Brian Thomas

Naval Architect
Salvage Engineer

Thomas Naval Architecture
Professional Engineering PLLC
www.ThomasNavArch.com
T: 617.653.5725
E: Brian@ThomasNavArch.com

Profile

Experienced Naval Architect with over two decades of expertise, focusing on vessel salvage, design, and construction within both the United States Coast Guard and private sector. Recognized for developing inventive solutions to complex engineering challenges, catering to diverse clients in the marine industry.

Experience

Naval Architect & Salvage Engineer - *Owner: Thomas Naval Architecture* **2014-Present**

• Provide salvage engineering services. Responded to more than 35 marine casualties including the bulker Pacific Huron, hopper barge Bridgeport, tug Western Mariner, Spirit of Sacramento, fishing vessels Aleutian Isle, Speranza Marie, Sea Angles & American Challenger, and the DB Vengeance.
• Perform stability analysis for diverse clients throughout the marine industry. Analyze vessels ranging from dry docks and deep draft cargo vessels to small sailing passenger vessels vessel. Clients include Longitude, Glosten, Crowley Engineering, All American Marine, and others.
• Manage regulatory approval for stability, structural plans, general arrangements, structural fire protection and evacuation plans for new construction passenger vessels.
• Develop new “wizards” for Creative System’s GHS to simulate complex liquid load transfer operations and model cross-flooding per IMO requirements.
• Provide forensic engineering support for a variety of clients

Ship Stability & Modeling Instructor - *Independent Consultant* **2009-Present**

• Taught over 30 classes in ship stability and modeling throughout the United States and internationally. Clients have included: The US Coast Guard, US Army Corps of Engineers, LOC & Longitude, Glosten, Jensen Maritime, Crowley, Vigor Shipyards, Bollinger Shipyards, and others.

Naval Architect & Salvage Engineer - *USCG Marine Safety Center* **2005- 2014**

Salvage Engineer Response Team Leader:
• Led the Coast Guard’s team of salvage engineers responding to ~60 casualties per year.
• Analyzed hundreds of salvage operations throughout the United States and guided Coast Guard field commanders responding to vessel casualties. Notable cases include: MODU Kulluk, Deepwater Horizon, Davy Crockett, Eagle Otome, Jireh, DBL-152, Cougar Ace, Empress of the North, Sea Witch, Hurricane Katrina Recovery, Sperchios.
• Instructed Coast Guard engineers in naval architecture and salvage engineering.
Naval Architect:
• Assessed hundreds of passenger vessels, barges, offshore supply vessels, tugs, research vessels, and floating offshore installations for compliance with domestic and international standards for strength and stability.
• Worked directly with marine industry designers, owners, and builders to resolve complex safety and regulatory compliance issues involving novel vessel designs.
Forensic Engineer:
• Performed detailed forensic engineering analyses to determine proximate cause of complex marine accidents involving loss of life.
• Created detailed simulations of vessel casualties to support Coast Guard and NTSB casualty investigations. Notable investigations include: Bounty, Alaska Ranger, Deepwater Horizon.

Polar Icebreaker Logistics Manager - *USCG Engineering Logistics Center* **2001-2003**

• Led team of engineers evaluating the remaining service life of the Polar Class Icebreakers and developed conceptual designs and cost estimates for a comprehensive service life extension program.

Auxiliary and Damage Control Officer - *USCG Cutter TAMPA* ***1999-2003***

• Led 12 USCG engineers in the day to day operation, maintenance and repair of all auxiliary systems aboard a 270' USCG Cutter.
• Oversaw all aspects of ship's loading, stability, and damage control.
• Routinely developed innovative engineering solutions in response to underway equipment casualties.

Teaching

GHS Classes for Customers of Creative Systems, Inc
Multi day courses from 2009 until present. Curricula covered basic to advanced topics with a focus on giving students the skills to write sophisticated run-files for design, regulatory compliance, salvage operations, and research applications. Advanced topics include grounding analysis, multi-body interactions, and probabilistic damage analyses. Classes tailored to client's needs.

Coast Guard Small Passenger Vessel Plan Review Course
1 Week Course, annually 2015 to present. Curriculum includes all aspects of small passenger vessel plan review and approval. Students are USCG marine inspectors.

US Navy Summer Salvage Workshop
1 Week Course - Annually 2009 to 2012. Curriculum included class room lectures in naval architecture as well as practical lab exercises in ground reaction, parbuckling, and compressed air dewatering.

GHS & HECSALV Classes for US Coast Guard
3 Day Courses - Annually 2008 to present

Guest Lecturer US Coast Guard and Naval Academies - Intact & Damaged Stability
Annually 2008 to 2015

Forensic Support

Specialist LLC et al for Exoneration from Limitation of Liability
Client: Betancourt, Van Hemmen, Greco & Kenyon LLC - 2020
United States District Court Southern District Of New York
Sinking Analysis - Deposed September 2020 - Settled Prior To Trial

American Commercial Barges Lines LLC V. Kinder Morgan Bulk Terminals, Inc
Client: American Commercial Barge Lines - 2017
United States District Court Eastern District Of Arkansas Jonesboro Division
Global Structural Analysis - Settled Prior To Trial

United States of America v. Greastone Logistics, LLC; Glenn E. Dalton, Inc; Bertucci Contracting LLC; The M/V RIVER TITAN, and the Barge GD-896
Client: Glenn E. Dalton, Inc - 2017
United States District Court for the Western District of Kentucky, Paducah Division
Hydrostatic Analysis of Downflooding and Sinking - Settled Prior to Trial

Marquette Transportation Company, LLC v. Kinder Morgan G.P., Inc.
Client: Marquette Transportation Company, LLC - 2017
United States District Court for the Western District of Kentucky
Vessel Proximity and CPA Estimation - Settled Prior to Trial

Marine Casualties

Provided engineering analysis for the following USCG and or NTSB Marine Casualty Investigations: Beowulf (2014), Bounty (2013), Coral Princess (2013), Davy Crockett (2012), Deepwater Horizon (2011), Foxy Lady Ii (2014), Galtex (2007), Glen Fontenot (2012), J R Nicholls (2010), Lady Mary (2010), Majestic Blue (2010), Miss Kameryn (2013), Nahoku II (2007), F/V Patriot (2009), Seaprobe (2013), Valour (2017)

Research

James Cameron's "Titanic Dream Team" - 2011
Developed detailed flooding scenarios and GHS simulations to support a National Geographic/James Cameron TV special on the sinking of the RMS Titanic. Pioneered a new approach to tracking floodwater in complex progressive flooding scenarios.

Passenger Weight Impact Assessment - 2008
Led a team of naval architects in analyzing the impact of increased passenger weight on compliance with stability standards. The results of the study altered the course of the a major regulatory revision - preserving the margin of safety afforded to passenger vessels.

ALASKA RANGER Forensic Analysis - 2008
Developed detailed analysis of the sinking of the ALASKA RANGER for Coast Guard and NTSB investigators.

Optimal Control Theory Applied to Ship Maneuvering in Restricted Waters - 2005
Developed potential flow model of close quarters ship interaction forces. Demonstrated the effectiveness of optimal control theory based auto pilots in overcoming these interaction forces. (Master's Thesis)

Education

Massachusetts Institute of Technology
M.S., Naval Architecture, 2005 / M.S., Mechanical Engineering, 2005

US Coast Guard Academy
B.S., Naval Architecture, 1999 - With High Honors

Qualifications

Registered Professional Engineer
State of New York - 094108 / State of Virginia - 0402043124

Major Publications

Ryan, K., Tobey, E., Burke, D., Larkin, T., Taylor, T., Larwrence, A., and Thomas, B. "Liftboat Stability Using Energy-to-Incline and Varying Inclination Direction" Journal of Ship Production and Design, April 2024

Stettler, J.W. and Thomas, B.S. "Flooding and Structural Forensic Analysis of the Sinking of the RMS Titanic." Journal of Ships and Offshore Structures, December 2012

Myatt, L.L., Thomas, B.S., and Taylor, T. "Impact of Pontoon Vessel Geometry on Allowable Passenger Weight Using USCG Pontoon Simplified Stability Test" Journal of Ship Production and Design, Volume 26, Number 2, May 2010

Thomas, B. S. and Sclavounos, P. D. "Optimal Control Theory Applied to Ship Maneuvering in Restricted Waters." Journal of Engineering Mathematics, Volume 58, 2007