



RICHARD A. MINK, MSME, PE SENIOR CONSULTANT

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Mr. Mink is a Senior Consultant in the Automotive Practice Group at Engineering Systems Inc. (ESi). His work at ESi focuses on vehicle crash investigations and analyses, including the retrieval and analysis of vehicle crash data, and vehicle crash reconstructions. He performed similar work while employed as a consultant by Brach Engineering, which became part of ESi in 2014. He earned a Master of Science degree in Mechanical Engineering from Purdue University and a Bachelor of Science degree, Cum Laude, in Mechanical Engineering from The University of Toledo.

Before joining ESi, he was employed as a mechanical engineer by Navistar, Inc., an original equipment manufacturer (OEM) of trucks and buses. Initially, while working in Navistar's Applied Mechanics Laboratory, he conducted numerous tests and analyses pertaining to the performance, strength, or durability of various heavy truck systems and components, including cab structure, occupant seating, occupant restraint systems, and various chassis components. Later, while working in Navistar's Product Integrity Group, he investigated numerous heavy truck crashes and fires and provided technical consultation and testimony in numerous product liability matters pertaining to heavy truck crashworthiness, compliance with federal regulations and industry standards, and the performance of heavy truck systems and components.

Mr. Mink is a licensed Professional Engineer (PE) in Indiana and Ohio and an SAE-certified accident reconstructionist. He also holds a Class A Commercial Driver's License in Indiana, with endorsements for tank vehicles, double/triple trailers, passenger transport, and school buses.

Areas of Specialization:

Vehicle Crash Data Retrieval and Analysis for Heavy and Light Vehicles

Vehicle Crash Investigation, Analysis, and Reconstruction

Commercial Vehicle Cab Structure, Seats, Occupant Restraints, Steps, and Grab Handles

Compliance with Federal Motor Vehicle Safety Standards, ECE Regulations, and Industry Standards

Compliance with Federal Motor Carrier Safety Regulations

Education:

Master of Science (MS) in Mechanical Engineering; Purdue University, West Lafayette, Indiana

Bachelor of Science (BS) in Mechanical Engineering, Cum Laude; The University of Toledo, Toledo, Ohio

Professional Licensure-Professional Engineer (PE):

State of Indiana License No. PE10201218

State of Ohio License No. PE.84922

Positions Held:

Engineering Systems Inc.–Aurora, Illinois

Senior Consultant, 2022 – present
Senior Staff Consultant, 2019 – 2021
Staff Consultant, 2014 – 2019

Brach Engineering, LLC–Granger, Indiana

Consulting Engineer, 2012–2014

Navistar, Inc.–Fort Wayne, Indiana

Mechanical Engineer, 1995–2012

Purdue University–West Lafayette, Indiana

Graduate Student, 1993–1995

United States Navy–Pensacola, Florida and San Diego, California

Naval Flight Officer, 1987–1993

Publications and Presentations:

Contributor to SAE International's *Dictionary of Vehicle Accident Reconstruction and Automotive Safety*, By R. Matthew Brach, PhD, PE, Publication R-556, SAE International, 2023

Manuel, E., **Mink, R.**, and Kruger, D., "Videogrammetry in Vehicle Crash Reconstruction with a Moving Video Camera," SAE Technical Paper 2018-01-0532, 2018, doi:10.4271/2018-01-0532.

Brach, R., Brach, R., and **Mink, R.**, "Nonlinear Optimization in Vehicular Crash Reconstruction," SAE Int. J. Trans. Safety 3(1):2015, doi:10.4271/2015-01-1433.

Professional Activities:

SAE International (SAE)
National Society of Professional Engineers (NSPE)
Pi Tau Sigma (International Mechanical Engineering Honor Society)

Continuing Education Courses Completed:

Event Data Recorder Update and Analysis, Ruth Consulting, September 2023
Advanced Applications of Heavy Vehicle EDR Data, SAE, 2022
Bendix Advanced Technology Training, Bendix Spicer Foundation Brake LLC, 2021
Traffic Signal Timing Records Interpretation and Analysis, The University of Tennessee, 2020
Applying Automotive EDR Data to Traffic Crash Reconstruction, SAE, 2019
Applied Vehicle Dynamics Course, Precision Auto Research, 2018
Pedestrian/Bicycle Crash Investigation–Level I, University of North Florida, 2018
Human Factors in Traffic Crash Reconstruction, University of North Florida, 2017
Vehicle Dynamics for Passenger Cars and Light Trucks, SAE, 2017
Fundamentals of Heavy Truck Dynamics, SAE, 2017
Reconstruction and Analysis of Rollover Crashes of Light Vehicles, SAE, 2016

Continuing Education Courses Completed (continued):

Reconstruction and Analysis of Motorcycle Crashes, SAE, 2016
Crash Data Retrieval (CDR)–Data Analyst, Northwestern University, 2016
Vehicle Crash Reconstruction Methods, SAE, 2015
Crash Data Retrieval (CDR)–Technician Level 1, Collision Safety Institute, 2014
Accessing and Interpreting Heavy Vehicle Event Data Recorders, SAE, 2014
Commercial Vehicle Air Brake Systems Training, Bendix Spicer Foundation Brake LLC, 2013
Traffic Accident Investigation 7–Commercial Vehicle, Michigan State University, 2012
Hands-On Vehicle Fire/Arson Investigation, Public Agency Training Council, 2011
Fire Investigation and Product Liability Litigation, University of Wisconsin, 2008
Fire/Arson Investigation, IVY Tech Community College, 2007
Vehicle Frontal Crash Occupant Safety and CAE, SAE, 2007
Modern Investigation Techniques, IAAI, Ohio Chapter, 2007
Commercial Vehicle Braking Systems, SAE, 2005
Design FMEA Participant Workshop, Eastern Michigan University, 2005
Mechanics of Heavy-Duty Truck Systems, University of Michigan, 2004
Traffic Accident Reconstruction I, Northwestern University, 2003
CVSA Inspection Familiarization, Commercial Vehicle Safety Alliance, 2002
Heavy Vehicle Rollover TOPTEC: Prevention, Analysis and Reconstruction, SAE, 2000
Injuries, Anatomy, Biomechanics & Federal Regulation, SAE, 2000

Patents:

Hybrid Electric Vehicle Battery Box and Supports, U.S. Patent 6,547,020
Seat Belt Anchor and Method of Installation in a Mobile Vehicle, U.S. Patent 6,158,774