



## Accident Analysis - Forensic Movement Analysts – Australasia

### Specialists in Staircase and Railing Falls

Perform Enhance Pty Ltd, Post Office Box 7155, Upper Ferntree Gully, Victoria 3156, Australia  
Ph/Fax: +61 3 9754 6621  
+61 3 9561 2273  
Email: info@accidentanalysis.com.au. Web: www.accidentanalysis.biz  
Directors: Geoffrey Hosford, Don Meikle

### Professional Resume

#### **Name**

Geoffrey Thomas Hosford

#### **Present Position**

Director, Accident Analysis (Perform Enhance Pty Ltd), Forensic Movement Analysts.  
Director, BIPE Publications Pty Ltd, Book Publishers.

#### **Academic and Professional Qualifications**

Bachelor of Education/Physical Education, University of Western Australia  
Hons Diploma of Physical Education, Loughborough University, UK.

#### **Professional Experience**

Continuous lecturing in biomechanics and kinesiology over 31 years. Course delivery has involved both lecture, laboratory and guest presentations in physics, body mechanics and human movement.

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| 1972 – 1973 | Victorian Education Department, Physical Education Advisor.  |
| 1976 - 1996 | Deakin University, and antecedent institutions. Unit Chair and Lecturer in Biomechanics/Kinesiology, Faculty of Education, School of Exercise Science. |
| 1996 - 2007 | RMIT University, Unit Chair and Lecturer in Biomechanics, Faculty of Medical Sciences, School of Exercise Science.                                     |

#### **Industrial Experience**

1996 - on Director, Accident Analysis (Perform Enhance Pty Ltd). Forensic analysis of slips, trips and falls in personal injury litigation.

Theory and practice of biomechanics to human movement. Application of kinematic and kinetic principles of motion to the analysis, interpretation and explanation of scientific data relating to causation in all manner of industrial, domestic and recreational accidents.

Investigations have included the following processes;

- a) The reconstruction and simulation of the accident using elements such as stairs, railings and miscellaneous structures built to precise dimensions and textures.
- b) The observation and analysis of injuries in a laboratory environment. Replicated structures are used to observe strategies and postures employed by test subjects in lifting and repositioning objects, and displacement of body segments in slips, trips and falls.

- c) Tracking the dynamic relocation of the centre of mass of the multi-segmented human form using the Vicon Motion Analysis System. A determination of the actual rather than virtual location of the centre of mass and the construction of sequential stick figure animations demonstrating the centre of mass location and segment displacement over time, in relation to barriers such as balustrades.
- d) The quantification of force data in three planes of motion using in-ground and portable Kistler force plates and force transducers integrated within these structures. Digital force gauges and force dynamometers to measure forces in pulling/pushing actions such as in the movement of heavy equipment in an industrial environment.
- e) Comparative friction co-efficient testing in slip and trip scenarios using a dedicated slip-resistance cart and various prostheses.
- f) Film analysis of segment recruitment and movement patterns demonstrated in a reconstruction by test subjects to obtain kinematic data including centre of mass displacement, segment displacements, velocities and accelerations.
- g) Risk assessment and workplace safety investigations relative to structural geometry, surface textures and the human form.
- h) The production of bioanimations of the incident using film of the in-situ background and a humanoid figure superimposed against this background. The figure dressed appropriate to the scene, simulates a slip, trip or fall sequence to offer explanation as to the sequence of events that took place. Dissolve demonstrates the relevant biomechanical principles pertinent to the incident.

### **Consultancy**

Involvement in consultancies since 1973, extending from legal, corporate and sporting institutions to educational, community, rehabilitation and health promotion organisations.

### **Principal Legal Consultancies**

Investigations are conducted Australia-wide, examples of which are offered below.

#### *Balustrade/Railing*

BWS Hotels Pty Ltd - v - David Ey, *DLA Phillips Fox, Solicitors, Melbourne*  
 Cameron Toomey - v - Scholaro and Ors, *Rennick Briggs, Solicitors, Melbourne*  
 Clinton Michael Rae - v - Queensland Rail, *McNamara & Assoc, Solicitors, Ipswich*  
 W & S England - v - MW Spehr, *Norris Coates, Lawyers, Melbourne.*

#### *Staircase*

Haywood - v - Collaroy Services Beach Club, *TD Kelly & Co, Solicitors, Sydney*  
 Jane Hutch - v - Christopher Geoffrey Ryan, *Donna Percy & Co, Lawyers, Perth*  
 Inside Edge Pty Ltd - v - Glen James Williams, *Thomsons, Lawyers, Melbourne*  
 Molly Erica Hoffman Boland - v - Hannelore Hoffman, *Moray & Agnew, Solicitors, Sydney*  
 Yeo Moon Yoon - v - Karaoke Bar Epping, *T D Kelly and Co, Solicitors, Sydney.*

#### *Industrial*

Davida - v - Hardwicks Meatworks Pty Ltd, *Alessi & Kemp, Solicitors, Melbourne*  
 Melbourne Water Corporation - v - Tim Burgerov, *Allens Arthur Robinson, Lawyers, Melbourne*  
 Paul Herbert Fry - v - Alcoa Wagerup, *Clayton Utz, Lawyers, Perth*  
 Prolift Fleet Management Pty Ltd - v - John Wilson & VWA, *Norris Coates, Lawyers, Melbourne*  
 Stephen Maxwell - v - Effem Foods, *Capell Burke, Solicitors, Ballarat*  
 Victorian Work Cover - v - Peter McCallum Cancer Institute, *Wisewould Mahony, Lawyers, Melbourne.*

*Recreational*

Clarence City Council - v - Sarah Lindsay, *Hunt & Hunt, Lawyers, Hobart*  
Geoffrey Port - v - Vladimir Koubek, *Norris Coates, Lawyers, Melbourne*  
Kearvell - v - McKay, *Minter Ellison, Solicitors, Melbourne.*

*Sporting*

AFL & Ors - v - Shaun Rehn, *Ebsworth & Ebsworth, Lawyers, Melbourne*  
Maroondah City Council - v - Philip D'Paul, *Minter Ellison, Lawyers, Melbourne*  
Nadia Baloglou - v - J Bahuth, *Alessi & Kemp, Solicitors, Melbourne*  
Penelope Sue Higginson - v - Westbeach Trust, *Stringer Clark, Lawyers, Portland.*

**Professional Associations**

Australian Lawyers Alliance. Accident Analysis (Associate Member).

**Honours and Awards**

Irish International Mens Hockey  
Great Britain International Mens Hockey.

**Sporting Group Consultancies**

Australian Football League (AFL) Tribunal. Expert witness to the following AFL clubs: Collingwood, Carlton, Brisbane, Essendon, Adelaide, North Melbourne.

**Authorship**

Hosford G.T., Sports Biomechanics - A Handbook for Teachers and Coaches of Sport Skills, B.I.P.E. Publications, Melbourne, 2000.

Hosford G.T., Biomechanics - Task and Laboratory Manual, B.I.P.E. Publications, Melbourne, 2000.

Hosford G.T., Meikle D., The Science of Kicking – Kicking for Distance and Accuracy in Australian Football, B.I.P.E. Publications, Melbourne, 2007.

Hosford G.T., Learn to Punt Kick – 8 Steps to Kicking Excellence for Young Players, B.I.P.E. Publications, Melbourne, 2011.

Amezdroz G., Dickens S., Hosford G.T., Davis D., Queensland Senior Physical Education, Macmillan, Melbourne, 1999.