OSAC 2021-N-0018
Standard for On-Scene Collection and Preservation of Physical Evidence

Crime Scene Investigation & Reconstruction Subcommittee
Crime Scene Scientific Area Committee (SAC)
Organization of Scientific Area Committees (OSAC) for Forensic Science

OSAC Proposed Standard

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Prepared by
Crime Scene Investigation & Reconstruction Subcommittee
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Disclaimer:

This OSAC Proposed Standard was written by the Crime Scene Investigation & Reconstruction Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science following a process that includes an open comment period. This Proposed Standard will be submitted to a standard developing organization and is subject to change.

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Foreword

This document sets requirements for the on-scene collection and preservation of physical evidence by any personnel responsible for scene response. Proper collection and preservation of physical evidence ensure that the integrity of the evidence is maintained from the point of collection, through possible forensic examination, and to the presentation of the evidence in the courtroom.

This document has been drafted by the Crime Scene Investigation & Reconstruction Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science through a consensus process.

This standard provides guidance on some safety issues but is not exhaustive. It is the responsibility of the appropriate agency to develop a full health and safety plan.

All hyperlinks and web addresses shown in this document are current as of the publication date of this standard.

Keywords: *scene investigation, collection, preservation, physical evidence*

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Standard for On-Scene Collection and Preservation of Physical Evidence

1 Scope

This document sets requirements for collecting and preserving physical evidence during scene investigations. The methods in this Standard are intended to maintain the integrity of physical evidence so that reliable, accurate, and relevant conclusions can be obtained during an investigation.

2 Normative References

The following reference is indispensable for the application of the Standard. For dated references, only the edition cited applies. The latest edition of the referenced document (including any amendments) applies for undated references.

OSAC 2021-N-0015, *Guiding Principles for Scene Investigation and Reconstruction*

3 Terms and Definitions

For purposes of this document, the following definitions apply.

NOTE: In a situation that involves a potentially criminal act, definitions in sections 3.1 through 3.8 would be preceded by "crime" (e.g., crime scene investigator).

3.1
chain of custody
A chronological record of the handling and storage of an item from its point of collection to its final return or disposal. [10]

3.2
contamination
The undesirable introduction of a substance to an item at any point in the forensic process.

NOTE: This includes the undesirable transfer of a substance within or between items, also referred to as cross-contamination. [4]

3.3
scene investigation
A methodical approach to examining a scene to document, search for, identify, collect, and preserve items of evidentiary value to help in understanding the elements of an incident.

NOTE: Though commonly applied to criminal investigations, the same principles and methods can be more broadly applied to scenes that are not criminal. [1]

3.4
scene investigator

A forensic science practitioner, however, named, whose responsibility is to use the appropriate combination of knowledge, skills, training, and experience to undertake one or more of the following tasks in relation to a scene investigation: document, search for, identify, collect, interpret, and preserve evidence. [1]

3.5
law enforcement officer
LEO

Any public employee whose duties primarily involve enforcement or investigation of laws.

3.6
personal protective equipment
PPE

Equipment worn to minimize exposure to various hazards such as body fluids, irritants, or contaminants (e.g., gloves, foot and eye protection, respirators, and full body suits).

3.7
physical evidence

Any material, object, or substance that can be collected or documented to inform the understanding of a scene.

3.8
scene

A place or object that is subject to and/or requires forensic examination.

NOTE: A crime scene is a common description of a scene where a presumed crime has been committed. The scene can be the body of a person or an animal. [4]

4 Collection and Preservation of Physical Evidence

Scene investigators shall communicate and cooperate with investigative personnel to ensure that the scene examination is thorough, and all physical evidence discovered is properly collected and/or documented. The method employed for collecting and preserving a particular item may vary based on scene context and anticipated analysis.

Physical evidence shall be collected and preserved in a manner intended to maximize evidence integrity and minimize contamination, tampering, alteration, or loss of evidence. If the collection or preservation of an item of physical evidence is beyond the technical skills, knowledge, or resources available to the scene investigator, specialized personnel shall be contacted for consultation or assistance.

OSAC 2021-N-0015, *Guiding Principles for Scene Investigation and Reconstruction,* shall be used in conjunction with this document because OSAC 2021-N-0015 provides the foundational principles upon which additional specific requirements, such as this document, will be based.

4.1 Personal Protective Equipment

4.1.1 Scenes can be the source of various hazards, including biological, chemical, physical, and environmental hazards. Personal protective equipment (PPE) shall be utilized for both the wearer's safety and to protect the integrity of the evidence. PPE may consist of but is not limited to, gloves, protective clothing, masks, eye protection, and respiratory equipment. The scene should be continuously reevaluated to determine if alterations to the level of PPE are needed for adequate personal protection.

4.1.2 When handling multiple items at a scene, PPE can be a source of cross-contamination. PPE shall be changed when needed to prevent cross-contamination.

4.1.3 A mask and unused gloves should be worn to avoid contaminating an item subject to DNA analysis.

4.2 Chain of Custody

4.2.1 Chain of custody shall be established at the point of collection and maintained through final disposition.

4.2.2 The chain of custody shall be documented for all physical evidence collected. This documentation shall include the dates and times of any transfer, including the name of the person or location to which the evidence is transferred.

4.3 Evidence Packaging

4.3.1 Proper packaging is critical to preserve material physically as well as to preserve its evidentiary value.

4.3.2 If an item is too large to be placed in available packaging, areas of evidentiary value shall be protected. There may be multiple acceptable packaging options for different evidence types.

4.3.3 Final, long-term packaging shall minimize degradation and preserve the evidentiary value of the item to the extent possible. Attempts should be made to utilize final packaging in the field, but conditions may exist where temporary packaging needs to be used for transport. For example, wet items may need to be transported in plastic and dried prior to final packaging for long-term storage. Original packaging shall be retained.

4.3.4 Packaging used to preserve evidence should be reasonably sized in relation to the item. Excessively large or tight packaging should be avoided.

4.3.5 Packaging shall be sturdy enough to avoid damage, damage to items within, or danger to personnel. Fragile and sharp evidence may need additional clean protective padding.

4.3.6 Packaging and packaging tools are either single-use or reusable. Prior to use, reusable packaging and packaging tools shall be contamination-free.

4.3.7 Individual items of evidence should be packaged and sealed separately to maintain their integrity and prevent cross-contamination. Commingled items (e.g., cigarettes in an ashtray) may be packaged together or separately, depending on the anticipated analysis.

4.3.8 Items and/or packages shall be marked to ensure that each item can by uniquely associated with its documentation. Packaging shall include warning labels for any potential hazards.

5 Special Evidence Considerations

This list does not cover all possible evidence types or considerations for such evidence.

5.1 Wet Items

5.1.1 Any item which may degrade due to prolonged exposure to moisture, such as whole or live plant evidence, clothes, or other organic material, shall be dried and packaged in breathable packaging or packaging with a moisture control mechanism to prevent the accumulation of moisture, mold, or mildew.

5.1.2 Wet items shall be temporarily packaged to prevent leakage or seepage until the item can be drained and repackaged for storage.

5.2 Greasy or Oily Items

5.2.1 Greasy or oily items shall be packaged to prevent leakage or seepage.

5.3 Gasses and Liquids

5.3.1 Gasses and liquids shall be packaged in non-porous containers such as glass jars or lined paint cans to prevent evaporation or contamination.

6 Evidence Security

6.1 Sealing Evidence Packaging

6.1.1 Prior to sealing, items not currently in the physical presence of the person's custody shall be temporarily placed in a secure storage location with restricted access.

6.1.2 An evidence package is properly sealed only if the identity of the individual creating the seal is recorded by marking their initials or other unique identifiers across or on the seal, its contents cannot escape, and breaching the package would result in obvious damage to the package or seal.

6.2 Evidence Labeling

6.2.1 Packaging shall be appropriately labeled to uniquely identify the contents and to reflect any known hazards [2]

6.2.2 Packaging or associated documentation should include specialized storage considerations (e.g., refrigerated or frozen storage requirements) specific to the contents and anticipated analysis.

6.3 Evidence Storage

6.3.1 Evidence shall be maintained and stored in a secure manner that can prevent and detect tampering, alteration, loss, or contamination.

6.3.2 Storage areas shall be secured and have restricted access, where all personnel with access to the area are trained to handle evidence properly.

6.3.3 Evidence shall be stored in a manner in which its integrity is preserved and can be uniquely associated with its documentation.

Appendix A
(informative)

Bibliography

This is not meant to be an all-inclusive list, as the group recognizes other publications on this subject may exist. When this document was drafted, these were some of the publications available for reference. Additionally, any mention of a particular software tool or vendor as part of this bibliography is purely incidental, and any inclusion does not imply endorsement by the authors of this document.

1] ANSI National Accreditation Board, GD 3150: Guiding Principles of Professional Responsibility for Forensic Service Providers and Forensic Personnel, 2018

2]ASTM E1188-11 (2017) Standard practice for the collection and preservation of information and physical items by a technical investigator

3] ASTM International, E1732-18, Standard Terminology Relating to Forensic Science, 2018

4] Ballou, Susan M., Margaret C. Kline, Mark D. Stolorow, Melissa Taylor, Shannan Williams, Phylis S. Bamberger, Burney Yvette, et al. "The biological evidence preservation handbook: best practices for evidence handlers." (2013).

5] ISO/IEC Directives, 21043-1:2018 Forensic sciences- Part 1: Terms and definitions, 2018

6] National Forensic Science Technology Center, Crime Scene Investigation A Guide for Law Enforcement, September 2013.

7] OSAC 2021-N-0016, *Standard for Initial Response at Scenes by Law Enforcement*

8] OSAC 2022-N-0025, *Standard for Scene Response: Initial Response by Scene Investigators*

9] OSAC 2023-N-0002, *Standard for the Documentation of Scenes by Crime Scene Investigators*

10] OSAC Lexicon. Retrieved July 21, 2020, from https://lexicon.forensicosac.org/

11] Standard Practice for the Enhancement of Friction Ridge Impressions. (under development)