

## **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.

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## **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

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**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

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**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)

Registered Professional Engineer in Texas (150860)

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

*"Additive Manufacturing and Forensic Engineering"*, presented at EDT Engineers annual meeting, February 2023

*"Impact of Data and Video in Auto Cases"*, presented at NASP Conference, November 2023