

Fingerprint and Footwear Forensics

November 2007 Publication No.55/07

MAXIMISING FINGERPRINT AND FORENSIC EVIDENCE

Help is available from HOSDB and your force laboratory

Contact us at

Home Office Scientific Development Branch,
Sandridge, St Albans AL4 9HQ

Direct telephone enquiries to: 01727 816400

Visit our Website and access our publications via
<http://science/homeoffice.gov.uk/hosdb>

INFORMATION HELD BY FORCE LABORATORY STAFF

Although our publications are circulated to all scientific support departments, we have closest contact with force fingerprint laboratory personnel. They should be consulted as part of the forensic strategy for scene examination. They hold a comprehensive knowledge of fingerprint development techniques and can advise or treat scenes with the safest and most effective recovery techniques. This is especially pertinent if other forensic evidence, and DNA in particular, needs to be recovered from the scene.



The Home Office Scientific Development Branch provides advice and operational support for the Home Office on any issues relating to science and technology, creating new solutions where none exists. HOSDB helps the Home Office meet its strategic objectives in policing, crime reduction, counter terrorism, immigration and offender management. Our purpose is to INNOVATE, ADVISE and SUPPORT.

Fingerprint and Footwear Forensics



The Home Office has supported research into fingerprint development techniques for over thirty years and the current team at HOSDB continues to provide innovative solutions for fingerprint and footwear mark recovery techniques for use in the laboratory or at scenes of crime.

We advise UK police forces on the use of safe, effective techniques via our publications, the Manual of Fingerprint Development Techniques, Fingerprint Development Handbook and a range of regular and technique-specific newsletters.

We support force laboratory and scenes of crime staff by answering a large number of enquiries every year and providing equipment loans.



Recent Project Activity

FINGERPRINTS AND DNA

In 2003, a joint FSS/HOSDB study evaluated the effect of HOSDB-recommended fingerprint development techniques on DNA recovery from latent prints. Subsequent advice has been published in full in the Manual of Fingerprint Development Techniques and the Fingerprint Development Handbook.

Key points to highlight are:

- When used individually, the standard recommended chemical or physical methods of latent fingerprint development have relatively little effect on the recovery of DNA profiles.
- If both fingerprint and DNA evidence is required, swab for DNA as soon as possible after physical or chemical treatment for fingerprints. Valuable fingerprint evidence may be lost if DNA swabbing is carried out first.
- The use of a number of sequential techniques is likely to reduce DNA recovery and increase the potential for DNA cross-contamination.



Swabbing before using a fingerprint development technique has the potential to wipe away potentially case-solving fingerprint detail.

Case Study

A forensic services supplier randomly took eighty swabs from a series of exhibits and obtained no DNA profiles. Subsequent examination with a laser identified four places which appeared to have been touched. While there was insufficient detail for



fingerprint comparison purposes these areas were swabbed for DNA and two profiles were obtained. This approach had a dramatic effect on the investigation and reduced costs dramatically.



Superglue and basic yellow dying of drugs packaging allows initial fingerprint development and subsequent DNA profiling.



RETRIEVAL OF FINGERPRINTS FROM ARSON SCENES

We have collaborated with Gardiner Associates and the University of

Strathclyde in a number of studies relating to the retrieval of fingerprints and DNA from arson scenes. Good practice guidance has been given in an HOSDB publication (Publication No. 26/06, April 2006), which includes:

- Where to look for evidence
- Techniques for soot removal
- Practical advice charts
- Suitable fingerprint techniques
- Techniques not recommended
- Notes on surfaces

SCENE CLEAN-UP

In conversation with some forces, it appears that forensic strategy meetings do not always include adequate debate about the use of chemical treatments or responsibility for subsequent clean-up of the scene. Laboratory staff can help but are not always consulted. Targeted application of chemicals can minimise the risks associated with their use and make clean-up less challenging, without compromising evidence. The provider of the service is legally bound to ensure safe use of chemicals and adequate provision for restoration of the property for safe habitation after treatment. We are aware of situations where responsibility for clean-up has remained unresolved because no early decision was made. The CSI Board and the NFB Laboratories' Group are taking this issue forward.

