

A History of Recreational Boat Propeller Safety Issues and the Propeller Safety Movement

See the link below for additional information, recent updates, and comments

<http://www.propellersafety.com/6742/history-propeller/history-boat-propeller-safety/>

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Introduction

We have long been inspired by the Propeller Safety History timeline Stop Propeller Injuries Now (SPIN) published at: <http://www.propellersafety.com/spin/timeline.htm> Outboard Marine Corporation (OMC) also has a “OMC History of Propeller Guarding” they have used in some trials. In April 2001, the U.S. Coast Guard showed a slide presentation titled Propeller Guard Regulatory History at the 67th NBSAC Meeting. Those documents, along with collections of Mercury Marine and OMC’s propeller guard testing records, our History of Kill Switches, our History of USCG Proposed Regulations, and our History of Log Strike Testing are about all that exist in terms of a Propeller Safety History prior to this document.

We are often asked to put things into a historical perspective so I decided it was finally time to build upon the SPIN chart. As our efforts rapidly grew accumulated more materials, it became apparent it would take a huge chart to display the information. As a result, we chose to publish the history as a list of events.

Much of the action in this field (proposed regulations, new inventions, new products, media coverage, research studies, safety meetings, legal cases) is driven at least in part by propeller accidents. Therefore, we brought over the entries from our list of High Profile Propeller Accidents and added a few more accidents that seemed to drive the timeline. The accidents are in bold italics. To learn more about a specific accident, check our Propeller Accidents Reported in the Media page for that year.

We recognize most events have quite brief descriptions. We hope these brief descriptions provide enough information for those familiar with this field.

We would greatly appreciate any comments you may have about this History and your efforts in helping us proof the existing document. If you see any errors, have suggestions for inclusions, or think something should be left out, please notify us via the Contact Us tab at PropellerSafety.com

Thank you for your assistance.

Gary Polson

PropellerSafety.com

EVENTS

31 May 1903 Lewis Maithew walked off the stern when underway, struck and killed by prop. The earliest recreational boat propeller accident we have on file.

1920's Early use of logging camp propeller guards

18 Jun 1931 Six people injured by a propeller at Glen Cove, New York

1933 Invention of the Kort Nozzle

Approx 14 Jul 1935 Ruffer Jill and Ron Taylor in early Circle of Death accident

1940 OMC develops the Gale Guard

28 Jun 1949 Imogene Wittche – age 13, feet severed

Early 1950's Kill switches were being used on National Outboard Racing Association boats.

1950's Bumper boats began to use propeller guards

16 Aug 1953 Boni Buehler – stewardess on Lake Arrowhead (Calif), perhaps the highest profile propeller accident ever, she was represented by Melvin Belli in Buehler v. Hilton. Belli was known for many innovations, including introducing the use of video depositions in this case.

5 Feb 1955 Long Beach Telegram reports on California Bill AB3038 that would require every motorboat operating near swimmers to have a propeller guard.

approx 1956/57 Kiekhaefer Mercury was running "on water" log strike tests at Siesta Key

1959 OMC began a fully enclosed pump jet project

May 1961 OMC begins to develop its own water jet

9 May 1961 US Patent 2,983,246 issued, one of the first guard patents to mention protecting swimmers

April 1964 OMC releases its first 30 water jets to individuals for testing

Sep 1965 "High Speed Propeller Injuries to the Brain: Report of Two Cases" Frederic Jackson. U.S. Navy. American Journal of Surgery. water ski prop strikes.

12 Nov 1969 OMC Comparative tests of Gale Propeller Guard and experimental Kort Nozzles on OMC engines. Includes efforts to increase speed with Gale ring guard.

1971 Federal Boating Safety Act - the birthplace of the Federal Preemption defense. Did not require all boats to have guards, therefore no states could require any boat to have had a guard, per the boating industry's Federal Preemption Defense.

20 November 1972 George Horton applied for a patent on his "Quick Kill" recreational boat kill switch. The "Quick Kill" is generally viewed as the first commercially available kill switch designed specifically for recreational boats.

27 May 1973 Sam Bailey struck and killed by the propeller of an unmanned circling boat in Texas. Went on to become one of the first kill switch cases, Bailey v. Boatland.

22 Jan 1974 George Horton received U.S. Patent 3,786,892 for his "Quick Kill" recreational boat kill switch.

May 1974 "Speedboat Propeller Injuries" by M.W. Sleight. British Medical Journal.

1975 Todd Huston - his is legs mangled by a propeller while skiing at 14, he went on to climb mountains, become an inventor, and a nationally known motivational speaker

17 Jun 1975 Donald Balius issued US Patent 3,889,624 for swinging (retractable) guard

May 1976 "Propeller Injuries" by Mann. Southern Medical Journal.

1976 "Power Performance of Planing Boats with the Effect of Propeller Selection and Propeller Guard Design" by Daniel Ladd. M.S. Thesis.

15 Jun 1977 "Propeller Guard Efficiency" OMC Research Center Project Specification. No. 441. Efforts to minimize performance penalty of Kort Nozzle or shroud at normal runabout speeds.

7 Sep 1977 OMC Test D-351, Balius Prop Guard Test on OMC 140HP Engine

8 Feb 1978 "Propeller Guard Efficiency" Final Report 441-1. OMC Research Center.

1979 "Struck by Propeller Accidents 1978" by Freund. USCG.

16 Feb 1979 "Review of the State of the Art of Swimmer Protection From Outboard Propellers" by Robert Taggart. Expert witness report.

Mar 1979 "Presentation of 1975 and 1977 Reported Boating Fatalities Preventable By a Kill Switch". Spring 1976 NBSAC Meeting. USCG.

Oct 1979 "Struck by Propeller Accident Study" by Al Marmo. USCG.

Oct 1979 OMC evaluates the Australian modifications of the Gale Guard used in surf lifesaving applications

25 Jan 1980 "Propeller Guard" OMC Research Center Project Specification. No. 443. Determine performance impact of guards in water skiing application.

Jul-Aug 1980 "Propeller Injuries Incurred in Boating Accidents" by Mann. American Journal of Sports Medicine.

10 Oct 1980 Sausage testing of Balius guard and Williams ring guard at Green Lake by Mercury Marine

2 Dec 1980 Sausage testing of Balius guard and Williams ring guard at Baileys Harbor by Mercury Marine

15 Dec 1980 Unpublished letter from Dick Snyder to Al Marmo at USCG summarizing the sausage testing

11 May 1981 "Propeller Guard" OMC Research Center Report 443-1

7-10 Oct 1981 Sausage testing of Balius guard and Williams ring guard on Big Carr Lake by Mercury Marine

5 Dec 1981 Jim Wynne's notes on Balius Guard testing at OMC

18 Dec 1984 "Steering / Struck by Propeller Accident Study, 1983 Recreational Boating Accidents" by Gary Traub. U.S. Coast Guard.

15 Apr 1985 Elizabeth Woodman – dad carried air to her entrapped underwater on houseboat propeller on Lake Oroville

5 Jul 1985 Jim Pree - a lawyer was struck, he went on to be propeller safety advocate, the accident resulted in Pree v. Brunswick, Jim Pree went on to represent several others injured by propellers in court

Sep 1985 Jim Nelford – professional golfer, his arm injured by a prop at the peak of his career, he came back, but was never able to regain his level of play

1987 OMC Project D 3750 Chadwell Guard performance test

10 Feb 1987 “The Technological Feasibility of Propeller Guarding of Pleasure Craft” by John Hill

1 Mar 1987 "Boat Propeller Impact Injuries and Fatalities" by Edward Purcell & Walter Lincoln. U.S. Coast Guard Research & Development Center.

Jun 1987 “Motorboat Propeller Injuries” by Price & Moorefield. Journal of the Florida Medical Association.

Jul 1987 “The Feasibility of Propeller Guarding” by Authur Reed. Expert witness report.

24 Jun 1987 OMC Project D 3750 Chadwell Guard on 150HP V6 Bass Boat

14 Aug 1987 “Propeller Guarding” by Larry Thibault of Biomechanics, Inc. Expert witness report to Stephen Bolden. Includes graphical sketches of numerous propeller accidents.

4 - 8 Sept 1987 Mercury Chadwell Guard handling 7 performance tests at Oshkosh

28 Oct 1987 OMC Chadwell Guard test at Fox Lake

1988 Simulated Underwater Limb Impact Tests (SIMULIT) video produced by Mercury Marine

Mar 1988 “Study of Impact Tests” by Dr. D.F. Huelke. (airborne swinging dummy head impacts drive and ring guard)

22 Sep 1988 “Struck by Boat or Propeller Manual Analysis of 1983-1987 Coast Guard Data” by D.J. Kerlin. USCG.

Fall 1988-1989 Mercury Marine in negotiations with the U.S. Marine Corps to supply propeller guards for Rigid Raiding Craft (RRC). Bryan Chadwell was in the same round of testing and negotiations with the Chadwell guard.

23 Feb 1989 Dick Snyder letter to Jim Getz, chairman on the NBSAC Subcommittee on Propeller Guards. Snyder reports he just became aware USCG reports accidents as a series of events, such as Event 1= Boat struck submerged object, Event 2 Person Overboard, and Event 3 person struck by motor or propeller. USCG had only been reporting propeller statistics in which a prop strike was the first event in the series. Thus many propeller accidents were not included in the stats Snyder earlier supplied the NBSAC Subcommittee on Propeller Guards. It is not clear if the letter was ever passed on to the remaining members of the subcommittee. The problem remains today. While USCG reports the stats both ways (Event 1, and All Events), many to most journalists confuse the numbers and report Event 1 statistics as representing the total number of propeller accident, injuries, and fatalities.

20 Jul 1989 “As Motorboat Injuries Soar, Institute for Injury Reduction Demands U.S. Coast Guard to Protect Against Propeller Slashings” IIR. Ben Kelley. (one of several IIR releases in this era).

9 Aug 1989 Ben Hogan, attorney for several propeller accident victims, conducted the “Stunt Man Propeller Guard Tests” video using the Chadwell guard

31 Aug 1989 Propeller Guard segment. CBS This Morning.

4 Sep 1989 Laura Hepler – pregnant mother, double fatality

7 Nov 1989 USCG [NBSAC Subcommittee on Propeller Guards final report](#) presented by Jim Getz to NBSAC & USCG. The report did not support the use of propeller guards or propeller guard regulations.

1990 GW Univ study recommends use of NEISS for a more accurate collection of propeller strikes accidents. USCG never opted to participate in this already established collection data base.

1990 “Motorboat Propeller Injuries” Stephen Bolden. Trials. Vol.41. Model Trials. American Jurisprudence. Book on how to try a prop case prior to the preemption defense is now relevant again.

21 Jun 1990 OMC Project D 2371 Weed and Endurance Test of Chadwell Wire Cage Guard

25 Jun 1990 U.S. Court of Appeals 11th Circuit reversed a \$4.375 million decision against Brunswick in Ashley Elliot v. Brunswick. The case was primarily reversed based on the prop being “open and obvious” and the 1989 NBSAC report.

10 Aug 1990 Kevin Fitzpatrick – fatality, 16 year old, later became Fitzpatrick v. OMC

18 Sep 1990 U.S. Patent 4,957,459 issued to Dick Snyder for Wald Wire propeller guard

20 Nov - 15 Dec 1990 OMC / Mercury Marine SUNY testing of propeller guards. The first of many tests to be conducted in the circular tank at SUNY.

13 Aug 1991 U.S. District Court, Northern District of Ohio supported the industry's new Federal Preemption defense in Mowery v. Mercury Marine.

30 Oct 1991 U.S. District Court, Middle Georgia, Albany Division supported the industry's new Federal Preemption defense in Shields v. OMC. The Preemption defense is now off and running with two wins in U.S. District Courts.

1992 "Recreational Boating Accident Statistical Methodologies" George Washington University study funded by USCG.

7 May 1992 Stacy Epping – Oregon State students on Shasta houseboat. Her leg was severed, she later appeared with SPIN.

Sep 1992 "Motorboat Propeller Injuries" by Vernick & Associates, Johns Hopkins Univ., Injury Prevention Center

6 Sep 1992 Matthew Wells - fell from PWC, houseboat on Shasta backed over him, struck in lower legs & feet. Right foot dangling, barely attached.

Oct 15 1992 Propeller Guard Segment. Inside Edition. by Matt Meagher. Aired on TV. Included a piece on the Chadwell Guard.

Dec 1992/Jan 1993 "Why Prop Guards Are Not The All-Purpose Answer to Boating Safety" by Dick Snyder, Mercury Marine MerCourier. A response to their employees about the Sep 1992 Inside Edition broadcast.

1993 "A Study of Boat and Boat Propeller-Related Injuries in the United States, 1991-1992" by Branche-Dorsey, Smith, & Johnson. CDC Study for USDOT, USCG.

1993 "Injury Analysis of Impacts Between a Cage-Type Propeller Guard and a Submerged Head" by Scott, Labra, Guzman, Benedict, Smith, & Ziggler. Biodynamics Research Corporation.

1993 - 1997 USCG Search and Rescue (SAR) data was later audited by BoatUS because USCG failed to identify hundreds of nearshore fatal accidents that should have been in BARD. Those accidents were never included in the annual BARD totals.

5 Jan 1993 US Patent 5,176,550 issued to Robert Hooper for PropBuddy guard

21 Mar 1993 Emilio Irving Cruz – fatality, University of San Diego students on Lake Havasu in rental houseboat. His mother, Marion Irving deCruz, founded [SPIN](#) and went on to be the leading advocate for boat propeller safety.

11 May 1993 Carolyn Falvey houseboat accident (NPS houseboat floatilla). Someone started the engine while she was reboarding.

6 Jun 1993 Kathryn Lewis – Oklahoma teenager killed in Georgia, later became a U.S. Supreme Court case on preemption

22 Nov 1993 two Japanese Patents #JP05-310187 and #JP05-310188 to Saito Hironori for swinging guard were published

Jun 1994 “Preventing Propeller and Boat Strike Accidents” USCG Boating Safety Circular 76.

11 Jun 1994 Phyllis Kopytko – her husband and a guide were killed by the propeller, she was very severely injured and went on to be part of SPIN

Aug 1994 “Motorboat Propeller Injuries in Wisconsin: Enumeration and Prevention” by Karlson, Vernick, and Aprahamian. Journal of Trauma.

1995 SPIN formalized their foundation

11 May 1995 USCG 95-041 / USCG-2001-10299 request for comments on rental boat propeller safety

17 Jun 1995 Stephanie Booker – hit and run on Lake Lewisville in TX

10 Jul, 1995 Jeanne Sprietsma – fatality, went on to become the U.S. Supreme Court case that overturned Federal Preemption

20 Jul 1995 Shirley K. Brocchini-Jones – Shasta houseboat, she died 8 days later, her mother, Shirl Koop went on to be a propeller safety advocate

Sep 1995 “Propeller Accidents Involving Houseboats and Other Displacement Type Recreational Vessels” USCG Boating Safety Circular #77. (Copy of the Federal Register announcement extending the comment period on CGD 95-041 and a copy of CGD 95-041).

24 Sep 1995 Howard Clark – hit and killed by propeller of Gloria Estefan’s boat

1996 “An Underwater Impact Biomechanics Study to Evaluate a Boat Motor Cage-Type Propeller Guard as a Protective Devices” by T.A. Kress. International IRCOBI Conference on Biomechanics of Impact. Dublin Ireland.

26 Mar 1996 USCG CGD-95-041 ANPRM announced a series of public hearings to be held in the Spring of 1996 to solicit comments.

22 Apr 1996 Public Comment Hearing Panama City FL

29 Apr 1996 NAVSAC & NBSAC Joint Council Public Comment Hearing San Francisco CA

1 May 1996 Public Comment Hearing Rockport ME

6 May 1996 Public Comment Hearing Washington D.C.

19 May 1996 Public Comment Hearing New Orleans LA

26 Mar 1996 USCG CGD-95-041 announced USCG had received over 1800 form letters supporting the development of propeller guard or water jet regulations for rental houseboats. SPIN’s form letter campaign was very successful in getting citizens to respond, but USCG said those letters did not include the type of information they were requesting (information on devices and accidents).

May 1996 “Biomechanical Effectiveness of a Safety Device: A Boat Motor Cage-Type Propeller Guard”. Part 10 of “Impact Biomechanics of the Human Body” by Tyler Kress. Phd Dissertation. Univ of Tennessee, Knoxville.

Jul 1996 “Emilio’s Mom Revives Prop Guard Debate” Soundings.

1996 & 1997 Senator Christ of Florida introduced bills to require all powerboats in Florida to have propeller guards.

1997 PGIC posted the Stealth Prop Guard concept (later became the Virtual Propeller Guard)

Jun 1997 "Prop Guards: Do They Work, Are They Safe?" by Jim Flannery. Soundings Trade Only.

Sep 1997 "Propeller Injury Protection: An Evaluation of the State of the Art of Recreational Watercraft Propulsion Systems" by Mancil Milligan and Jefferey Tennant. A report of the Marine Technology Society. Prepared for the USCG Office of Boating Safety. This state of the art survey was followed up the next year with a report on the results of testing the devices.

1997-1998 "Motorboat Propeller Injuries" by Dr. Mendez-Fernandez, medical doctor. He notes some authors compare prop strike injuries with battlefield war wounds.

2 Apr 1998 "Boat Boarding Ladder Placement" by James Miller and Brian Grieser. Miller Engineering.

15 May 1998 Lewis v. Brunswick, a Federal Preemption case, settled just before the U.S. Supreme Court was to issue its decision. The industry settled to preserve the preemption defense.

Jun 1998 "An Assessment of Propeller Guards Designed for Inboard Vessels on Vessel Operation and Manatee Protection" by Mancil Milligan and Jefferey Tennant. for the State of Florida Dept of Environmental Protection Division of Marine Resources Protected Species Management.

2 Jun 1998 PropGuard (later MariTech) was issued U.S. Patent 5,759,075 for their cage type propeller guard and its mounting harness.

Oct. 1998 "Propeller Injury Protection: An Evaluation of Commercially Available Protection Devices" by Mancil Milligan and Jefferey Tennant. A report of the Marine Technology Society. Prepared for the USCG Office of Boating Safety.

1999 NBSAC passes 1999-63-02 resolution to proceed with developing a performance standard to prevent and minimize propeller strikes

1999 "Alcohol-Influenced Recreational Boat Operation in the United States, 1994" by Logan, Sacks, Branche, Ryan, & Bender. American Journal of Preventative Medicine. Vol.16. No.4.

1999 Virtual Propeller Guard presentation posted by PGIC

2 Feb 1999 Mercury test report of Keith Jackson's guard on 20ft pontoon boat w/100 HP outboard

20 Mar 1999 “Prop-Buddy the Next Generation Propeller Guard” Nakamura, Chaney, & Roberts. Student project. SNAME Southeast Section.

April 1999 NBSAC recommended developing a performance standard for propeller guards and other propeller safety devices

26 Apr 1999 “Propeller Injury Protection: an Evaluation of Commercially Available Protection Devices” by Milligan and Tennant. Report Briefing Prepared for Office of Boating Safety. U.S.Coast Guard. Presented at 63rd NBSAC.

5 May 1999 Mercury Test Report #1999-437 log strike testing of Keith Jackson’s guard

23 May 1999 Audrey Decker – fatality, fell from small boat on a lake behind her home, became Decker v. OMC

23 Jul 1999 Dmitri Tertyshny – fatality, professional hockey player

Nov 1999 “Prop Guards Prevent Injuries” Dr. Robert Warren. Boat & Motor Dealer.

Dec 1999 “Propeller Injury Protection” U.S. Coast Guard Boating Safety Circular 81.

Jan 2000 “The Case of the Missing Reports: Possible Misleading Statistics About Boating Accidents” by Elaine Dickinson, Boat US. Calls attention to the hundreds of nearshore fatal accidents left out of BARD.

16 Sep 2000 Felix Shrayber – Shasta Lake houseboat, became Shrayber v. Holiday Harbor, one of the first cases after preemption was struck down. Case was tried under preemption and was being appealed when Sprietsma was decided. Case eventually settled 7 Apr 2004.

Oct 2000 Michael Davis – became the Yamaha / Skeeter case

18 Dec 2000 Kirsty MacColl - fatality, British songwriter & singer, diving in Mexico

23-24 Apr 2001 NBSAC passes Resolution 2001-67-01 recommending USCG institute rulemaking to prevent and minimize prop accidents in four vessel categories.

1. All prop driven vessels 12 feet and longer with props aft of the transom
2. New planing vessels 12 to 26 feet with props aft of the transom
3. New non-planing vessels 12 feet and longer with props aft of the transom
4. All non-planing rental boats with props aft of the transom

15 May 2001 Recreational Boating Safety Hearing before the Subcommittee of Coast Guard and Maritime Transportation on the Committee of Transportation and Infrastructure. House of Representatives. (107-20). Propeller safety was a prominent topic.

18 Aug 2001 Robin Listman – fell from swim platform while reaching for her son’s inflatable toy, became Listman v. OMC

21 Aug 2001 US Patent 6,276,974 issued to PropGuard (now MariTech) for swim ladder interlock switch

29-30 Oct 2001 “Report on a Nationwide Study of Recreational Boating Injured Patients Treated in U.S. Emergency Departments”. Emergency Nurses Association. 68th NBSAC.

10 Dec 2001 USCG withdrew USCG CGD-96-041, a rental boat proposed propeller safety regulation, and issued USCG-2001-10163, a houseboat propeller safety regulation.

10 Dec 2001 USCG proposed USCG-2001-10163 the houseboat propeller safety regulation

2002 RingProp PLC formed to commercialize ringed propeller

12 Mar 2002 Brunswick received U.S. Patent 6,354,892 for a heat sensing virtual propeller guard

20 Apr 2002 PGIC proposed an official definition for “Virtual Propeller Guard”

June 2002 USCG recommended ABYC’s Project Technical Committee develop a safety label to warn against prop strikes at the transom. ABYC and NMMA’s Boating Industry Risk Management Council (BIRMC) worked together to develop a series of warning labels.

20 Jun 2002 Mikael Renberg – professional hockey player

15 Aug 2002 Paul Gallagher fatality, two year old boy on the beach in the Bahamas

1 Sep 2002 Robin Tyler - houseboat on Lake Powell, became Tyler v. Forever Resorts

28-29 Oct 2002 NBSAC redefines 2001-67-01 as 2002-70-01. More specifications are provided for the four groups of vessels
NBSAC encouraged USCG to institute rulemaking on in April 2001.

3 Dec 2002 Spriestma v. Mercury Marine decided in U.S. Supreme Court, the end of the Federal Preemption Defense

6 Dec 2002 PGIC proposed a Boating Industry Consortium to address propeller injuries

Approx 2003/2004 “Propeller Injury Intervention” USCG web posted article discusses types of guards and prop safety devices.

Jan/Feb 2003 “Prop Guards, Again” by Ralph Lambrecht. Boat & Motor Dealer. Marine Service Technicians Corner.

2 May 2003 Coach Ray Zook – college football coach

26 May 2003 Laura Putnam – hit and run fatality on Lake LBJ in TX

1 Jul 2003 “Fault Tree Analysis for Assessing Propeller Guard Injury Prevention Effectiveness” by Tyler A. Kress and Reid L. Kress (USA). IASTED International Conference on Biomechanics. Rhodes, Greece.

3 Sep 2003 Davis v. Skeeter Boats & Yamaha decided for \$6 million, overpowered boat

Oct 2003 USCG starts holding semiannual propeller injury mitigation meetings in conjunction with major boat shows.

4 - 5 Mar 2004 Mercury testing of Keith Jackson’s guard on Tracker w/115 HP outboard

10 Mar 2004 Mercury Test Report #2004-439 off center log strike testing of Keith Jackson’s guard

4 May 2004 Capt. Scott Evans, Chief of the USCG Office of Boating Safety said Congress told USCG, that USCG has to do something to curtail propeller injuries or Congress may act directly. Comment made during an NMMA American Boating Congress panel discussion.

2005 Australian Army Marine investigated 8 different propulsion systems including cage and ring guards. They selected the Australian Army Modified Ringed Propeller.

30 Apr 2005 Nicholas Johs – fatality, boy scout on Whale Watching Boat

Weekend of 25 Jun 2005 John Flemming – DJ tubing in UK

1 Jul 2005 Jacob Brochtrup – age 18 on Lake Austin, leg amputated, became Brochtrup v. Mercury Marine & Sea Ray

17 Jul 2005 Kyle Lederer - houseboat fatality on Lake Oroville

10 Aug 2005 Alexandra Ciardi – fatality, U.K. fund manager

Oct 2005 student project - “Designing an Intelligent Propeller Safety System” by Bram van der Vist or Eindhoven University of Technology. A virtual propeller guard system student project.

3 Oct 2005 Sylvia Rozon - houseboat fatality on Lake Powell, became Rozon v. Aramark

9 Nov 2005 Congressman James Oberstar letter to Admiral Thomas Collins requesting asking for information on the progress of the propeller safety regulations. Admiral Cross spoke of at the May 2001 hearing.

11 Nov 2005 “Stress” a radio segment on Radio Lab, New York NPR. Coby Hall describes the stress of being struck by a propeller.

2006 Propeller Injury Awareness Brochure. Beware Boat Propellers ... A Hidden Danger. USCG. (Will later be updated in 2009).

21-22 Mar 2006 USCG/ABYC Propeller Injury Avoidance Workshop

7 Apr 2006 Mercury Test Report #2006-698 for Bob Hooper’s Prop Buddy guard. Mercury failed to use the trim limit spacers they use on their own drives to limit trim under, and said the guard had bow steering issues.

19 May 2006 KUTV aired a segment on Guy Taylor’s Three-P-O guard showing it running over large squash and a dummy

21 Jun 2006 RingProp stock trading suspended on AIM

July 2006 “The Push to Reduce Prop Injuries” by Jim Flannery, Soundings Trade Only.

2 Jul 2006 Contra Costa Times reports California will stop supplying accident date and location info to the Coast Guard. They will only supply summaries by accident type and requested USCG to stop making their data public.

18 Aug 2006 Britteny Lindt – fatality, 15 year old cheerleader tubing, family became boating safety advocates

12 Sep 2006 Brunswick received U.S. Patent 7,105,800 virtual propeller guard patent on preventing false triggers

Sep/Oct 2006 “Prop Guards are a Subject That Seems to Live Forever” by Ralph Lambrecht, Boat & Motor Dealer. Lambrecht understated accident counts, refused to acknowledge the correct statistics, and refused to issue a correction.

Oct 2006 “Industry Critics Say Kill Switch Rule is Overkill” by Melanie Winters, Soundings Trade Only.

7 Oct 2006 James Noel-Pou and Monica Burguera – two killed when a boat ran over of rented boat

13 Oct 2006 PGIC started promoting swinging/ flapping rear screens for reducing propeller guard drag

24 Oct 2006 Peter Foster – well known Australian conman on the run from police in Fiji

Nov 2006 “Keeping Current on Kill-Switches” BoatUS Foundation.

2007 Susan Tomczuk replaced Bruce Schmidt as keeper of USCG Office of Boating Safety BARD data / statistics

Spring 2007 USCG sent out request for guards to use in developing their new propeller guard test protocol

25 Mar 2007 Ronald Gill – fatality, U.S. Coast Guard on last day of training

17 Apr 2007 Brooke Fletcher – Australian Olympic swimming hopeful

17 Jul 2007 Patrick Murphy – fatality, Rhode Island boat taken without permission

11 Oct 2007 USCG Accident Mitigation Meeting presented results of propeller guard test protocol for three guards.

18 Oct 2007 USCG Withdrew USCG-2001-10163 (a proposed houseboat prop safety regulation). They cited lack of definition of “houseboat”, implementation costs, and the nature of the safety devices as reasons for withdrawal.

30 November 2007 Rebecca Stockwell / Crawley fatality, from New Zealand, snorkeling on her honeymoon in Fiji. Her father became an advocate for propeller safety.

10 March 2008 date on letter enclosed with USCG rental boating safety instructional materials sent out for feedback

21 Apr 2008 Adrian Todd, 14, NSW Australia boy fell pull starting small Mercury outboard. Became Todd v. Marine Power International. His father went on to become a leading advocate for propeller safety.

23 Jun 2008 Decker v. OMC decided for OMC

6 Jul 2008 Cole Ortega – 14 year old boy surfing, hit by propeller on a dory in Oregon

20 Nov 2008 PGIC published [Aspects of the Debate chart](#)

2009 PGIC published a [Who is Who](#) list in the propeller safety debate

12 Feb 2009 “Beyond the BARD” presented at USCG Accident Mitigation Meeting (review other possible accident data sources)

25 Apr 2009 Donald Balius, propeller guard inventor, passed away

29 May 2009 Isabella Hall – lady suspected of being intentionally ran over by her husband, killed by pontoon boat prop

14 Jul 2009 Allyssa Squirrell – 11 year old girl killed training as Jr. Lifeguard at Huntington Beach

31 July 2009 Molly Moses - 16 year old Alabama girl. A Miracles for Molly campaign and the family’s efforts for a Molly’s law to put guards on boats in Alabama captured significant attention.

25 Nov 2009 Colin Chamberlain wins ABC Australia 2009 invention of the year contest with his Australian Safety Propeller

22 Dec 2009 Brad Ottens – Australian rugby player

Jan 2010 New South Wales (NSW) Maritime of Australia launches Take Care - Be Prop Aware campaign

11 Feb 2010 USCG Accident Mitigation Meeting (1) showed ABYC ladder video and (2) presented the Safety Propeller from Australia.

14 Feb 2010 Oliver Minchin – Army Cadet struck in Australia, son of major political figure

25 May 2010 US Patent 7,722,418 assigned to Teleflex for trim cylinder relief valve system. The system might be able to mitigate blunt trauma issues from being struck by a propeller guard at moderate speeds.

31 May 2010 David McFarlin, 10, outboard motor struck a dredge pipe and flipped into the boat during family outing. When it flipped in, the propeller fatally struck the young boy on Storm Lake in Iowa. Became [Laass v. Storm Lake](#)

31 May 2010 Cyril Holley Jr., Madison Holley (his 9 months pregnant daughter), and her unborn child were struck and killed by the propeller of a boat that ran over theirs in Florida.

10 Jun 2010 PGIC published the [Houseboat report](#). It was the first, and so far only, report to point out two major errors in USCG's findings (USCG over estimated costs by failing to note that only 5 percent of all houseboats are rentals, and USCG relied upon the U.S. Small Business Administrations findings & threats which contained at least 15 major errors).

Late Aug 2010 USCG released "Don't Wreck Your Summer" PSA (withdrawn approximately 8 November 2010 under pressure from marine manufacturers)

approx 8 Nov 2010 The boating industry [banned USCG's "Don't Wreck Your Summer" PSA](#) due to industry complaints that it showed boating in a bad light (made boating look dangerous)

10 Oct 2010 Luke Evslin – canoe race in Hawaii, widely known young man

4 Feb 2011 Gabby DeSouza – 14 year old girl in Florida that captivated the press

27 May 2011 [Brochtrup v. Mercury Marine](#) final decision, \$3.2 million award, Robby Alden represented Brochtrup

7 Jun 2011 [Bell v MasterCraft](#) decided, \$30 million award focused on boat design and carrying capacity

8 Jun 2011 USCG-2009-0206 Kill switch ANPRM request for comments

10 Jun 2011 Perez v. Yamaha (waver runner / prop accident) decided, \$39 million verdict, case focused on off-throttle performance of the personal watercraft (PWC)

10 Jun 2011 Brunswick misled another Federal Court on prop accident frequency in Brochtrup v. Mercury Marine and Sea Ray request for rehearing by saying there were less than 100 accidents per year.

20 Jun 2011 PGIC web site launched in new format at PropellerSafety.com

25 Jun 2011 Deondra Scott - backed over by novice operator at North Carolina Lake Norman Lake Bash, became [Scott v. Allen, Orzolek & Chaparral Boats.](#)

30 Jun 2011 Alexis Angelopolous – 12 year old girl trapped between dual propellers off Virginia Beach

8 Jul 2011 PGIC was the first and is still the only voice to raise an uproar over missing BARD states (approaching half the states no longer make their individual boat accident data available due to privacy concerns).

12 Aug 2011 Jordan McKelvey - houseboat on Lake Cumberland. Became [McKelvey v. State Dock Marina Rentals et al.](#)

21 Aug 2011 Esther Fujimoto – University researcher swimming Pineview Reservoir in Utah fatally struck by hit and run

27 Aug 2011 Dr. Stephen Keller – San Jose Calif. dentist loved by all, fell from rental boat and fatally struck on Lake Tahoe.

26 Aug 2011 USCG-2011-0497 Recreational Vessel Propeller Strike and Carbon Monoxide Poisoning Casualty Prevention ANPRM request for comments.

29 Aug 2011 PGIC posted 5 RFID inventions, including RFID combo lifejacket / virtual lanyard

6 Sep 2011 USCG-2009-0206 Kill switch ANPRM comment period ended

10 Sep 2011 Larry Thibault, longtime defense expert witness, passed away

approx Nov 2011 Mercury Marine debuts Moving Propeller Alert MP Alert System

Nov 2011 Oliver Lee thesis on Propeller Guard CFD

Nov 2011 Maurice Abrahams – of the UK, severely struck while scuba diving in Egypt, he went on to be a propeller safety advocate.

Nov 2011 PGIC launched our site to encourage Senior Design Project Classes and others to consider propeller safety topics

Nov 2011 PGIC blogged the [Listman v. OMC trial](#) near live

25 Nov 2011 USCG-2011-0497 (stern propeller safety & CO) comments closed

11 Apr 2012 public comment period ends on Propeller Guard Test Protocol

May 2012 Yamaha releases a stainless steel, flood rescue outboard propeller guard

approx May 2012 USCG released their Annual Boating Statistics 2011 showing significant spike in propeller accidents and total fatalities.

4 Jun 2012 PGIC goes mobile

5 Jun 2012 Volvo Penta was issued U.S. Patent 8,195,381 for a virtual propeller guard system for their digital anchor

20 Jul 2012 Kali Gorzell – 16 year old girl loved by all fell overboard and fatally struck at Aransas Pass TX

20 Jul 2012 Charlie Hutton – 14 year old UK boy, fell from RIB near Isle of Wright and fatally struck. Nationally known soccer player at Whitgift. Heavily covered in the press. These two accidents happened about the same time (Gorzell / Hutton) thousands of miles apart.

27 Jul 2012 PGIC launches on Facebook

Aug 2012 MagBlade MaxThrust Safety Propeller in the news

11 Aug 2012 Cian Williams – 13 year old UK boy, backed into by a prop, he and his mother became propeller safety advocates. Heavily covered in the press.

Summer 2012 four propeller cases settled (McGarrigle, Laass, Todd, Coxe)

Sep 2012 Contrapel Water Jet in the news

4 Sep 2012 Guy Taylor of 3PO awarded swinging rear screen patent, U.S. Patent 8,257,121 for Navigator guard

16 Sep 2012 Mark Barhanovich – well known of Biloxi MS, thought to have struck dredge pipe near Deer Island, outboard flipped in and fatally struck him. Became a Limitation of Liability (Jones Act) suit, then [Barhanovich v. C F Bean & Archer Western](#)

2 Oct 2012 PowerTech! Safety Prop wins IBEX innovation award, PGIC raised issue of similarities to the Australian Environmental Safety Propeller.

13,14,15 Oct 2012 PGIC posted three articles on Yamaha's new propeller guard for flood rescue outboards

late Oct / early Nov 2012 Yamaha removed all references to its new propeller guard from its UK website

1 Dec 2012 Casey Schulman – University of Virginia student in Semester at Sea program fatally backed into by excursion sailing catamaran propeller in Dominica.

3 Dec 2012 Terrell Horne III – USCG officer on an interdiction run, boat suspected of criminal activity ran over RIB he was in off Santa Cruz Island, California.

13 Dec 2012 [Australian Military fined](#) for not using prop guard in Minchin accident

25 Dec 2012 PGIC pointed out the effect medical advances may be having on lowering the number of propeller fatalities, and boating fatalities in general (needs to be considered when comparing historical data)

3 Jan 2013 PGIC posted the missing documents from a possible [Yamaha coverup](#). Yamaha deleted all documents from their site about their new propeller guard and its performance

22 Jan 2013 PGIC first released this History of Propeller Safety

31 Jan 2013 Corner for Isle of Wight issued an appeal for the boating industry to promote propeller safety and awareness as part of her findings in the Hutton Inquest

Feb 2013 Royal Yachting Association (RYA) updated its propeller guard position statement

- 11 Feb 2013 PGIC pointed out dangers of swim platform facing seating in Swim Platform Seats: An Attractive Nuisance to Children, Youth, & Adults?
- 20 Feb 2013 US Masters Swimming announces they will be requiring propeller guards on all powerboats used with open water swimming events (except government vessels)
- 15 Mar 2013 C.F. Bean (dredge operation) filed a Limitation of Liability (Jones Act) suit against the estate of Mark Barhanovich in an attempt to limit their potential liability from his fatal propeller accident
- 15 Mar 2013 Texas House of Representatives introduced a bill to honor the life of Kali Gorzell, a 16 year old girl struck and killed by a boat propeller last July
- 20 Mar 2013 Jerrie Barhanovich, wife of Mark Barhanovich, filed suit against C.F. Bean and Archer Western in the propeller death of her husband
- 21 Mar 2013 WorkCover NSW (Australia) fined University of New South Wales \$100,000 (Australian) plus \$35,000 in court costs for not following proper boating safety procedures on a 2009 field trip that resulted in a prop accident
- 12-14 Ap 2013 NBSAC Meeting Cancelled, the subcommittees met later via webcast
- 21 Apr 2013 Sarah Roderick, age 8, fell from bow of a pontoon boat on Lake Havasu and fatally struck by propeller.**
- 2 May 2013 Emerald Isle, North Carolina renames a portion of the street the Coast Guard Station is on in memory of Terrell Horne III. The U.S. Coast Guardsman was killed by a boat propeller during a drug interdiction mission in December 2012.
- 5 May 2013 Nicholas Milligan, 51, and his 8 year old daughter, Emily, killed by prop as his entire family was ejected from his RIB which began to circle striking them repeatedly in the UK. His wife and a young son sustained very serious leg injures. Two daughters with minor injuries. Major press coverage in UK .**
- 9 May 2013 Timothy Clippard of Missouri, killed by propeller on Kentucky Lake during bass fishing tournament. While passing under a bridge, the outboard struck something, flipped up into the boat, and struck him in the head. Not yet confirmed as a prop strike.**