

Robson Forensic

Engineers, Architects, Scientists & Fire Investigators

GARY A. DERIAN, P.E. Mechanical Engineer

Tire Engineering:

Analyzed more than 5,000 field return tires including radial passenger, bias belted passenger, and bias and radial light truck tires. Designed tire tread patterns for water drainage and handling stability. Created unique carcass and belt constructions to optimize performance. Directed designs and processes for tire cords and rubber compounds. Developed constructions with fail safe characteristics to maintain vehicle control in the event of a tire failure. Developed passenger tires for use in endurance racing. Experience in all phases of tire manufacture. Consulted with engineers designing tires used in light and medium trucks.

Vehicle Crash Reconstruction:

Analysis of vehicle crashes to determine speeds and positions of vehicles before and during impact. Effectiveness of safety systems. Vehicle dynamics. Traction capability of road surfaces. Failure analysis of vehicle systems.

Vehicle Engineering:

Design Experience. Includes engine, suspension, fuel systems (both carburetor and fuel injection), vehicle dynamics, tires, wheels, brakes, steering, electrical systems, air conditioning and heating systems. Development includes compliance with safety standards, body strength, glass bonding, and wiper systems. Considerable development of vehicle dynamics and safe handling characteristics. Occupant protection includes both seat belts and air bags. Control systems include electronic fuel injection, anti-skid brakes, air bags and body electronics.

Manufacturing and Industry:

Designed electric, hydraulic and pneumatic power systems for industrial manufacturing applications. Designed and specified power units and their control systems and includes man-machine interface. Hydraulic and pneumatic design including flow and pressure control, metering systems, adhesive spray systems, seals and packings. Special consideration and design experience for abrasive materials and VOCs. Systems included process capability and statistical process control and integrated into complete automation cells. Wrote instruction manuals and warnings for both end users and service personnel. Designed for safety standards to include pinch point guards, fences and cages for robotic equipment, ladders and scaffolds, travel limits for machinery. Developed to meet ISO and QS standards for design and function. System design to meet and exceed OSHA and CE standards for operator safety.

Driving:

Developed training programs and instructed police and fire personnel in proper driving techniques for safe handling of vehicles under severe driving conditions. Participate in track and off-road racing events.

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PROFESSIONAL EXPERIENCE

- 1990 to present **Robson Forensic, Inc.** *Associate*
Provide technical investigations, analysis, reports, and testimony for failure analysis and toward the resolution of commercial and personal injury litigation involving crashes, defects, product failure, automotive and industrial safety; vehicular crash reconstruction, vehicle engineering and crash-worthiness; tire design and failure analysis.
- 1990 to 2000 **Dunlop Tire Co.** *Consultant* Tire Fitment Guide
Created the tire fitment guide for all passenger cars and light trucks sold in the US.
- 1989 to 2000 **Nordson Corp.** *Project Engineer; Consultant* Product Design and Development
Designed and produced dispensing systems for the application of sealants and adhesives using spray and extrude methods and applied to automobile manufacturing. Disciplines included hydraulic, pneumatic and electric power, flow control, seals and packings, computer controls, robotic applications, industrial safety, OSHA, CE, QS and ISO standards. Wrote manuals, warnings and performed training sessions for customers.
- 1987 to 1989 **Avanti Automotive Co.** *Chief Engineer* Automobile Engineering
Responsible for engineering and manufacturing the Avanti automobile. Performed major engineering work in the body, chassis, interior, suspension, electrical components and suspension to meet performance goals, manufacturing needs, and FMVSS regulations. Work included seat belt design, air bag considerations and other occupant restraints.
- 1986 to 1988 **National Academy for Professional Driving** *Director of Engineering; Consultant* Human Factors in Driving
Created technical department to develop scientifically based drivers training programs for police, fire and ambulance drivers. Performed engineering consulting in the areas of tire testing, accident reconstruction, high performance engine systems and high performance suspension tuning. Wrote articles for industry personnel and auto enthusiast magazines.
- 1974 to 1986 **The BFGoodrich Co.** *Product Engineer/Tire Engineer/Product Manager* Tire Engineering
Designed and developed the first US built passenger tire capable of 170+ mph. Developed new testing techniques for this new generation high performance tire which included vehicle dynamics studies and the interaction of tire properties with

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vehicle handling. Directed worldwide racing support programs where passenger tires were used in racing. Delivered technical and marketing presentations to consumer and trade organizations. Designed aircraft escape slides and inflation systems for them using high-pressure nitrogen and carbon monoxide.

EDUCATION

B.S. Mechanical Engineering, Case Western Reserve University, 1974

Additional Training:

SAE Congress, Crash Safety and Reconstruction, 1999, 2000, 2002, 2004, 2006, 2008, 2009, 2010, 2011

International Tire Exhibition and Conference (ITEC), 2010

SAE Crash Reconstruction Course, 1999

PROFESSIONAL REGISTRATION

Professional Engineer, State of Ohio, #47211, 1982

PROFESSIONAL AFFILIATION

Society of Automotive Engineers, Member Grade

PATENTS

2 patents for tire designs, folded fiberglass belts and nylon cap ply designs

3 patents for hydraulic systems, flow detection, and dispensing

1 patent for hydraulic seal design