

Dr. Hudson has more than 35 years of experience in naval architecture and ocean engineering, with expertise in vessel design and repair, waterfront condition assessment, and failure analysis. He has testified as a maritime expert in Federal and State courts and in international arbitrations, including matters involving intellectual property and patent disputes. His practice focuses on marine vessels, floating structures, and waterfront infrastructure, including ports, harbors, piers, seawalls, and breakwaters.

Dr. Hudson's project experience includes investigation and reconstruction of commercial and recreational vessel accidents; analysis of collisions, allisions, groundings, sinkings, and stability issues; cargo securement and damage; drydock and ship repair operations; and assessment of marinas, docks, moorings, anchor systems, underwater vehicles, and waterfront construction. His work also encompasses marine terminals, cranes, subsea cables, industrial diving operations, coastal engineering, and marine workplace safety.

Dr. Hudson is a retired U.S. Navy Commander and Engineering Duty Officer with 26 years of active and reserve service. He served in the construction, ship repair, and ship salvage communities, participated in major salvage operations, and supervised vessel construction, repair, heavy-lift operations, and drydocking. He is a former Assistant Professor at the U.S. Naval Academy and Lecturer at Johns Hopkins University and Virginia Tech.

Education

Professional Science Master's, Forensic Science, Arizona State University. 2025

Master of Legal Studies. Sandra Day O'Connor College of Law, Arizona State University. 2022

PhD, Ocean Engineering. The Johns Hopkins University. 2002

MSEng, Civil Engineering. The Johns Hopkins University. 2001

BS, Naval Architecture. United States Naval Academy. 1989

Contact Information

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ESi Santa Ana

Areas of Specialization

- Cargo Transportation
- Construction Defects
- Design Analysis
- Intellectual Property
- Marine
- Pipelines
- Recreational Products
Safety

Licenses & Certifications

- State of California P.E. (Mechanical) License M 38178
- State of Maryland P.E. License 31148
- Commonwealth of Virginia P.E. License 024913
- State of Texas P.E. License 28035

Positions Held

Engineering Systems Inc., Orange County, California

- Senior Managing Consultant, 2024 – Present

Exponent, Inc., Irvine, California

- Senior Managing Engineer, 2021 – 2024

Envista Forensics, Irvine, California

- Practice Leader, Marine, 2019 – 2021

Rimkus Consulting Group, Inc., Irvine, California

- National Division Manager, Marine Division, 2017 – 2019

Unified Investigations & Sciences, Inc., Carlsbad, California

- District Manager / Forensic Engineer, 2015 – 2017

U.S. Navy, Southwest Regional Maintenance Center, San Diego, California

- Head, Naval Architecture Branch, 2015 – 2016

U.S. Navy, Naval Sea Systems Command, San Diego, California and Washington, D.C.

- Commander (O-5), Engineering Duty, U.S. Navy Reserve, 1995 – 2016
- Head, Naval Architecture Branch, Southwest Regional Maintenance Center, 2015 – 2016
- Senior Naval Architect (GS-15), Carderock Division, Naval Surface Warfare Center, 2009 – 2015
- Senior Naval Architect (GS-12), Carderock Division, Naval Surface Warfare Center, 1996 – 2001

Moment Engineering, Inc., Annapolis, Maryland

- President and Principal Naval Architect, 2008 – 2015

Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland

- Mechanical Systems Supervisor, ISR Sensors Group, 2001 – 2009

John J. McMullen Associates, Inc., Arlington, Virginia

- Project Naval Architect, 1993 – 1996

SECOND Naval Construction Brigade, Little Creek, Virginia

- Flag Lieutenant / Aide to the Commander, 1991 – 1993

U.S. Naval Facility, Argentia, Newfoundland, Canada

- Assistant Resident Officer in Charge of Construction, Atlantic Division, 1989 – 1991

Continuing Education

- **Planning, Design, Construction, Repair, and Renovation of Docks and Marinas**, EPIC 15-0234-ONL25, Educational Programs Innovation Center (EPIC), April 2025

Professional Affiliations/Honors

American Bar Association (ABA)

- Member since 2022
- Tort Trial and Insurance Practice Section (TIPS), Admiralty and Maritime Law Committee

American Society of Civil Engineers (ASCE)

- Member since 1998
- Member and Past President, ASCE Coasts, Oceans, Ports, and Rivers Institute (COPRI)

American Society of Mechanical Engineers (ASME)

- Member since 1998

Maritime Law Association of the United States (MLAUS)

- Adjunct Member since 2013

Society of Naval Architects and Marine Engineers (SNAME)

- Member since 1988
- Technical Chair, SNAME Chesapeake Section, 1992 to 1994

Project Experience

Vessel Incidents

- Investigated the capsizing and sinking of an offshore fishing vessel in Northern California that resulted in one fatality.
- Analyzed and modeled the capsizing and sinking of an open cockpit sailboat in Maryland that resulted in two fatalities.
- Investigated the sinking of an electric dredge in a coal tailings pond that resulted in one fatality.

- Investigated and testified regarding the capsize of a World War 2-era floating drydock while under tow from Seattle to Ensenada, Mexico, which resulted in its sinking within the Monterey Bay Marine Sanctuary.
- Analyzed the allision of a ship dragging its anchor with an anchored vessel in the Mississippi River.
- Evaluated post-incident repairs required for a large commercial vessel destroyed by fire while moored alongside a pier in Mexico.
- Investigated and testified about the allision of a recreational fishing boat with an oil platform off the Louisiana coast.
- Analyzed a collision between a containership and a chemical tanker in the Houston Ship Channel which resulted in hull damage to both vessels.
- Investigated and testified regarding alleged contamination of cargo tanks on a civilian barge by a tank cleaning company.
- Determined the cause of unique hull corrosion experienced on a river excursion vessel.
- Investigated a fatal personal watercraft accident in a lake where the operator drowned.

Marine Infrastructure

- Conducted numerous regular evaluations of piers, wharves, aids to navigation, floating docks, and other waterfront infrastructure at U.S. Coast Guard facilities nationwide. These inspections included both above and underwater evaluations of material condition, expected remaining service life, and recommended repairs. The underwater inspections were conducted by subcontracted divers using both surface-supplied air and SCUBA diving methods. Defects and deterioration of the structures were documented and compared with the previous inspection results.
- Evaluated damage to a large petroleum pier in Panama resulting from allision by a tanker.
- Assessed required repairs to a recreational marina resulting from a major fire that damaged the docks and destroyed several vessels.
- Evaluated damage and required repairs to a container quay after allision from a container ship.
- Investigated damage and evaluated required repairs to an inland recreational marina destroyed by a tornado in the Midwest.
- Evaluated damage to a Gulf coast shipyard where two floating drydocks partially sunk during a hurricane.

International Arbitration

- Conducted vessel maneuvering and port design analysis and testified in an arbitration involving a container terminal in Peru.
- Testified in an international arbitration regarding alleged design defects in an underwater cooling water culvert installation in Malaysia.

Intellectual Property

- Performed patent validity and infringement analysis and testified regarding alleged infringement of a patent related to an underwater laser scanning system.
- Performed patent invalidity and noninfringement analysis and testified regarding alleged infringement of a patent related to an amphibious dredge.

Publications

"Aberrant Barge Impact Loads on Hurricane and Storm Damage Risk Reduction system (HSDRRS) Floodwalls," R. Patev, G. Consolazio, **P. Hudson**, M. McCormick, W. Marr, J. Walker, & K. Hokens, U. S. Army Corps of Engineers, North Atlantic Division, Technical Report, March 2010.

Aground Upon the Sands: An Investigation into the Wave-Induced Migration of Grounded Ships, " **P.J. Hudson**, VDM Verlag Dr. Müller. ISBN: 9783639139532, 3639139534, November 2009.

"Engineering Investigation of Design Procedures for Closed Containment Marine Aquaculture Systems. Aquacultural Engineering," D.W. Fredriksson I. Tsukrov & **P. Hudson**, 39(2-3), 91-102, 2008.

"Alternative Expression for Havelock's Free-Surface Integral. U. S. Naval Academy, Engineering and Weapons Division," M. McCormick & **P. Hudson**, Report EW-01-08, January 2008.

"Overcoming Interoperability Challenges for Joint and Coalition Heavy Lift Transportation Operations. In Proceedings of ASNE Day," **P. Hudson**, J. Wilkins, S. Quinn, N. Hills, R. Wasalaski, & E. Ofosu-Apeasah, In Proceedings of ASNE Day 2005, American Society of Naval Engineers, Virginia Beach, Virginia, 25-27, April 2005.

"Analysis of the Added Mass of a Barge in Restricted Waters," M.E. McCormick, D. Kraemer, **P. Hudson**, & W. Nobel,. U.S. Army Corps of Engineers, Washington, D.C., ERDC/ITL TR-02-B, 2002.

An Analysis of the Motions of Grounded Ships," M.E. McCormick, & **P.J. Hudson**, International Journal of Offshore and Polar Engineering, 11(2), 99-105, 2001.

"A Low-Cost Wave-Sediment-Towing Tank," **P.J. Hudson**, M.E. McCormick, & S.T. Browne, Proceedings of the Fourth International Symposium on Ocean Wave Measurement and Analysis, San Francisco, California, 3-5, September 2001.

"SICEM vs. ASSET: A Systematic Comparison," **P.J. Hudson**, Naval Surface Warfare Center, Carderock Division, Report No. NSWCCD-20-TR-2000/02, 2000.

"Ship Integration Cost and Evaluation Model (SICEM)," **P.J. Hudson**, Naval Surface Warfare Center, Carderock Division, Report No. NSWCCD-26-TR-1999/09, 1999.

Presentations

“Boxes Overboard: The Rise in Containers Lost at Sea,” **P.J. Hudson**, presented at Admiralty Disruption 2023, New Orleans, LA, 3 March 2023.

“Maritime Accident Investigations and the MV Dali Incident,” **P.J. Hudson**, presented at Transportation Lawyers Association Annual Conference, Rancho Mirage, CA, 1 May 2025.