

Cleve Bare, P.E.
Senior Managing Engineer

Professional Profile

Mr. Cleve Bare is a Senior Managing Engineer in Exponent's Vehicle Engineering practice. He specializes in the analysis and reconstruction of motor vehicle crashes involving passenger cars, light and heavy trucks and sport utility vehicles. Mr. Bare has particular expertise in the investigation of vehicle rollover crashes including assessments of vehicle handling, tire/component failure, rollover dynamics, and rollover stability. He is experienced in the reconstruction of complex accident situations including high-speed collisions, pole/guard rail impacts, and post-collision fuel-fed fires. In the process of his analysis, he has conducted numerous physical demonstrations including high and low-speed full-scale crash tests, vehicle component and restraint systems testing, and handling demonstrations.

Mr. Bare's expertise includes the analysis of computer programs and simulations used in the reconstruction of crashes and rollovers. Mr. Bare has further developed expertise in the use of recorded sensor data from both restraint system control modules and heavy truck engine control modules in accident reconstruction analysis.

Prior to joining Exponent, Mr. Bare consulted on issues related to crash reconstruction with M.P. Holcomb Engineering Corporation and Biodynamic Research Corporation. While at the University of Missouri, he developed and analyzed vehicle handling and rollover simulations for Department of Transportation research contracts.

Academic Credentials and Professional Honors

M.S., Mechanical and Aerospace Engineering, University of Missouri, 1990

Thesis: "Dynamic Analysis of Vehicle Tripped Rollover"

B.S., Mechanical Engineering, University of Missouri, 1988

Pi Tau Sigma

Licenses and Certifications

Licensed Professional Engineer, Michigan, #6201040509

Licensed Professional Engineer, Arizona, #49226

Patents

Patent Application No. US 12354673: Tire Rapid Entanglement and Arresting Device, filed January 15, 2009 (with B. Smyth, J. Pye).

Specialized Training

Collision Data Retrieval – Technician and Data Analyst Certification	2008
PhotoModeler Collision Investigation	2008
Bendix Brake Training School	2008
Highway Vehicle Event Data Recorder Symposium	2007
Collision Data Retrieval – Technician and Data Analyst Certification	2006
Methodology and Techniques of Crash Data Retrieval	2005
Automotive Glazing Materials	2005
Rollover Safety	2004
The Tire as a Vehicle Component	2002
Tire and Wheel Safety Issues	2002
Accident Reconstruction TOPTEC: Special Topics	2001
Heavy Vehicle Rollover TOPTEC	2000
Passenger Car Rollover TOPTEC	1999
Commercial Vehicle Reconstruction - Joint Annual Conference	1999
Fundamentals of Sensor Design for Automotive Airbag Systems	1999
High Performance Driving Course	1998
Bondurant School of High Performance Driving	
Vehicle Rollovers TOPTEC	1993
Automotive Vehicle Dynamics Before & After A Collision	1992
BH ₂ VK Crash Testing Project	1992
Traffic Accident Reconstruction	1991
Northwestern University Traffic Institute	

Professional Affiliations

- Association for the Advancement of Automotive Medicine
- National Society of Professional Engineers
- Society of Automotive Engineers
 - Vehicle Dynamics Standards Committee

Prior Experience

Consultant/Engineer, M. P. Holcomb Engineering Corporation, 1995–2005
Engineer, Biodynamic Research Corporation, 1991–1994
Research Assistant, University of Missouri, 1988–1990

Presentations

Bare C. Analysis of pre-crash data transferred over the serial data bus and utilized by the SDM-DS module. SAE 2011 Highway Vehicle Event Data Recorder Symposium, June, 2011.

Publications

Bare C, Everest B, Floyd D, Nunan D. Analysis of pre-crash data transferred over the serial data bus and utilized by the SDM-DS Module. SAE 2011-01-0809, SAE World Congress, April 2011, Detroit, MI, 2011.

Fittanto D, Bare C, Smith J, Mkandawire C. Passenger vehicle response to low-speed impacts involving a tractor-semitrailer. SAE2011-01-0291, SAE 2011 World Congress, April 2011, Detroit, MI, 2011.

Allen Rodowicz K, Dupont K, Smedley J, Raasch C, Mkandawire C, Fittanto D, Bare C, Smith J. Passenger vehicle occupant response to low-speed impacts with a tractor-semitrailer. SAE 2011-01-1125, SAE 2011 World Congress, April 2011, Detroit, MI, 2011.

Croteau J, Frank B, Peterson D, Bare C, Kyanka G. Timber utility pole fracture mechanics due to non-deformable and deformable moving barrier impacts. SAE 2011-01-0288, SAE 2011 World Congress, April 2011, Detroit, MI, 2011.

Heckman G, Kim R, Khan F, Bare C, Yamaguchi G. Auditory localization of backup alarms: The effects of alarm mounting location. SAE 2011-01-0086, SAE 2011 World Congress, April 2011, Detroit, MI, 2011.

Croteau J, Zolock J, Larson R, Bare C, Peterson D, Parker D. Dynamic response of vehicle roof structure and ATD neck loading during dolly rollover tests. SAE 2010-01-0515, SAE 2010 World Congress, Detroit, MI, 2010.

Pierce J, Carhart M, Bare C, Blakeslee A, Heald J. Retention characteristics of production laminated side windows. SAE 2007-01-0376, SAE 2007 World Congress, Detroit, MI, 2007.

Moore T, Gloeckner C, Steffey D, Le-Resnick H, Bare C, Corrigan CF. Implications of vehicle roll direction on occupant ejection and injury risk. Association for the Advancement of Automotive Medicine, 50th Annual Scientific Conference, Chicago, IL, October 15–18, 2006.

Howard RP, Bomar J, Bare C. Vehicle restitution response in low velocity collisions. SAE #931842, 1993 SAE Future Transportation Technology Conference, San Antonio, TX, 1993.

Nalecz AG, Bare C. Development and analysis of intermediate tripped vehicle rollover model (ITRS). NHTSA – U.S. DOT Final Report #HS 807 614, 1989.

Nalecz AG, Bindemann AC, Bare C. Sensitivity analysis of vehicle tripped rollover model. NHTSA – U.S. DOT Final Report #HS 807 300, July 1988.