

# CURRICULUM VITAE



Richard Ellwood BEng(Hons) EngD CEng MIET

## INTRODUCTION

Dr Richard Ellwood is a Principle Consultant with GBB. He has a degree in automotive engineering, an engineering doctorate, and is a Chartered Engineer. Dr Ellwood's expertise includes all aspects of collision investigation and reconstruction. He specialises in cases involving: engineering failures, motorcycles (including helmet examination), pedestrians, occupant biomechanics, night-time incidents, and CCTV analysis.

## CASEWORK OVERVIEW

- Over 20 years professional experience
- Extensive court experience (Magistrates, Civil, Crown and Coroner's courts in the UK and the Circuit Court in the Republic of Ireland).
- Advanced car driver and advanced motorcyclist
- Motorcycle and bicycle helmet examinations
- Pedestrians (night-time incidents), cyclists, motorcycles, passenger cars, HGVs, CCTV
- Laser scanning, 3D modelling and computer simulation
- Component Failure Analysis.

## ACADEMIC CREDENTIALS AND PROFESSIONAL AFFILIATIONS

Qualification	Location	Date
Chartered Engineer	Institute of Engineering and Technology	(2015 -)
Engineering Doctorate	University of Wales, Swansea	(1998 - 2002)
BEng (Hons) - Integrated Engineering with Automotive Studies	Sheffield Hallam University	(1995 - 1998)
HND - Automotive Engineering	Bolton Institute of Higher Education	(1993 - 1995)

## SPECIALISED QUALIFICATIONS

Qualification	Location	Date
Calculation of Speed from CCTV	Hague Forensic	2017
Forensic Collision Investigation for Police Part 1- City & Guilds	AiTS	2011
UCPD - Forensic Collision Investigation	De Montfort University / AiTS	(2011 - 2012)
Forensic Examination of Vehicle Lamps	Sheffield Hallam University	2011
Police Vehicle Examination and Prohibition (PG9)	Avon and Somerset Police	2009

## PROFESSIONAL PROFILE

Dr Richard Ellwood is a Chartered Engineer with a Doctorate, Honours Degree and an HND in Automotive Engineering and related subjects.

He has successfully completed examinations in two collision investigation courses: Part 1 of the City and Guilds Forensic Collision Investigation for Police, and the De Montfort UCPD in Forensic Collision Investigation.

Dr Ellwood has given evidence at Magistrates, Civil, Crown and Coroner's courts in the UK and the Circuit Court in the Republic of Ireland.

Working as a Forensic Collision Investigator with GBB (UK) Ltd, Dr Ellwood has obtained extensive experience in the investigation and reconstruction of serious collisions involving cars, motorcycles, bicycles, goods vehicles and pedestrians.

The reconstructions undertaken have involved examining witness and CCTV evidence, obtaining and using scene survey data (including laser scan data), reconstructing the collision at the scene, night time visibility assessments, computer simulations / modelling, airbag deployment testing and occupant biomechanics, and applying physics and research based literature.

Dr Ellwood has examined several hundred vehicles to determine their mechanical condition and to consider damage consistency, collision magnitude and occupant movement. He has considered defects and determined their likely contribution to the collision. He has also examined numerous motorcycle helmets to determine the impact magnitude and direction, why a helmet was ejected during a collision and whether there were any defects.

Dr Ellwood has also conducted numerous failure analysis investigations into failed components and systems on a range of vehicles and agricultural / plant equipment to identify the failure mode, the root cause of the failure and where relevant making recommendations to prevent or mitigate future failures.

Dr Ellwood spent five years in the Gwent Police Roads Policing Unit as a qualified Traffic Patrol Officer. He also has experience in the role of a Temporary Sergeant. As a Traffic Officer he was an advanced car driver, an advanced motorcyclist and was an authorised pursuit driver having been trained in Tactical Pursuit and Containment (TPAC).

During this time with the police, he gained an excellent practical understanding of vehicle handling and dynamics to supplement his academic background. He also attended, investigated and reconstructed numerous road traffic collisions ranging from non-injury minor collisions through to those with fatalities.

Whilst working as a Reliability Engineer for Corus Strip Products he was instrumental in the introduction of Reliability Centred Maintenance (RCM) to the Port Talbot steelworks. He managed and coordinated projects applying RCM in order to optimise plant availability, reduce maintenance costs and identify key areas where capital investment would be most cost-effective with several notable successes.

Whilst working in the research laboratories of British Steel / Corus, Dr Ellwood investigated the automotive applications of steel, evaluating and optimising component design and manufacturing procedures with respect to their welding, fatigue, forming, impact and crush characteristics.

Dr Ellwood's research led him to publish and present three technical papers on the subjects of simulation testing, modelling and the design of suspension components using high strength steels and advanced manufacturing techniques.

## PUBLICATIONS

Details	Date
Ellwood R, Fourlaris G, Jones T “ <i>Reliability of Test results from simple test samples in predicting the fatigue performance of components.</i> ” Materials and Design Vol. 23 (4) 118-1210, 2007	2007
Ellwood R, Fourlaris G, Jones T, “ <i>Evaluating the fatigue performance of a down gauged high strength steel suspension arm.</i> ” Materials Science and Technology, Vol. 19, 1017-1024 (2003)	2003
Ellwood R, Lewis C, “ <i>Maximising the Fatigue Durability of Down-Gauged High Strength Steel Structures.</i> ” Proceedings of the First International Conference on Component Optimisation, IRC, University of Wales, Swansea, UK, 29 March - 1 April 1999. Editors: W.J. Evans, R.W. Evans and M.R. Bache.	29 March - 1 April 1999

## EXPERIENCE AND EMPLOYMENT

Position	Location	Date
Principle Consultant	GBB (UK) Limited	2013 to Present
PC / TPS Response / Roads Policing	Gwent Police	2005 to 2013
Reliability Engineer	Corus Strip Products, Port Talbot	2002 to 2005
Research Engineer	Corus Strip Products, Port Talbot	1998 to 2002

## CURRENT RESEARCH

Dr Ellwood’s current research projects include motorcycle helmet damage and usage, night-time pedestrian conspicuity, airbag testing at MIRA, and CCTV analysis of pedestrian collisions.