



Accident reconstruction is the process of using physical and factual evidence, in conjunction with mathematics and physics, to determine how and why an accident occurred. Professional Analysis and Consulting works with automobile, truck, and bus manufacturers; suppliers, rail carriers, transit system and fleet operators; police departments, insurers and attorneys to investigate and reconstruct vehicular accidents.

During the accident reconstruction, our engineers determine the impact speed and direction of the vehicles involved, the time and distance relationships between the vehicles prior to the incident, and the impact severity (referred to as Delta V) to occupants or pedestrians.

Our engineers utilize several techniques for crash data collection, interpretation, and analysis including momentum, computer simulation, photogrammetry, and component or full scale crash testing. We also provide scene documentation, inspections, and securely collect and store artifacts, wreckage, and evidence from accidents.

## **Services**

- Accident Reconstruction and Simulation
- Aerial (Drone / UAS) inspections and laser scanning for accident scene documentation
- CDR/ECM (“black box”) download and interpretation – Crash Data Recovery
- Bosch CDR System – Latest version and all cables
- Vehicle handling and dynamic performance evaluation
- Failure Analysis
- Product liability assessment
- Crash testing
- Vehicle components testing
- Vehicle fire investigation
- Human/machine interaction analysis
- Biomechanical
- Full litigation support services
- Licensed Private Investigators capable of maintaining artifacts and evidence



## Practice Area Leaders

# *Accident Reconstruction*

### ***Timothy M. Hicks, P.E. – Principal Engineer, Mechanical***



Mr. Hicks performs investigations and failure analysis from a mechanical engineering perspective. He is certified for the Bosch Crash Data Retrieval System (“Black Box”). His projects have involved accident investigation and reconstruction, design analysis, product liability, intellectual property, manufacturing, fire cause and origin, and testing. His vehicle accident reconstruction experience includes commercial vehicles, automobiles, RVs, motorcycles, buses, railroad, agricultural, and construction equipment. Non-vehicle related projects have involved medical, athletic, and wheelchair accessibility equipment, forklifts, elevators, wind energy systems, lawn equipment, bicycles, plumbing, consumer products, and other mechanical systems.

### ***Roch J. Shipley, Ph.D., FASM, P.E. – Principal Engineer, Materials/Metallurgical***



Dr. Shipley performs engineering investigations and failure analysis from a materials engineering perspective. His evaluations involve design, manufacturing, materials, and operational factors. He specializes in complex issues involving multiple disciplines and/or accident reconstruction. He has experience with both ferrous and non-ferrous alloys, including aluminum, titanium, and nickel-base superalloys. Dr. Shipley is licensed by examination as a Professional Engineer and has testified in both State and Federal Courts.