National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: March 16, 2006

In reply refer to: M-06-4

Mr. Glenn Mazzella, Chairman
Marine Retailers Association of America
P.O. Box 1127
Oak Park, Illinois 60304

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, 2004. 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 the ways in which the recreational boating industry promotes adult PFD use.

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 accident and fatality data[2] for 1999–2003 presented at the forum indicate that 71 percent of these

[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.

[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.

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

[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

When compared with data from the Safety Board's 1993 study, the Coast Guard's 2003 statistics show that little has changed; PFD wear among adults has not increased, and the proportion of deaths in recreational boating attributable to drowning remains approximately the same.[4] The Coast Guard's 6-year observational study completed in 2003 and presented at the forum[5] found that although the number of children wearing PFDs had increased, general adult use of PFDs had not changed, 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. 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. In addition, according to the Coast Guard's observational study, these are the boaters who are least likely to wear PFDs.

Unfortunately, the resistance to a mandatory PFD wear requirement for adults appears to be significant. BOAT/US survey data presented at the forum indicated that 86 percent of the respondents opposed a requirement for adult boaters to wear PFDs while underway in *all* boats. However, the same data indicated that a requirement based on certain types of boats was supported by 62 percent of those surveyed.[6] When the organizers of the International Boating and Water Safety Summit in March 2005 surveyed attendees, they also found that 65 percent of the 235 respondents agreed or strongly agreed with the statement that PFDs should be mandatory for those in boats under 22 feet in length.[7]

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[4] National Transportation Safety Board, *Recreational Boating Safety*, Safety Study NTSB/SS-93/01 (Washington, DC: NTSB, 1993).

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

[6] E. Mahoney and others, *Boater Attitudes Regarding Requirements for Adults to Wear Life Jackets While Underway in Recreational Boats* (Lansing, Michigan: Michigan State University Recreational Marine Research Center, 2004).

[7] International Boating and Water Safety Summit, *Results of the Audience Survey* (March 14, 2005).

Integrating PFDs into Recreational Boating

One way to reduce resistance to PFD use by adults may be to integrate PFDs into all aspects of recreational boating, including the manufacture and sale of recreational boats and accessories. Unfortunately, PFDs are seldom displayed prominently at boat shows, and manufacturers, retailers, and recreational boating organizations rarely provide boating safety literature that addresses or advocates PFD use. The forum revealed that only the PWC industry, and to some extent, the paddle sports industry, successfully integrates PFD use into the recreational boating experience.

In its presentation at the forum, the Personal Watercraft Industry Association (PWIA) described its marketing model for integrating PFD use into PWC recreational boating. In that model, PFD use was promoted by manufacturers, retailers, and PWC media, and PFD design and fashion were integrated into the sale of boats and accessories. Before legislation was introduced requiring everyone aboard PWCs to wear PFDs, PWCs accounted for a disproportionate number of recreational boating deaths and injuries. By 2003, all States had enacted legislation requiring everyone aboard PWCs to wear PFDs. As a result, despite a more than 50-percent increase in the number of registered PWCs from 1997–2003, the number of injuries and deaths due to drowning and other causes declined (table 4). Further, the rates for drowning, other types of fatalities, and injuries in accidents per 100,000 registered PWCs in 2003 were less than half those of 1997. The Coast Guard's 1998–2002 observational study found that PFD wear among adults on PWCs was highest among all boaters, ranging from 93 to 97 percent.[8] The PWIA presentation showed how the PWC industry responded to the need to increase PFD use and PWC safety through equipment design, marketing, and education. According to PWIA, this approach could be applied to other boating categories to produce the kinds of reductions in fatalities, injuries, and rates exhibited by the PWC user community.

Table 4: Personal Watercraft (PWC) Fatalities, Injuries, and Registrations, 1997-2003

Year	Total Fatalities	Number of Drownings	Number Injured	Registered PWCs (in 1000s)	Fatalities per 100k PWCs	Number of Drownings per 100k PWCs	Number Injured per 100k PWCs
1997	84	22	1822	481.6	17.4	4.6	378.3
1998	78	13	1743	414.2	18.8	3.1	420.8
1999	66	15	1614	400.8	16.5	3.7	402.7
2000	68	24	1518	543.2	12.5	4.4	279.5
2001	50	11	1424	753.1	6.6	1.5	189.1
2002	71	21	1362	743.6	9.5	2.8	183.2
2003	57	15	1228	744.5	7.7	2.0	164.9

[8] Mangione, *National PFD Wear Rate Observational Study*.

The Safety Board believes that the marketing strategy used by the PWC industry can be effective in promoting the desirability and increased use of PFDs, and can be a model for the rest of the recreational boating industry. Therefore, the Board recommends that the Marine Retailers Association of America (MRAA) develop a marketing strategy that promotes the increased use of PFDs, and integrate that strategy into the promotion and sale of boats and accessories.

To ensure that PFD use is promoted effectively, the marketing strategy should specifically target high-risk boating populations, boats, and boating activities, and include sufficient detail about the range of PFD technology, comfort, performance, and effectiveness. The strategy should also take into consideration the specific needs of new boaters and boaters making the transition to different types of boats and boating activity. In developing the strategy, MRAA should work closely with all sectors of the recreational boating community, including the Coast Guard and the National Association of State Boating Law Administrators (NASBLA).

Recommendation

Therefore, the National Transportation Safety Board recommends that the Marine Retailers Association of America:

> Develop a marketing strategy that promotes the increased use of personal flotation devices, and integrate that strategy into the promotion and sale of boats and accessories. (M-06-4)

The Safety Board is also issuing this recommendation to the National Marine Manufacturers Association, and is issuing two recommendations to the U. S. Coast Guard and one recommendation to the National Association of State Boating Law Administrators. In your response to the recommendation in this letter, please refer to Safety Recommendation M-06-4. 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