



Vladimir P. Panlilio, M. Eng., M. Sc., P.Eng.

- 25 years of mechanical and automotive engineering experience
- Over 1000 vehicle crash/collision reconstructions since 1982
- Adjunct Associate professor at University of Calgary
- Extensive experience as a vehicle safety lecturer

EDUCATION

M.Sc. (Mechanical Engineering), University of Calgary (Combustion and Flame Propagation)	1981
M.Eng. (Mechanical Engineering), University of the Philippines (Thermal and Environmental Engineering)	1979
B.Sc. (Mechanical Engineering), University of the Philippines	1976

PROFESSIONAL ASSOCIATIONS & MEMBERSHIPS

Association of Professional Engineers, Geologists & Geophysicists of Alberta (APEGGA)
Society of Automotive Engineers (SAE)

WORK HISTORY

SAMAC Engineering Ltd. (Calgary)

Mechanical Forensic Engineer **2009 to present**

Department of Mechanical Engineering – University of Calgary (Calgary)

Adjunct Associate Professor **1979 - present**

- Wrote scientific papers and prepared over 1000 comprehensive reconstruction reports that included vehicle pre/post crash analyses, assessment of injury outcome, performance of safety systems - active and passive restraint systems, vehicle crash energy absorbing appurtenances, collision dynamics
- Principal investigator and co-ordinator of the **Injury Research Unit** (1992 to 2006) (under the auspices of the university): Headed a Transport Canada funded multidisciplinary and multiphase air bag study (first generation air bag systems to intelligent supplemental inflatable restraint systems); performed detailed examination / investigation of crashes involving air bag deployments
- Researched road transportation safety, lectured on vehicle safety and collision reconstruction to academe (Faculties of Medicine and Engineering), the law enforcement community (RCMP, Calgary Police Service), and health agencies (Calgary Health Region / Alberta Health Services)
- Investigated side impact incidents, especially cases with side airbag deployment

- Investigated specific crash cases involving restrained rear seat occupants with emphasis on assessing the performance of safety systems in the rear position
- Conducted detailed investigation and documentation of vehicles involved in crash incidents, including damage assessment based on SAE 224 Mar80, occupant interior contact, seat belt use and related these to the relevant Canadian Motor Vehicle Safety Standards (CMVSS)
- Taught computer reconstruction of crash incidents, including use of Crash Data Retrieval (CDR) information
- Obtained injury information from medical records and medical examiner's reports with emphasis on air bag related injuries, especially the few and difficult cases involving air bag induced fatalities
- Vehicle analyst/research associate for the Transport Canada funded research project (1983 to 1992): Investigated the crash performance of light trucks and vans (LTVs), passenger cars, school buses
- Researched and studied combustion and flame propagation of gaseous fuels in diluted oxidizing and stratified environments

The Hanna Test Centre (Calgary/Hanna)

2007 to present

Principal and facility manager of a vehicle test centre near Hanna. Responsible for scheduling of testing and training activities.

Department of Mechanical Engineering – University of the Philippines 1975 – 1979

- Tenured instructor, taught engineering courses – Thermodynamics, Elements of Mechanisms, Fluid Machinery
- Researched solar collectors, solar dryers, gas producers
- Experimented with alternative fuels, in particular, diesel fuel substitutes (coconut oil, producer gas)
- Performed compliance testing (ASTM) on fire hydrants, cast iron soil pipes and plastic pipes,
- Designed the ventilation and exhaust system of a wood working plant
- Reviewed HVAC designs of new campus (University of the Philippines) buildings
- Investigated improving combustion efficiency of boilers using emulsified fuels, regenerative heat recovery

TECHNICAL TRAINING

- 1) Human Factors in Traffic Crashes – Accident Dynamics Research Center, 2009
- 2) CDR course – Calgary Police Service CDR Operator Certification, 2009
- 3) Advanced Accident Analysis – Institute of Police Traffic Management – University of North Florida, 1986
- 4) SLAM Workshop – how to use SLAM, a collision reconstruction program based on the seminal CRASH3 program,
- 5) Transport Canada hosted/sponsored CDR workshops – intensive workshops on in-vehicle and off-vehicle methods of downloading data from SDMs, RCMs, and other event data recorders (EDRs); how to interpret downloaded EDR data; uses and limitations, 200

- 6) Transport Canada workshops on vehicle defect investigations – comprehensive hands-on workshops on vehicle defect cases, 1983-2005
- 7) Transport Canada workshops on airbags, 1997-

CONFERENCES & MEETINGS

- 1) Society of Automotive Engineers (SAE) International Congress and Exposition
- 2) Stapp Car Crash conferences
- 3) OECD Conference
- 4) Enhanced Safety of Vehicles (ESV) conferences
- 5) Canadian Multidisciplinary Road Safety (CMRS) conferences
 - conference chair of 13th CMRSC and editor of conference proceedings
 - organizer of 5th CMRSC
- 6) Alberta Centre for Injury Control and Research (ACICR) conferences

RESEARCH & INTERESTS

Investigating the effectiveness of supplemental restraint systems in mitigating occupant injuries in vehicle crashes

As faculty adviser for the University of Calgary Baja team, I advise students on the design and the manufacturing of an off-road competition vehicle with emphasis on safety (roll cage, appurtenances, maneuverability, and brake performance)

PUBLICATIONS

- 1) School Bus Crash Performance: Case Studies; Panlilio V and Gardner W; Proc. CMRSC-XII; London, Ontario; June 10-13, 2001.
- 2) Staged Train-Pickup Collision; Panlilio VP and Gaede TR; Proc. CMRSC-XI; Halifax, Nova Scotia; May 9-12, 1999
- 3) Flame Propagation and Extinction within Mixtures Involving Hydrogen and Diluent Inert Gases in Air, GA Karim, VP Panlilio - International Journal of Hydrogen Energy, 1993
- 4) Flame Propagation and Lean-Limit Extinction Within Stratified Mixtures Involving a Diluent Gas, GA Karim, V Panlilio – Transactions - American Society of Mechanical Engineers 1992
- 5) An Evaluation of the Injury Severity Score in a Pediatric Population: The Light Truck and Van Study; Beverly F. White, John H. Read and Vladimir P. Panlilio; Proc. CMRSC-V, Calgary, Alberta; June 1-3, 1987

COURT EXPERIENCE

Court qualified as an expert witness in a case involving an airbag induced fatality. Testified on the misuse of the seat belt restraint system, resulting in the occupant being out-of-position at the time of airbag deployment.

AREAS OF EXPERTISE

- Motor vehicle crashes, vehicle examination, crash reconstruction using computer modelling tools, school bus crash incidents, vehicle-train collisions
- Lecturer at the Canadian Police College and at the RCMP Pacific Region Training Centre – presenter of the signature lecture *Physics for Future Police Chiefs* (physics of collision, kinematics and kinetics, conservation of momentum, conservation of energy)
- Workshop presenter and lecturer on CDR data - vector analysis using graphical solution (RCMP E and K Divisions, Calgary Police Service)

October 2009