CRAIG A. SYLVESTER PE

PRINCIPAL FORENSIC ENGINEER

Education

MS, Mechanical Engineering, Naval Architecture/Mechanical Engineering Program Naval Postgraduate School, 2004

BS, Manufacturing Engineering, Naval Science/Manufacturing Engineering Program Miami University, 1997

Registrations

PE: WA

Certifications

Defense Acquisition Workforce Improvement Act (DAWIA) Production, Quality, Manufacturing Level II, 2008

U.S. Navy Diving and Salvage Officer, 2004

Awards

Boeing Commercial Airplanes Meritorious Invention Disclosure Award, 2016
Autonomous Rotary Vacuum Unit

Security Clearances

DoD, Top Secret

Contact

+1-206-508-5705
craig@sylvesterforensics.com

Bio

Craig Sylvester is a former U.S. Navy mustang officer and licensed Mechanical Engineer with more than 25 years of experience operating, maintaining, inspecting, and designing industrial equipment around the world. Craig's expertise in industrial systems is built on his early work as an electronics technician, along with formal education in manufacturing, mechanical engineering, and naval architecture. His deep practical knowledge of these systems and detailed understanding of what and how things can go wrong was earned through hands-on work as a Navy engineer and salvage officer, Boeing equipment engineer, and forensic engineer investigating a wide range of losses. As a result, Craig has earned the trust of clients across the forensic industry, leading large loss insurance investigations, supporting product liability case work, personal injury litigation support, and providing expert testimony in depositions, at trial, and for arbitration proceedings.

Professional Highlights

PRINCIPAL FORENSIC ENGINEER, SYLVESTER FORENSICS INC, MUKILTEO, WA, 2023 TO PRESENT

Principal Mechanical Engineer conducting mechanical and material failure analysis for commercial and residential losses, including large loss investigations involving industrial and marine facilities, heavy equipment, and vessel fires, collisions, allisions, and groundings. Experience with the evaluation of a variety of product and component failures including but not limited to elevators/escalators, industrial pumps, motors, steam/gas/electric ovens, tanks and pressure vessels, heavy equipment, powered lifts, doors, plumbing, fire suppression equipment, HVAC, and other commercial and consumer and products. Case work experience involving watercraft and large vessel flooding and fires. Evaluation of damage including fire and flooding resulting from the failure of plumbing and mechanical systems, components, and building materials. Consults with manufacturers on product development and improvement, including the design and construction of testing equipment and the development of test protocols.

PRINCIPAL MECHANICAL ENGINEER, JENSEN HUGHES, MOUNTLAKE TERRACE, WA, 2020 TO 2023

Served as Director of Mechanical Engineering, Forensics, Northwest Operations Leader, and Principal Mechanical Engineer. Performed a wide range of accident and equipment failure investigations for clients across the US.

MARINE PROGRAM MANAGER/PROFESSIONAL ENGINEER, KMS SOLUTIONS LLC, MELBOURNE, FL, 2016 TO 2020

Engineer of record for multidisciplinary technical team supporting U.S. Navy underwater RDT&E projects including acoustics studies, UUV testing and development at unique NSWCCD facility, Bangor, WA. Built agile team to deliver innovative, cost-effective engineering solutions the customer described as "game changing." Conducted underway operations and maintained the facility's primary 200-ft ocean going barge, auxiliary crane barge, and four support vessels.

Engineered and executed the first-ever successful deep-water moor, providing a stable vessel for critical underwater systems testing. Inspected and maintained marine facility structures, including a one-of-a-kind pontoon system centered around a repurposed section of the Seattle I-90 floating bridge as part of a $10M SEAPORT-e project.

Professional Highlights (Continued)

PRODUCTION EQUIPMENT AND AUTOMATED TOOLING ENGINEER, BOEING COMMERCIAL AIRPLANES, EVERETT, WA, 2012 TO 2016

Responsible for multimillion-dollar equipment acquisitions from concept to delivery, leading capital equipment project teams to design, build, test, certify, repair and maintain FAA-approved equipment systems in support of complex automated aircraft assembly operations. Designed unique data acquisition test protocols for production system components, providing valuable information for machine troubleshooting and optimization. Developed award-winning automated, laser-controlled foreign object debris collection device (FOD) for computer numerical control (CNC) aircraft floor drillers.

MARINE MECHANICAL FORENSIC ENGINEER/VICE PRESIDENT, MDE INC, SEATTLE, WA 2010 TO 2012

Investigated and performed root-cause analysis as the lead marine forensic engineer supporting commercial and private clients. Leveraged expertise and credibility as a U.S. Navy qualified Surface Warfare and Engineering Duty Salvage Officer to perform marine industrial safety surveys, vessel stability analysis, underwater inspections, and forensic investigations involving marine facility damage claims, commercial vessel losses as a result of fire and explosions, recreational boating personal injury accidents, and private marine structure failures.

Applied mechanical and electrical engineering expertise to conduct investigations into marine, construction, and industrial site accidents, as well as vehicle and residential mishaps involving electrical equipment failures, industrial and heavy machinery, mechanical system defects, marine fires, and marine structure collapses. Collected physical evidence and completed mechanical/electrical systems studies to determine probable origin and cause of fires and explosions on marine vessels, including private yachts of 100 feet or more, as well as state-owned ferries. Investigated more than 25 complex cases and served as an expert witness for more than a dozen cases. Provided written declarations and testified in civil case litigation, including jury trial and taped deposition appearances.

Performed lab analysis and non-destructive testing in accordance with ASTM and ANSI standards using state-of-the art tools such as Scanning Electron Microscope with Energy Dispersive X-ray Spectrometry (SEM/EDS), Gas Chromatography with Mass Spectrometry (GC/MS), and Fourier Transform Infrared spectrometry (FTIR).

UNITED STATES NAVY, 1991 TO 2011

MARINE INDUSTRIAL REPAIR FACILITY DIRECTOR OF OPERATIONS/MILITARY OFFICER IN CHARGE, PUGET SOUND NAVAL SHIPYARD AND INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF), EVERETT, WA, 2008 TO 2011

Officer in Charge of autonomous detachment of the Navy’s largest regional maintenance facility, providing leadership and oversight for a team of 200 mechanics, technicians, and engineers performing ship maintenance and repairs on six vessels including one nuclear aircraft carrier. Primary responsibilities included industrial safety, quality control and technical procedural compliance. Performed diving life support system re-entry control audits, vessel “safe for sea” certifications, underwater explosion mathematical modeling, and executive briefings.

ENERGY AND ECONOMIC DEVELOPMENT TECHNICAL CONSULTANT, MULTI-NATIONAL FORCES IRAQ (MNF-I), BAGHDAD, IRAQ, 2007 TO 2008

Deployed to provide engineering and high-risk evolution support, serving as the lead review engineer for proposed super-phosphate fertilizer plant waste heat power generation plant. Conducted war-zone site survey, technical assessment of existing and required gas turbine equipment, and performed a cost benefit analysis. Served as Commander, Personal Security Detail for Multi-National Forces Iraq, performing operational planning and risk assessments to safely escort flag officers and VIPs on more than 100 trips in and around Baghdad during the 2007 Surge and escalation in combat operations.

REGIONAL UNDERWATER SHIP & SUBMARINE MAINTENANCE & REPAIR DIVISION HEAD (CODE 760), PUGET SOUND NAVAL SHIPYARD & INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF), BREMERTON, WA, 2005 TO 2006

Division head for 75 civilian and military divers. Responsible for underwater maintenance and repairs on Navy vessels including nuclear-powered submarines, surface ships, and aircraft carriers. Planned and negotiated the formal consolidation of three separate dive lockers, conducted crane and rigging safety audits, and performed diving life support systems maintenance certifications. Hand-picked to provide Salvage Engineering support during Hurricane Katrina response led by SUPSALV, Naval Sea Systems Command.

Professional Highlights (Continued)

SHIPYARD UNDERWATER VESSEL MAINTENANCE & REPAIR MANAGER, PUGET SOUND NAVAL SHIPYARD & INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF), BREMERTON, WA, 2004 TO 2005

Directed underwater vessel and facilities maintenance and repair work conducted by 25 divers, performing maintenance, repairs and testing on submarine and surface ships. Completed 688/726 Class Submarine Systems course followed by extensive hands-on work above and below the water, in submarine ballast tanks, performing propeller and sail work, and cofferdam installation and monitoring. Designated as Safety and Quality Control Program Manager for underwater work performed on submarines, ships, nuclear aircraft carriers, and facilities including piers, and drydocks. Completed NAVSEA Drydock Engineering Course and supported vessel docking/undocking as Assistant Docking Officer.

NUCLEAR SUBMARINE CONVERSION PROJECT ZONE MANAGER/SHIPYARD DIVING OFFICER, PUGET SOUND NAVAL SHIPYARD & INTERMEDIATE MAINTENANCE FACILITY (PSNS & IMF), BREMERTON, WA, 2004 TO 2005

Performed safety, environmental, and quality control compliance audits on production teams during nuclear submarine conversion of USS MICHIGAN from SSBN to SSGN (ballistic missile to guided missile). Certified as Shipyard Radiological Worker and completed U.S. Navy SUBSAFE course to provide hands-on engineering support. Additional work included empirical modeling of submarine compartment pressurization tests, analysis and execution of undocking plans, and shipyard mishap response coordination. Completed U.S. Navy Basic Diving Officer, Salvage Diving Officer, and MK-16 Mixed Gas Diving courses.

STEAM PLANT AUXILIARIES AND ELECTRICAL DIVISION HEAD, USS SEATTLE (AOE-3), EARLE NAVAL WEAPONS STATION, NJ, 1998 TO 2001

Led two engineering divisions onboard one of the Navy's oldest operational steam ships, maintaining various electrical, HVAC and mechanical equipment including steam turbine and diesel electric generators, air conditioning units, cargo/weapons elevators, impressed current cathodic protection system, and steam/electric refueling pumps. Also served as engine room flooding investigator, Electrical Safety Officer for a crew of 500, fuse and power panel overhaul project manager, and Officer of the Deck, navigating the 53,000-ton auxiliaries ship during transits and more than a dozen underway replenishments around the world.

SHIPBOARD ELECTRONIC SYSTEMS DATA DISPLAY TECHNICIAN, USS PAUL F. FOSTER (DD 964), LONG BEACH, CA, 1991 TO 1993

Journeyman electronics technician, performing circuit troubleshooting on analog and digital display systems, interpreting schematics and diagnosing faults to repair equipment at the lowest component level to reduce wasteful module replacements. Specialized in high-voltage cathode ray tube display system repairs.

ADDITIONAL SKILLS & EXPERTISE

+ Solidworks/Simulation
+ Siemens SIMATIC
+ NASTRAN/PATRAN
+ MATLAB
+ HECSALV/POSSE

Professional Standings

ASSOCIATIONS

American Society of Mechanical Engineers (ASME)
American Society of Naval Engineers (ASNE)
American Boating and Yacht Council (ABYC)
National Fire Protection Agency (NFPA)
Society of Fire Protection Engineers (SFPE)

CONTINUING EDUCATION AND TRAINING

Solidworks Simulation Course, 2019
Solidworks Essentials Course, 2015
Siemens Control Systems Maintenance Course, 2014
NAVSEA LEAN Green Belt 2009
U.S. Navy Marine Salvage Engineering Workshop, U.S. Naval Academy 2008
DAWIA Intermediate Production, Quality and Manufacturing Course PQM 201B, 2008
NAVSEA Drydock Engineering Course, 2005
U.S. Navy Diving & Salvage Course, 2004
U.S. Navy Engineering Duty Officer Basic Course, 2004
688/726 Class Submarine Systems 2003
LEAN Six Sigma Green Belt Course, 2003
Shipyard Radiological Worker, 2003
Submarine Safety Course 2003
Nuclear Project Superintendent Course 2003
CVN Carrier Propulsion Systems 2002
U.S. Navy Surface Warfare Officer Course, 1999
Marine Steam Plant Engineering Course, 1999
Data Systems Technician C School, 1991
Basic Electricity and Electronics Data Systems Technician Course, 1991

NOTABLE PUBLICATIONS AND PRESENTATIONS

Rediger, J., Malcomb, J., and Sylvester, C., “Automated Floor Drilling Equipment for the 767,” SAE Int. J. Aerosp. 7(2):309-316, 2014, https://doi.org/10.4271/2014-01-2270

Master’s Degree Thesis: “Cold X-ray Radiation Absorption and Material Response: Developing a Numerical Model to Predict Blow-Off and Impulsive Loading in Re-Entry Vehicles”