

The Fingerprint Society



Increasing detections by advanced recovery of marks and trace evidence.

On Wednesday 26th November 2008 one hundred and twenty participants from twenty seven forces; NPIA, SOCA, HOSDB, the Universities of Derby, Nottingham Trent and Wolverhampton arrived at Derbyshire Constabulary Headquarters on a chilly but dry autumn morning to join in the second one day seminar of *The Fingerprint Society*.

This event marked a unique turning point for *The Fingerprint Society* who worked in partnership with the NPIA (*National Police Improvement Agency*) to bring together the first seminar / workshop to introduce CPD (*Continued Professional Development*) to the police service.

The original concept for the seminar was borne from a desire to return to the Society's original objective to provide educational meetings which provide good quality value for money conferences/seminars that are focussed to police service requirements, but ultimately to educate and inform members and delegates, who after attending can then return to their organisation and add value with their additional knowledge.

This is at a time when many of us observe an increasing number of 'forensic' related conferences that are disproportional in cost with many having no real focus. In the current financial climate Forces must channel their funding to wards areas linked to the strategic aims and objectives of the force. The Education Sub Group of the Society agreed that the focus of this and all future events would be to keep costs to a minimum, sourcing affordable venues and attracting sponsorship to achieve this goal. The subject matter also needs to be focussed, relevant and of interest to Fingerprint Experts, CSIs, Scientific Support Laboratory Officers, Forensic Imaging Officers, other Identification Specialists and all other staff working within the Scientific Support departments.

The Fingerprint Society is extremely grateful to the generous support from our sponsors who were, in no particular order, Foster & Freeman, Köttermann, Quorum Technologies, WA Products, Lot Oriel Group Europe.

Special thanks must also go to Sainsbury's who provided the food for the day from the early morning tea, coffee and biscuits, mid morning Danish pastries to the lunchtime platters which were both extremely well presented and plentiful and described by many delegates as "scrummy".

The day would also not have been possible without the assistance of Derbyshire Constabulary who provided, free of charge; the venue, all the printing and design, the use of their Votech system (www.votechltd.co.uk) and IT support for the day.

The event was opened by ACC Dee Collins from Derbyshire Constabulary who welcomed all the delegates to Derbyshire. Then in order to demonstrate learning during the seminar all the delegates were tested using the Votech remote control handset just like on "*Who wants to be a millionaire*".

To test the system and to give the delegates an idea as to how the handsets worked, Luke McGarr introduced a fun quiz. A number of questions were asked for example "*what does the phrase Quae rite et Invenietis mean?*" This was followed by the option of four answers indicated A, B, C and D. The delegates then selected A, B, C or D on their handsets to indicate their chosen answer. In this case the most popular answer by 86% was C: "*quality and innovation*".

The aggregate answers are then projected onto the screen with the percentage result for all to see. The advantages of this system allow the conveners to instantly gauge the response from the audience. In the case of the wrong answer as above the presenter can then educate and inform those who got it wrong with what the correct answer is in this case "*seek and ye shall find*".

Using this system the delegates knowledge was tested before, and then after each presentation to demonstrate an increase in knowledge throughout the day.

The President of the Fingerprint Society, Viv Galloway, then introduced each of the following speakers:

Mark Burgess a student from the University of Derby, presented his final year dissertation research which looked at sputter coating as a cheap viable alternative to Metal Deposition. Sputter Coating is a technique conventionally used to coat samples using carbon and gold deposits prior to scanning with an Electron Microscope. It is widely accepted that Vacuum Metal Deposition (VMD) is an extremely sensitive process however it is very expensive to purchase and maintain. Mark's presentation illustrated examples of some very good quality marks that were obtained by using a sputter coater which also deposits thin layers of metal onto the surface to develop latent marks. Mark then went on to demonstrate that sputter coating developed excellent quality marks comparable with VMD produced on the same items and under the same conditions as VMD.

Paul Roberts, the Forensic Operational Services Manager from Gwent Police gave a very interesting case history using the *GL Scan "in anger for the first time"*. On the 20th November 2006, a male was taken into the Royal Gwent Hospital with serious head injuries and left for dead. Although the CCTV showed the victim being carried into the hospital the identification of the people, Vietnamese nationals, were unknown. The subsequent enquiry became Gwent's largest ever Murder investigation with over 100 individual scenes. One scene in particular was a walk in disused freezer which proved extremely difficult and time consuming for the recovery of marks. One mark was recovered using conventional methods but took several days to find. By subsequently using the GL Scan many additional marks were found in a fraction of the time.

Nick Marsh, a Consultant Forensic Practitioner at the Metropolitan Police gave a very interesting and informative presentation on the role of the Metropolitan Police Evidence Recovery Unit with a particular emphasis on specialist lighting. Nick highlighted that the recovery of marks from motor vehicles can be increased by approximately 9% by the use of specialist lighting. Nick emphasised how important it is to use 'real' UV light. Even though a number of manufacturers purport that their light is pure UV, Nick has determined that this is not the case. If operators are to be effective in looking for, and enhancing non-visible trace evidence, including marks, then the optimum wavelength emission should not be less than 400 nanometres (*nm*). In addition, by using a single wavelength laser e.g. Yag Laser, Nick explained that more power is generated thus enabling more marks to be found.

Nick also advocated the use of a simple, cheap specular light called a light ball which he showed could greatly improve the quality of visible marks during imaging. The combination of a pure white

light (*lightball*), <400nm UV, 532nm green light, 577nm yellow light in four separate examinations can result in the maximum recovery / photography of latent marks.

Nick concluded his presentation on the application of liquid latex and how this can be used to remove soot whilst preserving latent fingerprints underneath.

Judith Kirby, a Fingerprint Instructor at NPIA Harperley Hall, outlined the NPIA vision of how Continuous Professional Development (*CPD*) will be linked to core competencies of the National Occupancy Standards and how this will be linked into Scientific Support learning programmes through the internal Performance Development Review (*PDR*) framework. Underpinning this will be the gathering of evidence to support the core skills of individual roles which will account for 100 working hours of CPD over a 4 year period. In addition a further 20 hours CPD will need to be gained by attending seminars, conferences etc again over a 4 year period.

After a hearty lunch delegates were split into 6 workshop groups. One of the workshops was facilitated by **Liane Marsh**, an Identification Officer, from Derbyshire Constabulary who provided an overview of the the Derbyshire Constabulary Glove Mark Identification and Linking system. After receiving the basic information delegates then tried their hand at identifying some glove marks themselves!!

Research has found that 10% of offenders are responsible of all crime. These 'prolific and other priority' offenders are generally forensically aware and try to avoid leaving evidence, primarily fingerprints by covering their hands in some way. The Derbyshire Constabulary coding system allows glove and fabric marks from crime scenes to be compared and linked to glove and fabric marks from other crime scenes. Also glove & fabric scene marks are compared to gloves and fabric seized from offenders to provide evidence linking glove and fabrics to the crime scene assisting in the reduction prevention and detection of crime.

To complement three of the morning session presentations follow up workshops on Sputter Coating (Quorum Technologies), GL Scan (WA Products) and specialist light sources and camera equipment (Lot Oriel) were run. These were supported and had input from the respective sponsors working alongside the presenters. In addition each workshop group were given time to attend the University Research Poster sessions (which included the subject areas; restoration of serial numbers, optimising small particle reagent, electronic signatures, visualising tattoos, bone

discolouration, ear marks) and also input from the two remaining sponsors (Foster & Freeman and Kotterman) .

The day concluded with a summary and thank you's from the President after which all delegates were asked to complete feedback sheets. 90% of the feedback sheets were returned and showed that the seminar was an overwhelming success as follow;

Feedback	Percentage Scoring 7 or above (range 1 to 10)
Overall impact of event	96%
Sputter Coating	81%
GL Scan	92%
Specialist Lighting	93%
Demonstrations / Workshops	89%
Sponsors	79%
Facilitators	92%
Catering	97%
Value for Money	83%
Push Button Voting	85%

Organisation of the next Seminar has now begun and we hope to see everyone there in May/June. More details will be made available nearer the time.

Nick Mitchell & Karen Stow