



Stephen Cash

IEng, AAE, MIMechE, MIMI, MITAI.

Principal Consultant

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Collision Investigation

I am an expert in the reconstruction of road traffic collisions, and the mechanical examination of all types of motor vehicles for all types of motoring matters. The scope of my work predominantly lays in the investigation of collisions whereby those involved have suffered either serious or fatal injuries.

I hold a BTEC Higher National Certificate in Mechanical Engineering. My work and accompanying research and development in the field of Collision Investigation has led to me obtaining Incorporated Engineer (*IEng*) status from the Engineering Council and attaining Membership of the Institution of Mechanical Engineers (*MIMechE*). I am a Member of the Institute of the Motor Industry (*MIMI*) with whom I am registered as an Advanced Automotive Engineer (*AAE*). I am also a Member of the Institute of Traffic Accident Investigators (*MITAI*).

My role as an expert requires that I remain impartial in any investigation. Any opinions that I draw surrounding the events in question will have been derived following a thorough analysis of the evidence available. Consequently, I will routinely call upon my skills and past practical knowledge as a Police Forensic Collision Investigator and in Engineering, along with the accompanying physical and mathematical principles. My reconstructions will, where possible, consider and account for all the physical evidence identified to establish the actions of those involved.

I am proficient in reviewing the work of others as well as conducting full investigations that may include collision scene examination, the identification and recovery of evidence, the examination of the vehicles involved and the production of a detailed analysis report.

As a trained Draughtsman I understand the benefit that high quality, detailed plans and illustrations bring to communicating any matter. In a world of 3-dimensional modelling it is often still the case that a 2-dimensional graphic can be far more manageable in a Court environment. Consequently, in many of my reconstructions I illustrate the key elements of the events and pride myself in the clarity in which this allows me to communicate my conclusions accordingly.

I am experienced and routinely accepted as an expert in the field of Collision Investigation in Criminal, Coroners and Civil courts.

Since entering in to the field of Collision Investigation in 2008 as a Police Forensic Collision Investigator, from a mechanical engineering background, I have been all but too aware of the detrimental effect that technological advances in vehicle design are having on methods routinely employed by Collision Investigators. Whilst research in the area of 'Human Factors' can often be relied upon irrespective of the date of publication, techniques developed following empirical studies of vehicle related elements will often only have a life of the type of vehicle concerned. It is this underlying ethic that motivates me in not just developing new techniques but developing techniques that can stand the test of time and be used effectively in Collision Reconstruction.

Specialities

In 2013 I led a research project to gain a better understanding of the dynamics of collisions where vehicles had experienced a loss of control at high speed, an area of collision investigation where current methods had produced many inconsistencies. The research culminated in a new method being derived that calculated the vehicles initial speed with a high degree of both accuracy and reliability.

Following its publication in 2014 the response from the international Collision Investigation community has been overwhelming as Collision Investigators across the country have begun using the technique developed. Furthermore, Collision Investigators across the globe have been able to validate the technique by comparison with live collision data more routinely available abroad.

In 2016 I co-authored '*Video Analysis in Collision Reconstruction*', a practical guide to assist Collision Investigators in this rapidly growing field of digital forensics. Elements of this work were presented to an international audience in 2017 which lead to its circulation internationally.

In 2017 I complete a period of research and published '*The Effects of Road Surface Technology on Vehicle Deceleration Calculations*', and continue to explore the developments of road surface technology on current Collision Investigation practises.

Qualifications

Higher Qualifications

BTEC Higher National Certificate in Mechanical Engineering – July 1996

Collision Investigation

Forensic Collision Investigation - *City and Guilds*

Vehicle Examination

Vehicle Examination and Investigation Programme - *Institute of the Motor Industry Accredited*

Tachograph

Drivers' Hours Recording Equipment - Examination and Calibration Techniques - *City and Guilds*

Professional Memberships

By both qualification and experience, I am an Incorporated Engineer (*IEng*) and a Member of the Institution of Mechanical Engineers (*MIMechE*). I am an Advanced Automotive Engineer (*AAE*) and a Member of the Institute of the Motor Industry (*MIMI*). I am also a Member of the Institute of Traffic Accident Investigators (*MITAI*),

Driving Licence

Full European A, B, C, C+E and D1

Institute of Advanced Motorists – Car and Motorcycle

Royal Society for the Prevention of Accidents - Motorcycle

Published Research

Research is a keen interest and I have published the following peer reviewed papers and books:

- *Calculating Vehicle Speed from Yaw Mark Analysis* – Proceedings of ITAI Conference 2014/EVU International Conference 2015
- *Video Analysis in Collision Reconstruction* – ISBN 978-1788089302
- *Positioning Techniques for CCTV Analysis* – Proceedings of ITAI Conference 2017
- *The Effects of Road Surface Technology on Vehicle Deceleration Calculations* – Proceedings of ITAI Conference 2017
- *Collision Investigation: CCTV Playback and validation using a lightboard* – 'Impact' Winter 2017