**RICHARD A. McALISTER**
**Accredited Reconstructionist**
**The Crash Lab, Inc.**

**Post Office Box 850**
**Hampton, N.H. 03843-0850**
**(603) 926-0624 - FAX: (603) 929-0744**
**e-mail: rick@thecrashlab.com**
**www.TheCrashLab.com**

**OBJECTIVE:**

The application of professional experience with tutorial and academic preparation allowing for professional growth and recognition.

**PROFESSIONAL EXPERIENCE:**

- **Accredited Traffic Accident Reconstructionist,** ACTAR # 1488, The Accreditation Commission for Traffic Accident Reconstruction, certificate expires October 2017.

- **The Crash Lab, Inc., Hampton, New Hampshire, January 2011 – present**

  Accredited Traffic accident reconstructionist, providing services to insurance companies, law firms and governmental agencies that require motor vehicle accident reconstruction for use in civil and criminal litigation. Duties include, but are not limited to, field investigations; vehicle damage analysis, low velocity impact analysis, occupant kinematics, photography, velocity calculations, time and distance analysis, lamp filament examination, Crash Data Retrieval (CDR) downloads and data analysis report preparation, expert testimony and seminar presentations. Certified Crash Data Retrieval (CDR) technician

- **Maine Department of Public Safety, Maine State Police, 1986-2010**

  **Sergeant, Senior Crash Reconstruction Specialist, Maine State Police Traffic Safety Unit:**

  Monitored and managed the Maine Crash Reconstruction Services Program, Vehicle Post Crash Inspection Program, Crash Data Retrieval Program, and the Forensic Mapping Program. Reviewed and approved reconstruction reports for all members of the Maine Crash Reconstruction Unit. Organized and conducted annual training and certification testing for all members of the Maine Reconstruction program. Managed records for the Maine State Police Fleet Safety Board. System administrator for Maine's statewide electronic crash program. Developed and authored Request for Proposals for ongoing development of the Maine Crash Reporting System. Training Coordinator for the Maine Crash Reporting System. Principal instructor for the Maine Criminal Justice Academy Basic Law Enforcement Training Program and the Maine State Police Trooper School Crash investigation courses.

  Areas of Expertise: Roadway Evidence identification and interpretation; Drag Factor determination (coefficient of Friction); Tire and Lamp examination; Vehicle Damage Analysis; Vehicle Dynamics; Vehicle Rollovers; Pedestrian and Bicycle Collision Dynamics; Speed Determination: Slide to Stop (skid), Yaw/Critical Curve Speed, Vault/Fall/Flip, Pedestrian, Conservation of Linear Momentum; Forensic Mapping and Scene Diagramming – Sokkia/Leica Total Station/MapScenes Evidence Recorder and MapScenes CAD diagramming; and Bosch/Vetronix Crash Data Retrieval System – Event Data Recorder systems on Motor Vehicles.

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- Recognized Expert to give testimony before States Courts
- Preparation of Collision Reconstruction for Counsel in Civil and Criminal Litigation, ~ 50/50% Civil Plaintiff/Defendant case ratio
- Member, Board of Directors, National Association of Professional Accident Reconstruction Specialists, Inc., **(NAPARS)**
- Member, New York Statewide Traffic Accident Reconstruction Society, NYSTARS
- State of Maine, Department of Public Safety, Licensed Private Investigator, current

**INSTRUCTOR:**

***Forensic Mapping Utilizing a Total Station Training,*** October 22-24, 2012, 24 hours, Bloomsburg Police Department, Bloomsburg, Pa. Topics included: Learning to apply investigation skills with Forensic Mapping technology, Demonstrating proficiency in leveling instrument, Describing instrument nomenclature, Understanding total station keyboard/setup, Determining slope and horizontal distances, Determining horizontal and vertical angles, Defining evidence coordinates with eight attributes, Determining remote elevations and off-set angles, Traversing, Resection, Applying reference measurement protocol, and Defining general operation of data collector.

***Accreditation Council for Traffic Accident Reconstruction Exam Preparatory Course,*** September 24-25, 2012, 16 hours, Camp Keys Army National Guard Base 194 Winthrop Street, Augusta, Maine. Topics included: Reviewing reconstruction techniques and problem solving necessary for the traffic crash reconstructionist, scale diagramming, and measuring approach and departure angles from scale diagramming.

***Accreditation Council for Traffic Accident Reconstruction Exam Preparatory Course,*** June 14-15, 2012, 16 hours, Massachusetts State Police Barracks Danvers, Ma. Topics included: Reviewing reconstruction techniques and problem solving necessary for the traffic crash reconstructionist, scale diagramming, and measuring approach and departure angles from scale diagramming.

Co-Instructor, ***Advanced Reconstruction with CDR Data,*** November 7-9, 2011, 24 hours, The Crash Lab, Inc., Alfred, ME, for Maine and New Hampshire Law Enforcement Reconstructionists. Momentum overview; Restitution & Closing Speed; Calculating Δv from Acceleration Data; Calculating Impulse Δv from x/y Δv Data; Calculating PDOF from x/y Δv Data; Discussed adjusting x Axis Δv to Represent Impulse Δv; Single Equation Approach to 360°Momentum Analysis; and Calculating Impact & Post Impact Velocities from CDR Data (Δv & pdof)

***Accreditation Council for Traffic Accident Reconstruction Exam Preparatory Course,*** October 3, 2011, 8 hours, NAPARS joint conference, Hersey, Pa. Topics included: Reviewing reconstruction techniques and problem solving necessary for the traffic crash reconstructionist, scale diagramming, and measuring approach and departure angles from scale diagramming.

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***Accreditation Council for Traffic Accident Reconstruction Exam Preparatory Course,*** April 27-28, 2011, 16 hours, Stratham Police Department, Stratham, NH. Topics included: Reviewing reconstruction techniques and problem solving necessary for the traffic crash reconstructionist, scale diagramming, and measuring approach and departure angles from scale diagramming.

***Accreditation Council for Traffic Accident Reconstruction Exam Preparatory Course,*** May 22, 2010, 10 hours, Rochester Police Department, Rochester, NH. Topics included: Reviewing reconstruction techniques and problem solving necessary for the traffic crash reconstructionist, scale diagramming, and measuring approach and departure angles from scale diagramming.

***Maine Reconstruction Unit In-Service "Reconstruction Update,"*** April 12-23, 2010, 40 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Pole and Narrow Object Impacts, COLM, Critical Speed Review, and Spin Analysis.

***Crash Reconstruction Course,*** May 3-7, 2010, 80 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Time/distance calculations, angular momentum and impact speed calculations using momentum equations, Behavior of vehicles in a collision using Newton's three laws of motion, Discussions of commercial vehicle and motorcycle dynamics in collisions, Determination of direction of travel, initial contact and position of vehicles on the roadway, and Derivation and origin of the commonly used speed formulas.

***Maine Reconstruction Unit In-Service and Certification Testing,*** December 2009, 16 hours, Central Maine Commerce Center, Augusta, ME.. Topics included: Calculating brake force in commercial vehicles, Calculating delta-v in crash vehicles, and Calculating speeds using the Mass-Ratio technique.

***Accreditation Council for Traffic Accident Reconstruction Exam Preparatory Course,*** October 5, 2009, 10 hours, Ocean City, MD. Topics included: Reviewing reconstruction techniques and problem solving necessary for the traffic crash reconstructionist, scale diagramming, and measuring approach, and departure angles from scale diagramming.

***Maine Reconstruction Unit In-Service Training,*** September 17, 2009, 8 hours, Bangor Police Department, Bangor, ME. Topics included: Calculating brake forces on commercial motor vehicles.

***Forensic Mapping Utilizing a Total Station Training,*** September 13-18, 2009, 40 hours, Farmington Police Department, Farmington, ME. Topics included: Learning to apply investigation skills with Forensic Mapping technology, Demonstrating proficiency in leveling instrument, Describing instrument nomenclature, Understanding total station keyboard/setup, Determining slope and horizontal distances, Determining horizontal and vertical angles, Defining evidence coordinates with eight attributes, Determining remote elevations and off-set angles, Traversing, Applying reference measurement protocol, and Defining general operation of data collector.

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***Maine Reconstruction Unit In-Service and Commercial Vehicle Skid Testing,*** July 7-9, 2009, 24 hours, Brunswick Naval Air Station, Brunswick, ME and Topsham Police Department, Topsham, ME. Topics included: Approximately 16 skid tests were performed using four configurations of truck-tractors/semi-trailers. All tests were recorded with Vericom 3000 and Stalker Radars. Approximately 50 acceleration tests were conducted for trucks and busses making left and right turns.

***Maine Reconstruction Unit In-Service and Certification Testing,*** December 2008, 16 hours, Central Maine Commerce Center, Augusta, ME. Topics included: Speed from pole impacts, Adjusting drag factors, Skid testing comparing ABS vs. Non-ABS braking, and Critical speed yaw testing.

***Maine Reconstruction Unit In-Service Training,*** October 7-8, 2008, 16 hours, Bangor Police Department, Bangor, ME. Topics included: Speed from pole impacts, Adjusting drag factors, Skid testing comparing ABS vs. Non-ABS braking, and Critical speed yaw testing.

***Maine Reconstruction Unit In-Service Training,*** June 25-26, 2008, 16 hours, Brunswick Police Department, Brunswick, ME and Brunswick Naval Air Station. Topics included: Speed from pole impacts, Adjusting drag factors, Skid testing comparing ABS vs. Non-ABS braking, and Critical speed yaw testing.

***Maine Reconstruction Unit In-Service and Certification Testing,*** December 2-3, 2007, 16 hours, Central Maine Commerce Center, Augusta, ME. Topics included: Determining delta-v, Principle Direction of Force (PDOF), Time/Distance calculations, Linear Momentum calculations, and Slip angle verification in critical speed calculations.

***At-Scene Traffic Homicide Crash Investigation,*** October 2007, 80 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

***Maine Reconstruction Unit In-Service Training,*** September 2007, 16 hours, Bangor Police Department, Bangor, ME. Topics included: Determining delta-v, Principle Direction of Force (PDOF), Time/Distance calculations, Linear Momentum calculations, Slip angle verification in critical speed calculations, and Conducting skid and yaw testing.

***Maine Forensic Mapping Total Station Training,*** July 2007, 40 hours, Central Maine Commerce Center, Augusta, ME. Topics included: Learning to apply investigation skills with Forensic Mapping technology, Demonstrating proficiency in leveling instrument, Describing instrument nomenclature, Understanding total station keyboard/setup, Determining slope and horizontal distances, Determining horizontal and vertical angles, Defining evidence coordinates with eight attributes, Determining remote elevations and off-set angles, Traversing, Applying reference measurement protocol, and Defining general operation of data collector.

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***Maine Reconstruction In-Service Training – Live Crash Testing,*** June 7-8, 2007, 10 hours, Rotary Park, Biddeford, ME. Eight crash tests were conducted ranging from low speeds to 35 mph impacts. Testing was used to determine accuracy of speed calculation techniques.

***Skid and Scuff Testing in Gravel,*** March 17-18, 2007, 16 hours, Oxford Plains Speedway, Oxford, ME. Conducted multiple skid and scuff testing on gravel with and without ABS braking and stability controls with Wade Bartlett of Mechanical Forensic Solutions, LLC and William Wright. Data collected contributed to Braking on Dry Pavement and Gravel With and Without ABS Bartlett & Wright, SAE Paper No. 2010-01-0066.

***Maine Reconstruction Unit In-Service Training and Certification Testing,*** December 3-4, 2006, 16 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Commercial Vehicle Tip-over formulas, Adjusting drag factors, Momentum techniques, and Report writing.

***Maine Reconstruction Unit In-Service Training,*** November 30, 2006, 8 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Commercial vehicle tip-over formulas, Adjusting drag factors, and Report writing.

***Maine Reconstruction Unit In-Service Training,*** September 19-20, 2006, 16 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Calculating effective drag factors when a vehicle is skidding or yawing over two surfaces and Report writing,

***Multiple Surface Skid and Scuff Testing,*** September 19, 2006, 8 hours, Waterville Airport, Waterville, ME. Conducted approximately 16 skid and scuff tests while a vehicle is traveling on pavement and grass at the same time.

***Forensic Mapping In-Service Training,*** August 16-17, 2006, 16 hours, Central Maine Commerce Center, Augusta, ME. Topics included: Total station components, Setting up and leveling the theodolite, Preparing the data collector for a new job, and Transferring data from the data collector to MapScenes CAD software.

***Maine Reconstruction Unit In-Service Training and Certification Testing,*** December 13-15, 2005, 24 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Report writing, Drag factor adjustment, Time/distance analysis, Momentum analysis, Use of Crash Data Retrieval information, and Court testimony.

***Maine Reconstruction Unit In-Service Training,*** September 6-7, 2005, 16 hours, Bangor Police Department, Bangor, ME. Topics included: Report writing, Drag factor adjustment, Time/distance analysis, Momentum analysis, Use of Crash Data Retrieval information, and Court testimony.

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***Maine Reconstruction Unit In-Service Training,*** March 22, 2005, 8 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Report writing, Drag factor adjustment, Time/distance analysis, Momentum analysis, Use of Crash Data Retrieval information, and Court testimony.

***Maine Reconstruction Unit Training,*** January 20, 2005, 8 hours, Maine State Police Traffic Division Gardiner, ME. Topics included: Critical Speed Scuff Technique verification, Trigonometric functions and their use, and Speed loss from rotation techniques.

***Maine Reconstruction In-Service Training & Certification Testing,*** November 8-9, 2004, 16 hours, Central Maine Commerce Center, Augusta, ME. Topics included: Critical Speed Verification Techniques, The use of trigonometric functions, Speed loss from rotation, Drag factor adjustments, Measuring PDOF, and Skid and scuff testing on wet surfaces.

***At-Scene Traffic Homicide Crash Investigation,*** September 20 – October 1, 2004, 80 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

***Maine Reconstruction Unit In-Service Training and Certification Testing,*** December 17, 2003, 8 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Speed analysis techniques, Momentum calculations, Time/distance calculations, and A review of Newton's Laws of Motion.

***At-Scene Traffic Homicide Crash Investigation,*** September 22 – October 3, 2003, 80 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

***Maine Reconstruction Unit In-Service Training,*** May 29 - 30, 2003, 16 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Speed caused by narrow object crush, Using tip-over formulas with large trucks, Adjusting drag factors for vehicles hauling partial or non-braked trailers, and Maintaining photos in reconstruction cases.

***Maine Reconstruction Unit In-Service Training and Certification Testing,*** December 6, 2002, 8 hours, Maine State Police Traffic Division, Gardiner, ME. Topics included: Drag sled verification, CDR technology, and the use of digital photography.

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***At-Scene Traffic Homicide Crash Investigation,*** December 2 - 13, 2002, 80 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

***Maine Reconstruction Unit In-Service Training and Certification Testing,*** November 13-14, 2002, 16 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Skid and scuff testing, Drag sled verification, CDR technology, and The use of digital photography.

***Vehicle Autopsy/Post-Crash Inspection In-Service Training,*** February 19-20, 2002, 16 hours, Oxford Hills Comprehensive High School, South Paris, ME. Topics included: Vehicle suspension, Braking and steering components. Process of conducting vehicle post-crash inspections, and Hands-on vehicle inspections.

***Maine Reconstruction Unit In-Service Training,*** November 9, 2001, 8 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Drag factor adjustment, Speed analysis techniques, and Skid testing.

***Maine Reconstruction Unit In-Service Training,*** October 29, 2001, 8 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Drag factor adjustment, Speed analysis techniques, and Skid testing.

***Maine Reconstruction Unit In-Service Training and Certification Training,*** December 12, 2000, 8 hours, Maine State Police Traffic Division, Gardiner, ME. Review of yearly instruction and administration of certification test.

***Maine Reconstruction Unit In-Service Training,*** December 11, 2000, 8 hours, Scarborough Police Department, Scarborough, ME. Topics included: Skid and scuff testing and Speed analysis techniques.

***At-Scene Traffic Homicide Crash Investigation,*** November 27 – December 8, 2000, 80 hours, Maine Criminal Justice Academy, Vassalboro, ME. Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

***At-Scene Traffic Homicide Crash Investigation,*** July 31 – August 11, 2000, 80 hours, Maine Criminal Justice Academy, Waterville, ME. Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

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***Maine Reconstruction Unit In-Service Training,*** March 3, 2000, 8 hours, Maine State Police Traffic Division, Gardiner, ME. Topics included: Critical speed scuff techniques on two surfaces, Pedestrian crashes, Adjusting drag factors, and Vehicles in yaw while ABS is active.

***Maine Reconstruction Unit In-Service Training,*** March 2, 2000, 8 hours, Bangor Police Department, Bangor, ME. Topics included: Critical speed scuff techniques on two surfaces, Pedestrian crashes, Adjusting drag factors, and Vehicles in yaw while ABS is active.

***Maine Reconstruction Unit In-Service Training,*** March 1, 2000, 8 hours, Scarborough Police Department, Scarborough, ME. Topics included: Critical speed scuff techniques on two surfaces, Pedestrian crashes, Adjusting drag factors, and Vehicles in yaw while ABS is active.

***Maine Reconstruction Unit In-Service Training and Certification Testing,*** October 1999, 16 hours, Maine Criminal Justice Academy, Waterville, ME. Topics included: General reconstruction technique review and Administering certification exam.

***Maine Forensic Mapping Unit In-Service Training,*** September 22, 1998, 8 hours, Maine State Police Barracks, Gray, ME. Topics included: Total station components, Setting up and leveling the theodolite, Preparing the data collector for a new job, Downloading a scene from the data collector to "MAP" software, and Transferring a scene from "MAP" software to Autosketch.

***Maine Forensic Mapping Unit In-Service Training,*** September 23, 1998, 8 hours, Maine Department of Transportation, Bangor, ME. Topics included: Total station components, Setting up and leveling the theodolite, Preparing the data collector for a new job, Downloading a scene from the data collector to "MAP" software, and Transferring a scene from "MAP" software to Autosketch.

***At-Scene Traffic Homicide Crash Investigation,*** January, 1998, 80 hours at each location, Maine Department of Transportation, Gardiner, ME and Maine State Police barracks, Gray, ME, Topics included: Physical evidence from the roadway, Physical evidence from the vehicle, The human element and occupant kinematics, Mathematical principles and equations, Skid marks and vehicle speeds, Crash scene photography, Traffic templates, Measuring and scale diagramming, Driver and witness interviews, and Information analysis and case preparation.

***Basic Crash Investigation,*** Biannual since 1989, 40 hours, Maine Criminal Justice Academy Waterville and Vassalboro, ME. Basic crash investigation techniques, Interview techniques, Evidence at the scene, Evidence from the vehicle, Filling out required crash report forms, and Measuring and diagramming crash scenes.