



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: March 16, 2006

In reply refer to: M-06-3

Mr. Charles A. Sledd, President
National Association of State Boating Law Administrators
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The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The Safety Board is interested in any action taken on this recommendation because it is designed to prevent accidents and save lives.

The recommendation in this letter addresses an issue raised at the public forum, *Personal Flotation Devices in Recreational Boating*, held by the Safety Board at its Academy in Ashburn, Virginia, on August 25, 2003. Information supporting the recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

Background

At the public forum, more than 80 participants from government and the recreational boating industry gathered to discuss policy issues related to the use of personal flotation devices (PFD) in recreational boating. The discussion highlighted a number of important issues, including adult PFD use, accident risk factors, and the effectiveness of boating education.

Recreational boating is increasing in popularity. Participation has increased from 78.3 million in 1999 to 91.1 million in 2003, according to a survey of recreational activities cited by the U.S. Coast Guard and the boating industry.¹ At the same time, the total number of accidents decreased by 30 percent, and the number of accidents per million participants declined more than 40 percent. However, the number of fatalities remained relatively constant from 1999 through 2003, varying less than 5 percent from an average of 714 per year (table 1). Coast Guard

¹ U.S. Department of Agriculture Forest Service, *National Survey of Recreation and the Environment (NSRE), Recreation Statistics Update*, Update Report No. 2 (Washington, DC: 2004). Survey data for recreational boating participation are currently available only for years up to and including 2003. Consequently, there are no accident statistics based on survey estimates of recreational boating participation calculated for 2004.

accident and fatality data for 1999–2003 presented at the forum² indicated that 71 percent of these deaths were due to drowning (table 2). In addition, Coast Guard statistics showed that the drownings per 100,000 registered boats remained constant during that period.³

Table 1: Accidents, Accident Rates, and Participation in Recreational Boating, 1999-2003

Year	Number of Accidents	Total Fatalities	Number Drowning	Number of Participants (millions)	Accidents per 1.0 mil Participants	Fatalities per 1.0 mil Participants
1999	7,931	734	517	78.3	101.3	9.4
2000	7,740	701	519	77.6	99.7	9.0
2001	6,419	681	498	75.3	85.2	9.0
2002*	5,705	750	524	81.7	69.8	9.2
2003	5,438	703	481	91.1	59.7	7.7

* In 2002, the Coast Guard changed its criteria for reporting accidents by raising the damage limit for reporting from \$500 to \$2000. This could result in fewer accidents reported than in previous years.

A prevalent factor among drowning victims is the lack of a PFD. Coast Guard data for 2003 showed that 416 of the 481 drowning victims were not wearing PFDs. The size of the boat also mattered; 7 of 10 people who drowned were in boats 21 feet or less in length. In addition, nearly 70 percent of all drownings (and more than 60 percent of all fatalities) occurred as the result of three very similar types of boating accidents that unexpectedly place boaters in the water—capsizing, falls overboard, and swamping (table 3). Using data for 1999–2003, the Coast Guard estimated that approximately 84 percent of the people who drowned would have been saved had they been wearing PFDs.

Table 2: Fatalities and Rates in Recreational Boating, 1999-2003

Year	Number of Drownings	Percent Total Fatalities	Number of Registered Boats (mil)	Drownings per 100k Boats
1999	517	70.4%	12.7	4.1
2000	519	74.0%	12.8	4.1
2001	498	73.1%	12.9	3.9
2002	524	69.9%	12.9	4.1
2003	481	68.4%	12.8	3.8

² U.S. Department of Homeland Security, U. S. Coast Guard, presentation to the public forum, *Personal Flotation Devices in Recreational Boating*, August 25, 2004.

³ U.S. Department of Homeland Security, U.S. Coast Guard, *Boating Statistics–2003*, COMDTPUB P16754.17 (Washington, DC: 2004), p. 34.

Table 3: Most Frequent Accident Types in Recreational Boating in 2003

Type of Accident	Number of Accidents	Number of Injuries	Number of Fatalities	Number of Drownings
Collision with Vessel	1,469	1,063	70	9
Collision with Fixed Object	558	491	50	19
Capsizing	514	330	206	136
Falls Overboard	508	353	201	155
Skier Mishap	451	466	6	1
Swamping	274	61	41	36

These data indicate that increased PFD wear, especially among adults, could substantially reduce the number of boaters who drown every year; however, the effectiveness of various safety programs can be difficult to determine. A Coast Guard 6-year observational study completed in 2003 (and presented at the forum)⁴ showed an increase in PFD wear by children and, to a lesser extent, their parents. However, this study showed no significant change in general adult PFD wear, even in States with child wear requirements and mandatory boating safety courses. For instance, in 2003, less than 10 percent of the 28,982 boaters ages 18 and older, and not aboard personal watercraft (PWC), were observed wearing PFDs. The highest observed PFD wear was among boaters on PWCs (95 percent), sailboards (94 percent), and in kayaks (84 percent). Although the perceived risk of kayaking, sailboarding, and PWC use may influence those boaters to wear PFDs, the risks of small boats may not be so obvious to all boaters. In fact, 77 percent of the recreational boaters involved in fatal accidents in 2003 had not received any boating safety instruction⁵ although 32 States have enacted mandatory boating education statutes and regulations that address some segment of the adult recreational boating population.

Previous Safety Recommendations

The consistent pattern of drowning found in its 1993 study led the Safety Board to issue a recommendation to the National Association of State Boating Law Administrators (NASBLA) to require boaters to improve their operating knowledge and skills. Safety Recommendation M-93-9 to NASBLA (and M-93-14 to the Coast Guard) recommended that NASBLA cooperate with the Coast Guard to develop guidelines that would be used by the States to implement recreational boating standards to reduce the number and severity of accidents. The recommendation went on to state that development of the guidelines should consider requirements for operators to demonstrate knowledge of safe boating rules and skills, and

⁴ T. Mangione, M. Rangel, and K. Watson, *National PFD Wear Rate Observational Study* (Boston: JSI Research & Training Institute, Inc., 2003).

⁵ U.S. Coast Guard, *Boating Statistics—2003*, page 19.

operator licensing (the recommendation also included consideration of mandatory child PFD requirements). The recommendations were based in part on accident data showing that boaters involved in fatal boating accidents exhibited a lack of safe boating knowledge, practices, and skills, and the finding that as few as 7 percent and no more than 22 percent of the persons operating a boat for the first time had taken a boating safety course.

NASBLA adopted resolutions and model acts that provided guidelines for vessel operator licensing and mandatory boating safety education, as well as PFD wear requirements for children 12 years of age and under. As a result, the Safety Board classified Safety Recommendation M-93-9 “Closed—Acceptable Action.” Coast Guard participation in the NASBLA activities and its work with the States led the Safety Board to classify Safety Recommendation M-93-14 as “Closed—Acceptable Action.”

PFD Use and Boater Safety Education

Forum participants agreed that, with the exception of individuals using PWCs and kayaks, PFD wear among adult boaters remains low. According to Coast Guard statistics, the greatest risk appears to be for adults in small (that is, 21 feet or less), open motorboats. According to the Coast Guard’s observational study, these are the boaters who are least likely to wear PFDs. Many participants at the forum believed that PFD use could be increased through boating safety education and mandatory licensing. As previously discussed, the Board—as a result of its 1993 study—issued Safety Recommendations M-93-9 to NASBLA and M-93-14 to the Coast Guard calling for minimum boating safety standards, such as education and licensing programs that require operators to demonstrate their knowledge of safe boating rules and skills.

Since 1993, 32 States have enacted mandatory boating education statutes and regulations (in addition to PWC-specific requirements) that address some segment of the adult recreational boating population.⁶ Despite these efforts, 77 percent of the recreational boaters involved in fatal accidents in 2003 had not received any boating safety instruction,⁷ and 18 States⁸ still have no education requirement. The Safety Board continues to believe that boating education and/or operator licensing requirements would improve boating safety, decrease recreational boating accidents and injuries, and increase PFD use.

NASBLA’s National Boating Education Standards provide States with the basis for acceptable recreational boating safety courses; PFD use is specifically addressed in Standard 2.3. This standard recognizes the need to inform boat operators that they should wear PFDs at all times and that they need to be alert to high-risk conditions such as high boat traffic, severe weather, dangerous water conditions, night operations, and boating alone. The standard does not, however, specifically require discussion of high-risk boating populations (such as adults in small boats), boats (less than 21 feet in length), or boating activities (such as the high-risk conditions

⁶ Most of the mandatory boating education laws enacted by States require recreational boat operators born after a specific date to take a boating safety course. For example, Missouri requires boat operators born after January 1, 1988, to complete a boating safety course.

⁷ U.S. Coast Guard, *Boating Statistics—2003*, p. 19.

⁸ Alaska, Arizona, California, Idaho, Indiana, Iowa, Maine, Massachusetts, Minnesota, Montana, New Mexico, North Carolina, Oklahoma, South Carolina, Utah, Virginia, Wisconsin, and Wyoming.

previously mentioned), or provide detailed descriptions of PFD types, applications, and effectiveness. In its presentation at the forum, the Personal Flotation Device Manufacturers' Association (PFDMA) described the variety of currently available PFD types, which address a wide range of comfort, performance, and effectiveness factors.⁹ Forum participants agreed that discussions of recreational boating risks and PFD technologies are a necessary part of any safe boating education course, and the Safety Board concurs. Accordingly, the Board concludes that the current National Boating Education Standards do not adequately discuss high-risk boating populations, boats, or boating activities, or provide detail about the current range of PFD technologies available.

Recommendation

Therefore, the National Transportation Safety Board recommends that the National Association of State Boating Law Administrators (NASBLA):

Modify National Boating Education Standard 2.3 to ensure that boating safety education courses adequately discuss high-risk boating populations, boats, and boating activities and present detail about the current range of personal flotation device technologies available. (M-06-3)

The Safety Board is also issuing two safety recommendations to the U.S. Coast Guard and one to the National Marine Manufacturers Association and the Marine Retailers Association of America. In your response to the recommendation in this letter, please refer to Safety Recommendation M-06-3. If you need additional information, you may call (202) 314-6170.

Acting Chairman ROSENKER and Members ENGLEMAN CONNERS, HERSMAN, and HIGGINS concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Acting Chairman

⁹ Paper presented by the Personal Flotation Device Manufacturers' Association to the public forum *Personal Flotation Devices in Recreational Boating* (August 25, 2004).