



Brendan J. McLaughlin, P.E., ACTAR

Senior Consultant

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Background

Mr. Brendan McLaughlin holds a B.E. (Bachelor of Engineering) in Mechanical Engineering and is a licensed Professional Engineer in multiple states. He is also an Accredited Accident Reconstructionist through the Accreditation Commission for Traffic Accident Reconstruction (ACTAR #3845) and Certified Fire and Explosion Investigator through National Association of Fire Investigators (26872-15215). Mr. McLaughlin has over 7 years of experience in the forensic engineering field.

Mr. McLaughlin has had extensive training, education, and experience in the forensic engineering field. He has inspected boilers, furnaces, refractory lining, pumps, hot water heaters, HVAC systems, and piping system failures. Mr. McLaughlin's areas of expertise include motor vehicle crash reconstruction, motorcycle crash reconstruction, pedestrian/bicycle versus vehicle crash reconstruction, commercial vehicle crash reconstruction, commercial vehicle brake examination, event data recorder (EDR) analysis for passenger vehicles and heavy trucks, seatbelt analysis, crash simulation software, and rollover crash reconstruction. He has extensive training and experience in crash scene mapping using drones, 3D laser scanners, and hand measurements.

Mr. McLaughlin's experience with forensic engineering began in 2015 as an engineering intern at the Jacksonville Electric Authority. He conducted root cause analysis of the Spray Dry Absorber (SDA) nozzles. He inspected combine combustion turbine blades with a borescope and performed pump performance testing on the boiler feed and condensate pumps. His forensic engineering experience continued at the Vanderbilt University Material Science Lab where he conducted catastrophic engine failure analysis. He worked under the supervision of Professor James Wittig.

Forensic Engagements

• Reconstructions/Investigations/Simulations

- Nashville, TN (2019), Reconstructed collision between tractor-trailer and bridge maintenance equipment. Evaluated the distance between the equipment hanging below the bridge and the top of the tractor-trailer.
- Memphis, TN (2019), Investigated claim of unintended acceleration in a 2004 Lexus ES350. Examined brake components, pedal spacing, and driver floor mat condition.
- Johnson City, TN (2019), Reconstructed rear-end collision between a commercial vehicle and motorcycle.
- Hart County, KY (2019), Investigated rollover collision of a 15-passenger van. Vehicle swerved on interstate to avoid deer before losing control. Evaluated the seat belt status of each seat position.

- Franklin, TN (2018), Investigated collision between passenger vehicle and bicyclist. Evaluated sight lines available.
- Dyersburg, TN (2018), Reconstructed collision between commercial vehicle and utility lines. Evaluated vehicle motion with Human Vehicle Environment (HVE) software.
- Nashville, TN (2017), Reconstructed nighttime collision between passenger vehicle and pedestrian.
- Fayetteville, AR (2017), Simulated the head-on collision between two passenger vehicles with HVE. Matched vehicle post-collision motion to determine positions and speeds at impact.
- Sumner County, TN (2016), Investigated sideswipe collision between two-tractor trailers leading to both tractor-trailers catching fire.

Professional Experience

- **Rimkus** **2021 – Present**
 - Senior Consultant
Provided technical consulting to clients regarding vehicle accident reconstruction. This included scene data collection, vehicle inspections, vehicle electronic data retrieval imaging, brake system inspection and evaluation, passenger and commercial motor vehicle collision analysis, vehicle-pedestrian accident reconstruction, collision speed analysis, acceleration and braking analysis, vehicle dynamics evaluation, collision avoidance analysis, human factors evaluation, and collision simulations.
- **Delta |v| Forensic Engineering** **2016 – 2021**
 - Professional Engineer (2020-2021)
Provided technical consulting to clients regarding vehicle accident reconstruction. This included scene data collection, vehicle inspections, vehicle electronic data retrieval imaging, brake system inspection and evaluation, passenger and commercial motor vehicle collision analysis, vehicle-pedestrian accident reconstruction, collision speed analysis, acceleration and braking analysis, vehicle dynamics evaluation, collision avoidance analysis, human factors evaluation, and collision simulations. Oversee, train, and perform technical reviews of the work of associate accident reconstructionists at Delta |v|.
 - Associate Engineer (2016-2020)
Progressed from associate engineer who assisted professional engineers with vehicle accident reconstruction to a senior associate engineer who completed vehicle accident reconstruction with minimal oversight from a professional engineer. Led and trained associate engineers in the field of accident reconstruction.
- **Vanderbilt University Material Science Lab.** **2015**
 - Lab Technician
Conducted catastrophic engine failure analysis in the Vanderbilt University Material Science Lab under the supervision of Professor James Wittig. Examined failed parts under a Scanning Electron Microscope (SEM). Identified materials and processing methods with Energy-Dispersive X-Ray Spectroscopy (EDX). Determined the cause of failure and established preventative measures to avoid future failures. Developed lab techniques to maximize equipment optimization and minimize false positives. Led and managed meetings for a design team of five mechanical engineers.

- **Jacksonville Electric Authority**

2015

- Engineer Intern

Created and updated piping and instrumentation diagrams for four gas combustion turbines. Assisted in the inspection of combustion turbine blades with a borescope. Conducted root cause analysis of the Spray Dryer Absorber nozzles. Performed pump performance testing on boiler feed and condensate pumps. Calculated and designed outlet piping for the ammonia relief valve. Consulted with the Fire Department Chief and researched proposed transition of fire hose nozzles. Educated and assisted fellow interns on proper MAXIMO and GEMS code procedures.

Education and Certifications

- **Mechanical Engineer, B.E.:** Vanderbilt University
- **Accredited Accident Reconstructionist:** Accreditation Commission for Traffic Accident Reconstruction (ACTAR #3845)
- **Bosch Certified Crash Data Retrieval Technician**
- **Certified Fire and Explosion Investigator:** #26872-15215
- **Registered Professional Engineer:** Connecticut #PEN.0035646; Kentucky #35867; Maine #PE17286; Massachusetts #56921; New Hampshire #17037; New York ##105714-01; Rhode Island #14201; Tennessee #124275; and Vermont #018.0135148
- **FAA Certified Remote Pilot:** #3924368
- **Memberships:** National Association of Professional Accident Reconstruction Specialist; Society of Automotive Engineers

Continuing Education

- **Basic Vehicle Accident Investigation/Reconstruction:** Northwestern University Center for Public Safety: Traffic Accident Reconstruction I, Northwestern Center for Public Safety, Evanston, IL (2018)
- **Vehicle Accident Reconstruction – Specialized:** Commercial Vehicle Crash Investigation – Level 1, Institute of Police Technology and Management, Online Course (2023); Vehicle Crash Reconstruction: Principles and Technology, Society of Automotive Engineers, Oxnard, CA (2021); Human Factors in Traffic Crash Analysis of Driver Response, Northwestern University Center for Public Safety, Online Course (2020)
- **Vehicle Accident Reconstruction – Electronic Data:** Event Data Recorder Use in Traffic Crash Reconstruction – Level 1, Institute of Police Technology and Management, Online Course (2022); Crash Data Retrieval System Technician Training, Institute of Police Technology and Management, Online Course (2018); Accessing and Interpreting Heavy Vehicle Event Data Recorders, SAE International, Oxnard, CA (2017)
- **Vehicle Accident Reconstruction – Software:** Accident Reconstruction and Simulation, Engineering Dynamics Corporation, Burbank, CA (2019)
- **Other:** Scientific Computing with Python, University of Michigan School of Information, Online Course (2021)

Presentations

- **“3D Simulation Capabilities in HVE.”** Delta |v| Forensic Engineering 2017 Annual Meeting. Charlotte, NC Feb. 16, 2017.
- **“Technology in Collision Reconstruction.”** New England International Association of Special Investigation Units 15th Annual Seminar. Westford, MA May 4, 2022.
- **“Basic Truck Accident Reconstruction.”** Claims and Litigation Management 2022 Claims College, Baltimore, MD, Sep. 8, 2022.

- **“Advanced Truck Accident Reconstruction.”** Claims and Litigation Management 2022 Claims College, Baltimore, MD, Sep. 9, 2022.
- **“Electronic Data and Evidence.”** Rimkus and McLane Company Big Rig School. Contoocook, NH. Sep. 8, 2023.