



# DESIGN RESEARCH ENGINEERING

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## **Todd Dudley Hoover, A.A.S., BS Principal Engineer**

### **Professional Specialization**

Accident reconstruction and analysis of all major accident reconstruction related topics for motor vehicles, motorcycles, off-road vehicles, articulating vehicles including vehicle, subsystems and components. Risk analysis of mechanical designs including failure mode analysis, consequences of failures, and the quantification and projection of risks of vehicle systems. Accident reconstruction analysis utilizing computer modeling, computer aided engineering, and finite element analysis.

On and off-road dynamic testing of motorcycles, ATV's, UTV's, instrumentation, simulation, and numerical analysis of test data. Evaluation and performance of motorcycle design, braking systems, tires, controls, safety equipment and non-OEM modifications.

Automotive and motorcycle crashworthiness performance of vehicle system designs, design modifications, and vehicle safety systems. Failure analysis of general failure modes of mechanical systems.

Electrical Engineering evaluations and analysis of designs and testing of electrical and electronic systems, including automotive, motorcycle, and commercial vehicle systems. Specific electrical analysis of vehicle and motorcycle complete wiring systems, braking systems, lighting, charging systems, including control modules.

### **Professional Background**

B.S. (Electrical Engineering), University of Houston, 1994

A.A.S. (Associate Degree of Applied Sciences in Electronic Technology), Williamsport Area Community College, 1985

### **Additional Engineering Courses**

Accident Reconstruction, Northwestern University Traffic Institute  
Graduate Courses (Mechanical Engineering), University of Houston

### **Principal Engineer**

Design Research Engineering  
February, 2014 to Present

### **Principal Engineer, Graduate Engineer**

Tandy Engineering & Associates, Inc.  
January, 2002 to February, 2014

### **Principal Engineer, Graduate Engineer**

Carr Engineering Inc.  
1991 to 2002

### **Professional Memberships**

Member, Society of Automotive Engineers (SAE)  
Member, National Association of Professional Accident Reconstructionist Specialists, Inc.  
(NAPARS)  
Member, Institute of Electrical and Electronic Engineers (IEEE)  
Member, American Society of Mechanical Engineers (ASME)  
Lifetime Member, American Motorcycle Association (AMA)