

# Robson Forensic

Engineers, Architects, Scientists & Fire Investigators

## PETER J. LEISS Automotive Engineering Expert

Provide technical investigations, analyses, crash reconstruction, testing, reports, and testimony towards the resolution of litigation arising from motor vehicle collisions, fires, and failure/defect claims.

**Motor Vehicle Design, Development and Testing** – from requirements, concept through validation field-testing of complete vehicles, including manufacturing. Failure Mode Effects Analysis (FMEA) for products & process, as well as writing trouble shooting and service procedures. Testing pre-production and production vehicles in extreme environments at or above rated capabilities. Owner's Manual and Quick Start Guide language development.

**Motor Vehicle System Design, Development and Testing** – conventional and anti-lock brakes; electronic stability control; restraints; powertrain; throttle-by-wire; seat; gear shift; suspension; steering; tires, fuel delivery; emissions controls; electrical; climate control; frames; and structures.

**Motor Vehicle Failures** – seat belt; seat retention, air bag; structural; suspension; axle, spindle failure and separation; wheel and bearing failure; transmission failure; sudden acceleration; cruise control; steering; frame rail; wheel separation; steering; ABS; electronic stability control; transmission; fuel injection and electronic engine controls; car, light truck and medium truck brakes; trailer hitches; throttle by wire; electronic throttle control.

**Motor Vehicle Repair** – diagnosis and repair of engine, transmission, transfer case, differential and final drive, suspension and steering systems, conventional and anti-lock brake systems, stability/traction control, fuel system, emissions systems, climate control, entertainment, video, navigation, network, multiplexing, primary and supplemental restraint systems, lighting/electrical, interior/exterior components and systems, interaction of dealers and manufacturers, and Safety Recall repairs. Proper use of service repair tools and equipment, repair procedures and shop operations.

**Vehicle Crash Reconstruction** – inspection of damaged vehicle and components. Site inspection. Review of police report, witness statements, scene photos and other documents. Computational recreation of the crash using facts and scientifically accepted methodology to determine how the crash occurred, including elements within the crash. All to determine cause(s) of the crash, including the resulting severity.

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### PROFESSIONAL EXPERIENCE

2007 to **Robson Forensic, Inc.**

present *Associate*

Provide technical investigations, analysis, reports and testimony toward the resolution of commercial and personal injury litigation involving vehicle collisions, vehicle design issues, mechanical defects and malfunctions, and vehicle repair issues for passenger cars, light trucks, SUVs and medium trucks.

1999 to **Chrysler, LLC**

2007 *Plant Vehicle Engineer, Newark, DE*

2006-2007

Deployed to the Newark Assembly Plant to determine root cause of production issues and implement corrective measures with chassis, powertrain, and interior parts and/or assembly processes and machines. Audited process and machine capability. Performed daily drive audits on new vehicles to confirm fit/form/function expectations. Liaison between the assembly plant and engineering in Detroit. Perform trials on new parts. Determined cause of warranty claims; pursue corrective actions. Assisted in prototype vehicle builds and diagnose and document build and functional issues.

*Vehicle Development Engineer, Detroit, MI*

2001-2006

Truck Vehicle Development and Synthesis Group. Responsible for current and future model year Dodge Durango Chrysler Aspen Interior/Chassis. Developed and performed vehicle tests to validate new hardware. Acquired suspension load data and performed suspension integrity testing to ensure design met functional objectives. Planned and executed development/validation trips for new product in severe climates and usage environments. Trailer towing at maximum weight over Eisenhower Pass, Colorado and in Baker and Death Valley, California. Acted as the "Voice of the Customer" during the development process. Diagnosed and documented build and functional issues throughout the development process. Reviewed and corrected draft Owner's Manuals for new models and features. Performed root-cause analysis on vehicle system and durability issues and provided feedback to design groups. Prepared vehicles for display at Auto Shows and for dynamic review by Senior Management and Journalists.

Part of team assigned to implement Electronic Stability Program (ESP) to current model Dodge Durango as a mid-life-cycle product enhancement. Activities included:

- Benchmarking competitive vehicles to establish system performance targets
- Participated in development rides at internal, external, and supplier testing facilities to gauge progress on tuning in various environments
- Guided tuning with feedback from the development rides and Senior Management reviews
- Updated structural durability vehicles with latest hardware/software

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Led project to modify a current product for use in a high speed pursuit environment. Worked with design groups to support prototype properties being built and tested. Modified the vehicle's handling and braking characteristics to meet targeted functional objectives. Scheduled internal testing at off-site facilities and external testing with potential customers for feedback and acceptance levels.

Involved in the development and tuning of:

- Brake Pedal Feel
- Anti-Lock Brake System tuning
- Electronic Stability Program tuning
- Suspension dampening
- Stabilizer bar design and application
- Tire analysis, performance, and selection
- Interior component design, fit, and finish
- Fuel gauge accuracy
- Trip computer readings
- Seat comfort
- Anti-Noise, Vibration, and Harshness (NVH) measures

*Product Engineer, Detroit, MI* 2001-2002  
Truck Chassis Design Engineering. Responsible for Dodge Durango Exhaust System design and engineering, including tonal quality tuning, thermal management, and emissions control devices. Addressed quality and reliability issues in current production parts. Designed and released future model parts, supported prototype vehicle builds, and planned and executed trips to test functionality in extreme climates. Managed cost reduction activity for all truck product exhaust system components.

*Product Engineer, Detroit, MI* 1999-2001  
Truck Chassis Design Engineering. Responsible for Dodge Ram Diesel Fuel System design and engineering including fuel tank design, filler tube, fuel supply and return lines, thermal management, and impact energy management. Addressed quality and reliability issues in current production parts. Designed and released future model parts, supported prototype builds, and planned and executed trips to test functionality in extreme climates. Managed cost reduction activity for current model parts.

1999 **General Motors Corporation, Pontiac, MI**

*Test Support Engineer*

Truck Simulated Durability Test Group. Responsible for proving structural durability of new program vehicles with testing conducted on computer controlled, hydraulic actuated test equipment. Tracked test progress and failed hardware on vehicles

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undergoing simulated structural durability testing. Worked with design engineers to develop solutions to repetitive failures.

### PROFESSIONAL CREDENTIALS

Greenbelt Certification, 2007  
Shainin Red X Apprentice, 2007  
Certified Inspection Mechanic, Class 1 (passenger car / light truck): Commonwealth of Pennsylvania

### EDUCATION

B.S., Mechanical Engineering, Lawrence Technological University, Southfield, MI, 1999

#### *Continuing Education*

Fundamentals of Motor Vehicle Fire Investigation, SAE, 2009  
Vehicle Accident Reconstruction, SAE, 2008  
Process FMEA, DaimlerChrysler, 2007  
Design FMEA for Systems and Components, DaimlerChrysler, 2007  
Process Capability, DaimlerChrysler, 2007  
Critical Thinking for Leaders, Business Processes Inc., 2006  
Problem Solving for Manufacturing, Shainin, LLC, 2006  
Statistical Process Control Application & Management, DaimlerChrysler, 2006  
Design FMEA, DaimlerChrysler, 2006  
Error/Mistake Proofing Techniques, DaimlerChrysler, 2006  
Hybrid Vehicle Electrical Awareness, DaimlerChrysler, 2005  
Brake Actuation, DaimlerChrysler, 2004  
Vehicle Synthesis Awareness, DaimlerChrysler, 2003  
Reliability Engineering in Product Design and Development, DaimlerChrysler, 2003  
Suspension Geometry and Design, DaimlerChrysler, 2001

### PROFESSIONAL MEMBERSHIPS and AFFILIATIONS

Society of Automotive Engineers (SAE), member since 1996  
Antique Automobile Club of America, member since 2003  
EvolutionMSport NASA American Iron Mustang, road race crew member, 2005  
ASTM International