

CARR ENGINEERING, INC.

12500 CASTLEBRIDGE DRIVE HOUSTON, TX 77065-4532

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Daniel R. Barnes

Education

- Bachelor of Science, Engineering, with Distinction, Harvey Mudd College

Specialized Professional Competencies

- Motor vehicle crash investigation, reconstruction, and failure analysis to determine causes, conditions, and circumstances
- Determining vehicle dynamic characteristics through specific testing and instrumentation
- Specification, design, test, and evaluation of automotive brake system components
- Analysis of industry-wide development of vehicle systems and technologies
- Application of Federal Motor Vehicle Safety Standards

Professional Experience and Qualifications

- Senior Engineer, Carr Engineering, Inc. (2013 to present)
Engineer responsible for crash reconstruction, testing, test development, and determining vehicle handling characteristics
- OE Program Manager, StopTech
Led foundation brake system development projects for OE customers; specified racing and specialty vehicle brake systems; investigated product defect claims
- Technical Editor, *Road & Track SPEED Magazine*
- Engineering Editor, *European Car* and *Sport Compact Car Magazine*
Evaluated ride, handling and driveability characteristics in single- and multi-vehicle tests on paved and unpaved surfaces; carried out instrumented testing; researched tire technology

Professional Development and Publications

- SAE Course: "Introduction to Brake Control Systems: ABS, TCS, and ESC" C0315 (2005 & 2013)
- SAE Course: "Applied Vehicle Dynamics" C0414 (2014)
- SAE Course: "Applying Automotive EDR Data to Traffic Crash Reconstruction" C1210 (2016)
- Northwestern University Center for Public Safety: Traffic Crash Reconstruction – 1 (2013)
- Collision Safety Institute: Crash Data Retrieval Technician Levels 1 and 2 (2014)
- EDCorp: EDC Reconstruction (2018)
- Small Unmanned Aircraft Systems (sUAS) – Part 107 Drone Licensee
- SAE Technical Paper 2014-01-0146: Lay Driver Technique for Crash Avoidance Brake Application (2014)
- SAE Technical Paper 2015-01-1448: EDR Pulse Component Vector Analysis (2015)
- SAE Technical Paper 2019-01-0412: Brake Vacuum Booster Characterization (2019)

Additional Motorsports Experience

- More than 25 years of experience in vehicle performance modification and off-road activities
- *Four Wheeler Magazine* Top Truck Challenge judge for six years
- Provided technical support to Lucas Oil Off Road Racing Series teams 2010-2011
- Racer and driving instructor at open track events
- Graduate of the Skip Barber High Performance Driving School