



## Lee E. Sale, P.E.

Principal Consultant

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## Background

Mr. Lee Sale is an experienced, degreed, and licensed mechanical engineer in the investigation of failures involving mechanical equipment and systems, heavy lifting and transport equipment, and industrial facilities. He has over 20 years of experience in commercial, heavy industrial, manufacturing, oil and gas, shipyard and shipbuilding, marine port facilities, and lifting and handling equipment.

His expertise includes cranes, rigging, lifting and handling, heavy transport, mobile equipment, automotive and marine lifts, and onboard vessel mechanical equipment. Mr. Sale is a certified crane operator and crane and rigging inspector. He is experienced with the investigation of accidents and failure analysis and has provided expert testimony. Mr. Sale is a licensed professional engineer in various states and is a registered professional engineer with the National Council of Examiners for Engineering and Surveying.

## Professional Engagements

### • Project Management

- Refit, repaired, modified, and erected revolving portal cranes, rail-mounted overhead cranes, and rail-mounted gantry cranes.
- Supervised disassembly, repairs, and erection of tower cranes used in industrial manufacturing facility.
- Provided technical support for mobile crane operations, maintenance, and rigging inside of shipbuilding facility.
- Conducted routine and periodic inspections of portal, overhead, gantry, mobile, tower, hoists, and rigging used inside of shipbuilding facilities.
- Designed and fabricated large rigging and spreader beams for use with overhead and gantry cranes in lifting ship sections.
- Engineered, fabricated, and installed tie-downs for large shipbuilding cranes to meet daily and storm wind conditions.
- Developed maintenance procedures for overhead, gantry, and portal crane machinery.
- Designed and fabricated travel assemblies for rail-mounted cranes.
- Developed estimates of wind loads on rail-mounted revolving-portal-crane structures.
- Developed heavy transport methods and support for large ship sections.
- Designed and fabricated lifting-lugs, pad eyes, for lifting large steel structures.

- Designed and fabricated wire-rope rigging for use lifting sections of ships.
- Designed and fabricated crane-hoisted personnel platforms.
- Developed specifications and designs for installation of pedestal cranes for oil and gas production deepwater platforms.
- **Disaster Recovery**
  - Conducted repairs to shipyard gantry cranes damaged by Hurricane Katrina. Responsible for evaluation, specification, and contractor supervision of repairs of wind and water-damaged cranes.
  - Evaluated rigging and crane components damaged by flood waters of Hurricane Katrina.

## Forensic Engagements

- **Crane Accident Analysis**
  - Evaluated fatal mobile crane accident, developed a report with opinions that were used to settle the matter.
  - Evaluated barge-mounted crane that was involved in a personal injury that occurred when conducting maintenance of the crane. Provided testimony that was used to settle the matter in litigation.
- **Heavy Equipment**
  - Evaluation of damage to mobile crane boom-lift hydraulic cylinder to determine repair or replacement requirements to restore operation of the hydraulic system.
- **Rigging**
  - Examined and evaluated rigging slings and hooks to determine compliance with ASME standards.
  - Evaluated plate clamp and beam clamp rigging involved in a personal injury in a manufacturing setting.
- **Transport Loads and Equipment**
  - Examined a forklift and crane that were used in tandem to offload HVAC components where an accident occurred that resulted in a personal injury. Issued opinions that were used to settle litigation.
  - Examined, evaluated, and valued damage to boat lifts used for lifting small vessels.
- **Residential and Commercial Mechanical Systems**
  - Examined and evaluated mechanical plumbing systems, HVAC, and fire water systems to determine the cause of water leaks at high-rise commercial and residential buildings.
  - Examined and evaluated water-damaged elevator systems in high-rise commercial and residential buildings.
  - Examined and evaluated mechanical systems at single-family residences that caused water damage.

## Professional Experience

- **Rimkus** **2025 – Present**
  - Principal Consultant  
Provide consulting services to clients with mechanical-related matters both inside and outside of litigation. Conduct site inspections and field investigations, and perform forensic engineering and analysis of incidents involving mechanical equipment. Equipment consulting services include cranes, rigging, hoists, hydraulics, pneumatics, piping, vessel onboard systems, and building mechanical systems. Advise clients with matters involving heavy mechanical equipment and facilities, including shipyards, shipbuilding, marine ports, shipping terminals, fabrication, and heavy industrial manufacturing. Provide and support forensic conclusions to be used in legal proceedings.

- **SEA, Ltd.** **2021 – 2025**

  - Mechanical Engineering Consultant

Conducted field investigations and performed forensic engineering and analysis on incidents involving mechanical equipment including cranes, rigging, hoists, hydraulics, pneumatics, HVAC, and building mechanical systems. Advised clients with heavy mechanical equipment and facilities, including shipyards, shipbuilding, marine ports, shipping terminals, fabrication, and heavy industrial manufacturing. Provided consulting and expert services, including reports and support of forensic conclusions in legal proceedings.
  
- **Lee E. Sale, P.E.** **2016 – 2021**

  - Independent Consulting Professional Engineer

Provided expert mechanical engineering consultant services for engineering designs, inspections, and accident and failure analysis. Consulted on projects in heavy industrial and marine facilities that included: rigging, material lifting handling, and cranes. Additional consultant projects included: residential, commercial, industrial, shipyard and shipbuilding, ship construction, marine port and terminal facilities, oil and gas offshore deep-water and shore-based facilities, fixed and rotating equipment, diesel and gas engines, generators, pressure washers, heavy transport, mobile equipment, automotive, marine vessel, and onboard vessel equipment. Shipyard and shipbuilding consulting provided for steel structure welding fabrication shops, machine shops, and blast and paint facilities.
  
- **Madsen, Kneppers & Associates, Inc.** **2016 – 2016**

  - Project Manager and Senior Mechanical Forensic Engineering Consultant

Provided expert services for forensic engineering projects of mechanical systems. Consultant expert for property and equipment owners, insurance adjusters, and litigators involved in facilities and equipment claims. Advised clients with mechanical facilities, including heavy industrial facilities, HVAC, fixed and rotating equipment, solar power generation projects, cranes, and vehicles.
  
- **Jacobs Engineering/Shell International Exploration** **2014 – 2015**

  - Facilities Mechanical Systems Engineer for Deep-water Platform

Mechanical design engineer of facilities utilities for Gulf of Mexico deep-water project “Vito” floating production and storage platform. Responsible for engineered systems that included: gas turbine utilities, backup power generators, onboard fuel storage and delivery, mechanical utility systems of main power turbine generators, support systems for artificial gas lift turbine-powered compressors, nitrogen generation for blanketing and sealed gas systems, nitrogen generation and storage vessels, USCG-regulated instrument air systems, hypochlorite generators for cooling water treatment, sewerage, and wastewater treatment systems, material handling studies for determination of vessel board lifting and handling solutions, revolving pedestal cranes, overhead cranes, and monorail hoists.
  
- **Huntington Ingalls Shipbuilding (formerly Northrop Grumman Shipbuilding)** **2003 – 2014**

  - Project Manager and Senior Mechanical Forensic Engineering Consultant (2009 – 2014)

Process-oriented manufacturing, planning, scheduling, and production engineering support for shipbuilding facilities and ship construction. Planned and improved production methods, including layout, production flow, tooling, and production equipment material, as well as fabrication and assembly methods. Provided guidance to the engineering department regarding design concepts and specifications requirements to best utilize equipment and manufacturing techniques. Developed methods for simplifying the erection strategy of the modules and blocks of a vessel. Originated and supported research and development projects with respect to cost reduction and construction optimization. Served as the facility and vessel programs lifting, handling, transport, and crane expert consultant for the ship construction processes.

- **Facilities Engineering Specialist – Cranes (2003 – 2009)**  
 Shipbuilding facilities specialist-engineer for maintenance and operations of cranes, lifting, handling, and transport equipment for the Ingalls, Avondale, and Gulfport shipbuilding facilities. Responsibilities for facilities engineering included maintenance, operations, project management, and technical support. Types of lifting equipment included: hand rigging, mobile cranes, pedestal, jib, gantry, revolving portal, overhead, bridge, goliath gantry, tower, rubber-tired, rail-mounted, straddle carriers, scrap handlers, steel handling, magnet, slewing, hydraulic, and friction cranes. Responsible for all onboard crane systems, including clutch hoist systems, hydraulic systems, travel systems, wire rope hoists, brakes, sheaves, booms, towers, king posts, masts, operator’s cabins, all controls, and onboard power systems. Major crane projects included new specifications and project management, overhaul and refurbishments, modifications, installations, hurricane repairs, and removal/disassembly.
  
- **Avondale Shipyard (formerly Litton Ship Systems) 2001 – 2003**
  - **Mechanical Engineer – Facilities Engineering and Maintenance**  
 Designed, modified, and fabricated mechanical equipment for use inside shipbuilding facility and in support of commercial and military vessel construction programs. Managed and engineered facilities projects from design to completion, including scheduling and managing individual capital project budgets. Designed modifications and oversaw installation of centrifugal chilled-water-cooled air compressor plant modifications. Designed critical backup power generator installation for emergency services buildings. Designed indoor facility steel handling overhead crane modernizations and new installations. Refit, modified, and erected revolving portal/gantry cranes used for ship construction. Refit and modification of steel yard plate-handling overhead magnet cranes. Managed maintenance and contract crews working on capital and overhead projects.

## Education and Certifications

- **Master of Business Administration:** University of New Orleans (2008)
- **Mechanical Engineering, B.S.:** Louisiana State University (2000)
- **Licensed Professional Engineer:** Alabama, Florida, Illinois, Louisiana, Mississippi, Missouri, New York, North Carolina, North Dakota, Texas, Virginia, and West Virginia
- **Crane Inspection & Certification Bureau (CICB):** Certified Overhead Crane/Hoist and Rigging Inspector (2024); Certified Mobile Crane and Rigging Inspector (2023)
- **National Commission for the Certification of Crane Operators (NCCCO):** Certified Mobile Crane Operator, Telescopic Boom and Swing Cab (2024)
- **Crane Institute of America (CIA):** Certified Tower Crane Inspector (2025)
- **Member:** American Society of Mechanical Engineers (ASME)
- **Member:** National Academy of Forensic Engineers (NAFE)
- **Member:** National Society of Professional Engineers (NSPE)
- **Listed:** National Council of Examiners for Engineering and Surveying (NCEES)

## Continuing Education

- **ASME B30 Committee:** B30 Sub-committee Meetings (2022)
- **Crane Institute of America (CIA):** Tower Crane Inspector Training Course (2025)
- **Crane Inspection Certification Bureau (CICB):** Mobile Crane Operator Training Course (2024); Overhead Crane and Hoist Inspector Training Course (2024); Mobile Crane Inspector Training Course (2023); Rigging

- Inspector Training Course (2023)
- **Delta Process Equipment:** Centrifugal Pump Fundamentals (2018)
  - **Jacobs Engineering/Shell:** Facilities Engineering, Upstream Oil Field 101 (2015); Facility Engineering Training, Automation and Control (2014); Facility Engineering Training, Gas Handling Systems (2014)
  - **Louisiana Engineering Society (LES)/National Association of Corrosion Engineers (NACE)/American Welding Institute (AWI):** Cathodic Protection to Control Tank Weld Cracking (2018)
  - **Professional Development Hours Online (PDHOnline):** IBC Life Safety (2024); 2021 Florida Advanced Building Code Accessibility, Application, Admin, 8th Edition (2024); Overview of Building Elevator Systems (2023); 2012 International Building Code – Structural Design (2021); Air Moving Systems and Fire Protection, (2021); MVAR – Bumper Damage Analysis (2021); Life Safety Code 101 (2021); Steel 101 – Overview of Cold-Formed Steel Structures (2021); Welding Technology and Inspection Procedures, AWS D1.1 (2021); Understanding Life Safety Code (2020); IBC Classification of Occupancy and Construction Types (2020); NFPA 101 – Life Safety Code (2020); MVAR Topic 1 Tire Failures (2020); Forensic Analysis of Stair Descent Falls (2020); Basics of Forensic Engineering Part 2 (2020); Basics of Forensic Engineering Part 3 (2020); Basics of Forensic Engineering Part 4 (2020); Basics of Forensic Engineering Part 5 (2020); Intro to Architectural Design (2020); MEP of Design of Building Spaces (2019); Intro to Fire Suppression Systems Inspection, Testing, and Maintenance (2018); Best Practices for Designing Fire Service Features (2018); Intro to Commercial Truck Fires (2018); Intro to Fire Protection Systems, Course No. M110 (2018); Expert Witness Testimony Do's and Don'ts (2018); ADA Standards for Accessible Design, Course No. G101, (2018); Commissioning Mechanical Systems (2017); Concrete Pavement, Distress Identification (2016); Calculating and Designing Wood Framing Components and Light Frame Construction (2016); Basics on Forensic Engineering, Part 1 (2016); Coastal Building Construction Requirements (2015); Indoor Air Quality (2015); Thermal Stress and Shock of Materials (2015); Plumbing Systems (2015); ASME Pressure Vessel Calculations, ASME Sect. 8, Div. 1 (2015); Guidance on the 2010 ADA Standards for Accessible Design (2015); ID Risk Factors in Machinery (2013); Electric Overhead Traveling Cranes and Hoists, Course No. M245 (2013); Personal Protective and Life Saving Equipment (2013); Industrial Process Equipment Testing, Inspection, and Commissioning (2013); 2012 IBC Classification and Construction Types (2013); International Building Code Structural Design 2006 (2011); Design and Evaluation of Overhead Lifting Lugs (2011); Design of Residential Buildings in (High-Wind) Coastal Areas (2011); Assessing Vulnerability of Coastal Sites (2011)
  - **RedVector:** Rigging Part 1 Utility Linesman Rigging (2023); Impacts of the 2010 ADA Guidelines (2023); Rigging Part 2 Utility Linesman Rigging (2023); Heavy Equipment and Safety Introduction (2023); Forklift Safety (2023); Rough Terrain Forklift Safety (2023); Worksite Safety 09: OSHA Materials Storage (2023); Transmission and Distribution: Transmission Line Safety (2023); ADA Guidelines 2010: Plumbing Elements and Facilities, (2023); Worksite Safety 07: OSHA Cranes and other Hoists (2022); Wire Rope Basics (2022)
  - **Royal Dutch Shell:** HSSE Human Factors Engineering, Safe Working Practices (2015); Accident Control Techniques, Safe Working Practices (2015); 20-Ton Crane Operation, Safe Working Practices (2015); Nitrogen Safety, Safe Working Practices (2015); Capital Projects Risk Engineering, Safe Working Practices (2015); Fire Lightning and Explosion Hazards, Safe Working Practices (2015); Line and Equipment Specs and Drawings – Safe Working Practices (2015); Construction Risk Management – Safe Working Practices (2015); Asset Integrity and Process Safety Management, Safe Working Practices (2014)
  - **Sundyne Corporation:** Sundyne Pump Instruction Course (2018)
  - **Vector Solutions:** 2021 IBC Fire Safety (2023); Crane and Hoist Rigging Safety for Canada (2023); Bucket Trucks (2023); 2020 Advanced Florida Building Code – Building 7th Edition (2023); Understanding Fire Sprinkler Drawings and Calculations (2023); Preventing Commercial Building Fires: The Importance of NFPA 285 (2023); Building Systems for Designers – Water Supply, Distribution, and Waste Systems (2023); OSHA

Fall Protection (2023); Hand and Power Tools – Construction Worksite Safety (2023); Steel Erection Safety (2023); ADA 2010 General Site and Building Requirements (2023); Tree Trimming Part 2 (2023); Safe Work Permit (2023); OSHA 10-hour Construction Program (2023); Overhead Crane Operational Safety for Canada (2023); Hydraulics: Actuators (2023); Hydraulics Component Inspection and Replacement (2023); Hydraulics Troubleshooting (2023); Hydraulics Maintenance (2023); Heavy Construction Equipment Basics – Lifting (2023); Crane Lift Planning (2022); Truck Mounted Cranes (2022)