SCHAEFER ENGINEERING, Inc.
A Professional Engineering Company

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Professional Resume
of
RANDY J. BICKNESE, P. E.

June 2025

I. General Information

Mechanical Engineer
Schaefer Engineering, Inc.
Wentzville, Missouri

II. Professional Summary

A. Education:

Bachelor of Science
Mechanical Engineering
University of Missouri – Rolla
Rolla, Missouri
1996

B. Experience:

August 2004 to present
Position: Mechanical Project Engineer
Co-Owner, Vice President, and Director of Engineering starting February 2017
Schaefer Engineering, Inc.
Wentzville, Missouri

Responsible for mechanical engineering projects and mechanical design analysis with emphasis in gas-fired, oil-fired, and wood-burning appliance fire and explosion evaluation, carbon monoxide related incidents, vehicle and agricultural equipment fire and accident evaluation, and building components and equipment failure analysis and evaluation including HVAC, plumbing, and fire suppression systems. Also responsible for automotive and marine product failure analysis. Mechanical engineering expertise includes industrial material handling and manufacturing equipment, electronic and CNC control systems, and automotive, marine, and recreational vehicle systems. Background in automotive and marine systems originated from hands-on training and experience as a service technician in heavy truck and marine service businesses.

April 2004 to August 2004
Position: Owner / Consulting Contract Engineer
R&D Contract Engineering Services
Defiance, Missouri

Provided mechanical and electrical project engineering services to manufacturing companies.

Experience (continued):

September 2001 to April 2004
Position: Manufacturing Project Engineer
Wainwright Industries, Inc.
St. Peters, Missouri

Focused on the design and manufacturing process development of automotive and aerospace components / systems and specialized industrial material handling equipment. Responsible for the specification, installation and failure analysis of complex automated manufacturing equipment used to produce automotive and aerospace system components.

December 1996 to August 2001
Position: Senior Design Engineer / Product Development Engineer
Cooper Industries / Bussmann Division
Ellisville, Missouri

Provided design, product development, and manufacturing engineering support for manufacturing operations that produced electrical and electronic circuit protection equipment. Responsible for the specification, installation and failure analysis of automated manufacturing equipment used to produce electrical system components as well as failure analysis of new products being developed.

III. Professional Registration

Registered Professional Engineer in the States of Missouri, Illinois, Kansas, Arkansas, Tennessee, Mississippi, Oklahoma, Michigan, Nebraska, Florida, and Virginia.

Certified Fire and Explosion Investigator, National Association of Fire Investigators.

IV. Professional Affiliations

American Society of Mechanical Engineers (ASME)
National Fire Protection Association (NFPA)
National Association of Fire Investigators (NAFI)
International Association of Arson Investigators (IAAI)
National Association of Subrogation Professionals (NASP)
DRI –The Voice of the Defense Bar
Society of Automotive Engineers (SAE)
American Boat and Yacht Council (ABYC)

V. Publications

Bicknese, Randy & Metzger, Todd; *Type HT Factory Built Chimneys in Relationship to Cellulose Insulation*; International Symposium on Fire Investigation Science and Technology Proceedings; October, 2012.

VI. Continuing Education

1998 – Plating Technology for Electronics Applications,
IMAPS, San Diego, California
1999 – Low Cost Flip Chip Technology and Manufacturing,
Georgia Institute of Technology, Atlanta, Georgia
1999 – Mechanics of Composite Materials,
Washington University, St. Louis, MO
2004 – Heavy Truck Brake Tests – HTTG,
Traffic Research Center, East Liberty, OH
2004 – Motorcycle Racer Licensing Clinic and Testing – CCS / Formula USA Road Racing,
Blackhawk Farms Raceway, Rockton, IL
2004 – Investigation of Gas and Electric Appliance Fires,
Fire Findings Laboratories, St. Joseph, MI
2004 – Vehicle Accident Reconstruction Methods,
Society of Automotive Engineers, Troy, MI
2005 – Investigation of Gas/Oil Service and Appliances,
The Institute of Fire Science, Rochester, NH
2006 – Vehicle Fire Investigations – Death & Injury,
International Association of Arson Investigators, Robinsonville, MS
2006 – Commercial Vehicle Brake Safety Symposium,
Commercial Vehicle Safety Alliance, Indianapolis, IN
2008 – Society of Automotive Engineers World Congress & Exhibition, Technical Sessions
Society of Automotive Engineers, Detroit, MI
2008 – Basic and Advanced Diagramming and Animation with Total Station
Visual Statement, Ontario, CA
2009 – Understanding Post-Flashover Fire Behavior,
International Association of Arson Investigators – Arkansas Chapter, Eureka Springs, AR
2010 – Fire and Casualty Seminar – DRI, Chicago, IL
2011 – NFPA 921 Fire & Explosion Investigations Seminar
Nation Fire Protection Association (NFPA) – St. Louis, MO
2012 – National Fire, Arson & Explosion Investigation Training Program
(NAFI) - St. Charles, MO
2012 – International Symposium on Fire Investigation Science and Technology
NAFI, University of Maryland – University College, College Park, Maryland
2013 – Fire Science Seminar – DRI, Scottsdale, AZ
2013 – Asbestos Operations and Maintenance Initial Course – Environmental Safety Training Center,
Wentzville, MO
2013 – NASP Annual Conference, San Diego, CA
2014 – Asbestos Operations and Maintenance Refresher Course – Environmental Safety Training
Center, St. Louis, MO
2014 – Fire Science Seminar – DRI, Scottsdale, AZ
2015 – Asbestos Operations and Maintenance Refresher Course – Environmental Safety Training
Center, Wentzville, MO
2016 – Product Liability Conference – DRI, New Orleans, LA
2016 – International Advanced Fire Investigation Training Program – NAFI, Tampa, FL
2017 – Asbestos Operations and Maintenance Refresher Course – Environmental Safety Training
Center, Wentzville, MO

Continuing Education (continued):

2017 – Ethics for Professionals – RedVector.com
2018 – Asbestos Operation and Maintenance Refresher Course – Environmental Safety Training Center, Wentzville, MO
2018 – Fire Science Seminar and Live Burn – DRI, Washington, DC
2018 – Florida Engineering Laws and Rules – RedVector.com
2018 – Ethics for the Practicing Engineer – RedVector.com
2019 – Asbestos Operations and Maintenance Refresher Training – Environmental Safety Training Center, Wentzville, MO
2019 – Aerial Lift Operator Training, Federal OSHA Regulation 29CFR 1910.67 – Safety Training Resources LLC, Wentzville, MO
2019 – Working at Heights (Fall Protection), Federal OSHA Regulation 29CFR 1926.500 Subpart M Safety Training Resources LLC, Wentzville, MO
2019 – Forklift Operation – Safety Training Resources LLC, Wentzville, MO
2019 – Ethical Decision Making for Engineers #2 – RedVector.com
2020 – Asbestos Operations and Maintenance Refresher Training – BluSky, Wentzville, MO
2020 – Project Management Essentials – RedVector.com
2020 – AEC Success: Time Management and Billable Hours – RedVector.com
2020 – Fire Essentials and Fire Science – RedVector.com
2020 – Fuel and Combustion Systems Safety - What You Don't Know Can Kill You! – RedVector.com
2020 – Innovative Heat Pump Technology – RedVector.com
2021 – Asbestos Operations and Maintenance Refresher Training – BluSky, Wentzville, MO
2021 – Telehandler Operation (Classroom & Practical Skills) – Safety Training Resources LLC, Wentzville, MO
2021 – Illinois Sexual Harassment Prevention Training for General Businesses – APYO Compliance
2021 – Ethical Decision Making for Engineers #3 – RedVector.com
2021 – Preparation for the Marine Fire Scene – IAAI CFI Trainer.net
2021 – Thermometry, Heat, and Heat Transfer – IAAI CFI Trainer.net
2022 – Electric & Hybrid Vehicle Fires – IAAI CFI Trainer.net
2022 – Fire Flow Analysis – IAAI CFI Trainer.net
2022 – NFPA 1033 and Your Career – IAAI CFI Trainer.net
2022 – Alternative Fuel Vehicles – IAAI CFI Trainer.net
2022 – Asbestos Awareness Refresher Training – EPA 763.92 & OSHA 1926.1101
2023 – Ethical Decision Making for Engineers #4 – RedVector.com
2023 – Florida Laws and Rules (2023) – PDH Library
2023 – Asbestos Awareness Refresher Training – EPA 763.92 & OSHA 1926.1101
2023 – Working at Heights (Fall Protection) - Federal OSHA Regulation 29CFR 1926.500 SubpartM
2023 – Digital Photography and the Fire Investigator - IAAI CFI Trainer.net
2024 – Asbestos Awareness Refresher Training – EPA 763.92 & OSHA 1926.1101
2024 – Laws and Rules Engineering Parts 1, 2, & 3 – All Star Online Continuing Education
2024 – Ethical Issues in Forensic Engineering – PDH Library
2024 – Fire Effects Part 1: Heat Effects on Fuels - IAAI CFI Trainer.net
2024 – Lithium-Ion Battery Fires - IAAI CFI Trainer.net
2024 – Fire Protection Systems - IAAI CFI Trainer.net
2025 – Product Liability Conference – DRI, Miami, FL
2025 – The Scientific Method for Fire and Explosion Investigation – IAAI CFI Trainer.net

Continuing Education (continued):

2025 – The Practical Application of the Relationship Between NFPA 1033 and NFPA 921
IAAI CFI Trainer.net
2025 – Marine Fire Investigation – 32 Hour IAAI in Collaboration with ABYC Training – Irvine, CA
Tested through CFI Trainer.net

VII. Courses Taught

Vehicle Fire Investigation – September 2006, Fire Investigation Training Conference of the Illinois Chapter of IAAI, in Cooperation with the Illinois Fire Service Institute and the Office of the State Fire Marshall.

Vehicle Fire Investigation – May 2007, MAACA Training Conference in St. Louis, Missouri.

Vehicle and Agricultural Equipment Fire Investigation – September 2007, Investigation Training Conference of the Iowa Chapter of IAAI.

A Team Approach to Fire Investigation (Mechanical Engineer's role in dwelling and equipment fire investigations) – March 2008, Farm Bureau Fire / Fraud Seminar in Little Rock, Arkansas.

Cellulose Insulation in Relation to Factory-Built Fireplaces and Chimneys – October 2010, Investigation Training Conference of the Arkansas Chapter of IAAI.

Cellulose Insulation in Relation to Factory-Built Fireplaces and Chimneys – January 2011, Northern Zone Fire Investigation Seminar of the Illinois Chapter of IAAI.

Cellulose Insulation in Relation to Factory-Built Fireplaces and Chimneys – May 2012, Southern Zone Fire Investigation Seminar of the Illinois Chapter of IAAI.

The Investigation of Vehicle Fires Related to the Insurance Industry – September 2012, Fire Investigation Training Conference of the Illinois Chapter of IAAI.

Anatomy of a Fireplace Chimney / Cellulose Insulation Fire: Investigation, Testing and Trial – November 2013, NASP 2013 Annual Conference.

Fire Investigations Involving Fireplaces, Chimney Systems and Cellulose Insulation – May 2014, NASP Kansas & Missouri Chapter Meeting.

Residential Natural Gas Systems, Subject Matter Expert – 2014 & 2015, IAAI CFITrainer, CFITrainer.net

Investigating Natural Gas Systems, Subject Matter Expert – 2014 & 2015, IAAI CFITrainer, CFITrainer.net

Building an Effective Defense Litigation Team – February 2016, DRI Product Liability Conference

Motor Vehicles: Parts I & II, Subject Matter Expert – 2016 & 2017, IAAI CFITrainer, CFITrainer.net

Investigation of Natural Gas Fires and Explosions – October 2021, Professional Fire & Fraud Investigators Association, St. Charles, MO

VIII. Service Technician Experience Summary

1994 to Present
Position: Technical Consultant

Provided technical support and system troubleshooting for marine drive systems, generators and electrical systems on a consulting basis to the marina facilities listed below as well as Lewis Engines located in St. Charles, Missouri and Lewis Marina located on the Lake of the Ozarks near Osage Beach, Missouri.

1993 to 1994
Position: Marine Service Technician and Service Manger
Little John's Marine Service
St. Charles, Missouri

Responsible for performing mechanical and electrical repairs on marine engines, drive systems and generators. Responsible for writing estimates and documenting repair orders based on customer requests and for evaluating work performed by other marine service technicians.

1991 to 1992
Position: Marine Service Technician and Marina Lift Operator
Yacht Club of St. Louis
St. Charles, Missouri

Responsible for performing mechanical and electrical repairs on marine engines, drive systems and generators. Responsible for operating machinery used to lift boats from the water and transport them to storage and/or repair facilities.

1988 to 1990
Position: Marine Service Technician and Marina Lift Operator
Woodland Marina
St. Charles, Missouri

Responsible for performing mechanical and electrical repairs on marine engines, drive systems and generators. Responsible for operating machinery used to lift boats from the water and transport them to storage and/or repair facilities.