

**Introduction: Volume I of a
Four Volume Series**

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Abstract: Mercury Marine and OMC worked together in the late 1980s and early 1990s to develop a defense against propeller guard lawsuits.

The keystone of their legal defense was the U.S. Coast Guard 1989 National Boating Safety Advisory Council (NBSAC) propeller guard subcommittee report.

The NBSAC report was later propped up by two underwater impact studies Mercury Marine and OMC conducted at the State University of New York (SUNY) at Buffalo. Multiple versions of reports focusing on underwater head impacts and underwater leg impacts were published.

*In the early 1990s, a legal maneuver (Federal Preemption) temporarily supplanted Mercury and OMC's legal defense efforts. The U.S. Supreme Court struck down their Federal Preemption Defense in *Spirietsma vs. Mercury Marine* in late 2002.*

Mercury & OMC's defense built upon the 1989 NBSAC report and underwater impact testing is now back in use in court, in the media, and in the public debate.

Volume I provides a glimpse into the environment in which the remaining three volumes, each addressing a specific study, were developed.

In addition to these three industry studies, the boating industry developed several techniques to defend their objection to the use of propeller guards. Among their most successful techniques were:

- 1. Snyderisms - retelling certain bits and phrases of information over and over again convincing others they are facts.*
- 2. Litigation Testing - testing safety devices proposed by Plaintiff in a manner guaranteeing failure.*
- 3. Controlling and manipulating propeller accident data to make their points - for example, limiting the number of accidents being discussed to fatal accidents of a certain type of vessel involved in a certain activity, from a single year of data using only Event 1 data (the first event in the accident). Then arbitrarily further reducing those accident counts.*
- 4. Use of Organizations - having multiple marine industry organizations backup their statements and claims. Brunswick participates in development of volunteer industry standards at the American Boat and Yacht Council (ABYC). Brunswick is the largest member of National Marine Manufacturers Association (NMMA) along with their NMMA boat builder certification program, their Boating Industry Risk Management Council (BIRMC) to share knowledge learned from lawsuits, and previously their Houseboat Industry Association (HIA). Use of the U.S. Coast Guard National Boating Safety Council (now the National Boating Safety Committee) to block or slow down USCG proposed regulations. For example mandatory use of kill switches was proposed in the 1970s and was partially approved for 2021.*

These four volumes reveal a number of documents, several from the boating industry itself, proving the three major propeller guard studies touted by the industry, are not defensible due to flaws in the evidence and test data their conclusions are based upon.

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Four Part Series of Volumes

Note this volume is part of a four volume series plus a bibliography all of the same title.

Volume 1 this introductory volume

Volume II covers the 1989 NBSAC study

Volume III covers the underwater head impact study conducted at SUNY

Volume IV covers the underwater leg impact study conducted at SUNY

Bibliography

Posters

All four volumes have been summarized into a series of 15 posters.

1. Purcell & Lincoln part 1
2. Purcell & Lincoln part 2
3. Purcell & Lincoln part 3

4. Introduction to Mercury Marine and Outboard Marine Corp. Propeller Guard Case Legal Defense

5. 1989 NBSAC Report part 1
6. 1989 NBSAC Report part 2
7. 1989 NBSAC Report part 3
8. 1989 NBSAC Report part 4
9. 1989 NBSAC Report part 5

10. Underwater Head Impact Study part 1
11. Underwater Head Impact Study part 2
12. Underwater Leg Impact Study part 1
13. Underwater Leg Impact Study part 2

14. Summary: Some Issues With These Three Studies
15. What Does This Mean?

Before We Begin: Purcell & Lincoln at USCG

The storm surrounding the use of propeller guards was gaining strength by the mid 1980's.

The United States Coast Guard assigned Edward S. Purcell and Walter B. Lincoln of the U.S. Coast Guard Research and Development Center in Groton Connecticut to "the problem of injuries and fatalities caused by collision of a boat or propeller with a human body" via a statement of work dated 7 January 1985.

The statement of work was later verbally amended from product safety device development to a review of currently available devices and technologies.¹

"The objective is to define the extent of the problem and identify potential safety measures that may alleviate it."

Purcell & Lincoln's final report issued on 1 March 1987.²

Purcell & Lincoln were unable to evaluate the utility of propeller guards because:

1. It could take years to gather accident data needed to make a decision on propeller guards.
2. Injury data and fatality data would both have to be considered. "The difference between occurrence of either a fatality or an injury in a given accident is often a matter of chance."
3. Biomechanical studies would have to be completed before a decision could be made.
4. Mechanical studies would have to be completed and the public sector would need to be encouraged to develop propeller guards to be tested.
5. Test for injury severity would then have to be conducted.
6. Potential solutions would need to be ranked.
7. Acceptable solutions would need to be identified.
8. Validation testing would need to be performed.

The U.S. Coast Guard later referred to Purcell & Lincoln's findings as being inconclusive.

¹ Letter dated 18 March 1987 from Commanding Officer of USCG Research and Development Center to Commandant (G-DMT) announcing the Purcell & Lincoln report dated 1 March 1987.

² Boat and Propeller Impact Injuries and Fatalities. Project 763584.20. Final Report. 1 March 1987. Edward S. Purcell and Walter B. Lincoln. U.S. Coast Guard Research and Development Center. Groton, Connecticut.

The Situation in 1989-1991

Mercury and OMC (Outboard Marine Corporation), the two largest manufacturers of outboard motors in the United States, were doing very well prior to 1988.

Approximately 1988 through 1991 Mercury and OMC encountered a significant challenge.

Several high profile boat propeller accidents resulted in legal trials claiming boat propeller guards could prevent or mitigate propeller accidents. Mercury and OMC cited a number of reasons why they did not use guards. But most of those reasons were just their own opinions or the results of their own testing. With the lack of independent studies and testing, the courts and propeller safety advocates were becoming more embolden.

It was a period of bad news:

1. Lawyers like Steve Bolden (won a case and wrote a book³ teaching other lawyers how to win propeller cases) and Ben Hogan (stunt man test video⁴) were anxiously anticipating their future successes.
2. Expert witnesses (Robert Taggart, John Hill, Arthur Reed, and Lawrence Thibault) were churning out reports showing propeller guards worked.
3. A major university patented an expert witness' alternative design.⁵
4. Medical professionals like Robert Mann, Charles Price, and Charles Moorefield, were writing technical papers about the carnage of boat propellers.⁶ Some surveyed their peers and found local propeller accident counts to be vastly under reported by the Coast Guard.
5. Propeller Guard manufacturer Brian Chadwell was skilled at using the press to further the cause.⁷
6. Ben Kelley's Institute for Injury Reduction was providing lawyers a chance to join forces against the boating industry. He published the IRR Review⁸ which included numerous articles and studies promoting propeller guards. In addition he held a press conference along with several propeller safety advocates including Brian Chadwell.⁹

³ Motorboat Propeller Injuries. Stephen Bolden. Trials. Vol.41. Model Trials. American Jurisprudence. Book for lawyers on how to win a boat propeller case.

⁴ August 9 1989 Ben Hogan filmed a stunt man being repeatedly struck by a propeller guard.

⁵ U.S. Patent 5,044,884, Safety Propeller. Assigned to Trustees of the University of Pennsylvania. Invented by Laurence Thibault. Patent issued September 3, 1991.

⁶ Motorboat Propeller Injuries. Charles T. Price and Charles W. Moorfield The Journal of the Florida Medical Association. Vol.74. No.6.

⁷ Inside Edition. WNYW-TV New York. Bill O'Reilly anchor. July 6, 1993. Matt Megher reports on dangers of boat propellers. Includes a segment on Brian Chadwell and his guards.

⁸ The IIR Review. Institute for Injury Reduction. Vol.1. No.2. Summer 1992.

⁹ Ben Kelley Prop Guard Press Conference. video. June 1989.

7. TV investigative shows like CBS This Morning were releasing specials showing the industry's treatment of propeller guards in a bad light.¹⁰
8. High dollar jury verdicts were coming down against the industry.
 - A. Kevin Fitzpatrick¹¹, deceased, \$1.1 million against OMC and the boat operator.
 - B. Ashley Elliot¹², \$1.5 million plus \$3 million punitive damages against Mercury, later reversed.
9. Mercury did not help themselves by patenting a propeller guard and selling them to the U.S. Marines Corps.¹³ (Mercury's actions made propeller guards seem plausible)
10. Congress was even asking questions about propeller guards.¹⁴
11. The Hepler accident¹⁵ happened in the midst of all this, making matters even worse.
12. Unbeknownst to the boating industry, some accidents in the wings would haunt them for decades to come. Each of these accidents had a major impact on the propeller guard situation. Some created long time propeller safety advocates among survivors (Epping, Cruz, Kopytko, Booker, Jones). The Lewis and Sprietsma accidents resulted in challenges to Federal Preemption, the Holy Grail of propeller accident legal defense.
 - A. 1992 Stacy Epping on Shasta Lake.
 - B. 1993 Emilio Cruz fatality on Lake Havasu in Arizona. His mother, the late Marion Irving de Cruz, became widely known as "Emilio's Mom"
 - C. 1993 Kathryn Lewis of Oklahoma fatality on Strom Thurmond Lake in Georgia
 - D. 1994 Phyllis Kopytko critically injured propeller strike survivor of a double propeller fatality on Table Rock Lake in Missouri.
 - E. 1995 Stephanie Booker hit and run on Lake Lewisville in Texas.

List of accidents changing the status quo continues on the next page.

¹⁰ Propeller Guard segment. CBS This Morning. 31 August 1989.

¹¹ Kevin Fitzpatrick vs. Madonna & OMC. 424 Pa. Superior Ct. 473 (1993). 623 A.2d 322.

¹² Ashley Elliott vs. Brunswick. U.S. Court of Appeals. Eleventh Circuit. June 25, 1990 verdict. 903 F.2d 1505. Mercury appealing the earlier \$4.375 million verdict.

¹³ U.S. Patent 4,957,459. Propeller Shroud With Load Bearing Structure. Richard Snyder. Assigned to Brunswick Corporation. September 18, 1990.

¹⁴ Letter, Orin G. Hatch U.S. Senate to Roger T. Rufe, Chief Congressional Affairs Staff, U.S. Coast Guard. March 28, 1988. These are documents #20 & 21 among those supplied as Appendix C to the 1989 NBSAC subcommittee on propeller guards.

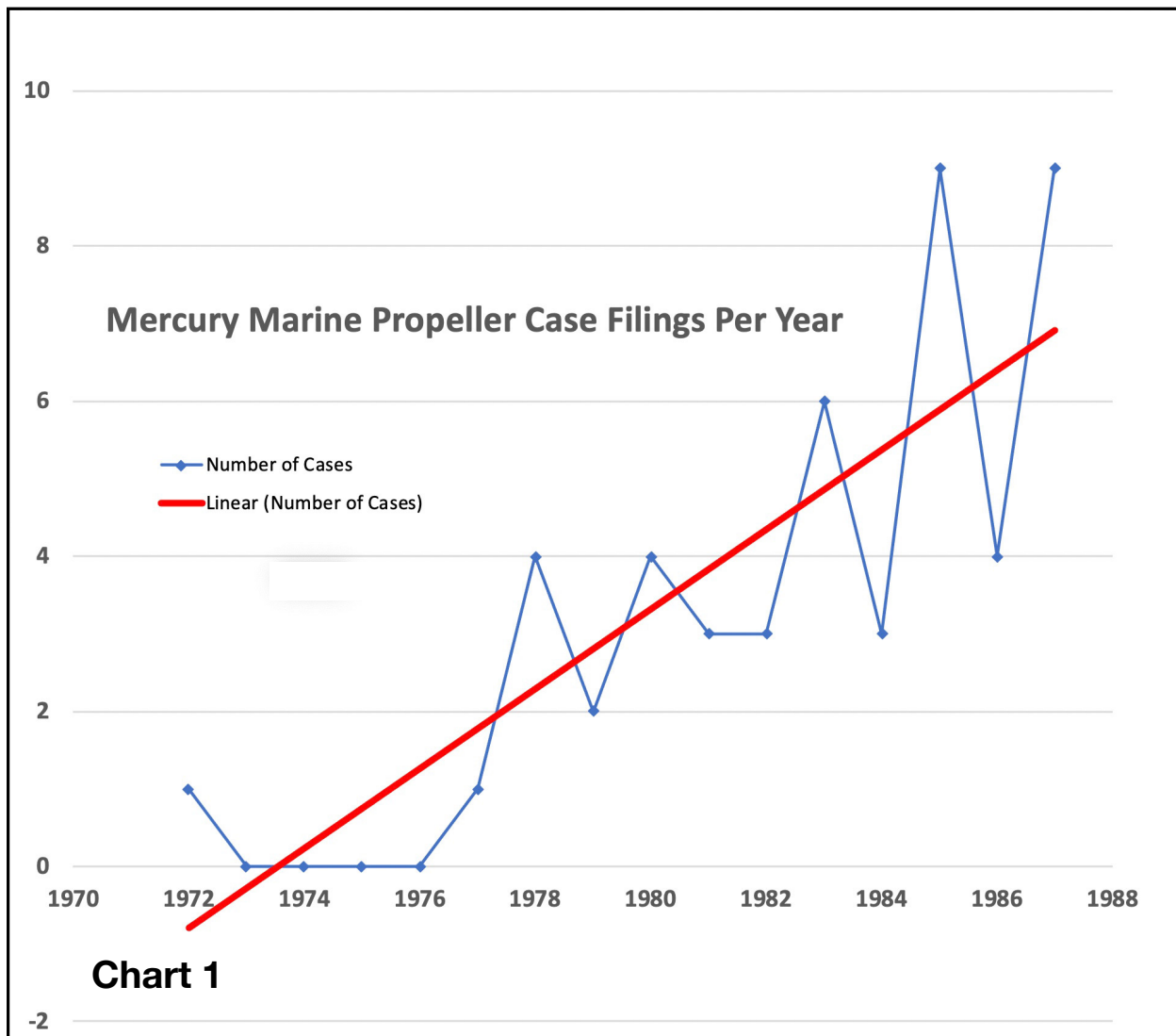
¹⁵ Laura Hepler, 23 of Florida, fell from a family member's boat on Labor Day 1989. Six months pregnant, she struck her head on the propeller, Doctors delivered her baby which died 16 hours later. The mother followed in death about a week after the accident.

F. 1995 Jeanne Sprietsma fatality on Dale Hollow Lake on the Kentucky-Tennessee border.

G. 1995 Shirley K. Broncchini-Jones on Shasta Lake. She died 8 days later.

13. More and more propeller cases were being filed every year. See **Chart 1**.¹⁶ The actual number of cases filed per year against Mercury Marine is charted along with the red linear fit trend line to the curve as obtained via Excel.

One suspects Mercury was plotting similar curves back then. One can only imagine the response from Mercury and Brunswick executives if Mercurys Legal Department had enough nerve to pass **Chart 1** up the chain of command.



¹⁶ Number of propeller cases filed per year against Mercury Marine. Reference Dick Snyder deposition in Elliott vs. Sportcraft. Exhibit 22, Attached List "A". December 15, 1987.

It was also a period of chaos, all the previously listed bad news along with:

1. Apprehension surrounding the 1989 NBSAC study,
2. Both sides of the issue were vying to control public opinion,
3. Propeller accidents continued to occur,
4. Court cases were popping up everywhere,
5. The Marine Corps project loomed in the the background, and
6. The 1991 10 percent luxury surcharge tax on boats over \$100,000.

An Associated Press article in the Kenosha News (Wisconsin) provides some insight into the amount of chaos concerning boat propeller guards¹⁷ at that time. This AP article mentioning many of the industry's issues regarding propeller guards was published across the country.

¹⁷ Battle Brewing on propeller shields. Associated Press. Alan Cooperman. Kenosha News, July 23, 1989, Page E2.

Some Propeller Guard Design Requirements

Boat propeller guards appear to be simple devices that could be constructed in about any weld shop. However design requirements for the **perfect** propeller guard include:

1. minimal drag resulting in minimal decrease in top speeds
2. minimal increase in fuel consumption and emissions
3. no boat handling issues
4. no impact on performance in reverse
5. no cavitation issues
6. the propeller guard cannot be crushed into the drive when grounding, beaching, or striking obstacles
7. cannot be clogged by weeds
8. be safer than an open propeller
9. does not corrode in the water
10. does not cause the propeller or marine drive to corrode
11. does not entrap people in the propeller guard
12. minimize blunt trauma impact
13. does not cover up the marine drive water intakes (cooling water for the engine)
14. provide quick access to marine drive service points, oil change locations, etc.
15. be extremely durable
16. not encourage risk taking by those on board or in the water
17. be easy to mount quickly on a marine drive
18. cause no structural problems to the marine drive itself
19. design can be used on a wide range of types of vessels for a wide range of activities with minimal or no modifications.
20. capable of being built to fit a large range of propeller sizes and models from several outboard and stern drive manufacturers, including legacy marine drives (no longer in production)
21. be capable of being economically manufactured in a wide range of configurations
22. be capable of being quickly inspected by rental operations between rentals
23. be capable of protecting people in the water at higher speeds than the boating industry now says propeller guards might be effective.

Obviously, no conventional propeller guard design is going to meet every criteria on this wishlist.

The list does show the complexity of propeller guard design issues **for planing vessels** exceeded the engineering capacities of many boat builders in the late 1980s and even today.

Propeller Guard Manufacturers

Propeller guard requirements listed on the previous page leave marine drive manufacturers best suited with the expertise and facilities capable of designing, manufacturing, and testing boat propeller guards for **planing** boats.

When marine drive manufacturers failed to respond to the demand for propeller guards, a number of small U.S. propeller guard manufacturers came on the scene in the late 1980s and early 1990s. Prop-Guard, Inc. by Brian Chadwell was probably the most successful. Chadwell's company was registered with the State of California on 30 March, 1987. Chadwell championed both a duct type guard and a wire cage guard.

National Boating Safety Advisory Council (NBSAC)

The U.S. Coast Guard has several advisory councils including the U.S. Coast Guard National Boating Safety Advisory Council also known as NBSAC.¹⁸ In recent years, NBSAC's name has since been changed to the National Boating Safety Advisory Committee.

NBSAC consists of 21 members drawn equally from (1) state officials responsible for boating safety programs; (2) representatives of the boating industry; and (3) representatives of national recreational boating organizations and the general public.

As the clamor surrounding propeller guards increased, NBSAC formed a subcommittee to investigate the use of propeller guards in May of 1988. Mercury and OMC representatives were members of the subcommittee along with a Coast Guard representative and others.

Jim Getz, a police captain with the Illinois Department of Conservation acting as commander of Lake Michigan enforcement operations, chaired the subcommittee.

A total of eight different men served on NBSAC's propeller guard subcommittee at one time or another. Five to seven serving at a time.

A charge to the NBSAC subcommittee committee provided in Appendix A of the final NBSAC report is stamped 13 April 1988. It charges (instructs) subcommittee members to:

1. Review available data on prevention of propeller strike accidents,
2. Review a Coast Guard study on shrouding propellers,¹⁹ and
3. Assess the pros and cons of mechanical propeller guards.
4. Specifically consider 10 points. The first point listed was, "What is the incidence of such accidents?"

¹⁸ USCG's National Boating Safety Advisory Council was recommissioned as the USCG National Boating Safety Advisory Committee in 2021.

¹⁹ Boat and Propeller Impact Injuries and Fatalities. Project 763584.20. Final Report. 1 March 1987. Edward S. Purcell and Walter B. Lincoln. U.S. Coast Guard Research and Development Center. Groton, Connecticut.

“Snyderisms”: A Successful Technique

Richard “Dick” Snyder was Mercury Marine’s long time in-house expert witness in boat propeller cases. As Snyder became aware of new propeller guards in the marketplace, he tested and debunked them. As seen in the next section and in **Volume II**, Mr. Snyder had extensive involvement with NBSAC’s propeller guard subcommittee.

As boat propeller accidents became a more important issue, Snyder began emphasizing several points he promoted as being facts. We refer to those points as Snyderisms. These points or “Snyderisms” were important in justifying Mercury’s case for not using propeller guards.

Mr. Snyder basically repeated Snyderisms so often, everybody started believing them. For example:

1. Propellers make nice clean cuts easy for surgeons to repair vs blunt trauma from propeller guards.
2. There are <100 propeller accidents a year.
3. Propeller guards have a 35 percent larger diameter than the propeller.
4. Propeller guards are only safe under 10 mph.
5. 80 percent of all propeller accidents occur when a boat is at operating speeds.
6. 1/3 of “struck by boat or propeller” accidents, including fatal accidents, were really stuck by the boat.
7. Those struck by a boat propeller that later drown should not be counted as boat propeller fatalities.

One example of a Snyderism was contained in one of his letters to Jim Getz, chairman of the NBSAC subcommittee on propeller guards.²⁰ The following quote comes from Section III part E of the letter: “Many actual boating accidents reveal that **although the prop left classic, unpleasant, repeated cuts** some other engine or boat component was the instrument of greatest injury.”

Referring to propeller wounds as “unpleasant, repeated cuts” is pretty brazen.

Dick Snyder made these and other points over and over to those in the industry, to the Coast Guard, and to the press. His continual repetition of Snyderisms eventually led to their broad acceptance as truth. Snyderisms are covered further in **Volume II**.

²⁰ Letter to Subcommittee Chairman Getz from Mr. Dick Snyder, Mercury Marine, reference a summary of his presentation to the Subcommittee on September 22, dated October 6, 1988.

A Glimmer of Hope for Mercury & OMC?

If the NBSAC subcommittee on propeller guards were to find against the use of propeller guards, Mercury and OMC would have an “independent” study backed by the U.S. Coast Guard supporting their opinions. This could be a real game changer for them.

1988 found representatives of Mercury Marine and OMC serving on the U.S. Coast Guard’s National Boating Safety Advisory Council (NBSAC) subcommittee on propeller guards.

1. Roy T. Montgomery, Mercury Marine Legal General Counsel.
2. Richard H. Lincoln, Outboard Marine Corporation Director of Public Relations and Director of Environmental Affairs.
3. Richard Snyder, Mercury Marine’s in house propeller strike expert witness **was not a member of the subcommittee**. However:
 - A. he or his presentations were on the program at all three subcommittee meetings
 - B. he rebutted presentations by others
 - C. he sent numerous letters to Mr. Getz, Chairman of the Subcommittee
 - D. he provided propeller strike accident data to the subcommittee
 - E. he provided information on Mercury and OMC’s cage propeller guard project with the U.S. Marine Corps
 - F. several of his documents and letters to others were provided to the subcommittee. For example, Appendix C of the 1989 NBSAC report lists numerous documents and videos supplied by Mr. Snyder.
 - G. A word search of NBSAC’s subcommittee on propeller guards final report finds Snyder’s name mentioned 9 times.
 - H. In addition, Snyder’s work, not attributed by name, appears several places in the report such as talking about reporting “hit by boat or propeller” on page 7, “80 percent of all accidents occur when a boat is at operating speeds” on page 11, his discussion of Mercury’s Marine Corps propeller guard project on pages 16-17. See more in our discussion on Snyderisms in **Volume II**.
 - I. Snyder appears to be responsible for more content in the report than any person actually on the subcommittee except for Chairman Jim Getz.
4. OMC’s in house lawyer, Alex Marconi, was not a member of the subcommittee. However, Marconi wrote at least two letters²¹ to Jim Getz, chairman of the subcommittee. Marconi also made a presentation at the September 1988 subcommittee meeting. In later years Mr. Marconi worked for Snell & Wilmer, a law firm defending many propeller guard cases for the boating industry.

²¹ Letter to Subcommittee Chairman, Jim Getz from Alex Marconi, OMC Senior Counsel/Litigation, reference response to the article, “Motorboat Propeller Injuries” by orthopedic surgeon John Nordt, M.S. of Coral Gables, and other related matters. November 9, 1988.

Letter to Subcommittee Chairman, Jim Getz from Alex Marconi, OMC Senior Counsel/Litigation, reference a U.S. Marine Corps accident involving a propeller guard, with attachment. October 12, 1989.

5. Two experts in human impacts²² soon to become involved with Mercury & OMC underwater impact testing made presentations and also sent letters to Jim Getz, subcommittee chair.

- A. Dr. D.F. Huelke²³ Professor of Anatomy, University of Michigan.
- B. Dr. James Benedict²⁴ Biodynamic Research Corporation.

Even Dick Snyder recognized the issues created by Roy Montgomery, Mercury's in-house lawyer, being on the propeller guard subcommittee. Snyder talks about how findings of the subcommittee could be considered tainted with Montgomery on the subcommittee. When asked in his testimony in Pree²⁵, "did you have anything to do with his not being on the committee at the end?" Snyder responded, "I like to think I did."

Snyder was not the only one concerned about the appearance of Montgomery being on the subcommittee. Jim Getz, chairman of the subcommittee, said "My concerns with Mr. Montgomery's involvement revolved around the perception of people who might ultimately review our report, their perceptions of his involvement as tainting the final outcome of the subcommittee."²⁶

Getz contacted the NBSAC chairman and voiced his concerns above when he learned Montgomery had been appointed to the subcommittee. However, Mr. Montgomery remained on the subcommittee til near the end.

²² D.F. Huelke, Professor of Anatomy. University of Michigan. December 19, 1988 letter to Jim Getz regarding November 1988 presentation at the second subcommittee meeting.

Dr. James Benedict - Biodynamic Research Corporation. September 20, 1989 letter regarding his May 1989 presentation at the last subcommittee meeting.

²³ Letter to Subcommittee Chairman Getz from Dr. D. F. Huelke, reference a summary of his presentation to the Subcommittee on November 14, 1988.

²⁴ Letter to Subcommittee Chairman Getz from the Biodynamic Research Corporation, reference an outline of Dr. Benedict's presentation to the Subcommittee in May 1989. September 20, 1989

²⁵ Richard Snyder testimony. James M. Pree vs. Brunswick Corporation. United States District Court. Eastern District of Missouri. St. Louis Missouri. September 20, 1991. Jury Trial transcript - Volume 5. Pages 117-118.

²⁶ Deposition of James E. Getz. Randall Edward Dacus v. Harris-Kayot, OMC, and Horseshoe Bay Marina, Inc. District Court of Dallas County, Texas. 101st Judicial District Court. No. 89-8181-E. December 12, 1990. Pages 38-39.

Control & Manipulate Accident Data: A Successful Technique

The boating industry has long controlled and manipulated propeller accident data in legal cases to minimize liability. They are able to do this by:

1. Using the complexities of the U.S. Coast Guard Database (BARD) to their advantage.
2. Misleading & misrepresenting propeller accident frequency.
3. Segment propeller accidents every way possible to leave fewer accidents on the table.²⁷ Smaller numbers sound better for their cause.
 - A. limit data to fatalities only (smaller number than those injured)
 - B. limit data to only one year or to a few years at a time
 - C. limit data to certain types of propulsion (inboard, stern drive, outboard)
 - D. limit data to certain types of boats
 - E. limit data to certain bodies of water
 - F. limit data to rentals only
4. Ignoring under reporting of boating accidents and feigning any knowledge of how to take under reporting of accidents into account, while saying almost all fatalities are reported.
5. Using USCG's practice of reporting accidents as a series of 3 events to mistakenly report "first event" totals as representing the total number of accidents when "first event" totals only represent a fraction of the total number of USCG reported propeller accidents.
6. Ignoring accidents in BARD not meeting requirements to be in BARD. The USCG maintains one large BARD database, but that database can be cut that into three separate databases:
 - A. An Annual database composed of all accidents reported to the Coast Guard within the BARD program whether they meet the official requirements to be listed in BARD or not. For example, some may be recreational boats used in commercial activities, boats being used in a crime, accidents not meeting the basic criteria to be listed in the official BARD database, state owned boats, boats involved in a racing event, boats not required to display state registration numbers, etc.
 - B. The Official annual BARD database containing only accidents meeting the requirements to be listed in BARD.
 - C. A subset of B above composed of those accidents US states and territories have agreed to allow to be published in Public BARD.
7. Ignoring USCG records of reported propeller accidents not meeting criteria to be in the canonized version of BARD.

²⁷ NMMA/HIA Accident Data. Houseboat Propeller Injury Avoidance Measures Proposed and Withdrawn by the U.S. Coast Guard: An Analysis by the Propeller Guard Information Center. Gary Polson. Version June 15, 2010. Pages 88-90.

8. Ignoring propeller accidents outside the United States involving the same boats and motors.
9. Removing individuals fatally struck by boat propellers that were also marked as drowned from the number of propeller fatalities.
10. Failing to thoroughly search BARD for propeller accidents using advanced searching techniques.²⁸
11. Use of Snyderisms - for example keep stating low propeller injury and fatality numbers and eventually the public and courts will believe them.
12. Overly constrain BARD without taking blank data fields into account. For example, searching for outboard powered boats, while not recognizing many entries may not have a propulsion type listed. Or searching for Mercury powered boats when many entries do not list the engine manufacturer.
13. Claiming accidents are not similar because minute, irrelevant details are not exactly the same.
14. Refusing to recognize media reports of accidents not listed in BARD.
15. Refusing to recognize social media reports of accidents not listed in BARD even if they are collaborated by multiple sources including photographs.
16. Failing to use advanced techniques when searching BARD for certain types of propeller accidents.

²⁸ U.S. Coast Guard Boating Accident Report Database (BARD) Search Strategies to Identify Boat Accidents Involving Vessels Built by a Specific Boat Builder. Gary Polson. PropellerSafety.com 7 August 2020. 35 pgs. pdf

U.S. Marine Corps Rigid Raiding Craft

By the fall of 1988, Mercury was contacted by the U.S. Marine Corps to discuss propeller guards on small outboard powered beach assault craft.

The guards were said to be needed when the craft was near shore with soldiers in the water beside the craft loading and unloading themselves and equipment while the propeller was left running to hold the boat in place. USMC was said to be especially concerned about soldiers feet being struck by the propeller(s) during this process.

December 8, 1988 the Marine Corps asked Dick Snyder of Mercury to produce four prototype propeller guards of the cage type Snyder had proposed for testing in February 1989. Mercury decided to build the guard around a 70 horsepower OMC outboard motor. It was extremely unusual for two competitors like Mercury and OMC to be working together on a project like this.

Mercury's prototype propeller guards were speed and performance tested against Brian Chadwell's cage guard, and against no propeller guard. A new round of open bidding on a cage guard was then scheduled to take place.²⁹

The Spring of 1989 found Dick Snyder on the water testing his new propeller guard design.³⁰

Mercury filed a U.S. patent application for Dick Snyder's wire basket propeller guard on August 23, 1989. The patent issued September 8, 1990,³¹

This section is continued on the next page

²⁹ Dick Snyder, Mercury Marine letter to Jim Getz. "Summary of supplemental comments regarding recent prop guard work with U.S. Marine Corps made 12 May 1989 Couer D'Alene, Idaho. May 30, 1989.

³⁰ Mercury Marine lab report on on water testing of various wire thickness of the Snyder guard.

³¹ U.S. Patent 4,957,459.. Propeller Shroud With Load Bearing Structure. Invented by Richard Snyder. Assigned to Brunswick Corporation. September 18, 1990.

NBSAC propeller guard subcommittee's final report reads like Mercury's Marine Corps project was unable to overcome "the physical laws and an insoluble (*sic*) manufacturing dilemma."³² The subcommittee's findings are not consistent with:

1. Mercury attending a Marine Corps pre-bid conference³³ the day before the NBSAC subcommittee's final report was released. The contract was to be for over 300 propeller guards.
2. U.S. Marine Corps issued Mercury Marine a purchase order³⁴ for their services the day after the NBSAC subcommittee released its final report. The order was for on site hydrodynamic testing and a written report for the testing propeller guards from 27 November - 1 December 1989.

NBSAC Propeller Guard Subcommittee Final Report

NBSAC's subcommittee on propeller guards presented their final report to the full NBSAC committee on November 7, 1989. The subcommittee's final report³⁵ was very critical of propeller guards. The full NBSAC immediately unanimously approved the subcommittee's findings.³⁶ The full NBSAC passed the report and its recommendation on to the Coast Guard.

The very first recommendation in the NBSAC report was, "**The U.S. Coast Guard shall take no regulatory action to require propeller guards.**"

The U.S. Coast Guard officially accepted the NBSAC report and recommendations by letter to Newell Garden, then chairman of NBSAC, from Robert T. Nelson, Rear Admiral, U.S. Coast Guard.³⁷

³² 1989 NBSC Subcommittee on Propeller Guards final report. Bottom of Page 16 through top of Page 17.

³³ M67854-90-B-0001. Two Step Sealed Bid. Step One. Pre_Bid Conference: 6 Nov 1989 at Marine Corps Research, Development, and Acquisition Command, Motor Transport Test Site; Building 3230 Quantico, VA.

³⁴ M9540509RCRDOH6 Order. Issued by MCRDAC. Ship to: Marine Corps Research Development and Acquisition Command. Washington DC. For on site hydrodynamic testing and a written test report. Order issued November 8, 1989. Signed by Richard H. Snyder. of Mercury Marine, November 17, 1989.

³⁵ Report of the Propeller Guard Subcommittee. The National Boating Safety Advisory Council. Presented November 7, 1989.

³⁶ Minutes. 44th Meeting of National Boating Safety Advisory Council. Orlando, Florida. November 6-7, 1989. Pages 17-19.

³⁷ Robert T. Nelson, Rear Admiral, U.S. Coast Guard letter to Newell Garden, Chairman National Boating Safety Advisory Council. Date stamped February 1, 1990.

NBSAC Final Report Runs Contrary to USCG Purcell & Lincoln Report

As discussed in The Before We Begin section, Edward Purcell and Walter Lincoln of the United States Coast Guard Research and Development Center studied the “the problem of injuries and fatalities caused by collision of a boat or propeller with a human body” per a January 1985 statement of work. Their project was later verbally changed to a review of currently available devices and technologies.

Purcell & Lincoln’s study was a paper study like the NBSAC study. They reviewed a large number of documents on the subject. Biomechanical studies would have to be completed before a decision could be made.

3. Mechanical studies would have to be completed and the public sector would need to be encouraged to develop propeller guards to be tested.
4. Test for injury severity would then have to be conducted.
5. Potential solutions would need to be ranked.
6. Acceptable Solutions would need to be identified.
7. Validation testing would need to be performed.

However, NBSAC’s propeller guard subcommittee was able to find, **“The U.S. Coast Guard shall take no regulatory action to require propeller guards.”** without addressing a single one of the problems identified by Purcell & Lincoln

Glimmer of Hope Mercury & OMC Part 2

Findings of the 1989 NBSAC subcommittee on propeller guards finally gave the boating industry an “*independent*” study backed by the U.S. Coast Guard they could use to fight off those clamoring for propeller guards.

The 1989 study, along with Chairman Jim Getz as an expert witness, immediately became **the keystone** in Mercury and OMC’s propeller guard defense.

Mercury and OMC immediately began using the 1989 NBSAC report in:

1. Propeller guard legal cases.
2. Defending against proposed government regulations requiring the use of propeller guards or other propeller safety restrictions.
3. Rebutting public opinion in the media.

and still does to this day.

Immediately After the 1989 NBSAC Report

The very next day, November 8, 1989, a purchase order was issued to Mercury by the Marine Corps for services during testing Snyder’s guard scheduled for 27 November -1 December 1989, along with a written test report. Dick Snyder signed the contract in behalf of Mercury on 17 November 1989.

Jim Getz immediately became an expert witness for the boating industry in the defense against the use of propeller guards. Getz testified of his participation on the NBSAC propeller guard subcommittee in his 1991 Dacus deposition,³⁸ along with the findings of the subcommittee.

Propeller safety advocates like Ben Kelley started pointing out problems with the operations of the subcommittee and with their final report.³⁹

We later identified several problems with the subcommittee and their findings in our post, “NBSAC Propeller Subcommittee Report 1989.”⁴⁰

³⁸ Deposition of James E. Getz. Randall Edward Dacus vs. Harris - Kayot, et al. 101st Judicial District Court. District Court of Dallas County Texas. Case #89-8181-E. January 10, 1991.

³⁹ Part Three. Propeller Injury Policies, Legislation, and Litigation. The IIR Review. Institute for Injury Reduction. Vol.1. No.2. Summer 1992.

⁴⁰ NBSAC Propeller Subcommittee Report 1989. Gary Polson. April 7, 2011.
<https://www.propellersafety.com/nbsac-propeller-guard-subcommittee-1989/>

Propeller Safety Advocates Were Not Sitting Still

Propeller safety advocates and plaintiff attorneys were becoming more organized and increasingly making points that resonated with the public, including:

1. We can put a man on the moon, but we can't build a functional boat propeller guard?
2. They put guards on fans, why not on propellers?
3. Guards would also protect propellers, resulting in fewer propellers being replaced. If the boating industry used propeller guards, marine drive manufacturers would lose their lucrative propeller replacement business.
4. Ben Kelley was among those leading the charge against the boating industry.⁴¹

The Boating Market Takes a Turn for the Worse

By the early 1990s the country was in a recession. To make matters worse, the government enacted a 10 percent federal tax on boats in excess of \$100,000. Boat companies were closing plants and laying off workers including Brunswick, Mercury, and OMC.

Below is a quote from a history of boating in Boating Industry, a trade publication

“Overall, the industry went from employing 600,000 in 1988 to 400,000 in 1992. It was estimated that the average boat price dropped by as much as 50 percent. Sales of boats more than \$100,000 dropped by 77 percent, estimated the Marine Retailers Association of America. Boat sales nationally dropped by more than 40 percent from \$17 billion in 1989 to \$10 billion in 1992.”⁴²

⁴¹ Ben Kelley Prop Guard Press Conference. video. June 1989.

⁴² 85 years of boating history. Boating Industry June 12, 2014.

Litigation Testing: A Successful Technique

Mercury and OMC tested propeller guards from experts or third parties that were or were anticipated to be proposed as alternatives during litigation. Those tests are sometimes referred to as litigation testing.

While the testing is supposed to be performed honestly and fairly, everybody knows the proposed solution is going to fail. We are not saying the testing is or is not fair, we are just saying that across all industries, proposed alternatives fail every single time. They never succeed. It is obvious manufacturers setup and conduct tests in a way in which the proposed alternative will fail. For example, always testing propeller guards at planing speeds.

We previously wrote about litigation testing of propeller guards by Mercury.⁴³

Mercury and OMC previously conducted many litigation propeller guard tests in which they found guards caused a variety of problems including blunt trauma injuries, increased drag, boat handling issues, reduced top speeds, increased fuel consumption, and entrapped people.

Mercury and OMC's litigation testing was especially brutal on Brian Chadwell's guards. Products that rise to the top of the pack receive the most brutal litigation testing.

In the Decker case, Don Kueny, former Chief Engineer, and former President of OMC who was present at some of the Mercury OMC testing at SUNY was asked about litigation testing.⁴⁴ They asked him on the stand right after a discussion about the spring in the crash dummy's neck in the SUNY testing being several times stiffer than it should have been.

14 Q Sure. So would you agree with me that if
15 somebody conducts litigation testing with the
16 preexisting goal of what they want to prove that you
17 can fix the test apparatus in whatever way necessary
18 to prove exactly what you want to prove so you can
19 share it with the jury?
20 A That could be done.

Figure 1: Don Kueny testimony in Decker vs. OMC propeller case

⁴³ Litigation Testing Continues in Testing of Propeller Guards by Mercury Marine / Brunswick. PropellerSafety.com by Gary Polson. July 6, 2011.

⁴⁴ Audrey Decker and Frederick Decker v. Outboard Marine Corporation. Circuit Court of the Twentieth Judicial Circuit in and for Collier County, State of Florida. Case No. 02-1970-CA-HDH. Transcript of Proceedings. Volume 7. June 11, 2009. Don Kueny being cross examined by Jay O'Sullivan. Page 877.

The Alliance Continues

1991 found Mercury and OMC working together on three more projects. They teamed up to support two research projects. (1) underwater impacting a crash dummy in the head with Dick Snyder's propeller guard on an OMC outboard motor, and (2) underwater impacting testing Dick Snyder's propeller guard against cadaver legs. In addition they were (3) developing / establishing the Federal Preemption defense. (see next page)

Three Very Successful Joint Projects

All three projects above eventually became major elements in Mercury and OMC's court defense.

1. Propeller guard head impact study⁴⁵ became a **pillar of their defense**, with the testing performed in 1991.
2. Propeller guard leg impact study⁴⁶ became a **pillar of their defense**, with the testing performed in 1991.
3. Federal Preemption was so successful it eventually replaced their existing legal defense. Mercury and OMC received their first favorable Federal Preemption rulings in two U.S. District Courts in 1991.

⁴⁵ Injury Analysis of Impacts Between a Cage-Type Propeller Guard and a Submerged Head. Scott, Labra, Guzman, Benedict, Smith, and Ziegler. SAFE Journal Vol.24. No.3. 11 pages.

⁴⁶ An Underwater Impact Biomechanics Study to Evaluate a Boat Motor Cage-Type Propeller Guard as a Protective Device. Kress, Porta, Snider, and Fuller. 8 pages.

Federal Preemption

About 1991 the boating industry began developing their **Federal Preemption defense**.^{47,48} This legal defense was based upon the 1971 Federal Boating Safety Act (FBSA) in which the U.S. Coast Guard did not require the use of propeller guards on all boats. The boating industry led by Mercury and OMC claimed plaintiff's state court claims were preempted by the 1971 FBSA due to USCG's decision not to require propeller guards on all boats. If state court claims were preempted, then federal court claims could be immediately rejected based on the 1971 FBSA not requiring propeller guards.

Federal Preemption eventually became their "Get Out of Jail Free" card. All they had to do was show up in court, move for summary judgement (a ruling based on law), and go home a winner.

While Federal Preemption was a magic wand for Mercury and OMC, it practically put an end to propeller guard development by third parties. The boating industry had absolutely no reason to develop or use boat propeller guards. They actually had a huge financial incentive to NOT use propeller guards. If they were to one day start using propeller guards, those injured or families of those killed in the past would sue them for not using guards earlier. But with Federal Preemption and staying away from using propeller guards, they had no worries at all.

Third party development of propeller guards (development by small firms) also suffered during this time because the boating industry had an even stronger financial incentive to reject their products.

⁴⁷ The Federal Boat Safety Act of 1971 and Propeller Strike Injuries: An Unexpected Exercise in Federal Preemption. Amy P. Chiang. Fordham Law Review. Vol.68 No.2. Article 5.
Available at: <http://ir.lawnet.fordham.edu/flr/vol68/iss2/5>

⁴⁸ Mowery vs. Mercury Marine. U.S. District Court, Northern District of Ohio. On August 13, 1991 the court ruled in favor of the industry's new Federal Preemption defense. This win was followed up by Shields vs. OMC. U.S. District Court, Middle Georgia, Albany Division. On October 30, 1991 they ruled in favor of the Federal Preemption defense. This gave the industry two wins in two district courts, one for each firm (Mercury and OMC). They were off to the races trying to cement this verdict across the country.

Use of Organizations: A Successful Technique

It was as if the industry knew Federal Preemption was not going to stand forever. They needed to shore up their traditional defenses in the event they lost Federal Preemption.

As the boating industry matured many organizations formed to represent different segments and concerns of the industry. For example USCG's NBSAC provided Mercury and OMC an inside track to see what the Coast Guard was thinking about. It even offered them an opportunity to derail initiatives the industry wanted to go away.

Other organizations include the National Marine Manufacturers Association (NMMA). NMMA themselves formed special interest organizations like the Houseboat Industry Association (HIA) and the Boating Industry Risk Management Council (BIRMC). With Brunswick being a major player and major source of funds for NMMA,⁴⁹ NMMA's special interest organizations wrote letters against the use of propeller guards and encouraged their members to do the same. BIRMC became a place for the industry to pool legal knowledge behind closed doors.

The American Boat and Yachting Council (ABYC) was used in conjunction with NMMA and the Coast Guard to develop voluntary industry standards, none of which required the use of propeller guards. ABYC was involved in U.S. Coast Guard contracts to create a protocol for testing propeller guards. The final version propeller guard test protocol is too complex to be applied by most propeller guard manufacturers.

The industry even managed to get the U.S. Small Business Administration to rally to their aid and write a letter with industry assistance against a proposed houseboat propeller guard regulation.⁵⁰ Mercury and Brunswick were especially good at getting these and other marine organizations to rally to their aid.

The End of Federal Preemption

Lewis vs. Brunswick⁵¹ challenged the industry's propeller guard Federal Preemption defense all the way up to the U.S. Supreme Court. Brunswick blinked and settled the case at the very last moment possible. The Justices had already heard the entire case. Brunswick settled for approximately \$700,000 to protect their Federal Preemption defense.

Sprietsma vs. Mercury Marine⁵² was the second U.S. Supreme Court challenge to the boating industry's Federal Preemption defense. The December 3, 2002 Sprietsma decision cancelled the industry's Get Out of Jail Free card. Their beloved Federal Preemption defense was no more.

⁴⁹ John McKnight, Director Environmental and Safety Compliance. National Marine Manufacturers Association letter to USCG dated 11 March 2002. USCG Docket Item # USCG-2001-10163-88. Pgs. 15-27.

⁵⁰ U.S. Small Business Administration letter to USCG dated 11 March 2002. USCG Docket Item # USCG 2001-10163-92.

⁵¹ Lewis, Deceased, v. Brunswick Corporation. 523 U.S. 1114 (1998). Settled May 15, 1998.

⁵² Sprietsma v Mercury Marine Propeller Case. PropellerSafety.com. Gary Polson. May 4, 2011.

Reemergence of The Original Defenses

Many thought there would be a flurry of propeller cases once Federal Preemption was no longer a defense. However, things seemed to move fairly slowly for a while. With the loss of Federal Preemption, the industry once again trotted out its old friends, the two underwater impact studies along with their keystone defense:

1. The 1989 NBSAC study.
2. The underwater head impact study.
3. The underwater leg impact study.

The State of Affairs 20 Years After Sprietsma

The industry's three "independent" studies are still heavily relied upon. The 1989 NBSAC report remains the keystone of the industry's defense.

Recently industry experts have applied a human factors mathematical approach to underwater impact testing.^{53,54} Other industry experts are still citing the industry's three old friends (the 1989 NBSAC study and the two underwater impact studies) in the same cases.⁵⁵

⁵³ Jonathan Slocum, Alexander Slocum, Thomas Eagar report to Johnson and Bell Ltd. dated September 28,, 2018. *Orteg-Garcia v. United States of America et al.*

⁵⁴ Alexander Slocum report to Johnson and Bell Ltd. dated April 15, 2021. *Reed vs. Tracker Marine, LLC et al.*

⁵⁵ William H Daley, III. CED Technologies Inc. Report dated April 15, 2021 in *Reed vs. Tracker Marine, LLC et al.*

More Successful Techniques

In addition to the 1989 NBSAC propeller guard study and the two underwater impact studies, over time the boating industry developed additional techniques / approaches to minimize or eliminate legal liability in boat propeller strike cases. These techniques include the four already mentioned in this report (NBSAC study, the two impact studies, and Federal Preemption), plus several more:

1. “Snyderisms” - repeat something so often everybody starts believing it.
2. Litigation Testing - testing of proposed alternatives
3. Control and Manipulate Accident Data (see further details in next section)
4. Use of Organizations (ABYC, NMMA, Houseboat Industry Association, BIRMC, NBSAC, SBA, etc.) in their defense.
5. Controlling words and phrases - speaking and writing to nudge others to your point of view. While this is done by most writers and media outlets, the industry is especially adept at its use.
6. “Education is the answer.” The boating industry always thinks education is the answer, not some new safety device. The U.S. Coast Guard spends millions of dollars annually trying to educate and encourage boaters to wear life jackets, however adult wear rate in open motor boats has remained less than 10 percent for decades.
7. “Our products meet all existing standards, ABYC standards, and NMMA certifications, none of which require propeller guards” By the boating industry’s ties to ABYC, NMMA, and other organizations they have significant influence in the creation of standards and certifications.
8. Dog and Pony show - a well practiced courtroom legal defense team along with expert witnesses going from court to court like a theatrical production, especially in the late 1980s and early 1990s.
9. Obfuscation (obscure, make something unclear or unintelligible) - see my big chart.⁵⁶ Like when they objected to USCG’s 2001 houseboat propeller safety proposed regulation on grounds they did not know how to define the word “houseboat”.
10. “We do not know how to proceed without government regulation or guidance from the Coast Guard.”
11. Industry cooperation (Mercury and OMC). Sometimes Mercury / Brunswick comes to the aid of other boat companies in propeller guard trials. They do not want another firm to lose a case that will come back to bite Brunswick in the future.
12. Always testing boat propeller guards at planing speeds when some boats run much slower.

⁵⁶ Aspects of the Debate Surrounding Propeller Safety Issues. Gary Polson. PropellerSafety.com. Last updated September 25, 2014. When the industry gets boxed into a specific area on this chart and questions get more difficult for them to answer, they will hop to a distant area of the chart and try to bring the focus and attention over there.

13. If media (TV, newspapers, magazines, blogs) say something good about propeller guards or a specific propeller guard Mercury Marine quickly rebuts their piece with a detailed analysis of the media outlet's mistakes.⁵⁷
14. NRA defense against banning guns - refuse to give any ground to propeller guards. Do not give them a toehold anywhere, not even in rental displacement (non planing) houseboats or in slow rental pontoon boats.
15. Everyone toes the line together. "No manufacturer sells new boats with guards on them." "No boat rental operations use guards." Thus why should this boat or this marina?
16. We don't know where any specific outboard motor is going to be used (what company, what boat, what activity) so we can't put a guard on it. See our rebuttal based on the ant farm model (mail in a postcard to receive your ants).⁵⁸
17. Jones Act Defense - more appropriately known as the Limitation of Liability Act of 1851- if the propeller accident happened on "navigable waters" that could be used for commerce (shipping) they claim their maximum liability is the value of the vessel and its contents under the Limitation of Liability Act.
18. Law of Unintended Consequences - they say purposeful actions (adding propeller guards) might have unintended consequences, then emphasize those unintended consequences that could be bad with no mention some might be good.
19. Focus on safety principles they do not really believe in it. For example, reject propeller guards due to the additional cross sectional area being more likely to strike someone than the propeller was. If cross sectional area of running gear in the water is a critical issue, why are they now featuring quad 600 horsepower outboards on boats with countless times more total cross sectional area underwater?

⁵⁷ Richard Snyder of Mercury Marine letter to Steve Smede of Houseboat Magazine regarding an article in their November 1999 issue on pages 20-21 in which propeller guards were treated favorable for houseboats with portions contributed by Keith Jackson. Reference ARD BATES 53-54.

⁵⁸ Propeller Guard Paradox Defense Defeated by Ant Farm. PropellerSafety.com. Gary Polson. June 16, 2011.

Appendix

Summary of Mercury & OMC Joint Projects

Mercury Marine & OMC went on to work together on many propeller guard projects, including:

1. Mercury Marine & OMC were both participants in the 1988-1989 NBSAC propeller guard subcommittee, and the resulting report.
2. Marine Corps propeller guard project 1988 through early 1990s.
3. Head strike testing propeller guards underwater using a crash dummy, testing performed in 1991.
4. Leg strike testing propeller guards underwater using cadaver legs testing performed in 1991.
5. Their legal departments shared costs of the SUNY head and leg impact testing.
6. Jointly working together in the courtroom in many cases beginning in 1988 or earlier.
7. Sharing propeller guard test data.
8. Perfecting the Federal Preemption defense in early 1990s.
9. Conducting a mock court propeller guard case.
10. Publishing technical papers based upon underwater impact testing at SUNY (State University of New York at Buffalo) all the way up through 1996.
11. Creating a large database of depositions, legal cases, technical papers, media coverage, expert witnesses and more concerning propeller guards to assist their legal operations.

These fierce competitors teamed up on the eleven projects above primarily across their engineering and legal departments.

The End