

Exponent®
Engineering & Scientific Consulting

Mike Dickinson, P.E.

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Professional Profile

Mr. C. Michael Dickinson, MSME, PE is a Principal Engineer at Exponent, Inc. in the Vehicle Engineering Practice. He is a registered professional mechanical engineer in three states (NC, SC, and AL). He has investigated and analyzed over 1,500 accidents and incidents in 33 states, Canada and France. He has testified in deposition and trial in over 150 matters as an expert in Accident Reconstruction, Failure Analysis, and Safety Engineering.

Mr. Dickinson provides scientific and engineering consulting services in the areas of mechanical engineering, failure analysis, accident reconstruction, data analysis, and consumer and industrial product design and safety evaluations. He has specialized expertise regarding: accident causation; component, mechanism, and system failures; design and the manufacturing of mechanical systems; government regulations and codes as well as consensus industry standards. He has investigated and analyzed hundreds of accidents that occurred at mines, construction sites, railroads, pulp and paper plants, textile manufacturing facilities, and steel mills. He has provided scientific analysis and expert testimony on product-related and machinery-related cases involving: bucket trucks, scissor lifts, winches, hoists, rigging, dozers, excavators, backhoes, skid-steer loaders, cranes, conveyors, presses, automatic guided vehicles, go-karts, freight car brake systems, derailment causation, elastomeric straps, saws, textile processing machinery, intermodal container and freight car loading, lawn mowers, hydraulic cylinders, moving walkways, and automatic doors. Mr. Dickinson has also performed investigations and accident reconstructions that include pedestrian falls, falling objects, and motor vehicle accidents. Mr. Dickinson has specialized expertise in the following areas that may contribute to and/or cause traffic accidents: roadway conditions, line-of-sight and nighttime visibility, speed, stopping distance, the condition and function of vehicle components and systems, right of way violations and centerline crossing, vehicle handling, and accident avoidance.

Mr. Dickinson has provided engineering consulting and safety engineering services to textile machinery manufacturers, textile producers, engineered materials manufacturers, tobacco processors, motor vehicle manufacturers, printing equipment manufacturers, and the utility and railroad industries. Significant projects performed for commercial clients include: monitoring and analysis of process plant utilization of compressed air and steam, including use-optimization analyses and development of recommendations for equipment and procedural modifications to improve efficiency; development of a non-destructive instrumentation and testing technique to identify the presence of through wall cracks in fiberglass booms; reliability and risk analysis of freight car roller bearings, including development of a preventive maintenance program for the freight car fleet; safety evaluation of new machinery and machine components for the U.S. market for foreign-based equipment manufacturers; risk analysis and safety history evaluation for textile cards and crosslappers; safety evaluation of a new non-woven textile production facility including analysis of facility-related safety issues and machinery-related safety issues; design, development, and testing of a torsion bar rear suspension assembly for transit buses; theoretical study and experiments related to the mounting process for reusable cylinder surfaces (RCS sleeves) for the printing industry; design of a conditioning machine for cellulose acetate tow; design of equipment for

the deployment and retrieval of monitoring equipment beneath hazardous material landfills; design of a precision laser cutting machine for RCS sleeves; safety review of an entire injection molding plant; concept evaluation and stress analysis of a coiler-recoiler for sheet metal processing; and occupational noise measurement and analysis in textile processing facilities.

Academic Credentials & Professional Honors

M.S., Mechanical Engineering, University of Washington, 1982

B.S., Physical Sciences, Stanford University, 1978

Tau Beta Pi

Licenses and Certifications

Professional Engineer, Alabama, #28609

Professional Engineer, North Carolina, #16761

Professional Engineer, South Carolina, #14712

Certified English XL Tribometrist (CXLT)

Prior Experience

Dickinson & Associates, Inc., President and Principal Engineer,1989-2015

Failure Analysis Associates, Inc., Senior Engineer 1986-1989

SRI International, Research Engineer - Poulter Laboratory, 1982-1986

Lehigh Design, Inc., Consulting Engineer, 1980-1981

EDS Nuclear, Inc., Principal Engineer, 1980

Catalytic International, Inc., Mechanical Engineer 1979

Arco Solar, Inc., Associate Research Engineer,1978-1979

Professional Affiliations

American Society of Mechanical Engineers — ASME

American Society of Safety Engineers — ASSE (Professional Member)

American Society for Testing and Materials — ASTM

National Society of Professional Engineers — NSPE

National Fire Protection Association — NFPA

Society of Automotive Engineers — SAE

Publications

Publications and Presentations

Dickinson CM, Brewer B. Non-Destructive Method of Detecting Cracks in Fiberglass-Reinforced Bucket Truck Booms, Presented at Materials Science & Technology Conference, Columbus, OH, October 2018.

Dickinson CM. Technology in Heavy Vehicle Accident Reconstruction. Presented at CLM Midwest Transportation Conference, Chicago, IL, June 2018.

Dickinson CM. The Case of the Wayward Arrowboard. Georgia Defense Lawyer, Volume XIII, Issue III, Winter 2017.

Dickinson CM. Accident Reconstruction: What We Do and How You Can Help. Invited speaker, Zurich Construction Seminar - Fleet Safety Management, Charlotte, NC, April 2005.

Dickinson CM. Comparison of EDSVS Simulations and Track Test Data. Presented at the NAFE Seminar, Charlotte, NC, January 1997.

Dickinson CM. Industrial Safety for Machinery Maintenance and Service Personnel. Instructor for the field service staff seminar, Schlumberger U.S.A., Inc., North Myrtle Beach, SC, June 1996.

Dickinson CM. Low Speed Collision - Accident Reconstruction. Invited speaker for law firm of Tim L. Harris & Associates, Inc., Annual Retreat, Hilton Head Island, SC, May 1996.

Dickinson CM. Traffic Accident Reconstruction. Instructor for the Continuing Education Seminar for the Investigative Engineers Association (IENGA), New Orleans, LA, April 1996.

Dickinson CM, Iwand H. Railroad Freight Car Roller Bearing Life Estimation Using Weibull Analysis. 1996 SAE Weibull User's Conference, Detroit, MI, March 1996.

Dickinson CM. Traffic Accident Reconstruction Techniques. Presentation to Charlotte Claims Association, April 1995.

Dickinson CM, Proffit EM. A Study of the Mounting of Nickel RCS Sleeves. Society for Experimental Mechanics, International Machinery Monitoring & Diagnostic Conference, March 1993.

Dickinson CM, et al. Safety Issues in Systems Designed to Recover Gasoline Vapor During Motor Vehicle Refueling. Submitted to US Environmental Protection Agency in response to proposed rulemaking dated August 9, 1987, FaAA-AZ-R-87-10-6, Failure Analysis Associates, Inc., February 1988.

Dickinson CM, Andeen GB. Torque Programming. Army Research Office Workshop, Kinematics, Dynamics, and Control of Mechanisms and Manipulators, June 1986.

Dickinson CM. Laboratory Experiments and Theoretical Analyses Investigating the Response of Unreinforced and Rock-Bolt-Reinforced Tunnels. Final Report of Research for Defense Nuclear Agency, Contract No. DNA 001-82-C-0025, Classification: Secret, SRI International, July 1985.

Dickinson CM, Lindberg HE. Scale Model Experiments Investigating the Response of Protective Structures to Nuclear Attack Loading. 25th Symposium on Rock Mechanics, 1984.

Dickinson CM, et al. Thermal Stresses and Fracture in Glass and Ceramics, Single and Multiple Cracks. Ceramics 1983, Seattle, WA, 1983.