

Laurence G. Cripe

Accident Reconstructionist

Mailing Address:

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Traffic Accident Reconstructionist

ACTAR Accreditation, Registration No. 418

National Headquarters, Hudson, Florida

Full accreditation as a Traffic Accident Reconstructionist through the Accreditation Commission for Traffic Accident Reconstruction

Professional Experience

Crashteam, New Hampshire/Southern Arizona **2009 to Present**

McNally & Associates – Senior Consultant **2004 to 2008**
Rochester, New Hampshire

Accident Reconstruction Associates – Southern Division Manager **1999 to 2004**
Tucson, Arizona

Northeast Collision Analysis, Inc. **1996 to 1999**
Rochester, New Hampshire and Kissimmee, Florida

Southeast Division Manager, 1998 to 1999

Directed and coordinated overall southern division operations. Principal investigator, provided services to various federal, state, county, and local law enforcement agencies, as well as to insurance companies and to law firms that require accident reconstruction for use in civil litigation. Services involved complete scene analysis and comprehensive reconstruction often including interpretation of impact geometry, speed determination, occupant kinematics studies, perception and reaction, expectancy, conspicuity, lighting, crashworthiness, component failures, and causal factor determination.

Senior Consultant, 1996-1998

Conducted accident reconstruction for corporation. Provided service to various federal, state, county, and local law enforcement agencies, as well as to insurance companies and to law firms that required accident reconstruction for use in civil litigation.

Pima County Sheriff's Department **1973 to 1995**
Tucson, Arizona

Sergeant

Special Operations Section - Traffic Unit

Supervised deputies specializing in accident investigations and DUI enforcement – including fatal crash investigations, aircraft accident investigations, case management and criminal prosecutions, DUI sobriety checkpoints, special investigations and assignments, training and logistics.

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Professional Experience - continued

Pima County Sheriff's Department Training Center

Arizona Law Enforcement Officer's Advisory Council

Advanced Officer Training Specialist

At-Scene Accident Investigation

Taught sheriff's deputy recruits in all aspects of On-scene Motor Vehicle Traffic Accident Investigation

Chief Instructor

Advanced Traffic Accident Investigation

Sponsored by the Arizona Law Enforcement Officer's Advisory Council
Taught at the Arizona Law Enforcement Training Center to recruit police officers and sheriff's deputies throughout Arizona for state, county and municipal jurisdictions.

Chief Instructor

On-Scene Accident Analysis & Interpretation

Taught federal law enforcement officers in all aspects of collision investigation and analysis at the Federal Law Enforcement Training Center (Marana, AZ)

Chief Instructor

Traffic Accident Investigation

Sponsored by the Northwestern University Traffic Institute
Taught experienced police officers from multiple jurisdictions in the techniques of accident investigation to include technical instruction in Vehicle Damage Analysis and Vehicle Dynamics, Mathematical Calculations and Formulae Relative to Speed Calculation, Time/Distance, Flips and Vaults, Yaw-Speed Calculation, Coefficients of Friction, Combined Speed Problems, Center of Mass, and Review of Momentum Problems (in-line and angle). Instruction in

Additional Law Enforcement Experience

Investigator with the Special Investigations Unit, Criminal Investigations Division, June 1990 to January 1993

SWAT Intelligence Analyst with the Special Operations Section, Special Services Division, January 1989 to June 1990

Detective with Internal Affairs & Intelligence, August 1985 to January 1989

Instructor with the Training Center specializing in Accident Investigation, Officer Safety and Tactics, and Report Writing, August 1981 to July 1985
Field Training Officer Coordinator and Co-author of Field Training Manual

Traffic Officer with the Traffic Unit, Special Operations Section, December 1978 to August 1981

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Additional Law Enforcement Experience - continued

Patrol Officer and Rincon District Traffic Officer, Uniform Patrol Division,
April 1974 to December 1978

Deputy Sheriff Recruit with the Southern Arizona Law Enforcement Institute
and Basic Training Academy, December 1973 to April 1974. Commissioned
on March 8, 1974.

Education

Medical Lake High School, Medical Lake, Washington
Diploma of Graduation, May 1970

Pima Community College, 4 Semester Hours in Criminal Justice

Arizona Department of Public Safety
Tucson, Arizona, June 1976 • 40 hours
Certificate of Graduation
Traffic Accident Investigation

Northwestern University • The Traffic Institute
Evanston, Illinois, March – April 1979 • 120 hours
Certificate of Graduation
On-Scene Accident Investigation

Northwestern University • The Traffic Institute
Evanston, Illinois, April – May 1979 • 80 hours
Certificate of Graduation
Technical Accident Investigation/Dynamics

Dynamic Sciences, Inc. • Failure Analysis Training Division
Phoenix, Arizona, June 1979 • 120 hours
Certificate of Graduation
Multi-Disciplinary Highway Collision Investigation Training

Northwestern University • The Traffic Institute
Evanston, Illinois, March 1981 • 80 hours
Certificate of Graduation
Traffic Accident Reconstruction

Northwestern University • The Traffic Institute
Phoenix, Arizona, December 1988 • 40 hours
Certificate of Graduation
Traffic Accident Reconstruction II

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Education - continued

University of North Florida

Institute of Police Technology and Management

Tucson, Arizona, December 1993 • 40 hours

Certificate of Graduation

The Use of Microcomputers (WinCRASH/SLAM) in Accident Reconstruction

Texas A&M University • Texas Engineering Extension Service

College Station, Texas, September, 1994 • 56 hours

Certificate of Graduation

Advanced Commercial Vehicle Accident Reconstruction

University of North Florida

Institute of Police Technology and Management

Jacksonville, Florida, November, 1996 • 32 hours

Certificate of Graduation

The Use of Microcomputers (WinSMAC) in Accident Reconstruction

University of North Florida

Institute of Police Technology and Management

Tempe, Arizona, December 1996 • 40 hours

Certificate of Graduation

Investigation of Motorcycle Accidents

University of North Florida

Institute of Police Technology and Management

Jacksonville, Florida, April 1997 • 24 hours

Certificate of Graduation

Human Factors and Visibility Concepts Hampering Perception and Reaction Times

Texas A&M University • Texas Engineering Extension Service

Mesquite, Texas, May 1997 • 40 hours

Certificate of Graduation

Pedestrian and Bicycle Accident Reconstruction

The Society of Automotive Engineers International (SAE)

Mesa, Arizona, October, 1997 • 32 hours

Certificate of Graduation

Hydraulic Brake Systems

University of North Florida

Institute of Police Technology and Management

Jacksonville, Florida, December, 1997 • 40 hours

Certificate of Graduation

Applied Physics for the Accident Investigator

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Education – continued

Texas A&M University • Texas Engineering Extension Service

Mesquite, Texas, April 1998 • 40 hours

Certificate of Graduation

Analysis of Low Speed Collisions

Texas A&M University • Texas Engineering Extension Service

San Antonio, Texas, July 1998 • 40 hours

Certificate of Graduation

Biomechanics for Traffic Accident Reconstruction

Northwestern University • The Traffic Institute

New Carlisle, Indiana, September 1998 • 40 hours

Certificate of Graduation

Heavy Vehicle Reconstruction

Texas A&M University • Texas Engineering Extension Service

Mesquite, Texas, May, 1999 • 40 hours

Certificate of Graduation

Vehicle Damage and Energy Relationship in Collision Reconstruction

Additional Training

Arizona Law Enforcement Officer's Advisory Council

Tucson Police Department Academy, Tucson, Arizona, December 1979

Instructor Certificate

Instructor Certification Training

Northwestern University • The Traffic Institute

Tucson, Arizona, January 1980

Certificate of Graduation

Driving Under the Influence Investigation

Dallas Police Department

Dallas, Texas, October 1985

Certificate of Graduation

Internal Affairs Training

International Association of Chiefs of Police

San Diego, California, April 1987

Certificate of Graduation

Comprehensive Police Intelligence Management

International Association of Chiefs of Police

Phoenix, Arizona, December 1987

Certificate of Graduation

Terrorism: Preparing for the Threat

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Additional Training – continued

Department of the U.S. Army • Fort Huachuca Army Intelligence School and Center

Sierra Vista, Arizona, February 1988
Certificate of Graduation
Intelligence Analysis

U.S. Department of State • Bureau of Diplomatic Security

Federal Law Enforcement Training Center, Marana, Arizona, March 1989
Certificate of Graduation
Executive Protection Training

U.S. Department of Justice • U.S. Marshall's Service

Tucson, Arizona, June 1989
Certificate of Graduation
Courtroom Security

Arizona Law Enforcement Officer's Advisory Council

Phoenix Police Academy, Phoenix, Arizona, April 1993
Certificate of Graduation
Supervision Program

Pima County Sheriff's Department Training Center

Tucson, Arizona, April 1994
Certificate of Graduation
Basic Supervision Program

SOAR/WATAI/TAARS

1994 Combined Conference
Certificate of Attendance
Bryan, Texas, September 1994 • 24 hours
Heavy Vehicle Rollover Characteristics & Night-time Conspicuity
(with staged crashes and night-time testing)
Heavy Vehicle Collision Inspection, Interpretation and Analysis of Center of Mass, Braking Efficiency Determination and Rollover Speed Analysis. Night Vision Characteristics and Conspicuity Testing. Relationships between Clothing and Driver Perception.

The National Institute of Forensic Studies

Orange, California, May 1996 • 32 hours
Certificate of Graduation
Biomechanics of Injury from Traffic Collisions
Injury from Vehicle Collisions, Physics and Mathematics of Vehicle Collisions, Occupant Kinematics, Analysis of Restraining Systems, Biomechanics of Low Speed rear-end collisions

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Additional Training – continued

The Society of Automotive Engineers International (SAE)

Vancouver, B.C., August, 1996 • 32 hours

Certificate of Attendance

TOPTEC: Low Velocity Impacts (with crash testing)

Accident Reconstruction of Low-Velocity Rear-end Impacts, Occupant Kinematics, Cervical Injuries, Crash Severity, and Injury Frequency. Current Research and Staged Collisions at Low Speeds. Role of the Bumper in a Crash, Estimating Impact Severity and Injury Potential.

The Society of Automotive Engineers International (SAE)

Costa Mesa, California, August, 1997 • 32 hours

Certificate of Attendance

TOPTEC: Air-Bag Design and Performance

Air-Bag History and Issues Concerning System Level Design and Performance Enablers, Sensing Technologies, Injuries, Smart Restraint Systems, Research, and Air-Bag Deployment Demonstration.

The Society of Automotive Engineers International (SAE)

Troy, Michigan, March 1998 • 24 hours

Certificate of Attendance

Accident Reconstruction Using Conservation of Momentum and Energy

MacInnis Engineering Association

Detroit, Michigan, March 1998 • 24 hours

Certificate of Attendance

PC-CRASH and PC-RECT Training Workshop

Physical Medicine Research Foundation

Vancouver, B.C., February 1999 • 32 hours

Certificate of Attendance

World Congress on Whiplash Associated Disorders

Association for the Advancement of Automotive Medicine

Southfield, Michigan, June 2000 • 32 hours

Certificate of Attendance

Advanced Air Bag Technology in Frontal and Side Impacts

Southwestern Association of Technical Accident Investigation

Phoenix, Arizona, July 2000 • 24 hours

Certificate of Achievement

Staged Collision Sequence, Frontal Crash Testing, CDR Systems and Friction Testing Results

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Additional Training – continued

WREX2000 World Reconstruction Exposition

College Station, Texas, September, 2000 • 40 hours

Certificate of Attendance

Staged Collision Sequence, Trailer Friction Testing, Uncertainty Testing, Restitution, Under-ride Investigations, Energy-Force Relationships, & CDR's

Grade Crossing Collision Investigation

San Bernardino Police Academy, San Bernardino, California • 40 hours

April 8 – 12, 2002 • Certificate of Completion

Train collision investigation conducted by Burlington Northern Sante Fe Instructors in concert with Operation Lifesaver

The Society of Automotive Engineers International (SAE)

Scottsdale, Arizona, April, 2002 • 24 hours

Certificate of Attendance

TOPTEC: Rollover Analysis & Reconstruction

Vehicle Rollover Tendency & Reconstruction Models, Roll Testing, Restraints, Scene Analysis and Interpretation of Evidence

Southwestern Association of Technical Accident Investigators (SATAI)

Tucson, Arizona, July 12-13, 2002 • 16 hours

Staged Collision Sequence #21, Rollover Collision Dynamics, Drag Factors, Human Factors in Accident Reconstruction

Southwestern Association of Technical Accident Investigators (SATAI)

San Diego, California, November 15-16, 2002 • 16 hours

Vehicle Mechanical Evaluations, Work Zone Designs, Intelligent Transportation Systems/NHTSA Crash Test Data

Southwestern Association of Technical Accident Investigators (SATAI)

Tucson, Arizona, July 11-12, 2003 • 16 hours

Staged Collision Sequence #22, Pedestrian and Cyclist Crash Investigation, Using Delta V to Calculate Closing Velocity and Impact Speeds, Pole Impacts

Southwestern Association of Technical Accident Investigators (SATAI)

San Diego, California, November 14-15, 2003 • 16 hours

Visibility and the Investigator/Nighttime Visibility, Photography, Friction Testing

Southwestern Association of Technical Accident Investigators (SATAI)

Las Vegas, Nevada, March 26-27, 2004 • 16 hours

Reconstruction and Mathematical Analysis, Simultaneous Equations to Solve In-Line Equations, Energy in Traffic Crash Reconstructions

Collision Safety Institute, Inc. (CSI) – Vetronix Corporation

Phoenix, Arizona, July 12-16, 2004 • 40 hours

Electronic Data Recorder Applications in Reconstruction (5 Test Crashes), Collision Investigation Training with EDR's, Accelerometer Testing

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Additional Training - continued

Southwestern Association of Technical Accident Investigators (SATAI)

Phoenix, Arizona, July 16-17, 2004 • 16 hours

Staged Collision Sequence #23, Crash Test Reconstruction, Friction Measurement Devices, Collision Reconstruction, Criminal vs. Civil/The Role of the CDR in Reconstruction

Tony Foals Designs – Motorcycle Dynamics Seminar

New York City, New York, November 13-14, 2004 • 16 hours

Motorcycle Tire Characteristics, front and rear suspension systems and settings, motorcycle geometry, suspension kinematics and dynamics, steering and cornering, damping methods, and adjustments, rear and front braking characteristics, drive systems

Sokkia Corporation – Total Station Mapping

Dover, New Hampshire, June, 2005

Completed 16-hour equivalency course presented by Sokkia Corporation in the use of their instruments for total station scene mapping

Collision Safety Institute, Inc. (CSI) – Damage and Energy Applications for Collision Reconstruction

Phoenix, Arizona, July, 2005 • 40 hours

Underlying Concepts and Relationships Between Damage, Energy, Delta-V and Barrier Equivalencies, Function and Process of Vehicle Measurement and Documentation for “Crush” Damage and How to Find Information for Calculations and Analyses

Southwestern Association of Technical Accident Investigators (SATAI)

Phoenix, Arizona, July, 2005 • 16 hours

Crash Test Sequence #24, Applicability of Crush Analysis Formulas, Crash Test Reconstruction, Crush Force Balancing in Collision Reconstruction

The Accident Reconstruction Network (ARC Network) & Collision Safety Institute, Inc. (CSI) – Crash Data Retrieval User’s Conference

Dallas, Texas, February 13-14, 2006

Vetronix CDR Systems Update, Incorporating CDR Services in an Existing Forensic Practice, Implementing Policy for Crash Data Retrieval, CDR as a Tool for Intelligent Transportation Systems and Human Factors Issues, A Review of Various ACM Module Types and Data Recorded, Motorcycles and Motor Vehicles Equipped with EDR’s, Analysis of the GM Sensing and Diagnostic Module in 360° Linear Momentum Collisions, Real Case Analysis, CDR Data Presentation and Validation in Legal Proceedings, Legal Implications of Data Collection, A Comparison of Airbag Control Modules to Flight Data Recorders, The ‘Black Box’ Misperception, Investigation Into the Durability of ACM’s, Quantifying Uncertainties in Ford and General Motors EDR’s, The Accuracy of Speed Recorded by an SDM and the Effects of Brake and Yaw Events, Overview of New GM Modules Using CAN Bus Technology, Practical Applications for CDR Gathered CAN Bus Data

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Additional Training - continued

The Nikon School of Photography – Introduction to Digital SLR Photography

Weston, Massachusetts, March 4, 2006

SAE International – Highway Vehicle Event Data Recorder Symposium

Ashburn, Virginia, September 5-6, 2007 • 16 hours

EDR and Legal Issues, EDR Standards Update, EDR Data Validity, Global Initiatives and Perspectives, Insurance Institute Perspectives, Passenger Car EDR Data Case Studies, Commercial Vehicle EDR Applications

The Accident Reconstruction Network (ARC Network) & Collision Safety Institute, Inc. (CSI) – Crash Data Retrieval User’s Conference

Houston, Texas, January 28-30, 2008 • 24 hours

Accident Dynamics Research Center – Human Factors for Traffic Crash Reconstruction

Laughlin, Nevada, March 8-12, 2009 • 40 hours

Why Reconstruct a Crash?, History of Reaction Time Research, Response Delays, Whether Weather Influences Driver Response, Evaluating Nighttime Response Scenarios: Headlights and Night Recognition Distance, Evaluating Driver Response in Path Intrusion Cases, Path Intrusion: Adjustment to Baseline, Vehicle Changing Lanes: Being Cut Off, Path Intrusion: Intersections, Response to Lead Vehicles: Depth Perception Limitations, DRIVE3: Tutorial and Terms, Estimating Driver Response Times, Factors That Influence Driver’s Response Choice Decisions in Video Recorded Crashes

Southwestern Association of Technical Accident Investigators (SATAI)

Laughlin, Nevada, March 13-14, 2009 • 16 hours

Motorcycle Braking Abilities, Motorcycle Crash Analysis, Crash Avoidance, Motorcycle Safety, and Evaluating Motorcycle Rider Response

Southwestern Association of Technical Accident Investigators (SATAI)

Phoenix, Arizona, July 10-11, 2009 • 16 hours

Biomechanical Analysis of Rollover Crashes, Seatbelts in Rollover Crashes, “MADYMO” In Reconstruction, Rollover Crash Test

Southwestern Association of Technical Accident Investigators (SATAI)

San Diego, California, November 6-7, 2009 • 16 hours

Aftermarket Components and the CDR, EDR Discrepancies, Stiffness Data Research & Calculating, Experts and Lawyers in the Courtroom

Crashtams Annual Conference

Las Vegas, Nevada, March 4-6, 2010 • 16 hours

Harmonie Group, Photo Modeler Software, Laser Scanning, Impact Severity & Injury Mechanisms, Report Writing and Peer Review, and ARAS 360 Software

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Additional Training - Continued

Southwestern Association of Technical Accident Investigators (SATAI)

Phoenix, Arizona, July 16-17, 2010 • 16 hours

Collision Crash Sequence # 29, Safety in Mass Production Vehicles, Pedestrian Safety and the 2009 MUTD/EDR Data from Non-CDR Supported Vehicles

Certifications

Police Radar Instructor Certification, January 1980

Kustom Signal HR-12 Instruction Services, Training Center, Tucson, Arizona

Police Intoxilyzor Instructor Certification, December 1980

Department of Health Services, Phoenix, Arizona

Police Driving Instructor Certification, November 1981

General Motors Proving Grounds, Mesa, Arizona

Police Firearms Instructor Certification, February 1983

NRA Firearms Instructor Course, Phoenix Police Academy, Phoenix, Arizona

Police Instructor Certification, December, 1979

ALEOAC Instructor's Certification Course, Tucson Police Department

Professional Memberships

Member of the National Association of Professional Accident Reconstruction Specialists (**NAPARS**)

Member of the Southwestern Association of Technical Accident Investigators (**SATAI**)

Member of the Society of Accident Reconstructionists (**SOAR**)

Associate Member of the Society of Automotive Engineers (**SAE**)

Honors and Awards

Silver Patrick Henry Award by the Military Order of World Wars for design and implementation of high-security procedures for courtrooms

Recipient of the Governor's Task Force Achievement Award for participation as the Co-Chairman of the Southern Arizona DUI Task Force for three years.

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Honors and Awards – Continued

Recipient of the Pima County Sheriff's Department Medal of Achievement for the implementation of procedures attributed to the successful reduction of DUI-related fatal collisions in Southern Arizona

Recipient of the Pima County Sheriff's Department Medal of Honorable Service for 21.8 years of law enforcement service.

Recipient of 8 Pima County Sheriff's Department Letters of Citation and 92 Letters of Commendation for law enforcement services.

Recognized Expert

Have testified as an Accident Reconstruction Expert before federal, state and municipal courts, and arbitration hearings approximately 162 times in Arizona, New Hampshire, Virginia, Massachusetts, Connecticut, Vermont, New Jersey, and Florida.

Have reconstructed over 1,600 motor vehicle collisions in 16 states – including 180 fatal collisions. Personal exposure to collision testing has involved rear-end and frontal impact testing, sideswipes and special testing with the U.S. State Department. [This does not include the multiple observations of staged testing.]

Publications

Estimating the Yaw Moment of Inertia in Typical Passenger Vehicles, presented at the Midwest Association of Traffic Accident Investigators Annual Conference by Bruce McNally in St. Paul, Minnesota, May, 2007

Investigating Rollover Collisions, published in The SOARce, Spring 2000, the newsletter of the Society of Accident Reconstructionists, and the basis for the seminar topic instructed at the SATAI Conference held in Tucson, Arizona in July, 2002

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Lectures

Pima Community College

Fatal Accident Investigation Procedures. Tucson, Arizona, March, 1996

State Farm Insurance

Tucson, Arizona “*Collision Investigation After The Police Accident Report*”
June, 1991, April, 1992, September, 1993, June, 1994, December, 1994 and
June, 1995

Southwestern Association of Technical Accident Investigators (SATAI)

San Diego, California Conference, November, 1998
Co-guest Speaker with Dr. Richard Froede on “*Occupant Behavior in
Traffic Collisions*”

“Partnership Towards 2000” 1999 Joint DIF/SIU Conference

Orlando, Florida, June, 1999
Co-guest Speaker with Russell A. Boynton on “*Accident Reconstruction:
Does it Work?*”

Southwestern Association of Technical Accident Investigators (SATAI)

Tucson, Arizona Omni Resort Conference, July, 2002
Guest Speaker on “*Rollover Collision Analysis and Interpretation*”

Affiliations

Pima County Sheriff’s Department FTO Program

Coordinator/Co-author of the P.C.S.D. Field Training Officer Manual
1983/1984

Southern Arizona DUI Task Force

Co-Chairman 1993 - 1995

Television

In the Jury Room – nationally televised on August 10, 2004 – expert testimony from the
Wendy Sue Anderson trial involving a motorcycle fatality and DUI investigation.