

Ann Arbor, Michigan
734 994-0494

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800 924-0494

Austin, Texas
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DONALD B. H. JEFFERS, P.E.



Mr. Jeffers has a broad background in the design and failure analysis of transportation vehicles and industrial machinery with experience in the automotive, aerospace and chemical industries.

Mr. Jeffers is a strong practical engineer with a scientific background. His hands-on experience ranges from research, design and development to manufacture, testing and the solution of machinery problems in the field.

He is a versatile professional skilled in mechanical engineering, structures, electrical systems and aerodynamics. He is an expert in vehicular systems failure analysis and thoroughly understands procedures used by field service personnel. His specialties are automotive engineering and industrial machinery.

His vehicular failure analysis, product liability and accident reconstruction experience includes trucks ranging from small pickups to multiple unit tractor-trailers; automobiles including sports cars, sedans, station wagons and sport utility vehicles; bicycles, motorcycles, all terrain vehicles; motorhomes, recreational vehicles, buses, farm machinery, skidders, self-propelled cranes, trains, pleasure boats, deep water boats, light aircraft and pre- and post accident fire.

Mr. Jeffers' expertise in vehicle systems and industrial machinery equips him to precisely determine systems failure and accident causative elements.

He uses a variety of analysis techniques, including state of the art computer analyses as well as empirically and theoretically based methods. He presents his results in a clear and complete manner, with the objective of facilitating early settlement. In cases that proceed to trial, Mr. Jeffers may design and construct unique demonstrative evidence models or graphical presentations for use in testimony. He has served as faculty for the National Institute for Trial Advocacy as guest engineering expert witness. Mr. Jeffers' ability to present complex events and concepts in understandable terms makes him a very credible witness.

Mr. Jeffers began his engineering studies at the University of Texas in Austin and went on to the University of Michigan at Ann Arbor for specialized studies and research in automotive engineering, internal combustion engines, machine design and aerospace structures.

Mr. Jeffers has consulted for U.S., Canadian, European and Middle Eastern companies. He has extensive worldwide travel experience.

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MACHINERY EXPERIENCE

AUTOMOTIVE

ALL SYSTEMS AND COMPONENTS INCLUDING:

Brakes	Air bags
Anti-skid braking systems	Seats, Seat Belts
Tires	Supplemental Restraint Systems
Wheels	Manual and automatic transmissions
Suspension	Differentials
Steering	Engine and chassis dynamometer testing
Hydraulic systems	Emissions testing
Vehicle Computer Controls	Fuel tanks
Diesel and Spark Ignition engines	Crash-worthiness
Engine / Chassis computer control modules	Fire Cause and Origin
Electronic fuel injection	Automotive structures
Electronic ignition	Chassis development
Cruise Control	Hybrid automobiles
Electrical systems	Articulated Vehicles
Lighting	Construction of unique vehicles

INDUSTRIAL

Steam and gas turbines	Cranes
Compressors: centrifugal, rotary, diaphragm, reciprocating, hyper-reciprocating	Deep space vacuum systems
Blowers: Axial, centrifugal, vane, roots	EMI shielded computer rooms
Vibration and control systems	Clean rooms
Lube/seal oil systems	Heat exchangers
Hydraulic systems	Cooling towers
Pumps	Chillers
Gearboxes	HVAC systems
Large and small electric motors and generators	Elevators
Blenders	Medical prostheses
Extruders	Sea going barges
Packers	Tenoning machines
Hammer mills	Foundry sand mold mixers
Belt and screw conveyors	Plant emissions systems: electrostatic scrubbers, bag houses, and others

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EDUCATION ABSTRACT

BRIEF DESCRIPTION OF GRADUATE DEGREE WORK: Vehicle Dynamics; Automotive Chassis Design; Internal Combustion Engines; Aerospace Structures (Statics and Dynamics of Monocoques, Beams, Plates, Composites, Elastic and Plastic Deformation, Creep, and Visco-elasticity); Stress, Strain, and Fatigue Considerations in Design; Dynamics of Mechanical Systems; Machine Design; Advanced Thermodynamics; Fourier Series; Matrix Algebra.

GRADUATE RESEARCH: Modeling by Semi-monocoque Methods; Stress Analysis, Dynamic Considerations and Design Optimization of a Composite Automotive Chassis Structure.

SUBSIDIARY SUBJECTS: Studies in Automotive Engineering and Aerospace Structures focusing on Engine Design, Chassis Design and Vehicle Structures with undergraduate courses in Automotive Engineering, Vehicle Dynamics, Internal Combustion Engines, Machine Design, Aerodynamics, Structural Mechanics, Materials Sciences and Manufacturing Processes.

ELECTRICAL-COMPUTER ENGINEERING: Included circuit analysis, logic circuitry, electro-mechanical devices, instrumentation and automatic control.

DIRECTED STUDIES: The Effects of Combustion By-products and Noise on Plant and Animal Life from the Medical, Natural Science, and Legal Perspectives; Similitude in Machinery and Nature; Reciprocating Crank Train Dynamics; Centrifugal-Axial Compressor Flow and Surge.

PROFESSIONAL DEVELOPMENT COURSES: Roadway Engineering Concepts - Texas A & M University; Rotor Bearing Dynamics of Turbo Machinery - University of Virginia; Rotor Characterization, Balance and Spectrum Analysis - Hewlett Packard / Johnson Space Center; Rotating Machinery Symposium - West Virginia University; Computer Accident Reconstruction - California State University.

CONTINUING EDUCATION: Hybrid and Electric Vehicles Technologies, Batteries, Fuel Cells, Photovoltaics, Solar Power, New Energy for the Future; Matter, Energy and Electricity, Electrical Science, Electrical Energy Storage, Antennas; Fiberoptics, LED and Fluorescent Lighting; Diesel Engines, Combustion; Biofuels, Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG) as Alternative Energy Fuels; Materials Science, Structure of Metals, Electrochemistry of Corrosion, Galvanizing; Unique Properties of Water; Procedures for Failure Analysis, Types of Failure and Stress, Wear Failures, Fatigue Failure, Ductile and Brittle Fractures, Failures of Shafts and Bearings, Roller Bearing Damage Analysis, Failures of Gears, Failure Analysis of Plastics; Thermal Shock, Brittle Fracture, Failure of Cast and Wrought Metals, Failures of Welded, Brazed and Soldered Joints; Lubricating Oils, Tribology, Non-Newtonian Fluid Dynamics.

The University of Michigan MSE (Mechanical Engineering) 1976 Shell Fellow

The University of Michigan BSE (Mechanical Engineering) 1974 cum laude

Member of the Society of Automotive Engineers.

Licensed Professional Engineer in the States of Michigan and Texas.