

The Huge Difference Between An Accident Forensics Specialist and Ordinary Accident Reconstructionists and Biomechanical Engineers.

What lawyers and insurance claims adjusters need to know to keep case costs down and to maximize the effectiveness of the expert witness budget.

The fields of accident reconstruction and biomechanics are unregulated. As a consequence, these fields are populated with a great many charlatans and imposters claiming to have expertise as it applies to accident litigation, when in fact their abilities may be marginal at best and totally deficient at worst. This results in many potentially relevant issues being overlooked which can adversely affect a case. To help ensure the best possible outcome in accident-related litigation, the lawyer or claims adjuster must be able to distinguish between legitimate experts and those having marginal capabilities.

What is not commonly known is that there is a huge difference between a genuine accident forensics specialist and ordinary reconstructionists and biomechanics experts. This difference can have a tremendous impact on how an accident case is prosecuted or defended. What follows is a summary of some of the major differences between an accident forensics specialist and run-of-the-mill reconstructionists and biomechanics. A real accident forensics specialist has training and experience in all of the following:

Accident Reconstruction

The accident forensics specialist has training in multiple areas of accident reconstruction from established and reputable training institutions. This means a lot more than padding one's CV with one or two beginner's courses in reconstruction as so many charlatan reconstructionists do. Legitimate accident reconstruction training includes courses in accident investigation, plus courses in reconstruction and advanced specialized reconstruction. Specialized reconstruction courses include commercial vehicle (heavy truck) accident reconstruction, pedestrian and bicycle accident reconstruction, watercraft accident reconstruction, computer simulation of accidents, vehicle

safety systems including seat belts and airbags, low speed (minor impact) crash reconstruction, and more. These programs are taught in schools which specialize in accident reconstruction. There are only a few such legitimate schools in the United States. None of these specialized skills are taught in any conventional engineering programs. Some of the schools claiming to be “institutes” are not legitimate accident reconstruction schools but instead consist of one or two-man private “certificate mills” offering meaningless certificates used to pad a CV.

There are many retired engineers, or engineers who are unemployable in their fields (which can include mechanical, electrical, chemical, industrial and other engineering disciplines), who are masquerading as accident reconstruction experts but lack the requisite training specific to accident reconstruction. The danger such individuals present to their attorney/insurance company clients is not only that of questionable competence, but also potential disqualification by the court. Padding of the CV with a couple of reconstruction courses by engineers is what a United States Circuit Court of Appeals discussed in a landmark case disqualifying a mechanical engineer from testifying as to accident reconstruction. See Wilson v. Woods, 163 F.3d 935.

Biomechanics

The accident forensics specialist is trained in injury biomechanics and the reconstruction of accident injuries. This is an important distinction between the ordinary “biomechanical engineer” and a true injury reconstructionist. Injury reconstruction entails determining how an injury happened, and how it might have been mitigated by reduced vehicle speed for example, alternative safety system designs, etc. To reconstruct accident injuries, one has to be trained not only in injury biomechanics, but also very specialized accident reconstruction techniques. These techniques are taught in reputable institutions that specialize in such training. A “biomechanical engineer” often has no such specialized training. Most biomechanical engineers offering services to the legal community are self-appointed. There is no undergraduate degree in biomechanical engineering, so many unemployed mechanical engineers usurp the role of “biomechanical engineer” for want of any other gainful employment. Although there are actual post-graduate degrees in biomechanical engineering, there is little if any training given in injury reconstruction, and no training in specialized accident reconstruction techniques necessary to perform a crash

injury reconstruction. The post-graduate degree in biomechanical engineering really trains a person to perform biomechanical research in a laboratory setting and to design devices such as sports rehabilitation and exercise equipment. Nobody is “engineering” the human body. All the engineering that can be done on humans has already been done by God (or nature, depending on your belief system). The application of biomechanical skills to accidents does not involve engineering. It involves interpretation of injury patterns.

The accident forensics specialist is specifically trained to establish the cause of injuries in vehicle and boating crashes, bicycle and pedestrian accidents, etc. The various injury mechanisms associated with these kinds of accidents are studied, along with the role speed, safety equipment and padding, etc. play in mitigating injuries. Interpretation of medical findings is taught along with interpretation of bone fracture patterns, soft tissue injury configurations, etc.

Human Factors

The accident forensics specialist is trained in human factors. This entails how people behave in accident scenarios. It includes training in the influence of alcohol and drugs on human behavior, how human vision works, what people can see at night versus what they can see during daytime, the effects of prescription medications on driver performance, and much more. The accident forensics specialist understands how to take all these issues into consideration when analyzing the cause of an accident, unlike an ordinary reconstructionist who may be limited to parroting back data from perception/reaction time tables.

Accident Investigation Techniques

Unbeknownst to most lawyers and claims adjusters is the fact that investigation of accidents and reconstruction of accidents are two quite different things. The genuine accident forensics specialist is trained not only in reconstruction, but also investigation and interpretation of evidence. Investigation can entail proper interpretation of marks on a roadway, or in the case of pedestrian accidents, interpretation of scratches on the soles of shoes and what the scratches mean in terms of how the pedestrian was oriented when struck by a vehicle. Was the pedestrian

standing or walking? Which way was the pedestrian actually heading? The accident forensics specialist is trained to answer such questions, and more.

Vehicle Mechanical Experience & Negligent Maintenance & Repair Evaluation

Vehicle crashes can be caused by mechanical failure of front suspension and steering components, brakes, power steering belts and hoses, wheel bearing seizure, and many other causes. These are literally thousands of people in the U.S. posing as accident reconstructionists who do not have any training or experience in automotive mechanics. As a consequence, they would not know where to even begin to evaluate mechanical failures as they relate to accident causation. By contrast, the true accident forensics specialist will possess extensive experience in practical automotive mechanics in the automotive industry, and possibly experience working for auto manufacturers. The accident forensics specialist has in-depth training and experience in vehicle defects investigations and parts failure evaluation. All of this is crucial in the litigation process because it is often thought by a lawyer that a case is founded in a particular theory of liability when in fact there is an entirely different cause of an accident which may be overlooked by a marginally trained “expert.” Mechanical failure can imply a products liability issue. It may implicate negligent maintenance or repair by a car dealer or repair shop. The accident forensics specialist is trained to look for these possible alternative causes of an accident.

Tire Forensics

Most people claiming to be accident reconstructionists have no training and experience in analysis of tire failures and how tire problems, including under-inflation, can contribute to accidents. Real accident forensics specialists do have training in tire failure analysis and are trained to understand how tire problems can contribute to, or directly cause an accident. Tire forensics training is offered in specialized accident reconstruction training institutions.

“Black Box” Data Interpretation

Modern cars and heavy trucks often have on-board computers that record pre-crash and post-crash data such as speed, braking application, status of seat belt usage, and much more.

Accident reconstruction schools offer specialized training and credentialing in methods of downloading and interpreting such data. An accident forensics specialist will have such training. An ordinary accident reconstructionist may not.

Vehicle Fire Forensics

In many cases vehicle crashes result in fires. Did the fire cause death or did the vehicle occupant die from crash injuries before the fire inflicted severe burns? What actually caused the vehicle fire? Ordinary accident reconstructionists and biomechanics experts are not trained to answer these questions. The accident forensics specialist is. Credentialing in vehicle fire investigation is available from various reputable training institutions. The accident forensics specialist will possess specialized training as a certified fire and explosion investigator or a certified vehicle fire investigator.

Auto & Boating Industry Experience/Warranty Experience

As previously stated, negligent maintenance and repair can be a major issue in auto or boating accident causation. What are proper repair practices versus erroneous practices? What mistakes did a mechanic actually make that resulted in an accident? How does the lawyer analyze warranty data to uncover evidence of widespread product defects and to prove foreseeability of product failure? What records need to be examined in a repair shop or from a manufacturer to prove the existence of a defect or to prove negligent repair, or negligent training and supervision of employees? An ordinary reconstructionist would not know where to begin to answer these questions. The legitimate accident forensics specialist has broad experience in the auto and/or boating industry in repair and management, and can provide valuable guidance to the attorney or claims adjuster to find answers to the aforementioned questions.

Warnings Defects/Documentation Defects

Many accidents are caused by defective warnings, defective road signs, or defective operator's manuals and repair manuals. Ordinary reconstructionists know nothing about these issues. A true accident forensics specialist has the training and background in technical writing and warnings to understand these issues and how they relate to an accident case.

Vehicle Electronics Training

Accidents can be caused by failure of the ignition systems of vehicles or boats. To fully analyze an accident, a forensic evaluation of system electronics may be necessary. This requires specialized training and experience in vehicle electrical systems. Ordinary accident reconstructionists have no such training. An accident forensics specialist does.

Published in Related Disciplines

A genuine accident forensics specialist will be published in his/her related fields of expertise. The accidents forensics specialist will more likely than not be published in accident reconstruction, injury biomechanics, electronics, vehicle mechanics, warnings and possibly additional fields.

A Final Note To Lawyers and Claims Adjusters

From the foregoing, you should be able to see that becoming a real accident forensics specialist involves a lot more than taking a couple of courses in accident reconstruction. Many, many years of training and experience are required. With the economy experiencing so much difficulty and outsourcing, more and more engineers are being laid off and can't find work.

Consequently, the unregulated business of accident reconstruction and biomechanics is being flooded with charlatans of limited training and experience seeking to exploit unwary lawyers and claims adjusters. Be careful! There are some very good accident forensics specialists who can bring their broad experience to the table to help you with a case. Select your experts wisely and you should be able to substantially reduce your case costs.

For more information, contact Sal Fariello at Eastern Forensic Science Group at (352) 331-0877, or e-mail easternforensic@earthlink.net. Sal Fariello has the broad range of skills as an accident forensics specialist needed to perform both the preliminary analysis of an accident case, and also to assist in the case to its conclusion. Where it is deemed potentially beneficial, he brings in outstanding co-consultants associated with Eastern Forensic Science Group in the fields of forensic pathology, chiropractic, radiology and many other areas of expertise.

This thoroughness helps account for the fact that Eastern Forensic Science Group's record of success is unparalleled in the forensic consulting field (above 90% trial wins and favorable settlements).