

1 GENERAL PRINCIPLES OF CRIME SCENE INVESTIGATION

This Standard Operating Procedure (SOP) aims to lay down specific action steps for the systematic investigation of a case under reference. It has been drafted in accordance with the Criminal Procedure Code of India, the procedure prescribed in other relevant laws and common provisions of the police regulations in use across the country. This chapter has been divided into two sections:

- (i) Section I comprises of an introduction to the type of crime occurred with details of critical concept and information.
- (ii) Section II discusses the operational action steps right from receipt of information at the police station till the time when the necessary reports from the Forensic Science Laboratories (FSL) are available on the crime exhibits.

Crime scene investigation is an integral part of scientific investigation and is a very crucial step for collection of evidence for a case. The plan of investigation consists of the following steps:

- (i) Re-construction of Scene of Crime (SOC)
- (ii) Developing understanding about the sequence of events in connection with the commission of crime or the modus operandi.
- (iii) Collection of relevant evidence in a systematic manner.

The action steps for investigation are detailed in a certain sequence including utilisation of high-tech scientific aids. However, depending on the facts and circumstances of a case, some of the action steps may be executed in a different sequence as per specific requirement of the case.

1.1 Investigation Defined

1.1.1 The word ‘investigation’ has been defined in Section 2(h) of the Criminal Procedure Code as:

All the proceedings under the Code for the collection of evidence by a police officer or by any other person (other than a Magistrate) who is authorized by the Magistrate in this behalf.

1.1.2 Investigation is basically an art of unearthing the truth for the purpose of successful detection and prosecution. In the words of the Supreme Court (in H.N. Rishbud v/s State of Delhi: AIR 1955 SC 196: 1955 SCJ 283,) the investigation generally consists of the following steps:

- (i) Proceeding to the spot
- (ii) Ascertainment of the facts and circumstances of the case
- (iii) Discovery and arrest of the suspected offender
- (iv) Collection of evidence relating to the commission of the offence which may consist of:
 - (a) Examination of various persons (including accused) and the reduction of their statements into writing, if the officer thinks fit;
 - (b) Search of places and seizure of things considered necessary for the investigation and to be produced at the trial; and
- (v) Formation of the opinion as to whether on the materials collected, there is a case to place the accused before a Magistrate for trial and, if so, taking the necessary steps for the same for the filing of a charge sheet u/s 173 Cr.P.C.

1.2 Forensic Science and Crime Scene Investigation

The investigation begins at the crime scene with the recognition and recovery of physical evidence. It proceeds with its analysis, evaluation of the results and presentation of the findings to the court of law. From the first responders to the end-users of the information, all personnel involved should have an adequate understanding of the forensic process, the scientific disciplines and the specialized services provided by forensic laboratories. Crime scene investigation is a process that aims at recording the scene as it is first encountered and

recognizing and collecting all the physical evidences potentially relevant to the solution of the case.

The first responder, usually a police officer, plays a critical role in the entire crime scene investigation process.

- (i) The initial responsibility of the police officer is to preserve the integrity of the scene and the evidence.
- (ii) The police officer is also responsible for the early documentation of crime scene and all its evidences.

In most of the cases, since the first responders are non-forensic personnel, adequate training on handling of evidence at SOC is crucial to successfully carry out these activities. The first responder (who is normally not expected to further process the scene) needs to carry out some basic recovery procedures before the arrival of the crime scene investigators, if there is a risk of the evidence being destroyed, lost or contaminated. In situations where there is no prospect for the crime scene to be processed by crime scene investigators, the responsibilities of the first responder might have to be extended beyond preservation and documentation.

1.2.1 Significance of Physical Evidence and ‘Chain of Custody’

1.2.1.1 Physical Evidence

Physical evidence can range from massive objects to microscopic items, resulting from a crime and recovered at the crime scene or related locations. Considering all sources of information available in investigations (e.g. confessions, testimonies, video surveillance), physical evidence plays a vital role. Physical evidence, when recognized and properly handled, offers the best prospect for providing objective and reliable information regarding the incident under investigation. However, the value of even the most carefully recovered and preserved evidence can be lost if the chain-of-custody is not properly maintained. ‘Chain of custody’ refers to the chronological and careful documentation of evidence to establish its connection to an alleged crime. Throughout the forensic process, it is crucial to demonstrate each step undertaken to ensure the following two characteristics of the evidences retained from the crime scene to the courtroom:

- (i) Traceability
- (ii) Continuity

1.2.1.2 Chain of Custody

The chain of custody is established whenever an investigator takes custody of the evidence at a crime scene. The chain is maintained when the evidence is received from another officer.

- (i) The chain-of-custody record for all items collected from the scene must be documented. Each evidence collected should be tagged and must include the following details:
 - (a) Case reference number FIR..., dated..., Police Station.
 - (b) Exhibit number.
 - (c) Date and time of collection.
 - (d) Item description.
 - (e) Identity of the person who collected the evidence.
 - (f) Location where the item was found.
 - (g) Name and signature of the person who collected the evidence.
- (ii) In case of digital evidence, the hash value of each digital evidence must be computed and recorded individually on every transfer in order to maintain the authenticity and integrity of digital evidence records. Individuals assuming custody of such digital evidence must sign a chain-of-custody document mentioning the respective hash values.
- (iii) A clear, well-documented chain of custody should be established through the following:
 - (a) Notes, including information recorded in aforementioned clause (i) and any unusual markings on or alterations to the item.
 - (b) Markings and packaging of the evidence.
 - (c) Seals of the evidence.
- (iv) All the processes during transfer of evidence should be recorded faithfully in the case diary to establish the chain of custody.

- (v) When evidence is submitted to the Police Station 'Malkhana' or to a forensic laboratory, a receipt documenting the transfer is obtained. The evidence should be sent to the Forensic Science Laboratory with duly filled prescribed forwarding form under proper acknowledgement.

1.2.2 Legal and Human Considerations During Investigation

1.2.2.1 Legal Considerations

While there are general principles related to crime scene investigation, local laws, rules and regulations govern many activities of the crime scene investigation and forensic process. They relate to issues such as how:

- (i) to obtain authority to enter the scene,
- (ii) to conduct the investigation,
- (iii) to handle evidence (e.g. the type of sealing procedure required),
- (iv) to submit physical evidence to the forensic science laboratory.

These legal considerations ultimately determine the admissibility of the evidence collected at the crime scene. Failure to comply with existing laws, rules and regulations can result in a situation where the evidence cannot be used in the court. Hence, it is a matter of importance for personnel working at the crime scene to be aware of, and to ensure proper compliance with these rules.

1.2.2.2 Human Considerations

Regardless of local rules and regulations, codes of professional conduct outline moral obligations of personnel working at crime scenes. Such codes typically stress on the importance of acting with care and professionalism (due diligence), objectivity (treat evidence for what it shows *not* what you think it shows), open-mind and impartiality. If there is a conflict between preservation of evidence and the possibility of saving a human life, priority is always given to emergency medical care.

1.2.3 Health and Safety Considerations

Personnel working at crime scenes may be exposed to various health and safety hazards. Not all hazards are immediately obvious and some may come up as the investigation unfolds. Potential health and safety hazards may arise from a number of sources:

- (i) Chemicals (either present at the crime scene such as in the case of clandestine laboratories, or used as part of the investigation).
- (ii) Biological materials (e.g. blood and body fluids may be a source of risk of HIV/AIDS and other infections).
- (iii) Unexploded explosives (e.g. booby traps) and firearms.
- (iv) Environmental factors (e.g. excessive heat or cold).
- (v) Unsafe structures (especially when collecting evidence at fire and bombing scenes).
- (vi) Insecure environment (e.g. offender still present at the scene).
- (vii) Other risks include sharp objects, radiological, nuclear and electrical risks, gases, etc.

It might be necessary to suppress or remove health and safety hazards before starting the investigation. Apart from the hazards encountered at the scene itself, police personnel may be exposed to hazards when receiving items collected at the scene. The personnel working at the crime scene play an important role in minimizing hazard risks to others who handle collected evidence later in the forensic process. These procedures may include:

- (i) The provision of first aid kits.
- (ii) Appropriate protective clothing, worn throughout the investigation such as helmet, latex gloves, paper shoes and even a face mask.
- (iii) Adequate equipment and interventions of the fire brigade in case of fire.

1.3 Crime Scene Investigation Process

The planning, organization and coordination of the work at the crime scene aims at deploying resources commensurate to the case being investigated and using these resources efficiently and effectively.

1.3.1 Planning

Good planning is essential to execute work at the crime scene. Planning may include gathering the most of readily available information by considering questions such as:

- (i) What is believed to have taken place?
- (ii) What is the magnitude of the problem?
- (iii) Is any specialized expertise/medical assistance required?
- (iv) Are there any particular dangers at the scene?
- (v) What other assistance might be required?
- (vi) Is it an indoor/outdoor scene?
- (vii) Is it a remote location?
- (viii) What local resources would be available?
- (ix) If anybody else needs to be informed?
- (x) What are the weather (hot/cold climate) conditions?
- (xi) What equipment is required?

Following are the examples of basic equipments (available in the form of kits) required for processing the scene of crime.

- (i) General crime scene investigation kit
- (ii) Crime scene protection kit
- (iii) Digital camera
- (iv) Forensic light source
- (v) Crime scene illumination kit
- (vi) Photo documentation kit
- (vii) Adhesive ID marker
- (viii) Evidence marker
- (ix) Gas mask
- (x) Explosive detection kit

- (xi) Narcotic detection kit
- (xii) Gunshot residue collection kit
- (xiii) Semen detection kit
- (xiv) Blood detection kit
- (xv) Impression evidence: Tyre and foot print investigation kit
- (xvi) Tool mark investigation kit
- (xvii) Arson investigation kit
- (xviii) Digital Evidence Collection tool kit
- (xix) Laptop
- (xx) Finger print lifting kit

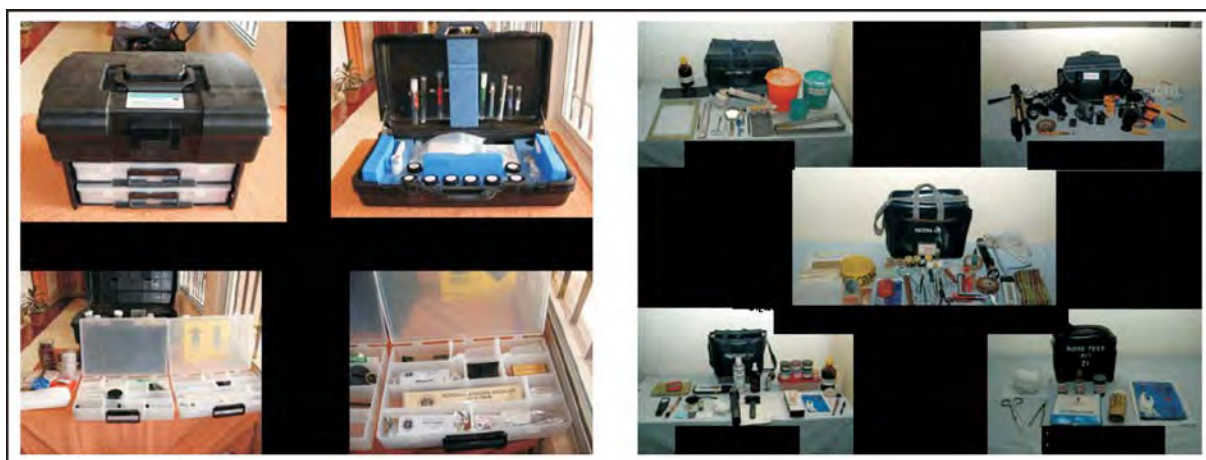


Figure 1.1: Different types of field kits required at the crime scene

1.3.2 Organization and Coordination

Organization and coordination are very important and should continue throughout the investigation and include decisions on:

- (i) What needs to be done, i.e. the sequence of actions and priorities

- (ii) Accessibility to the crime scene i.e., the access is limited to personnel playing an essential role in the crime scene investigation and in the medical care (such as doctors and nursing staff) of victims present at the scene.
- (iii) Assignment of tasks (e.g. designation of a leader, definition of roles and responsibilities, need for specialized expertise).
- (iv) How required actions will be undertaken (e.g. applicable procedures, need for specialized equipment and tools, and required communication channels).

Each crime scene is unique. Hence, planning and organization require adaptation and flexibility from one case to another. In addition, during the course of an investigation, the requirements may change as new elements are recognized and the personnel working at the scene may have to adapt to the organization of the work accordingly. The equipment required for crime scene work should be available to the personnel working at the crime scene, readily put together in a box/kit and replenished regularly, to enable rapid response. Some cases may also require specialized equipment.

1.3.3 Preservation of the Scene and its Evidence

Crime scene preservation starts soon after the incident is discovered and reported to the police station. Concerns for scene protection end only when scene investigation process is completed and the scene is released.

- (i) Demarcation of the area to be protected is a complex activity and the boundaries of the scene may change as the investigation unfolds. What appears to be obvious at the outset may change and need to be re-evaluated.
- (ii) Once demarcated, the area is clearly cordoned off using any kind of physical barrier. Any non-essential people who entered the scene before the cordon was established, are removed (and this information is recorded) and any non-essential people are prevented from entering the scene during the entire scene investigation.
- (iii) From the beginning to the end of the crime scene investigation, strict anti-contamination measures are important. They include:
 - (a) Wearing protective clothing, gloves and shoe covers (as shown in Figure 1.2.)
 - (b) Using a single path when entering the scene (this is also valid for medical personnel providing care to victims).

- (c) Keeping away from using any facilities available at the scene (e.g. toilet, water, towel, and telephone), eating, drinking or smoking.
- (d) Avoiding moving anything/anybody, unless it is of absolute necessity (if something or somebody is moved, the initial location should be carefully documented).
- (e) When selecting protective and anti-contamination measures, respect for the victim's privacy and human rights is important. If required, the use of screens, curtains, tents should be considered.
- (f) If, during the course of the investigation, a second or a third, related crime scene is discovered, each scene is treated separately (i.e. separate teams working on different scenes).

1.3.4 Documentation of the Scene and its Evidence

Documentation aims at producing a permanent, objective record of the scene, the physical evidence and any changes that take place. Documentation at the scene is also the starting point for the chain-of-custody.

- (i) Documentation starts with the arrival of the first person at the scene. Using appropriate means (e.g. notes, photography, video, sketches and measurements), the scene as it is first encountered is recorded along with other things:
 - (a) Arrival time
 - (b) Condition of doors, windows and shades
 - (c) Odours
 - (d) Signs of activities
 - (e) Weather/light conditions
 - (f) Air conditioning systems (central or localized)

Any person present while entering or leaving the scene and any changes that take place as a result of activity undertaken or observed are recorded as well.

- (ii) Once physical evidence is recognized, detailed documentation is made before it is moved or recovered.

- (iii) Each recovered item is labelled individually.



Figure 1.2: Gloves used as an anti-contamination measure

The requirement for documentation continues throughout the crime scene investigation process and beyond until the result of the laboratory examination is available. It constitutes the chain-of-custody. When a person working at the scene leaves the investigation, all information (e.g. photographs, records, notes, etc.) is turned over to the personnel coming in.

1.3.5 Recognition and Recovery of Physical Evidence

Recognition and recovery of physical evidence aims at locating and identifying a maximum number of potentially relevant evidences, and selecting appropriate recovery methods.

1.3.5.1 Recognition of Physical Evidence

There are a number of search patterns that may be followed in case of outdoor crime scenes. Some of them are as follows:

Strip method: The whole area is to be searched, and divided into a convenient number of strips. Each strip is examined carefully (as shown in Figure 1.3). Whenever any item or physical evidence is found, it is properly collected and preserved. The process is continued till the entire area has been searched.

Spiral method: Here the search is started from one end of the crime scene, carried out in spirals till the focal point of the crime scene.

Zone method: The scene is divided into small zones and each zone is examined in turn.

Grid Method: In the grid search method, the IO begins like a strip search. After completing the search by horizontal lanes, he searches back at right angles to the original strip (as shown

in Figure 1.3). This search from two different angles helps in the recovery of evidence which may be missed in simple strip method.

Pie or Wheel method: It is a search pattern in which the area is divided into pie slices or sections of a wheel, usually six in number. Crime scene searchers start from a critical point, such as body, and travel outwards along straight lines or rays.

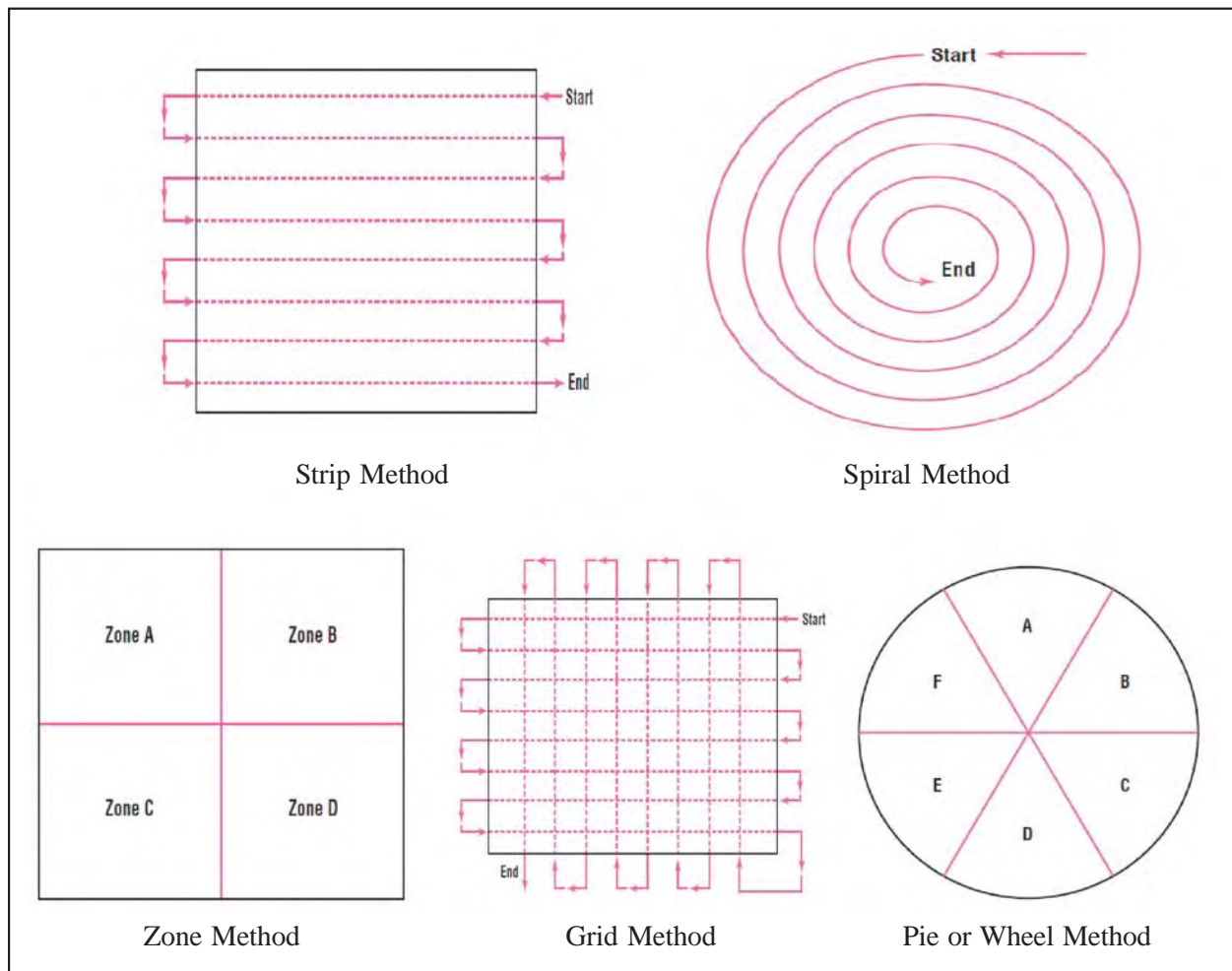


Figure 1.3: Crime scene search methods

After the collection of evidence, appropriate packaging is required to preserve the evidence integrity. The most relevant and important evidence may not be obvious or directly visible to the naked eye. Typically, the recognition of physical evidence starts with the observation of the scene like:

- (i) Searching for evidences with the naked eye and magnifiers and also using various hand-held light sources.
- (ii) Basic testing procedures might have to be carried out to detect physical evidence, e.g. use of powders and iodine fuming gun (as shown in Figure 1.4) to locate and enhance fingerprints at crime scene or the use of chemicals to visualize traces of blood at the SOC.

1.3.5.2 Recovery of Physical Evidence

- (i) Once the evidence is recognized, appropriate recovery methods (e.g. adhesive tape, tweezers, cotton tips as shown in Figure 1.5) and adequate packaging (e.g. collection bags/boxes, containers for sharp objects) are used. Each piece of evidence is labelled and sealed following requirements as per law. Priorities in evidence recovery might have to be decided to avoid unnecessary loss or degradation of evidence.



Figure 1.4: Use of Iodine fuming gun to locate latent fingerprints

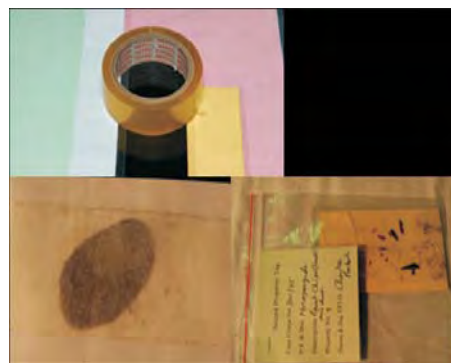


Figure 1.5: Adhesive tape and laminated paper

- (ii) Under difficult conditions, it might be preferable to recover and collect more evidence at a later stage of the investigation.
- (iii) As a part of the recovery process, in many instances, sample in question and control samples are necessary, e.g. when collecting fire debris. In situations where the evidence is in traces and is difficult to be collected by manual methods, vacuum pumps with special attachments (as shown in Figure 1.6) are used to collect the trace evidence and in a situation where the evidence is in very large quantity, a representative sub-sample in duplicate is usually collected, e.g. from bulky drug seizures.

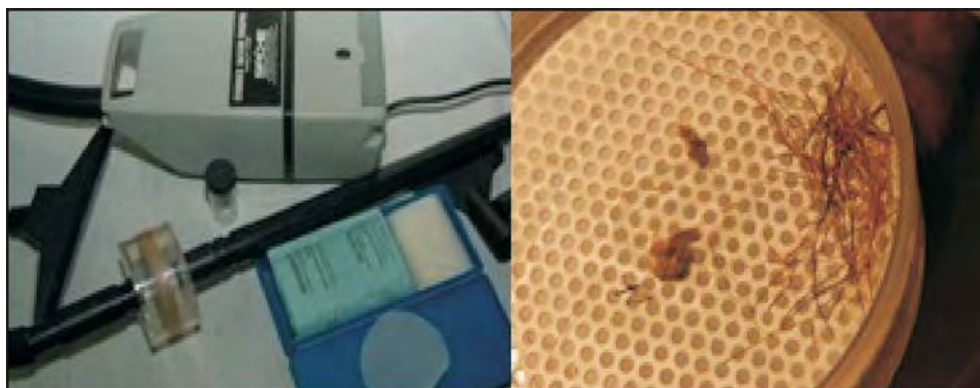


Figure 1.6: Vacuum pump with special attachment used to collect trace evidence

1.3.6 Transportation, Storage and Forwarding of Evidence to the Laboratory

The last phase of the crime scene investigation process aims at selecting the means of transportation and storage that are appropriate for the particular type of physical evidence to ensure the integrity of evidence to be forwarded to the laboratory.

- (i) Once physical evidence is recovered, items more likely to provide information that will assist the investigation receive priority for submission to the forensic laboratory.
- (ii) Material evidence is generally taken to police station malkhana. From there, it is sent to FSL under the covering letter of SP or a designated officer. Adequate conditions, e.g. a cool and dry place, and secured and controlled access are essential characteristics of transport and storage conditions. Also the costs, distance, time and means of transportation are aspects to be considered while choosing how to relocate and store the evidence.
- (iii) The relocation of some of the physical evidences, e.g. drugs and firearms, may need special considerations.
- (iv) Documentation of transportation, storage and forwarding to the laboratory is important. A written receipt is usually obtained for all the evidence received by the laboratory.
- (v) While sending the evidence to the forensic science laboratory, checks on the following points are invariably made.
 - (a) Whether the Forwarding Form accompanying exhibits is duly filled in and is completed and signed by the competent authority?
 - (b) Whether the queries are specific, clear and relevant to the exhibits forwarded to the laboratory?

- (c) Whether the exhibits in containers/ parcels have been sealed with tamper proof seals and the seals are intact?
- (d) Whether case reference, exhibit details have been mentioned/ tagged on each container of exhibit/parcel and signed by the IO?
- (e) Whether the specimen seal impressions have been forwarded to the laboratory along with evidence forwarding proforma?
- (f) Whether the road certificate/movement orders for exhibits and personnel carrying exhibits to the laboratory are complete in continuity and valid in all respect?

References

1. http://www.unodc.org/document/scientific/crime_scene_awareness_Ebook.pdf (date of access 16 December 2014).
2. Justice V.S. Malimath, *Committee on Reforms of Criminal Justice System: A Report*, vol. I, Ministry of Home Affairs Government of India, Bangalore, 2003.

2

GENERAL PRINCIPLES OF PACKAGING OF EXHIBITS

2.1 Sources of the Exhibit

There are three main sources from which crime exhibits can be obtained:

1. The scene of the crime
2. The victim
3. The suspect and his environment

It is necessary to search for the above three sources thoroughly in order to collect all the materials in sufficient quantity and send them to the laboratory. The microscopic fragments, debris and other inconspicuous materials can contribute to the final solution of the crime. The collection of such materials is a specialized task; an investigating officer must have a very deep sense of observation.

2.2 Goals of Evidence Packaging

2.2.1 Protection of IO from possible hazards associated with evidences like

- (i) Accidental firearm discharge
- (ii) Bio-hazards
- (iii) Sharp objects
- (iv) Health hazards associated with exposure to bacterial/viral toxic infections

2.2.2 Protection of evidence against

- (i) Loss

- (ii) Contamination
- (iii) Cross-transfer
 1. Suspect to victim
 2. Victim to suspect
 3. Scene to scene
 4. Item to item
- (iv) Deterioration

2.3 Elements of Packaging Evidence

2.3.1 Packing Material

- (i) Plastic Container/Polythene pouch: In some cases plastic containers/polythene pouches (as shown in Figure 2.1) are optimal and can be used for drugs, documents and digital evidences.



Figure 2.1: Airtight polythene pouches

- (ii) Paper: Paper bags/envelopes (as shown in Figure 2.2) are optimal and may prevent the deterioration of a biological sample if it is not completely dry when packaged.



Figure 2.2: Paper envelopes

2.3.2 Size of Packing Material

- (i) Size of a container is important
- (ii) Too small packaging (as shown in Figure 2.3) is likely to be inadequate



Figure 2.3: Too small envelope for the evidence

- (iii) Too big packing would disperse the evidence throughout the container and could be difficult to recover (as shown in Figure 2.4).

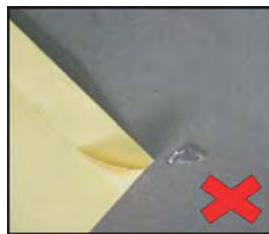


Figure 2.4: Small glass fragments packed in large envelope

- (iv) Ideally, small fragments would be packaged into a paper, i.e. coin envelope or a hold down device.

2.3.3 Sealing of Evidence

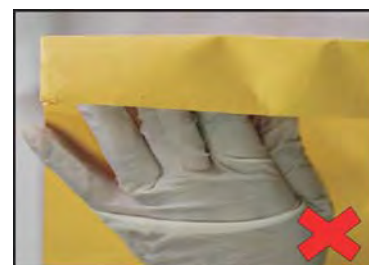
Sealing an evidence properly is the most important issue. An evidence can be sealed in the following three ways

- (i) Heat seal
- (ii) Tape seal/paper seal
- (iii) Lock seal

- Tape seal should completely seal envelope flap.



- Tape seal should completely seal bag flap.



- Staples are not an appropriate evidence 'seal'.



- Tape seal should be across entire flap of envelope.



Figure 2.5: Tape sealing the evidence

- All seals must be initiated by the person, sealing the evidence and dated to indicate when the evidence was sealed.

2.4 Precautions to be Taken

- (i) Protect the scene of offence immediately after the receipt of information about the offence.
- (ii) While picking and packing the material for dispatch to the laboratory, care should be taken to see that no article is inadvertently contaminated with extraneous material. Obtain photographs of the scene from a number of angles so as to later establish the exact position of the object, the body (if any), the weapons, etc.
- (iii) Investigating officer should handle the articles with care.
- (iv) Look for unusual foreign matter like pieces of hair, fiber, paper, clothes, glass, wood, metal, etc., and collect the sweepings from the floor without disturbing other things like blood, saliva, semen-stains, etc.
- (v) Make a rough sketch of the position of objects and note the relationship of various pieces of evidence to the surrounding.
- (vi) While investigating cases of murder or suicide, a medical officer should accompany the police to the scene of crime whenever possible and inspect the body and its surroundings before they are disturbed.

2.5 General Directions

- (i) Each article should be separately packed and labelled indicating the serial number of an item.
- (ii) Never pack more than one type of item together.
- (iii) The labels should be numbered consecutively and should bear the signature of the forwarding officer.
- (iv) All the packets belonging to one case should be enclosed in one box or an outer covering.
- (v) Articles belonging to different cases should never be forwarded under the same cover.
- (vi) All parcels should be carefully sealed by the dispatching officer and packed in such a manner that they cannot be opened without destroying the seals.

- (vii) The seal should be the same throughout.

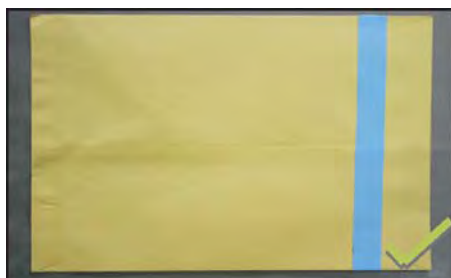


Figure 2.6: The correct way of sealing of an envelope of crime exhibit

- (viii) In all cases, the specimen seal impression should be sent.

2.6 Directions for Specific type of Exhibits

2.6.1 Weapons and Tools

- (i) Iron metal parts stained with blood should be preserved from getting rusty as far as practicable and should be sent for examination to the laboratory as early as possible, after proper drying of blood stain/fluid.
- (ii) Although paper is good packaging for bloodstained evidence, but it can easily endanger anyone who handles this evidence and blood sample sticking on the evidence can be lost.



Figure 2.7: Incorrect packing of blood stained knife in an envelope

- (iii) Knives, guns, tools and other weapons need to be immobilized first and then should be secured to board by means of strings.
- (iv) It should be then placed in a box of suitable size (as shown in Figure 2.8).

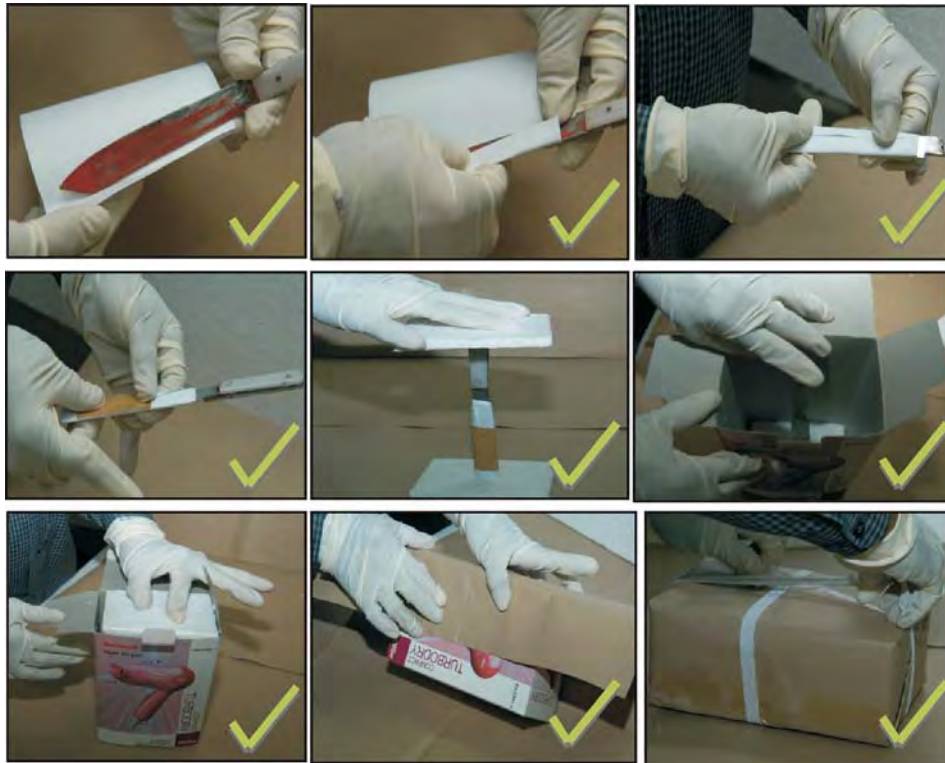


Figure 2.8: Packaging of knife with suspected blood stain at scene of crime

2.6.2 Hair and Fibres

- (i) If hair and fibres are found adhering to some objects with blood, clot, the whole object with the hair or fibre adhering should be sent to the laboratory.
- (ii) In order to prevent contamination, any foreign matter adhering to the hair or fibres should be picked up with forceps.
- (iii) They should be placed in glazed surface, cellophane, filter or blotting paper, which should be carefully folded along the length of the exhibit and enclosed in a suitable container.

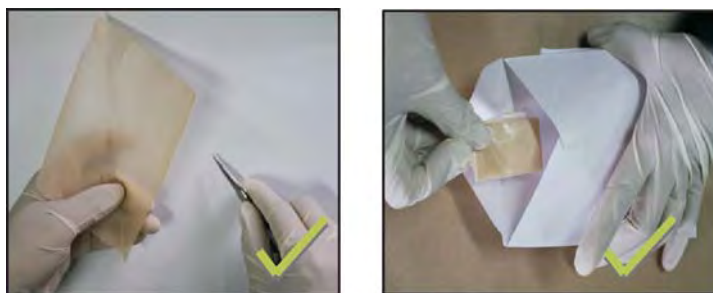


Figure 2.9: Packaging of hair sample at the scene of crime

- (iv) Hair from the persons or animals should be obtained by combing or clipping from several points, cutting them close to the skin.
- (v) Pubic hair should be taken from rape victims. This should be clipped close to the skin. This is useful for comparison with the hair found on the person clothing or handkerchief of the suspect.

2.6.3 Blood and Bloodstains

- (i) Ensure that anything that comes in contact with the biological samples during collection should not contaminate it. Work on clean surfaces and wear gloves if necessary to avoid contamination.

Do not use any preservative unless specified.

- (ii) Blood that is in liquid pools should be picked up on a gauze pad or other clean sterile cotton cloth and allowed to air dry thoroughly at room temperature. Pack gauze pad or sterile cotton cloth after drying between clean white paper and send it in paper envelope.

Do not dry stained material by heating or in bright sunlight. Hang clothing and similar articles in a room where there is adequate ventilation.

- (iii) For fresh moist stains on clothing, sheets, blankets, etc., allow the stain to *dry at room temperature*. Insert the stained clothing between clean white paper and send in paper envelope after sealing it properly.



Figure 2.10: Packaging of bloodstained clothing at the crime scene

- (iv) For fresh moist stains on solid objects such as weapons, wood, plaster, automobile, etc., collect the blood stain on filter paper or gauze pad and allow the stain to *dry in shade at room temperature* and send in any envelope. Blood may be soaked on filter paper or gauze pad and allow to *dry in shade at room temperature* and send in any envelope.
- (v) Dried stains on clothing, sheets, and blankets: Send the entire clothing to the laboratory, protecting the stain with clean white paper and send in any paper envelope.
- (vi) Dried stains on small solid objects: Send the whole stained object to the laboratory after labelling and packaging.
- (vii) Dried stains on large solid objects that cannot be delivered to the laboratory: Scrape the stain onto a clean piece of paper, which can be folded and place in an envelope. Do not scrape directly onto the evidence. Scrape blood from objects using a freshly washed and dried knife or similar tool. Wash and dry the tool before each stain is scraped off. Seal and mark the envelope.
- (viii) Do not mix dried stains. Place each stain in a separate envelope.
- (ix) Never attempt to wipe dried stains from an object using a moistened cloth or paper.
- (x) If the blood is found on earth, or earthy material, scrapping should be made deep enough (1 inch) to collect the soaked blood.
- (xi) *Do not use any packaging device that limits air exchange because biological samples get deteriorated.*



Figure 2.11: Blood samples packed in tube (air tight), pouch (air tight) and paper envelope

- (xii) If blood stains are suspected to be present in the nails, it should be clipped and the clippings be packed in a glazed paper and sent in any envelope to the laboratory. While clipping nails, care should be taken to avoid cutting of the skin or flesh.

Control samples:

- (a) In cases where it is not possible to send the entire object to the laboratory, a portion of the unstained area immediately surrounding the stain should always be forwarded for control tests, and the location on the clothing from where the control sample has been taken must be marked with red pencil and the investigating officer should sign the marking.
- (b) If stain is on soil, plaster, furniture, etc., a portion (1 inch) of the unstained area should be scraped to the same depth as the stained area and sent as control.
- (c) In the case of weapons, it is very desirable that the whole object is sent to the laboratory with suspected blood stain so that the control sample is also prepared by taking swab from unstained surface of the weapon.

To minimize the chance of cross transfer of adhering evidence; different clothing items should *not* be packaged in the same container.



Figure 2.12: Different clothing items packaged in the same and different container

2.6.4 Semen

Seminal stains are often found on clothing, blankets and sheets. Allow these stains to get dried at *room temperature* before packaging. Wrap these clothing with suspected stain of semen in paper and pack the evidence in paper bags after marking the stains with red pencil.

Precautions:

- Do *not* use plastic bags because it will deteriorate the sample.
- The garment or fabric may be folded taking care that the stained areas are not folded.

2.6.5 Saliva

- (i) If saliva is suspected to be present on any object, the entire object should be sent to the laboratory.

- (ii) Control samples of saliva from the victim and the suspected persons should be collected and sent immediately in small sterile plastic/glass tube with an advice to be kept in the freezer.

Note: If the persons are dead, swabs from the mouths of both the victim and suspect should be sent.

2.6.6 Dust or Soil

- (i) Dust or soil should be placed in a filter paper and then enclosed in a suitable container.
- (ii) If the dust is found on any article of furniture, it can be collected directly in a filter paper with the help of a vacuum cleaner.
- (iii) Soil may be collected with a spatula or spoon.
- (iv) If the dust is found on an object which can be readily transported such as shoe or clothing, the whole object should be sent to the laboratory keeping the dust or soil intact on the material.
- (v) Metal filing, glass fragments, finger nail scrapings, paint chips, wood chips, plaster and similar samples should be placed in filter paper and enclosed in suitable containers.

Precautions:

- For all the above purposes, cellophane paper or any other paper preferably with a glazed surface can be used instead of filter paper.
- Liquids and greases should be sent in glass containers with non-leaking ground glass stoppers.

2.6.7 Arson Cases and Cases of Burning

- (i) In arson cases, traces of flammable fluid may be found in cans, mattresses, rugs, furniture, wallboard, and other objects at the scene. The traces of the same flammable fluid may spread to the areas where no burning has occurred or where there is a partial burn.
- (ii) The traces of these flammable fluids from the material such as soil, wood, cloth, paper, etc., if suspected, can be preserved in a heat sealed plastic bags and then packed in an airtight appropriate size leak proof plastic/metal container. The investigating officer should ensure that the traces of flammable liquid do not get evaporated by the time the samples reach the laboratory.

- (iii) If volatile liquids are found in open containers, pour a small amount of material into a clean bottle with an airtight seal so that no loss occurs.

Do *not* use any rubber-lined lids or plastic containers.

- (iv) Large pieces of wood, furniture, wallboard, and similar exhibits which will not fit in cans should be placed in heat-sealed plastic bags.

Note: In all cases, the package or container should be marked as inflammable.

2.6.8 Tool Marks

- (i) Tool marks should be protected by covering with soft paper. It should then be placed in strong wrapping papers. The whole thing should be in a strong box and packed after fixing the evidence in the box by thread so that the tool marks on the evidence are not damaged during transportation.
- (ii) Submit the whole evidence containing tool marks to the laboratory instead of just removing the area containing the marks. If this is not possible, carefully photograph and sketch the area containing the marks.
- (iii) Casts of tool marks can be made by an experienced person.

Attempts should never be made to fit tools into questioned marks or to make test marks prior to laboratory examination because the questioned mark or tool marks may be altered. In addition, traces of transferred paint or other stains on the tool may be lost or additional material may be transferred to the tool.

2.6.9 Exhibits for Ballistics Examination

2.6.9.1 Firearms

- (i) Photograph the firearm with ammunition.
- (ii) Inspect for live ammunitions, if any, remove them. *Never* submit a loaded gun to the laboratory.
- (iii) The investigating officer should not try the mechanism or the working of the firearms. It should be brought in-original condition of the seizure.
- (iv) Never clean the bore, chamber, or cylinder before submitting a firearm, and never attempt to fire the gun before it is examined in the laboratory.
- (v) Record serial number, make, model, manufacture details and caliber of the weapon.

- (vi) Enclose the firearm in a cellophane sheet and pack in cloth cover and seal properly (as shown in Figure 2.13).

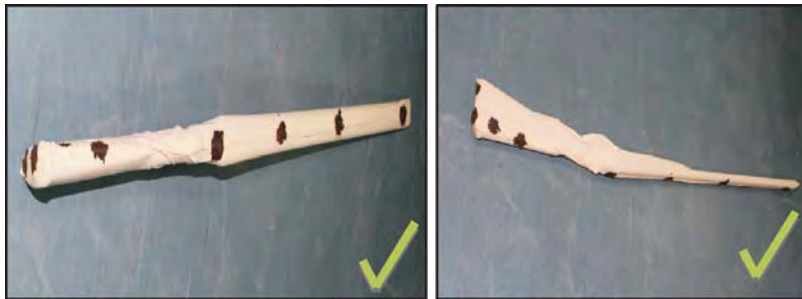


Figure 2.13: Firearm packed and sealed in a cloth

- (vii) Handguns may be sealed in a box. Give cotton padding so that the firearm does not move inside the box and seal properly.

2.6.9.2 Cartridge Cases

- (i) Place recovered cartridge cases in plastic envelopes separately and then packed collectively in a suitable box preferably cardboard, plastic or wooden box. The box should be packed in a clean cloth and sealed properly.

If an examination is required to determine whether a bullet or cartridge case was fired by a specific weapon, submit the weapon and all recovered unfired ammunition to the laboratory.

2.6.9.3 Bullets

- (i) Note caliber of bullet.
- (ii) Never mark bullets on its outer surface with a metallic marker.
- (iii) Wrap each recovered bullet in a piece of paper and then pack in a suitable box with sufficient padding of cotton. Then pack the box in a cotton cloth and seal properly (as shown in Figure 2.14).



Figure 2.14: Bullet packed and sealed in a box

- (iv) Submit all evidence including bullets recovered to the laboratory. Do not attempt to clean recovered bullets before sending them to the laboratory. Bullets recovered from a body should be air dried and wrapped in paper.

2.6.9.4 Ammunition

- (i) Always attempt to recover unused ammunition for comparison purposes from the locations such as cars, clothing, houses, or other locations.
- (ii) Do not put any details/marks on the cartridge.
- (iii) Enclose the cartridge in a plastic envelope and seal in a box giving sufficient padding of cotton between two cartridges to avoid the cartridges from colliding with each other.

Each article should be packed, labelled and sealed separately before sending to the laboratory. (For detailed procedure for packaging of firearm and ammunition please refer to Chapter 14 of this SOP).

2.6.10 Glass

- (i) Shoes and clothing of suspects or other objects contaminated with glass should be wrapped in paper and send to the laboratory for examination.
- (ii) Place small glass fragments in a coin envelope and then in bigger envelopes, which can be marked and sealed (as shown in Figure 2.15).

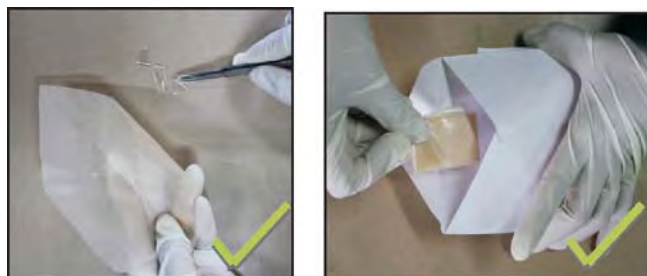


Figure 2.15: Packaging of glass fragments

- (iii) Place large glass fragments in boxes with sufficient cotton padding to prevent any breakage or damage during shipment. Seal and mark the box properly.

2.6.11 Paint

- (i) Keep all samples collected in separate containers. Small paper can be used to collect and hold many paint samples. It can be placed in an envelope, which can be marked and sealed.

Never place paint directly into envelopes unless large pieces are enclosed.

2.6.12 Questioned Documents

- (i) All original questioned documents such as handwriting, typewriting, or other evidences involved in a particular investigation should be sent to the laboratory for examination.
- (ii) Known specimens are also required with the questioned document for investigation.
- (iii) All documents should be packed in polythene or plastic envelopes and then in a paper envelope. The sealing should be complete so that there is no chance of tampering the sealed document.

Precautions:

- Questioned document and the specimens should not be defaced, or altered in any circumstances. Do not fold or punch holes or use pins on a document.
- Personal marks for identification purposes should be made as small as possible on the back or other area of the document where no handwriting or typewriting is present.
- If document is already damaged, do *not* try to repair the document.
- Where examination of charred paper is involved, extra care must be taken to prevent any additional crumbling or breaking of the burned material. It should be placed on top of the loose cotton in a box and should be delivered in person to the laboratory.

2.6.13 Latent Fingerprints

- (i) Most fingerprints sent to the laboratory should be on paper, glass, metal, or other smooth surfaced objects. Articles containing latent fingerprints must be picked up and not be touched.
- (ii) Lifted, developed latent fingerprints should be marked and sealed in marked envelopes.
- (iii) Papers and documents containing latent prints should be placed individually in a paper envelope.
- (iv) Containers, bottles or glasses can be sandwiched between two sheets of stiff cardboard, wrapped, and placed in a box to send it to the laboratory.

Precautions:

- The investigating officer should wear gloves while handling any article having fingerprints so that his fingerprints do not contaminate the object.
- The investigating officer should also take care that the area of the object where fingerprints are likely to be present are not touched by him.
- Once the fingerprints are visualized, these should be immediately developed and photographed.
- Fingerprints on bigger objects such as doors, iron boxes, tables, chairs, etc., which cannot be transported to the laboratory, should be developed and lifted using adhesive tapes.

2.6.14 Drug Samples

- (i) Appropriate packaging materials for drug evidence are heat sealed like plastic pouches or air tight pouches (as shown in Figure 2.16). Sealed pouches can safely contain potent drug evidence and protect personnel against unnecessary exposure.



Figure 2.16: White coloured powder suspected to be heroin packed in airtight pouch

- (ii) Choose an appropriate sized plastic pouch for the packaging of drug evidence.

Note: A paper envelope and paper is not appropriate packaging for drug evidence.

References

1. A.K. Bapulay, Forensic Science: Its Application in Crime Scene Investigation, 1st edn, India, 2006, p. 264.
2. http://www.mppolice.gov.in/PHQImages/GOPEnglish/gop_1-62.pdf