



INTECH ENGINEERING LTD.
Forensic Analysis • Accident Reconstruction

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MICHAEL ARASZEWSKI, P.Eng.
CURRICULUM VITAE

ACADEMIC QUALIFICATIONS

Completed the University of British Columbia Engineering Program. The Degree of “Bachelor of Applied Science” in the Mechanical Option of Engineering Physics was awarded with Distinction in May 1997.

EXPERT TESTIMONY

Has been qualified and has provided expert evidence as a Mechanical Engineer and Accident Reconstructionist in the Supreme Court of British Columbia and the Provincial Courts of British Columbia.

PROFESSIONAL AFFILIATIONS

- Member of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)

FORENSIC ENGINEERING EXPERIENCE

Mar 1997 - Intech Engineering Ltd., Surrey, BC
Present MECHANICAL ENGINEER

- Technical reconstruction of numerous types of traffic collisions, industrial accidents, and slip-and-fall incidents
- Failure analysis
- Technical review of expert engineering reports

Motor Vehicle Accidents:

- Analysis and reconstruction of accidents involving motor vehicles, motorcycles, bicycles and pedestrians
- Data collection, vehicle, scene and personal property examinations:
 - Photographic evidence gathering
 - Detailed measurements of vehicle interiors, vehicle exteriors and scene geometries
- Preparation of scaled vehicle and scene drawings
- Assessment of collision circumstances including:
 - Vehicle dynamics
 - Speed analysis
 - Automobile component failure: stress analysis
 - Automobile tire failure
- Rollover collision analysis:
 - Cause and dynamics

- Vehicle lamp examination:
 - Assessment of vehicle headlight or taillight use
 - Assessment of headlight/taillight benefit
- Fraud investigation:
 - Assessment of contradictory collision circumstances
 - Automobile driver identification
 - Vehicle damage matching
- Seat belt analysis:
 - Examination of seat belt assembly
 - Evaluation of occupant dynamics
 - Assessment of seat belt usage and effectiveness

Failure Analysis

- Component examination:
 - Photographic evidence
 - Detailed measurements
- Technical assessment of cause of material failure
- Assessment of appropriateness of component design

Slip and Fall Incidents

- Data collection:
 - Examination of incident scene, personal property (e.g. footwear) and floor coverings
- Technical assessment of ground slip resistance for particular footwear, floor covering and environmental conditions
- Assessment of conformance to applicable codes and standards

Research:

- Low-speed collisions
- Sideswipe collisions
- Vehicle/pedestrian collisions
- Vehicle dynamics in rollover collisions
- Vehicle stiffness
- Occupant dynamics during collision impacts
- Vehicle handling characteristics

VEHICLE TESTING

- May 1997 - Organized, implemented, and analyzed over 250 staged impact tests involving
Present multiple vehicles, including:
- Fixed barrier impacts
 - Moving barrier impacts
 - Vehicle to vehicle impacts
 - Frontal, rear and side impacts
 - Sideswipe collisions
 - Over-ride impacts

- Sep 2001 Assistant test engineer for vehicle dynamic performance testing of a tri-drive tanker truck:
- Instrumented test vehicle with data acquisition equipment
 - Conducted load transfer ratio tests, lane change manoeuvre tests, and steady-state handling tests
 - Collected data and completed analysis and assessment of vehicle dynamics
- Aug 2001 Assistant test engineer for vehicle dynamic performance testing of a tri-drive truck/quad-axle trailer logging truck combination:
- Instrumented test vehicle with data acquisition equipment
 - Conducted rearward amplification tests, load transfer ratio tests, lane change manoeuvre tests, and high speed off-tracking tests
 - Collected data and completed analysis and assessment of vehicle dynamics

PUBLICATIONS

- **Araszewski M.**, Toor A., “Head, Hip and Knee Velocities of Restrained Occupants in Frontal Impacts.” SAE #2003-01-0884. Society of Automotive Engineers. 2003. Warrendale, PA.
- Toor A., **Araszewski M.**, “Theoretical vs. Empirical Solutions for Vehicle/Pedestrian Collisions.” SAE #2003-01-0883. Society of Automotive Engineers. 2003. Warrendale, PA.
- **Araszewski M.**, Toor A., Overgaard R., Johal R. “Lane Change Maneuver Modeling for Accident Reconstruction Applications.” SAE #2002-01-0817. Society of Automotive Engineers. 2002. Warrendale, PA.
- Toor, A., **Araszewski M.**, Johal R., Overgaard R., Happer A. “Revision and Validation of Vehicle/Pedestrian Collision Analysis Method.” SAE #2002-01-0550. Society of Automotive Engineers. 2002. Warrendale, PA.
- **Araszewski, M.**, Toor, A., Happer, A. “Knee and Hip Displacements of Vehicle Occupants Restrained by Seat Belts in Frontal Impacts.” SAE #2001-01-0180. Society of Automotive Engineers. 2001. Warrendale, PA.
- Overgaard, R., Johal, R., **Araszewski, M.**, Toor, A. “Relationships between Pre-Skidding and Pre-Braking Speed.” SAE #2001-01-01281. Society of Automotive Engineers. 2001. Warrendale, PA.
- Toor, A., **Araszewski, M.** “Uses and Abuses of Engineering Evidence in Litigation”, The A-Z of Expert Witnesses, Trial Lawyers Association of British Columbia (TLABC), December 2000.
- Toor, A., **Araszewski, M.**, Johal, R. “Technical Assessment of Seatbelt Usage and Effectiveness”, Trial News, July/August 2000, Vol.35, #11, Washington State Trial Lawyers Association, Seattle, WA.
- **Araszewski, M.**, Toor, A. “Engineering Evidence: When Does a Seat Belt Make a Difference?”, Brain Injury Litigation, Trial Lawyers Association of British Columbia (TLABC), February 2000.
- Happer, A., **Araszewski, M.**, Toor, A., Overgaard, R., Johal, R. “Comprehensive Analysis Method for Vehicle/Pedestrian Collisions.” SAE #2000-01-0846. Society of Automotive Engineers. 2000. Warrendale, PA.

- Happer, A., **Araszewski, M.**, Toor, A. “Assessing Seatbelt Usage and Effectiveness”, The Lawyer’s Weekly. 23 July 1999: 15, Markham, ON.
- **Araszewski, M.**, Roenitz, E., Toor, A. “Maximum Head Displacement of Vehicle Occupants Restrained by Lap and Torso Seat Belts in Frontal Impacts.” SAE #1999-01-0443. Society of Automotive Engineers. 1999. Warrendale, PA.
- Toor, A., Roenitz, E., Johal, R., Overgaard, R., Happer, A., **Araszewski, M.** “Practical Analysis Technique for Quantifying Sideswipe Collisions.” SAE #1999-01-0094. Society of Automotive Engineers. 1999. Warrendale, PA.

LECTURES & PRESENTATIONS

- March 2003—SAE World Congress. Presentation of SAE paper #2003-01-0884. Detroit, MI.
- March 2002—SAE World Congress. Presentation of SAE paper #2002-01-0817. Detroit, MI.
- June 2001—ICBC (Insurance Corporation of British Columbia) training seminar.
- March 2001—SAE World Congress. Presentation of SAE paper #2001-01-0180. Detroit, MI.
- February 2000—Trial Lawyers Association of British Columbia (TLABC) Brain Injury Seminar.
- Presentation discussing requirements for seat belt analysis and the effectiveness of seat belts in preventing occupant injuries. Vancouver, BC.
- March 1999—SAE World Congress. Presentation of SAE paper #1999-01-0443. Detroit, MI.

PROFESSIONAL DEVELOPMENT

- March 2003—SAE World Congress, Detroit, MI.
- March 2002—SAE World Congress, Detroit, MI.
- March 2001—SAE World Congress, Detroit, MI.
- July 2000—SAE Heavy Vehicle Rollover Demonstration, Delta, BC.
- March 1999—SAE World Congress, Detroit, MI.
- Reviewer of SAE Manuscripts for Publication since 2008.

OTHER ENGINEERING EXPERIENCE

- May 1996 - Ballard Power Systems, Burnaby, BC
 Aug 1996 Core Technology Department
 ENGINEERING STUDENT
- Maintained, upgraded and repaired Hydrogen Fuel Cell Test Stations. Designed and constructed testing apparatus
- May 1995 - BC Hydro, Burnaby, BC
 Aug 1995 Transmission Design Department
 ENGINEERING STUDENT
- Updated and enhanced tower analysis computer programs used to aid in the design of transmission towers. Evaluated the need for maintenance/ replacement of tower foundations and supervised project construction



- May 1994 - NRC / CANMET / Western Research Centre, Devon, Alberta
Aug 1994 ENGINEERING STUDENT
- Designed and assembled test equipment that optimized the design of a newly developed High-Current Pulsed Impedance Spectrometer

SPECIAL TECHNICAL PROJECTS

- Sept 1995 - Automed Corporation, Richmond, BC
Jan 1996 STUDENT PROJECT
- Developed a fully automated Test Tube Preparation Device that was used for testing new modules
- Sept 1994 - UBC Physics Department, Vancouver, BC
Apr 1995 STUDENT PROJECT
- Developed an automated data acquisition system that accurately recorded the flow velocity profile in a vortex tube without disturbing the flow characteristics