



National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Log M-383A

Date: MAY 25 1993

In reply refer to: M-93-15

Lieutenant General Arthur E. Williams
Commanding General
U.S. Army, Corps of Engineers
Washington, D.C. 20314-1000

Recreational boating accidents currently result in the greatest number of transportation fatalities annually after highway accidents. Although the number of fatal recreational boating accidents and fatalities decreased each year from 1985 to 1990, the U.S. Coast Guard indicates that in 1991, the number of fatalities from recreational boating accidents increased to 924 from the 865 fatalities reported in 1990. According to the Coast Guard, the fatality rate--the number of fatalities per 100,000 estimated boats--also increased slightly during the same period. Information from the American Red Cross indicates that about 355,000 persons are injured from recreational boating accidents annually and that more than 40 percent of these injuries require medical treatment beyond first aid. The U.S. Coast Guard estimates that in 1991 there were about 20 million recreational boats on the Nation's waterways, with the number increasing steadily each year. Not only has the number of recreational boats increased, but the speed at which many of these recreational boats operate has also increased. Because of the number of fatalities and injuries and because recreational boating activities can be expected to continue to increase, the Safety Board believes that efforts to improve safety are needed in recreational boating. The Safety Board, therefore, initiated a safety study of recreational boating accidents to determine the circumstances of these accidents and the countermeasures needed to prevent or reduce their number and severity.¹

For the study, the Safety Board reviewed U.S. Coast Guard data on recreational boating accidents that occurred between 1986 and 1991. The Safety Board also asked 18 States to provide copies of their 1991 fatal accident investigation reports, including witness statements, local investigation reports, and written narratives of the accidents. The Safety Board received 407 fatal accident reports,

¹ National Transportation Safety Board. 1993. Recreational boating safety. Safety Study NTSB/SS-93/01. Washington, DC.

about 52 percent of the 779 fatal boating accidents that occurred nationally in 1991; 478 persons died in these accidents, about 52 percent of the 924 persons who died in boating accidents nationally in 1991.

Of the 478 fatalities that occurred in the accidents, 351 were reported by the States to be the result of drowning and 89 were due to traumatic injuries.² Of the 351 persons who drowned, use/nonuse of personal flotation devices (PFDs) was known for 331 persons; 50 (15 percent) of these persons wore PFDs; 281 (85 percent) did not wear PFDs.

A detailed review of the 50 State-reported "drownings" in which the victims were wearing a PFD suggests that cold water exposure (hypothermia) may have been a factor in the cause of death in 23 cases. The review further revealed that in 10 cases, the victims were caught under water; in 4 cases, the victims were probably unconscious; in 1 case, the PFD was ripped off the victim; in 4 cases, the PFDs were not being worn properly; and in 8 cases, the circumstances of the drowning and the role of the PFD were not known or not documented. Thus, in at least 84 percent of the drownings in which the victim was wearing a PFD, there is a reason for the victim drowning that is not attributed to the failure of the PFD.

A review of the 281 State-reported "drownings" in which the victims were not wearing a PFD suggests that in 15 percent of the drownings (43 drownings) there were factors involved that may not have been influenced by the wearing of a PFD. The cause of death in 32 of the 43 drownings was probably exposure to cold water (hypothermia) rather than drowning; in 9 of the drownings, the victims were caught under water; and in 2 of the drownings, the victims were probably unconscious. Therefore, as many as 238 persons (85 percent of the drownings) may have survived had they been wearing a PFD.

There were 51 children under the age of 12 on board the accident vessels.³ Fifteen of these 51 children were fatally injured: 2 died from traumatic injuries, 12 drowned, and the cause of death for 1 victim was not known because the body was never recovered. Of the 12 children who drowned, it was documented that 5 were

² Subsequent information obtained from the States indicates that for the remaining 38 fatalities, 35 bodies were never recovered and the cause of death could not be accurately determined; 1 fatality was believed to have been caused by a pre-existing medical condition; and 2 fatalities were thought to have been the result of exposure to cold water.

³ The States' data provided information only on 32 children, including all 15 who were fatally injured. Information on the additional 19 nonfatally injured children was obtained from the Board's supplemental data form to the States.

wearing a PFD and 7 were not.⁴ Information provided by the officers who responded to the accidents indicates that of the 36 children who survived the accidents, 15 lives were saved because they were wearing a PFD.

On November 9, 1992, the U.S. Coast Guard published a notice of proposed rulemaking (NPRM) in the Federal Register (57 FR 53410) on recreational boating safety equipment requirements. The Coast Guard proposes to change several Federal requirements and exemptions for carriage of PFDs on recreational vessels. Specifically, the rulemaking would eliminate the Type IV PFD as a primary PFD on recreational vessels less than 16 feet in length. Further, the rulemaking would eliminate Federal preemption of State boating safety laws related to PFD wearing or PFD carriage. Because current PFD carriage regulations allow use of a nonwearable Type IV PFD to meet carriage requirements for vessels under 16 feet in length, a State requirement to wear a PFD is preempted by Federal regulations because it implies a wearable PFD that is in conflict with Federal regulations. Under the rulemaking, a State would no longer be preempted from requiring that PFDs be worn. The proposed rulemaking would also remove the exemption from PFD carriage requirements for racing shells, rowing sculls, canoes and kayaks, sailboards, and personal watercraft. The Safety Board supports the NPRM.

Despite the fact that States currently are preempted from requiring that PFDs be worn on boats less than 16 feet in length, 37 States and the District of Columbia have enacted laws that require PFDs to be worn: (1) by children of certain ages and on certain size vessels; (2) for specific water activities such as waterskiing and operating personal watercraft; and (3) on specified dangerous waters.

One of the typical requirements for PFD usage among the States is the requirement that children of certain ages wear PFDs. For example, seven States--Arizona, Kansas, Louisiana, Mississippi, New York, Oklahoma, and Texas--require that PFDs be worn by children 12 years old and younger. In three States--Montana, Nebraska, and Vermont, the requirement is for children 11 years old and younger. In some States, the requirement that children wear PFDs is contingent on the size of the vessel. For example, in Utah, a child 11 years old and younger is required to wear a PFD if the vessel is less than 19 feet in length or if the child is outside the cabin of a vessel more than 19 feet in length. North Dakota requires children 10 years old and younger to wear a PFD if the vessel is less than 26 feet in length. Florida requires children 6 years old and younger to wear a PFD on vessels less than 26 feet in length.

⁴ Of the five children who drowned and were wearing a PFD, three died from exposure to cold water (hypothermia), one was caught under water, and one slipped out of the PFD in cold water.

In May 1986, the Pittsburgh District of the Army Corps of Engineers established a regulation requiring children under 9 years of age in Pennsylvania and under 10 years of age in Ohio and West Virginia to wear PFDs while in a boat on Pittsburgh District waters.⁵ There are 16 recreational water areas in five States (Maryland, New York, Ohio, Pennsylvania, and West Virginia) under the jurisdiction of the Pittsburgh District that were subject to this regulation. According to the Pittsburgh District, the youth PFD regulation was readily accepted by the boating public and the Corps experienced exceptional voluntary compliance with the new regulation.

In May 1990, the Pittsburgh District expanded the regulation to include all persons on board all boats less than 16 feet in length, all canoes, and all nonswimmers. According to the Pittsburgh District, 70 of the 71 drownings that occurred in the Pittsburgh District in the 10 years before expanding the regulation involved persons who were not wearing PFDs. According to District officials, three lives have been saved since the regulation was expanded, and the regulation has resulted in an increased number of boaters who wear PFDs.

Of the 38 Corps of Engineer districts, only the Pittsburgh District has initiated any action regarding PFD usage on Corps waters. Some districts have indicated that they do not have the resources to enforce such a regulation, and others have indicated that they are waiting for the States to initiate action on the issue of PFD usage. Given the apparent success of the PFD regulation in the Pittsburgh District and the findings of this study, the Safety Board believes that the Corps of Engineers should implement similar requirements on all Corps water impoundments that are appropriate for each district with the minimum requirement that all children wear PFDs.

Therefore, as a result of the safety study, the National Transportation Safety Board recommended that the U.S. Department of the Army, Corps of Engineers:

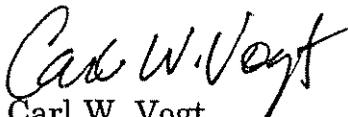
Implement requirements for the wearing of personal flotation devices for recreational boaters on Corps' water impoundments; at a minimum, require all children to wear personal flotation devices. (Class II, Priority Action) (M-93-15)

Also as a result of the study, the Safety Board issued safety recommendations to the Governors of the 50 States, U.S. Virgin Islands, and Puerto Rico; and the Mayor of the District of Columbia; the National Association of State Boating Law Administrators; the U.S. Coast Guard; and the American Academy of Pediatrics.

⁵ In those States that had implemented PFD usage requirements for children of certain ages on all sizes of vessels, the Pittsburgh District regulation coincided with the State requirements.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "...to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation M-93-15 in your reply.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HART, and HAMMERSCHMIDT concurred in this recommendation.

By: 
Carl W. Vogt
Chairman