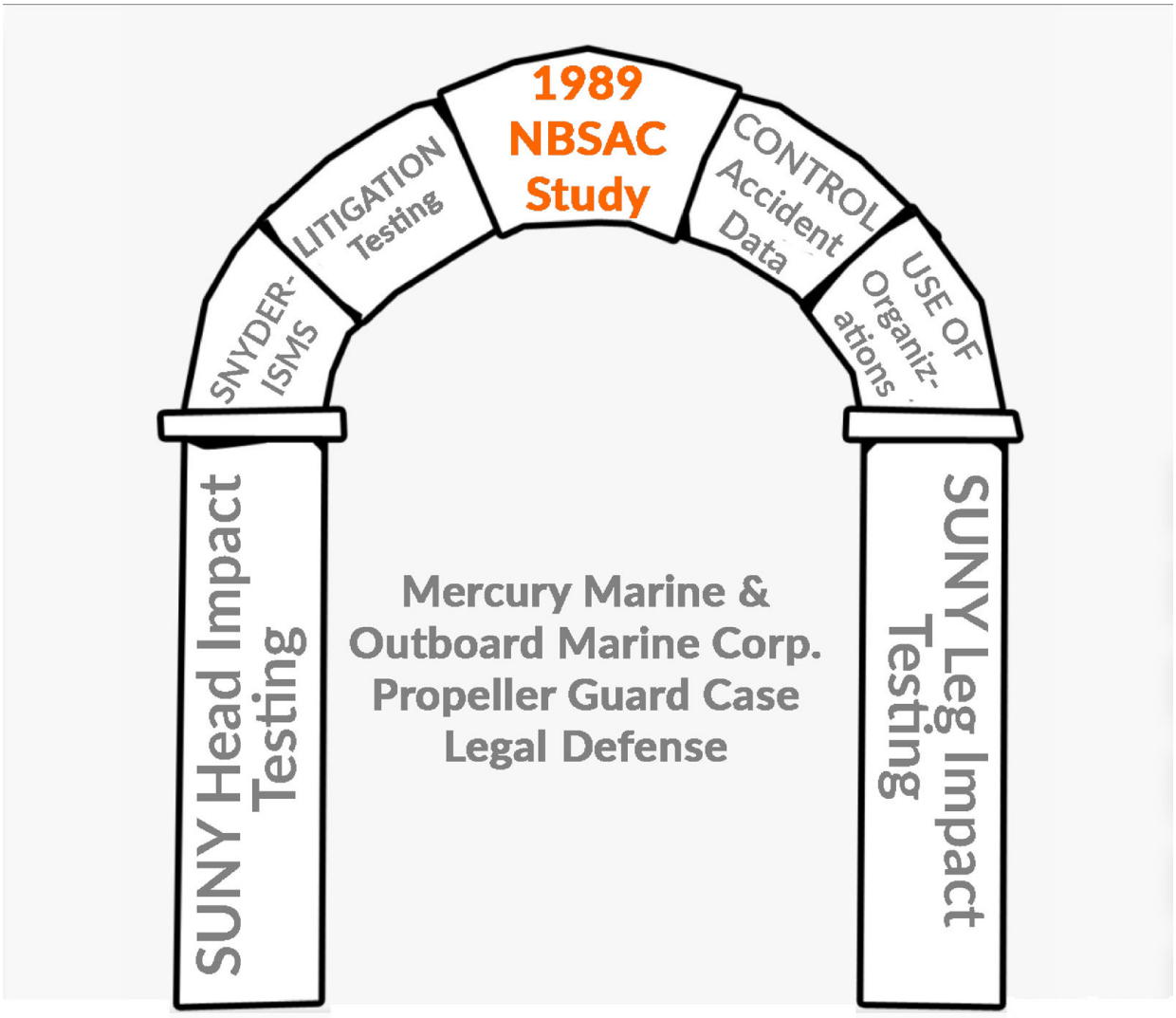


# Volume II: The 1989 NBSAC Study

**PropellerSafety.com**

**4 May 2023**

**Gary Polson**

*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 quickly organized defense was the U.S. Coast Guard 1989 National Boating Safety Advisory Council (NBSAC) propeller guard subcommittee report.*

*The report was propped up and enhanced by two underwater impact studies conducted at State University of New York (SUNY) at Buffalo.*

*This report is the second of a series of four volumes. The introduction to the series, and one addressing each of the three studies. This volume addresses the 1989 NBSAC Propeller Guard Subcommittee report, the keystone of the boating industry's legal defense.*

*The 1989 NBSAC report had several problems. Most critics focus on the subcommittee report being biased by industry representatives serving on the subcommittee. This volume focuses on how the* ***boating industry deliberately watered down propeller accident statistics in order to influence the outcome of the NBSAC subcommittee report.***

***The boating industry assured the outcome of the subcommittee by:***
1. ***Limiting discussion to fatality data,***
2. ***Misrepresenting propeller fatality data, and***
3. ***Making no efforts to account for unreported "struck by boat or propeller" accidents.***

***Propeller accident statistics were critical to the outcome of the 1989 report which became the keystone of the boating industry's defense.***

*We also cover* ***statements we call Snyderisms*** *frequently repeated by the boating industry as truth.*

*We close the volume with Mercury Marine not being totally open with NBSAC about the status of the* ***U.S. Marine Corps propeller guard project and their involvement with it.***

For background information on the 1989 NBSAC subcommittee report and on this current report on the 1989 NBSAC report, please see:

1. Report of the Propeller Guard Subcommittee. The National Boating Safety Advisory Council. Presented November 7, 1989. https://www.propellersafety.com/wordpress/wp-content/uploads/1989-nbsac-propeller-guard-study.pdf

2. NBSAC Propeller Subcommittee Report 1989. Gary Polson. April 7, 2011. (our 2011 review of the 1989 NBSAC report) https://www.propellersafety.com/nbsac-propeller-guard-subcommittee-1989/

3. Mercury Marine & Outboard Marine Corporation Propeller Guard Case Legal Defense. Introduction: Volume I of a Four Volume Series. PropellerSafety.com. Gary Polson.

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**Introduction**

For reasons detailed in the introduction of this four volume series, Mercury Marine / Brunswick and Outboard Marine Corporation (OMC) were facing serious problems on several fronts concerning boat propeller guards about 1988-1991. These challenges forced these two fierce competitors to work together against the financial threat of propeller injury cases.

Along came the U.S. Coast Guard National Boating Safety Advisory Council (NBSAC) in May 1988 announcing they were going to study issues surrounding the use of propeller guards.

Mercury and OMC each had an employee serving on NBSAC. Both men were chosen to serve on NBSAC's propeller guard subcommittee.

The subcommittee was formed of 5 to 7 men and lasted about a year and a half.[1] Mercury's representative was Roy Montgomery, their corporate lawyer. OMC's representative was Richard Lincoln their Director of Public Relations and Director of Environmental Affairs.

In addition to the members above, Richard "Dick" Snyder, long time in house expert witness in boat propeller strike cases for Mercury Marine, attended all three subcommittee meetings, presented at all three meetings, rebutted presentations by others, and sent numerous letters to subcommittee chairman, Jim Getz. Dick Snyder also provided propeller accident statistics to the subcommittee. Mr. Getz was a police captain with Illinois Department of Conservation acting as commander of Lake Michigan enforcement operations.

A finding against use of propeller guards by the NBSAC subcommittee could be worth millions of dollars to Mercury and OMC. The full National Boating Safety Advisory Council and U.S. Coast Guard would likely ratify the subcommittee's findings. A Coast Guard statement against use of propeller guards could quickly be wielded by Mercury and OMC in boat propeller cases, in the media, and in public debate. "Independent" findings of the U.S. Coast Guard would have tremendous weight in court against Plaintiff's saying boat motors should have propeller guards. That is in fact what happened.

This volume explores three previously unexplored problems with the 1989 NBSAC subcommittee on propeller guards final report.

**Problem #1:** the subcommittee was knowingly furnished inaccurate, watered down propeller accident statistics by Mercury Marine.

**Problem #2**: "Snyderisms - several points frequently made by Dick Snyder, Mercury Marine's long term in house propeller accident expert witness, made it into the report without being proven or even being attributed to him. Later on, Mercury was able to quote his unattributed statements from the 1989 NBSAC study, giving them even more authority.

**Problem #3**: Dick Snyder presented Mercury's project with U.S. Marine Corps to produce propeller guards for Outboard Marine Corporation (OMC) outboard motors as a failure. That was not true.

This volume will cover each of these three problems separately.

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[1] NBSAC 1898 Propeller Guard Subcommittee Timeline. Gary Polson. Polson Enterprises. 2011. https://www.propellersafety.com/wordpress/wp-content/uploads/NBSAC-propeller-guard-report-timeline.pdf

# Problem # 1

## The Subcommittee was not timely furnished accurate propeller accident statistics

**Importance of Accurate Statistical Data**

Without the 1989 NBSAC report, the boating industry's propeller guard defense collapses. The industry's entire defense is built upon it. It is the keystone of their defense.

Every time the Coast Guard has chosen to investigate a proposed solution for a certain type of accident (mandatory installation and use of kill switches, houseboat propeller guards, carbon monoxide poisoning, pontoon boat propeller accidents, etc.) the first thing they do is determine frequency and severity of those accidents.

There will inevitably be hurdles to cross in implementing potential / proposed changes. Otherwise, they would have already been implemented. The number and severity of accidents preventable by proposed changes provide motivation to cross hurdles along the way. That motivation is sometimes reflected in survivor advocates clamoring for change.

If hurdles to be crossed are many and high AND the number of accidents and their frequency is low, there is not enough motivation to overcome the hurdles.

The NBSAC study itself cited importance of accident data on Pages 22-23 under "Conclusions" - *"Accident data and the analysis of accident data must be an integral component of a study of this nature."*

The problem in this instance was two members of the 4 to 7 person subcommittee were highly motivated to convince remaining members propeller guards have problems, do not work, and the subcommittee should not recommend their use. In addition, these two members were the gatekeepers to industry information. Propeller guards are a complex topic with a tremendous amounts of existing documents and data. OMC and Mercury were in a position to filter that information to influence the subcommittee to come to the outcome they desired, an independent study condemning the use of propeller guards.

As will be shown later, the study relied on what the Coast Guard refers to as "first event" fatality data, the number of people killed by "struck by boat or propeller" in the first event of the accident. This figure ignores all those who may have been ejected from a boat or fallen from a boat and struck by the propeller. Mercury even further reduced "first event" statistics supplied to the subcommittee based on guidance of Dick Snyder. Thus fatality statistics provided to the subcommittee were only a small fraction of actual reported fatalities, and injury statistics were not considered at all.

Armed with watered down, fatality only accident statistics the subcommittee found little motivation to overcome hurdles in the way of implementing use of propeller guards in any boating application.

The boating industry has long said most propeller injury accidents are reported because they are very severe. If these accidents are so severe, why were propeller injury accidents not considered in deliberations of the subcommittee? In addition, why were no efforts made to estimate the number of individuals killed or injured by boat propellers not reported in the Coast Guard accident database?

The 1989 NBSAC study, like most studies of its nature was driven by accident data. The wrong data was supplied to the subcommittee, rendering their findings invalid. Thus all studies built upon the 1989 NBSAC study are also invalid.

**The Charge to the Subcommittee**

The National Boating Safety Advisory Council subcommittee on propeller guards was given a charge. See **Figure 1**.

The first item listed among points to be considered was, “What is the incidence of such accidents?”[2]

The second point to be considered was, “Is there a trend toward more or fewer such accidents?”

The subcommittee initially consisted of four men:

1. Jim Getz - police captain with the Illinois Department of Conservation - chairman
2. William Fast - maritime union executive
3. Dick Lincoln - OMC Director of Public Relations
4. Donald Kerlin - U.S. Coast Guard

As time went on some were added and some dropped off. Jim Getz, chairman, said some were added in order to maintain a balance on the subcommittee of equal representation from all three categories of membership of the council.[3]

The three categories of NBSAC membership are:
1. State officials responsible for boating safety programs
2. Representatives of the boating industry
3. Representatives of national boating organizations and the general public

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[2] Appendix A. NBSAC Committee. Propeller Guards / (Propeller Strikes / Propeller Protection). Charge to the Committee. Report of the Propeller Guard Subcommittee. Presented November 7, 1989.

[3] 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 30-31.

APR 13 1988

NBSAC COMMITTEE

Propeller Guards/ [Propeller Strikes/Propeller Protection]

Charge to the Committee:

* Review the available data on the prevention of propeller-strike accidents and the Coast Guard study of various methods of shrouding propellers to prevent contact with a person in the water.

* Assess the arguments for and against some form of mechanical guard to protect against propeller strikes reflecting the positions of state boating law administrators, the recreational boating industry, and the boating public.

* Among points to be considered:

a. what is the incidence of such accidents?

b. is there a trend toward more or fewer such accidents?

c. what are the possible solutions and their advantages/disadvantages?

d. how is this problem being addressed in other nations?

e. what would be the direct costs and indirect costs (fuel economy, maintenance, etc.) of mechanical solutions?

f. can the risks be addressed adequately by education?

g. should the Coast Guard move towards a federal requirement for some form of propeller guard?

h. assess the potential for propeller equipped with each of several propeller guard designs to cause injury. How much has the propeller guard reduced the injury potential compared to the injury potential of the same propeller operating in an unguarded manner?

i. should only new boats and motors be equipped with propeller guards, or should all boats eventually be equipped with a guard?

j. what is the practical boat length limit beyond which propeller guards would not be required? are there other parameters which would dictate upper limits for guard installation?

Committee members:

Jim Getz (Chairman)
William Fast
Dick Lincoln
Don ~~Ellison~~ Kerlin (USCG rep.)

**Figure 1: Charge to the NBSAC Subcommittee**

**Statistical Data in the Final Report**

A list of propeller accident statistics sources cited in the 1989 NBSAC subcommittee's final report by NBSAC report page number follows.

The first item has to do with the timing of information, the rest with propeller accident statistics.

**Pg2.** - *"The second meeting was held in New Bern, North Carolina, on November 14, 1988, and a third meeting at Couer d'Alene, Idaho, on May 12 and 13, 1989. Following that session, the Subcommittee concluded that sufficient written and verbal presentations and demonstrations had been seen and heard to cover the field; collection of documentary material amassed and reviewed was reasonably representative of presently available, relevant data; and further document search or additional meetings with concerned persons was unlikely to produce substantial additional information."*

Approximately three months later, August 2nd, Robert Taylor penned his Failure Analysis Associates letter providing statistics to Jim Getz.

"*Between the May 1989 and November 1989 NBSAC meetings, this report was drafted and unanimously approved by Subcommittee members, and the Chairman was directed to deliver it to NBSAC at its regular meeting scheduled for November 6, 1989."*

**Pg.3 item 7** - Individuals Heard - Robert Taylor: marine engineer and naval architect, formerly of the University of Michigan and U.C. Berkley, former ship designer for the U.S. Navy, and currently Supervising Marine Engineer of Failure Analysis, Inc. He has previously furnished propeller accident **statistical data on behalf of defendants**.

**Pg.5 item b** engine and boat manufacturers have asserted - *"A very high percentage of the reported accidents of "struck by boat or propeller" do not involve propeller strikes, but involve impacts with the boat hull or a stationary component of the lower unit."*
This item is a Snyderism.

**Pg.6**. - *"Manufacturers are opposed to mandatory propeller guards and assert that propeller strike accidents constitute less than 5% of the total annual boating fatalities."*

**Pgs. 7-9** - titled, *"Statistical dimensions of the problem" - "The Coast Guard believes that only 5 to 10 percent of all boating accidents not involving fatalities are reported."*
*"The subcommittee believes that the completeness of accident reporting varies proportionately to the severity of the injury, from nil in the case of very minor injuries, to fairly complete in fatalities."*

**Pg.10-11** - titled *"Annual recreational boating fatalities" - "Robert Taylor of Failure Analysis, Inc. presented information from his organization's data base which had been compiled from all major statistical sources (See **Appendix E**)."*
Absolutely no data is directly provided in this section on the number of propeller strike injuries or fatalities for any specific year or time period. Similarly no data is directly provided for the number of those "struck by boat or propeller" is provided for any time period OR the number of "struck by drive or propeller"

**Pg.22-23** - titled *"Conclusions" - "**Accident data and the analysis of accident data must be an integral component of a study of this nature**. There is no one single source, best source, or all-inclusive source of accident data. However, the available sources can be utilized collectively to give an accurate portrayal of the significance, frequency, and relative magnitude of underwater impacts to other causes of boating accidents in particular and accidents in general. There is no indication that any changes in reporting would reflect significant change to the relative position of percentage of injuries/fatalities due to underwater impacts. Therefore propeller guarding at best could have only a negligible impact on improving boating safety."*
It is unbelievable that the entire 1989 NBSAC report never mentions the U.S. Coast Guard Boating Accident Report Database (BARD) by name.

The subcommittee says the available sources can be used collectively to give an accurate portrayal of the frequency underwater impacts (propeller strikes) but fails to explain how to do so OR list their findings when they performed that task. There is absolutely no data provided for the number of individuals injured by boat propellers in the body of this report.

The report reads like they were won over by Robert Taylor's charts of relative frequency of propeller fatalities as compared to the total number of boating fatalities. This logic totally leaves out the hundreds of reported propeller injuries per year, most of them extremely severe. The same logic basically says we don't care how many people propellers injure or kill per year as long as the reported number of propeller fatalities is only about 5 percent of total reported boat fatalities. Percentages leave readers less engaged in the situation than the number of lives involved and especially less engaged than stories of individuals injured or killed.

**Pg.24** - titled *"Recommendations" - "#2. The U.S. Coast Guard should, through improved accident reporting and analysis, develop a complete and comprehensive data base on underwater impact accidents. This should involve, as an integral part, U.S. Coast Guard involvement in the National Electronic Injury Surveillance System (NEISS) and the appropriate training of involved hospital personnel."*

## Appendix C titled, "List of Documents and Materials Reviewed"

**Appendix C Pg2** - "Boat and Propeller Impact Injuries and Fatalities" Project 763584.20 Final Report, by Edward S. Purcell and Walter B. Lincoln, U.S. Coast Guard Research and Development Center, 1 March 1987.
The report above focuses on trying to prevent people to propeller impacts. It does include one page, in its Appendix A titled "Review of Fatalities (1984) Designated "Struck by Boat or Propeller" individually listing 42 fatalities. A brief description of each event notes some were not prop strikes.

**Appendix C Pg3** - "Struck by Boat or Propeller" manual analysis 1983-1987 Coast Guard data by Subcommittee member Don Kerlin, dated September 22, 1988.
One page of the report lists drownings, deaths other than drownings, and injuries for "struck by boat or propeller" for 1983-1987 by year. Drownings range from 6 to 17 per year, deaths other than drowning range from 28 to 42 per year, and injuries range from 163 to 286 per year.
The report also includes 28 pages of BARD data for 1983-1987 "struck by boat or propeller" drownings, deaths, and injuries dated September 12, 1988. Note, it was especially challenging for those without training to understand raw BARD data in that era. See **Figure 3**.

**Appendix C Pg3** - 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.

Mr. Snyder supplied the following accident statistics in his presentation and letter above:

*"B. There are on average 13 fatalities labeled "struck by boat or propeller" (or gear case or rudder) per year. By several studies that I have made at least one-third will prove to have their injuries caused by something other than the propeller.* (That is a Snyderism.) *This leaves 9 fatalities out of a total of just over 1,000 (1,033 in '87, new record low) total pleasure boating fatalities or just under 1 %."*

*"C. Non-fatal "struck by boat or prop" accidents are rather imprecise due to some amount of failure to fillout and file a report. My best estimates are that there are around 300 nonfatal accidents per year related to prop injuries where the injury was serious enough to seek professional medical help."*

Note - Dick Snyder's presentation was made at the same subcommittee meeting as Don Kerlin's presentation.

**Appendix C Pg4** - Letter to Subcommittee Chairman Getz from Mr. Dick Snyder, Mercury Marine, reference a clarification of his presentation to the Subcommittee on September 23, 1988 concerning USCG Statistics dated February 23, 1989.

Mr. Snyder said in recent discussion with others he learned the annual Coast Guard report might be a little misleading. The report only lists those "struck by boat or propeller" in the first event of an accident. Snyder goes on to say the total should be the total number of victims killed by propellers in all three events LESS those injured by propellers that subsequently drowned.

Mr. Snyder notes his previous reports relied upon annual Coast Guard reports for propeller strike fatality totals.

*"Where I gave an average of about 13 fatalities (13.1 for 79-87). I would now amend that to 30.4 for 79-87. Again that can be reduced at least one-third for pure propeller related fatalities (as distinct from other boat parts), or about 20 per year, it is 1.7%, again for the nine years looked at (79-87). I don't believe this change appreciably alters any conclusions drawn from this data,* ***but I'm sure we would agree that any conclusion should not be drawn from misunderstood data****."*

**Appendix E** - Letter to Subcommittee Chairman Getz from Robert Taylor of Failure Analysis Associates regarding Mr. Taylor's presentation at the May 12-13, 1989 subcommittee meeting in Coeur D'Alene Idaho.

Mr. Taylor's three page letter is followed by a series of six charts illustrating the:

1. Relative frequency of boating accidents (5.2 percent "struck by boat or propeller") from 1976-1981
2. Annual fatalities from various activities such as motor vehicles or bicycling
3. Risk of boating fatality in 1981 by boat type,
4. Relative rate of "struck by boat or prop" accidents in jetboats vs propeller driven boats 1975-1981
5. Risk of injury by activity per millions of hours

The only mention of actual numbers of propeller accidents per year are on page 1 of Taylor's letter under "Chart 1" where he states:

*"For the years presented, this amounts to an average of 49 fatalities per year associated with this accident mode. We know this number is higher than actual because we cannot subtract the subset "related to propeller contact" for from those accidents where the individual was stuck by only the boat or only other motor or steering appendages and not by the propeller. Estimates that boating fatalities involving the propeller are probably closer to 30 per year."*
*Taylor says he knows the number is higher than actual do to some entries being struck by something other than the propeller, however he makes no mention of under reporting which likely greatly increases the number of propeller strikes.*

and under Chart 2 *"Of these, approximately 30-49 incidents per year are associated with propeller involvement. On an absolute basis this is one third to one half the number of fatalities associated with being struck by lightning (94 in 1981).*

*Neither Richard Snyder or Robert Taylor mentioned under reporting of accidents. Both focus only on fatalities, an industry technique to keep the "number on the table" smaller. Mr. Taylor tried to equate propeller strikes as being rarer than lightning strikes. In doing so he departed from his risk analysis considering exposure person hours. A fraction of all people are actually underway on a boat for a few hours a month. Every person in America is exposed to the possibility of a lightening strike 24 hours a day.*

Mr. Taylor chose to use old data for his charts (1975-1981). 1987 BARD data was available by then. More accidents were being reported in what was then recent times than in1975-1981. Failing to analyze more recent data was inconsistent with the subcommittee's charge to evaluate current trends in propeller accidents.

Mr. Taylor's use of the phrase "**propeller involvement**" under Chart 2 is an example of the boating industry coining words and phrases less startling to the public. "**Propeller Involvement**" joins **phenomenon**, **emergency engine cut-off switch** (vs. kill switch), **unmanned underway** boat (vs. Circle of Death), and a host of others.

Even the 1989 NBSAC report went from being charged[4] to review data on the prevention of "**propeller-strike accidents**" to reaching a conclusion about "**underwater impacts**".

[4] Appendix A of the 1989 report: Charge to the Committee.

**Freud Report is NOTICEABLY ABSENT**

One well known study is noticeably absent from the 1989 NBSAC report “List of Documents and Materials Reviewed”.

Traub’s report[5] is listed in the Documents and Materials Reviewed by the subcommittee, but is listed as not available in the documents later furnished by the subcommittee. Traub compared 1983 accident data to Freund’s data.

Freund’s report was titled, “Struck by Propeller” Accidents-1978.[6] In it, Freund, a Coast Guard analyst, went though all 284 USCG reported 1978 “struck by boat or propeller” accidents (52 fatalities and 171 injuries).

Based on estimated reporting rates, Freund estimated the total number of propeller injuries in 1978 at 855 to 3,420. Extensive statistical data was recorded, including whether each victim was struck by the boat or propeller. For those struck by both, relative severity of the propeller strike was estimated.

Estimates were made that propeller guards could have prevented 39 fatalities, 67 injuries, and reduced severity of 93 more injuries in 1978.

The boating industry was very familiar with this study because they voiced strong objection to its results when it was released. The Coast Guard later took multiple steps to “soften” this report’s findings in response to criticism from the boating industry. Some of these steps can be seen in later addendums to the Freund report and related documents furnished along with it in this report.

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[5] “Steering/Struck-by-Propeller Accident Study, 1983 Recreational Boating Accidents,”by Gary Traub, U.S. Coast Guard G-BP-1. December 18, 1984.

[6] “Struck by Propeller” Accidents-1978. Kenneth F. Freund. U.S. Coast Guard.

**Status of BARD Propeller Accident Statistics at That Time**

U.S. Coast Guard Boating Accident Report Database (BARD) has plenty of challenges, but was then and remains the only widely accepted national database of boating accidents.

One could write books on BARD and its history, however we will quickly cover a few points relevant to this report.

Certain criteria must be met for an accident to be in listed in BARD. The most relevant criteria for boat propeller accidents to be listed are “death” and “injured beyond first aid”.

Among the problems with BARD in that era were:

1. Many accidents were not reported. U.S. Coast Guard (USCG) estimated accident reporting rates have been as low as 5 to 10 percent.[7] The boating industry and the Coast Guard generally agreed that almost all fatalities were then being reported. They said the more serious the accident is, the more likely it is to be reported.

   Note, we do not agree that almost all fatalities are reported.

2. While under reporting remains a major problem today, back in the late 1980’s the percentage of accidents being reported was even less than today.

3. The actual BARD database in the late 1980s used numerical codes in data fields to represent words or phrases. Lookup tables were used to translate alphanumerical codes, adding to the complexity of BARD. **See Figure 3**.

4. Boat propeller accidents were not recorded in their own category.
   For example, USCG collected data as:

   “Stuck by boat or propeller” from 1960 - 1994
   “Struck by motor/propeller” 1995- 2007
   “Struck by propeller” 2008 - present

5. As seen in the next section, the Coast Guard reports boating accidents as a series of events. **USCG’s annual Recreational Boating Statistics report was often mistakenly used to proclaim “first event” statistics as representing the total number of propeller accidents in the media and in court.** In todays time we refer to the “first event” as “Event 1”.

6. See **BARD 3 Event Data** section on the next page.

7. See **Boating Industry Repeatedly Cites Event 1 Statistics** section later in this report.

8. See **Don Kerlin, of USCG, Presented Event 1 Data to the Media** later in this report. Mr. Kerlin, U.S. Coast Guard’s liaison to and member of the propeller guard subcommittee, quoted Event 1 fatality data to the press immediately after the subcommittee’s findings were released.

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[7] See the bottom of **Figure 4**.

**BARD Three Event data**

BARD records boating accidents as a series of up to three events. In the era of the 1989 NBSAC subcommittee on propeller guards, an accident might be recorded as:

1. Event 1 “Collision with Floating Object” (often called the “first event”),
2. Event 2 “Falls Overboard”,
3. Event 3 “Struck by boat or propeller”.

For a propeller strike to be properly recorded as Event 1, the person must already be in the water. Most propeller strikes occur as Event 2 or Event 3.

There has long been a problem with the boating industry and media using Event 1 statistics as representing the total number of boat propeller strikes instead of using “All Event” data (sum of Event 1 plus Event 2 plus Event 3). Whether this by accident or not, those viewing the stats were vastly misled vs. actual accident counts.

Thus media and boating industry often leave the public and the courts with the wrong impression of the total number of BARD reported boat propeller accidents.

We suspect if somehow the problem were reversed (the easy to find data were significantly over counted accident statistics, and the harder to find data was the much lower actual data), the industry would be able to take the extra effort to find correct data a little more often than it does today.

**“Struck by Boat or Propeller” era**

The boating industry’s technique of Controlling Outcome by Controlling the Accident Data, was used by Dick Snyder. He used confusion created by the Coast Guard:

1. counting accidents as a series of events
2. categorizing accidents as “struck by boat or propeller”
3. providing drowning data for those “struck by boat or propeller”

to drastically reduce the number of propeller fatalities he reported to the subcommittee, thus greatly reducing the importance of and motivation for doing anything about boat propeller accidents.

Snyder, seen as the preeminent expert in the field, knowingly supplied low ball accident data to the subcommittee, leading them to find the USCG should take no regulatory action to require propeller guards.

Snyder twice wrote Jim Getz regarding propeller strike fatality data. The first time[8] Mr. Snyder said he would amend the “struck by boat or propeller” data by at least 1/3 to obtain pure propeller strike data. See **Figure 9**. The second time[9] he also reduced the total by 1/3 attributing the reduction to “as being distinct from boat parts.” See **Figure 10** and **Figure 11**.

[8] Dick Snyder of Mercury Marine letter to Jim Getz, NBSAC subcommittee on propeller guarding chairman. Notes-Snyder Presentation, 22 September, 1988 at Rockland, MA. Letter dated October 6, 1988. Page 3.

[9] Dick Snyder of Mercury Marine letter to Jim Getz. Propeller Accident Statistics Clarification. February 23, 1989. ARD BATES # 000101.

In the late 1970s and 1980s, two USCG reports found a lower percentage of “Struck by Boat or Propeller” fatalities were struck by boat than Mr. Snyder used in his calculations.

1. “Struck by Propeller” Accidents -1978. by Freund at USCG.[10]

2. Steering/Struck-by-Propeller Accidents Study. 1983 Recreational Boating Accidents. Gary Traub. U.S. Coast Guard.[11]

Fruend found 51 of 52 fatal “struck by boat or propeller” accidents were either struck by the propeller, primarily struck by the propeller, or equally struck by the boat and propeller. That equates to 98 percent of “struck by boat or propeller” fatalities being seriously struck by the propeller. The one remaining accident was not listed as “struck by boat”. It was listed as “other’.

Fruend found 98% of those listed as “struck by boat or propeller” were equally or more than equally struck by the propeller. Snyder only counted 2/3 of them as being struck by the propeller.[12]

Traub only investigated a 25 percent sample of 1983 accidents, thus the numbers are lower than Freund. Traub found 8 of 12 fatal “struck by boat or propeller” accidents were either equally struck by the boat and propeller, primarily struck by the propeller, or struck by the propeller. Traub’s findings equate to 67 percent of “struck by boat or propeller” fatalities being seriously struck by the propeller. The other 33 percent were not listed as “struck by boat”. They were listed as “other”.

Joining the two studies, not a single fatality was primarily or purely due to being “struck by boat”. But Snyder dismissed 1/3 of them for being struck by boat.

It makes sense that few “struck by boat or propeller” fatalities were mostly or primarily or only struck by the boat. Being struck by a boat can create severe bumps and bruises, but people are rarely killed when struck by a boat, especially at the speeds of that era. On the flip side, we already know many people are killed when struck by a boat propeller.

Snyder even reduced “struck by boat or propeller” fatalities by those that later drowned.

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[10] “Struck by Propeller” Accidents-1978. Kenneth Freund. U.S. Coast Guard. 1979.

[11] Steering/Struck-by-Propeller Accidents Study. 1983 Recreational Boating Accidents. Gary Traub. USCG. December 18, 1984.

[12] “Struck by Propeller” Accidents - 1978. Kenneth Fruend. U.S. Coast Guard. 1979. Enclosure. Page 2.

**What Did Dick Snyder Know About the Coast Guard Recording Propeller Accident Statistics as a Series of Events and When Did He Know It?**

Dick Snyder, long time, in-house propeller accident expert witness for Mercury Marine, left a trail of letters of his interactions with the Coast Guard as he requested propeller accident data. These letters were later furnished during discovery in Mercury/Brunswick propeller guard cases.

The letters and documents are in the documents supplied with this report.
We number and list them below:

SP = Snyder Proof - each of the 5 documents below shows Dick Snyder knew the Coast Guard's annual Recreational Boating Statistics report only included a portion of the reported total number of propeller accidents, injuries, and fatalities.

SP1. October 9,1987 Snyder letter to Marmo at USCG[13]
SP2. October 21, 1987 Marmo return letter to Snyder[14]
SP3. December 15, 1987 Deposition Digest of Dick Snyder in Elliott v. Sportscraft[15] (see **Transcript 1 figure**)
SP4. June 16, 1988 Snyder letter to Marmo at USCG[16]
SP5. July 6, 1988 Marmo return letter to Snyder[17]

Snyder's documents above are discussed in more detail on the following pages and in **Appendix B**.

Note accident reports requested by Snyder and sent to him based on SP1, SP2, SP4, and SP5 are vessel based, meaning the report identifies each vessel for which one or more persons was killed by "struck by boat or propeller". For example see the "sample" page attached to SP2 (**Figure 2**) or for a clearer version, see Kerlin's USCG data pages[18] (a page of which is in **Figure 3**).

Some vessel entries contain more than one person killed "struck by boat or propeller". The number reported for fatalities is the sum of the number of people "struck by boat or propeller" that drowned or died from "struck by boat or propeller". The same logic extends to data for "struck by boat or propeller" injuries.

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[13] Richard Snyder of Mercury Performance Products letter to A.J. Marmo of the U.S. Coast Guard. October 9, 1987.

[14] A. J. Marmo of U.S. Coast Guard letter to Richard Snyder, Director of Racing, Mercury Performance Products. October 21, 1987.

[15] Richard Snyder testimony in Ashley Elliott v. Sportscraft, Inc., et al.. Deposition Digest December 15, 1987. Along with portions of the transcript, List of Exhibits to Deposition Digest, and Exhibit 22 List "A", and Mercury Marine Propeller Injury Legal Cases by Case Filing Year by Gary Polson. Note- is also repeated in Snyder's testimony in ARD.

[16] Richard Snyder, Mercury Marine letter to A.J. Marmo, U.S. Coast Guard. June 16, 1988.

[17] A.J. Marmo of U.S. Coast Guard letter to Richard Snyder,, Mercury Marine. July 6, 1988.

[18] Don Kerlin Summary 1983-1987 data - 1304 cases "struck by boat or propeller" (manual analysis) accompanied by 28 pages of BARD data.

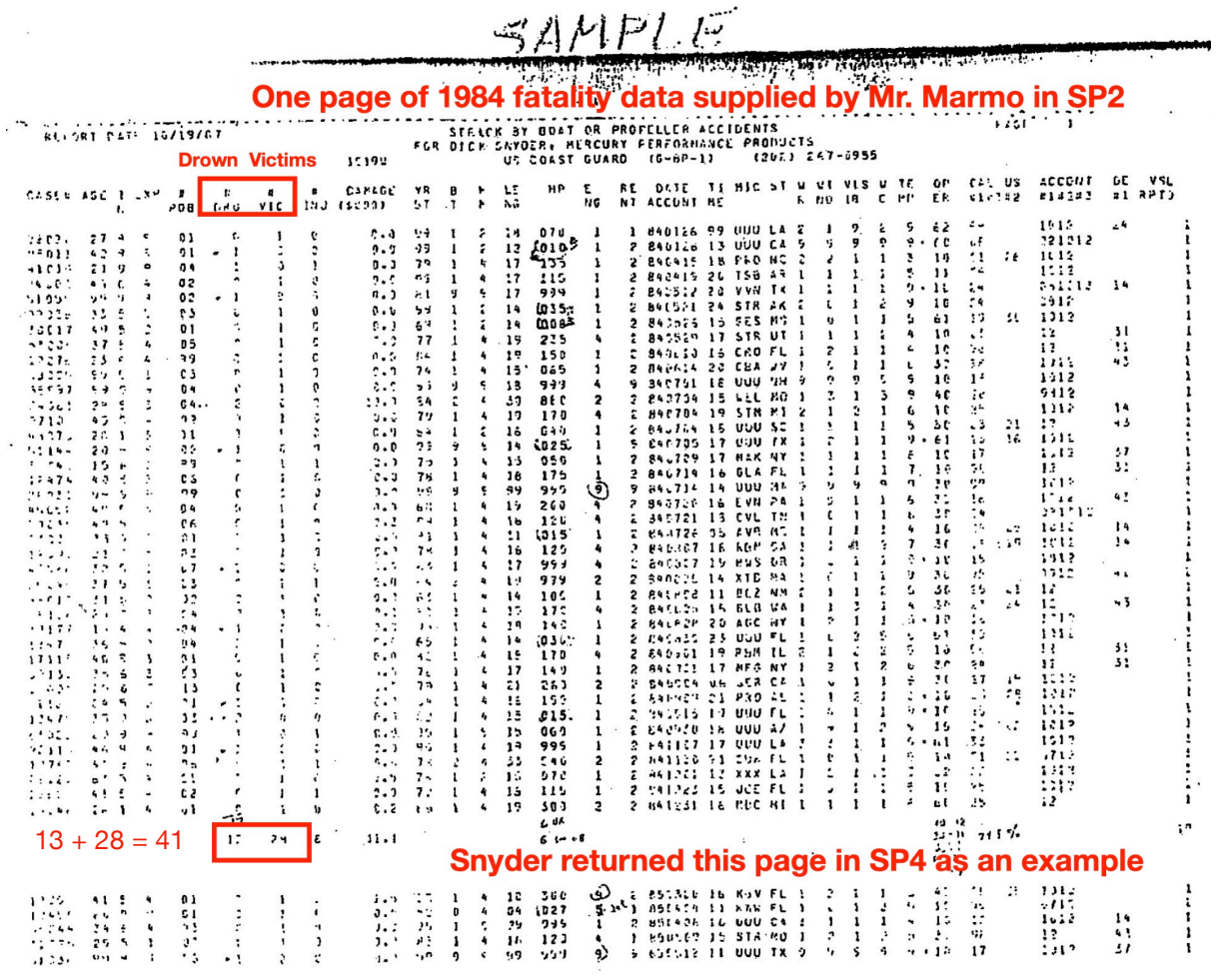



**Figure 2: USCG Struck by Boat or Propeller fatality data 1984 the "Sample" page from SP2 sent back in SP4.**

The importance of the document above is the total number of "struck by boat or propeller fatalities" being 13 "struck by boat or propeller" that subsequently drowned PLUS 28 "struck by boat or propeller" fatalities for a total of 41 "struck by boat or propeller" fatalities.

This document was among those sent to Snyder based on his October 9, 1987 request in SP1.

As proof that he received it AND read it, we submit the copy above that Snyder sent back to the Coast Guard with his SP3 request for more propeller accident data on June 16, 1988.

Dick Snyder, seen as the preeminent expert in this field, **knew there were 41** "struck by boat or propeller" fatalities reported to the Coast Guard in 1984 (per his October 9, 1987 data request), BUT wrote Jim Getz a year later on Oct 6, 1988 supplying his recent presentation to the subcommittee in which **he said there were 9** struck by propeller accidents in 1984. See **Figure 9**.

REPORT DATE 09/12/88 — STRUCK BY BOAT OR PROPELLER DEATHS AND INJURIES 1983-87 — PAGE 9

USCG NAVIGATION SAFETY & WATERWAY SERVICES G-NAB-2
80614A WASHINGTON, DC 20593-0001 (202) 267-0955

Drown Victim

| CASE # | J R | AGE OPR | E X | RE NT | # POB | I N | MIC | B T | H M | E NG | HP | LE NG | YR BU | DATE ACCDNT | TI ME | TYP WAT | ST | COU NTY | W R | W C | TE MP | WI ND | V S | OP ER | ACCTYP #1#2#3 | P FD | $/100 DAMGE | # DRO | # VIC | # INJ | # VES | CAUSES #1#2#3 | DESCRIPT #1#2#3#4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42009 | 9 | 21 | 3 | 2 | 02 | 5 | MBC | 1 | 4 | 2 | 240 | 19 | 83 | 080684 | 17 | 5 | ND | 043 | 1 | 2 | 5 | 2 | 1 | 10 | 12 | 2 | $ | 0 | 0 | 1 | 1 | 21 | 51 | 96 | 1 |
| 43047 | 9 | 45 | 2 | 2 | 06 | 5 | HCH | 1 | 2 | 1 | 050 | 28 | 69 | 061684 | 21 | 5 | OH | 007 | 1 | 1 | 5 | 1 | 1 | 10 | 0512 | 2 | $ | 0 | 0 | 1 | 1 | 98 | | 96 | 1 |
| 43069 | 9 | 31 | 4 | 2 | 05 | 5 | CVB | 1 | 4 | 4 | 250 | 20 | 72 | 070184 | 15 | 5 | OH | 015 | 1 | 2 | 6 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 1 | 21 | | 96 | 1 |
| 43098 | 9 | 31 | 2 | 2 | 07 | 5 | RBN | 1 | 4 | 4 | 120 | 18 | 82 | 071484 | 19 | 6 | OH | 059 | 1 | 1 | 6 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 1 | 21 | 53 | 97 | 1 |
| 43148 | 2 | 25 | 9 | 2 | 03 | 4 | SRC | 1 | 4 | 4 | 250 | 18 | 69 | 092184 | 18 | 5 | OH | 153 | 1 | 1 | 5 | 0 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 1 | 99 | | 95 | 1 |
| 43172 | 1 | 15 | 2 | 2 | 01 | 5 | UUU | 0 | 1 | 1 | 999 | 09 | 77 | 082384 | 14 | 4 | OH | 173 | 2 | 1 | 5 | 0 | 2 | 40 | 021012 | 1 | $ | 0 | 0 | 1 | 1 | 99 | | 97 | 1 |
| 44020 | 2 | 28 | 1 | 2 | 02 | 5 | SES | 1 | 4 | 1 | 060 | 15 | 60 | 070884 | 11 | 6 | OK | 027 | 1 | 2 | 6 | 2 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 44021 | 2 | 37 | 3 | 2 | 05 | 5 | BNM | 1 | 4 | 4 | 302 | 18 | 75 | 070484 | 06 | 5 | OK | 071 | 1 | 2 | 7 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 45040 | 2 | 49 | 1 | 2 | 05 | 5 | BRC | 1 | 4 | 2 | 170 | 17 | 84 | 070784 | 16 | 5 | OR | 067 | 1 | 1 | 9 | 0 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 45058 | 2 | 22 | 2 | 2 | 02 | 6 | UUU | 1 | 4 | 1 | 040 | 14 | 99 | 081384 | 17 | 5 | OR | 019 | 1 | 2 | 5 | 2 | 1 | 98 | 12 | 2 | $ | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 45064 | 1 | 29 | 4 | 2 | 04 | 5 | TAH | 1 | 4 | 1 | 075 | 16 | 75 | 081884 | 19 | 3 | OR | 057 | 1 | 1 | 4 | 2 | 1 | 10 | 12 | 2 | $ | 0 | 0 | 1 | 1 | 98 | 51 | 97 | 1 |
| 45088 | 2 | 32 | 1 | 2 | 07 | 5 | BWS | 1 | 4 | 4 | 999 | 17 | 83 | 080784 | 19 | 5 | OR | 039 | 1 | 1 | 9 | 0 | 1 | 10 | 1012 | 2 | $ | 0 | 1 | 0 | 0 | 1 | 19 | | 96 | 1 |
| 46023 | 1 | 20 | 1 | 2 | 09 | 5 | MTM | 1 | 4 | 4 | 140 | 17 | 77 | 060984 | 19 | 4 | PA | 003 | 1 | 1 | 5 | 0 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 46026 | 1 | 17 | 3 | 2 | 03 | 5 | UUU | 1 | 4 | 4 | 250 | 18 | 71 | 061584 | 16 | 4 | PA | 003 | 2 | 2 | 6 | 1 | 1 | 73 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 46050 | 1 | 49 | 3 | 2 | 04 | 5 | EVN | 1 | 4 | 4 | 200 | 19 | 68 | 072084 | 16 | 4 | PA | 003 | 1 | 1 | 6 | 0 | 1 | 30 | 1012 | 2 | $ | 0 | 0 | 1 | 0 | 1 | 18 | 53 | 96 | 1 |
| 46063 | 2 | 16 | 2 | 2 | 03 | 5 | YAR | 1 | 4 | 1 | 060 | 15 | 81 | 073084 | 12 | 5 | PA | 103 | 1 | 1 | 9 | 2 | 1 | 30 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 48056 | 1 | 25 | 1 | 2 | 03 | 5 | PIN | 1 | 2 | 1 | 090 | 28 | 84 | 091584 | 12 | 5 | SC | 063 | 1 | 1 | 6 | 1 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 1915 | 48 | 96 | 1 |
| 48073 | 1 | 28 | 3 | 2 | 01 | 1 | UUU | 1 | 2 | 1 | 040 | 16 | 84 | 070484 | 18 | 5 | SC | 039 | 1 | 1 | 5 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 0 | 1 | 2521 | 53 | 96 | 1 |
| 50011 | 9 | 37 | 3 | 2 | 01 | 5 | AFP | 1 | 4 | 1 | 085 | 15 | 78 | 060384 | 18 | 5 | TN | 123 | 1 | 1 | 6 | 0 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 26 | | 97 | 1 |
| 50030 | 2 | 42 | 9 | 2 | 06 | 5 | CVL | 1 | 4 | 4 | 120 | 16 | 99 | 072184 | 18 | 5 | TN | 123 | 1 | 1 | 6 | 0 | 1 | 30 | 081012 | 2 | $ | 3 | 0 | 1 | 0 | 1 | 24 | | 97 | 1 |
| 50037 | 1 | 17 | 2 | 2 | 01 | 5 | HYR | 1 | 4 | 1 | 115 | 17 | 99 | 072884 | 15 | 5 | TN | 079 | 1 | 1 | 6 | 1 | 1 | 20 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 18 | | 96 | 1 |
| 51037 | 2 | 60 | 1 | 1 | 07 | 6 | UUU | 1 | 3 | 1 | 007 | 18 | 99 | 042184 | 15 | 5 | TX | 315 | 1 | 2 | 5 | 2 | 1 | 10 | 1012 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 99 | | 95 | 1 |
| 51059 | 1 | 99 | 9 | 2 | 02 | 9 | VVN | 9 | 9 | 1 | 999 | 17 | 81 | 051284 | 20 | 4 | TX | 361 | 1 | 1 | 9 | 1 | 1 | 10 | 081012 | 0 | $ | 0 | 1 | 0 | 0 | 1 | 24 | 48 | 96 | 1 |
| 51144 | 1 | 20 | 9 | 9 | 02 | 9 | UUU | 9 | 9 | 1 | 025 | 14 | 99 | 070584 | 17 | 4 | TX | 407 | 1 | 1 | 9 | 2 | 1 | 61 | 1012 | 1 | $ | 0 | 1 | 0 | 0 | 1 | 2516 | | 96 | 1 |
| 51166 | 2 | 38 | 4 | 2 | 02 | 1 | UUU | 1 | 4 | 1 | 135 | 19 | 78 | 072184 | 18 | 5 | TX | 439 | 1 | 1 | 7 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 98 | 51 | 97 | 1 |
| 51168 | 2 | 24 | 3 | 2 | 99 | 5 | BLB | 1 | 4 | 1 | 085 | 16 | 84 | 072284 | 99 | 5 | TX | 233 | 1 | 9 | 9 | 9 | 9 | 30 | 12 | 9 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 51178 | 2 | 27 | 2 | 2 | 02 | 6 | UUU | 1 | 4 | 2 | 060 | 15 | 69 | 071484 | 17 | 5 | TX | 129 | 1 | 4 | 6 | 3 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 33 | | 97 | 1 |
| 51213 | 2 | 38 | 2 | 2 | 01 | 6 | ARW | 1 | 4 | 1 | 050 | 15 | 74 | 081884 | 11 | 4 | TX | 213 | 1 | 1 | 7 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 2125 | | 96 | 1 |
| 53005 | 2 | 37 | 4 | 2 | 05 | 5 | STR | 1 | 4 | 4 | 235 | 19 | 77 | 052984 | 17 | 5 | UT | 057 | 1 | 2 | 4 | 1 | 1 | 10 | 12 | 1 | $ | 0 | 0 | 1 | 0 | 1 | 23 | 51 | 96 | 1 |
| 53019 | 1 | 37 | 2 | 2 | 01 | 5 | CBC | 1 | 4 | 1 | 055 | 16 | 82 | 052084 | 19 | 5 | UT | 025 | 1 | 2 | 4 | 2 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 1625 | 48 | 96 | 1 |
| 53041 | 1 | 34 | 1 | 1 | 04 | 5 | KAY | 1 | 2 | 1 | 115 | 24 | 82 | 010784 | 14 | 5 | UT | 025 | 1 | 1 | 3 | 0 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | 48 | 96 | 1 |
| 53060 | 1 | 38 | 3 | 2 | 08 | 5 | SLE | 1 | 4 | 2 | 350 | 23 | 77 | 072284 | 11 | 5 | UT | 025 | 2 | 1 | 6 | 1 | 1 | 30 | 1012 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 53070 | 2 | 46 | 3 | 2 | 04 | 5 | ELB | 1 | 4 | 4 | 370 | 23 | 83 | 071584 | 15 | 5 | UT | 043 | 1 | 2 | 6 | 1 | 1 | 30 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 53084 | 1 | 37 | 2 | 2 | 02 | 5 | ARW | 1 | 4 | 1 | 075 | 17 | 75 | 082684 | 14 | 5 | UT | 037 | 1 | 1 | 6 | 1 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 26 | | 97 | 1 |
| 55013 | 1 | 23 | 3 | 2 | 03 | 5 | MAK | 1 | 4 | 1 | 085 | 15 | 72 | 051384 | 15 | 4 | VA | 810 | 2 | 2 | 5 | 3 | 1 | 30 | 1012 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 26 | | 97 | 1 |
| 55050 | 2 | 35 | 4 | 2 | 05 | 5 | ELD | 1 | 4 | 2 | 188 | 18 | 84 | 081184 | 14 | 5 | VA | 109 | 1 | 2 | 6 | 2 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 56030 | 1 | 99 | 9 | 2 | 02 | 9 | UUU | 9 | 9 | 9 | 999 | 99 | 99 | 061384 | 19 | 5 | WA | 033 | 9 | 9 | 9 | 9 | 9 | 10 | 1012 | 9 | $ | 0 | 0 | 0 | 1 | 1 | 03 | | 96 | 1 |
| 56102 | 2 | 21 | 1 | 2 | 04 | 5 | UUU | 1 | 4 | 1 | 070 | 14 | 63 | 090384 | 17 | 5 | WA | 015 | 1 | 2 | 5 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 33 | | 97 | 1 |
| 56158 | 1 | 24 | 3 | 2 | 04 | 2 | BLB | 1 | 4 | 4 | 170 | 19 | 81 | 080884 | 18 | 5 | WA | 033 | 1 | 1 | 4 | 1 | 3 | 30 | 12 | 2 | $ | 1 | 0 | 1 | 0 | 1 | 2324 | 53 | 96 | 1 |
| 58005 | 1 | 99 | 1 | 2 | 03 | 5 | CBA | 1 | 4 | 1 | 065 | 15 | 74 | 061484 | 20 | 4 | WV | 107 | 1 | 1 | 6 | 0 | 1 | 30 | 1012 | 9 | $ | 0 | 0 | 1 | 0 | 1 | 98 | 53 | 95 | 1 |
| 58013 | 1 | 34 | 2 | 2 | 03 | 5 | AGC | 1 | 4 | 4 | 150 | 18 | 79 | 071484 | 19 | 4 | WV | 011 | 1 | 2 | 7 | 0 | 1 | 30 | 1012 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 04 | | 97 | 1 |
| 59031 | 9 | 54 | 4 | 2 | 01 | 2 | UUU | 7 | 5 | 1 | 010 | 11 | 84 | 062384 | 24 | 5 | WI | 029 | 1 | 1 | 9 | 0 | 1 | 98 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 03 | | 96 | 1 |
| 59086 | 2 | 23 | 4 | 2 | 02 | 6 | SWT | 1 | 4 | 1 | 250 | 18 | 81 | 081284 | 18 | 5 | WI | 101 | 1 | 1 | 9 | 1 | 1 | 10 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 59102 | 2 | 23 | 4 | 2 | 02 | 6 | SWT | 1 | 4 | 1 | 175 | 17 | 81 | 081284 | 99 | 5 | WI | 101 | 1 | 2 | 9 | 1 | 1 | 10 | 0712 | 1 | $ | 0 | 0 | 0 | 1 | 2 | 21 | | 96 | 1 |
| 59123 | 1 | 36 | 4 | 2 | 03 | 5 | UUU | 1 | 2 | 1 | 065 | 16 | 58 | 082684 | 99 | 3 | WI | 029 | 1 | 2 | 9 | 2 | 1 | 20 | 12 | 2 | $ | 6 | 0 | 0 | 1 | 1 | 98 | 51 | 97 | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | $ | 212 | 013 | 028 | 163 | | | | 190 |

13 drownings plus 28 deaths =
41 total reported deaths

**Figure 3: USCG Struck by Boat or Propeller 1984 data from Don Kerlin of USCG report.**
**Fatality totals are easier to read than Figure 2.**

While **Figure 2** listed “struck by boat of propeller” fatalities in 1984. **Figure 3**, above, lists both injuries and fatalities resulting from “struck by boat or propeller” for 1984. This particular page from Don Kerlin’s report sums injury and fatality counts for 1984.

You can see fatality totals much more clearly than you can in **Figure 2** which appears to have been recopied several times.

We will now address each document individually.

### SP1. October 9,1987 Snyder letter to Marmo at USCG (ARD BATES # 000055)

Snyder had seen the Coast Guard's Boating Statistics 1986 publication and is aware it lists 16 individuals as fatally "struck by boat or propeller". Snyder is also aware these 16 fatalities do not represent all BARD reported fatal "struck by boat or propeller accidents". He instructs USCG to send him "a list of all boating fatalities in 1986 where the "struck by boat or propeller" category paid a major roll, not just the 16 fatalities attributed to this category." See **Figure 4**.

**Figure 4** also instructs Snyder that the Coast Guard estimates they receive reports of only 5% to 10% of all reportable accidents not involving fatalities.

In response to **Figure 4**, Snyder requests a list of each 1986 fatal "stuck by boat or propeller" accident with some additional information on each accident.

He also requests similar data for 1984 and 1985 on "struck by boat or propeller" fatalities.

The 16 fatal accidents Snyder is talking about are in the far right column for "struck by boat or propeller".

In Snyder's letter, he knows there are more than 16 fatalities. He may have learned there were more fatalities by reading the asterisk note in **Figure 4** that explains the data above is only "first event" data or learned it from a previous annual Recreational Boating Statistics report.

### SP2. October 21, 1987 Marmo return letter to Snyder

If Snyder did not previously know the actual number of "struck by boat or propeller" fatalities reported in BARD was greater than the number reported in the Coast Guard's annual Boating Statistics report, he did now. For example, a page of 1984 BARD data supplied by Marmo Snyder later marks as "SAMPLE" (see **Figure 2**) and sends in requesting more information shows 13 "struck by boat or propeller" drownings and 28 "struck by boat or propeller" fatalities for a **total of 41 fatalities vs the 8 fatalities reported by USCG** in their annual Boating Statistics 1984 report (see **Figure 6**).

The one page "SAMPLE" data Snyder sends back in **SP3** is in the **Appendix** as part of **SP2** to show the layout of the data.

The 1984 Don Kerlin "struck by boat or propeller" BARD data is also with **SP2** in the **Appendix**. Kerlin's 1984 totals page is shown in **Figure 3**.

Similarly, Marmo supplied 1986 "struck by boat or propeller" data (see **Figure 5**) showing 17 drownings and 42 deaths for "struck by boat or propeller" for a **total of 59 fatalities vs 16 fatalities reported by USCG** in their annual Boating Statistics 1986 report. (see **Figure 4**)

You can see Snyder comparing these two datasets in his February 23,1989 letter to Jim Getz.

Snyder would have received Marmo's letter in late October 1987 but fails to pass his newfound knowledge on to Jim Getz for over 15 months.

Boating Statistics 1986. U.S. Dept. Transportation. U.S. Coast Guard. June 1987.
COMDTPUB P16754.1 Page 20.

**TYPE OF ACCIDENT ***

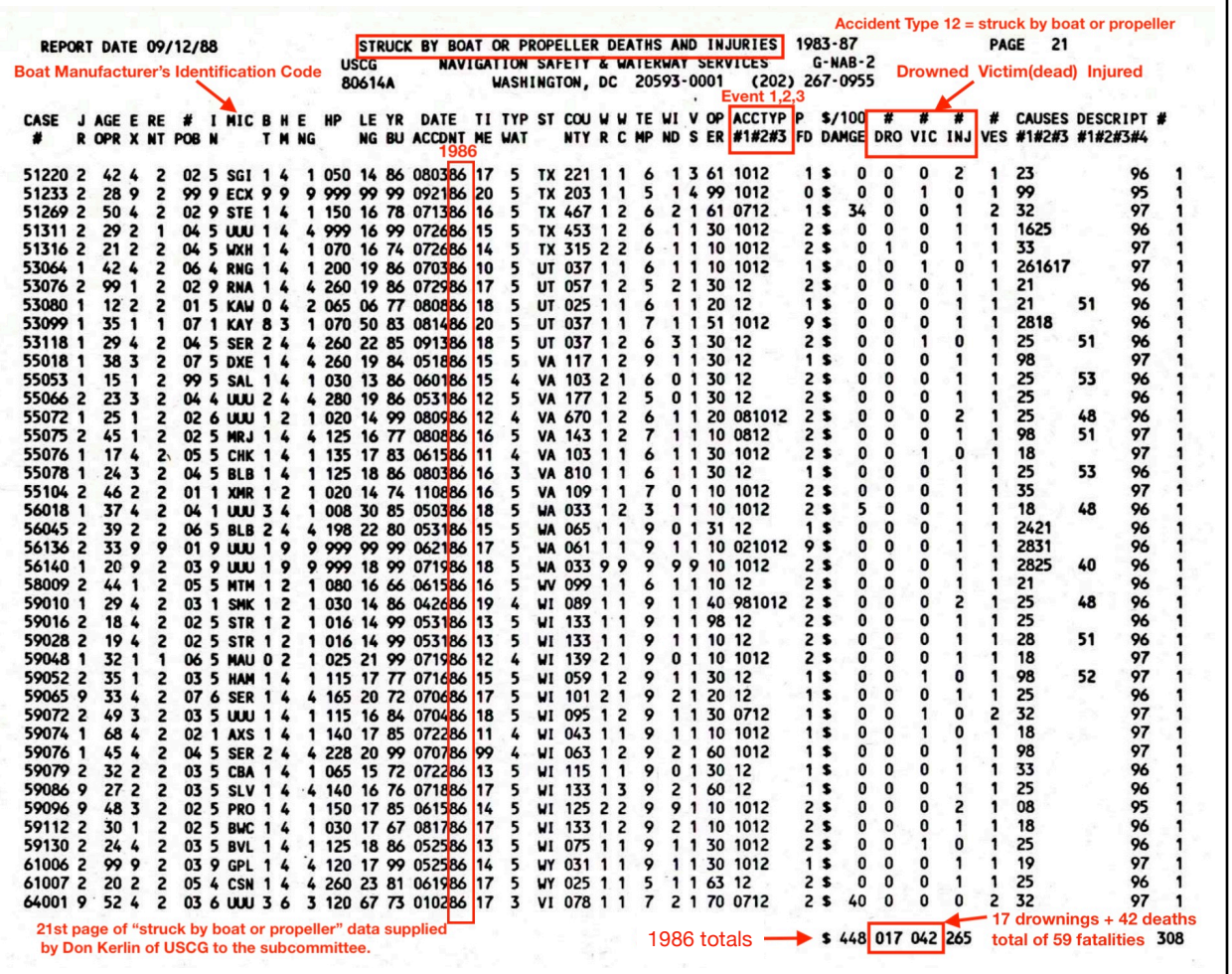
| 1986 | TOTAL VESSELS INVOLVED | FATALITIES |
|---|---|---|
| TOTALS | 8,399 | 1,066 |
| Grounding | 367 | 11 |
| Capsizing | 629 | 370 |
| Swamping/Flooding | 289 | 89 |
| Sinking | 227 | 28 |
| Fire/Explosion (fuel) | 379 | 6 |
| Fire/Explosion (other) | 83 | 2 |
| Collision with another vessel | 4,096 | 86 |
| Collision with fixed object | 914 | 79 |
| Collision with floating object | 276 | 8 |
| Falls overboard | 451 | 277 |
| Falls within boat | 72 | 0 |
| Struck by boat or propeller | 147 | 16 |
| Other | 418 | 37 |
| Unknown | 51 | 57 |

* Type of accident refers only to the first event that occurred. Some accidents involve more than one event, e.g., a grounding followed by a sinking is included here only as a grounding even though the sinking may have directly led to a drowning fatality. Event 1 Only data

We estimate that we receive reports of only 5% to 10% of all reportable accidents not involving fatalities.

**Figure 4: USCG 1986 Accident Totals Event 1 Only**

**Snyder KNEW** USCG "first event" data in USCG's annual Boating Statistics reports did not represent the total number of reported "struck by boat or propeller" fatalities. Yet, Snyder **MISLED** the subcommittee by furnishing them "first event" data.



REPORT DATE 09/12/88 — STRUCK BY BOAT OR PROPELLER DEATHS AND INJURIES 1983-87 — PAGE 21

USCG 80614A — NAVIGATION SAFETY & WATERWAY SERVICES — WASHINGTON, DC 20593-0001 (202) 267-0955 — G-NAB-2

Accident Type 12 = struck by boat or propeller

Boat Manufacturer's Identification Code

Drowned Victim(dead) Injured

Event 1,2,3

1986

| CASE # | J R | AGE OPR | E X | RE NT | # POB | I N | MIC | B T | H M | E NG | HP | LE NG | YR BU | DATE ACCDNT | TI ME | TYP WAT | ST | COU NTY | W R | W C | TE MP | WI ND | V S | OP ER | ACCTYP #1#2#3 | P FD | $/100 DAMGE | # DRO | # VIC | # INJ | # VES | CAUSES #1#2#3 | DESCRIPT #1#2#3#4 | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51220 | 2 | 42 | 2 | 02 | 5 | SGI | 1 | 4 | 1 | 050 | 14 | 86 | 080386 | 17 | 5 | TX | 221 | 1 | 1 | 6 | 1 | 3 | 61 | 1012 | 1 | $ | 0 | 0 | 0 | 2 | 1 | 23 | 96 | 1 |
| 51233 | 2 | 28 | 9 | 99 | 9 | ECX | 9 | 9 | 9 | 999 | 99 | 99 | 092186 | 20 | 5 | TX | 203 | 1 | 1 | 5 | 1 | 4 | 99 | 1012 | 0 | $ | 0 | 0 | 1 | 0 | 1 | 99 | 95 | 1 |
| 51269 | 2 | 50 | 4 | 02 | 9 | STE | 1 | 4 | 1 | 150 | 16 | 78 | 071386 | 16 | 5 | TX | 467 | 1 | 2 | 6 | 2 | 1 | 61 | 0712 | 1 | $ | 34 | 0 | 0 | 1 | 2 | 32 | 97 | 1 |
| 51311 | 2 | 29 | 2 | 1 | 04 | 5 | UUU | 1 | 4 | 4 | 999 | 16 | 99 | 072686 | 15 | 5 | TX | 453 | 1 | 2 | 6 | 1 | 1 | 30 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 1625 | 96 | 1 |
| 51316 | 2 | 21 | 2 | 2 | 04 | 5 | WXH | 1 | 4 | 1 | 070 | 16 | 74 | 072686 | 14 | 5 | TX | 315 | 2 | 2 | 6 | 1 | 1 | 10 | 1012 | 2 | $ | 0 | 1 | 0 | 1 | 1 | 33 | 97 | 1 |
| 53064 | 1 | 42 | 4 | 2 | 06 | 4 | RNG | 1 | 4 | 1 | 200 | 19 | 86 | 070386 | 10 | 5 | UT | 037 | 1 | 1 | 6 | 1 | 1 | 10 | 1012 | 1 | $ | 0 | 0 | 1 | 0 | 1 | 261617 | 97 | 1 |
| 53076 | 2 | 99 | 1 | 2 | 02 | 9 | RNA | 1 | 4 | 4 | 260 | 19 | 86 | 072986 | 17 | 5 | UT | 057 | 1 | 2 | 5 | 2 | 1 | 30 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 21 | 96 | 1 |
| 53080 | 1 | 12 | 2 | 2 | 01 | 5 | KAW | 0 | 4 | 2 | 065 | 06 | 77 | 080886 | 18 | 5 | UT | 025 | 1 | 1 | 6 | 1 | 1 | 20 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 21 | 51 | 96 | 1 |
| 53099 | 1 | 35 | 1 | 1 | 07 | 1 | KAY | 8 | 3 | 1 | 070 | 50 | 83 | 081486 | 20 | 5 | UT | 037 | 1 | 1 | 7 | 1 | 1 | 51 | 1012 | 9 | $ | 0 | 0 | 0 | 1 | 1 | 2818 | 96 | 1 |
| 53118 | 1 | 29 | 4 | 2 | 04 | 5 | SER | 2 | 4 | 4 | 260 | 22 | 85 | 091386 | 18 | 5 | UT | 037 | 1 | 2 | 6 | 3 | 1 | 30 | 12 | 2 | $ | 0 | 0 | 1 | 0 | 1 | 25 | 51 | 96 | 1 |
| 55018 | 1 | 38 | 3 | 2 | 07 | 5 | DXE | 1 | 4 | 4 | 260 | 19 | 84 | 051886 | 15 | 5 | VA | 117 | 1 | 2 | 9 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 98 | 97 | 1 |
| 55053 | 1 | 15 | 1 | 2 | 99 | 5 | SAL | 1 | 4 | 1 | 030 | 13 | 86 | 060186 | 15 | 4 | VA | 103 | 2 | 1 | 6 | 0 | 1 | 30 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | 53 | 96 | 1 |
| 55066 | 2 | 23 | 3 | 2 | 04 | 4 | UUU | 2 | 4 | 4 | 280 | 19 | 86 | 053186 | 12 | 5 | VA | 177 | 1 | 2 | 5 | 0 | 1 | 30 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 55072 | 1 | 25 | 1 | 2 | 02 | 6 | UUU | 1 | 2 | 1 | 020 | 14 | 99 | 080986 | 12 | 4 | VA | 670 | 1 | 2 | 6 | 1 | 1 | 20 | 081012 | 2 | $ | 0 | 0 | 0 | 2 | 1 | 25 | 48 | 96 | 1 |
| 55075 | 2 | 45 | 1 | 2 | 02 | 5 | MRJ | 1 | 4 | 4 | 125 | 16 | 77 | 080886 | 16 | 5 | VA | 143 | 1 | 2 | 7 | 1 | 1 | 10 | 0812 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 98 | 51 | 97 | 1 |
| 55076 | 1 | 17 | 4 | 2 | 05 | 5 | CHK | 1 | 4 | 1 | 135 | 17 | 83 | 061586 | 11 | 4 | VA | 103 | 1 | 1 | 6 | 1 | 1 | 30 | 1012 | 2 | $ | 0 | 0 | 1 | 0 | 1 | 18 | | 97 | 1 |
| 55078 | 1 | 24 | 3 | 2 | 04 | 5 | BLB | 1 | 4 | 1 | 125 | 18 | 86 | 080386 | 16 | 3 | VA | 810 | 1 | 1 | 6 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | 53 | 96 | 1 |
| 55104 | 2 | 46 | 2 | 2 | 01 | 1 | XMR | 1 | 2 | 1 | 020 | 14 | 74 | 110886 | 16 | 5 | VA | 109 | 1 | 1 | 7 | 0 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 35 | | 97 | 1 |
| 56018 | 1 | 37 | 4 | 2 | 04 | 1 | UUU | 3 | 4 | 1 | 008 | 30 | 85 | 050386 | 18 | 5 | WA | 033 | 1 | 2 | 3 | 1 | 1 | 10 | 1012 | 2 | $ | 5 | 0 | 0 | 1 | 1 | 18 | 48 | 96 | 1 |
| 56045 | 2 | 39 | 2 | 2 | 06 | 5 | BLB | 2 | 4 | 4 | 198 | 22 | 80 | 053186 | 15 | 5 | WA | 065 | 1 | 1 | 9 | 0 | 1 | 31 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 2421 | | 96 | 1 |
| 56136 | 2 | 33 | 9 | 9 | 01 | 9 | UUU | 1 | 9 | 9 | 999 | 99 | 99 | 062186 | 17 | 5 | WA | 061 | 1 | 1 | 9 | 1 | 1 | 10 | 021012 | 9 | $ | 0 | 0 | 0 | 1 | 1 | 2831 | | 96 | 1 |
| 56140 | 1 | 20 | 9 | 2 | 03 | 9 | UUU | 1 | 9 | 9 | 999 | 18 | 99 | 071986 | 18 | 5 | WA | 033 | 9 | 9 | 9 | 9 | 9 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 2825 | 40 | 96 | 1 |
| 58009 | 2 | 44 | 1 | 2 | 05 | 5 | MTM | 1 | 2 | 1 | 080 | 16 | 66 | 061586 | 16 | 5 | WV | 099 | 1 | 1 | 6 | 1 | 1 | 10 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 21 | | 96 | 1 |
| 59010 | 1 | 29 | 4 | 2 | 03 | 1 | SMK | 1 | 2 | 1 | 030 | 14 | 86 | 042686 | 19 | 4 | WI | 089 | 1 | 1 | 9 | 1 | 1 | 40 | 981012 | 2 | $ | 0 | 0 | 0 | 2 | 1 | 25 | 48 | 96 | 1 |
| 59016 | 2 | 18 | 4 | 2 | 02 | 5 | STR | 1 | 2 | 1 | 016 | 14 | 99 | 053186 | 13 | 5 | WI | 133 | 1 | 1 | 9 | 1 | 1 | 98 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 59028 | 2 | 19 | 4 | 2 | 02 | 5 | STR | 1 | 2 | 1 | 016 | 14 | 99 | 053186 | 13 | 5 | WI | 133 | 1 | 1 | 9 | 1 | 1 | 10 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 28 | 51 | 96 | 1 |
| 59048 | 1 | 32 | 1 | 1 | 06 | 5 | MAU | 0 | 2 | 1 | 025 | 21 | 99 | 071986 | 12 | 4 | WI | 139 | 2 | 1 | 9 | 0 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 18 | | 97 | 1 |
| 59052 | 2 | 35 | 1 | 2 | 03 | 5 | HAM | 1 | 4 | 1 | 115 | 17 | 77 | 071686 | 15 | 5 | WI | 059 | 1 | 2 | 9 | 1 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 1 | 0 | 1 | 98 | 52 | 97 | 1 |
| 59065 | 9 | 33 | 4 | 2 | 07 | 6 | SER | 1 | 4 | 4 | 165 | 20 | 72 | 070686 | 17 | 5 | WI | 101 | 2 | 1 | 9 | 2 | 1 | 20 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 59072 | 2 | 49 | 3 | 2 | 03 | 5 | UUU | 1 | 4 | 1 | 115 | 16 | 84 | 070486 | 18 | 5 | WI | 095 | 1 | 2 | 9 | 1 | 1 | 30 | 0712 | 1 | $ | 0 | 0 | 1 | 0 | 2 | 32 | | 97 | 1 |
| 59074 | 1 | 68 | 4 | 2 | 02 | 1 | AXS | 1 | 4 | 1 | 140 | 17 | 85 | 072286 | 11 | 4 | WI | 043 | 1 | 1 | 9 | 1 | 1 | 10 | 1012 | 1 | $ | 0 | 0 | 1 | 0 | 1 | 18 | | 97 | 1 |
| 59076 | 1 | 45 | 4 | 2 | 04 | 5 | SER | 2 | 4 | 4 | 228 | 20 | 99 | 070786 | 99 | 4 | WI | 063 | 1 | 2 | 9 | 2 | 1 | 60 | 1012 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 98 | | 97 | 1 |
| 59079 | 2 | 32 | 2 | 2 | 03 | 5 | CBA | 1 | 4 | 1 | 065 | 15 | 72 | 072286 | 13 | 5 | WI | 115 | 1 | 1 | 9 | 0 | 1 | 30 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 33 | | 96 | 1 |
| 59086 | 9 | 27 | 2 | 2 | 03 | 5 | SLV | 1 | 4 | 4 | 140 | 16 | 76 | 071886 | 17 | 5 | WI | 133 | 1 | 3 | 9 | 2 | 1 | 60 | 12 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 59096 | 9 | 48 | 3 | 2 | 02 | 5 | PRO | 1 | 4 | 1 | 150 | 17 | 85 | 061586 | 14 | 5 | WI | 125 | 2 | 2 | 9 | 9 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 2 | 1 | 08 | | 95 | 1 |
| 59112 | 2 | 30 | 1 | 2 | 02 | 5 | BWC | 1 | 4 | 1 | 030 | 17 | 67 | 081786 | 17 | 5 | WI | 133 | 1 | 2 | 9 | 2 | 1 | 10 | 1012 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 18 | | 96 | 1 |
| 59130 | 2 | 24 | 4 | 2 | 03 | 5 | BVL | 1 | 4 | 1 | 125 | 18 | 86 | 052586 | 13 | 5 | WI | 075 | 1 | 1 | 9 | 1 | 1 | 30 | 1012 | 2 | $ | 0 | 0 | 1 | 0 | 1 | 25 | | 96 | 1 |
| 61006 | 2 | 99 | 9 | 2 | 03 | 9 | GPL | 1 | 4 | 4 | 120 | 17 | 99 | 052586 | 14 | 5 | WY | 031 | 1 | 1 | 9 | 1 | 1 | 30 | 1012 | 1 | $ | 0 | 0 | 0 | 1 | 1 | 19 | | 97 | 1 |
| 61007 | 2 | 20 | 2 | 2 | 05 | 4 | CSN | 1 | 4 | 4 | 260 | 23 | 81 | 061986 | 17 | 5 | WY | 025 | 1 | 1 | 5 | 1 | 1 | 63 | 12 | 2 | $ | 0 | 0 | 0 | 1 | 1 | 25 | | 96 | 1 |
| 64001 | 9 | 52 | 4 | 2 | 03 | 6 | UUU | 3 | 6 | 3 | 120 | 67 | 73 | 010286 | 17 | 3 | VI | 078 | 1 | 1 | 7 | 2 | 1 | 70 | 0712 | 2 | $ | 40 | 0 | 0 | 0 | 2 | 32 | | 97 | 1 |
| 1986 totals | | | | | | | | | | | | | | | | | | | | | | | | | | | $ | 448 | 017 | 042 | 265 | | | | | |

21st page of "struck by boat or propeller" data supplied by Don Kerlin of USCG to the subcommittee.

17 drownings + 42 deaths

total of 59 fatalities 308

**Figure 5: 1986 "struck by boat or propeller" total fatalities**

## SP3. December 15, 1987 Snyder Deposition Digest, Elliott v. Sportscraft

In July 1982, fourteen year old Ashley Elliott  jumped from a pier near a boat into the water and was severely struck by the boat propeller.

In the ensuing legal case, Dick Snyder testified on the status of guarding boat propellers. On pages 71-72 of the Digest of Snyder's **December 1987 testimony**[19] it is recorded that Snyder, "**Understands there are about 50 fatalities each year from persons struck by propellers**." This is many more fatalities than the "first event" fatalities reported in USCG Boating Statistics annual reports in this era.

Ten months later on **September 22, 1988** Snyder stands up in front of the NBSAC subcommittee on propeller guards and tells them "**There are an average of 13 fatalities labeled as struck by boat or propeller" (or gearcase or rudder) per year**." See **Figure 9**.

The Elliot jury found against Mercury for 1.5 million dollars in compensatory damages and 3 million dollars in punitive damages for a total of $4.5 million. Mercury later appealed the case and won. This $4.5 million dollar verdict is an indication of the pressure Mercury and OMC felt to find something to put between themselves and the issue of propeller guards.

In 2006, Snyder reiterated his testimony in the Elliott case. In Ard v. Brunswick[20] Snyder was shown his own December 1987 testimony in Elliott and was asked to confirm that he knew in 1987 there were about 50 struck by boat or propeller fatalities per year. See **Transcript 1**.

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[19] Deposition Digest of Richard H. Snyder. Ashley Elliott v. Sportscraft, Inc. et al. State of Alabama. Circuit Court. Jefferson County. Taken December 15, 1987 in Fond du Lac, Wisconsin.

[20] Robert Leroy Ard v. Brunswick Corporation. Circuit Court of Jackson County Missouri. Division 3. No. CV95-23303.Transcript. Trial Testimony of Richard Snyder. Tuesday April 25, 2006. Pages 259-260.

Q. And I'm going to hand you a deposition that you gave in 1987, which was December '87, about six months before this accident, and is this a deposition that you gave?
A. **That's what it says.**
Q. I want to turn to page 71 of that deposition, if you would.

MR. VERWYS: Mr. Lombardo, would you give me some hint as to what you're talking about? Thank you.
Q. (By *Mr. Lombardo)* Referring to page 71, line 13, the question was asked: "Well, from your research and correspondence with the Coast Guard and so forth, tell me what is your understanding about the extent to which people are struck by propellers each year," and you give



an answer to that and does that answer contain within it the number of fatalities on an annual basis relating to being struck by propeller as of 1987?
A. **I'm still looking for a number at the bottom of the page. I assume it continues.**
Q. It does, sir.
A. **I see at the end there is the number 50. It seems like it's got a lot of qualifications to it. In the preceding part of that paragraph, I do comment about the combination of struck by boat or propeller because at that point they had not separated those two categories.**
Q. So in 1987 you were aware that there were or you thought there were 50 fatalities a year that were either struck by propeller or struck by boat and propeller?
A. **Struck by boat or struck by propeller.**
Q. That was your understanding in 1987?
A. **That was the way the statistics were gathered back then. I didn't like that and eventually asked them to change it and separate the two, which they did.**

**Transcript 1: Richard Snyder trial transcript. Ard v. Brunswick. April 25, 2006.**

## SP4. June 16, 1988 Snyder letter to Marmo

Snyder refers to his previous request (SP1) and now requests USCG injury and fatality data for "struck by boat or propeller" for 1984, 1985, 1986, and 1987.

Snyder even included a SAMPLE page from USCG's earlier response (see **Figure 2**). The SAMPLE page shows accident totals for 1984. The page is hard to read. We labeled the Drowned and Victim (Dead) columns and their respective totals. It **shows 13 drownings plus 25 victims (dead) for a total of 41 "struck by boat or propeller" deaths.**

Since Snyder's "SAMPLE" page is hard to read, we included the page with 1984 accident totals on it from Don Kerlin's report as **Figure 3**. Kerlin's data in **Figure 3** can easily be read as **13 drownings plus 25 victims for a total of 41 "struck by boat or propeller deaths"**.

These 41 fatalities can be compared with **the 8 Event 1 fatalities shown by USCG in their annual Boating Statistics 1984 report in Figure 6.** Once again proving Dick Snyder knows there are many more fatalities than were shown in the corresponding annual Coast Guard Boating Statistics reports.

## SP5. July 6, 1988 Marmo return letter to Snyder

Marmo's response to **SP4**. Marmo included a computer printout of all reported "struck by boat or propeller" injury or fatality accidents for 1984, 1985, 1986, and 1987.

Once again it is obvious to Dick Snyder there are many more reported "struck by boat or propeller" fatalities than those shown in USCG's annual Boating Statistics reports.

**We have identified 5 separate occasions on which Dick Snyder knew Event 1 data as reported in USCG's annual Boating Statistics reports significantly underrepresented the total number of "struck by boat or propeller" accidents reported in the Coast Guard BARD database.**

**Those five dates range from October 9 1987 to July 6, 1988.**

Boating Statistics 1984. U.S. Dept. Transportation. U.S. Coast Guard. June 1985.
COMDTINST M16754.1F Page 19.

## TYPE OF ACCIDENT *

| 1984 | TOTAL VESSELS INVOLVED | FATALITIES |
|---|---|---|
| TOTALS | 7,510 | 1,063 |
| Grounding | 352 | 9 |
| Capsizing | 663 | 395 |
| Swamping/Flooding | 206 | 55 |
| Sinking | 268 | 51 |
| Fire/Explosion (fuel) | 347 | 4 |
| Fire/Explosion (other) | 68 | 1 |
| Collision with another vessel | 3,715 | 70 |
| Collision with fixed object | 646 | 61 |
| Collision with floating object | 231 | 30 |
| Falls overboard | 384 | 261 |
| Falls within boat | 53 | 1 |
| Struck by boat or propeller | 89 | 8 |
| Other | 447 | 60 |
| Unknown | 41 | 57 |

* Type of accident refers only to the first event that occurred. Some accidents involve more than one event, e.g., a grounding followed by a sinking is included here only as a grounding even though the sinking may have directly led to a drowning fatality. This is Event 1 data only

We estimate that we receive reports of only 5% to 10% of all reportable accidents not involving fatalities.

**Figure 6: USCG 1986 Accident Totals Event 1 Only**

**Boating Industry Repeatedly Cites Event 1 Statistics**

In the era of the 1989 NBSAC report the boating industry often cited low ball event 1 only data as representing the total number of propeller injuries and fatalities. That practice continues to this day.

A few examples follow:

1. **NMMA Presented Event 1 Data to Media**
As the topic of propeller guards was heating up in the Fall of 1987, David Beach, Manager of Engineering Services for National Marine Manufacturers Association (NMMA), was quoted by Orlando Sentinel[21] as saying "*that of 1,066 reported boating fatalities last year (1986), propellers accounted for only 16*."

You can see from **Figure 4**, NMMA's Beach only reported Event 1 data.

David Beach, a National Marine Manufacturing Association executive, misled the media and the public.

2. **"Boating Industry Provides Misleading Propeller Accident Statistics"**[22]

Our PropellerSafety post by the title above, provides examples of five boating industry executives providing Event 1 data.

A. Dick Snyder of Mercury Marine  Brunswick
B. Bill Calorie, General Counsel of Volvo Penta
C. Ralph Lambrecht of Outboard Marine Corporation
D. Don Kueny of Outboard Marine Corporation
E. Pete Chisholm of Mercury Marine / Brunswick

**CONTINUED**

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[21] Props Are a Deadly Problem. by Charlie Jean. The Florida Orlando Sentinel. September 7, 1987. Page D1.

[22] Boating Industry Provides Misleading Propeller Accident Statistics. Gary Polson. PropellerSafety.com. October 8, 2013. http://www.propellersafety.com/8733/propeller-statistics/boating-industry-misleading-propeller-accident-statistics/

### 3. Don Kerlin, of the Coast Guard, Presented Event 1 Data to the Media

Don Kerlin of USCG, and member of the NBSAC subcommittee on propeller guards, prepared and presented propeller accident data to the subcommittee at their first meeting, the same day Dick Snyder presented his amended Event 1 data.

Kerlin's full report included a BARD print out of 1983-1987 propeller injuries and fatalities. His entire report is missing from the supporting documents (NBSAC Appendix C).

The subcommittee latched on to Event 1 accident data. For example, Don Kerlin himself later cited Event 1 data to the media:[23]

A. **Figure 7** shows 1988 Event 1 Only data as 11 "struck by boat or propeller" fatalities.

B. **Figure 8** shows Don Kerlin providing Event 1 fatality data to the press and stating he didn't think that number (11) justified a large investment in research.

Not only did Mr. Kerlin mislead the media and the public by quoting Event 1 fatality data, he seems to have forgotten hundreds of people seriously injured by propellers annually.

We see no record of the subcommittee interviewing a single propeller strike victim to gain a feel for the disruption to their life or their family's loss of a loved one. It would be hard to understand what they were actually balancing against an investment in further research without visiting with those directly impacted.

Right after the subcommittee submitted their final report, Don Kerlin told the general public there were only about 11 propeller fatalities a year, vs. citing 1987 reported statistics of 47 "struck by boat or propeller" fatalities, and 286 injured. See **Figure 7 and Figure 8**.

47 + 286 = 333  333/11 = **33 times as many injured or killed in one year than reported by Kerlin** who only reported Event 1 fatality data.

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[23] Guard panel advises against prop guards. November 1989.

**Boating Statistics 1988. U.S. Dept. Transportation. U.S. Coast Guard. June 1989. COMDTPUB P16754.1 Page 16.**


**TYPES OF BOATING ACCIDENTS 1988**

| | VESSELS INVOLVED | FATALITIES |
|---|---|---|
| **TOTALS** | **8,981** | **946** |
| Grounding | 433 | 18 |
| Capsizing | 608 | 305 |
| Swamping/Flooding | 265 | 64 |
| Sinking | 276 | 36 |
| Fire/Explosion (fuel) | 385 | 5 |
| Fire/Explosion (other) | 42 | 3 |
| Collision with another vessel | 4,612 | 76 |
| Collision with fixed object | 848 | 78 |
| Collision with floating object | 376 | 13 |
| Falls overboard | 450 | 260 |
| Falls within boat | 97 | 3 |
| Struck by boat or propeller | 48 | 11 |
| Other | 510 | 37 |
| Unknown | 31 | 37 |

Type of accident refers only to the first event that occurred. Some accidents involve more than one event (e.g., a grounding followed by a sinking is included here only as a grounding even though the sinking may have led directly to a drowning fatality).

We estimate that we receive reports for approximately 10 percent of all non-fatal accidents.

**Figure 7: USCG 1988 Accident Totals Event 1 Only**

BRUNS 004091

GOVERNMENT

# Guard panel advises against prop guards

ng Safety Advisory Council
he Coast Guard not to require
ats, citing evidence that they
dling, reduce engine efficiency
is injury.
the Coast Guard on matters
afety. Its report concluded that
nted propeller related injuries
does not justify a large outlay
esearch into improving prop

end money, especially govern-
t where you're going to get the
James Getz, chairman of the
d subcommittee.
servation Department district
oney is better spent on teach-
falls overboard and other situ-
e run over.
rt to the Coast Guard at a
Orlando, Fla., drew a swift
rd advocates.

"Like any other issue, when the public demands a reaction from the Coast Guard and the industry, we'll get a reaction," said Linda Barnby, a 36-year-old Winter Park, Fla., attorney who lost a leg when a prop slashed it in a water-skiing accident. "Right now, they see it as as an issue that nobody cares about."

Engine manufacturers characterized the report as a vindication of their position that guards are not feasible on fast-moving boats.

"We're in complete agreement with the conclusions of the subcommittee," said C.J. Koehler, director of public relations for Mercury Marine in Fond du Lac, Wis.

In January 1989, Mercury lost a liability court case involving the prop guard issue. An Alabama jury awarded 19-year-old Ashley Elliott of Sheffield, Ala., $4.5 million in damages for disfiguring prop injuries suffered in a boating accident. The case is on appeal in federal district court in Atlanta.

Koehler said Mercury has fewer than six other prop guard cases pending. Laurin Baker, spokesperson for Outboard Marine Corp., of Waukegan, Ill., the other large American marine engine maker, said OMC's prop guard caseload is about the same as Mercury's.

Al Marmo, assistant chief of the Coast Guard Auxiliary, Boating and Consumer Affairs Division, said the Coast Guard is studying the report and probably will decide what to do with it in February.

The NBSAC is a 21-member body with representatives from the boating industry, state boating law administrators and boaters. Its report faulted ring-type guards for causing loss of boat control in turns. It said catcher's mask-style cage guards caused loss of control and speed. It faulted both guards for increasing the smashing surface of the prop assembly, which at more than 10 mph could inflict internal injuries more serious than prop cuts.

Prop guard advocate Barnby attacked the study, saying the subcommittee's membership was skewed toward the boating industry and its technical information, testing and research was incomplete.

Donald Kerlin, a subcommittee member and chief of the Coast Guard's Product Safety Assurance Branch, said 11 of 946 boating fatalities in 1988 were from prop injuries. He didn't think that number justified a large investment into research.

Barnby claims a physicians' survey in Florida suggests the numbers may be six times greater than those reported to the Coast Guard. ■

**Figure 8: Don Kerlin of USCG quotes EVENT1 data to the media**

**What Did Dick Snyder Tell the Subcommittee About Propeller Accidents Statistics and When Did He Tell Them?**

Richard Snyder was invited by letter to present at the NBSAC subcommittee meeting to be held September 22, 1988 in Rockland, Massachusetts for about an hour.[24]

Dick Snyder wrote several letters to Jim Getz, chairman of the subcommittee. Two are enumerated below, along with the presentation above:

A. Snyder presentation to subcommittee September 22, 1988.
See **Figure 9**.
(NBSAC Appendix C item #30).

B. Snyder letter to Jim Getz summarizing his September 22, 1988 presentation to the subcommittee. October 6, 1988.[25]
(same references as above).

C. Snyder letter to Jim Getz explaining Snyder's recent revelations concerning Event 1 and All Events data. February 23, 1989.[26]
See **Figure 10**.
(NBSAC Appendix C item #36).

### A. Snyder Presentation to the Subcommittee

Snyder supplied his presentation notes in his October 6, 1988 letter to Jim Getz.

### B. Snyder Letter to Jim Getz October 6, 1988

Snyder's October 6, 1988 letter to Jim Getz consists of Snyder's notes for his September 22, 1988 presentation to the subcommittee. He is basically summarizing his presentation for the record. Mercury has recognized the importance of the record of this subcommittee and adds to the record when the opportunity presents itself. See **Figure 9**.

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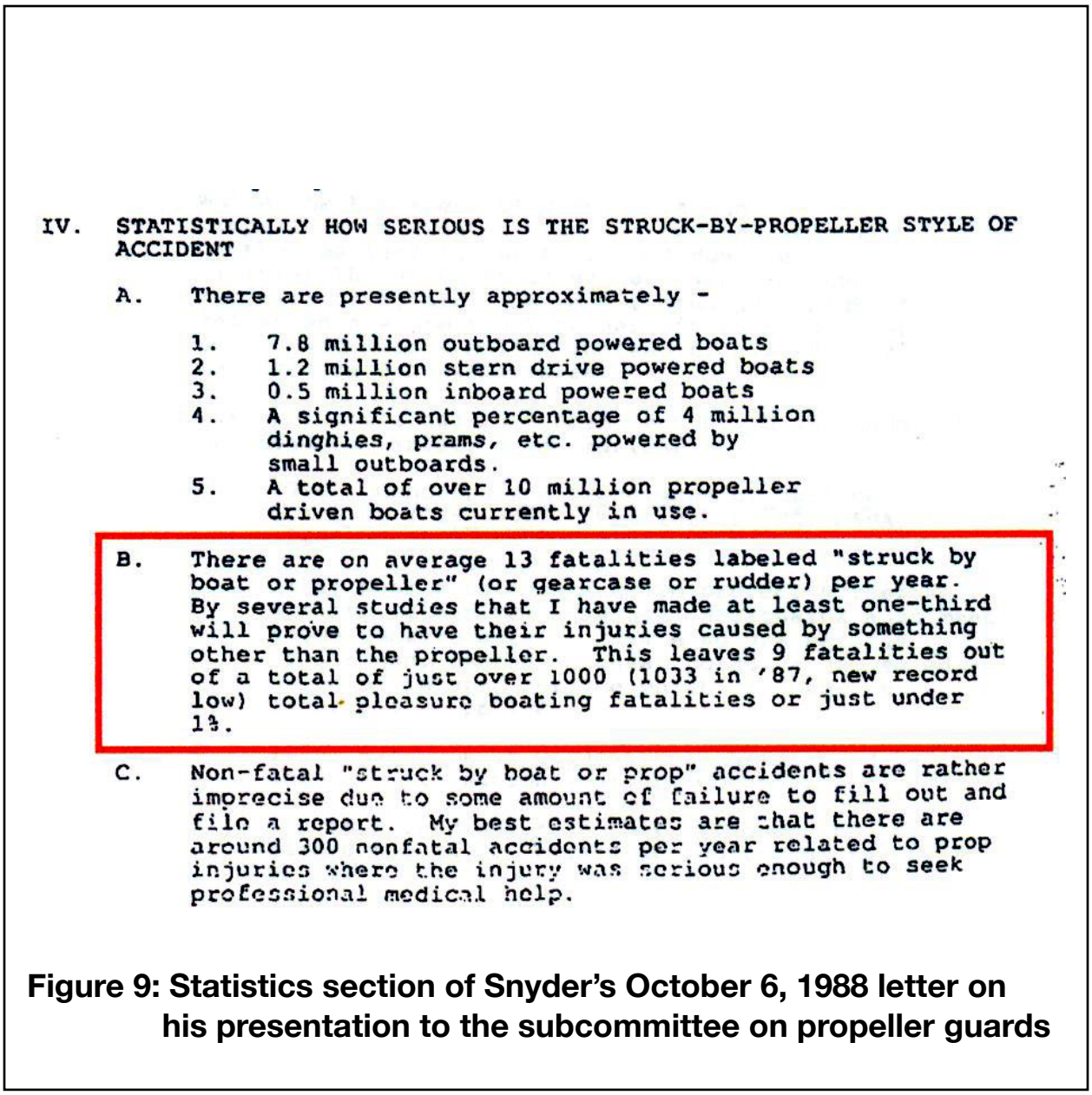
[24] James Getz, NBSAC subcommittee on propeller guards chair, September 1998 letter to Richard Snyder of Mercury Marine inviting him to present for about one hour at the September 22, 1988 subcommittee meeting in Rockland Massachusetts.

[25] Dick Snyder, of Mercury Marine, letter to Jim Getz, subcommittee chair, containing Snyder's presentation notes from his September 22, 1988 presentation to the subcommittee on propeller guarding. Letter dated October 6, 1988.

[26] Dick Snyder, of Mercury Marine, letter to Jim Getz, subcommittee chair in which Snyder reports recently learning the annual Coast Guard accident report might be a little misleading to their fatality totals. Snyder resubmits propeller fatality statistics, along with injury statistics. February 23, 1989.



IV. STATISTICALLY HOW SERIOUS IS THE STRUCK-BY-PROPELLER STYLE OF ACCIDENT

A. There are presently approximately -

1. 7.8 million outboard powered boats
2. 1.2 million stern drive powered boats
3. 0.5 million inboard powered boats
4. A significant percentage of 4 million dinghies, prams, etc. powered by small outboards.
5. A total of over 10 million propeller driven boats currently in use.

B. There are on average 13 fatalities labeled "struck by boat or propeller" (or gearcase or rudder) per year. By several studies that I have made at least one-third will prove to have their injuries caused by something other than the propeller. This leaves 9 fatalities out of a total of just over 1000 (1033 in '87, new record low) total pleasure boating fatalities or just under 1%.

C. Non-fatal "struck by boat or prop" accidents are rather imprecise due to some amount of failure to fill out and file a report. My best estimates are that there are around 300 nonfatal accidents per year related to prop injuries where the injury was serious enough to seek professional medical help.

**Figure 9: Statistics section of Snyder's October 6, 1988 letter on his presentation to the subcommittee on propeller guards**

Snyder supplied propeller accident statistics in Part IV of his presentation. Points B and C are copied below:

*"B. There are on average 13 fatalities labeled "struck by boat or propeller" (or gear case or rudder) per year. By several studies that I have made at least one-third will prove to have their injuries caused by something other than the propeller.* ***This leaves 9 fatalities*** *out of a total of just over 1000 (1003 in '87 new record low) total pleasure boating fatalities or just under 1%."*

*"C. Non-fatal "struck by boat or prop" accidents are rather imprecise due to some amount of failure to fill out and file a report. My best estimates are that* ***there are around 300 nonfatal accidents per year related to prop injuries where the injury was serious enough to seek professional medical help.****"*

### C. Snyder Letter to Jim Getz February 23, 1989 (ARD BATES # 000100)

In this letter, Snyder reveals the accident statistics he previously furnished *"might be a little misleading.*"

This letter is so important it will be reproduced in its entirety. It is listed as item #36 in NBSAC Appendix C as:

"Letter to Subcommittee Chairman Getz from Mr. Richard Snyder, Mercury Marine, reference a clarification of his presentation to the Subcommittee on September 22, 1988, concerning U.S. Coast Guard Statistics. Date 02-23-89"

Snyder makes it sound like a minor clarification, not a big deal.

The letter is in **Figure 10**. Snyder opens with:

> "*In a recent discussion with others who have looked at Coast Guard boating accident statistics, I was alerted to the possibility that the annual Coast Guard accident report might be a little misleading as to their fatality totals relative to various causes.*"

Snyder says this is news to him, but he knew about it when he wrote SP1, a year earlier.

Snyder goes on to say he called Al Marmo at the Coast Guard to get clarification. "*Sure enough*" total fatalities are only those listed in the first event column. Per Snyder, the relevant total fatalities should include Event 1, Event 2, and Event 3 fatalities LESS any individuals "struck by boat or propeller" that later drowned.

Snyder now adjusts the fatal propeller strike statistics he supplied during his presentation (item **A**) and in the accompanying letter to Jim Getz (item **B**). Snyder's calculations are in **Figure 11**.

Snyder's hand written calculations are present in the ARD case materials.

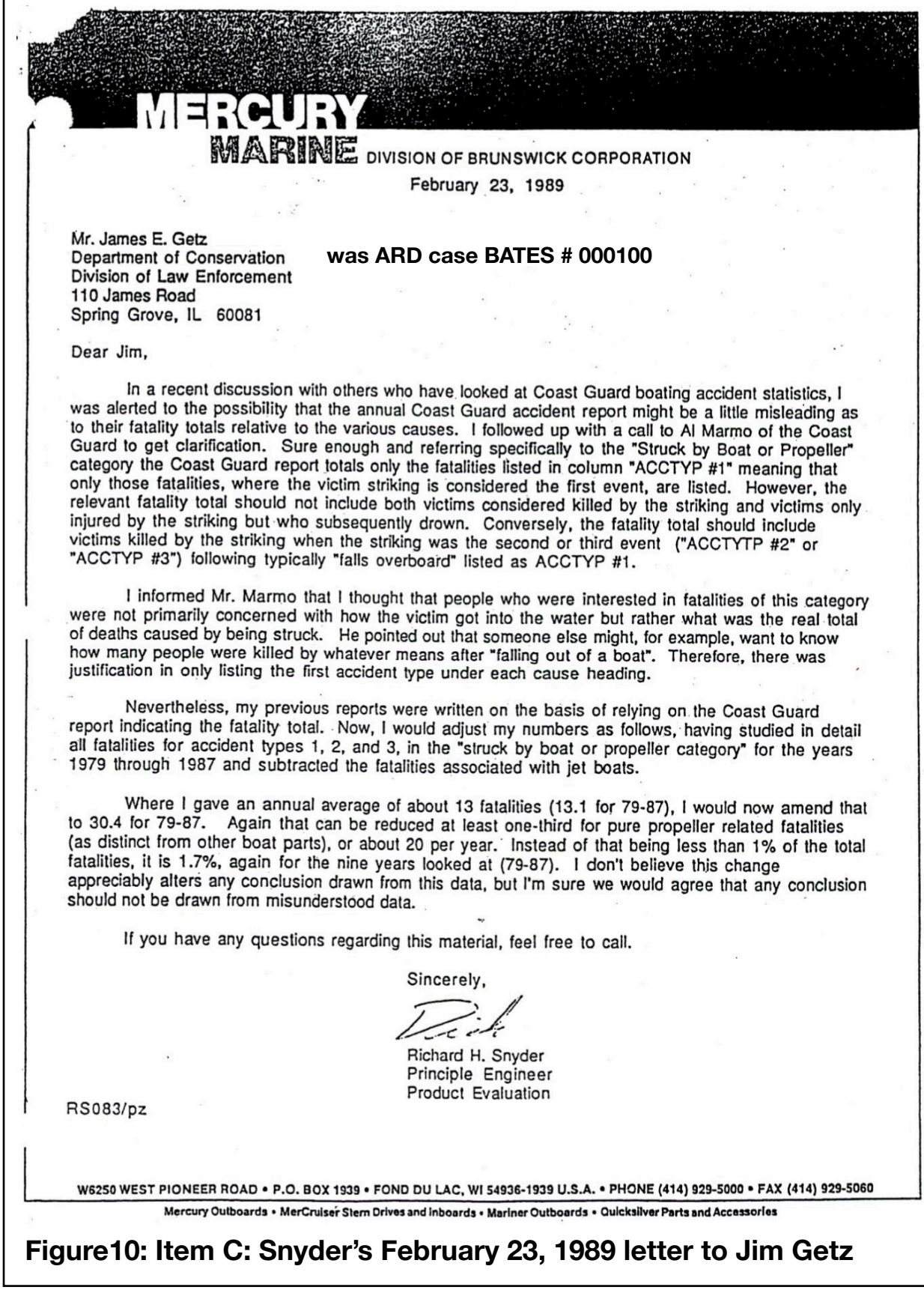
Snyder subtracts fatalities associated with jets boats, some of which may be early PWC's crashing in the stern of a boat or being ran over and struck by the propeller.

**Next Snyder subtracts the total number of instances in which someone was "struck by boat or propeller" and later drowned. He does not consider these instances to be "struck by boat or propeller" fatalities.** This act alone show how desperately the industry wanted to skew the statistics. It is common to list cause of death as drowning for bodies retrieved some time after being struck by propeller.

Using Snyder's logic, why not just remove all drownings from boating fatality statistics? Boating would immediately be over twice as safe, at least on paper.

Carrying forward the industry's plan to minimize the number of fatalities, Snyder then reduces the number of remaining fatalities by 1/3. He claims at least one third of the fatalities are not pure propeller accidents. Per Snyder those persons death was cause by being struck by the boat or other running gear.

Snyder's next to closing sentence ends with, *"I'm sure we would agree that any conclusions should not be drawn from misunderstood data."*



MERCURY MARINE DIVISION OF BRUNSWICK CORPORATION

February 23, 1989

Mr. James E. Getz
Department of Conservation
Division of Law Enforcement
110 James Road
Spring Grove, IL 60081

**was ARD case BATES # 000100**

Dear Jim,

In a recent discussion with others who have looked at Coast Guard boating accident statistics, I was alerted to the possibility that the annual Coast Guard accident report might be a little misleading as to their fatality totals relative to the various causes. I followed up with a call to Al Marmo of the Coast Guard to get clarification. Sure enough and referring specifically to the "Struck by Boat or Propeller" category the Coast Guard report totals only the fatalities listed in column "ACCTYP #1" meaning that only those fatalities, where the victim striking is considered the first event, are listed. However, the relevant fatality total should not include both victims considered killed by the striking and victims only injured by the striking but who subsequently drown. Conversely, the fatality total should include victims killed by the striking when the striking was the second or third event ("ACCTYTP #2" or "ACCTYP #3") following typically "falls overboard" listed as ACCTYP #1.

I informed Mr. Marmo that I thought that people who were interested in fatalities of this category were not primarily concerned with how the victim got into the water but rather what was the real total of deaths caused by being struck. He pointed out that someone else might, for example, want to know how many people were killed by whatever means after "falling out of a boat". Therefore, there was justification in only listing the first accident type under each cause heading.

Nevertheless, my previous reports were written on the basis of relying on the Coast Guard report indicating the fatality total. Now, I would adjust my numbers as follows, having studied in detail all fatalities for accident types 1, 2, and 3, in the "struck by boat or propeller category" for the years 1979 through 1987 and subtracted the fatalities associated with jet boats.

Where I gave an annual average of about 13 fatalities (13.1 for 79-87), I would now amend that to 30.4 for 79-87. Again that can be reduced at least one-third for pure propeller related fatalities (as distinct from other boat parts), or about 20 per year. Instead of that being less than 1% of the total fatalities, it is 1.7%, again for the nine years looked at (79-87). I don't believe this change appreciably alters any conclusion drawn from this data, but I'm sure we would agree that any conclusion should not be drawn from misunderstood data.

If you have any questions regarding this material, feel free to call.

Sincerely,

Richard H. Snyder
Principle Engineer
Product Evaluation

RS083/pz

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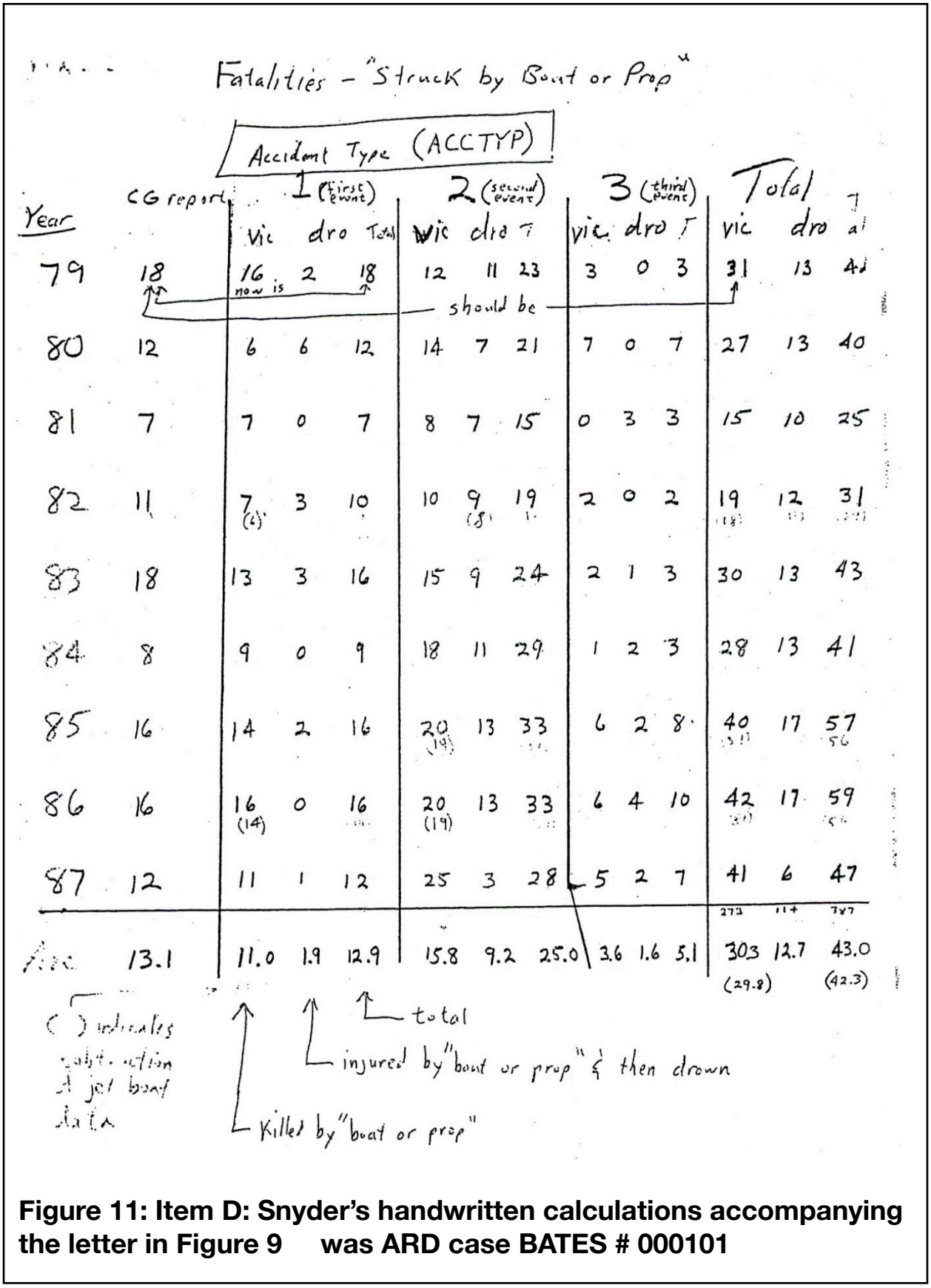
**Figure10: Item C: Snyder's February 23, 1989 letter to Jim Getz**



Fatalities – "Struck by Boat or Prop"

Accident Type (ACCTYP)

| Year | CG report | 1 (first event) vic | 1 dro | 1 Total | 2 (second event) vic | 2 dro | 2 T | 3 (third event) vic | 3 dro | 3 T | Total vic | Total dro | Total al |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 79 | 18 | 16 now is | 2 | 18 | 12 | 11 | 23 | 3 | 0 | 3 | 31 | 13 | 44 |
| 80 | 12 | 6 | 6 | 12 | 14 | 7 | 21 | 7 | 0 | 7 | 27 | 13 | 40 |
| 81 | 7 | 7 | 0 | 7 | 8 | 7 | 15 | 0 | 3 | 3 | 15 | 10 | 25 |
| 82 | 11 | 7 (6) | 3 | 10 | 10 | 9 (8) | 19 | 2 | 0 | 2 | 19 | 12 | 31 |
| 83 | 18 | 13 | 3 | 16 | 15 | 9 | 24 | 2 | 1 | 3 | 30 | 13 | 43 |
| 84 | 8 | 9 | 0 | 9 | 18 | 11 | 29 | 1 | 2 | 3 | 28 | 13 | 41 |
| 85 | 16 | 14 | 2 | 16 | 20 (19) | 13 | 33 | 6 | 2 | 8 | 40 (39) | 17 | 57 (56) |
| 86 | 16 | 16 (14) | 0 | 16 | 20 (19) | 13 | 33 | 6 | 4 | 10 | 42 (39) | 17 | 59 (56) |
| 87 | 12 | 11 | 1 | 12 | 25 | 3 | 28 | 5 | 2 | 7 | 41 | 6 | 47 |
| | | | | | | | | | | | 273 | 114 | 387 |
| Ave | 13.1 | 11.0 | 1.9 | 12.9 | 15.8 | 9.2 | 25.0 | 3.6 | 1.6 | 5.1 | 303 (29.8) | 12.7 | 43.0 (42.3) |

should be

( ) indicates substitution of jet boat data

Killed by "boat or prop"

injured by "boat or prop" & then drown

total

**Figure 11: Item D: Snyder's handwritten calculations accompanying the letter in Figure 9 was ARD case BATES # 000101**

**Getz - Statistical Dimensions of the Problem**

Statistical Dimensions of the Problem are discussed on pages 7 -9 of the subcommittee report. The report states *"There are obvious variations in reported statistics. No. universally accepted, accurate and complete compilation came to the Subcommittee's attention."*

Jim Getz, subcommittee chair, was asked in the DACUS case[27] based upon the quote above, "How was it decided what statistics would be used then, if any, in the analysis that the committee obviously did?"

Answer "Do you mean how was it decided what statistics or what facts and figures to use in the compilation of the report?

Question "Yes."

> Answer "I believe that was a joint decision made by the subcommittee at the formulation and discussion stage after the information gathering or as a result of one of the committee members including that in his draft to me. It could have happened either of those two ways, and I can't specifically state in each instance which one was the factor in that case."

Mr Getz was also asked about the charge to the subcommittee, and more specifically, "How did the committee go about determining under Subpart A quote, "What is the incidence of such accidents "?"

> Answer "For that information, we used the Coast Guard statistics that were available to us and we also used the statistics from Failure Analysis that were included in the appendix that we've already discussed and other documents and information that was presented to us as both orally and in written form."
>
> Getz went on in DACUS to state, "we looked at the U.S. Coast Guard reports that were existing reports, we asked for supplemental reports to be generated out of the Coast Guard statistics … ."

**Robert Taylor Presented Data to the Subcommittee in Percentages**

As stated earlier, Robert Taylor of Failure Analysis Associates presented some general accident data to the subcommittee at a meeting and again in the form of a letter to Jim Getz that became Appendix E of the 1989 NBSAC report.

Mr. Taylor reported there were an average of 49 fatalities per year associated with this accident mode. He estimated boating fatalities are probably closer to 30 per year with the rest involving struck by boat or other motor or steering appendages. Robert Taylor reduced the accident count by 39 percent (19/49).

Taylor reports in his Accident Types for Fatal Accidents Boats with motors, 1976-1981 chart that "struck by boat or propeller" represented about 5.2 percent of all boat fatalities.

---

[27] 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 48, 57-58.

Taylor reported many events as percentages. The subcommittee appeared to have latched onto that idea in seeking a way out of their dilemma. Whichever way they landed in the propeller guard debate, one side would be angry. If they could talk in terms of percentages and keep those numbers low, they might avert attention of regulators outside of USCG (avoid Congressional regulation).

Snyder's original presentation and letter estimated "struck by boat or propeller" fatalities at just under 1 percent of all boating fatalities (he began with Event 1 only fatality data, then subtracted those "struck by boat or propeller" that later drowned, then deducted 1/3 of those left for being struck by the boat.)

Snyder's confession letter (**Figure 9**), in which he said the Coast Guard accident report may be a "*little misleading*", found "struck by boat or propeller" fatalities now accounted for about 1.7 percent of all boat fatalities after he performed the same deductions as before.

As mentioned earlier in this report, two separate U.S. Coast Guard studies did not find a single "stuck by boat" fatality in the datasets they evaluated. They found none, while Dick Snyder and Robert Taylor reduced their counts by 1/3 or more. No research is cited in the NBSAC report to backup Taylor's or Snyders reduction of "struck by boat or propeller" data.

**Time Line Charts**

Earlier, PropellerSafety.com produced a timeline chart showing time served by individual members of NBSAC's Propeller Guard Subcommittee.
See **Figure 12 Timeline Chart 1**.

We also previously produced a timeline chart of Mr. Snyders letters regarding accident statistics to Jim Getz. See **Figure 13 Timeline Chart 2**.

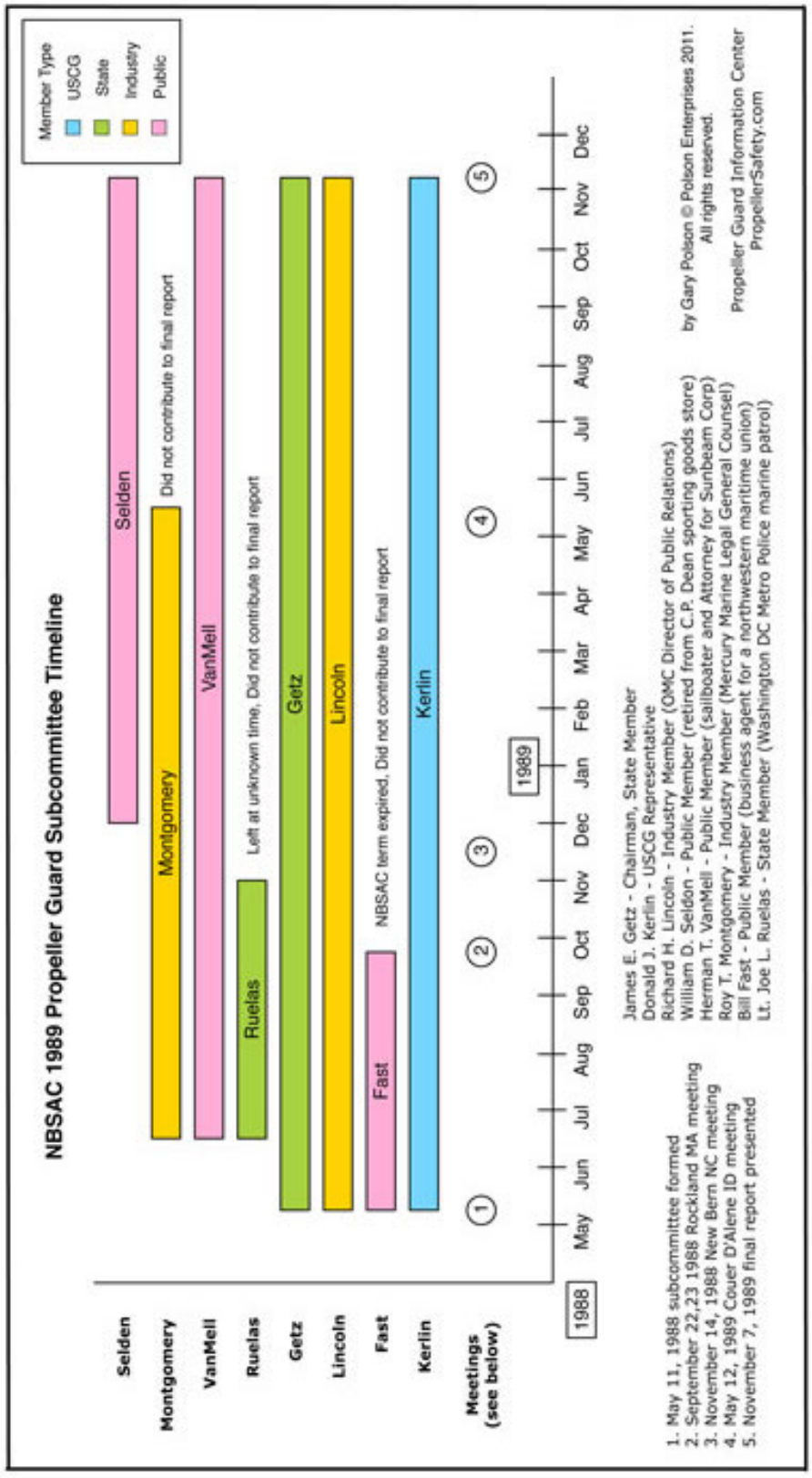



**Figure 12: Timeline Chart 1**

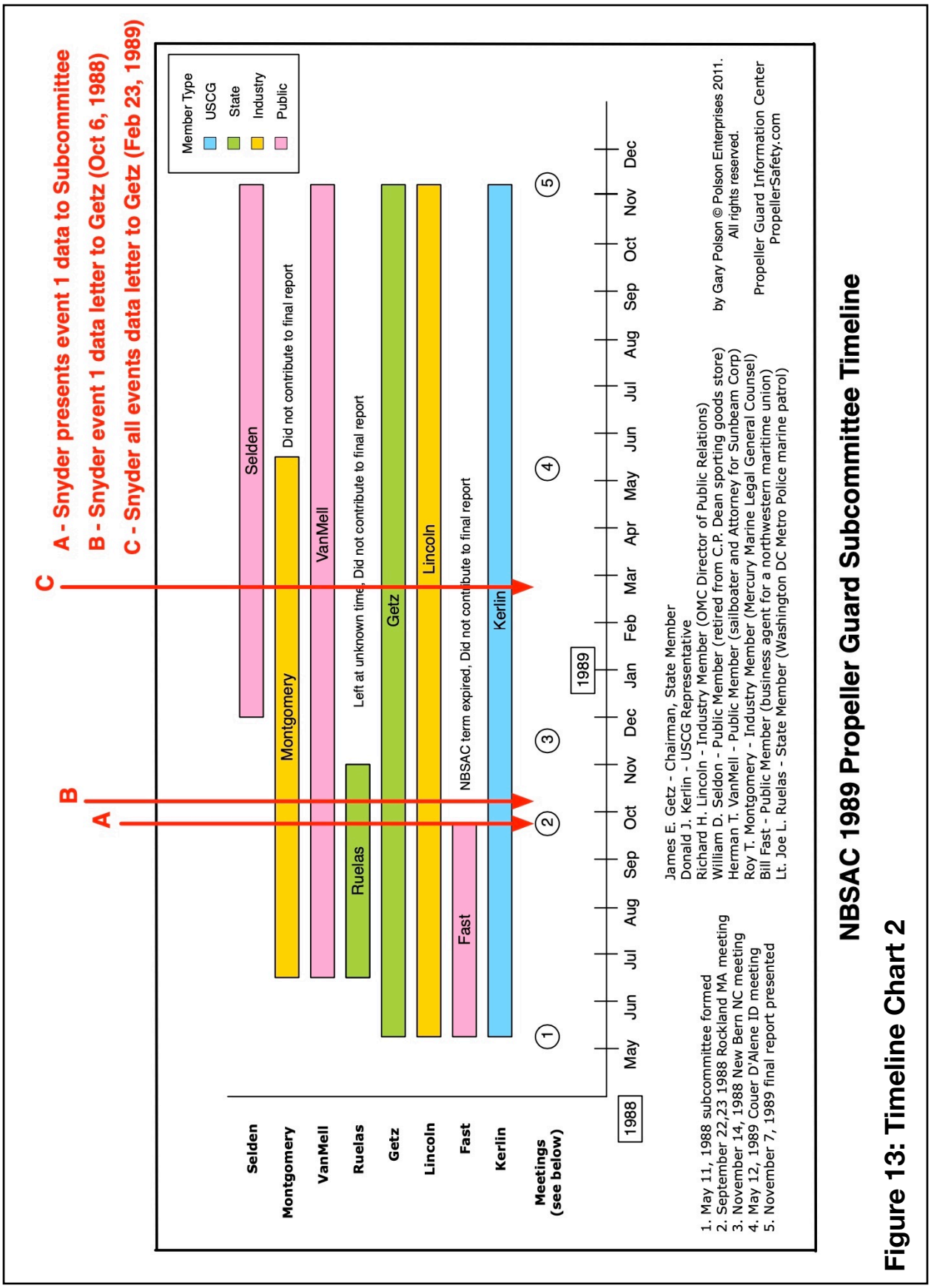



**Figure 13: Timeline Chart 2**

Using dates and information on previous pages, **Figure 14 Timeline Chart 3** was created by stretching out **Timeline Chart 2** and overlaying it with **SP** dates (dates on which we have proven that Dick Snyder was aware Coast Guard Event 1 data significantly underrepresented the total number of reported "struck by boat or propeller" fatalities.

**Timeline Chart 3** shows Dick Snyder knew Event 1 fatality data printed by the Coast Guard in annual Boating Statistics reports significantly underrepresented the actual number of reported "struck by boat or propeller" fatalities at time **SP1** well over 11 months before he gave his September 22, 1988 NBSAC subcommittee presentation. During that first presentation, Snyder cited Event 1 statistics from which he reduced by 1/3 claiming they represented struck by boat fatalities.

In addition to proving Dick Snyder knew of the Coast Guard collecting data as a series of events at least 11 months before his presentation, we also proved he knew so on 4 other separate occasions prior to his presentation ranging from 11 months to 2 months prior to his presentation.

Snyder gave his presentation 22 September 1988. Five months later he sends Jim Getz a nonchalant letter (**Figure 9**) about how he recently learned USCG reports accidents as a series of events and the USCG data he supplied earlier may be a "*little misleading*". This letter was a five alarm fire. The first two charges of the subcommittee were to determine the frequency of these accidents and if the trendline is going up or down, Snyder
waits past:

1. the September 1988 subcommittee meeting
2. the November 1988 subcommittee meeting
3. the tenure of Fast and Ruelas on the subcommittee
4. over 2/3 of the service of Montgomery (Mercury in-house lawyer) on the subcommittee
5. over one year and four months after we proved he had knowledge of USCG recording multiple Event data
6. looking the other way every time he reviews one of the annual USCG Boating Statistics publications. See the asterisk below **Figure 2** and **Figure 6**, and the text immediately below **Figure 7** which explains the published data only includes first event fatalities.

Dick Snyder was seen as Mercury Marine's top gun on propeller accidents, the man seen by all as the boating industry's most knowledgable person about propeller accidents and propeller guards. How could he not know approximately how many propeller accidents were being reported annually in BARD?

Not only would Snyder have known event one data was being used in annual USCG Boating Statistics reports, Roy Montgomery, Mercury's in house lawyer would have known, as well as Dick Lincoln, OMC Director of Public Relations.

Mercury misled the subcommittee on their most critical charges.

**See Figure 15 Timeline Chart 4,** a marked up version **Timeline Chart 3.**

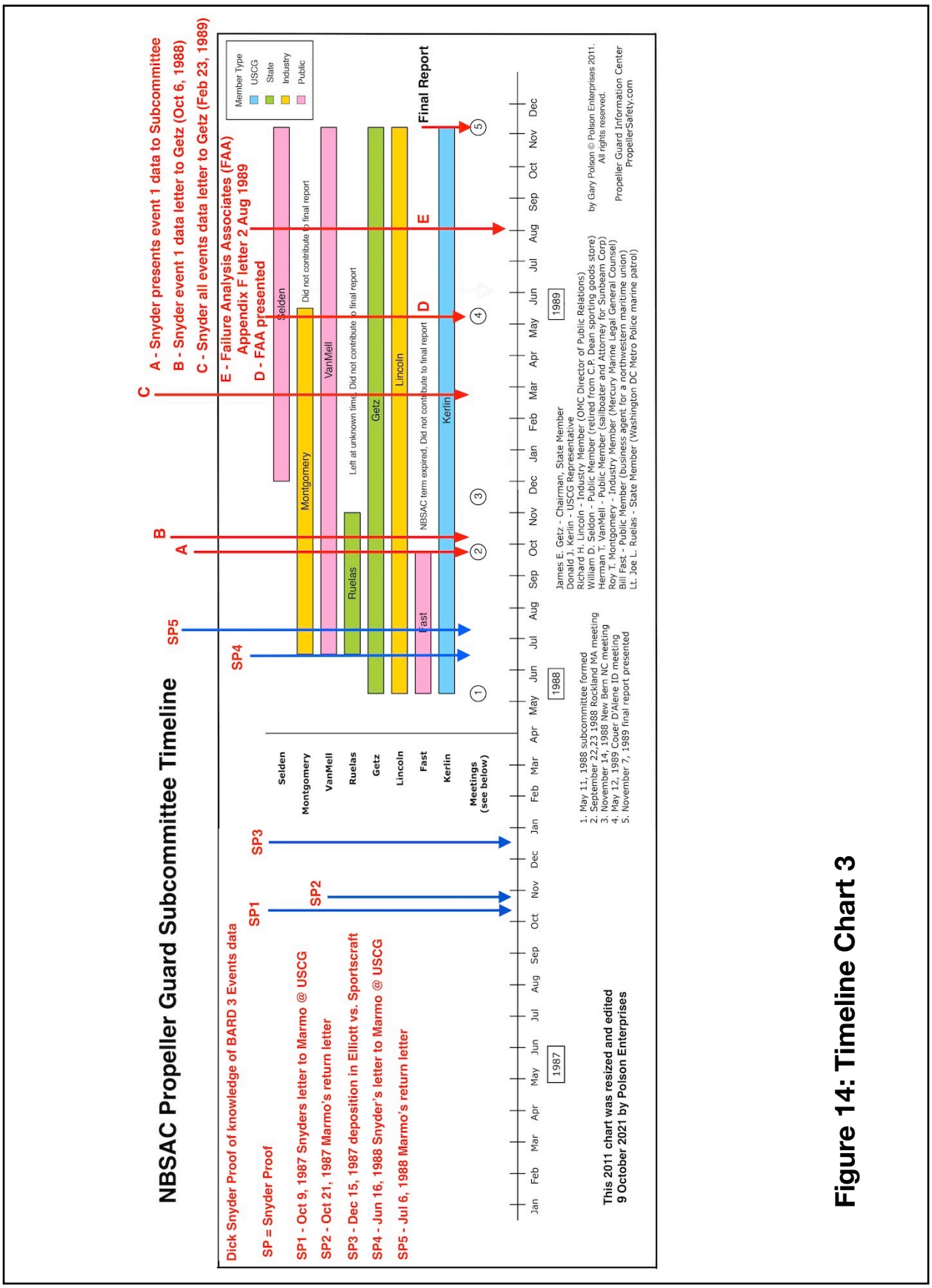



**Figure 14: Timeline Chart 3**

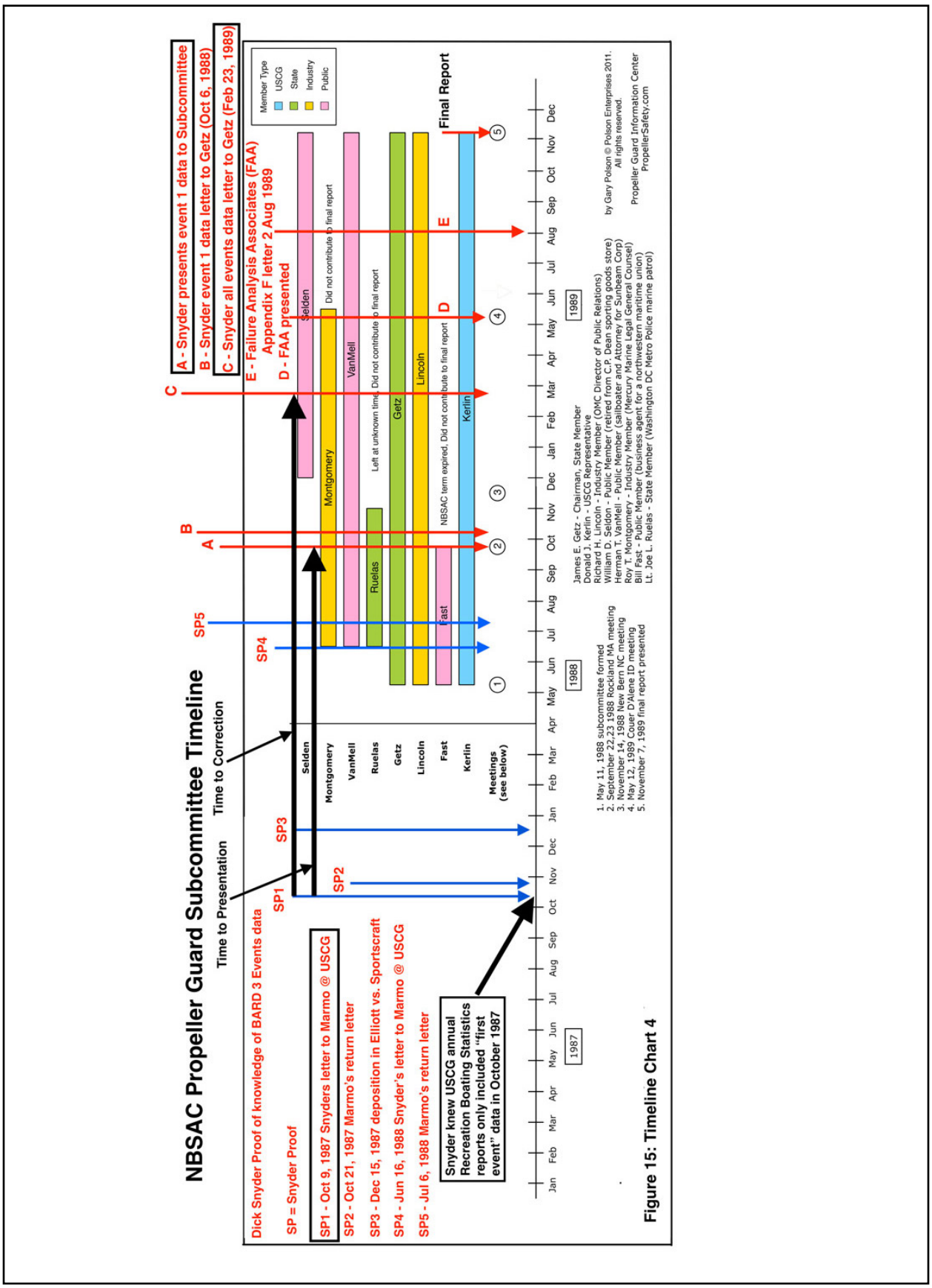



Figure 15: Timeline Chart 4

**Conclusions of the Subcommittee**

The 1989 NBSAC Propeller Guard Subcommittee report ends with 5 conclusions (pages 24-25) and 6 recommendations (pages 25-26). We list their first conclusion below.

**Conclusion 1:**

> ***"Accident data and the analysis of accident data must be an integral component of a study of this nature.*** *There is no one single source, best source, or all-inclusive source of accident data. However the available sources can be used collectively to give an accurate portrayal of the significance, frequency, and relative magnitude or underwater impact to other causes of boating accidents in particular and accidents in general. There is no indication that any change in reporting would reflect significant change in the relative position or percentage of injuries /fatalities due to underwater impacts. Therefore, propeller guarding at best could have only a negligible impact on improving boating safety."*

They are saying the relative position (X$^{th}$ leading cause of boating fatalities) or percentage of injuries / fatalities due to underwater impact (Y % of total boating fatalities) are too low to justify action because preventing these accidents would have negligible impact on improving boating safety.

The study cites no specific data in connection with Conclusion 1. Are they talking about first event data, or all events data? Are they removing drownings like Snyder did? Are they talking about fatality data or injury data? How did they estimate the percentage of boat strikes in "struck by boat or propeller" data?

Snyder's own September 22, 1988 presentation to the subcommittee (**Figure 9**) reports he estimates "there are around 300 nonfatal accidents per year related to prop injuries where the injury was serious enough to seek professional medical help.

300 non fatalities a year plus about 40 reported fatalities a year X 30 years between then and now = in excess of 10,000 people dead, maimed, or suffering individuals since then. Does that sound trivial?

Just four years later, Dick Snyder said[28], "Our survey of state boating law administrators indicates most serious accidents are reported and amount to fewer than 500 annually."

---

[28] Why Prop Guards Are Not the All-Purpose Answer to Boating Safety. Dick Snyder. Mercury Marine MerCourier (employee magazine). Vol.7. No.10. (December 1992 / January 1993). Pages 5-6. Mercury responds to an "Insider Edition broadcast critical of Mercury and OMC for not using propeller guards.

**Recommendations of the Subcommittee**

NBSAC's report ends with six recommendations.

**Recommendation 1:**

> **"*The U.S. Coast Guard should take no regulatory action to require propeller guards*."**

Recommendation 1 is written not only as no, but as hell no.

The paragraph immediately before the first recommendation reads as:

> "*Although the controversy which currently surrounds the issue of propeller guarding is, but its very nature, highly emotional and has attracted a great deal of publicity, there are no indications that there is a generic or universal solution currently available or foreseeable in the future. The boating public must not be misled into thinking there is a "safe" device which would eliminate or significantly reduce such injuries or fatalities*."

A common theme in the NBSAC report is looking for a single propeller guard design that would prevent all propeller accidents while not creating any problems of its own.

There are kinds of types, sizes, and uses of boats combined with various means of propulsion being used in various conditions. This variety tends to produce propeller accidents in specific clusters such as pontoon boat bow riding accidents, houseboat backover accidents, picking up fallen water skiers accidents, circle of death accidents, rental boat accidents, on the swim ladder accidents, etc. These and other clusters, especially when combined with the prevalence of alcohol in boating, will likely not be solved by a single solution. As the NBSAC study says, one would not anticipate "*that there is generic or universal solution currently available or foreseeable in the future*."

Accident clusters are far more likely to be addressed by targeted solutions, including education, Public Service Announcements, warnings, safety devices, regulations, propeller guards, boat design, and innovation.

**Charge to the Subcommittee: The First Two Points**

The charge (what they were asked to do) by NBSAC (**Figure 1**) began with a series of points. The **first point being "What is the incidence of such accidents?"**[29] and the **second point being, "Is there a trend toward more or fewer such accidents?"**

**The First Charge**

No numerical or statistical data is provided in the body of NBSAC's subcommittee report regarding the first charge. Robert Taylor's Appendix F dated August 2, 1989 reports there are about 49 "struck by boat or propeller" fatalities per year with close to 30 of those being due to struck by propeller.

**Robert Taylor's report was furnished about 3 months after the 3rd meeting** of the subcommittee. Getz said they quit gathering additional information after the third meeting because they felt they had all they needed and did not need more of the same. His exact words are on page 2 of NBSAC's final report:

**Pg2.** - *"The second meeting was held in New Bern, North Carolina, on November 14, 1988, and a third meeting at Couer d'Alene, Idaho, on May 12 and 13, 1989. Following that session, the Subcommittee concluded that sufficient written and verbal presentations and demonstrations had been seen and heard to cover the field; collection of documentary material amassed and reviewed was reasonably representative of presently available, relevant data; and further document search or additional meetings with concerned persons was unlikely to produce substantial additional information."*

**The Second Charge**

The NBSAC subcommittee report is totally silent on the second charge.

Don Kerlin of USCG was a member of the subcommittee on propeller guards. He presented a report at the September 22, 1988 subcommittee meeting summarizing USCG "struck by boat or propeller" accident data. Kerlin's data is summarized in **Figure 16**.

Note Kerlin broke out drownings (those struck by boat or propeller that later drowned), deaths, and injuries. **Figure 16** charts the total of all three categories.

As mentioned earlier, all evidence of Kerlin's report is gone from the subcommittee's materials. Kerlin's entire report is missing from the supporting documents (NBSAC Appendix C item #27).

The answer to the subcommittee's second charge, "Is there a trend toward more or fewer such accidents?" is very obvious from adding up the three categories and reading across the totals in the top half of **Figure 16**. However, the subcommittee failed to do so. One suspects Mercury and OMC put together a chart like **Figure 16** on their own, likely further motivating their efforts to influence the subcommittee's findings.

The NBSAC subcommittee neglected the second charge, just like they neglected the first.

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[29] Appendix A. NBSAC Committee. Propeller Guards / (Propeller Strikes / Propeller Protection). Charge to the Committee. Report of the Propeller Guard Subcommittee. Presented November 7, 1989.

**Don Kerlin of USCG**
**22 September 1988 summary of 1983-1987 USCG "struck by boat or propeller" data**
**Page 7**

1983-1987 Death/Injury Statistics
(Struck by Boat or Propeller)

| Category/Year | 1983 | 1984 | 1985 | 1986 | 1987 | Total |
|---|---|---|---|---|---|---|
| Drownings | 13 | 13 | 17 | 17 | 6 | 66 |
| Deaths(other) | 30 | 28 | 40 | 42 | 41 | 181 |
| Injuries | 206 | 163 | 213 | 265 | 286 | 1133 |
| | 249 | 204 | 270 | 324 | 333 | |

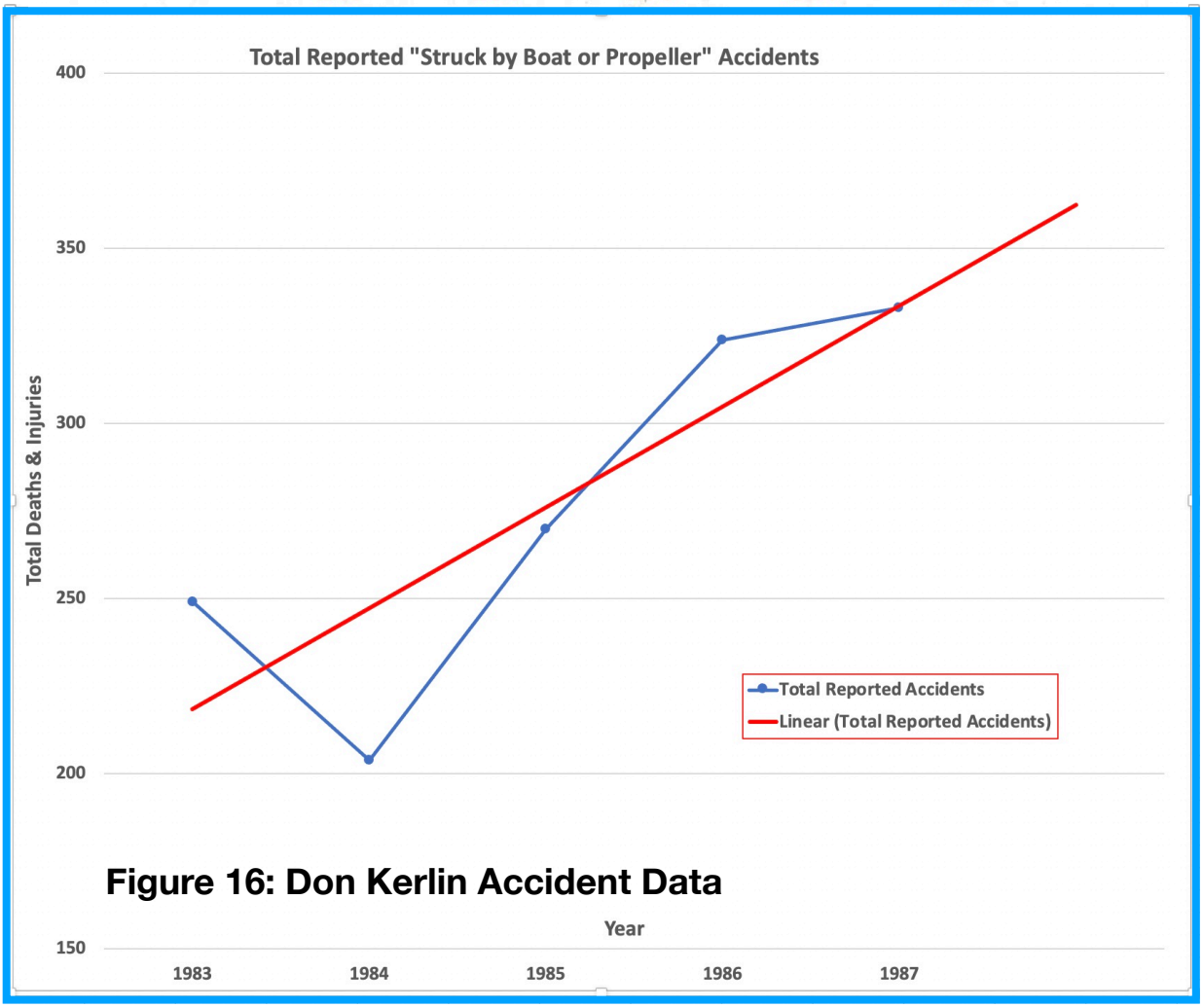


**Figure 16: Don Kerlin Accident Data**

# Problem # 2

## Snyderisms

**Snyderisms Revisited**

Snyderisms were introduced in **Volume I** of this four volume series. Dick Snyder, Mercury Marine's long term, in-house boat propeller case expert witness, was known for repeating certain points over and over to the industry, the the Coast Guard, to the press, and to the courts. After a period of time, many began to accepted Snyderisms as fact.

Some Snyderisms made it into the 1989 National Boating Safety Advisory Council (NBSAC) propeller guard subcommittee final report.

Some Snyderisms seemed more like wishful thoughts than the truth.

Examples of Snyderisms include:

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 increase projected cross area of an open propeller by 50 percent.

4. Propeller guards are only safe under 10 mph (over time he kept reducing that speed)

5. 1/3 of "struck by boat or propeller" accidents were really stuck by the boat

6. 1/2 of "struck by motor or propeller" are really struck by the motor

7. He subtracted those struck by a boat propeller that later drown from the total number of struck by propeller fatalities

A Snyderism was contained in one of Dick Snyder's letters to Jim Getz, chairman of the NBSAC subcommittee on propeller guards.[30] 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.

The subcommittee did not review color photos of fresh propeller injuries to see some of these "unpleasant cuts" themselves.

Dick Snyder made these and other points over and over to those in the industry, to the Coast Guard, to the media, to the courts. His continual repetition of Snyderisms led to their broad acceptance as truth. Snyderisms are covered further in **Volume 1** and in the next section.

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[30] 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. BRUNA003967 - 003974. Page 3.

**Snyderisms observed in the NBSAC subcommittee final report:**

**Pg.5 item b** engine and boat manufacturers have asserted - *"A very high percentage of the reported accidents of "struck by boat or propeller" reported accidents do not involve propeller strikes, but involve impacts with the boat hull or a stationary component of the lower unit."*
The 1989 NBSAC study focused on fatality data. Two separate U.S. Coast Guard studies did not a find a single "struck by boat" fatality. (Freund and Traub)

**Pg.6 item d** *"Since all types of known guards substantially increase the frontal area of the underwater appendages of an engine, the chances that a victim will be hit are greatly increased."*
Just like boats with multiple drives or faster boats that cover more water in a day. However the industry never mentions concerns of them increasing the risk of propeller strikes because they like selling drives, especially expensive high horsepower drives. See **Figure 17** and **Figure 18**.

**Pg.6 item e** *"A victim hit by other than a very slight glancing blow of the guard on a boat operating at normal planing speeds, will suffer impact injuries more devastating than being cut by a propeller."*

**Pg.6 item g** *"To recover normal operating speeds lost to guard drag, the engine horsepower and fuel consumption must be raised at least 50% with consequent proportionate increases in exhaust emissions"*
Minimal speed is lost on non-planing boats, little if any additional power is required to match unguarded performance.

**Pg.7** *"The standard form of boating accident report as prepared by the Coast Guard and followed by many state agencies has one category to be checked under the box "type of accident" identified as "hit by boat or propeller" (actually says "struck by boat or propeller") Such reports, principal source of statisticians, do not distinguish whether the victim's injury resulted from striking by the boat, the underwater propulsion unit which proceeds the propeller (namely, the gear housing, skeg, anti-ventilation plate), or by the propeller, or a combination of all three."*
OMC and Mercury long had employees on the National Boating Safety Advisory Council. They were in a position to get the Coast Guard to change it if they wanted it changed.

**Pg.11** *"Presentations illustrated that approximately 80 percent of all accidents occur when a boat is operating at speeds in excess of 10 miles per hour, i.e. normal operating or planing speeds."*
Snyder was later challenged on his allegation of 80 percent of all propeller accidents occurring at normal or planing speeds during his deposition in Pree.[31] When Snyder was challenged where he came up with the 80 percent figure, Snyder said he came up with 80 and even 90 percent in some of the studies he had looked at for some years. Snyder said there were also other studies he has looked at which a figure in the general area of 80 percent. He said lets make it a range of 75 to 90 percent. When asked to produce the name of even one of those studies or test data collecting places, Snyder was unable to supply one. Then Snyder said he himself produced one by studying 3 years of Coast Guard data, but he was not sure which years those were and he did not know if he had anything currently in writing.

---

[31] James M. Pree v. Brunswick Corporation. United States District Court. Eastern District of Missouri. St. Louis Missouri. Case 89-1996C(1). Jury Trail transcript - Volume 5. Pages 150-152.

**Pg.13** *"In the use of both the ring and the mask-type guards, opponents have stressed that the frontal impact area would be increased by three times by attaching the guard…." See Figure 3 page 14 of the NBSAC report."*

It is hard to image that getting past the subcommittee. A 12 inch diameter propeller has a cross sectional area of 113 square inches. Three times the cross sectional area would be 339 square inches which equates to a guard 20.7 inches in diameter. That equates to a gap of four inches between propeller blade tips and the guard. Many guards have a gap of 1 inch or less.

In the head impact study Mercury and OMC conducted in **Volume III**, they report Snyder's guard, known for a very large gap from propeller tip to guard, only had a 53 percent increase in frontal area.[32]

Several guards have about a one inch gap from propeller tip to guard resulting in a much lower percentage increase in frontal cross sectional area.

**Pg.16-17** *"An engineer for one of the engine manufacturers described experimental work done for the Marine Corps on a mask guard which would have less severe steering and trim hazards than a ring guard and was expected to be less subject to critical damage from hitting bottom or submerged objects. … The added drag due to his mask or cage reduced boat speed from 37 mph to 27 mph (with two 70 horsepower engines). It was stated that to regain the desired speed of 37 miles an hour, horsepower would have to be increased100% to 280."*

That sounds all doom and gloom for Mercury and OMC's Marine Corps propeller guard project. Interestingly, the day before the NBSAC propeller guard subcommittee report was issued, Mercury received an invitation from the Marine Corps to bid on what was likely the largest single sale of propeller guards in the history of the world. See **Problem #4** section of this report.

**Pg.22-23** titled *"Conclusions" - "Accident data and the analysis of accident data must be an integral component of a study of this nature. There is no one single source, best source, or all-inclusive source of accident data. However, the available sources can be utilized collectively to give an accurate portrayal of the significance, frequency, and relative magnitude of underwater impacts to other causes of boating accidents in particular and accidents in general. There is no indication that any changes in reporting would reflect significant change to the relative position of percentage of injuries/fatalities due to underwater impacts. Therefore propeller guarding at best could have only a negligible impact on improving boating safety."*

It is noteable this study never mentions the U.S. Coast Guard Boating Accident Report Database (BARD) by name.

The subcommittee says the available sources can be used collectively to give an accurate portrayal of the frequency underwater impacts (propeller strikes) but fails to explain how to do so OR list their findings when they performed that task. There is absolutely no data provided for the number of individuals injured by boat propellers in the NBSAC report.

---

[32] 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. Page 22.

**Snyderisms in Appendix C of the final NBSAC report titled, "List of Documents and Materials Reviewed"**

**Appendix C Pg3** - Letter to Subcommittee Chairman Getz from Mr. Dick Snyder, Mercury Marine, referencing a summary of his presentation to the propeller guard subcommittee on September 22, dated October 6, 1988.

Mr. Snyder supplied the following accident statistics in his presentation and letter above:

> *"B. There are on average 13 fatalities labeled "struck by boat or propeller" (or gear case or rudder) per year. By several studies that I have made at least one-third will prove to have their injuries caused by something other than the propeller. This leaves 9 fatalities out of a total of just over 1,000 (1,033 in '87, new record low) total pleasure boating fatalities or just under 1 %."*
> Note - Snyder was presenting "first event" data.
>
> *"C. Non-fatal "struck by boat or prop" accidents are rather imprecise due to some amount of failure to fillout and file a report. My best estimates are that there are around 300 nonfatal accidents per year related to prop injuries where the injury was serious enough to seek professional medical help."*

Note - Dick Snyder's presentation was made at the 22 September 1988 subcommittee meeting. The same date is on Don Kerlin's data.

**Appendix C Pg4** - February 23, 1989 letter to Subcommittee Chairman Getz from Mr. Dick Snyder, Mercury Marine, reference a clarification of his presentation to the Subcommittee on September 23, 1988 concerning USCG Statistics.

Mr. Snyder says that in recent discussion with others he learned annual Coast Guard reports might be a little misleading. The report only lists those "struck by boat or propeller" during the first event of an accident. Snyder goes on to say the total for "struck by boat or propeller" should be the total number of victims killed by the striking in all three events LESS those struck by the propeller that subsequently drowned.

Snyder's notes his previous reports relied upon the Coast Guard report for fatality totals.

> *"Where I gave an average of about 13 fatalities (13.1 for 79-87). I would now amend that to 30.4 for 79-87. Again that can be reduced at least one-third for pure propeller related fatalities (as distinct from other boat parts), or about 20 per year, it is 1.7%, again for the nine years looked at (79-87). I don't believe this change appreciably alters any conclusions drawn from this data, but I'm sure we would agree that any conclusion should not be drawn form misunderstood data."*

# Problem # 3

# Controlling Accident Data

**Controlling Outcome by Controlling Accident Data**

Just like we learned how the outcome of Litigation Testing can be controlled to achieve the results the boating industry wants,[33] the industry's ability to control and manipulate accident data can also be used to further their cause.

The boating industry's efforts to minimize the number of accidents being discussed in any specific situation was introduced in **Volume I.**

**How Mercury & OMC Controlled Accident Data**

The industry has a long history of trying to "reduce the number of accidents on the table". Meaning, they make the accidents being discussed appear to be rarer than they actually are.

For example, if the Coast Guard proposed a propeller guard regulation for a certain type or use of vessels, the industry would first immediately try to limit the conversation to fatal propeller strikes because the number of propeller fatalities is considerably smaller than the number of propeller injuries or the combined number of propeller fatalities and injuries.

Then they would try to limit the conversation to a very specific type and size of boat.

Then they would try to limit the conversation to just a few years of data. (fewer years = smaller numbers)

They talk about averages to keep the total numbers down.

They talk about percentages to totally divorce the conversation from actual numbers.

Even now, years later they still popup quoting "first event" or "Event 1" statistics claiming they represent the total number of propeller strikes.

Sometimes the industry limits the conversation to rental boats of a certain type knowing rental status is often not reported on accident reports.

**Continued**

[33] See Volume One Figure 1. Don Kueny testimony in Decker vs. OMC propeller case.

A great example of the boating industry's actions can be seen in Dick Snyder's efforts in manipulating the 1989 NBSAC propeller guard subcommittee:

1. he only want to address fatality data

2. he wants to talk about average annual number of fatalities, not the total number of fatalities over the last few years. Average numbers are smaller than he total of a few years of data.

3. he presented "first event" or "Event 1" data as if it represented all fatal propeller accidents

4. he reduced "first event" data by one third to account for any struck by boat accidents when two USCG studies did not find a single "struck by boat" fatality in "struck by boat or propeller" data.

5. **he put forth 9 as the estimated annual number of boat propeller fatalities**

6. About 8 months later when Snyder finally came clean on "Three Event" data, the subcommittee was beginning to wrap up their data and literature collection efforts. He:

    A. subtracted a few jet boat fatalities that may have involved early PWC - boat impacts
    B. removed everybody fatally "struck by a boat propeller" fatality that drowned
    C. once again, he removed one third of those left to account for any fatally struck by boat accidents

    **D. put forth 20 as the estimated annual number of boat propeller fatalities AFTER he himself calculated an average of in excess of 40 "struck by boat or propeller" fatalities per year.**

    **E. mailed these new findings to Jim Getz, subcommittee chair. There is no evidence of this data being discussed at the third subcommittee meeting or even being distributed to members of the subcommittee.**

Snyder just illustrated how the industry "Controls Outcome by Controlling Accident Data".

All the while, there is no record of Roy Montgomery, Mercury's corporate lawyer, or Richard Lincoln of OMC speaking up about the use of "first event" data. We even have Don Kerlin of USCG citing "first event" data after the final report was presented.[34] See **Figure 8**.

**Figure 11** is Snyder's handwritten calculations of #6 above.
No propeller accident statistics upon which the subcommittee's decisions were made even made it into the subcommittee's Conclusions or Recommendations.

Only this statement was in the Conclusions:

> *"There is no indication that any changes in reporting would reflect significant changes in the relative position or percentage of injuries/fatalities due to underwater impacts. Therefore, propeller guarding at best could have only a negligible impact on improving boating safety."*

The industry succeeded in scrubbing numerical accident data from the Conclusions and Recommendations.

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[34] See **Don Kerlin Presented Event 1 Data to the Media** section of this report.

**Controlling Words and Phrases**

Another industry technique is controlling the terms. For example, the subcommittee went from a charge[35] to review data on the prevention of "**propeller-strike accidents**" to reaching a conclusion about "**underwater impacts**".

A close review of the 1989 report Summary, Conclusions, and Recommendations finds no mention of propeller strikes or propeller accidents. However the phrase "underwater impact(s) is mentioned seven times.

"Underwater impact" sounds much less threatening than being struck by or shredded by a propeller. It also tries to tie some impacts to hitting things other than the propeller.

[35] Appendix A of the 1989 report: Charge to the Committee.

# Problem # 4

## Marine Corps Propeller Guard Project

**Snyder's letter to Getz on the Marine Corps project**

As noted in the **Volume I: U.S. Marine Corps Rigid Raiding Craft**, Dick Snyder of Mercury Marine worked with the U.S. Marine Corps to produce propeller guards for Outboard Marine Corporation (OMC) outboard motors on U.S. Marine Corps Ridging Raiding Craft.

Snyder presented his work with the U.S. Marine Corps at the third NBSAC propeller guard subcommittee meeting in Idaho on May 12,1989.

He wrote Jim Getz, subcommittee chair a letter[36] dated May 30, 1989 outlining his earlier presentation

Snyder noted he was first contacted by the Marine Corps in the fall of 1988, he met with them in December 1988 where he was asked to produce four prototypes that were tested in late February 1989. The results of that testing provided in his letter, made it into the final report as seen below.

The letter closes with some indirect comments by Mercury's technician noting the Marine Corps seems to no longer be interested in Brian Chadwell's ring guard. Chadwell had built a more open cage the Marines thought was too open to provide protection. Major Snell had stated  a new round of open bidding would have to take place.

Noticeably, the letter makes no mention of this being a joint Mercury-OMC project, with Mercury's propeller guard being on an OMC outboard motor.

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[36] Richard Snyder of Mercury Marine letter to Jim Getz, chairman of NBSAC subcommittee on propeller guards. Subject: Summary of Supplemental Comments Regarding Recent Prop Guard work with U.S. Marine Corps Made on 12 May at Courer D'Alene, Idaho. May 30, 1989. ARD BATES # 000159 - 000161 and ARD BATES # 000037 - 000039.

**Lets look closely at the timeline:**

**November 6, 1989 (day before NBSAC final report was presented)**
**U.S. Marine Corps Pre_Bid Conference**

Mercury attended a Marine Corps Pre-Bid Conference[37] in Quantico, Virginia the day before the 1989 propeller guard subcommittee final report was presented. Mercury was preparing to bid on delivery of over 300 propeller guards. This would likely be the largest single sale of boat propeller guards in the history of the world.

**November 7, 1989**
**NBSAC propeller guard subcommittee presented their final report in Orlando, Florida**

**Section 8 Mechanical and hydrodynamic problems inherent in guards**

**Pgs. 16-17** *"An engineer for one of the engine manufacturers described experimental work done for the Marine Corps on a mask guard which would have less severe steering and trim hazards than a ring guard and was expected to be less subject to critical damage on hitting bottom or submerged objects. The first cage, built of 5/16" diameter steel rod stood up structurally, but its drag reduced boat speed from 35 to 19 mph (when compared to use without a propeller guard)."*

*"The second, built of 1/4" diameter steel rod more widely spaced solved steering but not drag problems, and vibration forces broke the welds. The added drag due to this mask or cage reduced boat speed from 37 mph to 27 mph (with two 70 horsepower engines). It was stated that, to regain the desired speed of 37 miles an hour horsepower would have to be increased 100% to a total of 280. It was also found that the mask, as well as the ring-type guards, was vulnerable to crushing on hitting the bottom, pushed down by the weight of the boat bouncing in the waves, with consequent disablement of the engine."*

*"It was further stated that the objective of simultaneously protecting the propeller from damage, protecting landing personnel, and making no sacrifice of speed involved irreconcilable physical laws and an insoluble manufacturing dilemma. To make the guard strong enough to withstand hitting the bottom or hard object resulted in unacceptable drag and handling and handing - and to conserve desired speed, steering control, and prevent entry of body appendages, the guard would have to be so lightly constructed that it could not stand up to normal operating loads."*

Sounds like the project was a failure as of November 7, 1989. If it was a failure, why did the Marine Corps hold a Pre-Bid Conference yesterday and issue and order to Mercury Marine tomorrow?

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[37] 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.

**November 8th (day after final report delivered)**
**U.S. Marine Corps Order**

The U.S. Marine Corps issued an order to Mercury Marine for technical assistance and a final report on the testing of Mercury's propeller guard the day after the 1989 NBSAC propeller guard final report was presented.[38] Dick Snyder signed that order a few days later.

[38] 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.

# Presentation &

# Acceptance of the Final Report

**Presentation of the Final Report to NBSAC**

NBSAC's subcommittee on propeller guards presented their final report at a normally scheduled NBSAC meeting on November 7, 1989 in Orlando, Florida.[39]

Jim Getz "*remarked that the final report received unanimous approval by the subcommittee members and there were no dissenting opinions or views*." He read the subcommittee's conclusions to the Council. Then he informed the Council of their six recommendations.

Getz thanked current subcommittee members for their "*extremely significant contributions to the report*." A motion was made "*that the Council accept the report, adopt the recommendations of the subcommittee, and discharge the subcommittee as having completed its task.*" Voting was unanimous in the affirmative.

The minutes read as if copies of the report were not physically passed out at the meeting. NBSAC members were told they could obtain one from NBSAC's executive secretary at the address or phone number on the first page of the minutes. They were also told copies of all documents reviewed by the subcommittee could be obtained from the National Technical Information Service (NTIS). Availability of the report to the public was announced five years later in the Federal Register September 26, 1995.[40]

NBSAC members did not even have an opportunity to skim the report before voting to accept its findings. They just heard the Conclusions and Recommendations and voted. The report was then passed on to USCG for their consideration.

**Acceptance of Findings by the Coast Guard**

Robert T. Nelson, Rear Admiral of the U.S. Coast Guard. Chief, Office of Navigation Safety and Waterway Services wrote a letter[41] of acceptance to A. Newell Garden, Chairman of the National Boating Safety Advisory Council.

Admiral Nelson's letter individually responds to each of the six recommendations. We provide part of his response to the first recommendation.

> *"NBSAC Recommendation 1. The U.S. Coast Guard should take no regulatory action to require propeller guards.*
>
> *Coast Guard Position. The regulatory process is very structured and stringent regarding justification.* ***Available propeller guard accident data do not support imposition of a regulation requiring propeller guards on motorboats.*** *…"*

Thus the U.S. Coast Guard believed the decision was based on accident data.

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[39] Report of the Committee on Propeller Guards. 44th Meeting of the National Boating Safety Advisory Council. Orlando, Florida. 6-7 November, 1989. Minutes. NBSAC Appendix C item 14.

[40] Propeller Accidents Involving Houseboats and Other Displacement Type Recreational Vessels. CDG 95-041. Coast Guard. Department of Transportation. Federal Register. Vol.60. No.186. September 26, 1995. Page 49,532.

[41] Robert T. Nelson. Rear Admiral USCG letter to A. Newell Garden, Chairman of NBSAC regarding the propeller guard subcommittee report. February 1, 1990. 3 pages. NBSAC Appendix C item 15.

# Our Findings & Conclusions

**Findings**

Reviewing some major points exposed in **Volume II**: The 1989 NBSAC Study.

1. Techniques - The boating industry drastically needed a favorable "independent" report to stem the flow of propeller guard cases. As a result, they employed various techniques[42] to influence the NBSAC subcommittee's report.

   We have pointed out examples of:

   A. Snyderisms - Dick Snyder repeating things over and over till they are accepted as truth.

   B. Control & Manipulate Accident Data (first event data).

   C. Use of Organizations (NBSAC, NMMA, and more).

   D. The industry call for education being one of the solutions to "underwater impacts".

   E. Industry cooperation (Mercury and OMC on the subcommittee, on legal cases, developing experts, preparing and sharing legal case books, etc).

   F. Trying to hold off public opinion as more organized threats (Ben Kelley and Brian Chadwell) were gaining traction in the media.

   G. Obfuscation - trying to make something obscure, unclear (using "first event data", subtracting those fatally struck by propellers that later drowned, calculating those struck by boat vs. struck by propeller in a manner not consistent with USCG reports, only considering one year of data at a time, ignoring unreported accidents, focusing only on fatalities, calling "propeller strikes" "underwater impacts", and **item H** below.

   H. Focus on a safety principle even though they do not believe in it.

The 1989 NBSAC final report, perceived as being an independent U.S. Coast Guard report, could be worth hundreds of millions of dollars to Mercury and OMC in court.

An example of **technique H** above follows.

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[42] See **More Successful Techniques** in **Introduction: Volume I** of this series.

**Cross Sectional Area**

NBSAC's propeller guard subcommittee final report focused considerable attention on propeller guards increasing cross sectional area of the drive, making it more likely for someone to strike the guard than they were to strike the propeller in the first place. The final report includes a full page sketch accenting the problem. The report states, "*In the use of both the ring and the mask-type guards, opponents have stressed that the frontal impact area would be increased by three times by attaching the guard*" and then refers to the full page sketch.[43]

They are trying to convince you the area contained within the circle prescribed by the dashed line near the bottom of our **Figure 17** is three times larger than the area contained within the blue circle in the same image. That is ridiculous.

The report goes on to state, "T*hey further contend that, while a submerged body limb may not be struck by the rotating blades of the propeller, they would certainly be struck by the guard, if the limb were in the path of the lower unit.*"

The statement above fails to recognize that while we would prefer not to have our arm smacked by the outer reaches of the propeller guard, we would much rather endure that than have our head struck by an open propeller.

Not only did the industry exaggerate the cross sectional area issue, they totally forgot about it afterwards. In recent years there has been a trend toward powering larger boats with multiple large outboard motors vs. inboard engines. Now countless vessels are running multiple, expensive, large outboard motors with an incredible amount of running gear in the water. These vessels are basically like brush hog mowers. If they go over you, you are going to be struck by the drives and /or propellers. Not only do they add a great deal of underwater cross sectional area, they run faster than boats used to go, making them even more dangerous per the NBSAC study and "mowing" even more area over the course of a day. See **Figure 17** and **Figure 18.** This "mowing" or "sweeping" effect is similar to hydrofoil impact studies.[44]

Sweeping concepts have also been applied to manatee, dugong, and whale strikes, to iceberg strikes, airplane bird strikes, wind turbine bird strikes, and even orbital debris strikes.

The boating industry rejected propeller guards in part because they increase submerged cross sectional area. Now the same boating industry hangs countless times more cross sectional area in the water on much faster boats running large outboard motors. Not only does the industry sell multiple large outboard motors into these applications, they prominently feature them in marketing materials.

Is the new Mercury Marine 600 horsepower outboard motor, said to be selling for about $77,000 each, somehow scientifically immune to cross sectional area concerns? See **Figure 17** and **Figure 18.**

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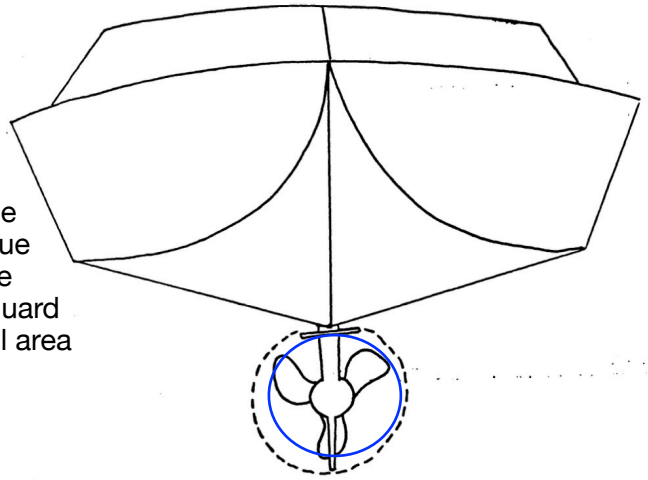
[43] NBSAC subcommittee on propeller guards final report. Pages 13-15. Note full page image on page 14.

[44] A Method for Predicting the Probable Number and Severity of Collisions Between Foilborne Craft and Floating Debris. Structural Mechanics Laboratory Research and Development Report. Department of the Navy. Report 1723 August 1963.


**Figure 17: Mercury quad 450R's alongside Mercury guard 600's**
**image above from irate 4X4**
**image below is Figure C from the 1989 NBSAC report**



Compare the cross sectional area of the thin donut shaped area between the blue circle marking the propeller tips and the dotted line representing the propeller guard vs. the total underwater cross sectional area of three very large outboard motors.

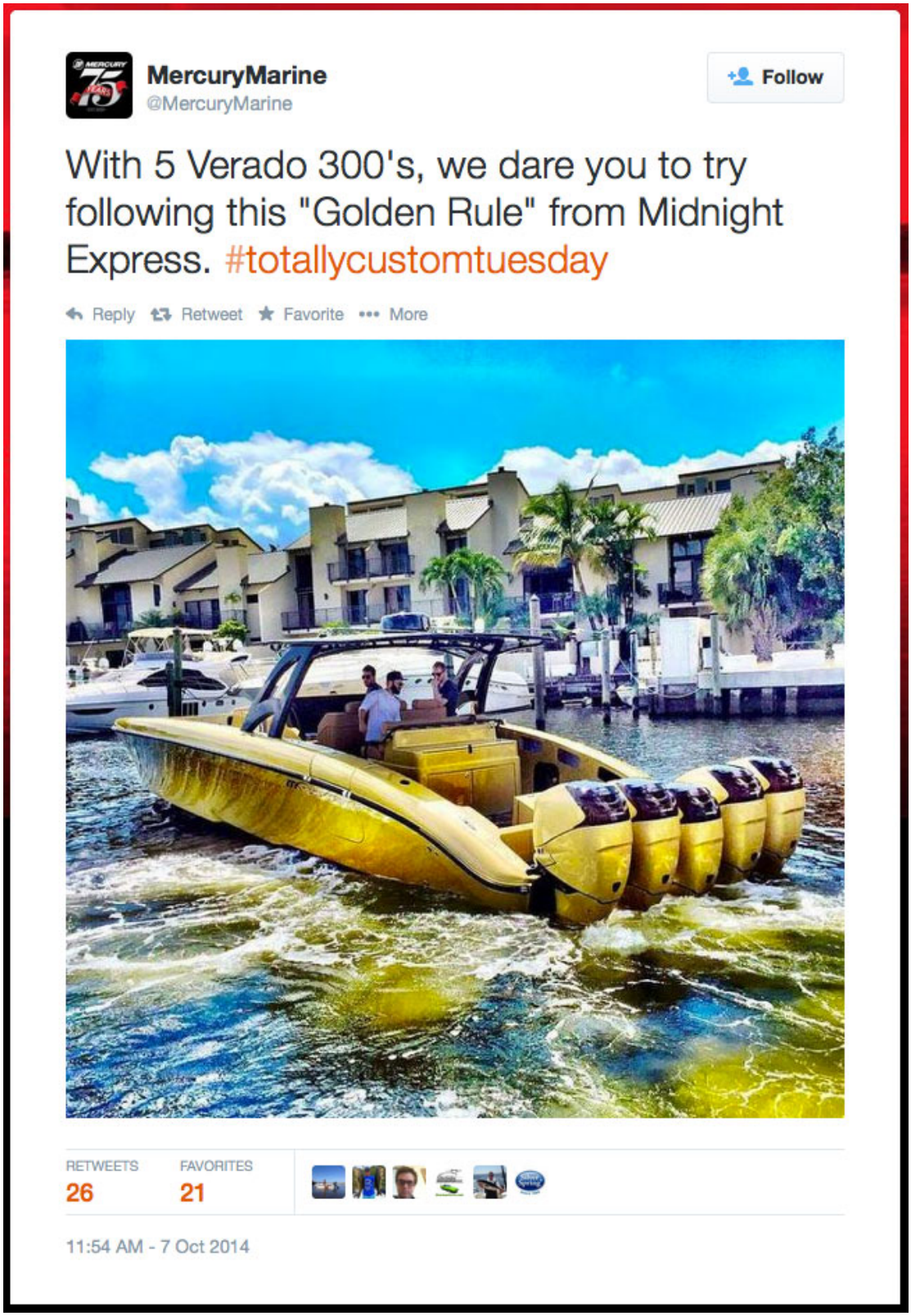



**Figure 18: Mercury tweet just ten days before this exact same boat was involved in a propeller strike**

Additional information is available in our December 2012 coverage of this topic.[45]
If you think these large, fast boats do not hit people in the water, see **Figure 18**. This exact boat was involved in a propeller strike accident just 10 days later, resulting in a lawsuit.[46]

**Chairman Getz Said the Subcommittee's Findings Would be a Judgment Call**

Page 2 of NBSAC's 1989 final report said the subcommittee had gathered enough information by their third meeting in May 1989 and any further searching for documents or interviews was unlikely to produce new information.

In September 1989, Just two months prior to the subcommittee's final report being released, Tampa Bay Times interviewed several people on both sides of the propeller guard issue, including Jim Getz, chairman of NBSAC's subcommittee on propeller guards.[47]

> *"The federal advisory subcommittee is not expected to make any major recommendations about propguards in November. The subcommittee chairman, Capt. James Getz, a boating administrator with the Illinois Dept. of Conservation says they* ***haven't found anything "alarming" one way or the other.***
>
> *But, he says, "It's a very traumatic, emotional issue.* ***I'll be honest, when they make a report, we'll be making a judgment call."***

The chairman of the subcommittee being interviewed AFTER they quit gathering information, said they had not found anything alarming one way or the other. He is quoted as saying they would be making a judgement call.

Yet, the subcommittees first Recommendation was:

**Recommendation 1. "*The U.S. Coast Guard should take no regulatory action to require propeller guards*."**

The subcommittee went from the decision being a judgement call to a very bold statement against any regulatory action requiring propeller guards in just 60 days without any meetings in between.

This statement by itself, once approved by the full NBSAC committee, and then by the Coast Guard was worth millions of dollars to the boating industry in court. Anytime the industry goes up against a propeller guard case they can:

1. Point to U.S. Coast Guard NBSAC finding "*The U.S. Coast Guard should take no regulatory action to require propeller guards*",

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[45] Propeller Guards Increase Cross Sectional Area and Thus Increase Risk of Injury? Gary Polson. PropellerSafety.com. December 21, 2012.
https://www.propellersafety.com/6503/legal-propeller/propeller-guards-cross-sectional-area/

[46] Snorkeler Struck by Midnight Express boat propeller: Florida. Gary Polson. PropellerSafety.com. October 18, 2014.
https://www.propellersafety.com/10816/propeller-accident-report/snorkeler-midnight-express-boat-propeller-florida/

[47] Injuries prompt drive for Calling out the Guard. Sheryl James. Tampa Bay Times (Florida). September 4, 1989. Page 10.

2. Point out NBSACs findings were approved by the U.S. Coast Guard,

3. While simultaneously distancing themselves from having any part in the entire affair. See **Figure 20**.

**If This Truly Was a Judgement Call What If?**

What if:

1. Dick Snyder had presented “All event data” in his first presentation to the subcommittee vs. “first event data”. Recall we identified five previous occasions on which he knew “first event” data under represented the total number of reported boat propeller accidents.

2. The U.S. Coast Guard had printed “all event” accident data in its annual reports such as in **Figures 4, 6, & 7**.

3. Dick Snyder’s “revelation” concerning all event data (A) was not improperly reduced as it was in **Figure 11** and all event data was actually presented and distributed to members of the subcommittee at their first meeting.

4. The boating industry did not continue to cite “first event” data.

5. The NBSAC subcommittee had considered data concerning those seriously injured by boat propellers as well as those killed by them.

6. The subcommittee made an effort to account for unreported accidents.

7. The subcommittee had considered more than one year of reported accident data at a time. For example, had they recognized that 40 deaths and 300 injuries a year turns into **over one thousand people injured, maimed, or killed in just 3 years**, just counting reported accidents versus looking at one year of first event fatality data, reduced even further by Snyder to **9 fatalities**.

8. The subcommittee had actually integrated all event injury and fatality propeller accident data into the body of their report.

9. The subcommittee had involved some propeller accident victims and their families in their ongoing discussions.

10. The subcommittee reviewed color photos of recent boat propeller wounds and injuries to better understand what those injured were dealing with.

11. The subcommittee had followed the charge they were issued (see **Figure 1**) and determined the trend in the number of accidents over time. See **Figure 16** reproduced on the next page.

12. Mercury had been honest with the subcommittee concerning the Marine Corps project, including they were on the verge of bidding for the largest single sale of boat propeller guards in the history of the world.

13. The subcommittee had not accepted so many “Syderisms” without requiring proof of those statements. See **Problem 2 Snyderisms**.

**Don Kerlin of USCG**
**22 September 1988 summary of 1983-1987 USCG "struck by boat or propeller" data**
**Page 7**

1983-1987 Death/Injury Statistics
(Struck by Boat or Propeller)

| Category/Year | 1983 | 1984 | 1985 | 1986 | 1987 | Total |
|---|---|---|---|---|---|---|
| Drownings | 13 | 13 | 17 | 17 | 6 | 66 |
| Deaths(other) | 30 | 28 | 40 | 42 | 41 | 181 |
| Injuries | 206 | 163 | 213 | 265 | 286 | 1133 |
| | 249 | 204 | 270 | 324 | 333 | |

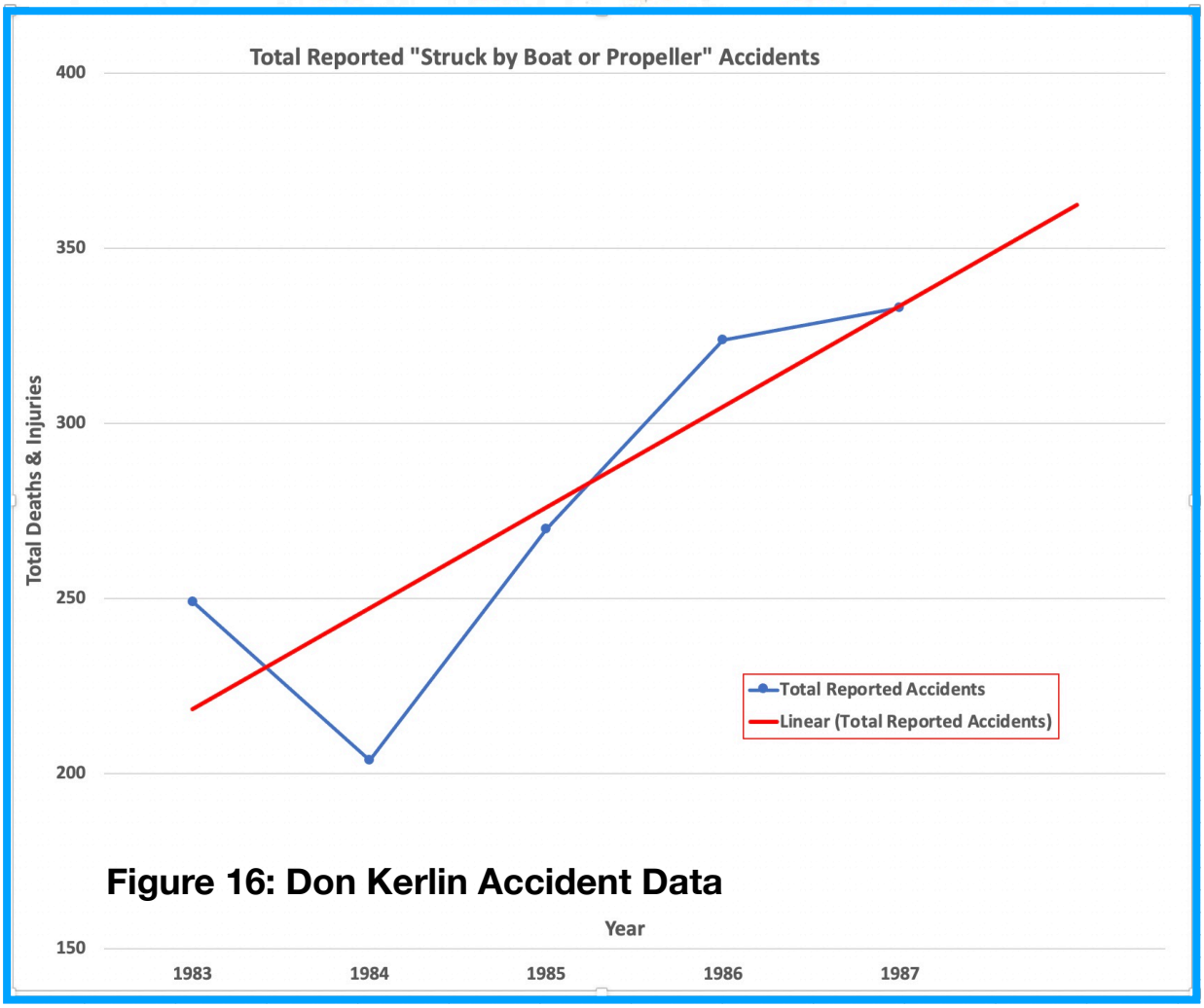


**Figure 16: Don Kerlin Accident Data**

**Would the subcommittee's findings be as strongly worded against propeller guards if even some of the "What if" items listed over the previous pages actually happened?**

As mentioned multiple times, the NBSAC propeller guard study, like most studies of its nature, was driven by accident data. When the wrong data was supplied to the subcommittee, their findings were rendered worthless. The computer crowd uses the phrase, Garbage In, Garbage Out. See **Figure 19**.

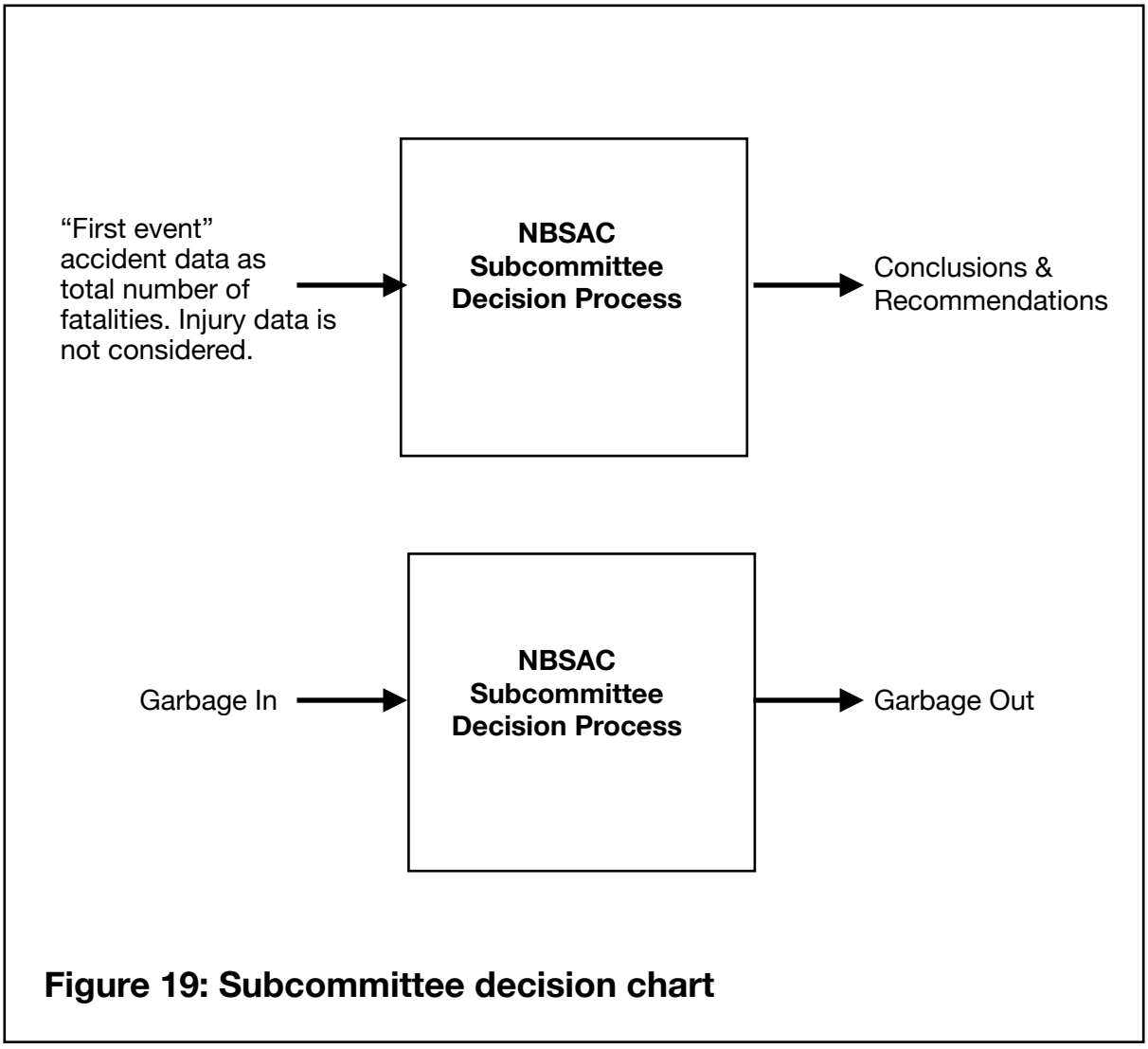


**Figure 19: Subcommittee decision chart**

We are not saying the Coast Guard should have required propeller guards on all boats.

We are saying the NBSAC study should not be admissible in court or in the court of public opinion without being challenged by facts set forth in this and other reports.
Jim Getz said it was going to be a judgement call just two months before the final report was released. If the study had addressed some or all of the 11 “What If items” listed in this section, one suspects the outcome would have been softer toward propeller guards, with a recommendation more of the nature of the one below:

**Possible Recommendation #1** The U.S. Coast Guard should not take action to require propeller guards on all boats at this time. The breadth of types of propulsion drives, types and sizes of boats, their activities, and conditions of use likely dictate a variety of solutions, including education. We call for ongoing monitoring & analysis of boat propeller accident data by boat type, along with monitoring the development and use of propeller safety devices including propeller guards, and kill switches.

The boating industry could have still used the recommendation above in court to show USCG had investigated the matter and not required guards on all boats at that time. The recommendation would have been useful to the industry in court, but would not have wielded the immense power of the recommendation the subcommittee put forth.

# Impact of the Final Report

**Epilog**

**The NBSAC study itself** - when one side tries to introduce significant new documents supporting their view in court the other side often challenges the introduction of those documents.

Some OMC propeller safety research projects and their propeller related legal defense costs were paid by a trust. Legal firms, predominately "Snell & Wilmer" and "Bowman and Brooke", sent their bills to OMC. OMC reviewed them, then forwarded those bills to Crawford & Company, a claims management company, with instructions to pay them from OMC's trust account.

Snell and Wilmer's January 23, 1991 billing statement for the month of December 1990[48] includes dozens of charges listing specific employees performing certain tasks for a certain amount of time. Some of those charges are copied below:

December 3rd 1990
Johnathan Weisbard - Review motion in support of admissibility of BSAC report RE preparation of reply brief; analysis of law RE Federal Advisory Committee Act.[49] 1.5 hrs
*note - many refer to NBSAC as BSAC*
*RE = regarding*

December 6th
Johnathan Weisbard - Phone conference with A. Marconi (OMC in house lawyer) RE arguments responsive to plaintiff's opposition on bias of BSAC committee: Review Getz testimony in other cases RE same; … 1.1 hrs

December 10th
Johnathan Weisbard - Review trial testimony of Capt. Getz; Review Reply RE same, Phone Conference with P Tayor RE same. 2.4 hrs

December 4th
Carolyn Marshall - … Copy Getz deposition in Griffith for B, Dahm (.2 hrs) …

December 6th
Carolyn Marshall - Copy Getz deposition in Beech for J. Weisbard (.2 hrs) …

December 10th
Karen Finateri - Contact D. Short RE Getz testimony in Kunreuther for information requested by J Weisbard. … 5.5 hrs

The invoice notes OMC was initially having some problems getting the NBSAC report introduced in court. They also confronted accusations the subcommittee was biased in its makeup.

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[48] Polson OMC Trustee reference #1446.

[49] Federal Advisory Committee Act. 5 U.S.C. app. As Amended.

The same invoice includes numerous references to underwater impact testing at SUNY which will be covered in **Volume III** and **Volume IV**. It also covers OMC's development of reference books including in digital format to include all their documents, discovery, expert witness testimony, etc.

OMC's invoice above also notes the flurry of court cases at that time including Eggen, Kunreuther, Anderson, Griffith, Beech, Alston, ENE, and Dacus. Eight active propeller cases in one month at just one legal firm.

The large number of cases drove them to embark on a major data collection project, creating a series of reference books for use in trials. Eventually these books would be used across the United States in multiple cases by multiple attorneys at the same time. Efforts were also being made to make information within the books available digitally.

Multiple references were made in the legal invoices to Jim Getz.

**Those Involved in the Study & its Aftermath**

**Jim Getz** - chair of the Propeller Guard subcommittee immediately stepped into the role of expert witness for Outboard Marine Corporation (OMC) and Mercury Marine. OMC was represented on the subcommittee by their Director of Environmental Affairs, Mr. Richard Lincoln. Mercury Marine was represented on the subcommittee by their corporate lawyer Roy Montgomery. Mr. Getz went on to testify in many boat propeller cases.

Getz's testimony focused on the NBSAC propeller guard subcommittee, what they did, who they were, and their findings. Especially focusing on the committee's recommendation, that the U.S. Coast Guard should take no regulatory action to require propeller guards. Getz also pointed out some disadvantages of propeller guards enumerated in the subcommittee's final report.

Mr. Getz's January 10, 1991 deposition in the Dacus case[50] notes he had already testified at least 5 times in the following propeller cases:

1. Betty Jane Old
2. Matthew Beech
3. George and Julie Griffith
4. Howard Kunreuther
5. Dennis Ruzkicks

**OMC** - quickly used the subcommittee's findings in court and in the media. Stacey Grace, 23, was struck by a boat propeller on the Mississippi River on April 27, 1989. She died later that same day. A lawsuit was filed against OMC February 21, 1990 alleging the Evinrude outboard motor was defective because it did not have a propeller guard.

Laura Baker, Director of Public Affairs for OMC responded in the press[51] with several points raised in the 1989 NBSAC subcommittee on propeller guards report. As might be expected, she enlarged the findings a little stating, "propeller guards do not exist for outboard motors used in recreational boating." See **Figure 20**.

Unrelated to propeller guard issues, OMC declared bankruptcy in December 2000.

**Continued**

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[50] 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. Page 28.

[51] Suit is filed in boating accident.Telegraph Edwardsville Bureau. The Telegraph. Alton, Illinois. February 22, 1990. Page 5.

THE TELEGRAPH

# Suit is filed in boating accident

**Telegraph Edwardsville Bureau**

EDWARDSVILLE — The estate of a Bethalto woman killed in a boating accident last year is seeking damages against an outboard motor manufacturer.

Stacey L. Grace, 23, was injured April 27 when she fell from a boat and was struck by the outboard motor propeller. She died the same day. The accident occurred on the Mississippi River in St. Charles County, Mo.

Outboard Marine Corp. of Waukegan, manufacturer of the motor, is the defendant in a lawsuit filed Wednesday in Circuit Court.

The lawsuit alleges the Evinrude outboard motor was defective because it lacked a propeller guard or shroud.

The lawsuit seeks damages in excess of $15,000 for the victim's pain and suffering, medical and funeral expenses and family members' loss of her support and companionship. Grace is survived by her parents, David and Doris Woltering, and a sister, Sheila Martin.

A spokesman for Outboard Marine declined to comment on the lawsuit, but said propeller guards do not exist for outboard motors used in recreational boating.

Laurin Baker, director of public affairs for Outboard Marine, said there is "no basis in science or engineering" for requiring propeller guards.

Baker said that after a recent study, the U.S. Coast Guard's Boating Safety Advisory Council recommended that such guards not be required. The council said the guards, if feasible, would cause more injuries than they would prevent, Baker said.

The council's reasoning, Baker said, is that the guards would be larger than a propeller and thus more likely to strike someone and that, when a boat is travelling at speeds more than 5 mph, "it doesn't really matter what hits you."

The company has been a defendant in several similar lawsuits and has yet to lose, Baker said.

**Figure 20: OMC media response, post NBSAC report**
**The Telegraph. Alton, Illinois. February 22, 1990. Page 5.**

**The purpose of this public relations response from OMC is obviously to discourage additional lawsuits and reinforce OMC's previous statements against propeller guards.**

**Those Involved in the Study And its Aftermath Continued**

**Albert "Al" Marmo** (U.S. Coast Guard) - with which Dick Snyder corresponded with passed away in November 2021 after a long career with the Coast Guard.

**Al Marconi** (OMC lawyer) - went on to work for Snell & Wilmer which continues to handle propeller guard cases for the boating industry.

**Dick Snyder** - several of his "Snyderisms" were in the final report. After the report was issued he was able to restate them with increased credibility even though no research was performed to see if they were true or not. For example, he repeatedly used "80 percent of propeller strikes occur on plane." After the final report was issued, he started quoting his Snyderisms out of the final report giving them more stature. Sort of like money laundering, NBSAC's final report washed Snyderisms and guaranteed their acceptance. Dick Snyder went on to be an expert witness for several firms in propeller cases and has since retired.

**The Courts** - the 1989 NBSAC report was quickly used by the industry to rack up a number of court wins. Those wins became a precedent that helped them win even more propeller cases and scare away even more potential litigants. The Federal Preemption defense eclipsed the NBSAC study between the mid 1990's and Brunswick's 2002 loss in Sprietsma.[52] Then the 1989 NBSAC report was once again trotted out front and center where it remains today.

**The Courts more recently**- currently evaluating the required level of specificity of warnings such as if boat operator does not connect the kill switch lanyard and is ejected, the unmanned boat could circle repeatedly striking them and their passengers with the propeller vs just warning them to connect the lanyard. Courts are also evaluating the duty to warn passengers of hazards historically covered in the operator like the Circle of Death just mentioned.

**Marine Corps Propeller Guard project** - Mercury was invited to bid on what was likely the largest single order of propeller guards in the history of the world the day before NBSAC's final report was released. Then Mercury received an order for testing their guard and writing up a report the day after NBSAC's final report was released. Deseret Storm quickly came and went. It is my understanding the vessels were eventually fitted with pump jets, a variation of water jets.

**Mercury & OMC Joint Efforts** - quite shortly Mercury and OMC moved on to the underwater head and leg impact projects covered in **Volume III** and **Volume IV** of this series. They went on to work together on several more joint projects as seen in the **Appendix**.

**Coast Guard** - went on to propose and withdraw several propeller guard regulations, develop a propeller guard test protocol, lose some of their own to propeller strikes (Ronald Gill 2007, Terrell Horne III 2012), and require mandatory use of kill switch lanyards on federal waters.

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[52] Sprietsma v Mercury Marine Propeller Case. Gary Polson. PropellerSafety.com. https://www.propellersafety.com/sprietsma-mercury-marine-propeller-case/

**American Boat and Yacht Council (ABYC)** - continues to establish voluntary standards for the boating industry. They were contracted by the Coast Guard to put on Propeller Injury Mitigation Meetings for several years at major boat shows. ABYC assisted in development of the Coast Guard's propeller guard test protocol.

**National Marine Manufacturers Association (NMMA)** - Provide a boat builder certification program heavily reliant upon ABYC standards.They and ABYC are often contracted by the Coast Guard as propeller safety proposals are being considered.

**NMMA Boating Industry Risk Management Council (BIRMC)** - became a place for the industry to privately discuss legal defenses, work toward reducing risk through warnings, and stay up to date on product liability issues.

**Propeller Guards** - increased use of vane type guards similar to the Australian surf saving guards, rear flaps that swing up automatically when under way to reduce drag - some are using these for wakesurfing, Yamaha introduced propeller guards[53] said to solve several of the problems identified by the NBSAC subcommittee, see **Appendix A**. We anticipate future developments in automatically retractable guards. Education is needed to help those searching for a guard to find one suited to their use and circumstances. Propeller guards are now extensively used on vessels associated with youth training in Australia, such as sailing clubs. Propeller guards are required on vessels in Suffolk County New York used with youth training, such as coaches boats used with youth sailing. A recent fatality has once again stirred up the State of Hawaii on the issue.

**Those Considering Legal Cases** - The boating industry has being very successful in defeating propeller guard court cases. Only one direct loss in modern times, the Brochtrup case.[54] As a result, those injured or survivors of loved ones now often make claims such as boat design issues, steering system failures, kill switch issues, rental boat training issues, etc.

**Virtual Propeller Guards** - a quickly growing class of sensor based devices detecting presence of people near the propeller or increased probability of persons being near the propeller. For example virtual kill switches, backup cameras, infrared detection of people in the water, image detection of people in the water, proximity sensing, etc. This class of devices also includes sensor based warnings, for example backup alarms and systems requiring presence of lookouts at the back of houseboats when backing off beaches. Some devices not only detect people, but can take action to protect them. Much of this technology comes from the automotive industry.

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[53] Yamaha Possible Coverup of Propeller Guard Documents Exposed. Gary Polson. PropellerSafety.com. January 3, 2013.
https://www.propellersafety.com/6331/legal-propeller/yamaha-propeller-guard-documents-coverup/

[54] Brochtrup vs. Mercury Marine, et al. US DIstrict Court. Western District of Texas. Austin Division. Case 1:07-cv-00643-SS. Decided 5 April 2010. Later appealed to U.S. Court of Appeals for the Fifth Circuit in New Orleans, Louisiana. Decided May 27, 2011.

**Marine Drives** - Mercury and Volvo now both have stern drives with forward facing propellers, in part targeting the wake surfing market. Outboard motors continue to get bigger and faster.

**High Profile Propeller Accidents** - while U.S. high profile accidents keep coming year after year, two British propeller accidents still get a lot of attention.

18 December 2000 Kirsty MacColl a British folksinger scuba diving in Mexico[55]
5 May 2013 Nicholas Milligan family in the UK kill switch accident[56]

[55] Kirsty MacColl Death by Boat Propeller. PropellerSafety.com https://www.propellersafety.com/4369/propeller-accident-report/kirsty-maccoll-boat-propeller-killed/

[56] Nicholas Milligan Boat Propeller Accident at Padstow UK: Two dead 5 May 23. PropellerSafety.com http://www.propellersafety.com/7329/propeller-accident-report/nicholas-milligan-boat-propeller-accident-padstow-uk/

# Appendix A

## Yamaha Solved Propeller Guard Issues in 2012

**Yamaha Solved the Problems With Propeller Guards**

In 2012 Yamaha released a line of propeller guards in the United Kingdom announcing they had solved previously identified problems with propeller guards. Yamaha's own statements were: In the fall of 2012, we congratulated Yamaha on their propeller guard developments and their being willing to stand up against decades of previous claims by the industry that propeller guards did not work. Yamaha immediately removed all online references to their propeller guards.[57]

Yamaha's here today, gone tomorrow propeller guards were brought up at the November 2012 NBSAC meeting in Watsonville, California.[58] Phil Dryskow, immediate past president of Yamaha Marine Group (basically Yamaha Marine US less the PWCs) was present at the meeting along with other Yamaha executives. Mr. Dryskow was sworn in as a new member of NBSAC.

Yamaha was silent on the propeller guard matter when pressed by longtime propeller safety advocate, Marion Irving de Cruz.

Later, we pressed the Coast Guard to check into the matter suggesting if Yamaha had really solved all these problems as described in their product literature, we did not want them destroying documents that might one day help someone else follow in their footsteps.

The Coast Guard later relayed, Yamaha said they only had one customer in the United Kingdom that wanted propeller guards on their outboard motors so they put guards on them. That was all there was to it. Yamaha told the Coast Guard they never said they developed guards for sale or that those guards solved issues normally raised against propeller guards. Yamaha also denied ever putting their propeller guards online.

Yamaha's response was obviously inconsistent with:

1. Countless documents Yamaha themselves published,
2. Magazine articles featuring Yamaha's new propeller guards in use,
3. Yamaha interviews,
4. Yamaha exhibiting the propeller guards at trade shows,
5. Numerous Yamaha brochures,
6. Yamaha advertisements,
7. Yamaha's self published quotes on **Figure 1**,
8. Yamaha instantly going dark when I commented on their new propeller guards.

Just like the marine drive industry mislead the Coast Guard on the Houseboat Propeller Injury Avoidance Measures proposal,[59] Yamaha's vanishing act was just another example of the the boating industry intentionally misleading the Coast Guard on propeller guard issues.

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[57] Yamaha Possible Coverup of Propeller Guard Documents Exposed. Gary Polson. PropellerSafety.com. January 3, 2013.
https://www.propellersafety.com/6331/legal-propeller/yamaha-propeller-guard-documents-coverup/

[58] Marion Irving de Cruz spoke to the Council. Minutes of 90th Meeting of the National Boating Safety Advisory Committee. West Marine Watsonville Support Center. Watsonville, California. November 9-12, 2012. Page 15.

[59] Houseboat Propeller Injury Avoidance Measures Proposed and Withdrawn by the U,S, Coast Guard: An Analysis by the Propeller Guard Information Center. Gary Polson. Propeller Guard Information Center. June 15, 2010.

- **“a new design of propeller guard, shaped to give greatest strength, with minimum water-flow disturbance to the propeller giving maximum performance when required.”**
- **“For shallow and unpredictable conditions, a Plastic Prop Guard or stainless steel Deflector Guard will assist in limiting the chance of foreign objects fouling the propeller. In addition, these guards aid control of water flow from the propeller and can increase thrust at low RPM.”**
- **Yamaha propeller guards, tailored to fit individual engines, are also specifically designed to have minimal impact on performance.”**
- **“When operating in a flooded environment there is also the possibility of casualties in the water, which means a propeller guard is essential to reduce the risk of injury.”**
- **“When operating in flooded environments the liklihood of swimmers/diver/casualties being in the water means that a prop. guard is essential.”**

**Figure A1: Yamaha statements**

# Appendix B

# Snyder Timing Documents

**Snyder Timing Documents & Timelines**

Dick Snyder's documents referenced in the **What Did Dick Snyder Know About the Coast Guard Recording Propeller Accident Statistics as a Series of Events and When Did He Know It?** section are in our documents file, along with larger versions of the four timeline charts.

SP = Snyder Proof - each of the 5 documents below shows Dick Snyder knew the Coast Guard's annual Recreational Boating Statistics report only included a portion of the reported total number of propeller accidents, injuries, and fatalities.

SP1. October 9,1987 Snyder letter to Marmo at USCG[60]

SP2. October 21, 1987 Marmo return letter to Snyder[61]

SP3. December 15, 1987 Deposition Digest of Dick Snyder in Elliott v. Sportscraft[62] (see **Transcript 1** his testimony in the ARD case recounts his testimony in Elliott)

SP4. June 16, 1988 Snyder letter to Marmo at USCG[63]

SP5. July 6, 1988 Marmo return letter to Snyder[64]

time1. Timeline1. see page 43.

time2. Timeline2. see page 44.

time3. Timeline3. see page 46.

time4. Timeline4. see page 47.

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[60] Richard Snyder of Mercury Performance Products letter to A.J. Marmo of the U.S. Coast Guard. October 9, 1987.

[61] A. J. Marmo of U.S. Coast Guard letter to Richard Snyder, Director of Racing, Mercury Performance Products. October 21, 1987.

[62] Richard Snyder testimony in Ashley Elliott v. Sportscraft, Inc., et al.. Deposition Digest December 15, 1987. Along with portions of the transcript, List of Exhibits to Deposition Digest, and Exhibit 22 List "A", and Mercury Marine Propeller Injury Legal Cases by Case Filing Year by Gary Polson. Note- is also repeated in Snyder's testimony in ARD.

[63] Richard Snyder, Mercury Marine letter to A.J. Marmo, U.S. Coast Guard. June 16, 1988,

[64] A.J. Marmo of U.S. Coast Guard letter to Richard Snyder, Mercury Marine. July 6, 1988.

# Appendix C

# The Missing Reports

**Missing Reports**

Appendix C of NBSAC's report lists and supplies documents gathered for review by members of the propeller guard subcommittee.

A quick look at the list (Appendix C) shows several critical documents are missing (listed as Not Available). Among them are:

**1.** Document #9. "*Steering/ Struck by Propeller Accident Study, 1983 Recreational Boating Accidents.*" by Gary Traub, U.S. Coast Guard G-BP-1. Dated 12-18-84.

**2.** Document #27. "*Struck by Boat or Propeller manual analysis of 1983-1987 U.S. Coast Guard data"* by Subcommittee member Kerlin. Dated 09-22-88.

and

3. "*Struck by Propeller" Accidents-1978*"[65] by Kenneth F. Freund of the U.S. Coast Guard is not even listed as missing. Its absence is resounding given it was repeatedly maligned by the boating industry. The U.S. Coast Guard made multiple attempts to tone Freund's findings down due to intense opposition from the boating industry.

NBSAC's Appendix C is supposedly the best they could do at gathering up the documents the subcommittee received for review.

Now over 30 years later, we have these and more of the missing documents just laying around here without even looking for them. Why were these documents missing from NBSAC's final report Appendix C?

The Fruend, Traub, and Kerlin documents listed above are in our documents files.

A portion of the later 1998 Milligan & Tennant report dealing with the cross sectional area of propeller guards increasing likelihood of impacts is also in our files.

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[65] "Struck by Propeller" Accidents-1978. Kenneth F. Freund. U.S. Coast Guard.

**The End**