



## ***Douglas J. Van Sweden, PE***

September 19, 2016

### **PROFESSIONAL EXPERIENCE:**

#### **Douglas J. Van Sweden, PE, Principal Engineer, Owner, 1997-Present**

Provide engineering consulting services in a broad range of transportation and property-related activities, including collision/incident reconstruction, biomechanical analysis, restraint systems analysis, mechanical failures, vehicle systems and structures analysis, crash testing, and origin/cause analysis of fires. He performs these analyses on property, automobiles, motorcycles, trucks, marine and stationary equipment, and structures.

#### **Senior Engineer, ARCCA, Inc., Sept. 2013-Oct. 2014**

Provide engineering consulting services in a broad range of transportation and property-related activities, including accident/incident reconstruction, mechanical failures, vehicle systems and structures analysis, crash testing, and origin and cause analysis of fires. He performs these analyses on property, automobiles, motorcycles, trucks, marine and stationary equipment, and structures.

#### **Senior Staff Engineer, Packer Engineering, Inc., 1996-1997**

Provided engineering consulting services in transportation related activities including accident reconstruction, and the analysis of fires involving automobiles and trucks. Provided engineering consulting services in the reconstruction of non-transportation related accidents, including elevators and boat hoists.

#### **Senior Product Analysis Engineer, AlliedSignal Safety Restraint Systems, 1993-1996**

Reviewed and analyzed the field performance of current and past-production safety restraint systems. Performed accident reconstructions to understand and explain the products' performance in a collision to the legal staff and outside counsel. Designed and prepared trial exhibits and performed demonstrations for use as trial exhibits. Reviewed and analyzed available data bases for use in the evaluation of AlliedSignal products in field performance. Worked with the design staffs on new and future products in regard to expected performance in collisions. Worked with the engineering staff to prepare responses to NHTSA Information Requests.

#### **Staff Analysis Engineer, General Motors Corporation Engineering Staff, 1979-1993**

Reviewed and analyzed current and past-production products (passenger cars, light, medium and heavy duty trucks, trains, and marine engines) in the field as they performed in a fire. Evaluated the performance of fuel and other vehicle systems in post-collision fires. Worked with various government agencies, GM legal staff, outside counsel, and outside consultants to understand the performance of General Motors products in the field. Designed and prepared trial exhibits, and performed demonstrations for use as trial exhibits. Testified on behalf of the Corporation in trial and/or depositions concerning the performance of the General Motors products. Performed accident reconstructions to understand and explain the products performance in a

collision and/or fire. Worked with the design staffs on new and future products in regard to fire analysis, and expected performance in collisions and/or fires. Reviewed and analyzed data bases for use in the evaluation of the products.

**Project Engineer, General Motors Corporation Engineering Staff, 1975-1979**

Durability test and development of 1978 "A" car production fleet on 100,000 mile durability schedule. Corrosion test and development on foreign and domestic, GM and competitive passenger cars, pickup trucks and vans. Evaluated corrosion and durability field performance, and recommended corrective action. Mass analysis of structural components of a future vehicle design. Development simulation and testing of rear structure and fuel storage system on 1980 "X" car for compliance to FMVSS. Development simulation and testing of vehicle structure on 1977 "B/C" vehicles for compliance to FMVSS. Specific responsibility for design/development of the fuel storage system and entire vehicle structure as it related to collision performance.

**Associate Engineer, Cadillac Motor Car Division, General Motors Corporation, 1973-1975**

Testing, design and development of the production Air Cushion Restrain System for Cadillac passenger cars. Testing, design and development of the production seat belt restraint system for Cadillac passenger cars. Field evaluation of ACRS vehicles and recommendations for corrective action. Certification testing of Cadillac passenger cars/components for compliance to FMVSS.

**EDUCATIONAL BACKGROUND:**

Bachelor of Science, Mechanical Engineering, University of Michigan, 1973

Master of Science, Mechanical Engineering, University of Michigan, 1977

Mechanical Engineering Course #7995, Biomechanics of Human Injury Tolerance, Wayne State Univ. 1998

**REGISTRATIONS:**

Registered Professional Engineer, State of Michigan, 1978

**PROFESSIONAL SOCIETY MEMBERSHIPS:**

Society of Automotive Engineers, 1970

National Society of Professional Engineers, 1999

International Association of Arson Investigators, 1999

National Association of Professional Accident Reconstruction Specialists, 2006

National Association of Fire Investigators, 2008

**PRESENTATIONS:**

Emergency Driver Training Instructor, November 1971.

"Evaluation of Automobile Fires", Oakland County IAAI, September 1981

Guest Lecturer, Biomechanics of Human Injury Tolerance, Wayne State University, Nov. 2004

**SEMINARS ATTENDED:**

Structural & Mobile Property Fire Investigation Seminar, September 2016

World Reconstruction Exposition 2016, Orlando, Florida, May 2016

Structural & Mobile Property Fire Investigation Seminar, September 2015

IAAI-ITC2015, Chicago, IL, May 2015

2015 CDR User's Summit, Houston, Texas, January 2015

Advanced Crash Reconstruction Utilizing Human Factors, Northwestern Univ., May 2013

ARC-CSI Crash Conference, May, 2013  
Investigation of Gas & Electric Appliance Fires, April 2013  
Electrical for the Fire Investigator January 2013  
IAAI Annual Training Conference, May 2011  
Structural & Mobile Property Fire Investigation Seminar, August 2010  
ARC-CSI Crash Conference, May, 2010  
Advanced Fire, Arson & Explosion Investigation Training Program, August 2009  
Motor Vehicle Theft & Fire Investigation Seminar, June 2009  
ARC-CSI Crash Conference, June, 2009  
ARC-CSI Crash Conference, June, 2008  
Motor Vehicle Theft & Fire Investigation Seminar, June 2007  
Crash Data Retrieval (CDR) System Operator Training Series, March 2007  
50<sup>th</sup> Stapp Car Crash Conference, November 2006  
ARC-CSI Crash Conference, June 2006  
Michigan Chapter, IAAI Annual Arson School, May 2006  
NFPA 921; Guide for Fire and Explosive Investigations, November 2004  
Proper Protocol for Subrogation Seminar, November 2004  
ARC-CSI Crash Conference, June 2004  
Evaluating Crashes for Injury Potential, June, 2004  
Michigan Chapter, IAAI Annual Arson School, May 2002  
NFPA 921 Structural and Vehicle Burn Seminar, August 2001  
Fire Injury and Death Investigation Conference, August 2001  
Watercraft Crash Investigation and Incident Reconstruction, February 2001  
World Reconstruction Exposition, September 2000  
51<sup>st</sup> International Association of Arson Investigators Seminar May 2000  
43<sup>rd</sup> Stapp Car Crash Conference, October 1999  
L&J Low-Speed Accident Reconstruction Seminar, October 1999  
Michigan Chapter, IASIU 4<sup>th</sup> Annual Training Seminar, October 1999  
Ninth Injury Prevention through Biomechanics Symposium, June 1999  
WSU 60<sup>th</sup> Anniversary Symposium on Impact Biomechanics, June 1999  
Whiplash '98 International Symposium, November 1998  
42<sup>nd</sup> Stapp Car Crash Conference, November 1998  
26<sup>th</sup> Int. Workshop on Human Subjects for Biomechanical Research, November 1998  
8<sup>th</sup> Injury Prevention Through Biomechanics Symposium, May 1998  
25<sup>th</sup> Int. Workshop on Human Subjects for Biomechanical Research, November 1997  
41<sup>st</sup> Stapp Car Crash Conference, November 1997  
Second Child Occupant Protection Symposium, November 1997  
AAAM, Biomechanics of Impact Trauma, November 1995  
38<sup>th</sup> Stapp Car Crash Conference, October 1994.  
GM Fire School, October 1989  
Electrical Fire Investigation, University of Wisconsin, April 1987.  
Computer Command Control, January 1987  
Traffic Accident Reconstruction, Northwestern University, February 1986  
IAAI Arson Seminar, May 1984.  
Heat Transfer in Fires, ASME, November 1980.  
Designing for Automotive Corrosion Prevention, SAE, November 1978  
3<sup>rd</sup> International Conference on Occupant Protection, SAE, July 1974