



## Mark James Crouch

*MSci. (Hons.), CPhys, ChFP (Collision), AAE, FInstP, FCSFS, FIMI, MITAI.*

### *Head of Investigations*

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## Collision Investigation

I am an expert in the reconstruction of road traffic collisions, including the mechanical examination of motor vehicles of all types. In this capacity I analyse the evidence surrounding road traffic collisions of a serious or fatal road nature and many other road traffic matters. I am experienced in the identification and capture of evidence from a scene as well as the study of evidence obtained by others. I have attended the scene of many hundred road traffic collisions and analysed an even higher number.

I hold a Master's Degree in Science in the field of Applied Physics (*MSci Hons.*), a Chartered Physicist (*CPhys*), a Chartered Forensic Practitioner (Collision), a Licentiate of the City and Guilds Institute (*LCGI*) and an Advanced Automotive Engineer (*AAE*). I hold a City and Guilds Certificate in Forensic Collision Investigation and I am a Fellow Member of the Institute of Physics (*FInstP*), a Fellow of the Chartered Society of Forensic Sciences (*FCSFS*). I am a Full Member of the Institute of Traffic Accident Investigators (*MITAI*), and a Fellow of the Institute of the Motor Industry (*FIMI*). I was a member of the Metropolitan Police Collision Investigation Unit, for 8 years prior to moving into private practice.

I am also the current External Examiner for De Montfort University overseeing the UCPD, Cert HE, FdSc and BSc courses in Collision Investigation.

I am required to draw on all available information and compile it in an impartial and thorough investigation of the events surrounding the collision. I have to call upon my skills in the area of Physics and Mathematics to reconstruct the collision and the actions of the parties involved on the approach to the collision.

Unlike many tasks, my work involves me working back from a set of known facts, to unlock the key elements that together explain the circumstances that caused the collision.

I conduct vehicle examinations on all types of vehicles involved in collisions to assess whether there were any pre-existing mechanical defects that could have caused or contributed to the collision. This includes proving or disproving any allegations made by the driver.

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

I pride myself on delivering a high-quality product and explaining even the most complex of findings in a straight forward way. Scientific integrity is key and I commit fully to investigating collisions in an impartial way.

## Specialities

In addition to expertise in all areas of Collision Investigation, I am currently undertaking research in the use of CCTV in Collision Reconstruction. I have developed new techniques for the positioning of objects in CCTV footage and the positioning of cameras mounted on moving vehicles. I can test CCTV footage

to establish the reliability of frame time stamps and calculate the speed of vehicles passing through a camera's field of vision. I also provide evidence in court relating to vehicle identification.

## Qualifications

### Degree

Master's Degree with Honours in Applied Physics – *University of London*.

### Collision Investigation

Forensic Collision Investigation - *City and Guilds*

### Vehicle Examination

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

Advanced Automotive Engineer (AAE) - *Institute of the Motor Industry*

Incident Data Recorder Analysis – *RSG and Continental*

### Tachograph

Drivers' Hours Recording Equipment - Examination and Calibration Techniques - (Levels 1, 2 and 3) - *City and Guilds* - *City and Guilds*

### CCTV

Optical and Electromagnetic Systems (including Image Recognition (*BSc Module*)) - *University of London*

Image Capture and Sensor Technology (*MSci Module*) - *University of London*

### Scene Surveying and Photography

Leica – Collision Scene Surveying, and 3-Dimensional Laser Scanning

Authorised Photographer - Road Traffic Collision Investigators Photography Course - *Skills Mark*

### Impairment Testing

National Drug Influence Recognition and Field Impairment Testing Course

### Professional Memberships

By both qualification and experience, I am a Chartered Physicist (*CPhys*) and am a Fellow of the Institute of Physics (*FIInstP*). I am a Licentiate of the City and Guilds Institute (*LGCI*). I am a Member of the Institute of Traffic Accident Investigators (*MITAI*), a Member of the Chartered Society of Forensic Sciences (*MCSFS*), a Fellow of the Institute of the Motor Industry (*FIMI*) and an Advanced Automotive Engineer (*AAE*). I am also Member of the Institute of Advanced Motorists.

I am 1st Tier Expert for the Association of Personal Injury Lawyers and am a fully vetted expert for the UK Register of Expert Witnesses.

### Driving Licence

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

Institute of Advanced Motorists - Car

Police Pursuit Trained Driver

## Published Research

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

- *Video Analysis in Collision Reconstruction* – ISBN 978-1788089302
- *Maximum Attainable Braking from a Pedal Cycle* – 'Impact' Summer 2012
- *Calculating Vehicle Speed from Yaw Mark Analysis* – Proceedings of ITAI Conference 2014/EVU International Conference 2015
- *Quantifying the Uncertainty in Skid to Stop Calculations* – 'Impact' Summer 2014
- *Use of the CCTV Frame Interval Timer (Lightboard)* – Proceedings of ITAI Conference 2017
- *Positioning Techniques for CCTV Analysis* – Proceedings of ITAI Conference 2017
- *Collision Investigation: CCTV Playback and validation using a lightboard* – 'Impact' Winter 2017

