



Craig Wilkinson PEng

Director, Senior Engineer

contact

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expertise

Collision Reconstruction

areas of specialization

Accident Reconstruction

Event data recorder and airbag analysis

Low speed collisions

Heavy truck accidents

Nighttime Visibility

Vehicle crash testing

Computer modeling

Mr. Craig Wilkinson is a senior engineer in MEA Forensic's Collision Reconstruction group in the firm's Toronto office. Craig has investigated a wide variety of issues in over 2,500 collisions involving commercial vehicles, passenger cars, bicycles, motorcycles, pedestrians, and golf carts. "We help our clients to understand the technical answers to their questions," Craig says. "They can expect an honest answer from us—the right answer."

Craig has a Bachelor's degree in Engineering Physics from the University of British Columbia and is a registered professional engineer. He regularly presents his conclusions in court as an expert witness. When facts such as the speed of a car, or the severity of a crash will help resolve legal issues, Craig aims to present the results of his unbiased analysis as clearly as possible. "The court may be asked to make decisions about highly technical analyses," Craig notes. "As experts, our role is to help the court understand what the science says about the evidence."

New cars record information about speed and driver behavior in the event of a crash or extreme driving. Since his early years at MEA, Craig has studied the reliability and accuracy of this "black box" data. "Ten published papers later, MEA is still leading research in this area," he says. "We've quantified its accuracy, found errors in how programs are interpreting the data and described how forensic engineers can use it properly."

Craig continues to be motivated by technical questions: "I am still excited about the physics." But he also enjoys working with his MEA colleagues. "A lot of what inspires me," Craig says, "is getting to work with a group of smart young people who are evolving and defining their own careers."

education

Bachelor of Applied Science, Engineering Physics: Mechanical and Materials Options, University of British Columbia, 1999.

professional status

Professional Engineer, Association of Professional Engineers and Geoscientists of British Columbia, January 2004.

Professional Engineer, Professional Engineers of Ontario, 2007.

professional associations

Society of Automotive Engineers (SAE), since 2000.

Canadian Association of Technical Investigators and Reconstructionists (CATAIR), since 2003.

professional experience

MEA Forensic Engineers & Scientists

Director, Senior Engineer, 1999 to Present

Conducts technical investigations, primarily for motor vehicle collision reconstruction and material failure investigations. Involved in research into Event Data Recorders and impact testing of rigid mounted bumpers.

Protection Engineering Inc., Vancouver, BC

Student Fire Protection Consultant, May 1998 to August 1998

Performed sprinkler design and code analysis for various projects. Wrote code conformance and equivalency reports. Also drafted new building plans and modified existing drawings.

Forintek Canada Corporation, Vancouver, BC

Research Engineer, May 1997 to August 1997

Designed and implemented heat flow experiments in pilot plant. Created theoretical models for heat flow in the processing of wood composites.

Generation II Orthotics, Richmond, BC

Student R&D Engineer, May 1996 to August 1996

Designed mechanical components for knee braces. Performed failure analysis on metal and polymeric components. Optimized assembly process for two different braces.

research activities

Completed ten in-depth studies of automotive “black box” data recorders. The commercial availability of a computer interface device allows accident investigators to download crash data from certain vehicles. Experimental studies of the reliability and accuracy of downloaded data were conducted. A large number of staged collisions and linear motion sled tests revealed that the data recorders tested underestimated the actual speed change of the vehicle during a collision. Methods for accounting for this error were developed allowing the data to be applied to real-life collisions.

Conducted low-speed crash tests of pickup trucks to determine the levels of damage associated with speed changes of 8 km/h. Tests were conducted with different types of pickup trucks and different collision surfaces. It was found that the damage resulting

from the collisions depended on the bumper design and collision engagement.

Conducted drop tests of motorcycle helmets to look at head accelerations for various helmet styles. Documented helmet damage and developed correlations between damage and impact severity. A linear relationship between helmet foam crush and collision energy was established.

awards

Excellence in Oral Presentation Award, 2005 SAE International Congress, Detroit, MI.

Excellence in Oral Presentation Award, 2006 SAE International Congress, Detroit, MI.

publications

Behavior of Toyota airbag control modules exposed to low and mid-severity collision pulses

Comparison of the Accuracy and Sensitivity of Generation 1, 2 and 3 Toyota Event Data Recorders in Low-Speed Collisions

The Accuracy and Sensitivity of 2005 to 2008 Toyota Corolla Event Data Recorders in Low-Speed Collisions

lectures & presentations

August 2018 – Investigating Rollover Collisions. CATAIR Annual General Meeting and Conference, Aylmer, ON.

May 2018 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Aylmer, ON.

September 2017 – Let the Evidence Speak Seminar, MEA Forensic, Toronto, ON.

June 2017 – Live Crash Test Demonstration and lecture. Crash Course: The Life of a Claim, Toronto, ON.

April 2017 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Aylmer, ON.

April 2016 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Aylmer, ON.

February 2016 – Using Collision Reconstruction In Loss Transfers. Canadian Defense Lawyers Loss Transfer and Priority Disputes Seminar, Toronto, ON.

September 2015 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Aylmer, ON.

June 2015 – Engineering assessment of collision & severity, black box. Crash Course: The Life of a Claim, Kitchener, ON

June 2015 – Live Crash Test Demonstration. Crash Course: The Life of a Claim, Kitchener, ON

September 2014 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Orillia, ON.

May 2013 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Aylmer, ON.

April 2013 – The Accuracy and Sensitivity of 2005 to 2008 Toyota Corolla Event Data Recorders in Low-Speed Collisions. SAE International Congress and Exposition, Detroit, MI.

September 2012 – Engineering Investigations of Slips, Trips and Falls. Canadian Defense Lawyers Boot Camp Toronto, Basic Training for New Defence Lawyers Seminar, Toronto, ON.

September 2012 – What Engineers Need from Examinations for Discovery – It's All About the Details, Ontario Trial Lawyers Association, Interrogatory and Interrogation – The Art and Science of Discovery Seminar, 2012 New Lawyers Division Conference, Toronto, ON.

May 2012 – Investigating Slip, Trip and Fall Claims. Health & Safety Ontario Partners in Prevention Conference, Mississauga, ON.

May 2012 – Forensic Engineering: From Black Boxes to Broken Bones. Health & Safety Ontario Partners in Prevention Conference, Mississauga, ON.

April 2012 – Accident Reconstruction: An Engineering Perspective. Ontario Police College Reconstruction Course, Aylmer, ON.

February 2012 – Engineering Investigations of Slips, Trips and Falls. Canadian Defense Lawyers Winning Occupier’s Liability Claims Seminar, Toronto, ON.

October 2011 – Using Forensics to Make Sense of Pedestrian & Bicycle Accidents. Kitchener Waterloo chapter of OIAA, Kitchener, ON.

October 2011 – Accident Reconstruction: An Engineering Perspective. Toronto Police Service Reconstruction Course, Toronto, ON.

Apr 2011 – Using Forensics to Make Sense of Pedestrian & Bicycle Accidents, Canadian Defence Lawyers Mid Level Madness Seminar, Toronto, ON.

Apr 2011 – Accident Reconstruction: An Engineering Perspective. Ontario Police Service Accident Reconstruction Course, Aylmer, ON.

October 2010 – Using Forensics to Make Sense of Pedestrian & Bicycle Accidents. Insurance Brokers Association of Brantford, Brantford, ON.

June 2010 – Using Forensics to Make Sense of Pedestrian & Bicycle Accidents. Canadian Defence Lawyers National Audioconference.

April 2010 – Accident Reconstruction: An Engineering Perspective. Police Accident Reconstruction Course, Aylmer, ON.

February 2010 – Forensic Engineering in Practice, The Institute of Law Clerks of Ontario, Toronto, ON.

February 2010 – Investigating Vehicle Collisions with Pedestrians and Bicycles, OIAA 2010 Professional Development & Claims Conference, Toronto, ON.

November 2009 – Accident Reconstruction: An Engineering Perspective. Durham College Police Reconstruction Course, Durham College, ON.

April 2009 – The Accuracy of 1997 to 2005 General Motors Event Data Recorders in NHTSA Crash Tests, SAE International Congress and Exposition, Detroit, MI.

April 2009 – Asking the Right Questions: Getting the Most from Your Expert, Canadian Defence Lawyers: Law Clerk Boot Camp, Toronto, ON.

May 2009 – Accident Reconstruction: An Engineering Perspective. Toronto Police Service Accident Reconstruction Course, Aylmer, ON.

February 2009 – Forensic Investigation Using Black Boxes. Canadian Society of Safety Engineers Education Day, Toronto, ON.

January 2009 – An Introduction to Biomechanics. Ontario Insurance Adjusters Association Hamilton Chapter, Hamilton, ON.

September 2008 – Forensic Engineering in Practice. Canadian Independent Adjusters Association AGM, Charlottetown, PEI.

April 2008 – Accident Reconstruction: An Engineering Perspective. Toronto Police Service Accident Reconstruction Course, Aylmer, ON.

March 2008 – Forensic Engineering: From Black Boxes to Brain Injuries. Canadian Defence Lawyers: Law Clerk Boot Camp, Toronto, ON.

December 2007 – Forensic Engineering: From Black Boxes to Brain Injuries. Society of Automotive Engineers; Toronto Chapter, Toronto, ON.

November 2007 – Forensic Engineering: From Black Boxes to Brain Injuries. Toronto Insurance Women’s Association, Toronto, ON.

November 2007 – Winning Cases with Forensic Engineering: From Black Boxes to Brain Injuries. Toronto Lawyers Association, Toronto, ON.

October 2007 – Event Data Recorders in Cars. Ontario Trial Lawyers Association Fall Conference, Toronto, ON.

September 2007 – How to Deal with Data Uncertainty in EDR Analyses. Highway Event Data Recorder Symposium, Society of Automotive Engineers, Ashburn, VA.

August 2007 – Analyzing Yaw Events. CATAIR Annual General Meeting and Conference, Aylmer, ON.

June 2007 – Forensic Investigations of Workplace Accidents. Loblaws Canada Ltd. Health and Safety Conference, Toronto, ON.

April 2007 – Slips, Trips, and Falling Things – Forensic Investigations of Workplace Accidents. IAPA Health & Safety Conference, Toronto, ON.

April 2007 – Black boxes and beyond – Forensic Engineering Investigations of Motor Vehicle Accidents. IAPA Health & Safety Conference, Toronto, ON.

February 2007 – The accuracy of General Motors Event Data Recorders in NHTSA Frontal Barrier Tests, Crash Data Retrieval Users Conference, Houston, TX.

April 2006 – The Timing of Pre-Crash Data Recorded in General Motors Sensing and Diagnostic Modules. SAE International Congress and Exposition, Detroit, MI.

February 2006 – Quantifying Uncertainties in Ford and General Motors Event Data Recorders. Crash Data Retrieval User's Conference, Dallas, TX.

April 2005 – The accuracy and sensitivity of 2003 and 2004 General Motors event data recorders in low-speed barrier and vehicle collisions. SAE International Congress and Exposition, Detroit, MI.

March 2004 – The accuracy of crash data saved by Ford restraint control modules in low-speed collisions. SAE International Congress and Exposition, Detroit, MI.

2001 to present – Accident reconstruction seminars to various insurance offices and law offices. Topics covered include “black box” crash recorders data, low speed collision reconstruction, seat belt use assessment and use of PC-Crash, computer simulation software. Some presentations also involve low speed vehicle collision demonstrations.

training and professional development

August 2018 – CATAIR Annual General Meeting and Conference, Aylmer, ON.

April 2018 – Society of Automotive Engineers World Congress, Detroit, MI.

October 2017 – European Association for Accident Research (EVU) Congress 2017, Haarlem, Netherlands.

May 2017 – Webinar: Factors that influence nighttime recognition, Crash Safety Solutions LLC.

April 2017 – Society of Automotive Engineers World Congress, Detroit, MI.

December 2016 – Reconstruction and Analysis of Rollover Crashes of Light Vehicles, SAE, Cerritos, CA.

April 2016 – Society of Automotive Engineers World Congress, Detroit, MI.

July 2015 – Building Code Overview, Ontario Society of Professional Engineers, Mississauga, ON.

April 2015 – Vehicle Forensics and iVe Certification, Berla Corporation, Millersville, MD.

April 2014 – Society of Automotive Engineers World Congress, Detroit MI.

January 2014 – Crash Data Retrieval Summit, Houston, TX.

April 2013 – Society of Automotive Engineers World Congress, Detroit, MI.

May 2012 – Optics, Lighting and Visibility for the Forensic Investigator. Clearly Visible Presentations, Somersworth, NH

January 2011 – Crash Data Retrieval Summit, Houston, TX

December 2010 – SAE Accessing and Interpreting Heavy Vehicle Event Data, Cerritos, CA

January 2010 – Crash Data Retrieval Users Conference, Houston, TX

January 2010 – Crash Data Retrieval Train the Trainer Course, Houston, TX

November 16, 2009 – Canadian Safety Council ATV Training Course, Horseshoe Resort, ON

October 2009 – Human Factors in Traffic Crashes, Accident Dynamics Research Centre, Edmonton, AB

April 2009 – PC-Crash Advanced Training Course, Toronto, ON

April 2009 – Society of Automotive Engineers World Congress, Detroit, MI

January 2009 – Crash Data Retrieval Users Conference, Houston, TX

April 2008 – Society of Automotive Engineers World Congress, Detroit, MI

February 2008 – Crash Data Retrieval Train the Trainer Course, Houston, TX

January 2008 – Crash Data Retrieval Users Conference, Houston, TX

January 2008 – Crash Data Retrieval System Technician Certification Course, Toronto, ON

January 2008 – Crash Data Retrieval System Data Analyst Course, Toronto, ON

September 2007 – Highway Event Data Recorder Symposium. Society of Automotive Engineers, Ashburn, VA

August 2007 – CATAIR Annual General Meeting and Conference, “Mythbusting,” Aylmer, ON

February 2007 – Crash Data Retrieval Users Conference, Houston, TX

April 2006 – Society of Automotive Engineers World Congress, Detroit MI

February 2006 – Crash Data Retrieval User’s Conference, Dallas, TX

April 2005 – Detroit Diesel Electronic Controls Reports and Data Extraction, Detroit, MI

April 2005 – SAE Tire and Wheel Safety Issues Seminar, Course ID C0102

April 2005 – Society of Automotive Engineers World Congress, Detroit MI

March 2004 – Society of Automotive Engineers World Congress, Detroit, MI

August 2003 – CATAIR Annual General Meeting and Conference “Collision Reconstruction – Technology and Application”, Burlington, ON

April 2003 – Air Brake Theory and Air Brake Pre-trip Inspection, Fraser Valley Driving School, Surrey, BC. Air brake endorsement obtained (licensed to operate air brake equipped vehicles).

March 2003 – Society of Automotive Engineers World Congress, Detroit, MI

May 2002 – Crash Data Retrieval System Operator, Collision Safety Institute, Seattle, WA

May 2001 – Accident Reconstruction TOPTEC Special Topics, Society of Automotive Engineers, Phoenix, AZ

June 1999 – PC-Crash Workshop. Attended a workshop on the use of PC-Crash and PC-Rect software.
