

CURRICULUM VITAE

February 2018

Lock, James Raymond

Collision Research Associates
College Station, Tx USA

PROFESSION:

Motor Vehicle Crash Investigation and Reconstruction
Highway Safety Research & Analysis

EXPERIENCE:

Traffic Accident Reconstructionist and Highway Safety Expert: Collision Research Associates, Jan 1991 - Present. Scientific Inquiry, Inc., Jan 1982 - June 1994.

Activities include: Heavy truck, motorcycle, and passenger collision investigation and reconstruction. Crash scene and vehicle documentation. Crash investigation, reconstruction, analysis and reporting for governmental entities, insurance companies, law firms, trucking and transportation carriers and vehicle component manufacturers. Develop and teach collision reconstruction short courses. Qualified as an Expert Witness in traffic accident reconstruction (vehicle, environment and human factors), roadway safety and analysis, vehicle defects, and transportation safety in many State and Federal Courts.

Assistant Research Scientist:

Tx Transportation Institute, Texas A&M University System, Oct 1986 - June 1992.

Activities included: Collision investigation, reconstruction, research, analysis and reporting for the federal government, state agencies and private sponsors. Research in vehicle defect investigation, heavy truck fuel system integrity (during collisions), and heavy truck braking. Traffic accident data base research and analysis, motorcycle crash reconstruction, research and analysis of tire/pavement friction, research and evaluation of highway design and maintenance related to accident frequency and causation. Provide detailed technical assistance and policy analysis to the Federal Government and the State of Texas in the area of highway safety. Research proposal and report preparation. Development and presentation of accident reconstruction training courses for various sponsors.

Program Manager:

**Accident Investigation and Reconstruction Program,
Accident Analysis Division, Tx Transportation Institute,
Texas A&M University System, Sept 1983 - Oct 1986.**

Activities included: Engineering evaluation of traffic safety components and programs. Development and evaluation of traffic safety programs. Budgetary and financial preparation, and research activity reporting. Traffic crash data analysis. Hiring, development and oversight of research staff. Research proposal and report preparation. Conduct contract research in the area of highway safety and traffic crash reconstruction for various federal and state agencies, and for private industry.

Research Associate:

Texas Transportation Institute, Texas A&M University System, Sept 1980 - Sept 1983.

Activities included: Principal Investigator on two U.S. Department of Transportation (DOT) National Accident Sampling System (NASS) crash investigation/reconstruction projects. Research over-represented crash locations for the FHWA and develop procedures for identifying and documenting roadway geometry, pavement and roadside conditions that cause or contribute to accident occurrence.

Motorcycle safety research and accident data collection. Evaluation of crash data and traffic safety programs. Technical and financial research proposal preparation. Preparation of written reports on highway safety research project operation. Occasional lecturer in traffic accident investigation and reconstruction for the Tx A&M University Engineering Extension Service and Law Enforcement Academy.

Highway Safety Specialist:

Texas Transportation Institute, Texas A&M University System, Sept 1977 - Aug 1980.

Activities included: Accident Investigation and Reconstruction Team Manager for two U.S. DOT sponsored NASS teams. Crash Team Leader for U.S. DOT collision investigation/reconstruction team. Test supervisor for Environmental Protection Agency automotive emissions compliance and road-load horsepower determination testing. Preparation and dissemination of motor vehicle research test reports. Testing and data analysis supervisor for motor vehicle dynamics and tire property research conducted for the U.S. Department of Transportation.

Instructor:

Texas Transportation Institute, Texas A&M University System, Aug 1975 - Aug 1977.

Activities included: Chief Instructor for High Performance Driver/Instructor development program. Hire, train and supervise instructors for the training program. Develop, promote, schedule and conduct one and two week short courses for police officers and oil company chauffeurs. Perform maintenance and repair on vehicles and equipment used in short courses. Testing supervision, data analysis and reporting on tire-pavement/vehicle handling and dynamics research projects for the U.S. DOT. Data acquisition, analysis and reporting on tire-pavement coefficient of friction calibration-correlation studies.

Automobile Service Manager and Mechanic:

**Several domestic and import automobile dealerships,
1970 - 1975.**

Activities included: General automotive repair, vehicle defect repair, new dealer start-up, customer liaison, parts sales, scheduling of automotive service and warranty repair claim processing.

Automotive Paint and Body Service Technician:

Several domestic automobile dealerships, 1969 - 1970.

Motorcycle Mechanic:

**Honda/BMW/Triumph dealer, 1966 - 1969
(Part-time during High School).**

FORMAL EDUCATION:

Texas A&M University - 1987

Bachelor of Science in Political Science
General Engineering Minor

MEMBERSHIP AND LICENSING INFORMATION:

Member - *Society of Automotive Engineers (SAE) (1977 - Present)*

Member - *Institute of Transportation Engineers*

Associate Member - *American Society of Civil Engineers*

Member - *European Association for Accident Research and Analysis*

Member – National Association of Professional Accident Reconstruction Specialists

Member - Texas Association of Accident Reconstruction Specialists

Texas DPS Licensed Private Investigator

Texas Commission on Private Security – Private Investigations Company (Class A) under license number A09712.

Fellow: The American Board of Forensic Examiners

• Board Certified Forensic Examiner (1994 – 2004)

Member - National Research Council (1983 - 1992)

• Transportation Research Board

• Motorcycle and Moped Committee, TRB A3B14

TECHNICAL TRAINING, SYMPOSIUM PARTICIPATION and/or TEACHING EXPERIENCE (Partial Listing):

World Reconstruction Exposition

Presented by 21 Reconstruction Associations

Orlando, Florida, May 2016.

Reconstruction and Analysis of Motorcycle Crashes

Society of Automotive Engineers

Mesa, Arizona, November 2015.

Digital Forensics of Heavy Vehicle Event Data Recorders

The University of Tulsa

Oklahoma City, Oklahoma, June 2015.

2015 HVE Computer Simulation Forum

Engineering Dynamics Corporation, Austin, Tx, March 2015.

FARO Focus 3D

FARO 3D Point Cloud Scanner and Software Training

Dustin Productions LLC. College Station, Texas, Jan 2014.

Texas Association of Accident Reconstruction Specialists

Instrumented Crash Tests, Braking Systems, Product Liability Issues, CVM Inspection Issues, Vericom Systems, Forensic Uses of GPS Systems, Presentation of Crash Data. Ft. Worth, Tx, May 2012.

Advanced Crash Reconstruction—Utilizing Human Factors Research

Northwestern University Center for Public Safety, Evanston, Illinois, Mar 2012.

Motorcycle Crash Investigation

Presented to the 2012 Motorcycle Safety Forum – Texas Transportation Institute - Center for Transportation Safety, Texas Department of Transportation, Texas Department of Public Safety. Bryan, Tx, Feb 2012.

ARAS 360 Advanced 3D Computer Diagramming for Crash Reconstruction

ARAS Software, Belton, Tx, June 2011.

REC-TEC TRUCK 2011

Michigan State University, College of Engineering, Highway Traffic Safety Program Department of Civil and Environmental Engineering, New Orleans, Louisiana, Mar 28 – April 1, 2011.

1st Joint ITAI – EVU Conference and ITAI EVU Test Day at the MIRA Proving Ground

The Institute of Traffic Accident Investigators - Europäische Vereinigung für Unfallforschung und Unfallanalyse e.V. (European Association for Accident Research and Analysis), Hinkley, United Kingdom, Sept 2009.

High Performance Driving School

Skip Barber Racing School, Mazda Raceway Laguna Seca, Monterey California, June 2009.

Motor Vehicle Accident Reconstruction: Theory and Practice

Canadian Association of Technical Accident Investigators and Reconstructionist (CATAIR) and, International Association of Accident Reconstruction Specialists, Vancouver, BC, Canada, July 2008.

2007 HVE Computer Simulation Forum

Engineering Dynamics Corporation, San Antonio, Tx, Feb 2007.

CDR/EDR User's Summit

Collision Safety Institute and The ARC Network, Houston, Tx, Jan 2007, Jan 2008, Jan 2009, Jan 2012, Jan 2014 and March 2017.

Advanced Vehicle Dynamics for Passenger Cars and Light Truck

Society of Automotive Engineers Professional Development Program, Troy, Michigan, Dec 2005.

Internationale Automobil-Asstellung (IAA), Association of the

Automotive Industry (VDA), Frankfurt/Main, Germany, Sept 1994, Sept 2005 and Sept 2015.

Vehicle and Occupant Kinematics in Rollovers

Society of Automotive Engineers Professional Development Program, Detroit, Michigan, April 2005.

Accident Reconstruction and Computer Simulation using MSMAC

McHenry Software, Inc. Cary, North Carolina, April 2003.

Vehicle Dynamics for Passenger Cars and Light Trucks:

Society of Automotive Engineers Professional Development Program, Detroit, Michigan, Mar 2001.

Private Investigators Continuing Education:

Connelly and Associates, Bedford, Tx, Feb 2001, Feb 2003.

Skills and Techniques for Advanced Riding:

College Station, Tx, Oct 1999, April 2000.

Passenger Car Rollover TOPTEC: Cause and Prevention:

Society of Automotive Engineers Topical, Technical Workshop & Professional Development Program, San Diego, California, Jan 1999.

Reconstruction Technologies 3rd Annual Advanced Training Seminar:

REC-TEC Software and Accident Reconstruction, Cocoa Beach, Florida, July 1998.

Perception, Reaction, Conspicuity Seminar:

Human Factor Issues in Accident Reconstruction, University of Iowa, Iowa City, Iowa, Nov 1997.

36th Annual Workshop on Transportation Law:

Presentation participant in a Mock Trial on Tort Issues, Transportation Research Board, Annual Workshop on Transportation Law, Chicago, Illinois, July 1997.

Low Speed Collision TOPTEC:

Society of Automotive Engineers Topical, Technical Workshop - Continuing Education Seminar, Richmond, BC, Canada, Aug 1996.

Motorcycle Accident Reconstruction:

Short Courses developed and taught for The Texas A&M University System, Texas Engineering Extension Service, College Station, Tx, May 1986 through May 1990.

Biomechanics of Motor Vehicle Accidents:

Short Course developed and taught for The Texas A&M University System, Texas Engineering Extension Service, College Station, Tx, July 1994, with D. Lance Bullard and Dr. Patrick B. Mathews.

Mechanics of Heavy Duty Trucks and Truck Combinations:

The University of Michigan, Transportation Research Institute, Continuing Engineering Education Professional Development Program. Ann Arbor, Michigan, July 1994.

Traffic Accident Investigation and Reconstruction Training:

Two week course developed and presented to the Dubai Police General Headquarters, Dubai, United Arab Emirates, Sept 1993.

The Acquisition and Utilization of Tire-Pavement Friction in the Reconstruction of a Motor Vehicle Collision:

An invited lecture given at the Second Traffic Symposium, Dubai, United Arab Emirates, Feb 1993.

Personal Injury Insurance Fraud Investigation and Expert Witness Requirements and Laws:

Texas Association of Accident Reconstruction Specialist, Houston, Tx, Oct 1991.

Tools and Techniques for Motorcycle Collision Reconstruction:

Short Course developed and taught for the University of North Florida, Institute of Police Technology and Management, Jacksonville, Florida, April 1991.

International Motorcycle Safety Conference, The Human Element:

Orlando, Florida, Nov 1990.

Tire/Roadway Friction & Drag Sled Testing:

Texas Association of Accident Reconstruction Specialist, College Station, Tx, Nov 1990.

Tire Pavement Friction - an Overview of Properties and Relationships:

Short Course developed and taught for the University of North Florida, Institute of Police Technology and Management, Jacksonville, Florida, April 1990.

Special Problems in Traffic Accident Reconstruction:

University of North Florida, Institute of Police Technology and Management, Jacksonville, Florida, April 1990.

Tire Failure Seminar:

Criminal Justice Academy, The Texas A&M University System, College Station, Tx, Jan 1990.

Investigation of Motorcycle Accidents:

Institute of Police Technology and Management, University of North Florida, Grand Prairie, Tx, Mar 1989.

Brakes: Design and Safety:

Society of Automotive Engineers Continuing Education Seminar, Orlando, Florida, Oct 1988.

Inspection of Commercial Vehicles in Accidents:

Institute of Police Technology and Management, University of North Florida, Tucson, Arizona, Mar 1988.

Investigation of Commercial Vehicles Accidents:

Institute of Police Technology and Management, University of North Florida, Tucson, Arizona, Mar 1988.

Accident Reconstruction and Analysis:

Institute of Transportation Engineers and Northwestern University, Dallas, Tx, Nov 1985.

National Accident Sampling System Update:

Southwest Research Institute, San Antonio, Tx, Nov 1981.

Advanced Accident Reconstruction:

University of Michigan, Highway Safety Research Institute, Ann Arbor, Michigan, May 1979.

Special Interest Accident Reconstructions - Motorcycles Collisions and Automobile Side Impact Collisions:

University of Michigan, Highway Safety Research Institute, Ann Arbor Michigan, April 1978.

Management of Accident Research Teams:

Allen Corporation and NHTSA, Washington, D.C., Mar 1978.

Advanced Motor Vehicle Accident Investigation:

U.S. Department of Transportation, NHTSA, Washington, D.C., Feb 1978.

Accident Investigation Field Techniques:

Indiana University, Institute for Research in Public Safety and NHTSA, Bloomington, Indiana, Dec 1977.

National Accident Sampling System Introductory Accident Investigation Training:

Allen Corporation and the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C., Nov 1977.

High Performance Vehicle Operation Training:

Taught for the Texas Transportation Institute, Texas A&M University System, Aug 1975 – Aug 1977.

Automotive Service Short Courses:

Toyota, Mazda, General Motors, Ford, various dates and locations, 1971 – 1975.

PARTICIPANT IN SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) WORLD CONGRESS - TECHNICAL TRAINING, SHORT COURSE and INTERNATIONAL SYMPOSIUM PARTICIPATION:

Occupant Protection: Accident Reconstruction, Detroit, April 2011.
Accident Investigation and Reconstruction, Detroit, April 2005.
Accident Reconstruction Technology and Animation XI, Detroit, Mar 2001.
Truck & Bus Meeting and Exposition, Indianapolis, Nov 1998.
Accident Reconstruction Technology and Animation VII, Detroit, Mar 1997.
Accident Reconstruction Technology and Animation V, Detroit, Mar 1995.
Accident Reconstruction Technology and Animation, Detroit, Mar 1993.
Vehicle Dynamics and Rollover Propensity Research, Detroit, Feb 1992.
Accident Reconstruction: Technology and Animation, Detroit, Feb 1991.
Motor Vehicle Accident Reconstruction, Detroit, Feb 1989.
Accident Reconstruction, State-of-the-Art, Detroit, Feb 1988.
Automatic Occupant Protection Systems, Detroit, Feb 1988.
Automobile Collision Analysis, and Accident Reconstruction: Automobiles, Tractor/Semi-trailers, Motorcycles and Pedestrians, Detroit, Feb 1987.
Field Accidents: Data Collection, Analysis, Methodologies and Crash Injury Reconstruction Symposium, Detroit, Feb 1985.
Advances in Belt Restraint Systems: Design, Performance and Usage, Detroit, Feb 1984.
Pedestrian Impact Injury and Assessment, Side Impact Protection, Detroit, Feb 1983.
Accident Investigation and Reconstruction Standards Committee, Detroit, Feb 1977 – 2011.

TECHNICAL PAPERS, PRESENTATIONS and REPORTS (partial listing):**Motorcycle Crash Investigation**

Prepared for the Tx Transportation Institute at Tx A&M University under contract to the Tx Department of Public Safety, Sept 2010.

Collision Reconstruction Reports

Prepared for a variety of clients on individual public roadway collisions, investigated and reconstructed to determine how and why the collision occurred, Collision Research Associates, 1991 – Present.

Occupant Restraint Systems; Design and Function

Developed for and presented at the Biomechanics of Motor Vehicle Accidents Short Course, Texas Engineering Extension Service, Texas A&M University, July 1994.

Traffic Accident Investigation and Reconstruction

Prepared for and presented to the Dubai Police General Headquarters, Dubai Police College, Dubai, United Arab Emirates, with Lance Bullard, Sept 1993.

The Acquisition and Utilization of Tire-Pavement Friction in the Reconstruction of a Motor Vehicle Collision

Prepared for and presented to the Dubai Police General Headquarters, Research & Studies Center. The Second Traffic Symposium, Dubai, United Arab Emirates, Feb 1993.

Texas Skid Initiated Accident Reduction Program

Research Report 910-1F, Skid Accident Reduction Program Safety Recommendations H-87-2, Prepared for the Texas State Department of Highways and Public Transportation (TxDOT), with Don L. Ivey, Lance Bullard and Lindsay I Griffin, III., Aug 1992.

Tools and Techniques for Motorcycle Collision Reconstruction

Developed and presented to the Special Problems in Accident Reconstruction Seminar, Institute of Police Technology and Management, University of North Florida, Jacksonville, April 1991.

Proposed Program to Reduce Skid Initiated Accidents in Texas

Program Development Report 9100-1, Skid Accident Reduction Program Safety Recommendations H-87-2, Prepared for TxDOT, with Don L. Ivey and Lindsay I Griffin, III., Aug 1990.

Motorcycle Accident Reconstruction

Training developed for and taught at the Texas Engineering Extension Service, Texas A&M University, May 1986 - May 1999.

Tire-Pavement Friction: An Overview of Properties and Relationships

Developed and presented to the Special Problems in Accident Reconstruction Seminar, Institute of Police Technology and Management, University of North Florida, Jacksonville, April 1990.

Rollover Caused by Concrete Safety Shaped Barrier: Volume II

Final report on contract DTFH61-85-00129 and FHWA-RD-88-220, for the Federal Highway Administration, U.S. Department of Transportation, K.K. Mak and D.L. Sicking, J.R. Lock, Jan 1989.

A Survey of Selected 1986 Motorcycle Fatalities in the State of Texas

With Sandra L. Parsons. TTI Report Number: TARE-82, Jan 1989.

Heavy Truck Fuel System Integrity Study

Clinical In-Depth Case Study Reports generated for each investigated and reconstructed heavy truck crash with fuel loss or post-crash fire collision. Prepared for The Motor Vehicle Manufacturers Association, 1987 - 1988.

Accident Investigation and Reconstruction of Air Bag Equipped Vehicles

Research and reports prepared for the National Highway Traffic Safety Administration, U.S. Department of Transportation, 1987-1991.

In-Depth Investigation and Documentation of Vehicles with Alleged Safety Defect

Investigations conducted and reports prepared for the U.S. Department of Transportation National Highway Traffic Safety Administration's Office of Defects Investigation, 1987-1992.

Research, analysis and preparation of Highway Safety Technical Reports

Research and reporting on an annual basis for the State of Texas (TxDOT), 1984-1992.

NHTSA Heavy Truck In-Depth Accident Investigation

A Recommended Protocol For Program Initiation: Prepared for and presented to the U.S. DOT, National Highway Traffic Safety Administration, Jan 1988.

Multidisciplinary Accident Investigation Teams - A Feasibility Study Volume I Technical Report, Volume II Data Collection Forms and Manuals

Prepared for the Texas State Department of Highways and Public Transportation (TxDOT), with King K. Mak, Aug 1985.

Pavement Condition Measurements for Safety Improvements

Final Report FHWA under Contract DTFH 61-82-C-00056, with Don L. Ivey, Alan S. Jones, Kirk E. Barnes, Olga J. Pendleton, and Ted Chira Chavala, June 1985. (Volume 1 and 2).

Evaluation of Selective Traffic Enforcement Programs (STEPs) in Waco and Irving, Texas

Prepared for the Tx State Department of Highways and Public Transportation (TxDOT), with Olga J. Pendleton, Nov 1983.

Surveys of Motorcycle Traffic at Selected Locations in Houston and Dallas, Tx

Prepared for the Motorcycle Safety Foundation, with Nancy Hatfield, Dec 1982.

Evaluation and Documentation of the Procedures Generated by the State Accident Statistical System (SASS)

Prepared for the Texas State Department of Highways and Public Transportation (TxDOT), with Joseph La Belle and Sara Seely, April 1982.

Documentation of Accident Investigation and Reconstruction on NASS Selected Cases

Approximately 300 collision reconstructions provided to the U.S. DOT, NHTSA. 1977-1981. Technical Oversight provided on over 1200 NASS collision reconstructions, 1980-1986.

Establishment of a National Accident Sampling System Team in Ashley, Chicot, Desha, Drew and Lincoln Counties, Arkansas

Prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, with John Cook, Sept 1980.

Student's Guide to the Tx Transportation Institute School for High Performance Driving

Prepared for the HPDriving School Students at the Texas Transportation Institute, Texas A&M University, Feb 1976.



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