THE EXPERTS
Robson Forensic

RICHARD D. SHERMAN
Tire Design & Failure Analysis Expert

Provide technical investigations, crashworthiness and engineering, tire failure, and accident reconstruction analysis.

Vehicle and Tire Expert with a background focused on process/product improvement and development. A disciplined expert in: the analysis and optimization of systems; problem solving with proven physics based solutions to interruptions in product and process quality; and, a master tactician in the causal explanation discovery and problem elimination mantra of continuous improvement.

Tire Manufacturing Quality, Performance & Optimization – from design, manufacturing, and product optimization. Authoring quality standards, procedures, and safety analysis reports. PFMEA, Control Plans. Critical Characteristic identification. Forensic investigation of customer tire, field and internal failures. Quality improvements through optimization of processes, procedures, and tire design. Use of physics based problem solving techniques to identify, eliminate product variation and defects.

Vehicle Accident Reconstruction – inspection of damaged vehicle and components; CDR/EDR "black box" data retrieval and analysis; Site inspection; Review of police report, witness statements, scene photos and other documents. Computational simulation of the accident using facts and scientifically accepted methodology to determine how the crash occurred, including the resulting severity.

Motor Vehicle Design and Development - from requirements, concept through validation field-testing of complete vehicles, including manufacturing. Failure Mode Effects Analysis (FMEA) for products & process, DVP&R development. Use of 3D solid modeling and failure analysis tools for design optimization and safety requirements.

Manufacturing Process and Equipment – pneumatic and DC powered tools, hand tools, torque verification means and methods, Statistical Process Control (SPC), welding (TIG/MIG), tube bending, roll forming, extrusions, Mistake and Error proofing, Poka-Yoke, Kaizen activities, Hydraulic and pneumatic design including flow and pressure control, metering systems, spray systems.

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 systems, emissions systems, climate control, entertainment, video, navigation, network, multiplexing, lighting/ electrical, interior/exterior components and systems. Rebuilt engines to original equipment specifications.

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PROFESSIONAL EXPERIENCE

2016 to Present **Robson Forensic, Inc.**
Associate
Provide technical investigations, analysis, reports and testimony toward the resolution of commercial and personal injury litigation involving tire defects, vehicle collisions, vehicle crashworthiness and engineering issues, mechanical defects and malfunctions, and vehicle repair issues for passenger cars, light trucks, SUVs, medium and heavy duty trucks.

2009 to 2016 **Goodyear Tire & Rubber Company**
Quality Team Leader, Curing Business Center, Lawton, Oklahoma 2013 – 2016
Managed budget reduction from $5.5M to $5.2M through product optimization. Achiever of month over month cured waste improvements totaling $850K . Investigated and determined root cause for internal/external product quality concerns. Responsible for increasing production yields in Uniformity performance. Coach, Teach and Train team members to strengthen team and individual performance and uniformity waste reduction.

Quality Team Leader, Tire Assembly Business Center 2011 - 2013
Leader of a cross-functional team with improvements of $250,000 annual waste savings. Achiever of $1M in loss recoveries through process and product optimization. Championed systems and process improvements with over $200,000 in annual savings. Investigated and determined root cause for internal/external product quality concerns. Lead 16 quality technicians across 4 shifts through process improvements. Responsible for increasing production yields regarding uniformity performance. Coach, teach and train team members to strengthen team and individual performance. Liaison to Tire Assembly, Curing and Tire Design for product/process improvements.

Tire Designer, New Product Industrialization 2009 - 2011
Implemented new tire designs into production while tuning uniformity performance through design and manufacturing optimization. Investigated and determined root cause to address internal/external product quality concerns. Manage team to reduce tire weight variance, plant performance up 65%. Incorporated Convergent Diagnostic problem solving for waste reduction.

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2008 to 2009 **Hilite Industries**
Senior Quality Engineer, Carrollton, Texas
Responsible for tracking, analyzing, and leading initiatives for quality improvements. Lead Cross functional groups to reduce waste to less than 0.5% of sales from 5%. Applied Quality tools including Six Sigma, Lean Manufacturing to improve plant performance. Assisted in managing the performance and development of the plant QA personnel. Supervised technical staff in completing tasks essential to enforcing quality standards. Championed cross functional teams to implement problem solving techniques (8D, 5 Whys). Created and maintained controls and documentation procedures per ISO 9000 and TS 19469. Identified/administered relevant quality-related training needs to plant and QA personnel.

2007 to 2008 **Collins Industries**, Parent Company to:
Wheeled Coach - Ambulance Manufacturer
Collins Bus – Class A Bus Manufacturer
Capacity of Texas – Heavy Truck Manufacturer

Corporate Engineer, Hutchinson, KS
Corporate change agent to support Lean Manufacturing initiatives across all subsidiaries. Improved production cycle times through fastener reduction and process improvements. Optimized existing designs to address structural integrity, weight reduction and reliability. Reduced manufacturing variations and optimized designs to increase fabrication efficiency. Trained engineers and drafters on basic GD&T philosophies to reduce manufacturing variations. Conducted adhesive testing to optimize manufacturing techniques and increase vehicle structural integrity.

2004 to 2007 **Peterbilt Motors Company**.
District Sales Manager, Medium-Duty Trucks, Denton, Texas 2006-2007
Design Engineer, Denton, Texas 2004 - 2006
Managed and implemented part redesign resulting in $2.3M in annual parts and labor savings. Responsible for manufacturing cost reduction through part modification, redesign or material changes. Recommended and investigated cost reduction opportunities on current production components. Responsible for leading, managing and directing engineering tasks with other functional groups. Assigned, approved, performed or delegated design modifications necessary to satisfy customer needs. Coordinated engineering design, development and production support of new parts. Coordinated with other engineers and production staff to reduce weight, complexity and assembly time. Performed design, production or supplier changes as necessary to meet cost reduction goals.

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2000 to 2004 **Canon USA, Inc.**
Application Engineer, Irving, Texas
Optimized and maintained optics performance in Semiconductor Photolithography Equipment. Customized machine performance to customer's manufacturing processes. Conducted training classes for engineers, technicians, and machine operators on new technologies. Documented field test results and reports to customer.

1997 to 1999 **Goodyear Tire & Rubber Company**. Lawton, Oklahoma.
Technology Engineer, Lawton
Managed equipment installation/redesign projects exceeding 10 million dollars of capital investment. Reduced maintenance costs $1 million/year by designing and installing new material handling system. Designed and implemented several safety improvements reducing lost time accidents by 12%. Modified existing conveyor systems increasing reliability and performance, systems still in place.

1996 to 1997 **Raytheon Defense Systems (Texas Instruments – Defense Systems)**
Design Engineer, McKinney, Texas
Modified production process resulting in $198,000 annual labor savings and 143% decrease in waste. Managed production team to streamline manufacturing methods and reduced defects by 67%. Designed, developed and manufactured; production tooling, injection molds, composite parts. Investigated optimum manufacturing processes of composite panel prototypes.

1994 to 1996 **Hibdon Tires**
Associate, Norman, Oklahoma
Responsible for maintaining the highest quality service to our customers. Repaired flats, mounted and dismounted tires, rotation, balance, performance and quality assurance. Top monthly salesperson in the company twice based on sales and customer satisfaction.

EDUCATION

B.S. Mechanical Engineering, University of Oklahoma, Norman, OK, December 2000
B.S. Electronics Engineering Technology, Cameron University, Lawton, OK, May 1992
A.S. Applied Science, Electronics, Cameron University, Lawton, OK, May 1991

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Continuing Education

The EDR User's Summit, Houston, Texas, February 2024
- Toyota Techstream User's Course

Advanced Interactive Driver Response Research Program (I.DRR) Instruction, Crash Safety Solutions, March 2022
Crash Data Retrieval (CDR) Data Analyst, Collision Safety Institute, 2022
Interactive Driver Response Research Program (I.DRR) Instruction, Crash Safety Solutions, August 2019
The Tire as a Vehicle Component, SAE International, June 2018
Tire and Wheel Safety Issues, SAE International, June 2018
Tire Forensic Analysis, SAE International, April 2017
Traffic Crash Reconstruction III, Northwestern University Center for Public Safety, June 2016
Advanced analytical and methodological concepts to better understand and explain real-world crash reconstructions. In-depth instruction focused on Monte Carlo analysis, advanced concepts in energy and momentum.
Traffic Crash Reconstruction II, Northwestern University Center for Public Safety, April 2016
Advanced skills and techniques for reconstructing traffic crashes through the analysis of real-world case studies including motorcycle, pedestrian, and truck collisions.
Convergent Diagnostics, Goodyear 2011
Continuous Improvement, Goodyear, 2011
5S, Goodyear, 2010
8D Problem Solving, Peterbilt (PACCAR), 2006
5 Why Methodology, Peterbilt (PACCAR), 2006
Lean Manufacturing, Peterbilt (PACCAR), 2005
Six Sigma Green Belt, Peterbilt (PACCAR), 2004
Kaizen Method, Peterbilt (PACCAR), 2004

CERTIFICATIONS

CDR System Operator

LICENSES

Private Pilot, Single Engine, Land, University of Oklahoma Aviation, 1996

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PROFESSIONAL MEMBERSHIPS

Society of Automotive Engineers International (SAE)
American Society of Mechanical Engineers (ASME)
Tire Industry Association (TIA)

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