

CARR ENGINEERING, INC.

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Technical Biography for Amanda R. Duran, P.E.

I am a resident of the State of Texas and an employee of Carr Engineering, Inc. (CEI), a Texas corporation at 12500 Castlebridge Drive, Houston, Texas 77065. I graduated with highest honors from the University of Texas – Austin with my bachelor's degree in Mechanical Engineering in 2002. Since 2008, I have been licensed and registered as Professional Engineer in the State of Texas. For more than 16 years, I have been working in the automotive engineering field, primarily focusing on the investigation and reconstruction of motor vehicle crashes.

From 2003 until the present, I have been an Engineer at CEI. In this role I perform investigations to determine the causes, conditions, and circumstances of motor vehicle crashes. To date, I have personally been involved in analyzing the various aspects of over 500 crashes, including approximately 350 vehicle inspections and 340 scene inspections. To assist clients with a rapid response, I have inspected vehicles and scenes within days of a crash. If the vehicles and/or scene are not available, I have utilized photogrammetric techniques to measure the data in photographs.

Over the course of my career, I have assisted clients in analyzing numerous large-scale matters related to such areas as vehicle rollover following tread separations, other similar incident (OSI) evaluations for large passenger vehicle rollovers, in-depth investigations (IDI) for side-by-side off-road utility vehicles, and root-cause analyses to determine whether or not an alleged safety defect played a role in each of hundreds of crashes. This work involved evaluation and detailed reconstruction of individual cases, as well as applying the principles of the Haddon Matrix to evaluate the role of the human, the vehicle, and the environment in each crash. I have also worked with clients to build databases and evaluate claims that were involved in Multi-District Litigation (MDL) and class-action lawsuits.

As part of crash investigations and reconstructions, I have participated in a variety of tests, including surrogate studies, daytime and nighttime visibility demonstrations, perception and reaction time analyses, full-scale vehicle crash testing, vehicle dynamics testing, and electro-mechanical testing of vehicle components. I am trained and knowledgeable in the field of advanced driver assistance systems (ADAS) and have studied their relative levels of effectiveness in a variety of crash scenarios. These ADAS technologies include Brake Assist (BA), Forward Collision Warning (FCW), Adaptive Cruise Control (ACC), and Automatic Emergency Braking (AEB).

I have co-authored several SAE papers related to automotive crash reconstruction and vehicle dynamics related to pre-crash tire failures. In addition, I have received specialized technical training in the accepted industry methodologies and tools used to investigate and analyze crashes. This includes specialized training on the recommended field practices for accessing and imaging event data recorders (EDR), including the appropriate interpretation and application of that data in a crash investigation. I continue to receive additional training and education related to the field of automotive crash reconstruction in compliance with obtaining continuing education credits for maintaining my Professional Engineering license.