

# MELISSA HERTEL, P.E.

## Vice President



### Summary

Melissa Hertel has more than 35 years of experience in naval architecture and marine engineering. She has led the design team on dozens of vessels including fireboats, patrol boats, research vessels, split hopper dredges, workboats for the US Navy, and ferries. Melissa has helped clients through the bidding process and provided construction oversight for many vessels. Melissa is well versed in the rules and regulations governing ship design and has worked on US Coast Guard rule-making committees. She has developed emergency response plans for fuel suppliers and ferries and has responded to emergencies. Melissa provided salvage and wreck removal support for Titan Maritime. Melissa has investigated issues related to ship design and construction and currently leads multidisciplinary teams to provide forensic investigation, root cause analysis, litigation support, risk loss consulting, repair and retrofit design services.

### Areas of Technical Expertise

- Naval Architecture & Marine Engineering
- Ship Design & Construction Oversight
- Vessel Accident Investigations
- Emergency Response
- Salvage Support
- Forensic Engineering

### Education

- M.B.A., International Business (with Honors), 2000, Georgetown University
- M.A., Theology, 1996, Fuller Theological Seminary
- B.S., Naval Architecture & Marine Engineering, 1986, Webb Institute of Naval Architecture

### Registrations

- Licensed Professional Engineer in WA

### Professional Activities

- Past Member, Ad Hoc Panel on Ro-Ro Passenger Ferry Stability, Society of Naval Architects and Marine Engineers (SNAME) representing the Alaska Marine Highway Systems (AMHS)\* on technical panel examining IMO stability regulations after the 1994 MS ESTONIA disaster. Ran calculations to identify potential ambiguities or loopholes for clarification prior to release of the rules.
- Past Member, U.S. Coast Guard Commercial Fishing Industry Vessel Safety Advisory Committee\* providing naval architecture expertise during development of safety standards for smaller fishing vessels.

### Select Project Experience

#### Emergency Response

**Freight & Fuel Supplier**, Columbia River, USA.\* Emergency response for a fuel barge that had run aground. Performed calculations for lightering. The client was able to resume operations and avoid potential loss.

**Washington State Ferries**, WA.\* Developed emergency response support plan for a fleet of 24 vessels in 11 classes including geometry, loads & structure modeling, training program with regular drills and responded to several groundings.

#### Salvage Support Engineering

**M/V ANGELN**, St. Lucia.\* Performed grounding analysis to determine current and wave forces acting on a 435-foot-by-63-foot containership resting on its side on the sea floor in 105-foot-deep water. Determined ground tackle requirements to hold through hurricane season.

**KALEEN McALLISTER**, Baltimore, MD.\* Salvage engineering support after a tug hit an underwater object and sank off Baltimore's Locus Point. Performed analysis to support vessel stabilization, fuel discharge, lifting plan and weight / buoyancy calculations during lifting operations.

#### Naval Architecture and Marine Engineering

**Design of Custom Fire Boats, New Product Line**, Various locations.\* Design engineering and construction oversight services through testing and delivery of custom fire boats, including the first civilian boat with advanced Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) crew protection systems for Seattle. Lead project & design engineer for fireboats for Los Angeles (1, 3 & 5), Seattle (ENGINE 1 & LESCHI), and San Francisco (FIREBOAT 3 "St Francis").

\*Denotes work performed with previous employer.

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### Naval Architecture and Marine Engineering Continued

**Project Manager, Lead Project Engineer & Owner's Representative** for contract design, construction, and testing of King County Environmental Laboratory's 45'x18', 30 knot, Foil Assist Catamaran Research Vessel SOUND GUARDIAN and California Department of Water Resource's 60'x24', Catamaran Research Vessel SENTINEL.

**Project Manager & Lead Project Engineer** for contract design of Portland Fire & Rescue's fireboats KWANSUM and SKUKUM ATS.

**Prototype LNG Bunker Barge**, Savannah, GA.\* Concept design of a 126-meter-long LNG bunker barge PROGRESS with a capacity of 12,000 cbm (3.17 million gallons) and re-liquefaction plant. Worked with the American Bureau of Shipping (ABS) to develop a design basis prior to development of ABS rules and/or U.S. Coast Guard regulations that address this class of vessel.

### Litigation

Confidential Client, Long Beach, CA. Litigation support for a claim related to fireboat design and shipyard construction practices.

### Select Papers, Lectures and Publications

"Technical Validation of Existing U.S. Flagged Barges as a Feeder Solution for the U.S. Offshore Wind Industry:

- 1) Barge, Cargo and WTIV Load Properties Technical Report
- 2) Dynamic Barge Motions and Mooring Study Technical Report
- 3) Maneuvering Simulation to Indicate Operational Limits Technical Report
- 4) Weather Downtime Based on Metocean Data & Frequency Domain Motions FINAL Technical Report,"

National Offshore Wind Research and Development Consortium (NOWRDC) and New York State Energy Research and Development Authority (NYSERDA), Albany, NY, 2023 (lead author)

"Maritime Navigation Simulations to Measure Captain's Perceived Operational Limits for Wind Turbine Feeder Barges," ASME 2023 42nd International Conference on Ocean Offshore and Arctic Engineering (OMAEE), Melbourne, Australia, June 11-16, 2023 (co-author)

"Predicting Weather Down Time for an Offshore Wind Turbine Installation Vessel (WTIV) with Feeders Using Rapid Spectral RAO-Based Hindcast Vessel Motions in Wave Environment," ASME 2023 42nd International Conference on Ocean, Offshore and Arctic Engineering (OMAEE), Melbourne, Australia, June 11-16, 2023 (co-author)

"Using Simulation Programs to Design and Analyze Marine Transportation Systems," SNAME Maritime Technology Conference, Washington, DC, 2004 (co-author)

"Design, Analysis and Optimization of LNG Logistics using Simulation Programs," SNAME Texas Section 14th Offshore Symposium, Houston, TX, 2004 (co-author)

### CONTACT

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