



The Art of Finding Evidence Hiding in Plain Sight

by John Gaspar and Anthony Luizzo

“The significance of forensic strategies in modern investigations is underscored by the limitations of relying solely on eyewitness evidence.”

The roots of forensic and criminalistic strategies can be traced back centuries, often intertwined with the birth and evolution of watchmen, constables, and private sleuths. Edmond Locard is considered a pivotal figure in the development of forensic science and criminology. He helped lay the foundation for understanding the scientific principles behind solving criminal cases. His emphasis on applying scientific methods to legal contexts significantly shaped investigative practices.

The emergence of agencies like Pinkerton's in the 19th century further solid-

ified the role of private investigators in filling the gaps in law enforcement and providing specialized investigative services. Their contributions to risk management, investigations, and security set a foundation for today's private policing/security profession.

Over the decades, progress in forensic techniques, from fingerprint identification to DNA profiling and beyond, demonstrate the continuous development and sophistication of investigative tools that fellow investigative sleuths have at their fingertips. Collectively, these innovations help sleuths to solve cases

more quickly and effectively. Moreover, these new cutting-edge forensic tools help investigative sleuths gather accurate evidence and solve complex cases.

What is the Significance of Crime Scene Investigation (CSI)?

The significance of forensic strategies in modern investigations is underscored by the limitations of relying solely on eyewitness evidence. While eyewitness testimony can be valuable, it's susceptible to various factors that can compromise its accuracy. Factors such as stress, bias, perception, and memory recall can significantly impact the reliability of

eyewitness accounts. Comprehending these limitations underscores the need to verify assertions via forensic and criminalistic resources. Quoting Suzanne Massie, a Russian scholar who coined the phrase “Trust but Verify” and popularized by President Ronald Reagan in his oratory, speaks volumes about how most investigative specialists view eyewitness testimony. This principle highlights the importance of corroborating evidence through scientific and forensic means to ensure accuracy and reliability.

Law enforcement agencies and educational institutions are increasingly integrating forensic and criminalistic approaches into their training. The increasing use of forensic tools indicates a shift towards a more comprehensive investigative approach—one that relies not only on personal observation but also on verifiable, scientifically supported evidence. Equipping the new generation of criminologists with these new and exciting forensic tools is an important institutional investment in developing tomorrow’s new breed of investigative sleuth.

Crucial Steps to Classify, Identify, Assess, and Validate Evidence

Validating testimonial evidence through forensic analysis is vital in establishing a robust foundation for meeting the burden of proof required in legal proceedings. The distinction between class and individual evidence is essential in understanding the varying strengths of forensic evidence.

“Class Evidence” refers to material associated with a group but not a single source: e.g. fibers, paint chips, or shoe prints that possibly belong to a specific brand or model fall under this category. While useful in narrowing down possibilities, class evidence alone may not definitively link a suspect to a crime.

Individual evidence on the other hand, holds more weight as it can directly link a specific person to a crime. Examples include fingerprints, DNA, or unique tool marks. This type of evidence is

more persuasive in court as it can significantly bolster the case by placing a suspect at the crime scene, providing strong, often irrefutable support for investigative assertions. The distinction between types of evidence is crucial, especially in criminal cases where proving guilt beyond a reasonable doubt is necessary for conviction.

Steps in Crime Scene Preservation

The following provide a comprehensive framework for crime scene preservation:

1. Preliminary Crime Scene Survey:

Taking detailed notes at the case’s beginning helps capture the scene’s layout, potential evidence locations, and initial observations crucial for further investigation.

2. Area Identity: Establishing a larger perimeter initially allows for flexibility; this boundary can be adjusted based on evolving information or discoveries without compromising potential evidence.

3. Securing the Crime Scene: Use barriers, tape, or other means to secure the scene. Preservation from external elements like weather or inadvertent contamination is vital.

4. Establishing Entry and Exit Points: Designating specific paths for entry and exit helps preserve the scene’s integrity while allowing authorized personnel necessary access.

5. Plan of Action/Personnel Roles: Developing a structured plan and assigning roles to personnel ensures a systematic approach to evidence collection and scene examination.

6. CSI Log for Access Control: Maintaining a log of individuals entering and leaving the scene is essential for accountability and maintaining the chain of custody. Only authorized personnel should be allowed access.

7. Bystander Photography Restricting: Limiting bystander photogra-

phy helps prevent potential contamination or alteration of the scene. It ensures that only authorized documentation takes place under controlled conditions.

The above steps align with best practices in crime scene management, emphasizing the importance of meticulous preservation and controlled access to facilitate accurate investigation and evidence collection. These measures are pivotal in maintaining the scene’s integrity and the evidence gathered, thus ensuring a solid foundation for the investigative process.

Preserving the Crime Scene

Preserving a crime scene is crucial to ensuring the integrity of evidence for forensic analysis. These steps set the stage for testing the accuracy of forensic and criminalistic evidence assertions:

1. Securing the Scene: Upon arrival, the first responders or investigators must secure the crime scene to prevent contamination or tampering. This involves restricting access, marking boundaries, and ensuring the safety of all individuals present.

2. Documenting the Scene: Comprehensive documentation is vital. Photography, sketches, and notes should capture the scene’s layout, evidence placement, and any relevant details. This documentation serves as a reference for analysis and court proceedings.

3. Evidence Collection and Packaging: Proper techniques for collecting and preserving evidence are essential. Each item should be carefully collected, labeled, documented, and packaged to prevent contamination or degradation.

4. Chain of Custody: Maintaining a clear chain of custody ensures accountability for evidence from the crime scene to the forensic laboratory. Proper documentation of who

handled the evidence and when is critical for legal validity.

5. Forensic Testing and Analysis:

Forensic and criminalistic strategies involve various scientific methods such as DNA analysis, fingerprint examination, ballistics, toxicology, and more. Testing these pieces of evidence helps in reconstructing the crime and establishing facts.

6. Quality Control and Validation:

To test the accuracy of forensic evidence, quality control measures and validation processes are crucial. This includes proficiency testing, peer review, and adherence to scientific standards to ensure the reliability and accuracy of results.

7. Independent Verification and Peer Review:

An important aspect is independent verification by experts not directly involved in the case. Peer review of findings and methodologies helps ensure the credibility and accuracy of forensic and criminalistic assertions.

8. Continued Research and Advancements:

Staying current with advancements in forensic science and criminalistics is vital. Continuous learning and integration of new technologies and methodologies enhance the accuracy and reliability of investigations.

Body and Evidence Documentation

1. Victim or Bodies: Take photos of the victim(s) or any bodies present, ensuring to document injuries, position, and surrounding evidence.

2. Evidence Markers: Photograph each piece of evidence with corresponding markers or placards to show its exact placement and context.

3. Close-ups of Evidence: Capture detailed shots of individual pieces of evidence, such as weapons, fingerprints, bloodstains, or any items relevant to the investigation.

Conditions and Surroundings

1. Lighting Conditions: Document the scene under various lighting conditions (natural light, artificial light, or lack thereof) to accurately represent how it appeared at the time of the incident.

2. Environmental Factors: Photograph any factors that might affect the scene, like weather conditions, obstructions, or any changes in the scene's environment.

3. Overall Scene Conditions: Capture any relevant details such as signs of struggle, forced entry, or any damage to the surroundings that might be linked to the crime.

Comprehensive photographic documentation accurately captures relevant aspects of the crime scene, aiding investigators, forensic experts, and legal proceedings in understanding and analyzing the scene.

Processing the Crime Scene

Processing a crime scene involves various meticulous techniques to collect evidence effectively. The following is a breakdown of the processes:

• **CSI Sketching:** Create a sketch of the crime scene, noting positions of evidence, bodies, or any significant objects. It doesn't need to be scaled but should accurately represent the scene's layout and items' placements.

• **DNA Collection Considerations:** Sample collection involves gathering biological materials like blood, urine, saliva, semen, or controlled substances for DNA analysis. Presumptive testing may be performed on-site to detect the possible presence of bodily fluids or drugs, but further confirmatory analysis is usually conducted in the lab.

• **Fingerprinting:** Fingerprint collection utilizes various methods including, contrast powder, iodine fuming, cyanoacrylate, small particle reagent, and ninhydrin. Each of these meth-

ods has its specific applications and advantages, enabling investigators to recover fingerprints from various surfaces and conditions.

• **Adhesive Use:** Cyanoacrylate (super glue) can be used to encapsulate items, preserving latent prints or other trace evidence effectively.

The techniques outlined above represent standard practices in crime scene processing which are designed to maximize the collection and preservation of crucial evidence. Their application depends on the nature of the crime scene, the surfaces involved, and the types of evidence present. Understanding and employing these methods with precision are fundamental to successful evidence collection and analysis in forensic investigations.

Steps in Evidence Collection

This is a meticulous and crucial process in maintaining investigative integrity:

1. Identification and Documentation: Identify each piece of evidence and document its location within the crime scene using detailed notes, photographs, and sketches.

2. Packaging and Labeling: Placing each item of evidence in designated envelopes, containers, or boxes, ensuring proper labeling with details like case number, item number, date, location, and description.

3. Securing the Packaging: Sealing securely with crime scene evidence tape, initialing at both ends of the tape, and signing across the evidence prevents tampering.

4. Storage and Preservation: Storing the packaged evidence in a secure location to prevent contamination, loss, or tampering.

5. Special Handling: Certain types of evidence, such as DNA samples or perishable items, may require special handling. For example, DNA

samples might need refrigeration to preserve their integrity.

6. Chain of Custody Documentation:

A chain of custody log detailing who handled the evidence, when, and for what purpose ensures accountability and tracks evidence movement from the crime scene to the laboratory, to the court.

Professional investigators instinctively know that these meticulous steps help ensure that evidence is properly preserved, help prevent contamination or tampering, and help maintain the integrity of the evidence for analysis and use in legal proceedings. Most importantly, always handle and store different types of evidence according to its specific requirements to minimize degradation or loss of crucial information.

Concluding Comments

The information contained herein helps

to make a compelling case for the pivotal role that proper evidence handling and forensic advances play in the investigative process. Moreover, the article highlights various strategies related to forensic and criminalistic evidence and fundamental crime scene preservation protocols. These strategies are aimed at empowering modern investigative professionals to navigate the complexities of investigations in the technology-driven era efficiently.

What a journey it has been, indeed! Crime scene management and police work have seen remarkable transformations, from the pioneering days of fingerprints to the revolutionary advent of DNA analysis. The evolution underscores the remarkable strides made in forensic science and investigative techniques. Peering into the future is an exercise in imagination, considering the unknown possibilities that lie ahead. Innovations yet to come might reshape the landscape

of tomorrow's earth-shattering crime-solving strategies. The metaphorical advice about following the light to its source rather than its reflection speaks to the importance of delving deep into the heart of an issue or crime rather than merely scratching the surface. It emphasizes the need to uncover the root causes and essential evidence, a vital aspect of effective crime-solving. 📍

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