ASAY ENGINEERING

Curriculum Vitae

Alan Foster Asay, P.E., M.S.

Asay Engineering, LLC
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Registered Professional Engineer - Utah #180089, Oct 1994

Professional Profile

Mr. Alan Asay has over 35 years of experience in accident investigation and reconstruction, testing, research, consulting and litigation support for clients across the United States. Mr. Asay has a Bachelors and Masters Degree in Mechanical Engineering and is also a Licensed Professional Engineer.

Specific areas of expertise for Mr. Asay include vehicle collision reconstruction of automobile, pedestrian, OHV and ATV collisions. Additionally, he is able to download and interpret event data recorders (EDR) from automobiles, off-highway vehicles, and heavy trucks and address issues involving vehicle system components.

Mr. Asay has provided expert witness testimony in criminal and civil proceedings and civil litigation at deposition, mediation, and jury trial levels in many states.

Additionally, Mr. Asay has investigated and reconstructed numerous collisions involving motorcycle impacts at high and low speeds, explored motorcycle avoidance maneuvers, and analyzed effects of aftermarket design alterations on motorcycle performance.

One of Mr. Asay's most notable contributions to the discipline of accident reconstruction is in the area of crash testing. He was instrumental in researching and developing a unique innovative test methodology involving the study of vehicles that impact stationary objects. In traditional crash tests, a test vehicle is pulled or towed into a stationary object or barrier. The innovative test methodology developed, utilizes a large moving barrier, referred to as a Massive Moving Barrier (MMB), which is driven into a stationary test vehicle. This unique method of testing has proven to increase accuracy and repeatability of unusual test configurations while reducing the overall costs associated with traditional test methodology.

The MMB has allowed for many tests to be performed in the field of rollover testing. Besides just impact testing, the MMB has been utilized as a tow vehicle in order to conduct numerous rollover case studies along an actual highway. These series of rollover tests were the first-ever of this type to be conducted and published with instrumented vehicles.

Licenses and Certifications

Professional Engineer, State of Utah, #180089
Brake Adjuster/ Inspector, Utah Trucking Association
Class "B" Commercial Driver License with a Motorcycle Endorsement, State of Utah
FAA Remote Pilot License for sUAS
Society of Automotive Engineers (SAE), Member
American Society of Mechanical Engineers (ASME), Member

Education

Brigham Young University, Provo, Utah
Master of Science in Mechanical Engineering, August 1992

Brigham Young University, Provo, Utah
Bachelor of Science in Mechanical Engineering, April 1990
Mathematics Minor

Work Experience

Asay Engineering, LLC
Principal Mechanical Engineer, January 2014-Present

Armstrong Forensic Engineers, Inc.
Senior Engineering: July 2012 - January 2014

Woolley Engineering Research Corporation
Mechanical Engineer: July 1992 - July 2012

Collision Safety Engineering
Mechanical Engineer: 1990-1992
Graphics Technician: 1986-1990

Professional Affiliations:

- Society of Automotive Engineers (SAE), since 1991
- American Society of Mechanical Engineers (ASME), since 1992
- Served as SAE Occupant Protection Committee Vice Chair 2019-2020
- Served as Chairman of the Occupant Protection Committee for SAE International, 2021-2022

SAE Professional Courses

- Accident Reconstruction, the Autonomous Vehicle and ADAS; Alan Moore, Detroit, MI, April 2022
- Reconstruction and Analysis of Motorcycle Crashes; Stein Husher and Louis Peck, December 2021
- Accessing and Interpreting Heavy Vehicle Event Data Recorders; John Steiner/Timothy Cheek, October 2021
- PC-Crash Live Three-Day Workshop; Dr. Andreas Moser, Brad Heinrichs, Orlando, FL, February, April, June 2021
- Accident Reconstruction, the Autonomous Vehicle and ADAS; Alan Moore, Detroit, MI, April 2019
- PC-Crash Three-Day Workshop; Dr. Andreas Moser, Brad Heinrichs, Orlando, FL, January 2019

- Photogrammetry and Analysis of Digital Media; William Neale, Toby Terpstra, Troy, MI, June 2018
- The Tire as a Vehicle Component; Gerald R. Potts, Troy, MI, May 2018
- Tire and Wheel Safety Issues; Gerald R. Potts, Troy, MI, May 2018
- Commercial Vehicle Braking Systems; Paul Johnston, December 2013
- Applying Automotive EDR Data to Traffic Crash Reconstruction; Richard Ruth, February 2013
- Accessing and Interpreting Heavy Vehicle Event Data Recorders; John Steiner/Timothy Cheek, October 2012
- Applied Vehicle Dynamics Seminar; James Walker, BMW, South Carolina, November 2011

SAE International Seminars

- Accident Reconstruction: Special Topics; Tempe, Arizona, May 2001
- Accident Reconstruction: State-of-the-Art Toptec; Costa Mesa, CA, December 1999
- Passenger Car Rollover Toptec: Cause and Prevention; San Diego, CA, January 1999
- Airbag Design and Performance Toptec; Costa Mesa, CA, August 1997
- Northwestern University Traffic Institute -
- Traffic Accident Reconstruction II, Oakland, CA, May 1996
- Low Speed Rear Impact Collision Toptec; Irvine, CA, August 1994

SAE International Symposiums

- Accident Reconstruction; Presenter for "Crash Pulse Modeling", Ventura, CA, November 2005
- Highway Vehicle Event Data Recorders; NTSB Academy, Ashburn, Virginia, June 2004

Achievements

- Served as SAE Occupant Protection Committee Vice Chairman, 2019-2020, and Chairman, 2021-2022
- Awarded SAE Forest R. McFarland Award recognizing outstanding contributions toward the work of SAE Engineering Meetings Board in planning, developing and disseminating technical information, April 2016
- Received Excellence in Oral Presentation Award for Crash Pulse and *Delta V* Comparisons in a Series of Crash Tests with Similar Damage (BEV, EES), SAE World Congress, April 2008
- Received Excellence in Oral Presentation Award for Narrow Object Impact Analysis and Comparison with Flat Barrier Impacts, SAE World Congress, March 2002
- Vocational Arts Contest (VICA), First Place, April 1983
- Passed Professional Engineering Exam, Oct 1994
- Eagle Scout, Boy Scouts of America, July 1978

Publications

Impact Testing of Passenger Vehicle and Semi-Truck Pneumatic Tires and Rims, Alan F. Asay, Ronald L. Woolley, Brian C. Nielson; Society of Automotive Engineers, SAE #2023-01-0625, April 2023.

Rollover Accident Reconstruction, SAE Accident Reconstruction Series; Rose, Beauchamp, Asay, SAE 2019

Rear Override Impact Analysis of Full-Size and Light Duty Pickup Trucks for Crash Reconstruction, Alan F. Asay, Christopher D. Armstrong, Bradley Higgins, John Steiner; Society of Automotive Engineers, SAE#2017-01-1423, April 2017.

Rollover Testing of a Sport Utility Vehicle (SUV) with an Inertial Measurement Unit (IMU), Alan F. Asay, Jarrod Carter, James Funk, Gregory Stephens; Society of Automotive Engineers, SAE#2015-01-1475, April 2015.

Snowmobile Cornering and Acceleration Data from On-Snow Testing, Mark H. Warner, Jon E. Bready, Wyatt Y. Warner, Alan F. Asay; Society of Automotive Engineers, SAE#2015-01-1431, April 2015.

An Integrated Model of Rolling and Sliding in Rollover Crashes, James Funk, Jeffrey Wirth, Enrique Bonugli, Richard Watson, Alan F. Asay; Society of Automotive Engineers, SAE#2012-01-0605, April 2012.

Reconstruction of an Actual Vehicle Rollover as a Special Project in an Undergraduate Dynamics Course, Blake M. Ashby, Alan F. Asay; American Society for Engineering Education, AC 2911-1919, June 2011.

Comparing Dolly Rollover Testing to Steer-Induced Rollover Events for an Enhanced Understanding of Off-Road Rollover Dynamics, Peter Luepke, Alan F. Asay; Society of Automotive Engineers, SAE#2011-01-1112, April 2011.

Rollover Testing of Sport Utility Vehicles (SUV's) on an Actual Highway, Alan F. Asay, Ronald L. Woolley; Society of Automotive Engineers, SAE#2010-001-0521, April 2010.

Rollover Testing on an Actual Highway, Alan F. Asay, Ronald L. Woolley; Society of Automotive Engineers, SAE#2009-01-1544, April 2009.

Crash Pulse and *Delta V* Comparisons in a Series of Crash Tests with Similar Damage (BEV, EES), Ronald L. Woolley, Alan F. Asay; Society of Automotive Engineers, SAE #2008-01-0168, April 2008.

Narrow Object Impact Analysis and Comparison with Flat Barrier Impacts, Alan F. Asay, Dagmar B. Jewkes, and Ronald L. Woolley; Society of Automotive Engineers, SAE #2002-01-0552, March 2002.

Crash Testing with a Massive Moving Barrier as an Accident Reconstruction Tool, Ronald L. Woolley, Alan F. Asay, Dagmar Buzeman Jewkes, and Chuck Monson; Society of Automotive Engineers, SAE #2000-01-0604, March 2000.

Determination of Vehicle Crush from Two Photographs and the use of 3D Displacement Vectors in Accident Reconstruction, Ronald L. Woolley, Karen A. White, Alan F. Asay, Jon E. Bready; Society of Automotive Engineers, SAE #910118, January 1991.