**English**

**Responsible Departments for Crime Scene Investigation in the UK**

**In the UK, crime scene investigation and forensic science are managed by a combination of law enforcement agencies, regulatory bodies, and forensic service providers. The key entities include:**

1. **Police Forces:**
    - **Each of the 43 police forces in England and Wales, as well as Police Scotland and the Police Service of Northern Ireland (PSNI), has dedicated Crime Scene Investigation (CSI) units. For example, the Metropolitan Police and Thames Valley Police have specialized forensic departments responsible for evidence collection at crime scenes.**
    - **CSIs (Crime Scene Investigators) attend scenes, collect evidence (e.g., fingerprints, DNA, footwear marks), and document scenes using photography and other imaging techniques.**
2. **Home Office:**
    - **The Home Office oversees forensic science policy and funding, including the National DNA Database (NDNAD) and the National Fingerprint Database (IDENT1). It supports forensic services through initiatives like the Forensic Information Databases (FIND) Strategy Board.**
3. **Forensic Science Regulator (FSR):**
    - **The Forensic Science Regulator, established under the *Forensic Science Regulator Act 2021*, ensures forensic science activities meet quality standards. The FSR publishes the *Code of Practice* (2023), which outlines requirements for evidence collection, analysis, and court presentation.**
4. **National Police Chiefs' Council (NPCC):**
    - **The NPCC coordinates forensic strategies across UK police forces, including the *Digital Forensic Science Strategy* (2020), which covers digital evidence and imaging.**
5. **Forensic Service Providers:**
    - **Private companies (e.g., Cellmark Forensic Services, Eurofins Forensic Services) and in-house police laboratories (e.g., Fingerprint Enhancement Laboratories) conduct specialized analysis of DNA, fingerprints, and trace evidence.**

- **Forensic units must be accredited by the United Kingdom Accreditation Service (UKAS) to meet standards like ISO/IEC 17025 for laboratory work or ISO/IEC 17020 for scene examination.**

6. **Crown Prosecution Service (CPS):**
    - **The CPS evaluates forensic evidence for court admissibility, ensuring compliance with legal standards and the FSR Code.**

**Forensic Standards for Evidence Collection**

**The collection of fingerprints, palm prints, footwear marks, trace evidence, and DNA follows strict protocols to ensure reliability and admissibility in court. Key standards include:**

1. **Forensic Science Regulator Code of Practice (2023):**
    - **The FSR Code applies to forensic science activities (FSAs) related to crime investigation and evidence presentation in England and Wales. It mandates quality management systems, contamination prevention, and chain of custody.**
    - **Forensic units must implement effective quality controls, and external providers (e.g., for DNA analysis) must also comply with the Code.**
2. **Chain of Custody:**
    - **Evidence must be identified, collected, packaged, secured, and maintained with a documented chain of custody to prevent contamination or tampering. For example, each piece of evidence is labeled with case details, collector's initials, date, and time.**
3. **Fingerprints and Palm Prints:**
    - **Fingerprints and palm prints are collected using methods like powder dusting, chemical treatments (e.g., ninhydrin), or alternate light sources. The *Home Office Fingerprint Visualisation Manual* (2014) provides detailed procedures.**
    - **Latent prints are analyzed and compared against the National Fingerprint Database (IDENT1), which holds 1,969,492 unidentified crime scene marks as of March 2023.**

- **The *Next Generation Identification (NGI)* system, an upgrade to the FBI's AFIS, is referenced for its integration of palm prints and advanced biometric techniques, influencing UK practices.**

4. **Footwear Marks:**
    - **Footwear marks are recovered using electrostatic dustprint lifters or photography with scales. They are compared against databases like the National Footwear Database, which contains over 40,000 shoe patterns.**
    - **Marks are analyzed for sole patterns, size, and wear to link suspects to scenes or identify additional offenses.**
5. **Trace Evidence:**
    - **Trace evidence (e.g., fibers, hair, glass) is collected using adhesive tape, vacuum devices, or tweezers and analyzed via microscopy or spectroscopy.**
    - **Standards emphasize avoiding contamination, such as using clean tools and wearing protective garments (gloves, lab coats).**
6. **DNA Evidence:**
    - **DNA samples (e.g., blood, saliva) are collected using sterile swabs or gauze, air-dried, and stored in paper containers to prevent degradation. Buccal swabs or blood samples from victims and suspects are required for comparison.**
    - **The National DNA Database (NDNAD) facilitates routine searches, with a 64% match rate for crime scene profiles in 2022/23.**

- **Contamination prevention is critical, with guidelines recommending sequential examinations (e.g., collecting DNA before fingerprint powdering).**

7. **College of Policing Guidelines:**
    - **The College of Policing's *Authorised Professional Practice (APP)* outlines procedures for physical evidence collection, emphasizing photography, forensic strategy, and contamination control.**

    - **CSIs must conduct a primary survey to prioritize evidence collection, documenting conditions like lighting and furniture positions.**

**Standards for Imaging Devices**

**Imaging devices, such as cameras and 3D scanners, are essential for documenting crime scenes. Standards include:**

1. **Photography:**
    - **Crime scene photography includes general, scaled, and contextual views to illustrate the scene for court. Scaled photographs capture fingerprints, footwear marks, or tool marks, while contextual photos show evidence orientation.**

    - **High-resolution cameras, alternate light sources (e.g., UV), and evidence scales are used. Images are stored securely to preserve metadata for court admissibility.**

2. **3D Imaging:**
    - **3D laser scanners (e.g., FARO Focus) create detailed digital models for measurements, bullet trajectory analysis, and bloodstain pattern analysis. These are increasingly adopted for complex scenes.**

    - **Photogrammetry is used to generate 3D coordinates from multiple images, enhancing scene reconstruction.**

3. **Contamination and Quality Control:**
    - **Equipment reused across scenes (e.g., cameras, brushes) must be cleaned to forensic DNA grade to prevent cross-contamination. Cleaning logs ensure traceability.**
    - **Sequential examinations minimize contamination risks (e.g., DNA collection before fingerprint processing).**

**Court Admissibility**

- **Forensic evidence must comply with legal standards under the *Police and Criminal Evidence Act 1984 (PACE)* and the FSR Code to be admissible. Compliance with the FSR Code is a mark of reliability, though non-compliant evidence may still be considered on a case-by-case basis.**
- **Courts assess the weight and reliability of evidence, particularly if it deviates from FSR standards. Prosecutors are guided to evaluate forensic evidence for reliability rather than automatically rejecting non-compliant evidence.**
- **Mishandling (e.g., contamination, improper storage) can lead to evidence being deemed inadmissible, as seen in cases like the OJ Simpson trial, where tampering allegations undermined credibility.**

**Why Are Standards Necessary?**

- **Court Admissibility: Strict protocols ensure evidence is reliable and admissible, preventing challenges to its integrity.**
- **Accuracy and Reliability: Standards minimize contamination and errors, ensuring scientific validity.**
- **Chain of Custody: Documentation prevents tampering and maintains evidence traceability.**

- **Public Trust and Justice: Proper standards reduce risks of wrongful convictions, as seen in cases like the David Camm case, where mishandled evidence led to overturned convictions.**

**Conclusion**

**In the UK, crime scene investigation is managed by police forces, overseen by the Home Office and Forensic Science Regulator, with standards set by the FSR Code and College of Policing. Evidence collection for fingerprints, palm prints, footwear marks, trace evidence, and DNA follows rigorous protocols to ensure accuracy and court admissibility. Imaging devices, including cameras and 3D scanners, are governed by standards to produce reliable documentation. These norms safeguard the integrity of the criminal justice system, ensuring fair and accurate investigations.**

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**英国犯罪现场调查规范概要**

**负责部门**

- **警察部队**：43 个英格兰和威尔士警察部队、苏格兰警察局、北爱尔兰警察局设有 CSI 单位，负责现场证据收集。
- **内政部**：管理取证政策、NDNAD 和 IDENT1 数据库，资助 FIND 战略委员会。
- **取证科学监管机构（FSR）**：依据《2021 年取证科学监管法》和《2023 年行为准则》确保质量标准。
- **全国警察局长理事会（NPCC）**：协调取证策略，发布《数字取证科学策略》（2020）。
- **取证服务提供商**：私人公司和警察实验室进行 DNA、指纹等分析，需 UKAS 认证。
- **皇家检察署（CPS）**：评估证据法庭可接受性。

**证据收集规范**

1. **FSR 行为准则**：
    - 适用于英格兰和威尔士的取证活动，要求质量管理、防污染和证据链。
2. **证据链**：

- 记录案件详情、收集者、时间等，防止污染或篡改。

3. **指纹与掌纹：**
   - 使用粉末法、化学处理或光源收集，参照《内政部指纹可视化手册》。
   - 与 IDENT1 数据库比对，含 1969492 未识别指纹（2023 年 3 月）。
4. **鞋印：**
   - 使用静电提升器或摄影收集，与 4 万种鞋底图案数据库比对。
5. **微量物证：**
   - 使用粘性胶带或镊子收集，显微镜分析，防污染。
6. **DNA：**
   - 无菌棉签收集，空气干燥，纸质容器保存，NDNAD 匹配率 64%（2022/23）。
   - 按顺序检查防污染。
7. **警察学院指南：**
   - 规定摄影、取证策略和污染控制，初步勘察记录现场条件。

**成像设备规范**

1. **摄影：**
   - 整体、带尺、语境视图，保留元数据。
2. **3D 成像：**
   - 3D 激光扫描仪用于弹道和血迹分析，摄影测量生成 3D 坐标。
3. **污染控制：**
   - 设备清洗至 DNA 级别，记录清洗日志。

**法庭可接受性**

- 需符合 PACE 和 FSR 准则，非合规证据逐案评估。
- 证据处理不当可能导致不可接受，如 OJ Simpson 案。

**规范必要性**

- **法庭可接受性：**确保证据可靠。
- **准确性：**减少污染和错误。
- **证据链：**维护可追溯性。
- **司法公正：**防止冤案，如 David Camm 案。

## 结论

警察部队、内政部和 FSR 管理 CSI，FSR 准则和警察学院确保证据收集准确。成像设备生成可靠记录，保障司法系统完整性。