MariTech Industries

Marine Safety & Innovations

159813

March 8, 2002

Docket Management System
US Department of Transportation
Room PL-401
400 Seventh St, SW
Washington, DC 20590-0001

Re: USCG-2001-10163 _ 105

Dear Sir/Madam,

Thank you for the opportunity to comment on the Notice of Proposed Rule (NPR) requiring propeller injury avoidance measures. I have been reviewing the comments submitted during the prescribed time frame and now feel compelled to forward my professional comments on this vital safety issue.

In reviewing the comments, it appears several authors are either confused or are submitting fictitious statements intended to disrupt the many years of dedicated work by the United States Coast Guard (USCG) and the National Boating Safety Advisory Council (NBSAC).

Regulatory actions will always have advocates and critics. The decision makers must maintain a neutral position in the analysis of information prior to the eventual decision to implement regulation. I believe this analysis was accomplished in a very professional, responsible manner by the USCG, with the unanimous consensus and support of NBSAC. Since the early 1970's, propeller safety has been an issue of concern brought forward by numerous propeller strike victims and/or their surviving families. Thirty years later, the ongoing desire to implement a propeller safety standard is true, just, and, furthermore, requested by the Congressional Oversight Committee.

The USCG performed an independent propeller guard study in 1989. Results concluded available technology to prevent and minimize propeller related accidents **did not** exist and recommended against regulations. That conclusion and recommendation was supported by the industry. Again, in 1996, the USCG and NBSAC authorized another independent study. The initial phase was a concerted effort to obtain information, comments, products, virtually any input regarding propeller strike protection. The request for data was broadcast and widely distributed to the marine industry, including the rental operators and the general public. For two years there was an equal opportunity for interested parties to submit data and expert commentary. In 1999, the Marine Technology Society (MTS) announced its conclusion and confirmed technology **did exist** which would be effective in minimizing and/or preventing propeller related accidents. In fact, the authors recommended a variety of solutions for the USCG and NBSAC to consider.

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The Propeller Injury Avoidance Study and announcement of the NPR's conclusions clearly prove that both the SwimGuard and the Marine Safety System, products manufactured by MariTech Industries, are effective and reliable. Both now have received criticisms, which are unfounded and designed to refute the findings of the 1998 study. Such criticisms are both an insult and disrespectful to this process, the Marine Technology Society, the US Coast Guard, and to the members of the National Boating Safety Advisory Council. Further, the alleged product failure is clearly contrived and I trust the governing bodies will reconigize this calculated maneuver for what it is.

It's quite evident that advocates of propeller safety are positioned at one end of the spectrum and demanding solutions. Critics are positioned at the opposite end, claiming any and all solutions fail and are not feasible. Results of the 1998 study were based on maritime experience, science and scientific fact. These results should not be discredited by unsubstantiated claims.

Some critics claim guards cause an unacceptable stress load on the motors. However, it is common practice for houseboat rental operators to install a Jacuzzi weighing 6500 lbs. to the top of a houseboat, which creates significantly more stress than a a propeller guard. Or consider the additional stress loads associated with "rafting" or towing several pleasure craft and water toys behind houseboats. In regards to criticism that guards cause lower unit damage, studies and data lead to no such conclusion. Furthermore, why argue, or challenge these issues now? The MTS, USCG and NBSAC have taken seven years to complete their extensive evaluations resulting in proposing a reasonable, effective solution to prevent propeller related accidents. This proposal provides a list of proven devices, including propeller guards, and/or the combination of alternative measures.

1998 Propeller Injury Protection Study Outcomes: **SwimGuard Results**

Table 3. Results for Houseboat Evaluation, Page 26

Evaluation Criteria:	**Unguarded 140 hp motor (baseline)**	**Guarded Motor (SwimGuard)**
Speed/Economy Index:	1.0	.94
Maneuvering Index:	1.0	.91
Low Speed Protection Index:	1.0	3.0
Practicality Index:	1.0	.80

Study Recommendation:

Recommendations, Page 35

" This study has established the enhanced safety that can occur at little or no performance penalty by using a "cage type" guard on houseboat drives. This information should be made available to insurance carriers in an effort to convince their underwriters that indeed the lower risk exposure associated with the use of such guards does indeed justify a lower insurance cost for the owner/operator."

The MTS also reported that the fundamental effort to educate and utilize warning signs is not effective in preventing any of the past propeller related accidents. They believe "warning signs are primarily important from a liability standpoint since anyone operating a vessel and/or swimming near a vessel is probably aware of the danger." (Page 29) They go on to recommend warning signs would be effective when combined with interlocks.

Most operators manuals, safe boating education courses and warning signs inform the owner/operator:

1. **"ENSURE THE MOTOR IS OFF WHEN SOMEONE IS WITHIN ONE BOAT LENGTH FROM YOUR BOAT"**

2. **"ENSURE THE MOTOR IS OFF WHEN SOMEONE IS USING THE BOARDING LADDER"**

3. **"ENSURE THE MOTOR IS OFF WHEN SOMEONE IS ACCESSING THE SWIM PLATFORM OR BOARDING LADDER"**

4. **"DANGER! DON'T APPROACH THE BOAT UNTIL THE MOTORS ARE OFF"**

To provide our customers an alternative to our SwimGuard and to ensure the boat operator adheres to the above message, we developed the Marine Safety System. Classified as an interlock, this device integrates a boat's ignition with the use of boarding ladders and/or gates that access the swim platform or water. While evaluating propeller accidents, we discovered a consistent scenario prior to the actual propeller strike. Most propeller related accidents occurred while swimmers were approaching the vessel, or accessing the vessel via boarding ladder or gate. Evaluation criteria was as follows:

1. Evaluation of accident reports and accident scenarios.
2. Evaluation of human factors prior to the time of the accident.
3. Evaluation of the recommendation to operate your boat safely.
4. Evaluation of the education structure and visual aids.

Upon completion of this study, it was clear that if technology could be combined with education, visual aids and the suggested safe operations of a boat, the scenarios that lead to propeller related accidents would be greatly reduced, if not completely eliminated. This is the Marine Safety System. It is a true system and is not a "kill switch.' When presented to the USCG and NBSAC, they were pleasantly surprised with the new innovation, but did request added features that would provide additional safety for the operator and occupants. A few of those features are as follows:

By-Pass Capabilities -

In order to by pass the system, an operator must make a **conscious decision** to de-activate the safety feature. Rarely does this happen due to the mounting location and that an operator generally understands that such a decision to by-pass the system would put an operators family in danger. The by-pass feature was recommend so the vessel would not be stranded in the event of product damage, which is unique to the consequences and dangers associated with failures from motors or other mechanical equipment.

Fail Safe Circuitry -

This feature was developed to address concerns that operators and passengers may develop a false sense of security. If the product is ever damaged, the circuitry will automatically prevent the motor from starting, rendering the vessel in a safe mode of operation. At that time, the operator can by-pass the system. By making a **conscious decision** to activate the by-pass, the operator is fully aware that the safety feature is not operational. While in by-pass, the operator and occupants of the boat will be reminded by audible alert and visual stimulus.

The USCG was also concerned by the activation of the Marine Safety System during docking of larger craft. This issue was addressed in June 2001, at Lake Mead. MariTech Industries demonstrated the versatility of the system by mounting the by-pass switch at the helm. Upon docking, if ever necessary, the operator could by-pass the system without losing control of the motors. Again, at that time an audible alert and visual warnings will remind the operator to re-activate the safety system after docking is completed. This demonstration was very successful and satisfied the concerns of the USCG.

The final comment to be addressed is, "If the interlock were connected to gates and/or ladders and the drive engines, and, if the system were activated while the boat was moving, the captain temporarily would loose control of the boat, creating a potential new hazard." Research has shown that it is highly unlikely the interlock would be accidentally activated while the boat is moving. Such condition indicates that a person or persons have exited the safety zone (the area within the perimeter of the boat protected by the system), have ignored warning signs and safe boating practices, and have entered an extremely dangerous environment where death or serious injury could occur within a heartbeat. The unlikely risk of a temporary loss of control, akin to running out of gas while underway, is vastly outweighed by the risk of death or dismemberment. We consider our device as a vital safety aid to the captain. The Marine Safety System immediately removes the safety hazards that a crewmember or guest inadvertently faces when they enter the danger area without the captain's permission or knowledge.

The Marine Safety System has proven to be very versatile. The design accommodates any boat configuration and can be customized to meet any request by the owner/operator. To have technology available that reinforces education, visual aids, promotes safe boating habits, and provides protection when necessary, is truly advantageous for the boating public.

Regarding cost benefits, several rental operators have indicated they will capitalize on the safety measures as a marketing tool attracting additional customers, which will increase their cash flow and offset the initial cost for purchasing and installing equipment. There are even greater advantages and cost benefits for boat owners and operators in regards to the Carbon Monoxide (CO) issue -- a new risk associated with generators on houseboats and cabin cruisers. The National Institute of Occupational Safety and Heath (NIOSH) discovered CO was also produced at dangerous levels by the propulsion motors on all craft. In short, very soon there will be a mandate requiring safety measures to combat the hazards associated with the production of CO.

Currently, three devices are being considered as solutions to prevent CO poisonings: a "Vertical Stack" ($1500.00), an Environmental Control Device ($5,000.00), and the Marine Safety System (considerably less costly than the previous two). All three devices address the hazard of CO production by generators. Only the Marine Safety System can prevent production of CO by the motors on all boats. This innovation brings consistency to education, warning labels and safe boating practices by, **"ENSURING THE MOTOR AND GENERATOR IS OFF WHEN SOMEONE HAS**

ACCESSED THE SWIM PLATFORM VIA GATE, OR IS IN THE WATER USING THE BOARDING LADDER."

Installation of the Marine Safety System will provide the boat owner/operator a highly cost-effective solution addressing two vital safety issues, Propeller Strike Injuries and Carbon Monoxide Poisonings. This product eliminates the necessity to install other costly devices while ensuring everyone adheres to safe boating practices.

The USCG and NBASC deserve a round of applause for their attention to detail and the recognition of the overall benefit the NPR will have on the boating industry. It's been our experience that seasoned and novice boaters alike appreciate the enhanced boating safety assured by our products. We are committed to improving our current products and we will continue striving to develop new technologies focused on boating safety. Immediate implementation of the Rule will both prevent propeller strike accidents and automatically address CO poisonings. It is our opinion that therecommended devices should be considered "base line" technology, providing a minimum propeller safety standard. This standard will eventually spur competition and the development of new and improved technologies, resulting in continuous reduction of boating hazards. To view accurate product information, please visit our web site at www.maritechsafety.com/

It is clear that the industry and private boaters should support this NPR due to its universal benefit. Implementation of this Rule would resolve long-term and lingering safety issues. Upon acceptance of the rule, I sincerely hope those opposing adoption of the rule would expend equal energy and urgency to implementing the rule in a timely and comprehensive manner, in addition will support the USCG and members of NBASC.

Thank you for the opportunity to comment. If you have any questions, or require additional information, please contact me at your convenience.

Sincerely,

Keith Jackson,
President/CEO