

# **Wall Accident Reconstruction, Inc.**

1550 North Stapley Drive, #91  
Mesa, Arizona 85203

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## **Curriculum Vitae**

**Dan W. Wall, BSME**

**Current as of March 16, 2013**

### **ACCREDITATION**

Fully accredited with ACTAR (Accreditation Commission for Traffic Accident Reconstruction), ACTAR No. 1140

### **LICENSES**

State of Arizona Private Investigator License No. 1595253

### **QUALIFICATIONS**

Qualified expert witness since 1987 in the fields of accident reconstruction, biomechanics and motor vehicle injury causation, human factors, and injury prevention in motor vehicle design.

Testified as an expert in the above subjects in Arizona, California, Colorado, Tennessee and Louisiana in both Civil and Federal Courts.

Expertise in engineering, biomechanics, human factors, failure analysis, forensic investigation, motor vehicle design, dynamics and handling, motorcycles, commercial Vehicles, rollovers, accident reconstruction, low-speed collisions, marine safety, bicycles, slip and falls and pedestrians.

Motorcycle operator, boat operator and Marine Instructor

## **EDUCATION**

University of Wyoming, Mechanical Engineering, BSME, 1978-1980  
Laramie County Community College, Mechanical Engineering, 1976-1978

## **CONTINUING EDUCATION**

**SATAI Conference**, Mar 15-16, 2013, Manhattan Beach, CA, "GPS, Red Light Photo and Surveillance Video Use in Accident Reconstruction, Toyota EDR, Vehicle Mechanical Failures".

**SATAI Conference**, Sept 28-29, 2012, Phoenix, AZ, "Semi-Trailer Collision Crash Testing, Heavy Truck brake Systems".

**SATAI Conference**, July 16-17, 2010, Phoenix, AZ, "Collision Crash Testing, Vehicle Safety Design, Pedestrians".

***2009 ARC-CSI Crash Conference***, June 1-4, 2009, Las Vegas, NV: "Staged Crash Testing and Analysis of Data, Biomechanical Testing, Human Factors, Commercial Vehicle Reconstruction, Motorcycle Braking, Vehicle Acceleration Factors, Optics, Lighting and Visibility for the Forensic Investigator".

***SATAI Conference***, Oct. 31-Nov. 1, 2008, San Diego, CA: "Critical Speed Yaws, Rotational Mechanics, Pole Impact Analysis, analysis of Airborne Vehicles".

***SATAI Conference***, September 2007, San Diego, CA: "Momentum Methods Reconstruction, Black Box Data Recorders".

***SATAI Conference***, June 2006, Tempe, AZ: "Motorcycle Accident Reconstruction and Factors, Biomechanics".

***SAE World Conference Seminars***, April 11-15, 2005, Detroit, MI: "Biomechanics, Accident Reconstruction".

***SAE World Conference Seminars***, March 8-13, 2004, Detroit, MI: "Biomechanics, Accident Reconstruction, tires and wheel safety".

***Association for the Advancement of Automotive Medicine (AAAM)***, Oct. 1-3, 2002, Tempe, AZ: "Technical Symposium on airbags and injury, front and rear impact crashes, injury diagnosis and severity assessment, elderly drivers, child passenger safety, crash injury research and engineering network (MEN), new automobile research tools, special publications".

***The Biomechanics of Impact-Understanding the Limits of Human Tolerance***, AAAM, Tempe, AZ, Sept 29, 2002, "Technical topics in the relationship between energy and trauma, limits of human tolerance to injury, effect of variations in injury outcomes, etc".

***Tire and Wheel Safety Issues***, SAE, Troy, MI, June 11, 2002: "Vehicle Handling Dynamics, Tires, vehicle rollovers, brake performance".

***The Tire as a Vehicle Component***, SAE, Troy, MI, June 10, 2002: "Tire forces and moments under operating conditions, vehicle responses, braking, handling, ride and performance".

***Passenger Vehicle Rollover TOPTEC***, SAE, Scottsdale, AZ, April 22-23, 2002: "Causes, Prevention and Injury Prevalence in rollovers".

***Accident Reconstruction TOPTEC: Special Topics***, SAE, Tempe, AZ, May 22-24, 2001: "Uncertainty analysis, pedestrians, motorcycle, and bicycle accident reconstruction, simulation models, force deflection modeling, offset/override/underride collision analysis, heavy truck accident reconstruction, restraint system evidence, human factors in accident reconstruction, crash data recorder, programmetry, exponent crash test and evaluation, Bondurant "hot laps".

***Motorcycle Rider Course: Riding and Street Skills***, TEAM AZ, Sponsored by Motorcycle Safety Foundation, Scottsdale, AZ, Oct 12-15, 2000.

***World Reconstruction Exposition 2000 (WREX)***, College Station, Texas, Sept 24-29, 2000: "36 hour course of instruction in Collision Investigation and Reconstruction: staged crash tests using motorcycles and passenger vehicles, lamp bulb analysis, skid tests, uncertainty, friction, witness factors, etc".

***Human Factors in Automobile Accidents Seminar***, Lawyers & Judges Publishing Co., Las Vegas, NV, Feb 18-19, 2000: "Driver perception and response, traffic control devices, human factors, emergency vehicles, memory and eyewitness reliability, drug impairment as a human factor, and roadway conditions".

***Accident Reconstruction: State-of-the-Art TOPTEC***, SAE, Costa Mesa, CA, Dec 9-10, 1999: "Collision analysis, reconstruction techniques, collision performance, computer simulation and modeling, research and testing".

***Accidental Injury: Biomechanics & Prevention***, San Diego, CA, Oct 23-24, 1999: "Anatomy, injury causation, injury prevention, biomechanics of injury, restraint systems, tolerances, etc".

***Vehicle Safety Restraint Systems: Performance, Technologies, and Implementation Strategies TOPTEC***, SAE, Costa Mesa, CA, Aug 9-10, 1999: "Field and crash test performance of first and second generation airbags, airbag injury, out-of-position detection systems, and rear occupant restraint systems".

***Staged Crash Tests and Data Acquisition***, Karco Engineering Test Facility, Adelanto, CA, Aug 11, 1999.

***Accident Reconstruction, Human Factors, Biomechanics***, SAE, Detroit, MI, Mar 1-2, 1999.

***PCCrash and PCRect Workshop***, Macinnis Engineering Assoc., Detroit, MI, Mar 3-4, 1999.

***Passenger Car Rollover TOPTEC: Cause and Prevention***, SAE, San Diego, CA, Jan 21-22, 1999: "Rollovers, biomechanics of rollovers, rollover frequency and injury risk, effects of roadside design, dynamics".

***Traffic Accident Reconstruction and Litigation Seminar***, Tucson, AZ, Nov 6-7, 1998: "Human factors, vehicle factors, environmental factors, motor vehicle collisions".

**42<sup>nd</sup> Annual Stapp Car Crash Conference**, SAE, Tempe, AZ, Nov 2-4, 1998: "Biomechanics, injury prevention, crash testing, modeling, human tolerance".

**Occupant Protection TOPTEC: Emerging Topics and Technologies**, SAE, Tempe, AZ, May 20-21, 1998: "Crash investigation, child protection, head protection, product litigation, side impact airbags, multistage inflators, crash test dummies and computer simulation, forward collision warning systems, and crash avoidance technology".

**Side Impact TOPTEC: Design Considerations for Safer Vehicles**, SAE, Tempe, AZ, May 18-19, 1998: "Crash testing, impact performance, side airbag evaluation and interaction, thoracic injury, injury tolerances, safety standards".

**ATB User's Group Conference**, Dayton, OH, Wright-Patterson AFB, Apr 30 – May 1, 1998: "Biomechanical modeling, sled acceleration testing, Dynamic Environment Simulator demonstration".

**Car Crashes and Occupant Injuries: A Team Approach to Crash Investigation**, AAAM, Tempe, AZ, Apr 16-17, 1998: "Investigation of frontal crashes, side impacts, rearend collisions, poles and tree impacts, motorcycles, pedestrians, compatibility in crashes, vehicle design".

**41<sup>st</sup> Stapp Car Crash Conference**, SAE, Orlando, FL, Nov 13-14, 1997: "Biomechanics of child injuries, side impacts, airbag interaction with upper extremities, biomechanics of low extremities, head injuries, neck injuries in rear-end collisions, neck modeling and injury tolerance".

**Child Occupant Protection Symposium**, AAAM, Orlando, FL, Nov 12, 1997: "Airbags, sitting position, restraint use, biomechanics of child injuries".

**41<sup>st</sup> AAAM Annual Conference**, Orlando, FL, Nov 10-11, 1997: "Alcohol and impaired driving related studies, occupant restraints, airbag effectiveness, etc".

**High Speed Rear Impact TOPTEC**, SAE, Tempe, AZ, Oct 27-28, 1997: "Occupant dynamics and injury biomechanics, mechanisms of injury and associated forces in high speed rear-end impacts and vehicular structure and design".

**High Speed and Low Speed Impact Seminar**, Macinnis Engineering Assoc., Vancouver, BC, Aug 18-22, 1997: "Staged crash tests, PCCrash simulations, accident reconstruction, low speed occupant biomechanics and studies".

**Heavy Vehicle Under-ride Protection TOPTEC**, SAE, Palm Springs, CA, Apr 15-16, 1997: "Truck and trailer crashworthiness, aggressivity, design, and standards".

**Airbags, Rollovers, Accident Reconstruction, Biomechanics**, SAE, Detroit, MI, Feb 24-28, 1997.

**Investigation of Motorcycle Accidents**, IPTM, University of North Florida, Tempe, AZ, Dec 2-6, 1996.

**40<sup>th</sup> Stapp Car Crash Conference**, Albuquerque, NM, Nov 4-5, 1996: "Biomechanics of impact".

**24<sup>th</sup> International Workshop on Human Subjects for Biomechanical Research**, NHTSA, Albuquerque, NM, Nov 3, 1996.

**SIP 96: Success in Injury Prevention-BC Perspectives**, ICBC, Canada, Material Damage Research and Training Center, Oct 10, 1996.

**40<sup>th</sup> AAAM Annual Conference**, Vancouver, BC, Canada, Oct 7-9, 1996: "Seat belt and airbag effectiveness, crash injury characteristics, vehicle characteristics, crash injury mitigation, bicycles and motorcycle injury studies, helmet effectiveness, alcohol risk, etc".

**Epidemiology for Traffic Injury Research**, AAAM, Vancouver, BC, Canada, Oct 6, 1996.

**Inspection and Investigation of Commercial Vehicle Accidents**, IPTM, University of North Florida, Tempe, AZ, Sept 16-20, 1996.

**Low Speed Collision TOPTEC**, SAE, Richmond (Vancouver), BC, Canada, Aug 19-20, 1996: "Biomechanics of soft tissue injuries, whiplash, human volunteer testing, human subject responses, structures and injuries of the neck, dummy development, seat testing, experimental research, head restraints, neck kinematics, reconstruction of low speed collisions, and demonstration of low speed staged crash tests".

**Emergency Medical Training**, 110 hours of classroom medical training, 16 hours of hospital emergency room clinical training and experience, 8 hours of life support training, Chandler-Gilbert Community College, Jan 23-May 14, 1996. EMT National Certification.

**Articulated Total Body Conference**, U.S. Air Force Armstrong Laboratory, Phoenix, AZ, Feb 8-9, 1996.

**Medical-Engineering Link**, AAAM, Chicago, ILL, Oct 15, 1995.

**39<sup>th</sup> AAAM Annual Conference**, Chicago, ILL, Oct 16-18, 1995: "Biomechanics, airbags, restraint systems, accident reconstruction, and injury causation".

**Children in Traffic: Exploring Their Special Needs as Vehicle Occupants**, AAAM, Washington, DC, Mar 23-24, 1995

**Accident Reconstruction, Biomechanics of Impact Trauma, and Automotive Design**, SAE, Detroit, MI, Feb 27-Mar 2, 1995.

**Head and Neck Injury**, SAE, Denver, CO, Dec 9-10, 1993.

**Accidental Injury: Biomechanics and Prevention**, University of California School of Medicine and Institute for Medical Education and Research, San Diego, CA, Nov 16-17, 1993: "Human tolerance, mechanisms of injury, and injury prevention".

**Vehicle Rollover TOPTEC**, SAE, Scottsdale, AZ, Sept 21-23, 1992: "Brain injury, rollovers, vehicle parameters, occupant injuries and tolerances, anatomy, biomechanics, and neck injuries".

**Basic Biomechanics of Musculoskeletal Systems**, Arizona State University, 1991, Semester course.

**34<sup>th</sup> AAAM Annual Conference**, Scottsdale, AZ, Oct 1-3, 1990: “ Injury studies, alcohol, traffic injury costs, seat belts, vehicle crashworthiness, injury mechanisms, biomechanical research, vision, drugs, fatigue, demonstrated stage crash test”.

**33<sup>rd</sup> AAAM Annual Conference**, Baltimore, MD, Oct 2-3, 1989: “Biomechanics, injury severity assessment, occupant crash protection, alcohol and drugs, relative risk of older drivers, trucks, and clinical studies”.

**Head Injury Mechanisms: The Need for an Angular Acceleration Criterion**, AAAM and Volvo Car Corp, Washington, DC, Oct 4, 1989.

**Biomechanics of Impact Trauma**, AAAM, Boston, MA, July 13-14, 1988: “Study in biomechanics, injury severity assessment, occupant kinematics, anatomy, types and mechanisms of injury, human tolerances, crash protection, and statistics”.

**Increasing Human Effectiveness, Edge Learning Institute**, Phoenix, AZ, 1987: “Human behavior, attitudes, self-image, constructive visualization, motivation, stress, and thought patterns”.

**Contingency Engineering Course**, Air Force Institute of Training, 1985: “Construction of roads and pavements, electrical, and structural”.

**Aircraft Hydraulic/Pneumatics**, U. S. Naval Training, 1972, “Structures, systems and safety”.

#### **PROFESSIONAL AFFILIATIONS**

Society of Automotive Engineering

Air National Guard Civil Engineering Association (Past)

Association for the Advancement of Automotive Medicine (Past)

Southwestern Association of Technical Accident Investigators (SATAI)

#### **MILITARY EXPERIENCE**

**United States Air Force Reserves**, 944<sup>th</sup> Civil Engineering, Captain, Supervisor of Engineering and Operations, 1988-1992, Retired.

**Colorado Air National Guard**, 240<sup>th</sup> Civil Engineering, Engineer, 1983-1988.

**Academy of Military Science**, 1984, Commissioned, Second Lieutenant.

**Wyoming Air National Guard**, 153<sup>rd</sup> Civil Engineering, Site Development Supervisor, 1977-1983.

**United States Marine Corp**, H & HS, Aircraft Maintenance, Flight Crew, Sergeant, 1971-1975.

#### **COMMUNITY SERVICES**

**Arizona Game and Fish**, Boat Safety Education Instructor, 1999-2001.

**Coast Guard Auxiliary**, Member since 1998, Public Boat Safety Instructor, Coxswain, Flotilla Commander, lake patrols, Home Land Security, FEMA.

### **PROFESSIONAL EXPERIENCE**

**Wall Accident Reconstruction, Inc.**, 1996-Present, Investigation and reconstruction of traffic collisions, highway traffic safety, biomechanics of impact trauma, injury causation, engineering analysis of design and design failure, statistical analysis, human factors, slip and falls and expert witness testimony.

**Cromack Engineering Associates, Inc.**, Tempe, AZ, 1987-1998, Investigation and reconstruction of traffic collisions, product liability, biomechanics, and expert witness testimony.

**Martin Marietta Aerospace**, Denver, CO, 1980-1987, Senior Engineer, Design and analysis of aerospace systems. Projects included Man Maneuvering Unit with special recognition by NASA, Titan 34D Missile Systems, and Strategic Defense Initiative.

**University of Wyoming**, Laramie, WY, 1997-1980, Heat transfer laboratory technician, design, test, and build of devices for measuring oil content in tar sand samples.

### **General Experience Summary:**

Numerous building and roadway construction and design, fire fighter school, automotive technology, aircraft technology and maintenance, motorcycle technology and experience, off-road experience and off-road design, ATV technology and experience, slip and fall, heavy vehicle, trailer design, commercial trailer under-ride guard design and effectiveness, FMVSS Standards, product liability, vehicle design and performance, tire design and failure analysis, human factors, investigation, accident reconstruction, biomechanics, injury trauma causation, injury prevention, crash worthiness, roadside design, signage, lighting, conspicuity, environmental conditions and effects, animation and computer simulations, crash testing, acceleration testing, low speed vehicle collision

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February 14, 2013

## **BILLING RATES**

Wall Accident Reconstruction, Inc. billing is based on accrued time spent by employees, expense of materials, and fees for specialized equipment and instrumentation. Hourly rates for employee time are based on experience, training, skill level and education. All activity, materials to be used and any other expenses incurred are utilized by the most economical and effective means possible.

### **Consultant:**

|                       |          |
|-----------------------|----------|
| Analysis/Review       | \$80/hr  |
| Testimony/Deposition  | \$120/hr |
| Travel (outside area) | \$40/hr  |

### **Technician:**

Assists in tasks including: creating collision scene schematics and trial exhibits, assists in vehicle and site inspections, vehicle testing and filming, search for exemplar subjects and vehicles, and various analytical and research duties.

|                      |         |
|----------------------|---------|
| Technician           | \$40/hr |
| Technician Assistant | \$25/hr |

### **Administrative Assistant:**

File accounting, file maintenance, deposition summarization, field note transcription, assist in correspondence, administrative support.

\$25/hr.

### **Registered Nurse:**

Medical record summarization and analysis, preparation of OIC and MS \$45/hr

\*All billing rates are subject to change at the discretion of Wall Accident Reconstruction, Inc.