



ENGINEER: JOHN M. ROPHAEL

JOHN M. ROPHAEL, P.E.

Engineering Design & Testing Corp.
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EDUCATION

2016 **Masters of Engineering, Mechanical Engineering**
 Rensselaer Polytechnic Institute, Hartford, CT

2011 **Bachelors of Science, Mechanical Engineering**
 Rutgers, the State University of New Jersey, New Brunswick, NJ

EXPERIENCE

January 2023 **Engineering Design & Testing Corp.
Hartford, Connecticut**

Consulting Engineer
Evaluate causes of failure of various mechanical components, systems, and devices by performing thorough on-site and off-site examinations and tests. Apply sound engineering principles, techniques, and calculations to support conclusions.

Provide written reports to clients in a clear and concise manner detailing engineering conclusions with supporting documentation and explanation.

Engage in client outreach to build, expand, and maintain a client base for the firm and ensure steady business. Provide high quality services in an expert, professional, and ethical manner to retain repeat clientele.

August 2011 **General Dynamics Electric Boat
Groton, CT**

Test Equipment Engineer
Designed multiple testing systems for various shipboard tests by performing extensive system analyses and calculations to ensure a robust design that exceeds rigorous technical requirements and supports aggressive testing schedules.

Resolved emergent issues during testing evolutions of multiple ship programs by engaging with tradesmen to fully analyze and understand problems and develop technically appropriate solutions without impacting testing and delivery schedules.

Improved team efficiency by integrating multiple process improvement initiatives.

Developed Matlab code and excel spreadsheets to centralize technical information.

Developed multiple procedures to train new hires in developing drawings and using software programs for typical duties.

Coordinated COLUMBIA class submarine test equipment design products and shipyard temporary systems. Worked with supervision to assign drawings scheduled for development to appropriate engineers and designers. Organized

appropriate supporting information to aid in drawing development by coordinating with ship system owners, test engineers, and test writers.

Construction Support Engineer

Resolved new construction issues on VIRGINIA class submarines by observing non-conformances, engaging with tradesmen and relevant stakeholders, and reviewing construction drawings and military standards.

Collaborated with other engineering departments to ensure resolutions to construction related issues are resolved in accordance with correct technical specifications, standards, and procedures.

Provided engineering resolution direction to tradesmen by submitting engineering reports in clear, concise language and in a timely manner to support construction and delivery schedule.

Component Engineer

Procured components for the COLUMBIA Class submarine by developing technical documentation that clearly communicates Navy requirements through various design phases of each project. Evaluated vendor proposals and design deliverables for compliance with technical, cost, and schedule requirements.

Supported component and ship development schedule by participating in program reviews, ship arrangement development meetings, and drawing disclosure development meetings.

Ensured designed components met technical requirements by witnessing testing relevant to the development of cognizant components.

EXPERIENCE

Forensic Engineering Investigations (partial list)

Overhead Door – Wallingford, Connecticut

Investigate to determine the cause of the collapse of an overhead door at a food storage warehouse that resulted in an injury.

Chiller Diesel Engine Smoke Event – Douglas, Massachusetts

Investigate to determine the cause of a smoke event on a diesel engine used to power a chiller at a cannabis facility.

Water Damage to HVAC Equipment – Providence, Rhode Island

Evaluate the scope of damage to heating, ventilation, and air conditioning equipment caused by a leak resulting from freeze damage to a fire suppression system.

Corrugator Machine Hydraulic System – Marlborough, Massachusetts

Investigate to determine the cause of malfunction of the hydraulic system of a corrugator machine.

Pipe Freeze Evaluation – *Old Saybrook, Connecticut*

Investigate to determine the cause of a pipe freeze that resulted in water damage to a house. Investigation included a heating analysis and an evaluation of the building's heating system and thermostats.

Edge Trim Granulator Impact Evaluation – *Merrimack, New Hampshire*

Evaluate the scope of damage to an edge trim granulator machine used for plastics manufacturing resulting from an accidental impact.

Hydronic Heating Fitting – *Stamford, Connecticut*

Investigate to determine the cause of a leak from a polymer fitting used in a hydronic heating system.

Dry Sprinkler System Leak – *Stratford, Vermont*

Investigate to determine the cause of multiple leaks in a dry sprinkler system at a ski resort.

Water Leak Evaluation – *Binghamton, New York*

Investigate to determine the cause of a water leak at a residence. Investigation included a heating analysis as well as a leak rate analysis to determine the length of time water was leaking.

Boiler Leak – *Sandwich, Massachusetts*

Investigate to determine the cause of a leak from a cast iron boiler. Investigation included metallography and water quality analysis.

Exhaust Fan Failures – *Allston, Massachusetts*

Product document and state building code review to determine if exhaust fans provided during new construction of a university building were provided with the correct components. The exhaust fans were failing more frequently than anticipated.

Chiller Failure – *Swampscott, Massachusetts*

Investigate to determine the cause of a chiller failure at an elderly care facility. Investigation included a water quality analysis and careful review of the chiller's service history.

Jaw Crusher Evaluation – *Danbury, Connecticut*

Investigate to determine the cause of jaw crusher hopper failure that resulted in the injury of a construction worker.

Geothermal Heat Pump Evaluation – *Lee, Massachusetts*

Investigate to determine the cause of a geothermal heat pump's malfunction in a greenhouse at a cannabis growing facility. Investigate to determine the cause of a malfunction of a geothermal heat pump's dehumidification function in another greenhouse in the same facility.

REGISTRATIONS and CERTIFICATIONS

Registered Professional Engineer in Connecticut (License # 33250)
Registered Professional Engineer in Maine (License # 17926)
Registered Professional Engineer in Massachusetts (License # 58015)
Registered Professional Engineer in Vermont (License # 018.135505)
Registered Professional Engineer in Rhode Island (License # 17429)
Registered Professional Engineer in New Hampshire (License # 17526)
Registered Professional Engineer in New York (License # 107742)
Registered Professional Engineer in Pennsylvania (License # 098423)
National Council of Examiners for Engineers and Surveying Record (#13-906-08)

PROFESSIONAL ORGANIZATIONS

American Society of Mechanical Engineers (ASME)
ASM International
National Fire Protection Association (NFPA)