



Surface Propulsion Analysis

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Curriculum Vitae

Summary

Naval Architect with degrees from Webb Institute of Naval Architecture (1973) and U.C. Berkeley (1979) and California P.E. license (mechanical). Areas of specializations include forensic naval architecture, surface-piercing propellers and propulsion systems for high speed vessels, small craft and sailboat accident analysis and reconstruction, PWC casualties due to off-throttle steering and body cavity injury.

Employment History

1989-present: Independent naval architecture consultant. Clients include Nautilus Data Technologies, Arneson Research, Arneson Marine, Morris Guralnick Associates and M. Rosenblatt & Son. Major projects include surface propulsion applications, sea trials and analysis of high speed amphibious vehicles, hybrid hydrofoil systems, tank testing of propulsion systems and vessel motion analysis.

Provide expert testimony for lawsuits involving collision and accident reconstruction, drive failures, yacht sinking, yacht dismasting, personal watercraft (jetski) and tubing accidents, fishing vessel capsizing, and injury resulting from vessel motions, propeller contact, sail handling, stranding in surf, and other causes.

Prepared reports, consulted or testified as an expert witness in over 45 cases, approx. 25 retained by plaintiff and 18 retained by defense, including five criminal defense cases.

1987-1989: Arneson Marine, Inc., 15 Koch Rd, Unit E, Corte Madera, CA 94925. (relocated to 29485 Airport Road, Eugene, OR 97402)

Applications Naval Architect. Responsible for speed and power estimates for a large number of projects involving high speed vessels of all types. Developed computer programs to predict speed and resistance of high-speed vessels, calculate propulsive efficiency of surface-piercing propellers and select propellers and driveline components for clients. Responsibilities included support for sales staff, technical presentations and project management. Participated in mechanical design of new products. Collected and maintained database of sea trial results. Participated in onboard sea trials at speeds up to 175 mph.

1977-1986: Morris Guralnick Associates Inc., 130 Sutter St., San Francisco, CA 94104 (now Archimedes Engineering, 2099 Grand St., Alameda CA 94501)

Senior Naval Architect. Responsible for projects including ship design, structural analysis, seakeeping analysis, tank testing and program development. Conducted ship inclining trials, on-sight structural tests and full scale ship motion experiments. Familiarity with a number of commercial finite element structural analysis programs for mainframe and microcomputers, as

well as specialized hydrostatics and seakeeping programs. Developed in-house computer programs for hydrostatics, structural analysis and dynamic simulation.

Ocean Thermal Energy Conversion While at Morris Guralnick Associates, developed conceptual design for the 400 MW OTEC floating power plant under DOE and Lockheed contracts. Performed dynamic analysis of several configurations of OTEC cold water supply pipe designs, including wave response and vortex shedding. Participated in design and implementation of the 100 KW OTEC demonstration project.

1975-1976: University of California, Berkeley, Department of Naval Architecture. Research Assistant. Performed tank tests and numerical simulations of large ship motions and capsizing in following seas.

1973: U.S. Coast Guard R&D Center, Groton, Conn. Naval Architect. Conducted open-water and tank tests of full-scale recreational vessels. Tests involved maneuvering, dynamic roll response and flotation in support of revised small craft safety recommendations.

Continuing Sideline

Contributing editor, Latitude 38, Mill Valley, CA.
Monthly columnist, writing about sailing and small craft technology since 1980

Education

1973-1979: University of California, Berkeley.
Master of Engineering. Major: Naval Architecture.
1969-1973: Webb Institute of Naval Architecture, Glen Cove, N.Y.
Bachelor of Science. Major: Naval Architecture and Marine Engineering.

Papers, Publications and Conference Presentations

"**Forensic Engineering of cleat failure during fish boat docking,**" National Academy of Forensic Engineers, January 2020.
"**Forensic Engineering of PWC Off-Throttle Steering Accidents,**" National Academy of Forensic Engineers, January 2016.
"**Forensic Analysis of Personal Watercraft Steering and Braking,**" Society of Forensic Engineers and Scientists, Spring Seminar, March 2015
"**Personal Watercraft Steering, Braking and Testing,**" Chesapeake Power Boat Symposium, Annapolis, MD, March 2010
"**An Overview of Ocean Renewable Energy,**" SNAME annual meeting, October 2009 and SNAME Proceedings, 2009.
"**Forensic engineering of propeller contact injuries,**" January 2008 meeting of the National Academy of Forensic Engineers, and February 2008 meeting of the American Academy of Forensic Scientists. AAFS Proceedings, February 2008.
"**Urban Passenger-Only Ferry Systems: Issues, Opportunities and Technologies**" SNAME annual meeting, October 2006 and SNAME Proceedings, 2006.
San Francisco Bay Interdisciplinary Ferry Round Table Conference co-organizer and speaker, October 2003.
"**Ferries For The San Francisco Bay Area; New Paradigms From New Technologies**" Joint meeting of California sections of the Society of Naval Architects and Marina Engineers, Asilomar, June 2001, the D.C. SNAME section, December 2003, and the joint ASME/SNAME Northern California meeting, 2005.

"Catastrophic Failures of Recreational Marine Equipment as Depicted by the Contemporary Media," a parody paper for the "Materials in Sports" symposium of the Material Research Society, San Francisco, April 1 1997.

"Is there a Surface Drive in your Future?" Professional Boatbuilder, December/January 1990.

"Application of Surface Propulsion Systems," Society of Naval Architects and Marine Engineers, Northern California Section, 1989.

"Articulated Surface Drives - Basic Considerations for Designers and Builders," Westlawn Yacht Design Symposium, New York, 1988.

"Offshore Incineration of Municipal Solid Waste," Society of Naval Architects and Marine Engineers, Northern California Section, 1985.

"Computers in Small Craft Design," Ancient Interface Symposium, 1981.

Over 450 published articles on small craft technology and operation in regional sailing magazine *Latitude 38* (circulation peaked at 48,000), 1980-present.

Patents

US20100013228 and Canadian CA2631204A1, surface piercing turbine as tidal power generator

Memberships

Society of Naval Architects and Marine Engineers

National Academy of Forensic Engineers

National Society of Professional Engineers

Berkeley Racing Canoe Center, Board of Directors

Berkeley Parks & Waterfront Commission (Vice-Chair 2018, 2019, 2020)

Past memberships

U.S. Sailing Area Appeals Committee and certified racing rules Judge

San Francisco Bay Yacht Racing Association Board of Directors

Competition and Technical Committee, International Dragon Boat Federation

Berkeley Waterfront Commission, (Chair 2001, 2002, 2005, 2006, 2011, 2012)

Berkeley Yacht Club, Board of Directors

California Dragon Boat Association, Board of Directors

Cal Sailing Club, Commodore

Midget Ocean Racing Association, regional measurer

Pacific Cup Yacht Club, Board of Directors

Misc Achievements and Awards

Navigated 23 sailboat races from California to Hawaii, division wins in 2000 and 2012, second in 1982, 1985 and 2014. Pacific Cup Navigators Award in 2000, Mark Rudiger Celestial Navigation trophy in 2019.

Numerous local championships in Merit 25 class sailboat *Twilight Zone*.

Principal exhibit designer for the Sailing Science Center, an interactive museum under development for Treasure Island. Projected opening in 2025.