



WOODROW M. POPLIN, M.S.E., P.E.

Engineer: Mechanical, Civil

Vehicle Accident Reconstruction

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**Vehicle Accident Reconstruction**

**Technical Investigation**

**Hazards Identification & Analysis**

**Mechanical/Structural Analysis**

**Failure Analysis**

**Machine Design**

**Products Liability**

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Education

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- 1989 Master of Science in Civil Engineering**  
University of South Carolina
  - 1983 Master of Science in Mechanical Engineering**  
University of South Carolina
  - 1979 Bachelor of Science in Mechanical Engineering**  
University of South Carolina

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Experience

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**November 1992 to Present**

W Poplin Engineering LLC formed 2002. 1992-2002 Summit Engineering, L.L.P., South Carolina, founding partner and consulting engineer performing specialized consulting in the areas of: **Vehicle Accident Analysis and Reconstruction, Vehicle and Occupant Dynamics and Collision Analysis, Hazards Identification and Analysis; Vehicle Accident Simulation; Computer Aided Drafting of Accident Site and Accident Sequence;** Precision measurement of accident sites to evaluate vehicle mechanics, visibility, and timing; occupant movement and contact analysis; analysis and evaluation of designs, component testing, operating instructions, guards and warnings, standards and code compliance; **Accident Evaluation**

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**(machinery, equipment and consumer products); Machine design, controls, guards, warnings, human factors, standards, code compliance, and maintenance.**

### **December 1983 to November 1992**

Engineering Design & Testing Corp., Columbia, South Carolina, District Manager - Engineering manager for all consulting activities of Columbia District Office. Supervised engineers, technicians and support staff in a variety of multidisciplinary projects including: mechanical, metallurgical, civil, structural, chemical and electrical analyses, failures, testing and design.

Consulting engineer with Engineering Design and Testing Corporation. **Consultant in vehicle accident reconstruction, mechanical designs, mechanical testing, vehicle and occupant dynamics and collision analysis. Typical activities include stress analysis, failure analysis, occupant motion, speed evaluation from vehicle trajectories and braking distances, collision speeds, welding practices, rigging procedures, and cargo securement.** Specify procedures, design equipment and supervise the conduct of specialized testing. Consultant to industry in shipping and transport considerations, automotive testing and structural analysis of vehicular systems.

Consulting Activities included investigation, documentation and analysis of hundreds of vehicle accidents. Conducted conventional analysis as well as two-dimensional and three-dimensional photogrammetry, computer analysis, simulation and animation of vehicle accidents.

### **January 1983 to December 1983**

Graduate Research Assistant with the University of South Carolina. Conducted research involving computer-aided examination of composite rocket motor casings for the U.S. Army Missile Command. Developed procedures to perform non-destructive testing on composite structures using computer aided optical techniques.

### **May 1979 to December 1982**

Naval Officer assigned to the Weapons and Engineering Departments of USS Davis DD-937. Required intimate familiarity with nautical rules of the road and maritime procedures. Responsible for the maintenance and operation of ship's boats, emergency diesels, steering gear, ground tackle, winch systems, refrigeration and air conditioning systems, air compressors, machining operations, and fire fighting operations and systems. Ship's Gas Free Engineer responsible for toxic and explosive atmosphere testing. Command Safety Assistant responsible for organization and conduct of safety meetings, safety training and investigation of safety related accidents such as fires and flooding. Assigned as Ship's Physical Security Officer and Nuclear Weapons guard force officer. Responsible for all physical security including alarms, perimeters, identification and access control, barriers, intrusion protection, bomb threats and terrorist activities. Responsible for supervision and training of nuclear weapons guard force personnel.

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**November 1976 to August 1977**

U.S. Navy - Training as an Electronics Technician; maintenance, troubleshooting and repair of shipboard electronic equipment.

**December 1972 to November 1976**

Worked as a machinist and welder on the repair and fabrication of agricultural, mining, logging and industrial equipment. Familiar with shop and field maintenance procedures on mechanical systems.

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Courses and Seminars Presented

**December 6, 1994**

Two-hour, State of North Carolina Approved Continuing Education Course entitled "Investigation and Evaluation of a Vehicle Accident Claim", Charlotte, North Carolina.

**July 9, 1997**

Three-hour, State of North Carolina Approved Continuing Education Course entitled "Identification of a Products Liability Claim", Charlotte, North Carolina.

**July 12, 1999**

"Broken Parts and Other Failures" presented at the 1999 International Association of Accident Reconstruction Specialists Conference in Charleston, South Carolina

**July 13, 1999**

"Power Equations" presented at the 1999 International Association of Accident Reconstruction Specialists Conference in Charleston, South Carolina

**July 23, 2001**

"Accident Reconstruction" presented at the 2001 Strategies In Handling DUI Cases In South Carolina Conference in Columbia, South Carolina

**January 10, 2002**

"Accident Analysis and Evaluation" presented to the American Society of Mechanical Engineers, Kingsport, Tennessee

**February 21, 2003**

"Event Data Recorders – Automotive Black Boxes" presented at the 2003 Strategies In Handling DUI Cases In South Carolina Conference in Columbia, South Carolina

**April 25, 2003**

"Event Data Recorders – Automotive Black Boxes" presented at the South Carolina Claims Association Spring Conference, Myrtle Beach, South Carolina

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**April 25, 2003**

“Evaluation of a Vehicle Accident” presented at the South Carolina Claims Association Spring Conference, Myrtle Beach, South Carolina

**March 10, 2005**

“Is the accident the driver’s fault?” presented at the 2005 Strategies In Handling DWI and DUI Cases In South Carolina Conference in Columbia, South Carolina

**April 26, 2006**

Event Data Recorders – Crash Data Recorders “The Black Box You Need To Know About” presented at the 2006 Strategies In Handling DUI Cases In South Carolina Conference in Columbia, South Carolina

**April 10, 2008**

Accident Reconstruction - Tractor Trailers and Heavy Trucks, presented at the 2008 Trucking Accident Litigation Seminar in Columbia, South Carolina

**April 1, 2009**

Accident Reconstruction - Tractor Trailers and Heavy Trucks, presented at the 2009 Trucking Litigation and D.O.T. Regulations in South Carolina Seminar in Columbia, South Carolina

**December 7, 2011**

Commercial Vehicle Accident Reconstruction - Trends and Issues, presented at the 2011 Trucking Litigation and D.O.T. Regulations in South Carolina Seminar in Columbia, South Carolina

Professional Organizations

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American Society of Mechanical Engineers (Past Chairman of Midlands, SC Chapter, Region IV)

Society of Automotive Engineers

South Carolina Society of Engineers

National Association of Professional Accident Reconstruction Specialists

South Carolina Association of Reconstruction Specialists

Publications

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"Determination of the Displacement Field of a Composite Cylinder Using Digital Image Processing", 1983, Masters Thesis, University of South Carolina.

"Whole Field Experimental Stress Analysis of Composite Joints", with W. Peters, M. Sutton and W. Ranson, 1983 University of South Carolina.

"Whole Field Experimental Displacement Analysis of Composite Cylinders", Proceedings, 1985 Society for Experimental Mechanics Spring Conference, with D. Walker, W. Peters, M. Sutton and W. Ranson.

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"A Critical Review of Materials Selected for High Integrity Containers", presented at the 1986 Waste Management Conference, Tucson, Arizona, February, 1986, with T. Jur.

"A Hybrid High Integrity Container for Disposal of Low-Level Radioactive Wastes", presented at the 1987 Waste Management Conference, Tucson, Arizona, March, 1987, with S.B. McCoy and T. Jur.

"Failure Analysis of a Plastic Boat Seat", American Society of Mechanical Engineers Paper No. 87-DE-8, presented at the National Design Engineering Conference, March 1987, Chicago, Illinois, with T. Jur, F. Furno and K. Suggs.

"Accident Analysis in Engineering", The South Carolina Engineer, Camden, South Carolina, Winter 1988.

"Methods of Analysis of Fractured Plastic Parts", Presented at the Society of manufacturing Engineers Conference on Practical Plastic Product Design, February 5 - 6, 1991, Detroit, Michigan, with T. Jur.

"Speed Evaluation - Working With the Vehicle Accident Reconstructionist", South Carolina Trial Lawyer, Columbia, South Carolina, Fall 1993.

"Improper Installation for Traffic Model Fire Hydrant Causes Significant Water Damage to Nearby Retail Establishment," ASSE Paper No. 081-7, presented at Safety Technology 2000 on June 19, 1995, Orlando, Florida, with Jeffery H. Warren.

"Accident Reconstruction" presented at the 2001 Strategies In Handling DUI Cases In South Carolina Conference in Columbia, South Carolina

"Acceleration of Heavy Trucks", presented at the South Carolina Association of Reconstruction Specialists, 4<sup>th</sup> Annual Southeastern Reconstruction Conference, June 2002, Charleston, South Carolina.

"Event Data Recorders - Automotive Black Boxes" presented at the Strategies In Handling DUI Cases In South Carolina Conference, on February 21, 2003, Columbia, South Carolina.

"Is the accident the driver's fault?" presented at the 2005 Strategies In Handling DWI and DUI Cases In South Carolina Conference in Columbia, South Carolina

Event Data Recorders – Crash Data Recorders "The Black Box You Need To Know About" presented at the 2006 Strategies In Handling DUI Cases In South Carolina Conference in Columbia, South Carolina

Accident Reconstruction - Tractor Trailers and Heavy Trucks, presented at the 2008 Trucking Accident Litigation Seminar in Columbia, South Carolina

Commercial Vehicle Accident Reconstruction - Trends and Issues, presented at the 2011 Trucking Litigation and D.O.T. Regulations in South Carolina Seminar in Columbia, South Carolina

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## Registration

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Registered Professional Engineer in South Carolina (#10858)

Registered Professional Engineer in North Carolina (#15125)

Accreditation Commission for Traffic Accident Reconstruction (#74)

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## Continuing Education

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December 1987	Traffic Accident Reconstruction - Northwestern University, Evanston, Illinois
October 1988	Brakes: Design & Safety - Society of Automotive Engineers Seminar, Orlando, Florida
March 1990	Heavy Truck Air Brake Systems - Greenville Technical College, Greenville, South Carolina
June 1990	Allowable Stress Design In Steel - Columbia, South Carolina
May 1992	Certificate of Qualification - Accreditation Commission for Traffic Accident Reconstruction
July 1993	Full Accreditation as a Traffic Accident Reconstructionist (Registration Number 74) - Accreditation Commission for Traffic Accident Reconstruction, Denver, Colorado
December 1993	Heavy Duty Vehicle Air Components and Brake Systems - Bendix Heavy Vehicle Systems, Atlanta, Georgia
August 1994	Hazardous Materials Transportation Safety Training, Charleston, South Carolina
January 1996	Land Surveying Mathematics, Spruce Pine, North Carolina
January 1996	Boundary Surveying, Spruce Pine, North Carolina
November 1997	Child Occupant Protection, Orlando, Florida
November 1997	STAPP Car Crash Conference, Orlando, Florida
March 1998	Advanced Accident and Collision Prediction (Simulation) with WINSMAC, Jacksonville, Florida
May 1998	Vehicle Fires - S.C. International Association of Arson Investigators, Columbia, South Carolina
July 1998	State of the Art in Reconstruction – Human Factor Issues; Low Speed Impact Testing; Physical Evidence Issues; Expert Witness Issues, Boston, Massachusetts
August 1998	Fire Dynamics, Columbia, South Carolina
November 1998	First Southeastern Reconstruction Conference, Myrtle Beach, South Carolina

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November 1998	Impulse Laser Measurement and Quickmap Software, Laser Technology, Inc., Charleston, South Carolina
March 1999	Acceleration and VC2000 Familiarization, Vericom Computers Inc., Raleigh, North Carolina
July 1999	IAARS 1999 – Biomechanics, Broken Parts, Power Equations, Legal Aspects of Accident Reconstruction, Occupant Kinematics, Vehicle Control Devices and ABS Systems, Charleston, South Carolina
October 1999	Southeastern Reconstruction Conference, Myrtle Beach, South Carolina
September 2000	World Reconstruction Exposition 2000, College Station, Texas
November 2000	Investigation of Vehicle Fires, Lee S. Cole & Associates, Charleston, South Carolina
March 2001	S.C.A.R.S., Southeastern Collision Reconstruction Conference, Myrtle Beach, South Carolina
July 2001	Inspection and Investigation of Commercial Vehicle Crashes, Jacksonville, Florida
June 2002	S.C.A.R.S., Southeastern Collision Reconstruction Conference, Charleston, South Carolina
July 2003	Collision Safety Institute - Crash Data Retrieval System Operator's Certification Course, Charleston, South Carolina
October 2004	MATAI 2004 Combined Annual Conference for Collision Reconstruction, Ocean City, Maryland
May 2005	Heavy Truck Handling, Dynamics & Control Symposium, Greenville, South Carolina
July 2005	S.C.A.R.S., Southeast Collision Reconstruction Conference, North Charleston, South Carolina
September 2006	Applied Vehicle Dynamics, Society of Automotive Engineers Seminar, Greer, South Carolina
November 2007	PhotoModeler Collision Reconstruction Course, Atlanta, Georgia
April 2008	Trucking Accident Litigation Seminar, Columbia, South Carolina
August 2008	Human Factors for Traffic Accident Reconstruction, Spartanburg, South Carolina
May 2009	Kinematics and Compliance Workshop, Michelin Research Center, Greenville, South Carolina
May 2009	SAE Heavy Truck Handling, Dynamics & Control Symposium, Clemson University International Center for Automotive Research, Greenville, South Carolina

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October 2009	Bendix Air Brake Course, Ocean City, Maryland
October 2009	2009 NAPARS 25 <sup>th</sup> Anniversary Conference: Heavy Vehicle Crash Reconstruction, Ocean City, Maryland
July 2010	S.C.A.R.S., Southeast Collision Reconstruction Conference Including Human Factors and CDR Update, Mt. Pleasant, South Carolina
August 2010	Commercial Vehicle Braking Systems e-Seminar, Society of Automotive Engineers, Warrendale, Pennsylvania
May 2011	Accessing and Interpreting Heavy Event Data Recorders, Society of Automotive Engineers, Charlotte, North Carolina
October 2011	Digital Photography for Accident Investigation, Harrisburg-Hershey, Pennsylvania
October 2011	2011 NATARI Crash Conference: Pedestrian/Bicycle Collisions – The Anatomy and Analysis of a Typical Pedestrian or Bicycle Crash Event, Harrisburg-Hershey, Pennsylvania
December 2011	Trucking Litigation and D.O.T. Regulations. Columbia, South Carolina
January 2012	Crash Data Retrieval User's Summit, Houston, Texas

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