

**FORENSIC INVESTIGATIONS
ENGINEERING CONSULTATION**

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Engineering Design & Testing Corp.
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EDUCATION:

2004 Bachelor of Science, Mechanical Engineering
The Pennsylvania State University, State College, Pennsylvania

EXPERIENCE:

March 2011 **Engineering Design & Testing Corp.**
to Present **Orlando, Florida – (Present)**
Charleston, South Carolina – (March 2011 to January 2016)

Consulting and Forensic Engineer. Specialized consulting in the areas of mechanical systems, equipment specification, repair/replacement cost estimation, project management, and mechanical design. Documentation and reconstruction of vehicle accidents including light passenger vehicles and heavy commercial vehicles, event data recorder retrieval and analysis, and root cause determination. Vehicle control systems component failure analysis, including braking systems, safety restraints, steering, suspension, and acceleration components. Investigation of fire origin and cause for both vehicle and structure fires. *(Listed in no particular order)*

May 2008 **Lafarge North America**
to March 2011 **Harleyville, South Carolina**

Project Engineer III. Management of large industrial capital projects through the entire project lifecycle including feasibility studies, conceptual design, engineering design, construction management, and closure/post auditing. Process equipment specification and installation, rotary kilns, crushing and grinding equipment, conveying equipment, alternative fuels systems, steel framed building installation, excavation, concrete foundation installation, low-/high-pressure steel pipeline, environmental compliance monitoring and control devices, and industrial/commercial safety equipment (including fall restraint and arrest systems). Design review of mechanical systems, interpretation and application of codes (NFPA, API, ASME, ANSI), and knowledge of OSHA and MSHA regulations for workplace safety.

February 2008
to May 2008

FLSmidth Inc.
Bethlehem, Pennsylvania

Design Engineer. Experience with the design of cement plant expansions, process equipment selection, process line design, and detailed AutoCAD drawings. Knowledge of design review for equipment compatibility, and compilation of structural and mechanical drawings for spatial compatibility.

October 2004
to February 2008

Lafarge North America
Alpena, Michigan

Project Engineer/Maintenance Engineer. Designed components for limestone crushing and rotating equipment, along with rendering AutoCAD drawings for shop fabrication. Experience with commissioning new mechanical systems including bulk loading of railcars, pulverized coal burners, solid alternative fuel systems, dust collection systems, and pneumatic pumps. Managed industrial projects for plant expansions and equipment installations, along with supervision of construction activities and installation of cementitious products. Knowledge of ISO 9001 and ISO 14001 safety and environmental best practices.

CONSULTING EXPERIENCE (PARTIAL LIST):

Chiller Damage Evaluation – Miami, Florida

Consultation regarding the evaluation of the damage scope to two commercial chiller systems – conduct the on-site examination, review repair documentation, procure and review maintenance records, determine the cause of failure.

Fatal Automotive Incident Involving Commercial Truck – Pensacola, Florida

Consultation regarding the reconstruction of a two vehicle accident involving a commercial truck and a motorcycle – conduct on-site examinations, analyze and measure tire marks and other related marks, mechanical examination of the vehicle, render opinions regarding the cause of the collision.

Condominium Complex Elevator – Ft. Lauderdale, Florida

Consultation regarding the cause of a failure to the hydraulic power unit for an elevator – conduct on-site examination, examine damaged components, evaluation of oil contamination, determine the cause of failure.

Weaving Loom – Sugar Valley, Georgia

Consultation regarding the evaluation of the damage scope to weaving loom that was damaged by fire – conduct on-site examination, evaluate the scope of the damage, determine the viability of repair, procure alternative manufacturer for equipment bidding.

Storage Warehouse – Charleston, South Carolina

Consultation regarding the determination of the cause of a mechanical collapse of metal rack shelving units holding inventory – conduct on-site examination, review product literature, examination of fractured weld surfaces of vertical supports.

Shipping Terminal – Savannah, Georgia

Consultation regarding the evaluation of the damage scope to shuttle conveyor system damaged by vessel – conduct on-site examination, review construction drawings of damaged equipment, review, and catalog invoices, procure equipment quotations, render an opinion of repair and replacement costs.

Landfill Facility – Dumfries, Virginia

Consultation regarding the determination of fire origin and cause of crusher – conduct on-site examination, examine fire damaged components, review electrical drawings and component drawings, render an opinion of origin and cause.

New Broadcast Facility – Charleston, South Carolina

Consultation regarding the evaluation of potential design defects to wet pipe sprinkler system – conduct on-site examination, review mechanical piping drawings, review of applicable codes and standards, render opinion of repair and replacement costs.

Shipping Terminal – Brunswick, Georgia

Consultation regarding the evaluation of the damage scope to conveyor systems and structures damaged by fire – conduct on-site examination, review bid proposals and scope of work documents from multiple general contractors, analyze and compare costs and repair scopes provided.

Multiple Historic Buildings Fire – Charleston, South Carolina

Consultation regarding the determination of fire origin and cause of a fire which damaged multiple historic building in the downtown area – conduct multiple on-site examinations, examine fire damaged areas and analyze burned debris, review witness statements, and fire reports – render an opinion of origin and cause of the fire.

Fatal Automotive Incident Involving DOT vehicle – Lajas, Puerto, Rico

Consultation regarding the reconstruction of a two vehicle accident involving a dump truck and a DOT passenger vehicle which resulting in multiple fatalities – conduct on-site examinations, analyze and measure tire marks and other related marks, mechanical examination of air brake system, analysis of vehicle movement, render opinions regarding the cause of the collision.

Large Transport Trailer – Waynesboro, Georgia

Consultation regarding the evaluation of the damage scope to a transport trailer carrying a turbine casing at a nuclear power facility – conduction on-site examination, review photographs and other documents related to incident, review mechanical drawings of casing and analyze lifting procedure, render opinion of the repair and replacement costs as well as an opinion of the cause of the damage.

Trailer Mounted Injection Silo – Atlanta, Georgia

Consultation regarding the cause of a tip-over of a hydraulically articulated silo mounted atop a trailer – conduct on-site examination, review construction drawings, and OEM specifications, calculate loading conditions and position of the center of gravity, evaluate the appropriateness of the design, render an opinion regarding the cause of the tip-over.

Feller Buncher Fire – White Plains, Georgia

Consultation regarding the determination of fire origin and cause of a fire which damaged a Tigercat feller buncher – conduct on-site examination, speak with witnesses, examine fire damage and analyze fire debris, examine on board fire suppression system, render an opinion of origin and cause of the fire.

Marine Vessel Launch System – Hollywood, South Carolina

Consultation regarding the evaluation of the damage scope to a rail system used to launch barges as well as the cause of damage – conduct on-site examination, review archival mechanical inspection reports, examine damage to the rail system, render an opinion regarding the cause of the damage.

Damage to Backup Diesel Generators at Hospital – Fairfax, Virginia

Consultation regarding the evaluation of the damage scope to four diesel generators used for backup power at a hospital facility – conduct on-site examinations, coordinate with repair contractors and electrical engineer to conduct load bank testing and mechanical tear-down of generators, examine the mechanical condition of generators, procedure, render an opinion of the repair and replacement costs.

Manufacturing Facility Fire – Sumter, South Carolina

Consultation regarding the evaluation of the damage scope to natural gas boiler, melting pots, and furnace which was damaged during a fire – conduct on-site examinations, coordinate with electrical engineer to test condition of generator, coordinate with repair contractor to conduct testing of boiler, review repair proposals and quotations, render an opinion regarding damage scope.

Car Logger Baler Fire – Jonesboro, Arkansas

Consultation regarding the evaluation of the damage scope to a car logger baler that was damaged during a fire – conduct on-site examination; examine fire damage; evaluate mechanical condition of the machine; coordinate with OEM to procure repair costs.

Concrete Silo Roof Collapse – Miami, Florida

Consultation regarding the evaluation of the damage scope to a concrete silo that was damaged when the roof cap and structure collapsed, conduct on-site examination; review original construction drawings; review contractor repair and replacement proposals; render an opinion of repair and replacement costs.

Manufacturing Facility Furnace Fire – Lake City, South Carolina

Consultation regarding the evaluation of the damage scope to a furnace and of origin and cause the fire which damaged the furnace – conduct on-site examination, speak with witnesses; examine fire damage; evaluate mechanical condition of the furnace; procure replacement quotations for damaged components, render an opinion of repair and replacement costs.

Storage Warehouse Copper Theft – North Charleston, South Carolina

Consultation regarding the evaluation of the damage scope to electrical power distribution system which was damaged when copper was stolen – conduct on-site examination; review contractor repair and replacement proposals; compare proposals to observations made during the examination; render an opinion of repair and replacement costs.

Fatal Automotive Incident Involving Tractor/Mower in Median – Berkeley County, South Carolina

Consultation regarding the reconstruction of a two vehicle accident involving a DOT contracted mower and a passenger vehicle - conduct on-site examinations, analyze and measure tire marks and other related marks, mechanical examination of vehicles, analysis of event data recorder retrieval, analysis of vehicle movement, render opinions regarding the cause of the collision.

Tip-over of End Dump Trailer and Truck-Tractor – Garden City, Georgia

Consultation regarding the cause of a tip-over of a hydraulically articulated end dump trailer and truck-tractor – conduct examination of end dump trailer, take measurements of the trailer and conduct tip-over analysis; speak with OEM regarding specifications of the trailer, render an opinions regarding the condition of the trailer.

Fatal Automotive Incident Involving Commercial Truck and Passenger Vehicle – Hatillo, Puerto Rico

Consultation regarding the reconstruction of a two vehicle accident involving a commercial truck and a passenger vehicle – conduct on-site examinations, analyze and measure tire marks and other related marks, mechanical examination of air brake system, analysis of vehicle movement, render opinions regarding the cause of the collision.

PROFESSIONAL ORGANIZATIONS:

Society of Automotive Engineers (SAE)

National Association of Professional Accident Reconstruction Specialists (NAPARS)

American Society of Mechanical Engineers (ASME)

National Fire Protection Association (NFPA)

National Association of Fire Investigators (NAFI)

American Society for Metals (ASM)

REGISTRATIONS:

Registered Professional Engineer in South Carolina (#28695)
Registered Professional Engineer in North Carolina (#038276)
Registered Professional Engineer in Connecticut (#00306280)
Registered Professional Engineer in Georgia (#036328)
Registered Professional Engineer in Florida (#76367)
National Council of Examiners for Engineering and Surveying (#45670)

CERTIFICATIONS:

NAFI Certified Fire and Explosion Investigator (#16631-9039)
NAFI Certified Vehicle Fire Investigator (#16631-9039v)
Mine Safety & Health Administration, Part 46 Miner Certification (Oct. 2004 - Feb. 2012)

PUBLICATIONS:

Stogran, Richard E. “Vehicle Autonomy: Extrasensory Driving”, *The Stress Point*, Volume 29, Number 3, Engineering Design & Testing Corp., Columbia, South Carolina, September 2016.

Stogran, Richard E. “Event Data Recorder: Your Vehicle’s Private Eye”, *The Stress Point*, Volume 27, Number 2, Engineering Design & Testing Corp., Columbia, South Carolina, June 2014.

Stogran, Richard E. “Advancements in Vehicle Controls, Progress in Motion”, *The Stress Point*, Volume 25, Number 1, Engineering Design & Testing Corp., Columbia, South Carolina, March 2012.

PRESENTATIONS:

“Technological Review of Unmanned Aerial Vehicles (UAVs) and Their Uses”, ED&T Seminar (2017)

“Event Data Recorders – Uses for Claim Investigations”, GEICO University (2015)

“Quantifiable Driver Response Decisions: PRT & Gap Acceptance”, ED&T Seminar (2013)

“Vehicle Control Systems: Modern Technology of Electronic Control”, ED&T Seminar (2011)

CONTINUING EDUCATION:

- “Large Loss Report Writing”, ED&T Seminar (2017)
- “A Review of Typical Motorcycle-Vehicle Collision Scenarios”, ED&T Seminar (2017)
- “Engineering Analysis of Failure: Determination of Cause in a Legal Environment”, ED&T w/ Yates Law Firm (2017)
- “Active Safety Solutions for Next Generation Automobiles”, SAE International & ON Semiconductor (2016)
- “Advanced Fire, Arson and Explosion Investigation Training Program, 1033 & 921: Putting It Together”, NAFI & IAFI (2016)
- “Sales Training”, ED&T Seminar (2016)
- “Pumps and Piping: Design & Operation for Continued Reliability”, ED&T Seminar (2016)
- “Large Loss Forum – Engineering Economics: Actual Cash Value (ACV) Definitions and Calculations”, ED&T Seminar (2016)
- “Increasing Fire Investigator Awareness on Potential Alternative Fueled Vehicles Safety Hazards”, NFPA (2015)
- “Acoustic Soot Agglomerations on Residential Fire Alarms – Indications of Functionality” ED&T Seminar (2015)
- “Florida Law and Rules”, Engineer Educators (2015)
- “Vehicle CDR Training Update”, Ruth Consulting (2015)
- “Federal Rules of Civil Procedure (FRCP) Rule 26 – Expert Reports”, ED&T Seminar (2015)
- “Glass Fractography”, ED&T Seminar (2015)
- “Additive Manufacturing: Changing Future Product Development, Manufacturing”, ASME (2014)
- “Commercial Braking Systems”, SAE International (2014)
- “Passenger Car – Motorcycle Collision Analysis”, ED&T Seminar (2014)
- “Investigating Electric and Hybrid Vehicles”, ED&T Seminar (2014)
- “Machine Tools 101”, ED&T Seminar (2014)
- “Presentation of Credentials in Litigation”, ED&T Seminar (2014)
- “Tire Construction and Defects”, ED&T Seminar (2013)
- “Safety on the Job”, ED&T Seminar (2013)
- “Social Networking and the Consulting Engineer”, McAngus Goudelock & Courie (2013)
- “Filing Rules in a Judicial System”, McAngus Goudelock & Courie (2013)
- “Tire and Wheel Safety Issues”, SAE (2012)
- “Advanced Crash Reconstruction-Utilizing Human Factors Research”, Northwestern University (2012)

“Event Data Recorder Use in Traffic Crash Reconstruction”, IPTM, University of North Florida (2012)

“Macro Photography”, Charleston Center for Photography (2012)

“Hot Wheels: Investigating Vehicle Fires”, ED&T Seminar (2012)

“Quantitative Measurement of LP/Natural Gas Pipe Systems”, ED&T Seminar (2012)

“Ethical Challenges for the ED&T Engineer”, ED&T Seminar (2012)

“The Daubert Decision: Where Have We Come Since 1993”, ED&T Seminar (2012)

“South Carolina Insurance Fraud Investigator’s Training Seminar”, SCIFI (2011)

“Vehicle Fire, Arson, & Explosion Investigation”, NAFI & NFPA (2011)

“Advanced Fire, Arson, & Explosion Investigation”, NAFI & NFPA (2011)

“Raising the Bar of Fire Investigation: NFPA 921 2011 Ed. & NFPA 1033”, SCIAAI (2011)

“Ammonia Injection – Emissions Control”, Tanner Ind. (2011)

“Confined Space Entry”, MSHA (2008, 2009, 2011)

“Use, Care, & Maintenance of Respiratory Devices”, Lafarge Harleyville Seminar (2010)

“Recognition & Avoidance of Hazards”, MSHA (2008, 2009)

“Pyroprocessing: Rotary Cement Kiln”, FLSmidth Institute (2008)

“Pumps and Compressor Maintenance”, FLSmidth Institute (2008)

“Ball Mill Operation & Maintenance”, FLSmidth Institute (2008)

“Large Gear Maintenance”, FLSmidth Institute (2008)

“Project Management – Basics”, PMI Project Management Institute (2007)

“Radial & Helical Gear Inspection”, Lafarge Alpena Seminar (2007)

“Centrifugal Fans & Gas Processing”, Lafarge Alpena Seminar (2006)

“RCA: Root Cause Analysis”, Apollo (2006)

“Cement Plant Maintenance”, Lafarge Exshaw Seminar (2005)

“Failure Analysis”, RCI (2005)