

SUBJECT	FORENSIC SCIENCE
Paper No. and Title	Paper No. 7: Criminalistics and Forensic Physics
Module No. and Title	Module No. 7: Collection, Care and Packaging of Evidence
Module Tag	FSC_P7_M7

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FORENSIC SCIENCE
PAPER No.7: Criminalistics and Forensic Physics
MODULE No.7: Collection, Care and Packaging of Evidence

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FORENSIC SCIENCE

PAPER No.7: Criminalistics and Forensic Physics

MODULE No.7: Collection, Care and Packaging of Evidence

1. Learning Outcomes

After studying this module, you shall be able to learn about the evidences which an investigator may encounter at the crime scene, procedures and precautions to collect evidence and how to package evidence.

2. Evidence Encounter at the Crime Scene

Depending on the crime occurred various types of evidences are recovered from **the crime scene**. An investigating officer may encounter with:-

1. DNA evidence
2. Impression evidence (fingerprint, shoe print, etc.)
3. Blood, Semen, Saliva and other body fluids.
4. Firearms and ammunition (gun, bullet, shell, etc.)
5. GSR swabs from shooting victims
6. Arson evidence (flammables, ignition source, etc.)
7. Wood, and absorbent materials
8. Chemicals and controlled substances (drugs)
9. Trace evidence (hair, fibers, soil, etc.)
10. Documents
11. Storage devices such as Compact Disk, DVD's, floppy disk, hard disk's etc
12. Victim's clothing
13. Fingernail scrapings

14. Vaginal, anal, and oral swabs
15. Glass
16. Charred clothing or debris.
17. And other potential evidence

3. Collection of Evidence

An investigating officer should remain cautious while collecting evidence from the crime scene. He should always keep in mind:

- 1) What evidence should be collected?
- 2) How to collect?
- 3) Whether the evidence collected, will support the investigation or not?

Collection of Evidence at the crime scene is a two-step procedure:-

- First, search for and collect large, obvious items.
- Collect smaller items of physical evidence next but the Evidence that is easily lost or fragile is collected first.

An investigating officer should follow the following precautions while collecting evidence:-

1. Evidence should not be removed from its source (or from its original place) when possible.
2. Evidence should be packaged individually to prevent breakage, spoilage and contamination with other evidences.
3. Mark all evidence as it is being collected if possible—or package and mark the outside of the package.
4. Evidence should be marked with the recovering officer's initials, the location (from which the evidence is recovered) and the date of recovery.
5. A chain of custody must be maintained. A list of all persons who came into possession of an item of evidence should be maintained in order to support the investigation.
6. Always wear gloves—latex or rubber gloves in order to prevent the contamination of DNA evidence.
7. Take great care (when handling evidence) not to destroy fragile fingerprints or other impressions.
8. Any items with residual moisture or bodily fluids should be thoroughly air-dried before packaging.
9. Each different piece of physical evidence must be packaged separately.
10. Evidence must be handled with forceps (gloved hands only) or similar tools.
11. Flashlights or ALS (alternate light sources) are used to help identify evidence for collection.
12. Once identified and documented, the evidence must be collected, preserved, packaged and inventoried in preparation for submission to the crime lab.
13. Reference/standard samples should be collected from relevant persons or from the scene and are used for comparison.
14. Disposable gloves are always worn, and often changed, to protect evidence from contamination.
15. Impression evidence (fingerprint, shoe print, etc.) may be Identified by sight, ALS or chemical reagent or enhanced by use of special photographic techniques or by chemical developers or collected by lifting tape or molding materials.

16. Biological evidence (blood, semen, etc.) may be identified by sight, ALS or chemical reagent, collected with sterile swabs, Firearms and ammunition (gun, bullet, shell, etc.), must be rendered safe for transport.
17. Arson evidence (flammables, ignition source, etc.) may be located by sight and smell, place carpet, wood, and absorbent materials in clean paint cans and seal lid, place flammable liquids in glass bottle with tight-fitting lid.
18. Chemicals and controlled substances (drugs) may be located by visual observation, Chemical field tests are used to classify or identify them at the scene.
19. Trace evidence (hair, fibers, soil, etc.) May be extremely small or microscopic, collect by forceps, tweezers, scraping, taping, or vacuuming, Document and collect questioned and known samples, Work in conjunction with medical examiner for homicide evidence collection.
20. The medical examiner or coroner will examine the victim to establish a cause and manner of death and preserve tissues and organs for analysis.

They may also collect some or all of the following:

- Victim's clothing
- Fingernail scrapings
- Body hairs
- Blood
- Vaginal, anal, and oral swabs
- Bullets or other objects inside the body
- GSR swabs from shooting victims

4. Packaging of Evidence

Physical evidence must be handled and packaged in a way that prevents any change from occurring. The evidence must be properly packaged according to type and should be properly labeled and sealed with appropriate initials to maintain chain of custody. The integrity of evidence is best maintained when it is kept in its original condition as found at the crime scene. Trace evidence should not be removed from the objects they're found on unless it is impossible to transport the item. The well-prepared evidence collector will arrive at a crime scene with a large assortment of packaging materials and tools ready to encounter any type of situation.

Physical evidence must be collected and packaged correctly so it does not change from the time it was collected to the time it is processed by the crime lab. Each item must be placed in a separate container to prevent cross-contamination. The package should be clearly labeled and sealed with evidence tape. Take entire piece of evidence as it is found at the scene, if possible.

Wet blood should either dry first and then be scraped or can be collected on a swab.

1. Hair, glass, fibers, and other types of trace evidence should be store in indestructible plastic pill bottles with pressure lids or in Beige envelopes, screw-cap glass vials, or cardboard pillboxes.
2. Paper bags and boxes can be use for bigger and/or heavier pieces of evidence.
3. For powders such as drugs or others ordinary mailing envelopes should not be used because powders will leak out of their corners.
4. Arson evidence is placed in clean paint cans.
5. Blood-stained things should be kept in paper bags or manila envelopes.
6. Blood-soaked clothing should not be reserve in air-tight vessels as the surrounded moisture can cause the development of mildew and mold and destroy the blood.
7. All clothing should be air-dried and independently put in storage in paper bags.
8. Charred clothing or debris on the contrary, must be stored in air-tight containers so that evaporation of volatile petroleum residues does not occur.

9. All diverse article or like articles collected at various places should be placed in isolated containers. Wrapping evidence independently averts damage by contact and avoids cross-contamination.
10. Forceps and similar apparatus may have to be used to pick up small items.
11. Insignificant quantities of trace evidence may also be accessibly packed in a cautiously folded paper, by what is said to be “druggist fold.”
12. Though pill bottles, vessels, containers, or beige envelopes are best universal containers for all trace evidence, two mostly found at crime scenes warrant special attention.
13. If bloodstained constituents are kept in airtight vessels, the accretion of moisture may reassure the development of mold that can ruin the evidential importance of blood.
14. In these cases, packaging paper, fawn envelopes, or paper bags are suggested wrapping materials.
15. All evidence should be packaged separately.
16. New and unused packaging materials must be used.
17. Seal evidence using proper methods which prevent tampering.
18. Though these kinds of sealable parcels are good for powders and other dry trace, bloodstains and bloodstained evidence is unlike.
19. Bloodstained evidence should not be packaged in airtight containers due to the moisture content of the blood.
20. The blood will start to mold very quickly and this mold will damage the evidence item and the associated bloodstains.
21. For damp or bloody items one should use:
 - a) Brown paper bags of appropriate size
 - b) Earthguard bags
 - c) Butcher paper that can be folded and properly taped shut.

22. Any items with residual moisture or bodily fluids should be thoroughly air-dried and then packaged in a non-porous container such as paper or cardboard so as to prevent the destruction of DNA by bacteria, mold, etc.
23. Arson evidence (flammables, ignition source, etc.) may be located by sight and smell, place carpet, wood, and absorbent materials in clean paint cans and seal lid, place flammable liquids in glass bottle with tight-fitting lid.
24. Chemicals and controlled substances (drugs) may be Located by visual observation, Chemical field tests are used to classify or identify them at the scene, Place liquids or solids in a screw cap jar or vial.

5. Chain of Custody

After all the collected evidences have been packaged properly they should be properly labeled. After labeling the next step is to transport all the packed evidences to the crime lab for forensic analysis or for further evaluation.

In order to maintain all items, a complete and correct chain of custody must be maintained for all items.

This is not necessary that the evidence collector only will transport the evidence to the laboratory. Often some other officer transports the evidence to the lab. That's why maintenance of chain of custody log must be maintained indicating the transfer of custody to and from every individual who is involved in transporting or storing the evidence until it gets to the crime lab. These include:

- a) The collecting officer (who collects the evidence from crime scene),
- b) The transportation officer (who transport the collected & packaged evidence from Crime scene to the laboratory),
- c) Any evidence storage officer if the evidence is stored prior to taking it to the lab,
- d) Any further transportation officer,
- e) Anyone who gets into the evidence for any reason,
- f) The laboratory evidence collection person(s).
- g) Any other person involved in the whole process.

Send all evidence (to the crime lab) registered or certified mail, return receipt requested, to maintain the chain of custody.

6. Summary

1. Evidence should not be removed from its source or from its original place, if possible.
2. Evidence should be packaged individually to prevent breakage, spoilage and contamination with other evidences.
3. A chain of custody must be maintained. A list of all persons who came into possession of an item of evidence should be maintained in order to support the investigation.
4. Use of gloves either of latex or rubber is must in order to prevent the contamination of DNA evidence.
5. While handling evidence great care is required in order to prevent destruction of fragile fingerprints or other impressions.
6. Reference or Standard samples should be collected from relevant persons or from the scene and are used for comparison.
7. Impression evidence (fingerprint, shoe print, etc.) may be Identified by sight, Alternate Light Sources or chemical reagent or enhanced by use of special photographic techniques or by chemical developers or collected by lifting tape or molding materials.

8. Hair, glass, fibers, and other trace evidence should be store in unbreakable plastic pill bottles with pressure lids or in Manila envelopes, screw-cap glass vials, or cardboard pillboxes.
9. Blood-soaked clothing must not be stored in air-tight containers because the trapped moisture may cause the growth of mildew and destroy the blood.
10. Each different item collected at different locations must be placed in separate containers to prevent damage through contact and prevents cross-contamination.

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