CURRICULUM VITAE

Mark R. Sawa, P. Eng.

ACADEMIC QUALIFICATIONS

1996 Master of Science in Mechanical Engineering (Solid Mechanics),
University of Calgary
Thesis Title: *"Load-Deflection Characteristics of Spherical Inflatables"*

1992 Bachelor of Science in Mechanical Engineering (with distinction)
University of Calgary

CONFERENCES, MEETINGS AND TECHNICAL TRAINING

- *Crash Data Retrieval – Data Analyst Certification Course*, Edmonton, Alberta, October/November 2006
- *Damage Analysis and Energy Methods in Traffic Crash Reconstruction*, Institute of Police Technology & Management, Calgary, Alberta, August 2005
- *Accident Reconstruction Seminar*, CATAIR, Calgary, Alberta, August 2005
- *Estimating Driver Response Times,* CATAIR, Edmonton, Alberta, November, 2004
- *Low Speed Testing of EDR Equipped Vehicles,* CATAIR, Edmonton, Alberta, April 2004
- *Crash Data Retrieval (CDR) System Operator Course,* CATAIR, Edmonton, Alberta, November 2003
- *Pedestrian/Bicycle Crash Investigation,* Institute of Police Technology and Management, Edmonton, Alberta, August 2002
- *Accident Reconstruction Seminar,* CATAIR, Edmonton, Alberta, August 2002
- *Accident Reconstruction Fall Lecture,* CATAIR – Prairie Region, Penhold, Alberta, October 2001
- *Accident Reconstruction TOPTEC: Special Topics*, Society of Automotive Engineers, Tempe, 2001
- *Tire to Ice Testing,* CATAIR – Prairie Region, Telford Lake, Alberta, February 2001
- *Commercial Vehicle Reconstruction*, CATAIR Conference, Edmonton, Alberta, August 1999
- *Accident Reconstruction Seminar,* CATAIR, Edmonton, Alberta, August 1999
- *Finite Element Analysis For Design Engineers – Hands On FEA Workshop,* Society of Automotive Engineers, Detroit, 1998
- *SAE International Congress,* Society of Automotive Engineers, Detroit, 1998
- *SAE International Congress*, Society of Automotive Engineers, Detroit, 1997
- *Low Speed Collision TopTech*, Society of Automotive Engineers, Vancouver, 1996
- *3D Photogrammetry Workshop*, Society of Automotive Engineers, Vancouver, 1996
- *Underride Crash Test,* Society of Automotive Engineers, Vancouver, 1996

- University of Calgary Graduate Courses in:

Continuum Mechanics	Shell Theory
Theory of Elasticity	Variational Methods
Shell and Plates	Theory of Plasticity

PROFESSIONAL ASSOCIATIONS AND MEMBERSHIPS

- Member, Association of Professional Engineers, Geologists and Geophysicists of Alberta
- Associate Member, Society of Automotive Engineers
- Member, Canadian Association of Technical Accident Investigators & Reconstructionists
- Director for Prairie Chapter (2001 to present), Canadian Association of Technical Accident Investigators & Reconstructionists

EXPERT TESTIMONY

Accepted as an expert witness multiple times in the Provincial Court of Alberta and Court of Queen's Bench of Alberta. Expert testimony was provided in the area of accident reconstruction including vehicle dynamics, commercial vehicle collisions, identification of point of impact, low speed collisions, impact severity, vehicle positions at impact, potential to avoid impacts, vehicle stopping distances, vehicle speed at impact, and pedestrian impacts.

PROFESSIONAL CAREER

1997 - Present **ANDERSON ASSOCIATES CONSULTING ENGINEERS INC.**
Partner/Mechanical Engineer

- Motor vehicle accident reconstruction of high and low speed accidents including pedestrian, bicycle, motorcycle, automobiles and commercial vehicles.
- Analysis of accident sites to assess visibility issues, pre- and post-impact vehicle speeds, point of impact , and collision severity.
- Examination of collision vehicles to assess seatbelt usage, seatbelt effectiveness, collision severity and lamp usage.
- Computer simulations of motor vehicle accidents using PC Crash and Engineering Dynamics software.
- Investigation of slip and falls, and incidents involving building code violations.
- Standard stress analysis and finite element stress analysis of mechanical parts.
- Mechanical design of torque measuring equipment.
- Mechanical design of 24" – 48" pipeline weld backup rings.
- Mechanical design of centrifuges.

1995 - 1997 **SAMAC ENGINEERING LIMITED**, E.I.T.

- Motor vehicle accident reconstruction of high and low speed accidents including pedestrian, bicycle, motorcycle, automobiles and commercial vehicles.
- Analysis of accident sites to assess visibility issues, pre- and post-impact vehicle speeds, point of impact , and collision severity.

- Examination of collision vehicles to assess seatbelt usage, seatbelt effectiveness, collision severity and lamp usage.
- Computer simulations of motor vehicle accidents using Engineering Dynamics software.

1994 - 1995 **WARNER SHELTER SYSTEMS LIMITED**
- Conducted finite element analysis of metal trusses, cables and polyvinyl fabric to determine anchorage requirements and structural integrity with respect to relevant building codes.

1992 - 1994 **UNIVERSITY OF CALGARY** - Faculty of Engineering
- Performed tutorial and laboratory duties in the areas of statics and solid mechanics (part-time).

1991 **AMOCO CANADA**
- Evaluated reservoir characteristics to assist in the strategic development of a new heavy oil field.
- Performed data collection to aid in a causation study of sanding problems in heavy oil wells.

1990 **SUNCOR INCORPORATED**
- Carried out various operator, maintenance and technical tasks associated with the operation and production of oil and gas wells and facilities.

PATENTS

Co-Inventor on United States Patent 6,119,916, Internal Backup Ring System, granted September 19, 2000.

Co-Inventor on United States Patent 6,386,421 B1, Actuation System for an Internal Backup Ring Assembly, Granted May 14, 2002

PUBLICATIONS AND PRESENTATIONS

Sawa MR, MacInnis SA. *Low Speed Collisions - Analysis of Collision Severity,* The Barrister (Journal of the Alberta Civil Trial Lawyers Association), September 1996.

Sawa MR, Glockner PG. *On the Ponding Instability of Spherical Inflatables*, American Society of Civil Engineers, Portland 1997.

Sawa MR, Glockner PG. *Clarifying Some Behavioral Features of Spherical Pneumatics Subjected to Axisymmetric Hydrostatic Loads,* Fifth Pan-American Congress of Applied Mechanics, San Juan, 1997.

Mark R. Sawa, P. Eng. Date

12/6/06