

# D.J. Dalmotas Consulting, Inc.

## Dainius John Dalmotas

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- Born** August 29, 1950 - Montreal, Quebec, Canada.
- Formal Education** Bachelor of Mechanical Engineering,  
Sir George Williams University,  
Montreal, 1972.
- Work Experience :** Transport Canada 1972-2005
- 1998 - 2005** Chief, Crashworthiness Research,  
Road Safety and Motor Vehicle Regulation Directorate,  
Transport Canada.
- Functions/Duties:** Planning and managing contracted research in the areas of human biomechanics and vehicle crashworthiness, conducting in-house development and evaluation projects supporting regulatory initiatives addressing vehicle crashworthiness, and developing Directorate position papers on technical policy issues and questions as they pertain to automotive safety.
- 1979 - 1998** Senior Engineer, Crashworthiness, Vehicle Systems  
Road Safety and Motor Vehicle Regulation Directorate, Transport Canada.
- 1974 - 1979** Project Engineer, Crashworthiness, Vehicle Systems  
Road Safety and Motor Vehicle Traffic Safety Branch,  
Transport Canada.
- 1972 - 1974** Junior Project Engineer, Crashworthiness, Vehicle Systems  
Road Safety and Motor Vehicle Traffic Safety Branch, Transport Canada.

**Safety is our passion - analysis is our specialty**

**Major  
Accomplishments:**

Implementation of field accident study documenting the injury experience of occupants restrained by three-point seat belt systems

Joint NHTSA/INRETS/Transport Canada study documenting the response of the human thorax when loaded by a shoulder belt

Joint NHTSA/Transport Canada comparative dummy response study of the US SID, the EuroSID 1, and the BioSID

Development of the Canadian Belt fit Test Device (BTD)

Participation in the development of Transport Canada's Occupant Restraint Policy

Development of testing protocols and injury criteria for use in CMVSS 208 to regulate the safety performance of occupant restraint systems

Joint NHTSA/Transport Canada cooperative study to monitor and assess the crash performance of vehicles fitted with conventional and advanced airbag systems

Development of padding strategies to improve side impact protection

Analyses of field accident data documenting the injury experience of occupants in air bag crashes

Development of in-position and out-of-position testing procedures to evaluate frontal and side airbag performance

Development of testing procedures to evaluate side impact performance in LTV-to-vehicle crashes utilizing the SIDIIIs.

**Academic  
Appointments:**

Visiting Scholar  
George Washington University, Washington, DC  
August, 2008 - date

**Awards:**

Award for Safety Engineering Excellence,  
U.S. Department of Transportation, 1996.

Award for Excellence, National Transportation Week,  
May, 1997.

Queen's Jubilee Medal, 2002

**Present and Past Memberships:**

Stapp Car Crash Conference Advisory Board (active)

Blue Ribbon Panel for the Evaluation of Advanced Airbags

Harvard Center for Risk Analysis, Advisory Council

International Harmonization of Research Activities (IHRA) – Vehicle Compatibility

International Harmonization of Research Activities (IHRA) – Biomechanics

International Harmonization of Research Activities (IHRA) – Side Impact

International Harmonization of Research Activities (IHRA) – Offset Frontal

TC22/SC10/WG3 - Test Procedures for Evaluating Occupant Interaction with Deploying Airbags

ISO/TC22/SC12/WG5 - Anthropomorphic Test Devices

ISO/TC22/SC12/WG6 - Performance Criteria Expressed in Biomechanical Terms

**Publications:**

Comeau J-L, Holmes W, Monk B, Dalmotas DJ, German A, Schramm S, Thannhauser S and Good C; The Application of Event Data Recorders to Vehicle Safety Research; Proceedings of the 27th CARSP Conference; Toronto, ON; June 18-21, 2017

Digges K, Dalmotas D, Prasad P and Mueller B; *The Need to Better Control Belt Routing for Silver NCAP Ratings*; Paper No. 17-0403-O; Proc. 25th ESV Conf.; Detroit, MI; June 8-11, 2017

Mertz HJ, Prasad P, Dalmotas DJ and Irwin AL; *Age-specific injury risk curves for distributed, anterior thoracic loading of various sizes of adults based on sternal deflections*; Paper No. 2016-22-0001; Stapp Car Crash Journal; pp. 1-9; Vol. 60; 2016

Prasad P, Dalmotas D and Chouinard A; *Side Impact Regulatory Trends, Crash Environment and Injury Risk in the USA*; Paper No. 2015-22-0004; Stapp Car Crash Journal; Volume 59; pp. 91-112; November, 2015

Prasad P, Dalmotas DJ and German A; *The Incidence and Severity of Small Overlap Frontal Crashes in NASS-CDS*; Paper No. 15-0182-O; Proc. 24th ESV Conf.; Gothenburg, Sweden; June 8-11, 2015

German A, Dalmotas DJ, Prasad P and Comeau J-L; *Ejections and Fatalities in Single-Vehicle Rollover Crashes: A Question of Restraint*; Proceedings of the 25th CARSP Conference; Ottawa, ON; May 27-30, 2015

Prasad P, Dalmotas DJ and German A; *The Field Relevance of NHTSA's Oblique Research Moving Deformable Barrier Tests*; Paper No. 2014-07; Stapp Car Crash Journal; Volume 58; pp. 175-196; November, 2014

Dalmotas D, German A and Prasad P; *Frontal Corner Impacts – Crash Tests and Real-World Experience*; Presented at the 6th. International ESAR Conference; Hannover, Germany; June 20-21, 2014

Prasad P, Dalmotas D and German A; *An Examination of Crash and NASS Data to Evaluate the Field Relevance of IIHS Small Offset Tests*; SAE Int. J. Trans. Safety; Vol. 2 No. 2; 2014

Harold J. Mertz, Priya Prasad and Dainius J. Dalmotas; *Minimizing the Injury Potential of Deploying Airbag Interactions with Car Occupants*; John Paul Stapp Memorial Lecture, 57th Stapp Car Crash Conference; Stapp Car Crash Journal; Vol. 57; SAE International; November, 2013

Kennerly Digges, Dainius Dalmotas and Priya Prasad; *An NCAP Star Rating System for Older Occupants*; Paper No. 13-0064; 23rd ESV Conf.; Seoul, Korea; May 27-30, 2013

Dalmotas D; *Safety of Elderly Motor Vehicle Occupants*; The Safety Network; Canadian Association of Road Safety Professionals; Issue 2, 2012

Comeau J-L, German A and Dalmotas D; *Crash Pulse Data from Event Data Recorders in Rigid Barrier Tests*; Paper Number 11-0395; 22nd International Technical Conference on the Enhanced Safety of Vehicles; Washington, DC; June, 2011

Comeau J-L, Dalmotas DJ and German A; *Evaluation of the Accuracy of Event Data Recorders in Chrysler Vehicles in Frontal Crash Tests*; Proc. CMRSC-XXI; Halifax, Nova Scotia; May 8-11, 2011

Comeau J-L, Dalmotas DJ and German A; *Event Data Recorders in Toyota Vehicles*; Proc. CMRSC-XXI; Halifax, Nova Scotia; May 8-11, 2011

Priya Prasad, Harold J. Mertz, Dainius J. Dalmotas, Jeffrey S. Augenstein and Kennerly Digges; *Evaluation of the Field Relevance of Several Injury Risk Functions*; Paper No. 10S-44; Stapp Car Crash Journal; Vol. 54; November, 2010

Dalmotas D, Prasad P, Augenstein J and Digges K; *Assessing the field relevance of testing protocols and injury risk functions employed in new car assessment programs*; Proc. 2010 International IRCOBI Conference on the Biomechanics of Injury; pp. 355; Hanover, Germany; September 15-16, 2010

Dalmotas DJ, German A and Comeau J-L; *Crash Pulse Analysis using Event Data Recorders*; Proceedings of the 19th Canadian Multidisciplinary Road Safety Conference, Saskatoon, Saskatchewan, June 8-10, 2009

Mertz, H.J. and Dalmotas, D.J., *Effects of Shoulder Belt Limit Forces on Adult Thoracic Protection in Frontal Collisions*, Paper 2007-22-0015, 51st Stapp Car Crash Conference, San Diego, California, October 29-31, 2007.

Digges, K. and Dalmotas, D., *Benefits of a Low Severity Frontal Crash Test*, Proceedings of the 51<sup>st</sup> Annual Proceedings of the Association for the Advancement of Automotive Medicine, Melbourne, Australia, October 15-17, 2007.

Tylko, S., Charlebois, D., Bussi eres, A. and Dalmotas, D.J., *The Effect of Breast Anthropometry on the Hybrid III 5<sup>th</sup> Female Chest Response*, 50th Stapp Car Crash Conference, Dearborn, Michigan, November 6-8, 2006.

Tylko, S., German, A., Dalmotas, D.J. and Bussi eres, A., *Improving Side Impact Protection for the Average Man: The Development of a Harmonized Pole Test Procedure*, Proceedings of the International IRCOBI Conference, Madrid, Spain, September 20-22, 2006.

Tylko, S. and Dalmotas, D.J., *WorldSID Responses in Oblique and Perpendicular Pole Tests*, Paper 05-0256, 19th International Technical Conference on the Enhanced Safety of Vehicles, Washington, D.C., USA, 2005.

Tylko, S. and Dalmotas, D.J., *Protection of Rear Seat Occupants in Frontal Crashes*, Paper 05-0258, 19th International Technical Conference on the Enhanced Safety of Vehicles, Washington, D.C., USA, 2005.

Augenstein, J., Digges, K., Bahouth, G., Dalmotas, D., Perdeck, E. and Stratton, J., *Investigation of the Performance of Safety Systems for Protection of the Elderly*, Proceedings of the 49<sup>th</sup> Annual Proceedings of the Association for the Advancement of Automotive Medicine, 49: 347-356, ISSN: 1540-0360, Boston, Massachusetts, September 12-14, 2005.

Tylko, S. and Dalmotas, D., *SID-IIs Response in Side Impact Testing*, 2004 SAE World Congress and Exhibition, SAE Paper No. 2004-01-0350: *Rollover, Side, and Rear Impact* (SP-1880), Society of Automotive Engineers, Warrendale, PA, USA, 2004.

Arbelaez, R.A., Dakin, G.J., Nolan, J.M., Dalmotas, D.J. and Tylko, S., *IIHS Side Impact Barrier — Development and Crash Test Experience*, IMechE Conference Transactions: International Conference on Vehicle Safety 2002, 73-88, London, UK, 2002.

Twisk, D., Rouhana, S., Elhagediab, A., Berliner, J., Baayoun, E., Dalmotas, D. and Tylko, S., *Laboratory Experience with the IR-TRACC Chest Deflection Transducer*, SAE Paper 2002-01-0188, 2002 SAE World Congress, Detroit, Michigan, USA, March 4 - 7, 2002.

Byrnes, K., Abramczyk, J., Berliner, J., Irwin, A., Jensen, J., Kowsika, M., Mertz, H.J., Rouhana, S.W., Scherer, R., Shi, Y., Sutterfield, A., Xu, L., Tylko, S., and Dalmotas, D.J., *ES-2 Dummy Biomechanical Responses*, Paper 2002-22-0018, 46th Stapp Car Crash Conference, Ponte Verdra Beach, Florida, USA, 2002.

Terrel, M., Newland, C., Seyer, K. and Dalmotas, D.J., *The Dependence of Side Impact Injury Risk on MDB Configuration*, Paper Number 399, 17th International Technical Conference on the Enhanced Safety of Vehicles, Amsterdam, June 4-7, 2001.

Tylko, S. and Dalmotas, D.J., *Side Airbags: Evaluating the Benefits and Risks for Restrained Children*, Paper Number 420, 17th International Technical Conference on the Enhanced Safety of Vehicles, Amsterdam, June 4-7, 2001.

Tylko, S. and Dalmotas, D.J., *Static Out-of-Position Test Methodologies: Identifying a Realistic Worst Case for Small Stature Female Drivers*, Paper Number 421, 17th International Technical Conference on the Enhanced Safety of Vehicles, Amsterdam, June 4-7, 2001.

Dalmotas, D.J., German, A. and Tylko, S., *The Crash and Field Performance of Side-Mounted Airbag Systems*, Paper Number 442, 17th International Technical Conference on the Enhanced Safety of Vehicles, Amsterdam, June 4-7, 2001.

Digges, K. and Dalmotas, D.J., *Injuries To Restrained Occupants In Far-Side Crashes*, Paper Number 351, 17th International Technical Conference on the Enhanced Safety of Vehicles, Amsterdam, June 4-7, 2001.

Transport Canada, *Evaluation of the Effectiveness of Air Bags and Seat Belts*, Fact Sheet RS 2001-03 E, Road Safety and Motor Vehicle Regulation, October, 2001.

Tylko, S. and Dalmotas, D.J., *Dangerous Sides*, Recovery Magazine, 2001;12 (51), Insurance Corporation of British Columbia, 2001.

Tylko, S. and Dalmotas, D.J., *Assessment of Injury Risk to Children from Side Airbags*, SAE Paper 2000-01-SC02, 44th Stapp Car Crash Conference, Atlanta, Georgia, USA, 2000.

Seyer, K., Newland, C., Terrell, M. and Dalmotas, D.J., *The Effect of Mass, Stiffness and Geometry on Injury Outcome in Side Impacts - A Parametric Study*, SAE Paper 2000-01-SC01, 44th Stapp Car Crash Conference, Atlanta, Georgia, USA, 2000.

Dalmotas, D.J., German, A. and Hurley, R., *Second Generation Airbag Systems: A Preliminary Evaluation of Field Accident Performance*, CMRSC-XI, Halifax, Nova Scotia, 1999.

Beusenberg, M., Kot, M., Dalmotas, D.J. and Malo, R., *Modifications to EuroSID-1 to Improve Thoracic Responses*, JSAE Spring Convention, Yokohama, Japan, May 19-21, 1999.

Dalmotas, D.J., *Assessments of Air Bag Performance Based on the 5th Percentile Female Hybrid III Crash Test Dummy*, Paper No. 98-S5-O-07, 16th International Technical Conference on the Enhanced Safety of Vehicles, Windsor, Ontario, Canada, 1998.

Morris, A., Fildes, B., Digges, K., Dalmotas, D.J. and Langweilder, K., *Injuries in Primary and Supplemental Airbag Systems*, Paper No. 98-S5-O-03, 16th International Technical Conference on the Enhanced Safety of Vehicles, Windsor, Ontario, Canada, 1998.

German, A., Dalmotas, D.J. and Hurley, R., *Air Bag Collision Performance in a Restrained Occupant Population*, Paper No. 98-S5-O-04, 16th International Technical Conference on the Enhanced Safety of Vehicles, Windsor, Ontario, 1998.

German, A., Dalmotas D.J., Comeau, J-L., Monk, B., Contant, P., Gou, M., Carignan, S., Lussier, L-P., Newman, J. and Withnall, C., *In-Depth Investigation and Reconstruction of an Air-Bag Induced Child Fatality*, Paper No. 98-S5-W-19, 16th International Technical Conference on the Enhanced Safety of Vehicles, Windsor, Ontario, Canada, 1998.

Rangarajan, N., White, R., Shams, T., Beach, D., Fullerton, J., Haffner, M., Eppinger, R., Rhule, D., Pritz, H., Dalmotas, D. and Fournier, E., *Design Criteria, Design, and Performance of the THOR Advanced Frontal Crash Test Dummy Thorax and Abdomen Assemblies*, Paper No. 98-S9-O-12, 16th International Technical Conference on the Enhanced Safety of Vehicles, Windsor, Ontario, Canada, 1998.

Stewart, D.E., Arora, H.R., and Dalmotas, D.J., *An Evaluation of the Effectiveness of Supplementary Restraint Systems ("Air Bags") and Conventional Seat Belts: Estimates of the Numbers of Lives Saved Among Front Seat Outboard Occupants of Light-Duty Vehicles Involved in Collisions Attributable to the Use of Seat Belts and the Fitment of Supplementary Restraint Systems ("Air Bags") in Canada, 1990-1997*. Transport Canada Publication No. TP13187 E, Ottawa, Ontario, Canada, 1998.

Stewart, D.E., Arora, H.R. and Dalmotas, D.J., *Estimation Methodologies for Assessing Effectiveness of Seat Belt Restraint Systems and the National Occupant Restraint Program*, Publication TP13110 E/F, Transport Canada, Road Safety, Ottawa, Canada, 1997.

Dalmotas, D. J., Hurley, R. M and German, A., *Supplemental Restraint Systems: Friend or Foe to Belted Occupants*, 40th Annual Proceedings of the Association for the Advancement of Automotive Medicine, Vancouver, BC., October 7-9, 1996.

Dalmotas, D.J., Gibson, T and Withnall, C, *Side Impact Protection Opportunities*, Paper 96-S6-O-04, 15th International Technical Conference on the Enhanced Safety of Vehicles, Melbourne, Australia, May, 1996.

Dalmotas, D.J., Hurley, J., German, A. and Digges, K., *Air Bag Deployment Crashes in Canada*, 15th International Technical Conference on the Enhanced Safety of Vehicles, Melbourne, Australia, May, 1996.

German, A., Dalmotas, D. J., McClafferty, K. J. and Nowak, E. S., *Real-World Collision Experience for Airbag Technology*, Canadian Society for Mechanical Engineering Forum on the Theory of Machines and Mechanisms and Advances in Transportation Systems, May 7-9, 1996, Hamilton, Ontario.

Dalmotas, D.J., German, A. and Welbourne, E.R., *Directed Studies: A Focused Approach to Collision Investigation*, Canadian Police Research Centre, Ottawa, Ontario (HV 8079.55 D245) 1996.

Dalmotas, D.J., Hurley, R.M. and German, A. "Air Bag Deployments Involving Restrained Occupants," SAE Paper 950868, 1995 SAE International Congress and Exposition, Detroit, Michigan, USA, 1995.

Dalmotas, D.J., German, A., Hendrick, B. and Hurley, R., *Airbag Deployments: The Canadian Experience*, The Journal of Trauma: Injury, Infection and Critical Care, Vol. 38, No. 4; 1995.  
Pedder, J., Dalmotas, D, Gibson, T., and Gilbert, D., *The Development of a Protocol for Documenting Vehicular Sitting Posture of Car Occupants Involved in Rear-End Collisions*, 22<sup>nd</sup> Annual Workshop on Human Subjects for Biomechanical Research. Fort Lauderdale, Florida, October, 1994.

Dalmotas, D., Newman, J. and Gibson, T, *Prospects for the Further Improvement of Side Impact Protection Based on Crash Testing*. Paper 94-S6-O-04, 14th International Technical Conference on Enhanced Safety of Vehicles, Munich, 1994.

Newman, J.A., Dalmotas, D.J., *Atlanto-Occipital Fracture Dislocation in Lap-Belt Restrained Children.*, SAE Paper 933099, Child Occupant Protection Symposium, San Antonio, Texas, USA, 1993.

Weber, K., Dalmotas, D. and Hendrick, B., *Investigation of Dummy Response and Restraint Configuration Factors Associated with Upper Spinal Cord Injury in a Forward-Facing Child Restraint*, SAE Paper 933101, Child Occupant Protection Symposium, San Antonio, Texas, USA, 1993.

Dalmotas, D., German, A., Gorski, Z.M., Green, R.N., and Nowak, E.S., *Prospects for Improving Side Impact Protection Based on Canadian Field Accident Data and Crash Testing*, SAE Paper 910321, 1991 SAE International Congress and Exposition, Detroit, Michigan, USA, 1991.

Green, R.N., German, A., Nowak, E.S., Dalmotas, D.J. and Stewart, D.E., *Fatal Injuries to Restrained Passenger Car Occupants: Crash Modes and Kinematics of Injury*, 35th Annual Proceedings of the Association for the Advancement of Automotive Medicine, October, 1991.

Dalmotas, D.J. and Krzyzewski, J., *Restraint System Effectiveness as a Function of Seating Position*, SAE Paper 870489, 1987 SAE International Congress and Exposition, Detroit, Michigan, USA, 1987.

Lawson, J. and Dalmotas, D.J., *An Assessment of the Potential Cost - Effectiveness of a Regulation Requiring Three-Point Rear Seat Belts in Passenger Cars*, Transport Canada, 1985.

Dalmotas, D.J., *Injury Mechanisms to Occupants Restrained by Three-Point Seat Belts in Side Impacts*, SAE Paper 830462, 1983 SAE International Congress and Exposition, Detroit, Michigan, USA, 1983.

Dalmotas, D.J., *Mechanisms of Injury to Vehicle Occupants Restrained by Three-Point Seat Belt*, SAE Paper 801311, 24th STAPP Car Crash Conference, Troy, Michigan, October 15-17, 1980.