Navigation and Vessel Information Circular (NVIC) 5-86<sup>3</sup> which recommends that every fishing vessel operating more than 20 miles offshore should carry either a class A (preferred) or class B EPIRB, although NVIC 5-86 states that class B EPIRBs are not required to float. Furthermore, because the FCC regulations authorize the use of a water-activated battery in class B EPIRBs, there is confusion about whether or not class B EPIRBs are supposed to float and about the intent of the regulations. To authorize a water-activated battery for an EPIRB that is not required to float is an inconsistency that should be corrected.

During the investigation, it was learned that several brands of class B EPIRBs failed to meet FCC standards for watertightness and failed to transmit on the prescribed frequencies. The Safety Board believes that these problems resulted from the failure of EPIRB manufacturers to comply with the FCC regulations (47 CFR 80.1053 and 80.1055) which specify that class A and B EPIRBs must be watertight and emit a signal on the distress frequencies of 121.5 and 243 MHz. The FCC's initiative to test EPIRBs serves the public interest and demonstrates that there is a need for a program to verify that EPIRBs are manufactured properly. The Safety Board believes that the FCC should establish a permanent inspection program to ensure that these problems do not recur and that all future EPIRBs will meet the requirements of 48 CFR Part 80, Subpart V.

<sup>2</sup>The *Vessel Safety Manual* is produced by the North Pacific Fishing Vessel Owners' Association.

<sup>3</sup>NVIC 5-86 is a set of voluntary technical standards for U.S. uninspected fishing vessels and operating standards for fishing vessel crews developed by a Coast Guard-directed industry task force.

Therefore, the National Transportation Safety Board recommends that the Federal Communications Commission:

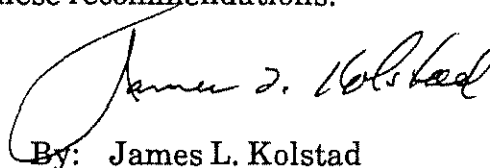
Require that directions be embossed or bonded on all newly manufactured emergency position indicating radio beacons (EPIRBs) describing how batteries are installed and that the directions include a prominent note warning that the battery must be connected before the EPIRB is placed in service. (Class II, Priority Action) (M-89-6)

Eliminate the authority to use water-activated batteries in emergency position indicating radio beacons (EPIRBs) that are not designed to float. (Class II, Priority Action) (M-89-7)

Establish a permanent inspection program for all newly manufactured emergency position indicating radio beacons to verify that they meet mandated technical requirements. (Class II, Priority Action) (M-89-8)

Also, as a result of its investigation, the Safety Board issued Safety Recommendations M-89-1 through -5 to the U.S. Coast Guard, M-89-9 and -10 to Guest Company, Inc., and M-89-11 to the U.S. Department of Transportation.

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.



By: James L. Kolstad  
Acting Chairman