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ROBSON FORENSIC PRESENTS

Crash Investigations

In 2007 motor vehicle collisions resulted in excess of 40,000 fatalities and almost 2,500,000 injuries, according to the National Highway Traffic Safety Administration's website. It is often important to determine both how a crash occurred and the underlying causes of both the crash and resultant injury. This can involve multiple areas: reconstruction of the event; determination of the role of the vehicle and the road; which event caused the injuries and the crashworthiness of the vehicle; the role of meteorological conditions; as well as driver/operator actions.

Our motor vehicle practice includes the capability to address all these issues and more.

We have vehicle engineers and road engineers who conduct overall crash investigations. Biomechanics experts evaluate injuries and determine if the injury could have occurred as claimed, whether the injury is consistent with evidence, at what point in the collision the injury occurred and the role of vehicle safety features. Highway engineers evaluate roadway conditions. Experts in trucks and buses, tires, motorcycles/ATVs, towing, driver actions and human factors, meteorology, and dram shop can be involved in an investigation.

To contact us, call 800-813-6736, one of our office locations on the back of this piece, or visit www.robsonforensic.com.

Robson Forensic
Engineers, Architects, Scientists & Fire Investigators

Crash Investigations

In this issue...

• **Recent Case Highlights**

• **Featured Experts**

Our Expertise in Crash Investigations:

- ◆ Crash Reconstruction
- ◆ Vehicle Engineering / Crashworthiness
- ◆ Highway Engineering
- ◆ Tires
- ◆ Motorcycles / ATVs / Bicycles
- ◆ Trucks / Buses
- ◆ Heavy Truck Operation
- ◆ Towing / Recovery
- ◆ Driver Actions
- ◆ Meteorology
- ◆ Biomechanics
- ◆ Dram Shop / Liquor Liability

Other Expert Areas:

- ◆ Construction
- ◆ Professional Liability
- ◆ Agriculture / Food Safety
- ◆ Medical
- ◆ Premises Liability
- ◆ Environmental Health and Safety
- ◆ e-Discovery
- ◆ Meteorology
- ◆ Transportation
- ◆ Workplace Safety
- ◆ Admiralty
- ◆ Child Supervision
- ◆ Sports and Recreation
- ◆ Product Liability

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Recent Case Highlights

Fatal broadside collision

A woman was killed and a passenger was injured in a three-vehicle crash. The woman's car was stopped while waiting to make a left-hand turn across traffic when she was struck from behind by a van and pushed into oncoming traffic. She was then struck broadside by a pickup truck and killed. Robson Forensic was retained to determine if the pickup's driver was driving improperly in a manner that caused the second crash.

Based on witness testimony, data downloads, and our reconstruction, we determined that a passenger in the pickup saw the impending crash between the van and car but the driver did not until after the car was in his lane. Had the pickup driver been reasonably attentive, he would have reduced the severity of the impact, or avoided it altogether, by perceiving and reacting to the hazard.

Medical records indicated that the woman survived the impact with the van. She was fatally injured when she was broadsided by the pickup. The van struck the woman's vehicle first, but it was the second collision that caused her death. That collision and the woman's death was the result of the pickup driver's inattentiveness.

This case settled favorably for our client before trial.

Tractor fire results in death

A truck driver and his new wife were running bobtail (no trailer attached) when they struck a guardrail and the truck burst into flames, killing the woman passenger. Robson Forensic was retained to determine if the truck was defective in a manner that caused the woman's death.

The truck driver recently filled the fuel tanks on his truck tractor when he lost control and slid sideways into the end of a guardrail. The guardrail end crushed the fuel tank causing fuel to spray upwards and erupt in a fire ball. The driver escaped the vehicle, but his wife did not.

Guardrails are designed to be hit and there are standards outlining the crush force to which they must yield.

Similarly, the Department of Transportation (DOT) has regulations regarding fuel tanks and the force and pressure they must withstand. By calculating the actual force required to crush the guardrail and the pressure created when the tank impacted the guardrail, our expert showed that the tank failed to meet the DOT standards. The fuel tank should have withstood the impact, which would have prevented the vehicle fire. The defective fuel tank was a cause of the woman's death.

The case settled prior to trial.

Improper repair causes crash

An insured's vehicle lost power to its brakes and struck another vehicle, causing damage to both vehicles and injuries to the other car's occupants. Robson Forensic was retained to investigate the vehicle in question and determine if it had been improperly repaired in a manner that caused the crash.

The insured claimed that as she approached the intersection she braked to stop, but the brake pedal went to the floor. She stated that her vehicle had been in a repair shop earlier in the week, but not for any problems with the brakes. When we inspected the vehicle we found that there was a defect in the car's brake system; it had become detached from the master cylinder, resulting in a complete loss of braking ability.

A review of maintenance records showed that two days prior to the crash the vehicle's brake light switch had been replaced. Examinations of the braking system found that those repairs were improperly done. The pin was not properly reinstalled when the brake master cylinder input rod and new brake light switch were installed, which caused the brake failure and the subsequent collision.

The failure to properly secure the pin that retains the brake master cylinder input rod to the brake pedal arm pivot caused the total brake system failure. This failure caused the collision.

The case was successfully subrogated.

Featured Experts

Gary A. Derian, PE

Tire Expert

Gary has a broad background in tire manufacturing and design. He has been investigating motor vehicle collisions since 1990. His specialty expertise includes tire safety, pressure monitoring, explosions, failure, design, defects and more. He spent 12 years with The BFGoodrich Company where he designed the first U.S. built passenger tire capable of 170+ mph.

Joseph A. Filippino, PE

Highway Engineering Expert

Joe has more than 31 years experience with the Pennsylvania Department of Transportation. The positions he held include Director of the Bureau of Construction and Materials, Assistant District Engineer for Maintenance, and Assistant District Engineer for Design

Erin P. Higinbotham, PE

Motorcycle/ATV Expert

Erin is a mechanical engineer with specialty expertise in motorcycles and dirt bikes, which includes handling dynamics, suspension, tuning, tires, performance driving, driver training, and fuel quality testing. Erin has been investigating motor vehicle collisions since 2006 and is a member of the American Motorcyclist Association, Western Eastern Roadracing Association and the American Historic Racing Motorcycle Association.

Raymond L. Lee, Ph.D.

Object Visibility, Lighting, Meteorology Expert

Dr. Lee is an expert in the determination of weather conditions and their effect on vehicle collisions. He has spent nearly 30 years in meteorological research and education, including the last 17 years as a research professor at the U.S. Naval Academy.

Peter J. Leiss

Vehicle Expert

Peter has a decade of experience designing and manufacturing modern light duty passenger vehicles for 2 high volume manufacturers. His expertise covers driver aids and safety systems. He has been involved in all aspects of vehicle design and manufacture, from cradle to grave, single part to entire vehicle. He is a member of the Society of Automotive Engineers, Antique Automobile Club of America, and is a Certified Inspection Mechanic in PA.

Joseph J. McHugh, PE, CET

Bridge Expert

Joe has over 35 years of comprehensive experience in highway, bridge, and building construction. He has engineered traffic detours to re-route 250,000 commuters in and out of Manhattan. He has received formal training in Maintenance and Protection of Traffic, vehicular and pedestrian.

Douglas J. Rowland, PE

Towing Expert

Doug has unique expertise in vehicle recovery after a collision – towing. His experience includes towing on and off-road vehicles from motorcycles to tractor-trailer combinations as well as heavy construction equipment; winching and up-righting; proper loading and towing techniques, as well as securement. He has personally provided damage free towing and recovery for over 100,000 miles, servicing over 800 vehicles. He is a mechanical engineer, licensed as a Professional Engineer in the State of New York.

Brooks Rugemer

Trucking and Driver Specialist

As a CDL-A driver, Brooks logged more than 1.5 million safe miles. After 13 years of commercial driving throughout the Northeast and Canada, he undertook training and safety positions with several regional roadway operations. Brooks has been in charge of nearly every aspect of the trucking industry, from scheduling and dispatching to overseeing DOT and OSHA compliance to managing an entire fleet of drivers.

Luka Serdar, Jr.

Motorsport Event Expert

Luka is a competitive auto racer and performance instructor and a mechanical engineer with over 25 years of automotive experience. He has been responsible for motorsport event organization, participant safety, spectator safety, technical vehicle inspections, competition vehicle safety systems, participant training and experience, emergency response team deployment, track side safety barriers and participant protective barriers, track run-off areas and spectator protective barriers. He has also been a racing school instructor where he taught novices and competitors safe handling and performance in classroom and on-track sessions aimed at maximizing safety.

James C. Shultz, PE

Highway Engineer

Jim has thirty-three years of highway engineering experience in all aspects of roadway design and construction of two lane local roads, arterial highways, and high speed limited access Interstates.

William J. Vigilante Jr., Ph.D.

Human Factors Expert

Dr. Vigilante relates drivers' reactions and perceptions to the roadway and environmental conditions using scientific research and mathematical models. He investigates issues including conspicuity, human error, and expectancy. He is particularly experienced in the science of driver guidance involving roadway markings, signage, construction zone set-up, and traffic control devices and warnings.

Jamie R. Williams, Ph.D.

Biomedical Engineer / Biomechanics and Bioengineering

Jamie's extensive research career in orthopedic and musculoskeletal biomechanics allows her to investigate injuries and determine causation. She analyzes the forces and motions exerted on or produced by the body during vehicular collisions.