

Robson Forensic

Engineers, Architects, Scientists & Fire Investigators

BARTLEY J. ECKHARDT, P.E. Marine and Mechanical Engineer

Experienced in the design, installation, testing, startup, safe operation, maintenance, modification, troubleshooting, upgrade and repair of marine and industrial machinery, equipment and systems.

Manufacturing Processes: General machining, metal forming, welding, brazing, grinding, soldering, oxyacetylene cutting, metal flame spraying, aligning, shrink fitting, slitting, composite laminating, blending, drying, liquid and dry filling, dedusting, dry solids handling, slurry handling, liquid handling, paint preparation, painting.

Piping and Pressure Vessels: Piping and Pressure Vessels (vacuum up to hydraulic pressures) – pipe welding and threading, flanges, butt-weld fitting, socket weld fittings, thread-o-let, sock-o-let, ASME B31.1 and B31.3, ASME Sections VIII and IX, National Board inspection Code (NBIC) requirements, ASME Code stamping – fired, unfired and repaired pressure vessels, piping supports, insulation, inspection, fouling, corrosion, failure analysis, methods for working pipelines live, use of saddles, blind flanges, spectacle flanges, bypass and blanking fittings such as pigs, stopples, plugs, methods for damage control and emergency repair methods, Non-destructive Examination (NDE) techniques.

Manufacturing Procedures, Standards and Specifications: Pressure vessels, power piping, pipe welding, structural welding, international steel specifications, sanitary manufacture, pharmaceutical manufacture, drawing standards, hazardous area requirements.

Testing methods and specifications: Hydrostatic testing, mil-spec shock and vibration testing, static and high speed dynamic balancing, acceptance sampling, material testing, thermal mapping, standpipe, sprinkler and inert gas fire system testing.

Management systems and standards: Quality systems and performance sampling.

Engineered Systems: Steam, condensate, feedwater, liquid fuel systems, aircraft refueling, natural gas, process water, potable water, deionized water, refrigeration, salt water service, ballast, tanker cargo, fire protection, waste water, hydraulic power, pneumatic power, pneumatic control, heating, ventilating and air conditioning, clean room, vacuum, exhaust, high pressure tree spraying, commercial laundry.

Machinery: Diesel engines, high-speed centrifuges, cable winches, pumps, drive gears, clutches, compressors, distillers, heat exchangers, chillers, cooling towers, air handlers, valves, boilers, turbines, jib cranes, monorail cranes and hoists, overhead bridge cranes, milling machines, lathes, slitters, presses, check weighers, screw conveyors, belt conveyors, roller conveyors, spreader beams, lifting and rigging gear, v-blenders, pony mixers, hammermill grinders, glue dispensers and applicators, reciprocating die cutters and perforators.

Machinery Safeguarding: Safety interlocks, drive guards, operational guards, pinch point guards, failsafe modes, caution and warning signs, instruction manuals.

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Safety Procedures and Requirements: EMS, material safety data sheets, right-to-know, confined space entry, lockout/tagout, high-rise scaffold, training, policies, inspections, OSHA requirements.

Tools: Reciprocating pneumatic hammers, rotary pneumatic drills and impact wrenches, gas-powered chain saws.

Buildings: Facilities systems, hospital systems, prison systems, façade pinning, fire protection, code conformance, inspections, industrial and domestic hot water systems, water and chemical mixing, education, pressure spraying, tempering, and injection. Preserving fire protection during construction, renovation and demolition. Monitoring and supervision of inspection, repair, testing and certification of gas and water fire protection including standpipes, sprinklers and inert gas systems.

Products: Bicycles, motorboats and associated equipment, jet skis, wave runners, sailboats and associated equipment, canoes, rowboats, kayaks and associated equipment.

Regulatory Compliance: Pharmaceutical validation, air quality permitting, New York City permitting.

PROFESSIONAL EXPERIENCE

2001 to present	Robson Forensic, Inc. <i>President and CEO</i> <i>Midwest Operations Manager</i> <i>Ohio Area Manager</i>	2006-present 2004-2006 2001-2004
	Provide technical investigations, analysis, reports, and testimony toward the resolution of litigation involving marine, manufacturing and other mechanical engineering issues.	

2001 to present	Fournier, Robson & Associates, LLC <i>Associate</i>	
	Provide specialized mechanical engineering for buildings, machinery, products and systems.	

1995 to 2002	Technology Development, Inc. <i>President and Owner</i>	Specialty Engineering
	Engineering and troubleshooting of highly specialized machinery, products and systems. Developed several portable process plants; developed slitters and modified 200 ton pod presses for the manufacture of structural composites; executed validation of pharmaceutical products and processes to FDA requirements; developed	

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proprietary products and processes for structural composites and laminates; developed proprietary distillation processes for vitamin and flavor intermediates; engineered liquid, gas and mechanical systems for a huge commercial laundry; designed HVAC systems for archive preservation; refined testing and sampling criteria for façade pinning; modified tub grinders for life extension of the hammers. Reversed engineered and manufactured large buffer carriage assemblies for the Staten Island Ferry. Taught power plant operations and safety courses; executed evaluations of design, maintenance, operational and/or construction defects in power plants for New York Department of Corrections.

Mid-rise and high-rise “arm’s length” façade and roof inspections. Design and site monitoring of mid-rise and high-rise demolition and renovation projects in New York City, including maintaining life safety provisions such as fire protection and security during demolition, construction, roofing and hot work. Instructed power plant and facilities engineers in the risks of hot work, proper explosive gas venting, maintenance of fire protection systems and proper use of fire watches.

1983 to **Centrico, Inc.** Turnkey Systems Manufacturer
1995 *Director of Engineering*

Managed the design, test and quality of custom turnkey process systems, usually incorporating high speed centrifuges, pumps and heat exchangers; Developed the high pressure (1000 psig) fuel injection system for the world’s largest gas turbine; developed the first steam sterilizable system for cell separation for injectables; developed systems for sophisticated military centrifuges to international requirements; evaluated equivalency of numerous European steels with U.S. standards; developed engineering procedures for ISO 9000 compliance; developed weld procedures to ASME IX and AWS D 1.1; engineered systems for pharmaceutical, marine, power, food, biotechnology, and petrochemical applications in accordance with appropriate industry standards; developed rigging beams, hoists, and rigging schemes for installation of large systems; developed a test stand and related procedures for hydrostatic testing of elaborate systems; developed thermal mapping method to ensure “kill” temperatures in elaborate biotech systems; evaluated methods for static and dynamic balancing, internally and externally excited vibration; provided seismic analyses as required.

1979 to **U.S. Merchant Marine** Ship Design and Operations
1983 *Engineering Officer*

Various assignments as engineer aboard ocean-going tugboats, an oil exploration drillship, and the Training Ship Empire State; taught basic marine engineering, ran thermo and fluid labs, taught machine shop (turning, milling, welding, grinding), ran strength of materials labs; worked as a senior marine engineering consultant with M. Rosenblatt & Son, Inc. in the basic ship design and mechanical groups. Executed

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designs of inert gas and wet fire protection systems. Supervised hot work and fire watches and put plans in place for emergency fire protection during maintenance and repair activities.

PROFESSIONAL CREDENTIALS

Professional Engineer, NCEES, New York, Ohio, Kentucky, Pennsylvania, Alabama, West Virginia, North Carolina, Michigan, New Jersey, Florida, Minnesota, Delaware, Connecticut, Illinois, Maryland, Iowa, Kansas

Chief Engineer (Limited-Near Coastal), Motor/Gas Turbine Vessels, Unlimited Horsepower (2005-2010)

Second Assistant Engineer, Motor/Gas Turbine Vessels, Unlimited Horsepower (1982-2010)

Third Assistant Engineer, Steam Vessels, Unlimited Horsepower (1979-2010)

Designated Duty Engineer of Steam, Motor/Gas Turbine Vessels, Unlimited Horsepower (2005-2010)

OS (Ordinary Seaman) (1979-2010)

SD(FH) (Steward Department [Food Handler]) (2005-2010)

Any Unlicensed Rating in Engine Department (1979-2010)

LBMAN (Lifeboatman) (1979-2010)

STCW-95 (Standards for Training, Certification, and Watchkeeping for Seafarers) (2005-2010)

Honorable Discharge, Lieutenant, U.S. Naval Reserve (1989)

EDUCATION

B.E. Marine Engineering, SUNY Maritime College at Fort Schuyler, 1979

Continuing Coursework and Seminars:

Ethical Decision-Making for Engineers, 2012

Steam Turbines, 2011

Thermodynamics I: An Introduction, 2011

Heavy Construction Equipment Basics – Lifting, 2011

Introduction to Rain Gardens, 2011

Steam System Basics & Performance Improvements, 2011

Preventing and Investigating Accidents, 2010

OSHA Demolition, 2010

Safety: Fire Part 2 – Fire Protection Equipment & Techniques, 2010

Safety: Fire Part 1 – Workplace Fire Hazards & Preventing Fires, 2010

Site Safety Risk and Liability, 2010

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The Need for Additional Human Factors Considerations in Ship Operations, 2010
Technology and Applications for Subsurface Imaging in Construction, 2009
Ex Situ Remediation Technologies for Contaminated Soils, 2009
Renewable Energy Generation, 2009
OSHA Safety: Drilling, 2009
Plumbing: Lead Work, Silver Brazing & Soft Soldering, 2009
Petroleum Engineering: Liquid Process Piping – Introduction and Design Strategy, 2009
Fuel Cell Power Systems, 2009
Petroleum Engineering: Liquid Process Piping – General Piping Design, 2008
Swimming Pools: Mechanical and Hydraulic System Design, 2008
Coastal Engineering: Storm Surge, 2008
Coastal Engineering: Sea Level Rise, 2008
Coastal Engineering: Hurricanes – The Basics, 2008
In Situ Remediation Technologies for Contaminated Soils, 2008
Pipe Support Systems, 2008
Maritime Accident Investigation Analysis and Reconstruction – 40 Hours – World Maritime University
Engineering Ethics I, P.E.C.E. lecture, 2007
Marine Fuels: Specifications, Testing, Purchase and Use, ASTM training, 2007
Major Testing Techniques for Plastics, ASTM training, 2007
EMD Diesel School Certificate
New York State lockout/tagout and confined space training
Offshore helicopter refueling training
ISO 9000 auditor training
Naval Officer training in ship's shoreside maintenance, NBC defense
Kayak self-rescue course, Shank's Mare, Pennsylvania, 2006

PROFESSIONAL MEMBERSHIPS

ASME (American Society of Mechanical Engineers)
ABYC (American Boat and Yacht Council)
SNAME (Society of Naval Architects and Marine Engineers)
IAMI (International Association of Marine Investigators)
ASTM (American Society for Testing and Materials)

PATENT

In-situ process for the remediation of contaminated soil

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PUBLICATIONS and PRESENTATIONS

Eckhardt, B. J., Vigilante, W. J., Jr., & Coste, P. F. (2012) Visibility Factors in Small Boat Collisions. Presented at the *2012 International Marine Forensics Symposium*. National Harbor, MD: The Society of Naval Architects and Marine Engineers & American Society of Naval Engineers.

OTHER

Instructor in power plant operations and safety, New York State Department of Corrections and Office of Mental Health
Instructor in power plant operations and safety for offshore towboat operators
Recreational Boater, 1960-present
EMT (Emergency Medical Technician), 1975-2002, Various Agencies
Co-author, U.S. Navy Towing Manual, 1983, (Under NAVSEA Contract)
Eagle Scout, 1971
Avid canoeist and sea kayaker

EXPERT NOT RECOMMENDED