



Kauderer & Associates, Inc.

Traffic Accident Reconstruction Experts

CURRICULUM VITAE OF EDWARD LEWIS

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AREAS OF EXPERTISE

- Court Qualified Expert Witness (Criminal and Civil)
- Forensic Mechanical Inspections of All Types of Vehicles and Equipment Components
- California Class A Driver License with TX and M1 Endorsements - 1984 to 2020
- Federal and State regulations and Codes Pertaining to Operation/Maintenance of Vehicles
- Mechanical Component Safety Inspections
- Vehicle Accident Investigation
- Commercial Vehicle Mechanical, Forensic and Safety Inspections
- Commercial Vehicle Federal and State Regulations and Codes
- Commercial Vehicle Air Brake Systems
- Commercial Vehicle Hydraulic and Electrical Inspections
- Certified Brake Inspector 49 CFR Part 396.25
- Certified Inspector 49 CFR Part 396.19
- Commercial Vehicle ECM (Electronic Control Module) Downloads and Interpretation
- Bosch® Crash Data Retrieval (CDR) Airbag Control Module (ACM) Images/Downloads and Interpretation
- Instructor of Forensic Vehicle Mechanical Inspections and Equipment Failure Analysis
- Commercial Vehicle Driving Experience
- Vehicle Fluid Analysis, Tire, Wheel, Seatbelt and Lamp Analysis Inspections
- Determination of Primary and Secondary Direct Contact Match Points and Induced Damage
- Live Crash Testing
- Proficient in the operation of gasoline, diesel, propane, and electric powered vehicles and equipment
- Proficient in the operation of hand and power tools, machine shop equipment, welding and general shop equipment
- Design and fabrication of parts and tools for fleet maintenance needs

EMPLOYMENT HISTORY

Kauderer & Associates	2020 - Present
Helicopter Accessory Services (HAS)	2020 - Present
California Highway Patrol Golden Gate Division	2002 - 2020
Fullerton Joint Union High School District	1995-2002
Club Car Incorporated	1994-1995
Western Rock Company & Puente Ready Mix Company	1994-1996 & 1986-1992
Vallen Safety	1992-1994
Seven-Up Bottling Company	1981-1986

RELATED WORK EXPERIENCE

Kauderer & Associates – Senior Mechanical Forensic Consultant

- Render opinions and conclusions on vehicle mechanical inspections and equipment component failures in cases handled by Kauderer & Associates
- Review and offer opinions and conclusions of vehicle mechanical inspection reports or equipment component failure reports prepared by law enforcement agencies and other private sector forensic firms or reconstructionists
- Review and approve vehicle mechanical inspection reports or equipment component failure analysis reports written by other consultants at Kauderer & Associates
- Assist in the development and design of mechanical inspection protocols, policies, and written report standards for Kauderer & Associates
- Mentor and train other mechanical consultants at Kauderer & Associates
- Use the Bosch® Crash Data Retrieval (CDR) tool to image/download vehicles' air bag control modules (ACM) or "Black Box"
- Download and interpret commercial and heavy vehicle engine control module (ECM) data
- Review commercial drivers' records and hours of service (driving) for compliance with State and Federal regulations

Helicopter Accessory Services (HAS) - Hydraulic Specialist

- Troubleshoot, repair and rebuild hydraulic servo units for the main and tail rotor blades
- Troubleshoot, repair and rebuild hydraulic check valves to ensure back-up hydraulic pressure is maintained if a failure occurs
- Troubleshoot, repair and rebuild hydraulic dampers for main rotor stability
- Proficient in the operation of hand and power tools and machine shop equipment including honing machines, lathes and grinders
- Proficient in the operation of the hydraulic flow bench to test and determine functionality of the hydraulic components prior to installation
- Complete paperwork for each test per FAA and EASA regulations

California Highway Patrol - Multidisciplinary Accident Investigation Team (MAIT) Investigator/MCS I

- Responded to active and post collision scenes, shootings and other critical incident investigations
- Conducted cursory inspection of vehicles on scene and collection of evidentiary components on scene
- Responsible for coordinating and conducting in-depth mechanical inspections of collision involved vehicles, including newer electric-powered vehicles
- Assisted MAIT/CIIT personnel at scene, identifying, marking and collection of evidence, survey roadway, scene environment, debris and associated vehicles utilizing a Total Station Surveying Instrument (TSSI) and Leica 3-D Scanners
- Test drove vehicles and performed functional testing of component systems
- Used Bosch® Crash Data Retrieval (CDR) tool to Image/Download vehicle Air Bag Control Modules (ACM) or "Black Box"
- Performed at least 800 mechanical inspections and analysis of component systems from August 2002 to August 2020
- Generated detailed written reports of vehicle inspections, critical component analysis and other methods of testing. Reports included opinions, conclusions, photographs, diagrams and charts.
- Photographed and video taped scenes, environments, vehicles and inspections

RELATED EXPERIENCE (cont.)

- Conducted Motor Carrier terminal, vehicle, and other related inspections in accordance with the California Highway Patrol Departmental policies and guidelines
- Performed inspections set forth in HPM84.1, Motor Carrier Safety Operations Manual to determine compliance with applicable laws and regulations in accordance with the California Vehicle Code, Title 13 California Code of Regulations, Title 22 Health and Safety Codes and Title 49 Code of Federal Regulations of Hazardous Materials
- Inspected and reviewed Commercial Vehicle Drivers' records and hours of service (driving) for compliance with State and Federal regulations
- Coordinated and worked side-by-side with National Highway Traffic Safety Administration and National Transportation Safety Board Investigators

Fullerton Joint Union High School District - Mechanic

- Maintained integrity of preventive maintenance program of approximately 55 school buses and over 150 pieces of miscellaneous fleet apparatus, including dump trucks, tractors, construction, automotive and small engine equipment
- Reviewed the daily Driver Vehicle Inspection Reports, (DVIR) and perform repairs as needed with documentation
- Test drove all types of vehicles and equipment to determine functionality of critical component systems
- Performed 45 and 90 day preventive maintenance inspections of fleet vehicles and equipment
- Inspected, troubleshooted, and repaired drive train components, engines, air brake systems, hydraulic and pneumatic systems, electrical suspension, steering, tires/wheels, emergency lighting, wheel chair ramps, entrance doors, emergency doors and locking mechanisms
- Demonstrated proficiency in the operation of gasoline, diesel, propane and electric powered vehicles and equipment
- Demonstrated proficiency in the operation of hand and power tools, machine shop equipment, welding apparatus and general shop equipment
- Designed and fabricated parts and tools for fleet needs

Club Car Incorporated - Transportation Coordinator/Driver and Mechanic

- Managed and coordinated deliveries of golf and utility carts to major country clubs, corporations, small businesses and private individuals throughout California, Arizona and Nevada
- Maintained integrity of preventive maintenance program of commercial fleet
- Performed commercial vehicle pre and post trip inspections and DVIR's
- Drove commercial combination vehicles requiring a class A license
- Demonstrated proficiency in the operation of hand and power tools, machine shop equipment, welding apparatus and general shop equipment
- Troubleshooted, serviced and repaired electric, gasoline, golf and utility carts

Western Rock Company & Puente Ready Mix Company - Commercial Truck Driver/Ready Mixed Concrete/Mechanic

- Responsible for driving ready mixed concrete trucks with loads to various construction sites
- Performed commercial vehicle pre and post trip inspections and DVIR's
- Maintenance and repairs to batch plant machinery, vehicles and miscellaneous equipment
- Obtained knowledge of different styles and designs of concrete pumps and their intended use
- Knowledge of concrete mix designs, slumps and their intended use
- Performed minor repairs in the field to truck, equipment and concrete pumps as needed

RELATED EXPERIENCE (cont.)

- Driver Trainer for new drivers, to develop, inspire and motivate safety, and drive one of the most difficult commercial vehicles in the industry
- Maintained active Class A Commercial Driver License with Hazmat Endorsement

Vallen Safety - Respiratory Technician

- Inspected, troubleshoedt and repaired Self Contained Breathing Apparatus (SCBA), for City and County Fire Departments, US Forestry, Hazardous Material Responders, Refinery and Armed Forces personnel
- Perfomed testing of the SCBA, intricate, high and low air pressures systems to ensure proper use of breathing capabilities and emergency alert systems
- Serviced and repaired low pressure (2200 psi) and high-pressure (4500 psi), aluminum and composite cylinders and associated valves
- Implemented training procedures for emergency personnel of donning and doffing the SCBA equipment
- Inspected, troubleshooted, repaired and trained personnel on use of dangerous and hazardous gas detection monitors and calibration equipment
- Inspected, troubleshooted, repaired and trained personnel on use of fall protection equipment

Seven-Up Bottling Company - Fleet Transportation Fuel/Lube Tech/Mechanic and Merchandising/Sales

- Maintained the integrity of preventive maintenance program of a large commercial vehicle fleet, including tractors, trailers, automobiles, forklifts and specialty equipment
- Became proficient in operation of commercial and specialty vehicle fleet
- Inspected, troubleshooted and repaired drive train components, engines, air brake systems, hydraulic and pneumatic systems, electrical, suspension, steering, lighting and cargo door systems
- Drove commercial combination vehicles, requiring a Commercial Vehicle Class A Driver License
- Test drive vehicles to determine functionality of major component systems
- Designed and fabricated parts and tools for fleet needs
- Demonsrated proficiency in the operation of hand and power tools, machine shop equipment, welding apparatus and general shop equipment
- Reviewed the daily Driver Vehicle Inspection Reports (DVIR's) and perform repairs as needed with documentation

EDUCATIONAL BACKGROUND

California Highway Patrol
MCS-I – Inspection of Commercial Vehicles, Buses and Limousines for Mechanical Function of Critical Components, including other State and Federal Regulations - 960 hours 2002

Rio Honda Junior College, Whittier, CA 1974-1975
Police Science and General Education

Solano Community College, Fairfield, CA 2005
Fire Science 50

SPECIALIZED TRAINING

- Field and on-line automotive manufacturer training on various critical components of vehicles and equipment 2002 - 2020
- CHP - MAIT collision investigation training - 2002 to 2020
- CHP - Critical Incident Investigation Team (CIIT) Member - 2002 to 2020
- CHP - Officer Involved Shooting Team Member - 2002 to 2020
- CHP - Attend autopsies to determine causation of injuries and determination of seatbelt use
- CA2RS - Basics of forensic video and photography reconstruction by Paul Jacobs February 2020 (8hours)
- Department of Justice, California Criminalistics Institute - Berla vehicle infotainment imaging (vehicle onboard computer) investigations - January 2020 (20 hours)
- CA2RS - Forensic testing and analysis of seat belts with case studies by Kurt Weiss - August 2019 (8 hours)
- CHP - Critical Incident Investigation Team Tactics and Investigations - March 2019 (16 hours)
- Department of Justice, California Criminalistics Institute Firearms Safety - March 2019 (24 hours)
- Society of Automotive Engineers (SAE) - Introduction to brake control systems, ABS, TCS and ESC - October 2018 (24 hours)
- US Department of Transportation - Fundamentals of bus collision investigations, drag factors, speed analysis and speed from tire friction marks - February 2018 (40 hours)
- CA2RS - Vehicle, bicycle, pedestrian collision investigation 2018 (8 hours)
- Society of Automotive Engineers - Heavy Vehicle Event Data Recorders (HVEDR) and interpreting the data for collision investigations - October 2017 (30 hours)
- Riverside County Sheriff's Department - Traffic Collision Investigation/Motor Vehicle Inspections, understanding, testing and analyzing the critical components and function of post-collision vehicles - October 2017 (40 hours)
- CA2RS - Traffic signal timing and phasing fundamentals - (2017)
- National Crime Investigations/FBI - Advanced Crime Scene Reconstruction/Logistics and Evidence Analysis from mock scenes and scenarios - August 2017 (50 hours)
- Institute of Police Technology and Management - Crash Data Retrieval Tool Technician - June 2017 (16 hours)
- Department of Justice (DOJ) Forensic photography using SLR digital cameras - June 2017 (40 hours)
- CA2RS - Crash team member of live motorcycle crash testing into various vehicles - June 2017 (16 hours)
- World Reconstruction Exposition (WREX) - Collision Reconstruction Conference for accident reconstruction and crew team member that performed live collisions of commercial vehicles, automobiles and motorcycles, including post collision investigation techniques - May 2016 (40 hours)
- CAR2S - Damage energy methods of vehicle vs vehicle, pedestrians and bicycles - March 2016 (8 hours)
- Honda Motor Company University - Online training of automotive component systems
- Bendix - Air Brakes and Advanced Air Charging Systems November 2015 (4 hours)
- Department of Justice - Lamp Analysis, determining if a lamp was incandescent (ON) during a collision - March 2015 (24 hours)
- CHP - Performance driving techniques and inspection of Ford Police Utility Vehicle, including the Powertrain, ABS and Stability Control Functions - February 2015 (16 hours)
- Society of Automotive Engineers - Heavy Vehicle Event Data Recorders (HVEDR) and interpretation of data - October 2014 (26 hours)
- CA2RS - Forensic Mapping of collision, shooting and critical incident scenes - August 2014 (8 hours)
- CA2RS - Application and Analysis of Video Reconstruction - January 2014 (8 hours)
- Vericom VC 3000, VC 4000 - Accelerometer analysis, determining vehicle G-force energy - August 2013 (16 hours)

SPECIALIZED TRAINING (cont.)

- TRG Tech Tire Consultants - Tire Forensics Examination, Understanding how tires are constructed and inspections to determine cause of failure - May 2013 (16 hours)
- The Bulletproof Mind - Lieutenant Colonel Dave Grossman, Awareness and behavior of the human mind during critical incidents - March 2013 (8 hours)
- Bosch® Crash Data Retrieval Technician I & II Certification Course - February 2013 (16 hours)
- CA2RS - Auto/Pedestrian Crash Reconstruction, Determining area of impact - August 2012 (8 hours)
- CA2RS - Photogrammetry, Laser Scanning and 3D Animation for reconstruction - February 2012 (8 hours)
- CA2RS - Reconstruction inspection procedures, lamp analysis, witness marks, prior damage and collection of evidence - April 2011 (8 hours)
- Bendix - Air brake system troubleshooting - September 2010 (8 hours)
- CA2RS - Motorcycle Downsiding Reconstruction Investigation - August 2009 (8 hours)
- Bosch® Crash Data Retrieval System Technician and Operator Certification - April 2009 (40 hours)
- TRG Tech Tire Consultants - Tire Forensics Examination, Understanding how tires are constructed and inspecting to determine cause of failure - January 2008 (24 hours)
- Vericom VC 3000, Understanding accelerometers and use - January 2007 (16 hours)
- Bosch® Crash Data Retrieval System - Technician and Operator Certification Course - 2006 (40 hours)
- Daimler Chrysler Corporation - Base and Antilock Brake System (ABS) inspections - 2006 (8 hours)
- Bendix - Air Brakes and ABS Training - November 2005 (8 hours)
- Honda Motor Company - Automotive Service Excellence (ASE) Service Brakes / Antilock Braking Systems training CD -2004
- General Motors Corporation - Service Brakes / Antilock Braking Systems ASE training CD - 2004
- Ford Motor Company - Automotive Service Excellence (ASE) Service Brakes / Antilock Braking Systems training CD - 2004
- Federal Motor Carrier Safety Administration - Regulations to transport, and use of cargo tanks, bulk packaging and hazardous materials - April 2004 (40 hours)
- CA2RS - Advanced Automotive Lamp Analysis, Determining if a lamp was incandescent at the time of the collision - January 2004 (8 hours)
- CA2RS- Tire Failure Analysis - January 2003 (8 hours)
- Federal Motor Carrier Safety Administration North American Standard Level I Training - Commercial vehicle enforcement and performing critical components safety inspections - July 2002 (120 hours)
- North American Standard Inspection Driver Examination – July 2002
- Hazardous Materials Emergency Awareness (Annual 8 hours)
- CHP Driver Enhancement-Awareness and behind the wheel training (Every four years)
- Allison New World Transmission - Troubleshoot, service and repairs of automatic transmissions - 1999 (8 hours)
- Pro-link Computer diagnostics of Caterpillar Diesel engines - 1999 (8 hours)
- Ricon Incorporated - Troubleshoot, service and repairs of electric and hydraulic wheelchair lifts – 1988 (8 hours)
- Hyster-Lift - Lift truck (fork and scissor lift) safety and driver training - 1998 (8 hours)
- Bendix - Troubleshoot and repairs of air brake systems - (8 hours)
- Carlisle Brake Components - Troubleshoot and repairs of air brake systems - (8 hours)
- Betts Spring Company - Troubleshoot and repairs of heavy duty commercial vehicle suspension systems - (8 hours)
- Club Car incorporated - Electric vehicle on Board Computer Diagnostics - (8 hours)
- Moog Suspension/Motor Rim and Wheel Company - Inspect, troubleshoot and repair commercial and automotive suspensions (8 hours)
- Bendix/Motor Rim and Wheel Company - Inspect, troubleshoot and repair air brake systems (16 hours)

SPECIALIZED TRAINING (cont.)

- Bendix/Motor Rim and Wheel Company - Inspect, troubleshoot and repair hydraulic service brake systems (8 hours)
- Bower Bearings Incorporated - Inspect, troubleshoot and repair different types of bearing sets (8 hours)
- Seven-Up Bottling Company - In house training of cable lift doors, maintenance and repairs

EXPERT WITNESS QUALIFICATIONS

- County of Solano Superior Court
- County of Contra Costa Superior Court
- County of Napa Superior Court
- County of Santa Clara Superior Court
- County of Marin Superior Court
- County of San Mateo Superior Court
- County of Alameda Superior Court
- San Francisco Superior Court
- County of Sonoma Superior Court
- Criminal Cases
- Civil Cases
- Grand Jury
- Depositions Criminal and Civil
- Preliminary Hearing Criminal

TEACHING/PRESENTATIONS

- CHP Academy - Basic Motor Vehicle Inspection Course - 2011, 2012, 2013, 2015, 2016, 2017, 2018, 2019 and 2020
- Golden Gate Division - Intermediate Accident Investigation - Mechanical Inspections, Contact Points and Photography - 2014, 2015, 2016, 2017, 2018 and 2019
- Golden Gate Division - Basic Motor Vehicle Inspections - 2011
- Golden Gate Division - Techniques of Accident Investigation Training (TAIT) Mechanical Inspections and Collision Investigation - 2002 and 2003
- Riverside County Sheriff's Department - Collision Investigation of Motor Vehicle Inspections - October 2019 (40 hours)

PROFESSIONAL AFFILIATIONS

- California Association of Accident Reconstruction Specialist (CA2RS)
- National Association of Professional Accident Reconstruction Specialists (NAPARS)
- Society of Automotive Engineers (SAE)

Not for Purposes of Expert Witness Disclosure

CERTIFICATES AND LICENSES

State of California

- State of California Contractors License #767768
- State of California Commercial Driver License - Class A, M1 and TX between 1984 and 2020

State of Arizona

- State of Arizona Commercial Driver License - Class A, L, and TX, 2020 to present

Not for Purposes of Expert Disclosure