GUIDELINES ON USE OF FORENSIC SCIENCE IN INVESTIGATION OF CASES

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Law Relating to Expert Evidence

Section 45 of the Indian Evidence Act:

"When the court has to form an opinion upon a point of foreign law, or of science, or art or as to identify handwriting (or fingerprint impressions), the opinions upon that point of persons specially skilled in such foreign law, science and art, (or in question) as to identify of handwriting (or finger impressions) are relevant facts. Such persons are called experts".

Section 47 of the Indian Evidence Act allows an individual to express an opinion about the genuineness of writing if the said individual is acquainted with the writings of the person concerned.

Under Section 73 of Indian Evidence Act, the court may direct any person present in the court to write any words or figures so written with any words or figures alleged to have been written by such persons. (This section applies also, with necessary modifications, to finger impressions).

The scientific reports on criminal cases by the experts are admitted u/s 293 Cr.P.C., provided the experts are declared as chemical examiners or Assistant chemical examiners by the government. Their presence to give evidence in the courts of law is exempted. However, there is on exception to this privilege i.e. when accused contests the opinion of the expert or the court wants to examine to clarify some doubts, he has to appear in person to give evidence in the court of law.

Section 293 Cr.P.C.:

i. Any document purporting to be a report under the hand of a government scientific expert to whom this section applies, upon any matter or thing duly submitted to him for examination or analysis and report in the course of any proceeding under this code may be used as evidence in any inquiry, trial or other proceeding under this code.

ii. The court may if it thinks fit, summon and examine any such expert as to the subject matter of his report.

iii. Where any such expert is summoned by a court and he is unable to attend personally, he may, unless the court expressly directed him to appear personally, depute any responsible officer working with him to attend the court, if such an officer is conversant with the facts of the case and can satisfactorily depose in court on his behalf.

Basic Crime Scene Kit for use by the Investigating officer

1. Foot print kit (Rexene shoulder bag)

1. Plastic bucket (4 Litre)/ Anodized aluminium bucket
2. Plastic mug (500 ml)
3. Aluminium frame (14" x 7" x 1.5")
4. Spray pump/Perfume spray bottle
5. Plastic bottle (150 ml) for shellac dissolved in 90% alcohol
6. Talcum powder (50 grams)
7. Common salt (50 grams)
8. Sugar (50 grams)
9. Stainless teaspoon
10. Forceps
11. Scissors
12. Plaster of Paris (2 Kg per cast) in a suitable air tight container

13. Stainless rice spoon
14. Wire mesh
15. Pencil (preferably copying pencil)
16. Triacetate sheet (OHP A 4 size polyester sheet)
17. OHP markers of different colours
18. Magnetic compass
19. Photo bromide paper (Black and White)
20. Foot scale

2. Photography kit (Rexene shoulder bag with special provisions to keep camera and accessories)

1. 35 mm SLR Camera /Digital SLR Camera
2. 35 mm film rolls (200 and 400 ASA)
3. Lens hood
4. Lenses (Normal lens)
5. Video camera (Video cassettes, charger and backup battery,
6. Camera tripod
7. Electronic flash (Rechargeable batteries, charger)
8. Video light
9. Electrical extension board
10. Measuring tape
11. Scribbling pad
12. Writing paper

3. Fingerprint kit (Rexene shoulder bag)

1. Pair of latex gloves
2. Printer's ink in squeezable tube (100 ml)
3. Smooth surface (Wooden block, white decolum laminated of 7" x 3" x 1")
4. Rubber ink roller (4")
5. Fingerprint recording slips
6. Camel hairbrush
7. Ostrich feather brush

8. Charcoal black powder
9. Manganese dioxide powder
10. Universal grey powder
11. Anthracene powder
12. Ninhydrin solution in spray bottle (2% solution of Ninhydrin in Acetone)
13. Silver nitrate solution in spray bottle (2% solution of Silver nitrate in Acetone with a few drops of Xylem)
14. Iodine fuming gun
15. Atomizer
16. Soap
17. Towel
18. Cotton wool
19. Rectified spirit/petrol in glass bottle (100 ml)
20. Hand held ultra violet light
21. Hand lenses with built in light (3x and 5x)
22. Roll of transparent adhesive lifting tapes (2", 4" and 6" wide)
23. Strips of Triacetate sheet (3" x 3", 5" x 6" and 8" x 7")
24. Torch light with rechargeable battery
25. Portable iron
26. Plastic dishes for powders

4. Packaging kit (Rexene side bag)

1. Roll of cordoning tape - 50 meters
2. 3 pairs of Gloves
3. Hammer
4. Pliers
5. Screw driver set
6. Triangular file
7. Saw
8. Blade
9. Soldier's knife set
10. Scissors

11. Forceps
12. Pair of tongs
13. Glass cutter
14. Magnetic compass
15. Mirror
16. Drawing sheets
17. Graph sheets
18. Foot scale
19. Pencil
20. Eraser
21. Note sheets
22. Carbon sheets
23. Clip Board
24. Gem clips
25. Stapler
26. Setsquare
27. Protractor
28. Compass
29. Red & blue pencil
30. OHP markers
31. Chalks of different colours
32. Measuring tape 50’
33. Thermopolis sheets (1’ x 1’) – 10 sheets
34. Assorted size polythene bags (sizes ranging from 4” x 3” to 12” x 10”)
35. Assorted size paper bags (sizes ranging from 4” x 3” to 12” x 10”)
36. Large size paper bags – 4 (2.5’ x 2’)
37. Brown sheets – 10 sheets
38. Assorted size corks
39. Assorted size screw cap vials
40. Assorted size plastic vials
41. Paper boxes of different sizes
42. Exhibit tags

43. Clean bed sheet (pair of single bed sheets for packing the dead body)
44. Sewing needles and thread
45. Adhesive tapes
46. Transparent adhesive tapes (2” and 4” wide) to lift trace evidence
47. Triacetate sheets for protecting trace evidence lift tapes
48. Cotton wool
49. Soap and towel
50. Rolls of twine
51. Rolls of cloth tape
52. Plastic vials for packing cartridges
53. Combs
54. Hair brush
55. Gum bottle
56. Sealing wax
57. Candle
58. Metal seal
59. Match box
60. Rechargeable battery search light
61. Rechargeable battery torch
62. Modelling clay
63. Magnifying lens with built in light (3x and 5x)

5. Blood testing kit (Rexene hand bag)

1. Pair of gloves
2. Freshly procured Hydrogen Peroxide – 20 ml (30 –40 %) – in plastic dropping vials
3. 2 % Benzidine solution in Glacial Acetic Acid – 20 ml in plastic dropping vials
4. Vial containing normal saline (100 ml)
5. Filer paper packet
6. Surgical cotton
7. Surgical gauge

8. Forceps
9. Scissors

Collection, Handling, Packaging and Forwarding of Physical Evidences

The location of physical evidences during the crime scene search merely marks the first step in its long odyssey towards presentation in court. To satisfy legal requirements to its introduction in a judicial proceeding, the I.O. must be able to:

1. Identify each piece of evidence, even years after it was collected.
2. Describe the location and condition of the item at the time it was collected.
3. Documentary proof for establishing chain of custody.
4. Giving description about any changes, which may have occurred in the evidence between the time of collection and the subsequent introduction as evidence in the court.

While collecting, handling and packing of physical evidence following precautions are to be observed:

1. Nothing should be touched or collected with bare hands. Always use gloves.
2. Hold objects in such a manner that the evidence such as latent finger prints on it are not damaged or wiped off.
3. There should be proper documentation about each type of physical evidence. Information such as - name of the object, make, colour, number, dimensions, locations, etc. are to be documented.

4. Blood stained dagger, lathi or bullet should be packed after thoroughly drying. Hairs and fibres sticking onto the weapons should not be separately packed.
5. All biological stains should be thoroughly dried under shade (never under sun or intense light).
6. Under no circumstance biological stains should be packed in air tight packing materials such as cellophane, polythene, glass vials etc.
7. Each physical evidence should be packed separately and labelled so that their integrity is maintained.
8. Each item should be protected adequately with suitable packing materials against external shocks so that they do not break during transit.
9. In order to prevent damage or contamination of the physical evidence while packing, care should be taken that the packing materials do not come in contact with the object.
10. Finally, all individual packets as far possible should be packed together in a box, wrapped with intact piece of paper, tied and sealed.
11. Forwarding note in triplicate should be filled up with specimen seal on each copy. The first copy should be placed in sealed envelope inside the box, second copy in a sealed envelope should be handed over to the messenger carrying the exhibit and third copy should be retained in the police station.

Physical Evidences

1. **Fingerprints / Palm prints-** Latent prints, Plastic prints and Visible prints.
1. **Footprints / Shoe Impression** -Dusty – Invisible print, Dusty-Visible print, Sunken impression
2. **Tyre Impressions and Skid Marks**
3. **Biological Materials –** Blood, Semen, Saliva, Urine, Vomit, Faecal Matter, Hair, Fibre, Tissues, Teeth and Bite Marks, Skeletal Remains, Nails, Burnt

Remains, Vegetable Materials, Diatoms, Insects and Larvae, Vegetable and Animal Poisons, Bacteria

4. **Trace Evidences –** Soil, Dust, Dirt, Glass, Paint,
5. **Medicines/Drugs/Poisons –** Anti-biotic and Medicines, Alcohol, Narcotic Drugs and Psychotropic Substances, Precursor Chemicals for making Synthetic Drugs Poisons (Synthetic), Syringes, Injection Vials, Injection Site, Medicine Wrappers, Blood/Urine/Vomit Samples, Viscera and its contents, Stomach Wash,
6. **Firearms and Ammunitions –** Different types of Factory made (Standard) and Country Made Firearms, Fired Bullets and Pellets, Empty Bullets and Cartridges, Live Ammunitions, Gunshot Residues, Gun Powder, Wads, Firearm Lubricants
7. **Explosives and Improvised Explosive Devices –** Bombs, Explosive Devices, Explosive Substances**,** Military Explosives and Bombs, Switching Mechanism and Switches, Detonators, Safety Fuses, Timing Devices, Wires, Adhesive Tapes, Splinters/Projectiles, Explosive Residues, Precursor Chemicals required for preparation of explosive substances, Remote Control Devices,
8. **Burnt Remains –** Fire Accelerants, Incendiary Devices, Inflammable Substances, Burnt Remains of Arson Cases,
9. **Acids and Corrosives**
10. **Documents and Counterfeit Currencies -** Written Paper/Document, Typed Document, Computer Printouts, Charred Documents, Documents containing invisible writings and Indentations, Counterfeit Currencies, Writing Ink, Printing Ink, Bank Cheques, Stamp Papers, Postal Stamps, Revenue Stamps etc.
11. **Tools and Tool Marks –** Erased Number plates, Machines and Tools, Tool Marks, Chemicals, Moulds, Templates/Punches
12. **Cables and Wires**
13. **Adulterated Food and Building Materials**

14. **Photographic Prints, Negatives, Audio/Video Tapes, Audio and Video CDs, DVDs**
15. **Ornaments and Jewelleries**
16. **Lipsticks and Cosmetics**
17. **Hand Wash Samples and Currency Notes in Trap Cases**
18. **Petroleum Products**

Methods of Searching and Developing Fingerprints

1. The transfer of body perspiration or oils present on finger ridges to the surface of an object causes the latent prints.
2. It is imperative that the investigating officer thoroughly searches all surface areas in and around the crime scene for fingerprints.
3. Particular attention should be paid to less than obvious places, such as the undersides of cots, dressing tables, chairs; table tops; surfaces of dinner plates, cups and saucers; filing cabinets, rear view mirrors, door handle and door of the iron chests, trunks.
4. It is never safe to assume that the offender took precautions against leaving prints or destroyed those left. The commission of a crime involves stress, and the offender may commit some oversight.
5. It helps to attempt to view the scene as the criminal did.
6. In conducting the examination for latent prints in a burglary case, for example, the search should begin at the point of entry.
7. Occasionally, fingers coming in contact with blood, paint, grease or oil may leave behind visible fingerprints impressions at the scene of crime such prints are known as Visible Prints.
8. Fingerprints found on soft surfaces such as soap, wax etc. are called Plastic Prints.
9. However, in most of the situations fingerprints are not visible to un-aided eyes and such category of prints are called as Latent

Fingerprints. Use of magnifying glasses, oblique lights, ultra-violet light with variable wavelengths and iodine fuming guns, makes it is possible to search and locate fingerprints at the scene of crime.

10. After locating the fingerprints, it is necessary to develop them. There are many methods available to develop fingerprints. Success or failure of various techniques depends upon many factors such as colour and nature of the surface, age of the impression etc.
11. If the impressions are not very old, different types of powders may be used to develop the latent fingerprints. Type and colour of powders to be used, vary greatly with the nature and colour of the surfaces on which the fingerprints are present.
12. Use of powders give better results if the fingerprints are found on non-absorbent surfaces such as glass, mirror, tile etc.
13. Chemical methods are used when the impressions are found on porous objects such as paper, cardboards etc.

1. Foot Prints, Shoe and Tyre Impressions

Collecting Foot and Shoe print and Other Impression Evidence

1. Because of the individualistic character impressions of shoe, foot and tyre are often encountered in variety of crime situations.
2. These impressions play an important role to establish identity of the suspect and also establish link between the suspect, victim and the scene of crime.
3. Impressions are found in two forms: Impression prints (sunken or depressed impression) in soft surfaces such as mud, sand, mortar or other soft material, and residue prints (surface impression) on solid surfaces by dust, mud, flour, blood, or similar media.
4. Besides, in case of shoe impressions the wear and tear of the sole is also specific to the individual.

Impressions

1. It has already been mentioned that shoe, foot and tyre tread impressions are highly individualistic and can provide important information leading to the identification of the suspect or a vehicle either involved in a hit and run case or used by the suspect.
2. This important physical evidence should be first photographed before any making Plaster of Paris cast or tracing. In case of sunken impression a Plaster of Paris cast is made. Fine grade Plaster of Paris is mixed to the proper consistency with water and poured carefully into the print so as to disturb it as little as possible yet fill it completely. It should be allowed to settle and dry completely and then lifted. It has been observed that fine details are not recorded in the cast but this can be ignored, as such fine details are not registered on the soil also.
3. Some experience or judgment on the part of investigator is necessary to decide manner of treating an impression.
4. If the impression has been satisfactorily photographed before casting, the failure of the cast is less serious.
5. Photographing the impression is an important precaution, because casts do sometimes fail, either because of unfavourable conditions or because of the operator's inexperience.
6. A high grade Plaster of Paris normally used by the dentist is suitable for the purpose of making casts.
7. For the purpose of comparison it is essential to obtain cast of the concerned tyre, foot and shoes under test conditions.
8. The casts made at the scene of crime together with the casts made under test conditions are to be sent to the Forensic Science Laboratories for comparison.
9. The casts may be sufficiently protected so that they don't break during the transportation.

10. The Forensic Science expert compares the casts meticulously. In case of foot impression casts various features such as size, shape, distance between fingers, size of the toes, mark of injuries, congenital deformities etc., are compared. On the basis of these comparisons the Forensic expert gives his opinion whether the footprint found at the scene of crime matches with the footprint obtained under test conditions.

11. Similarly in case of foot wears, both the case exhibits as well as the test shoe impression casts are also compared for various characters such as make, size, pattern, wear and tear mark etc.

12. In case of tyre impressions tread characteristics are compared critically to give opinion whether both the casts match with each other or not.

13. In various crime situations police may often come across series of foot impressions. Study of such impressions will enable the investigating team to analyse the gait pattern. Study of gait pattern is important as it varies from individual to individual to a great extent. A person suffering from congenital deformity in the legs, surgical operations, fracture of the legs, age, etc are reflected in their walking style. Similarly, a person carrying huge load will definitely have different walking pattern than in ordinary condition.

14. Study of gait pattern also helps to find the direction of the movement and also number of persons involved in a particular crime.

15. Expert opinions on various types of casts are considered to be corroborative in nature by the court. However, it is one of the most important evidence for establishing identification of a person or a vehicle through matching the characteristics between the exhibit and the cast prepared under test conditions.

Blood

1. Blood is one of the most significant and frequently encountered types of physical evidence associated with the forensic investigation of death and violent crimes.
2. Blood samples are often submitted to the Forensic Science Laboratories for the following examinations:
    - Whether the stain or the material is blood or some other material.
    - The identification of species origin i.e. human or animal blood
    - What is the blood group under ABO and other systems such Rh, MNs, etc.
    - Serum, Red Blood and White blood cells enzyme typing
    - Menstrual or Circulating Blood
    - Age of the Blood
    - Analysis of Blood for Chemicals and Poisons
    - DNA Profiling
3. Laboratory examinations of blood samples reveal highly conclusive results about the identification of the person.
4. Visit of the forensic scientist at the scene of violent crime is important. He after observing the shape, size, angle and other geometrical details of the blood stains, will be able to help the investigating officer to reconstruct the sequence of events leading to the commission of a particular crime. The circumstances and nature of violent crimes frequently produce a variety of bloodstains.
5. The blood grouping techniques at the Forensic Science Laboratory together with the reconstruction of events based upon bloodstain patterns at the scene of crime provide the identity of a person and also the way the crime was committed.

Information from the Blood Distribution pattern

1. Where the position of the victim at the time of injury is determined.
2. Where the movement of the victim can be observed.
3. Where the removal of the body from the scene is traced.
4. Where storage of the body can be noted.
5. Where evidence remains were the body has bled before removal.
6. Where blood soaking through a mattress, floor, or other surface may be provide volume estimation.
7. Where the relationship of the victim to the assailant may be deduced from the blood on the assailant's clothing.
8. Where the amount of blood loss is to be estimated.
9. Where aging of the blood accumulation must be determined.
10. Where it is required to determine whose blood is present and whether there are intoxicants present.
11. Where there may be a question of how much blood lost is present and its potential effect on the condition of the victim.
12. When there is any tissue present in the blood evidence such as brain tissue that would make difficult for the victim to move or be conscious.

Following precautions are to be observed while collecting and handling bloodstain materials at the scene of crime:

1. No stain, smear or liquid blood should be touched with bear hands, as it is hazardous.
2. The I.O. should always use gloves for handling such materials.
3. No two stains should be mixed with each other or they should not come in contact with each other.
4. To collect sample from smear of blood, it is recommended that the I.O. should take cotton wool, moisten in water and rub it over the smear, dry it under the shade and finally place in a paper envelope and paste.

5. In case of pool of blood, the I.O. should soak with liquid blood, dry under the shed and place inside paper envelope and paste.

6. In case of bloodstains for example, a bloodstain shirt, it is suggested that the shirt should be spread and completely dried under the shade. In order to ensure that no two stains on the same shirt come in contact with each other, it is recommended that clean piece of paper may be spread below and as well as above the shirt and fold it along with the paper. Finally, it should be placed in a paper envelope, pasted and sealed.

7. Under no circumstances, the biological materials should be packed in air-tight packing materials such as cellophane or polythene etc., as these air tight packing materials will not allow the residual moisture to dissipate which will result into faster decomposition of the exhibit due to rapid growth of the bacteria and other micro-organisms.

8. Under no circumstances, the I.O. should cut and isolate stain portion from large pieces of fabric such as bed sheet He should also not disturb the area bearing bullet whole or whole due to stab due penetration of dagger etc.

9. The I.O. should also send control samples of blood from victim, suspect if any etc., along with the exhibits.

10. The individual envelopes containing exhibits, control samples should be properly labelled before sending. It should bear the exhibit number, nature of the exhibit, colour of the exhibit and other details, number of the quantity if any etc.

11. In case of bloodstained objects such as bloodstained dagger, bullet, axe etc, the I.O. should not wipe the blood present on the weapon. He should also not remove any other foreign such as hair, fibre etc., sticking on to it from the weapons. He should dry the blood present on the weapon thoroughly under the shade, note down details of the

object such as make, shake, length, breadth etc., and then pack properly.

Semen and other body fluids

Identification of Semen:

1. Semen as physical evidence is frequently encountered in cases of rape and other sexual offences. There are innumerable cases where analysis of semen led to the identification of suspect involved in sexual offences.
2. The articles such as bed sheets, clothes, undergarments, etc., containing seminal stains should be collected and packed properly avoiding folding the area, which is stained. As in case of blood, the seminal stained materials should be dried thoroughly under shade and placed inside paper envelopes. The seminal stains should not be packed in airtight packing materials such as polythene or cellophane. Airtight packing materials enhance bacterial growth as a result of which the stains decompose faster.
3. It should be ensured by the investigating officer before packing that no two-stains on the same article should come in contact with each other. In order to prevent such contact, he should place paper between two stained areas. The exhibit should be properly described and labelled.
4. The I.O. should send control samples both from the victim and the suspect, if any. Blood samples drawn from the victim and the suspect serve the purpose of control sample as blood and seminal fluids contain same blood group substances.
5. The stains containing foreign materials such as pubic hair or fibres, those should not be separated from the stain.
6. The vaginal swab from the victim should be collected by the doctor during medical or autopsy examination and are handed over to the police for onward transportation to the Forensic Science laboratory.

Skeletal Remains

Many buried bodies come to light accidentally. Occasionally, information is received that a body is buried at a particular location. The police officer responsible to investigate such a case is required to carry out following major tasks at the scene:

1. To protect the scene of crime
2. Record the undisturbed scene of crime
3. To excavate/exhume the dead body
4. To record the scene at every stage of excavation
5. To conduct inquest
6. To collect the skeletal remains
7. To collect other physical evidence including soil samples from the buried area
8. To seal the skeletal remains to forward it first for post-mortem examination and secondly to the Forensic Science Laboratory for other examinations.
9. The I.O., soon after excavation of the skeleton remains, place the bones in anatomical position to find out age, sex, stature, race, anatomical deformities, cause of death, time since death and manner of death.
10. He should also try to find out the missing bones possibly eaten or taken away by animals in case skeletal remains are found in forest areas.

ACTIONS TO BE TAKEN AT THE PLACE OF BURIAL OF DEAD BODY

1. The outermost surface of the place should be observed carefully, photographed and then cleaned properly of extraneous materials so that the actual dimension of the place is visible which should be measured, sketch should be drawn.
2. Take a note of the vegetation of the site.
3. A stainless steel pointed end rod of 4-5 feet length and about an in diameter is highly suitable for the purpose of probing.
4. Soil or any surface should be dug slowly, layer by layer carefully so that no part of the human remains is lost or broken in the process.
5. All the bones, recovered should be collected at one place, preferably in an open container.
6. The soil of each of the layer should be sieved to recover pieces of human remains and other evidences such as the weapon of offence, hair bloodstains, clothes and any other material used in the commission of the crime.
7. Doctor should preferably be called to the scene to examine the bone and help the police to estimate the time since death, species, age, sex, cause of death and other aspects relating to the establishment of the identity of the deceased.
8. In the absence of a doctor, the I.O. may have to arrange all the bones in anatomical position and try to find-out the cause of death and other details such as species origin, age, sex and try to establish the identity and conduct the inquest.
9. The long bones should be individually measured and recorded.
10. Bones after arranging in anatomical position should be thoroughly measured.
11. Bones should be packed in a box taking care that no damage is caused or any part is stolen during the transportation to the Forensic Science Laboratory. Above-mentioned procedure for packing should be followed.

12. Collect the insect larvae in 10% Formalin in a bottle and seal. The insect larvae at different stages of development provide important information about the time since death. Forensic Entomologist working in Biology Division of the Forensic Science Laboratory examines the maggots and gives his report.
13. Samples of soil from the adjacent areas should also be collected, packed separately and sent for matching with the soil adhering to the bone.
14. Bones and other articles recovered should not be cleaned or washed.
15. In advanced countries, sophisticated equipment such as temperature sensing probes or radars are used to locate the body as much as 4-5 feet below the surface.

Examination of Skeletal Remains

Determination of Age: It is possible to give an opinion about the age of person from the bones.

Determination of Sex: Determination of sex is another important job of the forensic biologists.

Determination of Race: The scientists can give opinion on race by measuring cephalic index from the skull bone.

Determination of Cause and Manner of Death:

Determination of Time Since Death:

Facial Reconstruction:.

DNA TESTING

Packaging instructions:

S.No.	Type of Tissue	Packaging Instructions
1.	All the biological fluids such as blood, semen and saliva found on different surfaces both absorbent and non-absorbent or soaked in soil, mud etc.	All such materials should be dried properly; under shade and pack them in paper envelopes. Samples collected from different places/locations should be packed separately, even no two stains on a shirt or trousers should come in contact with each other. All airtight packaging materials such as polythene bags, cellophane sheets, plastic vials are prohibited. Control sample blood or tissue drawn from the victim and the suspect(s) are mandatory. Sample drawn from the liquid pool of blood should be in the form of stain.
2.	Samples such as blood, bones, hairs, swabs collected during post-mortem examination	Soft tissues should be collected in bottles a preserved in 70%-90% Alcohol (Rectified Spirit). Stains should be made out of the liquid blood and dried. All swabs should be dried and kept in separate paper envelopes. Long bones only should be wrapped in paper and should be placed in cardboard box. If tissues are attached with the bone, it should be preserved in Rectified Spirit.
3.	Amniotic and other fluids	Should be collected in glass vials, kept and transported in ice box without delay
4.	Blood stained weapons, bullet	Should be dried, wrapped in paper and placed in paper envelopes.

Packaging of Physical Evidence

S. No	Type of Physical Evidence	Method of Handling	Controls	Packaging Method	Information can be Obtained
1.	**Latent Fingerprints**	Use gloves to handle objects, avoid touching places where fingerprints are likely to be present	Recorded fingerprint slips of all those associated with the incident and also of the suspect(s)	If the object is small, latent FPs should be developed, photographed and then lifted. If it is necessary to send article, it should be packed in such a manner that its surfaces do not touch the packing materials. Each article should be packed separately. Each recorded FP slip should be packed in separate envelope.	The latent FP collected at the SOC is to be compared with the recorded on the FP slips to establish the identity of the suspect(s) and his association with SOC.
2.	***Footprints***	Footprints are easily damaged and hence should be protected by covering them before recording they should be photographed and shown in the SOC sketch.	Cast of the footprints of all the persons associated with crime should be obtained and sent along with the SOC cast. If there is shoe impression at the SOC, Cast of the shoes belonging to suspect, shoes, soil sample from the SOC and sample of the casting material should be sent to FSL for opinion.	Each cast should be packed separately with sufficient cushion to avoid breakage during transportation. Traced and lifted footprints may also be sent along with control tracings and lifted papers.	Cast is compared with the cast SOC and control casts to establish identity of the suspect and his association with the crime. Opinion may also be obtained on the gait patterns if photographs of all the impressions are sent. Similar opinion may be obtained in case of traced and lifted footprints.

3	**Blood Samples**	Wear gloves. Each bloodstained item or bloodstain should be collected in separate containers made up of absorbent materials such as paper or clean cloth. All the stains should be dried completely, under shade before they are collected. No two stains should be mixed.	Sample blood from the victim suspect(s) and all other persons should be collected and sent for matching.	While packing, it should be ensured that no two stains should come in contact with each other if there are more than one stain on a item such as a shirt. Place sheet of paper on both the sides of a bloodstained shirt and fold it along with the paper. This will not allow two stains to remain separate from each other. Place in paper envelope. Shirt or any other wearing material should not be removed by cutting. Damage caused on the shirt by a bullet or by a dagger should not be disturbed. Stained portions should not be cut out any material. Under no circumstance biological materials should be packed in airtight containers or by such material. This will destroy the stains due to bacterial growth. To collect sample from liquid pool of blood, clean cotton wool should be used to soak liquid blood, which should be dried	Opinion maybe obtained whether the stain is blood or not, species origin, Blood group and DNA type. It is strong evidence in cases against body, sexual offences and some times in property offences too to establish the identity of the offender and linkages between the victim(s), SOC and the suspect(s).

				under shad and then should be packed in paper envelope. Clean cotton wool soaked in water should be used to collect dried smear of blood present on the floor or wall or any such object. The rubbing of cotton wool should be gentle. After blood is transferred on the cotton wool, it should be dried under shade and then packed in paper envelope. Bloodstained blade of a dagger should be dried and should be wrapped with clean piece of paper or cloth and then finally packed in a suitable paper envelope or cardboard box. Hair or fibre stuck to a bloodstained dagger or lathi, should not be separated.	
4.	**Saliva Stain or materials containing Saliva.**	Do	Do	Do	Do
5.	**Semen Stain**	Do	Do	Same as above and in addition the stained portion should not be folded. The spermatozoa become highly brittle once dried, little friction would break	Do

				them, which would complicate the morphological examination of spermatozoa. Morphology of spermatozoa varies from one species to other and therefore is highly species specific.	
6.	**Skeletal Remains**	In case of buried dead bodies enough care should be taken while digging. The IO should use probe to assess the depth where the dead body is lying and start digging carefully and remove soil layer by layer. Soil should be sieved to recover other physical evidence or dismembered bones, if any. The IO should not dismember the bones or remove flesh attached to it or remove clothing etc. Soil adhering to the bones should not be separated. Stages of digging should be photographed and if possible video graphed also.			Death, Time Since Death etc. Blood Group analysis and DNA Test can also be conducted by examining the bone marrow. Establishing identity of a person is also possible by superimposing the photograph of the skull and the actual photograph of the victim.
7.	**Teeth**	Teeth found on the skull or mandible should not be separated, isolated teeth should be considered as separate samples.	Dental record of the victim, sample blood.	Teeth may be packed in glass vials. Jawbone with teeth should be protected from further damage during transportation by providing additional cushion using cotton wool and should be placed in suitable container and labelled.	Teeth are important evidence for identification. From teeth forensic expert can find out Age, Blood Group or DNA Test from Pulp Cavity of a person. At times teeth help to establish occupation of a person.

8.	**Hairs**	Hair samples from different locations of the SOC should be collected in separate envelopes. If it is sticking to a weapon or matted with blood or seminal fluid, it should not be separated and instead should be packed together, if required after drying under shade.	The IO should collect hairs sample by vigorous combing of the scalp or other organs of the victim, suspect(s) or any other person associated with the incident.	There are special vacuum machines are available to collect hair and other trace materials, which should be used collect hairs and fibres from the SOC. Alternatively, adhesive tape may also be used. Sample collected from different locations should be collected individually in envelopes. On each envelope nature and type of exhibits and the location must be indicated.	Hairs are sent to the Biology Division for opinion. Expert can opine on Species Origin, Age, Race, Sex, Organ from which hair originated, Burned, Weapon used, etc. Blood grouping and DNA typing is possible if there are hair roots attached to the hairs.
9.	**Documents**	Except charred documents no other documents need any special method for collection, handling etc.	Sample signature of normal handwriting should be obtained from the suspect. The suspect may be asked to write the text or sign on different dates without showing the signature on the exhibit should be marked.	The exhibit and the sample text or signature should be packed and sealed separately.	Opinion on handwriting or signature matching may be obtained from the document examiner.
10.	**Poisons and Toxic Substances**	Poisons and other toxic substances should be collected and handled carefully. Content of any bottle suspected to be a drug, should be transferred to other container, if needed. Such bottles should be examined for latent Fingerprints.	In case of spurious drugs, control samples may be seized and sent from the shop or the manufacturing. In case of suspected poisoning stomach contents/stomach wash and other visceral organs should be sent for analysis.	Each sample may be transferred to separate and clean containers, sealed, labelled and sent for analysis.	Qualitative and quantitative analysis of the suspected sample of drugs are carried out in the laboratory of the Chemical Examiner.

11.	**Explosives**	Steps should be taken first to diffuse live bombs or IEDs. Each should be packed separately. In case of an explosion, explosive residues should be collected from different locations from the site of explosion and packed separately.	Control samples may be collected from the possession of the suspect or from the adjacent areas from the locations where blast occurred.	Each exhibit and also control sample should be packed individually, taking care that the contents of the packets do not mix with each other. All packets should be labelled properly.	Forensic Toxicology Section of the FSL analysis and gives opinion on the nature and type of explosives used and their explosion power.
12.	**Firearms and Ammuni-tions**	**Fire arm** Photograph the firearm with ammunition, inspect for live ammunitions, if any remove them, take out the empty cartridge casings, count and keep them on soft surface. Inspect the firearm for latent fingerprints or bloodstains. Develop the fingerprints, photograph and lift them if the technique and expertise is available, otherwise take care that the fingerprints are not destroyed during handling or packaging. Dry the bloodstain. **Empty cartridge cases** Each cartridge case should be packed separately assigning individual exhibit number. Write identification mark in an inconspicuous place of the case so that you may identify it in the court during the trial. Place it in suitable container (plastic or glass container with proper lid)		Plug the breech and muzzle ends and also the chambers (in case of revolvers) with clean cotton wool or cloth. Write some identification mark in an inconspicuous place so that you may identify in the court during the trial. If there is no fingerprint, wrap the firearm properly with paper and place it in a suitable box. Protect the base of the case with cotton wool to prevent any scratch, which might develop on the percussion cap during the transportation. This is essential to protect the firing pin mark, chamber mark and the ejector	To relate firearm the ammunition. Also to give opinion regarding the functioning of the weapon. The expert will be able to identify from ammunition, the type and make of firearm used. By analysing the gun shot residue, collected from the hands of the suspect the expert will be able to furnish report whether the suspected person used the firearm and fired shot and also through chemical analysis of GSR, he will be able to relate the offender, SOC and the victim.

		Live Cartridges Same as above and extra care should be taken to prevent accidental firing at any stage of transportation. Clearly indicate the condition of the ammunition on the main container so that adequate care is taken while unpacking the exhibit. **Extracted Bullets/Pellets from the dead body or from other places of the scene of crime** X-ray examination of the injured person or a dead body should be done before extracting the bullet. Write some identification mark in an inconspicuous place so that you may identify the particular bullet/pellet when shown in the court. **Wads** Should be collected kept in a suitable container, label and sent. **Swabs collected for Gun Shot Residue Analysis** Swabs collected each hand should be packed separately in plastic bags with proper labelling.	After examining the actual position of the bullet in the human body, it should be extracted taking utmost care that no additional scratches are developed during the process of extraction. Rubber/latex tipped forceps are ideal to handle such evidences.	mark present on the empty shell. Extracted bullet/pellet containing blood should be dried first under shade, wrapped completely in cotton wool to protect the barrel marks on the surface of the extracted bullet and should be placed in a suitable glass/plastic container with proper lid.	
13.	**Drugs and Psychotropic**	Suspected material if it is in powder or tablet form,		Each sample should be packed	Chemical nature of the substance,

	Substances	apply spot test for preliminary identification of the type of drug. If in capsule form, open the capsule and test the content and in the same manner if the material is in injection or other form. Handle the materials after wearing gloves. Collect representative sample from all the packets/containers, empty capsules, tablet making machine, other containers suspected having used to manufacture drugs or making other preparations.		separately in suitable containers such as polythene bags. Samples should not be contaminated or mixed. Individual bag should be sealed and all relevant details should be written on each along with exhibit number. Finally all the packets should be placed in a suitable container or box, wrapped in intact piece of paper, sealed and sent to the FSL.	concentration, precursor chemical used and sometimes origin also by comparing with standard samples available in the laboratory.
14.	**Arson Cases**	All the burnt remains such as pieces of burnt cloth, debris, soil soaked in incendiary materials, containers, remains of the torches used to lit fire, smear of soot, gas cylinders, other inflammable materials, etc should be collected after identifying site of fire. In electrical short circuit cases, the exact site should be identified and material exhibits should be collected with care after switching of the electrical supply.		Individual exhibit should be packed carefully to prevent evaporation of inflammable materials, incendiary substances, etc.	Chemical analysis of the incendiary device and other inflammables from burnt remains including profiling of trace elements.
15.	**Paints**	Paint chips, smear of paint, powdered paint, liquid paint, etc	Paint chips should be collected carefully taking care that they do not break during transportation. Smear and powdered paint should be collected from the SOC in polythene bags. 10 ML of liquid paint should be collected.	Chips, powdered or smear of paint should be packed in polythene bags. Separate bags should be used for each sample. Liquid paint should be transferred to a glass vial and stopper/cap should be fitted	Microscopic analysis for physical fit for the paint chips, examination of layers of paints in the chip, chemical analysis and profiling of trace elements. It is possible to establish origin of paint through

				tightly to prevent leakage	forensic analysis.
16.	**Glass**	Fractured, large pieces, small pieces, dust of glass	Examine for the presence of fingerprints. In case there are fingerprints, the glass piece should be handled in a way as it is done in case of fingerprint bearing articles. If there is a fractured glass sheet, it should be handled carefully so that any artefact or scratches could be avoided. Small pieces should be collected using forceps whereas powdered glass may be collected using adhesive tape.	Should be packed carefully using proper packaging materials to avoid any damage or contamination.	Origin of the glass through physical, chemical and other tests and also cause of fractures on the glass sheet.

CHECK LIST ON INVESTIGATION OF CASES

Check List on Investigation of Drug Related Offences

1. Addicts

- Name, Age and Sex
- Educational background
- Educational details – University/Institution
- Details about the family members
- Income of the family
- Earning members
- Economic status
- Commitments of the family (Financial)
- Physical and mental conditions
- Details about physical problem, if any
- Nature of abuser – quiet/irritable/violent
- Nature and type of drug abused
- Method of administration
- Source of procurement of drug, location etc.
- Past history of the abuser about other drugs
- Initiation of drug abuse
- Duration of abuse
- Frequency of intake
- Paraphernalia used for the intake of drug
- Details about other abusers
- Friend circle of the addict
- Source of money to purchase drugs
- Criminal history of the abuser
- Family atmosphere
- Attitude of the family members including guardians
- Recent history of crime/violence in the family

2. Place of Abuser

- Details of drug (s) recovered including its form and quantity
- Paraphernalia recovered
- Details of the money recovered
- Stolen articles recovered
- Phone numbers, diary, address book
- Other materials used for taking drugs such as cigarette paper, metal foil, matchboxes, cigarettes, cotton, bloodstained cotton, tourniquet etc.
- Collection of samples of drugs, paraphernalia used and other materials such as spoon, cotton etc.
- Collection of blood and urine samples of the abuser by the doctor (control samples)
- Packaging and forwarding of the samples of drugs and the control samples
- Recording of statements of the addict and the members of the family
- Raiding the drug den
- Arrest of the accused person
- Medical examination of the addict
- Counselling/treatment/rehabilitation of the addict

3. Drug Den

- Name, age, social and economic background of the person(s) and associates running the den.
- Types of drugs sold and their forms
- Criminal history of the accused persons
- Time since when the accused was running the den

- Details of the persons visiting the den
- Source of procurement of drugs
- Search of the den
- Search of the persons
- Details of the hiding places
- Collection of sample of different types of drugs, precursor chemicals and related materials
- Results of spot test
- Collection of materials such as paraphernalia used by the addicts, empty capsules, machines for making tablets, packets etc.
- Money recovered from the accused persons
- Financial history and transactions
- Details of the other members of the gang
- Details about other criminal activities
- Statements of the addicts present in the den
- Statement of the accused person
- Taking the addicts into custody and sending them to doctor for medical examination and collection of blood and urine samples
- Arresting the accused person

1. Search of a suspected vehicle carrying drugs

- Type and make of vehicle, chassis number, engine number, colour, registration number and the issuing authority, driving licence and the issuing authority, insurance details.
- Identification of driver and other occupants
- Weapons recovered, if any
- Search of the persons
- Search of the vehicle
- Use of sniffer dog
- Part/Portion in which the drug is hidden

- Quantity and form of drug
- Result of spot test
- Whether the materials are precursor chemicals
- Interview of the suspects
- Details about their criminal history and involvement in the drug trade
- Details about the procurement of contraband
- Their contact persons
- Their destinations
- Collection of samples of suspected materials, packaging and forwarding for analysis
- Seizure of vehicle

2. Search of a house dealing with drug(s)

- Location, address and other descriptions of the house including the ownership and relevant papers
- Search of the inmates of the house
- Search of the house
- Recovery of drugs, precursor chemicals and other related materials
- Result of spot test
- Collection, packaging and forwarding of samples of drug
- Socio-economic status of the owner
- Source of income and earning members
- Details of the property and financial transactions
- Source of drugs
- Other partners in the trade
- Places to which drugs are supplied
- Details of the addicts, if found
- Criminal history of the occupants

- Recovery of weapons, communication equipment etc.
- Any vehicle used in transportation of drugs
- Modus operandi
- Search of the vehicle and collection of samples of drugs

3. Clandestine Laboratory

- Location and other descriptions of the laboratory whether isolated house, house in a congested urban area, rural area, flat in a multi-storied building or a mobile unit.
- Details of the persons running and working in the laboratory
- Their criminal history and modus operandi
- Collection of samples of drugs in various forms, precursor chemicals and other related materials
- Result of the spot test
- Details of the machineries recovered
- Collection of samples of drugs etc., from the machineries
- Other chemicals used in manufacturing of drugs
- Details about import of chemicals, raw materials, precursor chemicals and other materials
- Details about the supply
- Recovery of money
- Seizure of records showing details about drug trade including financial transactions
- Details about bank deposit
- Details about other properties
- Details about vehicle used in transportation of materials related to manufacture drugs and collection of samples
- Criminal history of the persons arrested
- Statements of the persons

- Arrest of the persons and other relevant legal formalities

Check List for Explosive Blast cases:

- Sending information to Bomb Disposal Squad
- Cordon off the area
- Summoning the dog squad
- Crowd Control
- Switching off the electricity connection.
- Sending information to Fire Officials and District Authorities
- Search of the scene, other physical evidence including the incendiary materials, time of fire etc.
- Study of the site of the explosion (Crater formation)
- Study the nature of Explosion
- Study the effects of the explosion
- Looking for Batteries, Timer Device,
- Insulating tape
- Switching devices
- Pieces of wires
- Collection of explosive residues
- Collection of vapour from the site of explosion
- Splinters
- Pieces of bomb casing
- Remnants of detonator
- Modus operandi about the explosion
- Pieces of paper used to carry or make the explosive device
- Study the unexploded bombs for the manufacturers, serial numbers etc.
- Photography and sketching
- Collection of physical evidence (Seizure Memo and Forwarding Note)
- Identification of dead persons

- Conduct of Inquest for the dead bodies (Inquest form)
- Sending the dead body for P.M. Examination (PM Challan)
- Recording of statements (Case Dairy – Part – II)
- Prior History
- Examination of documents and other evidence to find out the cause of fire
- Literature
- Gadgets
- Inflammable Materials
- Fire fighting devices and equipment
- Smoke alarm
- Fire alarm
- Documentation of observation of the fire scene
- Prepare profile of suspects
- Reconstruction of the scene
- Supervision Note
- Assessment into the number of deaths, property destruction
- Raids
- Recovery and collection of ingredients for manufacturing bombs
- Alerting neighbouring security forces
- Means of transportation of explosives
- Persons involved in transportation of the explosives
- To prove prior preparations, motive and conspiracy
- Intelligence collection
- Surveillance
- Launching combing operations to locate similar (different) explosive devices
- Check for the missing/theft of explosives/materials from the ordnance depots, police station/armoury

- Interrogation of suspects
- T.I. Parade
- Arrest
- Trial

Checklist on Investigation of Fire Cases

Probable Places

- Isolated instance
- Slums
- Market
- Forest fire
- Mills and factories
- Vital installations
- Public places
- Academic Institutions
- Religious places
- Domestic
- Cinema Halls
- Function Places
- Hotels
- Business Establishments
- Parking Places
- Forest Areas
  - Railway Station
  - Bus stand
  - Airport
  - Seaport
  - Cracker Shop/Go down/Manufacturing Unit

Causes

- Accidental
- Intentional
- Natural

Relief & Rescue Operations

- Services of Fire Brigade
- Medical Aid
- Transportation of Victims to the Hospital
- Sending information to seniors and civil authorities
- Crowd Control
- Communication
- Protection of property
- Services of cranes and bull dozers
- Forensic Scientists
- Evacuation of the adjoining areas
- Cordoning off the area
- Traffic diversion
- Removal of inflammable materials from the surrounding
- Sand bags
- Involving local people

Specific Police job:

- Investigation of the nature and cause of fire
- Source of fire
- Persons responsible for fire
- Arrest of the suspects and trial

Pre-accident:

- Checking & Evaluation of annual licences in commercial establishments with reference to the layout,
- Concerted approach in association with other agencies.

Post-accident:

- G.D. Entry
- F.I.R.
- Case Dairy Part - I
- Relief and Rescue Operations
- Cordon off the area
- Crowd Control
- Switching off the electricity connection.
- Sending information to Fire Officials and District Authorities
- Search of the scene to find source of fire, other physical evidence including the incendiary materials, time of fire etc.
- Photography and sketching
- Collection of physical evidence (Seizure Memo and Forwarding Note)
- Identification of dead persons
- Conduct of Inquest for the dead bodies (Inquest form)
- Sending the dead body for P.M. Examination (PM Challan)
- Recording of statements (Case Dairy – Part – II)
- Prior History
- Examination of documents and other evidence to find out the cause of fire
- Checking the Electrical circuits
- Gadgets
- Inflammable Materials
- Fire fighting devices and equipment
- Smoke alarm
- Fire alarm
- Documentation of observation of the fire scene
- Prepare profile of suspects
- Reconstruction of the scene
- Supervision Note
- Assessment into the no. of deaths, property destruction
- Interrogation of suspects
- T.I. Parade

- Arrest
- Trial

Inter-agency cooperation:

Joint committee of Police, Electricity dept., Factories and Boilers, Fire Brigade, Director, Food and drugs administration, Dist. Administration etc.

If death is due to burn

- Whether anti-mortem or post-mortem burn
- Whether suicidal/homicidal/accidental
- Extent/degree of burn
- Parts of the body burnt and percentage
- Position of the dead body
- Condition of the wearing apparel
- Whether any attempt has been made to extinguish fire
- Who attempted
- What is the condition of the person who tried to rescue the victim
- Whether victim died on the spot or taken to the hospital
- Name of the Doctor/hospital
- Treatment given
- Dying Declaration Recorded
- Treatment given
- Dying Declaration Recorded
- When died
- Whether the victim was suffering from chronic disease
- If yes, name of the Doctor/Hospital
- Treatment given
- Duration of the problem
- Financial status

In Case of married lady

- When was she married

- Whether love or arranged marriage
- Relationship with the husband and in-laws
- Dowry
- Past history of torture
- Observation of neighbours/friends
- Intervention by police
- Condition of the health of deceased
- Suicide note
- Mental condition of the deceased prior to the incident
- Love affair
- Un-employment
- Social causes
- Whether sexually assaulted

In case of unmarried lady

- Weak in studies
- Love affair
- Poverty
- Social problems
- Health
- Mental illness
- Drug addiction/alcoholism
- Un-employment
- Whether sexually assaulted
- Fire accelerant used
- Specific advice to post-mortem surgeon to preserve trachea to prove anti-mortem or post-mortem burn

General Check list on Homicide Investigation

- Whether died or still alive
- If alive, send to hospital
- Dying declaration
- If died, Whether sudden or unnatural death
- Who was the first to see the dead body
- Who and when saw living last
- Position of the dead body
- Locality and location
- Sign of struggle
- Blood distribution pattern
- Details of the dress including colour, cotton/terry-cotton, and make/tailor/dhobi mark.
- Ornaments
- Cash
- Visiting card
- Letter
- Receipt
- Occupational dust
- Dust adhering to the clothes and shoes
- Type of shoes
- Handkerchief
- Height
- Built
- Age
- Male/Female
- If female, whether married
- Whether pregnant
- Complexion
- Colour of hair

- Colour of eye
- Identification mark
- Brand cigarette/bidi
- Tattoo mark on the body
- Nail and nail bed
- Any peculiar smell
- Discoloration of the face and other body parts
- Colour and condition of the teeth
- Any discharge from the nostrils/mouth
- Condition of the eyes
- Condition of the mouth whether open/closed
- Post-mortem staining
- Rectal Temperature
- Rigor mortis present
- Rigor mortis present on the dead body
- State of decomposition
- Whether homicide/accident

Inquest

- Preliminary photography of the place including the position of the dead body
- Distance of he dead body from fixed points
- Close-up photography
- Drawing out line showing position of the dead body
- Sketching
- Position of the body
- Where found (Location)
- History of hospitalization
- Treatment given

- Medico-legal examination
- Dying declaration
- Name
- Sex
- Age
- Religion
- Caste
- Height
- Built
- Married/unmarried
- Complexion
- Occupational marks
- Any discoloration of the skin
- Peculiar smell
- Colour of the eye
- Colour of the hair
- Clothes
- Identification Marks
- Tattoo mark
- Appearance of the face
- Mouth
- Nostril
- Eyes
- Bleeding
- Vomit
- Dribbling of saliva
- Medicine applied (sign of external application)
- Detailed examination of clothes
- Colour and type of clothes

- Condition of the clothes
- Stains on the clothes
- Tailor/dry cleaner's mark
- Pockets
- Folds of the trouser
- Valet
- Visiting card
- Letter
- Other paper
- Money
- Ornaments
- Credit Card
- Driving licence
- Any weapon
- Watch
- Shoes (make, size, type of sole, material of the shoe, etc.)
- Socks
- Handkerchief
- Condition of buttons
- Perfume used, if any
- Time since death
- Body temperature
- Rigor mortis
- Decomposition
- Mummification
- Injuries (type, size location, cause, relative, distance, age of the wounds)
- Scalp
- Heard

- Fore head
- Face
- Neck
- Shoulders
- Chest
- Abdomen
- Upper Arm
- Lower arm
- Thigh
- Calf
- Foot
- Genital area
- Back of the shoulder
- Back Hips
- Hips
- Extent of bleeding
- Fatal injuries (type, size, location, relative distances, extent of damage to the organ, age of the wound, interpretation of weapon, etc.
- Mark of strangulation/suffocation/hanging/throttling
- Mark of burn injuries—nature, extent and degree of burn injuries
- Sign of drowning
- Sign of poisoning
- Apparent time since death
- Apparent cause of death
- Wrapping the dead body in an intact piece of cloth and seal at knots
- Filling up the proforma for sending the dead body for post mortem examination.

- Special instructions for the post-mortem surgeon to be filled in the PM challan form
- Deputing 2 constable to accompany the dead body to the mortuary
- Despatch of the dead body.

Check list on Types of Homicide

Death due to firearms

- How many persons sustained fire-arm injury in the incident
- How many died
- How may injured
- Examination of wounds
- Which part(s) of the body injured (location)
- Whether any part of the body blown off
- Margin of the wound(s) inverted or everted
- Margin is inverted and wound is small – word(s) of entrance.
- Margin everted and size of the wound is larger- wound of exit
- In case of multiple wounds of entrance whether all the wounds look alike or different
- Whether all the wounds are caused by the shot(s) fired from one or different fire-arms
- What is the size of the area on which injuries (wounds of entrance) are spread
- Whether there is blackening of the skin
- Whether there is tattooing of the skin
- Whether hairs are singed
- Whether there is a wad impression in the body/clothes
- What type of firearm was used?
- From what distance it was fired?
- Approximately how many shots fired?
- Which injury(s) appears to be fatal?

- Extent of damage caused to the organ
- How many wounds of exit are there?
- Location of the wound(s) of exit
- Extent bleeding
- Which other organ(s) of the body shows the presence of blood?

Examination of the scene

- I is it an indoor or outdoor crime?
- It is inside a vehicle such as bus, car, railway compartment, airplane, ship etc.?
- Type, colour, make and condition of the vehicle
- Whether shots were fired from outside or from inside he vehicle
- If fired from outside, approximate distance shots were fired
- What other evidence was found outside or from inside the vehicle
- If shots were fired from inside what was the position of the suspect and the victim?
- What other evidence was found inside the car?
- If on a vehicle, what is the position of the vehicle
- Extent and location of damage caused to the vehicle
- Fracture pattern on the glass panes of the vehicle
- Position and location of dead body inside the vehicle
- Is it an open area such as road, field, park, sea, beach, etc.
- What was the position of the dead body?
- Hw far it from the main road
- Any other article(s) seen lying near the dead body such as cycle, motor bike, fire-arm, fired bullet, empty, any other weapon
- Fie bullet found at the scene-location
- Number, type and make of he bullet
- Location of the empty found

- Number, make and type of fire arm found
- Condition of the fire arm
- Whether firearm belongs to the class of prohibited bore
- Whether the fire arm found is country made
- Whether the fire arm found at the scene can produce the type of injuries present on the dead body
- Whether the bullet and empty recovered from the scene match with the fire arm found
- Extent of bleeding from the dead body
- How blood is distributed at the scene
- Is there any sign of struggle before shots were fired?
- Position of the suspect
- Whether improvised fire are was used

Death due to weapons other than firearms

- Examination of the injuries
- Nature of Injury(s) such as contusion, laceration, punctured, incised, etc.
- Location of injuries their number, size and type in each location
- Whether hesitation cut is present
- If present, on which part of the body
- How many such injuries are there
- Possible weapon used
- Is there self-inflicted injuries
- Location of the injuries
- Possible weapon used
- Is there defence wound
- Location
- Size and Number

- Possible weapon used
- Extent of damage caused by each injury
- Quantity of blood shed near the victim
- Shape and size of the blood spatters
- Distribution of blood at the SOC
- Position of the body
- Nature of injury and correlation with a particular type of weapon
- Whether all injuries seen on the victim are caused by one type of weapon or by different type of weapons
- Whether corresponding cuts are seen on the clothes
- Whether the injuries match with weapon recovered
- What about the age of the wound
- Wounds are ante-mortem or post-mortem in nature
- Whether there was sign of struggle before killing
- The crime was committed by one or more than one person
- At the time of killing what was the position of the victim and the suspect
- How about suspect getting injured due to struggle
- Which organs of the suspect injured
- Did he sustain minor major injury
- Was he bleeding profusely
- Built and health of the suspect
- Whether victim was admitted in the hospital
- Medico-legal report of the victim
- Treatment given to the victim
- When died in the hospital
- Dying declaration of the victim
- Whether suspect was hospitalized treatment of his injuries
- When hospitalized

- Treatment given
- Medico-legal report
- Motive
- Whether crime has committed somewhere else and body dumped at other place
- Which injury was fatal for the victim
- If the victim is female, whether she was sexually assaulted

Blood Distribution Patter in Violent Crimes

On the dead body

- Organs injured
- Extent of blood stain on the body
- Distribution of blood stain
- Sign of profuse bleeding
- Organ from which profuse bleeding too place
- Sign of bleeding is recent or old
- Distribution from the body
- Quantity of blood
- Colour
- Whether correspond to the wounds
- Whether in the form of liquid or smear

At the Scene of Crime

- Nature of the surface
- Pool of blood – Approx. quantity, shape and size
- Drug mark – shape and size
- Circular Spatters
- Pear shaped spatters
- Mist of blood – nature of mist and area covered

- It is possible to interpret the origin of blood
- Is it possible to find out approximate distance
- Is it possible to find out the angle
- Is it possible to interpret about the type of weapon used
- Is it possible to reconstruct the scene
- Is it possible to interpret whether suicide or homicide
- Is it possible to interpret how many persons were involved in the commission of crime
- Whether crime committed elsewhere
- Is it possible to find out the time
- Is it possible to find out whether the suspect was also injured and the organ

Death due to poisoning

- Colour of the skin
- Any peculiar smell
- Sign of corrosion
- Colour of the nails, teeth, tongue, face
- Any sign of vomiting/purging
- Any vial, injection ampoule
- Hypodermic syringe
- Any tablet/liquid/powder
- Brand name of the tablet/powder/liquid
- When the deceased took the food and type of food
- Who else took the same food and what is his condition
- Whether deceased was suffering from any disease in the past
- Onset of the disease
- Treatment prescribed
- Name of the Doctor/hospital

- Medico-legal report
- Sudden sickness (Time and type)
- Treatment prescribed
- Medico-legal report
- Name of the doctor/hospital
- When died
- Whether alcoholic
- Whether drug addict
- Who got the suspected poison
- Possible mode of administration of the suspected drug
- Whether the deceased was suffering from mental illness
- Treatment prescribed
- Name of the doctor/hospital
- Suicide note
- Statement of other family members/friends/official circles
- Details about the job/profession/trade
- Financial status
- Motive
- Business transactions
- Probable persons who could get the position
- When did he get the poison
- Where from he got the poison
- Did he get sufficient time and opportunity to administer the poison

Deaths due to Asphyxia

Hanging/Suffocation/Drowning /Strangulation

- Hanging from tree/fan/any other object
- Height of the object from the floor

- How the deceased reached to the object for hanging
- Whether ante-mortem or post-mortem
- Size of the rope/string
- Type of noose around the neck
- Hanging from tree/fan/any other object
- Height of the object from the floor
- How the deceased reached to the object for hanging
- Whether ante-mortem or post-mortem
- Size of the rope/sting
- Type of noose around the neck
- Whether noose on the neck is oblique
- Whether tongue is protruding out
- Whether eyes are open
- Whether saliva is dribbling
- Colour of nail
- Colour of the face
- Whether there are Tardu's sports
- Whether there is any ligature mark around neck
- Whether it is a case of partial hanging
- Whether there is any suicide note
- Whether the suicidal note written by the deceased**?**
- Whether the victim was suffering from metal or other illness.
- History of illness
- Treatment prescribed
- Financial status
- Profession of the deceased
- Relation with his family members/friends/colleagues
- Business transaction

If death is due to suffocation

- How suffocation was caused
- Whether ante-mortem or post-mortem
- Whether there is any mark of injury on the face of the victim
- Whether there is any sign of discharge on the object used for causing suffocation.
- Age of the victim
- Whether suffocation is accidental or homicidal
- Condition of the room where deceased was living at the time of death
- Ventilation
- Smell inside the room
- Temperature inside the room
- Whether the doors/windows were open
- Whether there is Air-conditioner/Air-cooler in the room
- Possible source of the leakage of gas or production of toxic gas
- Colour of the body
- Discoloration of the skin
- Colour of the nails, face, etc.
- Petechial haemorrhage spots
- In case of fire, extent of burn

If death is due to drowning

- Mark of strangulation on the throat
- Discharge from nostrils, mouth, Etc.
- Injuries on the face and throat
- Condition of the eyes
- Whether mouth is open

- Any other injury on the body
- It is manual strangulation or any other object was used to strangulate
- Indication of scuffle
- Sign of scuffle in the scene
- Position of the body
- Wearing apparel
- Whether the victim was under the influence of drug or alcohol
- Built of the victim
- If the victim is a lady, whether she was sexually assaulted before death

Death due to burns including dowry death cases

- Whether anti-mortem or post-mortem burn
- Whether suicidal/homicidal/accidental
- Extent/degree of burn
- Parts of the body burnt and percentage
- Position of the dead body
- Condition of the wearing apparel
- Whether any attempt has been made to extinguish fire
- Who attempted
- What is the condition of the person who tried to rescue the victim
- Whether victim died on the spot or taken to the hospital
- Name of the Doctor/hospital
- Treatment given
- Dying Declaration Recorded
- Treatment given
- Dying Declaration Recorded
- When died
- Whether the victim was suffering from chronic disease

- If yes, name of the Doctor/Hospital
- Treatment given
- Duration of the problem
- Financial status

In Case of married lady

- When was she married
- Whether love or arranged marriage
- Relationship with the husband and in-laws
- Dowry
- Past history of torture
- Observation of neighbours/friends
- Intervention by police
- Condition of the health of deceased
- Suicide note
- Mental condition of the deceased prior to the incident
- Love affair
- Un-employment
- Social causes
- Whether sexually assaulted

In case of unmarried lady

- Weak in studies
- Love affair
- Poverty
- Social problems
- Health
- Mental illness
- Drug addiction/alcoholism

- Un-employment
- Whether sexually assaulted
- Fire accelerant used

Specific advice to post-mortem surgeon to preserve trachea to prove anti- mortem or post-mortem burn

Death due to explosion

- Domestic explosion - Go down of LPG cylinder
- Explosive substances – Crude explosives/gelatine sticks
- Terrorist activities – land mines/other explosives/I.E.Ds.
- Transportation of Inflammable substances.
- Explosion in cracker shop/Go down/Manufacturing Units
- Explosion in Factory
- Explosion in the building/hospital/school/religious place
- Explosion in vital installations
- Explosion in bus stand/railway station/airport/seaport
- Explosion in crowded places and markets
- Explosion in the vehicle
- Explosion in the train
- Explosion in the aeroplane
- Explosion in isolated places such as park, play ground
- Explosion in the places of tourist importance
- Explosion in monuments and in places of archaeological importance
- Explosion on highways
- Explosion on bridges
- Explosion on railway track
- Accidental explosion due to bursting of stove
- Explosion in the cinema hall

- Explosion in the police station
- Explosion in the government offices

Type of Explosions

- Crude explosive devices
- Gelatine sticks
- Plastic explosives
- Molotov cocktail

Explosive Devices and other materials causing explosion (Causing explosion intentionally/negligently/accidentally)

- Crude bombs
- Landmines
- Claymore mines
- I.E.Ds with timer device
- Booby traps
- Molotov cocktail
- Dynamite
- Human bomb
- Grenades
- Military explosive devices
- Vehicles (car, train, aeroplane, ship, other vehicles) loaded with explosives used as an explosive device
- Domestic appliances
- Boilers/inflammables/machines in the factory
- Gas stoves
- L.P.G. Cylinders
- CNG Cylinder
- Chemicals
- Fire

- Electrical short circuit
- Inflammable materials

Causes

- Accidental
- Intentional
- Natural