

## Using Forensic Science Effectively

For many years the use of forensic science has often appeared to be a resource to be used almost exclusively in criminal investigations. Its use in civil cases has often been criticised for being too expensive, unfocussed and uninformative - taking too long to produce a very detailed report which tells you something in forty pages what it could have done in four.

At First Forensic, we have extensive experience in a wide range of forensic techniques which can be applied to help out with little bits of the puzzle. Typical cases which we can assist in, and by no means an exhaustive list, are:

- Personal Injury
- Establishing Liabilities
- Road Traffic Incidents
- Fraudulent/counterfeit goods
- Product Contamination

The rise in “cash for crash” (or is it “crash for cash”?) cases has rekindled interest in what can scientifically be done to confirm or refute a set of circumstances. Forensic scientists can microscopically examine small smears of paint for the presence of other minute flakes, the size of a pinhead, revealing the topcoat and base layers of a particular vehicle.

Impact damage can be assessed in terms of its shape, size and position between the vehicles. A simple physical fit between a broken wing mirror and pieces left behind after an accident can provide rapid, irrefutable evidence of contact. We can analyse suitable samples with a vast array of instruments; Fourier Transform Infra Red (FTIR), Raman and Gas Chromatography Mass Spectrometry (GCMS) to name just a few of the simpler ones.

At the other end of the spectrum, in the world of fine arts; paints, resins and filler can be analysed to assist in determining authenticity. Would John Constable for example, have really used an organic pigment not synthesised until the late 19<sup>th</sup> Century when painting the previously undiscovered “*The Hay Wain 2*”?!

On the subject of authenticity, we can apply many forensic techniques to counterfeit goods. During any manufacturing process small features can be transferred from rollers, cutters and moulds to the finished product. These features can be uniquely associated to a process from a particular manufacturer, down to the factory level. Goods (footwear, clothing, jewellery etc) which show

microscopic manufacturing detail different to the legitimate manufacturer could not, therefore, have been made by them and must be counterfeit.

A problem that several manufacturers also have is contamination of their products; either deliberately or accidentally. Some quick relatively straightforward examinations, for example a microscopic examination and some simple chemical tests can help to distinguish these and may help to identify the source of the contamination.

The investigation of fires can be problematic. It is inevitable that budget cuts to the police service and fire brigade and the reshaping of the forensic marketplace by the closure of the Forensic Science Service (FSS) will have an impact. Priorities will change but the problems still remain. All too often fires slip between different agencies e.g. Police, Fire Brigade, Insurers and HSE. A robust examination by a forensic scientist who is a highly skilled fire investigator can, however, quickly and cost-effectively identify the origin and cause of the majority of fires.

It can shed light on the activities of the occupants – what appliances were left switched on, what doors were open or closed? Does their account tally with the remaining physical evidence? Could witnesses actually have seen something or are they making something up based on TV and films? There are still a remarkable number of people who will say they accidentally ignited some petrol when they dropped their cigarette. This is a TV/film myth which has been repeatedly “busted”. A focussed examination can highlight the potential of the fire to have spread, any defects, liabilities and responsibilities. This is of particular use in insurance work, for example, establishing that an electrical appliance is defective may invalidate the insurance claim, and the manufacturer of the appliance may be liable.

Forensic experts at First Forensic carry out all examinations within agreed timescales and provide written quotes for each case prior to commencement, which are never exceeded without written authorisation from the client. The client, therefore, has full control over the cost of the examination.

Andrew Wade BSc MSc FFSSoc. MAE (admin@firstforensic.co.uk) has been a practising forensic scientist for 32 years. A specialist in forensic chemistry he has examined over a thousand fire scenes and many thousands of cases with other evidence types. He is a founder and co-director of First Forensic Limited, a quality driven independent forensic science consultancy run by a dynamic team of experienced forensic scientists with backgrounds in police, government and private forensic laboratories. First Forensic provide a wide range of expertise for police, lawyers, insurers, corporate and private clients.