

EDUCATION

- 1993 **Master of Science, Manufacturing Systems Engineer**
Lehigh University, Bethlehem, Pennsylvania
- 1990 **Bachelor of Science, Mechanical Engineering**
University of Missouri, Rolla, Missouri

EXPERIENCE

- July 2022
to Present **Engineering Design & Testing Corp.**
Columbia, South Carolina District Office
Consulting Engineer
Root cause analysis of incidents involving machinery, mechanical systems, and plumbing systems in residential, commercial, and industrial applications. Cost analysis related to equipment, machinery, industrial/commercial repairs, and HVAC/mechanical systems. Failure analysis of fire suppression systems. Fire and explosion origin and cause analysis for structural, equipment, and vehicle fires. Investigation of product defects relating to consumer products, equipment, and machinery, including subrogation.
- June 2021
to June 2022 **Gibson Guitar Custom Shop**
Nashville, Tennessee
Manufacturing Engineering Manager
Lead team of seven engineers and technicians. Managed \$4 million capital budget. Designed, specified, purchased, installed, and commissioned new production equipment and manufacturing lines.
- June 2018
to June 2021 **Motlow State Community College**
Smyrna, Tennessee
Assistant Professor
Provided lecture and laboratory instruction for courses in the mechatronics and engineering departments, including Statics, Dynamics, Mechanical Systems, Electrical Systems, Hydraulic and Pneumatic Systems, and Production Control Systems.
- July 2012
to June 2018 **Engineering Design & Testing Corp.**
Nashville, Tennessee District Office
Consulting Engineer
Root cause analysis of incidents involving machinery, mechanical systems, and plumbing systems in residential, commercial, and industrial applications. Cost analysis related to equipment, machinery, industrial/commercial repairs, and HVAC/mechanical systems. Failure analysis of fire suppression systems. Fire and explosion origin and cause analysis. Investigation of product defects related to consumer products, equipment, and machinery, including subrogation.

March 2009
to July 2012

Wastequip, LLC
Eagleville, Tennessee

Director of Engineering, Container Division

Managed divisional engineering resources, including annual budgetary and financial planning. Designed and implemented new container products for the waste management, environmental, and oil-field industries. Coordinated engineering projects to customize existing products to customer specifications. Implemented 3D solids modeling and Finite Element Analysis software. Provided technical support for metal cutting and forming, finishing, and assembly processes.

March 2005
to March 2009

The Access Group, LLC
Hendersonville, Tennessee

Consulting Engineer

Provided consulting services in the areas of product design, process design, plant layout. Provided project management services for facility relocations and manufacturing line startups. Conducted training sessions on topics including lean manufacturing, root cause analysis, changeover reduction, and process mapping.

August 2003
to Present

12th Fret Manufacturing Services
Nolensville, Tennessee

Owner

Provided consulting services to small businesses. Developed and implemented production plans. Designed new products and associated tooling. Created CNC programs for manufacturing products.

August 2002
to August 2003

A.O. Smith Water Heater Co.
Ashland City, Tennessee

Mechanical Engineering Manager

Managed local engineering resources, including planning and overseeing the capital budget. Designed, specified, and implemented product and process conversions to comply with new government, industry, and corporate regulations. Oversaw continuous improvement projects to improve quality and reduce costs. Provided technical support for metal forming and stamping, welding, finishing, and assembly processes.

May 1997
to August 2002

Engineering Manager, Gibson Guitar Company
Nashville, Tennessee

Engineering Manager

Managed divisional engineering resources. Conducted research and development for new products and processes. Designed new products and coordinated their introduction to the market. Planned, specified, installed, and started two new manufacturing facilities. Maintained bills of material, CNC program, production print, and plant layout databases. Provided technical support for wood processing, finishing, and assembly processes.

June 1990
to May 1997

Delphi Chassis Division, General Motors
Kettering, Ohio

Lead Manufacturing Systems Engineer

Designed and implemented process plans, material flow plans, and equipment layouts for a major plant restructuring project. Developed and conducted training program for hourly, salaried, and management employees. Established Product Failure Mode and Effects Analysis (PFMEA) for division's entire product line.

EXPERIENCE

Forensic Investigations (partial list)

Printing Press — *Shelbyville, Tennessee*

Develop repair-verses-replace analysis and replacement cost estimates for printing press equipment damaged by vehicle crashing into building

Video Display Panel — *Nashville, Tennessee*

Determine cause of mechanical malfunction resulting in fall of billboard-size video screen from its base

Circular Saw — *Talladega, Alabama*

Determine root cause of malfunction of a circular saw resulting in injury to the user

Evaluate Sprinkler Head — *Franklin, Tennessee*

Determine the cause of water discharge from a sprinkler head in office building after renovation

HVAC and Humidity Control Units — *Franklin, Tennessee*

Evaluate scope of damage and determine repair costs for HVAC and humidity control units damaged by straight line winds

CNC Milling Machine — *Knoxville, Tennessee*

Determine scope of damage and repair costs to a CNC milling machine that was struck during shipment

Air Handling Unit — *Nashville, Tennessee*

Determine the root cause of a water discharge from a hotel rooftop air handling unit that resulted in damage to rooms on twelve floors

Water Line Repair Fitting — *Cincinnati, Ohio*

Determine cause of water damage to hotel resulting from a recent plumbing repair

Stamping Press — *Jackson, Tennessee*

Determine the root cause of broken gear teeth in the gear box of a metal stamping press

Tow Truck Boom — *Richmond, Virginia*

Determine cause of malfunction of tow truck boom that bent while loading vehicle

Chilled Water Bath — *Camilla, Georgia*

Determine cause of metal shavings in chilled water bath at food processing plant

Phone System — *Cookeville, Tennessee*

Determine scope of damage to hotel phone system resulting from lightning strike

Elevator Hydraulic System — *Memphis, Tennessee*

Determine cause of damage to hydraulic system of office building elevator

Concrete Pump Trailer — *Cordova, Tennessee*

Determine cause of malfunction resulting in wheel detaching from concrete pump trailer while being towed on highway

Coal Conveyor — *Pikeville, Kentucky*

Scope of damage and repair cost estimates for collapsed coal conveyor in storage and processing facility

Fire Related Investigations (partial list)**Heat Treat Oven — Cookeville, Tennessee**

Conducted origin and cause investigation of fire in heat treat oven in machine shop

Paint Oven — McEwen, Tennessee

Conducted origin and cause investigation of fire in powder coat paint line curing oven

Medical Incinerator — Memphis, Tennessee

Conducted origin and cause investigation of fire in hospital medical incinerator facility

Grease Container Fire — Manchester, Tennessee

Conducted origin and cause investigation of waste grease container located adjacent to restaurant

Commercial Clothes Dryer — Joelton, Tennessee

Conducted origin and cause investigation of fire in commercial clothes dryer

All-Terrain Vehicle (ATV) — Greenville, Alabama

Conducted origin and cause investigation of fire in electric ATV while charging

Skid Loader — Wilson, Arkansas

Conducted origin and cause investigation of fire in a skid loader on remote construction site

Prototype Engine — Columbus, Indiana

Evaluated scope of damage to products, equipment, and facilities resulting from engine fire in testing facility

Refrigerated Trailer Fire — Lebanon, Tennessee

Conducted origin and cause investigation of fire in refrigerated trailer parked overnight

Delivery Box Truck — Johnson City, Tennessee

Conducted origin and cause investigation of fire in delivery truck resulting in damage to vehicle and warehouse

Foundry Crucible — Ghent, Kentucky

Conducted origin and cause investigation of explosion in steel foundry crucible. Evaluated scope of damage to facility and equipment

Biodiesel Plant — Shelbyville, Tennessee

Conducted origin and cause investigation of explosion in ethanol tank in biodiesel processing plant

Acrylic Sheet Production — Memphis, Tennessee

Developed scope of damage and repair cost estimates resulting from explosion in furnace on acrylic sheet production line

Candy Factory Ductwork — Chattanooga, Tennessee

Developed scope of damage evaluation and repair cost estimates resulting from explosion in ductwork of candy factory

Rock Crusher — Nashville, Tennessee

Origin and cause investigation of explosion in a rock crusher on construction site

Legal Consultations (partial list)**Foundry Injury — Brewton, Alabama**

Expert testimony regarding design and installation of conveyor system related to amputation of employee's finger

Evaluate Sprinkler System — Louisville, Kentucky

Expert testimony on cause of sprinkler head discharge in long term care facility

Water Heater — Nashville, Tennessee

Expert testimony on cause of leak in water heater, resulting in water damage to stores in a strip mall

Parking Lot Striping Paint — Chattanooga, Tennessee

Expert report regarding a slip-and-fall in parking lot of retail facility. Analyzed paint used on curb to determine code compliance

Sprinkler System — Cleveland, Tennessee

Expert report on cause of water discharge resulting from sprinkler pipe damaged by freezing

REGISTRATIONS and CERTIFICATIONS

Registered Professional Engineer in South Carolina (40513)

Registered Professional Engineer in North Carolina (054793)

Registered Professional Engineer in Georgia (PE037515)

Registered Professional Engineer in Florida (PE94712)

Registered Professional Engineer in Alabama (PE33312)

Registered Professional Engineer in Kentucky (29037)

Registered Professional Engineer in Ohio (59418)

Registered Professional Engineer in Tennessee (116057)

National Council of Examiners for Engineers and Surveying Record (#16-859-13)

NAFI Certified Fire and Explosion Investigator (CFEI #17651-10085)

NAFI Certified Vehicle Fire Investigator (CVFI #17651-10085v)

PRESENTATIONS

"Investigating Electric and Hybrid Vehicles", presented at EDT Engineers annual meeting, February 2014