

## **MARKS AND TRACE EVIDENCE - CAN IT BE RELIED ON? SHOULD IT BE CHALLENGED?**

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- 1.1 In many cases we review, the prosecution will have only undertaken enough forensic work to support a charge or to secure a guilty plea. It is possible that further work may be critical to your client's case but that this work has not been done by the prosecution.
- 1.2 What is typically called forensic chemistry is related to the recovery and comparison of marks and trace evidence.
- 1.3 Marks evidence includes footwear marks and tool marks. Trace evidence includes glass, paint and other particulates.
- 1.4 These types of evidence can be encountered in a variety of cases including criminal damage, burglary, assaults and murders.
- 1.5 There are a variety of different issues which must be considered when testing the reliability of these evidence types including:
  - (a) Continuity
  - (b) Contamination
  - (c) Were the correct procedures followed?
  - (d) Was the correct method of analysis used?
  - (e) Have the findings been overrated on the evidential conclusion scale?
  - (f) Has the information regarding the circumstances surrounding the incident changed, such that the evidence should be re-assessed?
  - (g) Does the defendant have an explanation that needs to be tested against the evidence for plausibility?

## **2 TRACE EVIDENCE SHOULD ALMOST ALWAYS BE REASSESSED.**

- 2.1 Trace evidence by its very nature is very susceptible to contamination issues. If the possibility of contamination of trace evidence is not properly addressed by the defence, it could adversely affect the outcome of your client's trial.
- 2.2 We can assess the collection, packaging, storage and handling of items, to assess whether or not contamination may have occurred. This applies to both a person's clothing and any samples recovered for comparison, such as a sample of broken glass.
- 2.3 Even contamination between the pockets of a garment and the surface of the garment may significantly alter the strength of the evidence.
- 2.4 Such contamination may occur where the pockets of an item of clothing are searched during a routine police search of a detained person.
- 2.5 The presence of material recovered from the surface of a garment is regarded as highly significant by a forensic scientist; as debris on the surface of a garment would normally be lost in a relatively short period of time. Whereas debris recovered from a pocket is not as significant; as it is not possible to say with any certainty how long debris may remain in a pocket.
- 2.6 We can also re-assess the prosecution's evidence with regards to the scientific findings, determine whether the materials found are in fact similar and can assess the evidential significance of any similarities.
- 2.7 The significance of any findings must also be assessed by considering all of the known circumstances surrounding the case and any account provided by your client.

## **3 FOOTWEAR EVIDENCE AND THE EVIDENTIAL SCALE**

- 3.1 Following the R v T ruling in October 2010 (EWCA Crim 2439 [2012]) many examiners now state that their interpretation is based on their own experience.

- 3.2 However, some examiners may have very little experience although, this may not be apparent from the reports that they produce. They may not have the necessary experience to fully explain the results or to justify their conclusions
- 3.3 We can re-examine the evidence and scientific findings and re-assess whether a shoe matches a recovered mark or not. This can be done by assessing the following:
- (a) Pattern
  - (b) Size
  - (c) Degree of wear
  - (d) Random damage on the under surface sole unit
- 3.4 Random damage features can provide a unique link between a particular shoe and a recovered mark. However, care must be taken not to overstate the significance of any apparent damage, where the recovered marks are of a poor quality.

#### **4 FIND THE RIGHT FORENSIC EXPERT**

- 4.1 [Steven Lomas C.Chem MRSC MFSSoc - Forensic Chemist](#)
- 4.2 [Dr Iain Littley - Forensic Chemist](#)
- 4.3 [Dr Sarah Jacob - Forensic Chemist](#)
- 4.4 [Philip Boyce BSc. MSc - Firearms and Toolmarks Expert](#)