सत्यमेव जयते

GUIDELINES FOR FORWARDING CRIME EXHIBITS

FORENSIC SCIENCE LABORATORY,
(Government of NCT of Delhi)
Sector 14, Rohini, Delhi-110085.
Phone: 011-27555811, Fax: 011-27555890
Email: forensicdelhi@gmail.com

REGIONAL FORENSIC SCIENCE LABORATORY,
(Government of NCT of Delhi)
7th Floor, NDMC Building, Yashwant Place, Chanakya Puri,
New Delhi-110021.
Phone: 011-26881085, Fax: 011-26881086
Email: rfslchanakyapuri@gmail.com

Website: www.fsl.delhi.gov.in

सत्येन्द्र जैन
Satyendar Jain
गृह, स्वास्थ्य, ऊर्जा, लोक निर्माण विभाग,
एवं उद्योग मंत्री
Minister of Home, Health, Power, PWD,
& Industries

सत्यमेव जयते

राष्ट्रीय राजधानी क्षेत्र, दिल्ली सरकार
Govt. of National Capital Territory of Delhi
'ए' विंग, सातवां तल, दिल्ली सचिवालय
'A' Wing, 7th Level, Delhi Secretariat,
आई.पी.एस्टेट, नई दिल्ली-110002
I.P. Estate, New Delhi-110 002
दूरभाष/Tele No. : 23392116, 23392117
Fax : 23392044
E-mail : moh.delhi@gov.in

D.O. No. Minhealth/2393
Date : 11/3/16

MESSAGE

It is a matter of great satisfaction that detailed processes and DOs and DON'Ts for investigating teams, who collect crucial and clinching forensic evidence samples from scene of crimes, have been meticulously developed by the team of Forensic Science Laboratory, GNCTD. These guidelines will be of immense help and value to collect, preserve, analyse and produce vital forensic evidence before courts of law which will crucially help the courts in deciding complex matters. Delhi Police, Crime Branch have expressed their willingness and co-operation in adopting these invaluable guidelines so laboriously prepared by the FSL team. It is hoped that the effort will contribute in a big way in achieving better and more assuring justice delivery by courts of law.

SK Jain

(Satyendar Jain)
Minister of Home

Forensic Science Laboratory
(Home Department)
Govt. of NCT of Delhi
Madhuban Chowk, Sector-14, Rohini,
DELHI-110085
Tel: 011-27555811, Fax: 011-27555890

FOREWORD

A need was felt to bring out a comprehensive document to facilitate the investigation agencies for identification and collection of physical evidences, sampling, proper preservation, packing and maintaining the chain of custody.

With the support and guidance of Hon'ble Minister of Home, Sh. Satyendar Jain; Sh. K.K.Sharma, Chief Secretary; Sh. S.N. Sahai, Principal Secretary (Home) & Sh. O.P.Mishra, Additional Secretary (Home) of Government of NCT of Delhi; this laboratory had ventured into preparing guidelines for forwarding crime exhibits to Forensic Laboratories for examination by Investigation Agencies.

I do hope that the investigation agencies will be immensely benefited and will fully utilize the information provided in these guidelines and will give an opportunity to this laboratory to serve its valued customers as per International Standards. We always look forward for all valuable suggestions for further improvements.

I am highly thankful to Sh. Ravinder Yadav, Joint Commissioner of Police (Crime) and Sh. Rajan Bhagat, DCP/Crime (CRO & PRO) for their valuable suggestions.

I thank Dr. Madhulika Sharma, Dy. Director/HOO (TM Chemistry), Smt. Deepa Verma, Dy. Director (TM Document), Dr. Dhruw Sharma, Assistant Director (TM Biology/DNA), Dr. C.P. Singh, Assistant Director (TM Physics), Dr. N.P. Waghmare, Assistant Director (TM Ballistics), Sh. Sanjeev Gupta, Assistant Director (TM Photo), Dr. Aruna Mishra, Assistant Director (Lie-Detection) and their respective teams for providing technical support to bring out these guidelines in this booklet. I am also thankful to the retired Dy. Directors, Dr. Rajendra Kumar & Sh. A. K. Srivastava who had given valuable technical contribution in this book during their service in Biology and DNA Division in FSL, Delhi.

I appreciate the work done by the members of the team consisting of Shri K.C. Varshney, Deputy Director (In-charge RFSL, Ch.Puri / Quality Manager), Sh. Amar Pal Singh Assistant Director (Chemistry / In-charge Care Taking Branch) and Sh. Varun Goyal (Scientific Assistant-Lie Detection) in compiling the information and shaping the booklet.

R. K. Sarin

Delhi
March, 2016

(Dr. R.K. Sarin)
Director

Forensic Science Laboratory

Govt. of NCT of Delhi

Sector 14, Rohini, Delhi-110085.

Tel: 011-27555811, Fax: 011-27555890

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Accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL)

QUALITY POLICY

The Forensic Science Laboratory, Government of NCT of Delhi is committed to deliver highest quality forensic reports to assist criminal justice system to enhance public satisfaction and meet their expectations through well defined quality system, world class professionals and state-of-the-art technology to conform to the standards of ISO/IEC 17025: 2005 and NABL 113: 2008.

VISION

The Forensic Sciences Laboratory Delhi envisions a future in which we continue to build and develop an internationally recognized institution to deliver expeditious, quality and reliable forensic services to the police and other customers to serve and strengthen the criminal justice system.

K.C.VARSHNEY
(Dy. Director / Quality Manager)

Dr. R.K.SARIN
(Director/CEO)

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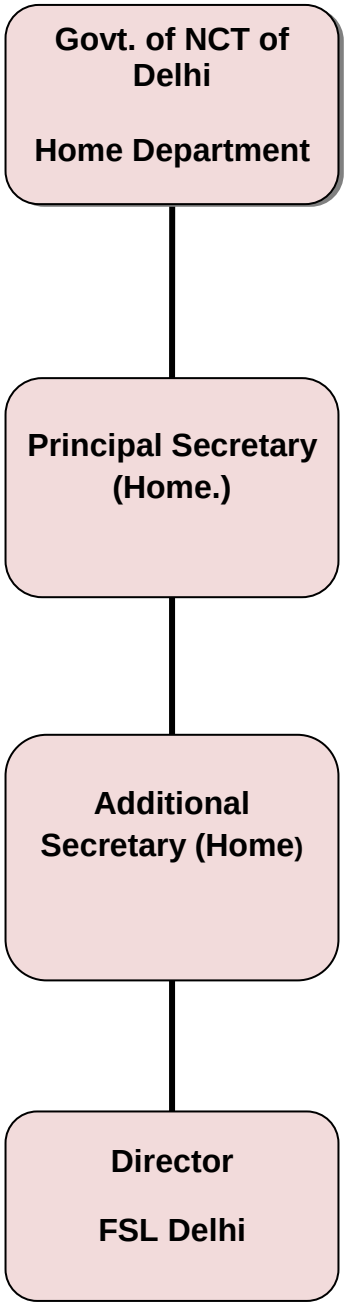
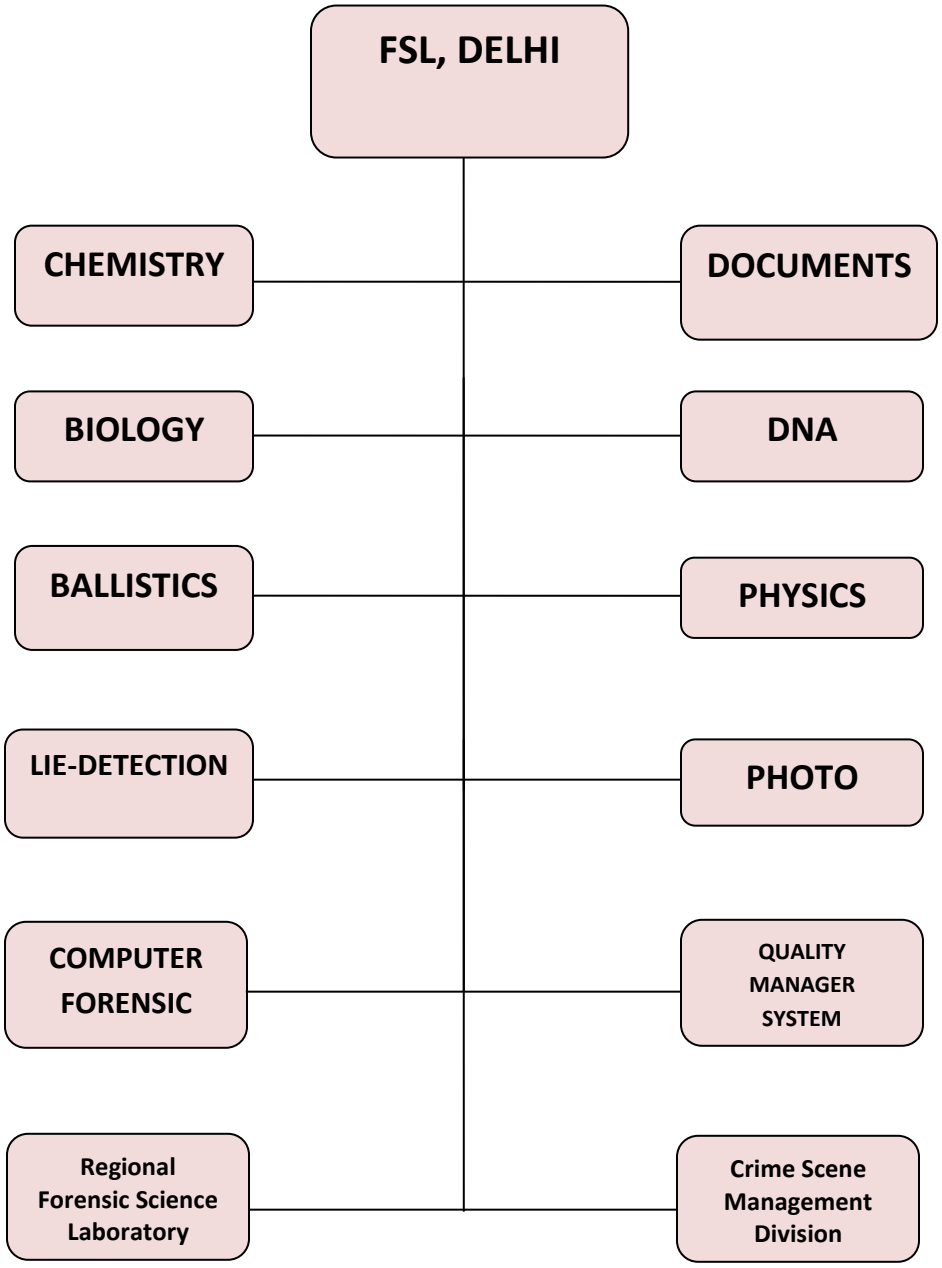
INTRODUCTION

- Forensic Science Laboratory, Delhi was approved during 8th Five Year Plan (1992-97) with the purpose to cater to the ever-increasing forensic needs of the Delhi Police
- Inaugurated by Sh. P.K. Dave, the then Lt. Governor of Delhi on 18.02.1995 at 7th / 8th Bn. DAP, police complex, Malviya Nagar, New Delhi-110 017.
- Previously the administrative control rested with the Delhi Police.
- The administrative control of FSL Delhi was transferred from Delhi Police to Home Deptt., Government of NCT of Delhi, with Principal Secy. (Home) as its administrative secretary.
- The laboratory is engaged in the forensic laboratory examination of the exhibits of Chemistry/Toxicology, Biology/DNA finger printing, Physics/Voice analysis, Ballistics, Photo, Documents, Lie-Detection and Computer Forensic for Delhi Police, and cases referred by Govt. of NCT of Delhi, attached ministries/departments of Govt. of India/PSUs, courts of law and public agencies of Delhi.
- The laboratory is accredited by National Accreditation Board for Testing and Calibration Laboratories(NABL) to provide services of international standards as per ISO/IEC 17025: 2005 and NABL 113:2008.

LABORATORY'S PLACE IN PARENTAL ORGANIZATION



DISCIPLINE OF FORENSIC SCIENCE LABORATORY, GOVT. OF NCT OF DELHI



FORENSIC ANALYTICAL SERVICES

- Forensic science in this broadest definition means application of science in the administration of criminal justice system.
- The main function of a forensic science laboratory is to provide scientific guidance to the police personnel at the scene of crime in collecting physical evidence and to undertake its diverse laboratory examination.
- Physical evidence includes materials, which a suspect leaves at the scene of crime or takes from the scene of crime.
- The purpose of collection and examination of physical evidence is to link the crime with the criminal.
- For achieving this purpose all basic sciences and their methodologies have been made applicable for analysis and comparison of physical evidence materials.
- FSL, Delhi undertakes the scientific examination of sensitive crime exhibits.
- Examinations are carried out in the fields of Chemistry/Toxicology, Biology/DNA, Physics, Ballistics, Photo, Documents, Lie-Detection and Computer Forensics.
- When required, the forensic scientist gives expert evidence in the courts of Law to help the judiciary in delivering justice.
- The Forensic scientist of FSL, Delhi also impart lectures and training-cum-practical demonstration to judicial officers, public prosecutors, forensic scientists of the country, police and students of Forensic Science institutes and colleges.

INFRASTRUCTURE

- The laboratory has state-of-art infrastructure with fully centrally air-conditioned building.
- All employees of this laboratory are well qualified and experienced personnel.
- The laboratory has a sanctioned strength of 391 scientific personnel.
- Sound proof Firing Range.
- All divisions of laboratory is well-equipped with latest equipments/ instruments to meet the international standards.
- This includes:
    - Physics Division - VISPEC, Digital Micrometer, Abbe Refractometer
    - Chemistry Division - UV-Vis, FTIR, GC, HPLC, HPTLC, GC-MS, LC-MS, UPLC, Raman spectrophotometer, Polarimeter, Compound Microscope, GC-MS-MS, HS-GC-FID, HS-GC-MS and Ion Chromatograph.
    - DNA Division- Genetic Analyzer, PCR, UV-Visible Spectrophotometer
    - Ballistics Division- Comparison Microscope, AAS, Velocity measuring system
    - Document Division- Video Spectral Comparator, Projectina Docucenter, Polyview system
- Library houses a wide collection of books and journals.
- Library resources are automated through library automation software for easy access of the books and journals to users.
- Regional Forensic Science Laboratory, Chanakya Puri, New Delhi is also well equipped with latest equipment/instrument to examination & report the cases of Chemistry, Biology / DNA and Document / Computer Forensics. RFSL Chanakya Puri is accepted the cases of New Delhi and South District.

CHEMISTRY DIVISION

Chemistry Division deals with the Qualitative and Quantitative chemical examination of various physical evidences materials pertaining to Narcotic & Psychotropic Substances, Arson cases, Trap (Bribe) cases under PC Act, Blood Alcohol cases and Toxicological examination of visceral organs or other body fluids in suspected poisoning cases and sedatives or tranquillizers in stupefaction cases etc. For collection and forwarding of samples pertaining to various types of cases following points may be observed.

1. Cases pertaining to General Chemistry:

a. Narcotic & Psychotropic Substances under NDPS Act:

The suspected material be weighed & taken into possession with following mandatory procedures.

i. Two representative samples of the suspected material (in equal quantity) should be drawn.

ii. In case, suspected material is available in more than one bag, then sampling should be done according to the instructions of the Narcotic Control Bureau in this respect.

iii. Homogenization of powdery material viz heroin etc should be done properly, before drawing the representative sample.

iv. If the seized suspected material is vegetative material (e.g. Poppystraw (Choorapost), Bhang, Ganja, Charas or Poppy plant etc) then the sample should be taken in polythene bags. In case of opium, Heroin or other psychotropic substance, the sample should be taken in zip-lock polythene pouches and placed in the clean plastic container.

v. For cannabis and Poppy plant, do not water the plant after seizure and do not strip the leaves from the plant. Cannabis leaves may be packed in envelopes with a hole to stop degradation of the contents.

vi. The polythene bags/plastic container should be put in separate cloth bags bearing details (FIR No. & Date etc.) of the case.

vii. The cloth parcel should be properly sealed with the legible seal of the I.O. and the Gazetted officer (wherever necessary) and must sign by the sealing officer(s) with name & Designation.

viii. The sample of each seal should be prepared on separate cloth piece bearing details of the case and sign of the sealing authority.

ix. One sample of each seized material should be sent to FSL at the earliest possible with proper forwarding letter from competent authority with details of the sample(s) being sent.

x. The net and gross weight of each sample/parcel must be mentioned individually in the forwarding letter and on the parcel.

b. Arson/Bride burning cases:

The common query, in such cases, as far as Chemical examination, is concerned is the nature of inflammable material, if any, used in the crime.

i. Common physical evidences encountered in such cases are: (a) Burnt/partially burnt materials from the scene of crime (b) Container used to carry inflammable liquids (c) Clothes and hairs of the victim in bride burning cases etc.

ii. The burnt or partially burnt materials from the scene of fire should be taken from different places and packed polythene packets (Air tight glass jars is preferred) and then packed in paper envelope/cloth bag with proper labelling, sealing and signed by the competent authority.

iii. The container, suspected to contain the inflammable liquid, should be taken into possession and its mouth be made Air-tight, using suitable means, and then packed in paper envelope/cloth bag with proper labelling, sealing and signed by the competent authority.

iv. In case of bride burning, clothes and hairs of the victim/deceased be got preserved/ sealed separately in the similar fashion from the doctor attending the victim/deceased.

v. The sample of each seal (I.O. & Doctor) should be prepared on separate cloth piece bearing details of the case and signature of the sealing authority.

vi. The seized material/sample should be sent to FSL at the earliest possible with proper forwarding letter from competent authority with details of the sample(s) being sent.

c. Trap (Bribe) cases under Prevention of Corruption Act:

The common query, in such cases is to detect Phenolphthalein and Sodium carbonate in exhibits obtained during raid.

i. Common physical evidences encountered in such cases are: (a) Demonstration wash (b) Hand wash of the Complainant and/or Accused (c) Currency Notes wash (d) Tainted money recovered from the accused (e) Pocket wash of the accused (f) Cloth (shirt/pant etc.) of the accused (g) Any other article e.g. register, purse, dash-board wash of the car etc used to keep the tainted money by the accused.

ii. The hand wash of the accused/complaint, pocket wash etc must be taken in Sodium Carbonate solution.

iii. The solution as obtained above should be packed in clean glass bottles.

iv. The glass bottles should be then packed in cloth bags which should be properly labelled indicating the colour of the solution and sealed with the seal of the I.O.

v. The other articles like currency notes, clothes etc should be packed individually in polythene bags which should be the put in the cloth bags which should be properly labelled and sealed by the seal of I.O.

vi. The numbers of the currency notes (tainted money) must be mentioned on the parcel, if any, containing currency notes.

vii. The sample of each seal should be prepared on cloth piece bearing details of the case and signature of the sealing authority.

d. Cases involving crimes using Acids/Alkalies:

The strong mineral acids (Sulphuric, Hydrochloric & Nitric acids etc) Alkalies (Caustic soda lye etc) are commonly used by the criminals to cause harm to individual and property with revengeful attitude to disfigure other persons. The common query, in such cases is to detect the acid or alkali used in the crime.

i. Common physical evidences encountered in such cases are: (a) Container used to throw the chemical (b) Clothes of the victim (c) Clothes of the Accused (d) Swabs from the scene of crime etc.

ii. The clothes, swabs etc should be placed separately in glass containers and which should be then put in duly labelled cloth bags and sealed.

iii. The acid or alkali recovered (if any) from the Scene of crime must be taken in an all glass container, duly labelled with and must bear a caution in bold letters "CONTAINS ACID/ALKALI" and sealed by the I.O.

iv. The sample of each seal should be prepared on cloth piece bearing details of the case and signature of the sealing authority.

e. Explosion Case Investigation

The scene must be carefully handled so that crucial evidence can be collected in case of post blast explosion to reconstruct the IED. In case of unexploded IED is detected, Bomb disposal squad should be called to diffuse.

1. Collection of Evidence:-

(i) In case of Post Blast Explosion :-

(a) The original condition of blast site should be preserved after stabilisation of the scene.

(b) The explosion site should be photographed and video graphed properly.

(c) The crater/seat of explosion should be identified/ located.

(d) All relevant evidences -- Different components/remnants IED's be identified, located and seized & measured w.r.t seat of explosion --- (Viz. explosives --smoke

deposits, soil from the crater/seat of explosion by swabbing/ picking/vacuum collection, initiating mechanism viz. fragments of detonators, Fragments of initiation mechanism, primer device, battery, flexible wire, switches, cable, wires, sensors, relay switches, microchips, antennae, circuits , other electrical components, clock timer, cell-phone etc., Projectiles i.e. Broken glass pieces, Iron nails/pieces, Metallic bolts and balls, metal pieces of assorted shapes and sizes, Casing material/camouflage (thread, Cloth pieces, Paper pieces , Jute string, Adhesive tape, Pieces of Plastic/Metallic container, cello tape etc.-- should be searched) at the scene of crime should be searched to reconstruct the IED.

- Collect clothes of the victims, swab the area around injury, projectile recovered from the body of injury.
- Collect CCTV footage from shops or camera installed near the site of explosion.

(ii) In case of Unexploded IED:-

Bomb disposal squad should be called to diffuse/render safe mechanism at the scene. Maximum protective & safety measures should be taken at the scene. After diffusing the device, the explosive may be send to laboratory for analysis.

2. Packaging and Forwarding of Evidence:- Label each container of evidence with information like FIR no./Crime no., police station, date and time of collection, point of collection, etc., along with proper numbering of containers. The collected evidence should be marked “dangerous substances” as per requirement.

Types of Evidence	Types of Containers
Components not requiring residue testing	Polyethylene Zip-top bag
Materials requiring residue testing (swabs, etc.)	Nylon zip-top or heat sealed bag, non-corrosive plastic or glass container
Liquids samples	Glass container or non-corrosive plastic container
Soil, loose materials	Interlocking-type polythene bag or plastic container
Dried clothing or cloth containing dried blood stains	Paper bag, polythene bag
fragments/parts of bomb	tight cotton from all sides in a plastic container with a transparent lid

Note :

1. Initiating and detonating devices should be packed separately with cotton packing. Samples should be packed in a padded wooden box in the condition in which they are received. The space between the samples and the box should be stuffed with cotton or strips of paper and the box should be closed with a lid secured by screws or by string. Nails should not be used to secure the lid.
2. Plastic Bags should not be used for packing evidence suspected of containing explosive residues since some explosives may seep through the plastic.
3. Detonators should not on any account be packed with other explosives in the same box.

Queries to be raised

(iii) Whether the given substance is an explosive, if yes, please specify nature and amount.

(iv) Whether the bomb was factory-made/improvised/crude type, please specify and reconstruct.

NOTE:-

1. A healthy coordination and operational coverage amongst different investigation agencies is important at blast site.
2. In case of suspected radioactive device and/or biological device, concerned authorities like Atomic Energy Regulatory Board and/or National Centre for Communicable Diseases may be called and consulted.

2. **Cases pertaining to Toxicology:**

a. The Toxicological work includes:

i. The chemical examination of the exhibits for the detection of poisons in samples of biological origin or any other material collected from scene of occurrence in homicide, suicide and other un-natural deaths and

ii. Detection of ethyl alcohol in blood and urine samples of alcoholics.

The common query in the cases pertaining to Toxicology is whether the given exhibit contain any poison or otherwise. For collection and forwarding of samples pertaining to various types of cases following points may be observed.

i. The physical evidences commonly encountered in Toxicological cases are: (a) Vomit of the effected person available at Scene of Crime. (b) vomit stained soil (c) Container of the poison (d) Tumbler, cup or similar utensil suspected to have been used to consume/administer the poison (e) Bottles of water, cold drinks & liquor etc. (f) Clothes of the effected person suspected to have poison/vomit stain (g) Empty injection vial/ampoules, hypodermic syringes and needle etc (h) Gastric lavage and blood sample taken by the doctor [in cases where effected person was taken to hospital for treatment] (i) in case of death due to suspected poisoning visceral organs of the deceased viz Stomach & small intestine with their contents; Parts of liver, spleen, kidney, lungs, brain; Blood sample from heart; urine, hairs, nails etc and (j) sample of preservative used to preserve the visceral organs, all collected by the doctor at the time of post-mortem examination of the deceased (k) burnt bones & ashes for detection of common metallic poison.

ii. Lungs, brains and cerebrospinal fluid are ideally required in case of poisoning by inhalation and Narcotic drugs.

iii. Urine and blood are required in case of suspected alcohol poisoning.

iv. The blood whatsoever collected for Toxicology examination should be sent in single air-tight container.

v. Hair and nails are required in case of suspected chronic poisoning.

vi. Adipose tissues are ideal in cases of suspected pesticide poisoning.

vii. Skin with underlying tissue from the site of injection and venous blood is ideal exhibits in case of suspected poisoning by injections. (Skin with underlying tissue from nearby body area of deceased as control is also required.)

viii. The exhibits recovered from the scene of crime viz vomit, vomit stained soil, poison container, tumbler, cup, injection vial, syringe needle etc should be packed in clean & air-tight glass containers separately at the earliest possible time. The exhibits must not be dried prior to packing in the glass containers.

ix. The clothes etc. recovered from scene of crime should be packed in zip-locked polythene bags without drying.

x. A control sample of soil, from a nearby place, must be collected and sent to the laboratory along with the vomit stained soil.

xi. The visceral organs taken during the post-mortem examination of the deceased should be taken in clean & air tight containers (preferably glass containers) and the visceral organs should be preserved in:

(a) Saturated solution of common salt for detection of common poisons.

(b) Rectified spirit in case of suspected acid poisoning

(c) 1% Sodium hydroxide in case of suspected cyanide poisoning.

(d) Blood should be preserved with 1 gm of sodium fluoride per 20 ml of blood.

(e) Blood with liquid paraffin or any other vegetable oil in carbon monoxide poisoning.

xii. The containers containing the exhibits lifted from scene of crime should be kept in separate cloth bags, properly labelled and sealed by the competent authority.

xiii. All the containers containing the visceral organs and/or Biological material collected by the doctor during post-mortem examination should be packed properly/tightly in wooden boxes. (Plastic boxes with their covers fixed using adhesives are not recommended)

xiv. All the exhibits pertaining to one case should be sent to Forensic Science Laboratory at one time.

xv. The forwarding letter signed with stamp by the competent authority should be addressed to the Director, Forensic Science Laboratory. It should include:

(a) Copy of the FIR and/or DD entry.

(b) Details of all the exhibits sent indicating the impression of the seal.

(c) Nature of examination required on each exhibit.

(d) Sample seal(s).

(e) Copy of Medico-legal examination, if any.

(f) Copy of Post Mortem Report in cases of death

(g) Copy of statements of relatives and/or witnesses.

(h) Copy of all medical treatments given before death, if hospitalized.

(i) Road certificate.

PHYSICS DIVISION

This division examines cases related to decipherment and restoration of altered numbers of stolen vehicles, soil analysis, estimation of elements presence in various samples such as gold, silver in spurious ornaments and other materials, speaker identification, Analog/Digital images, Audio and Video recording media etc.

TYPE OF CRIME EXHIBITS

- Foot/footwear/tyre marks
- Tool marks
- Paint & Pigments
- Identification marks
- Glass fragments
- Soil
- Cement
- Erased numbers on vehicles/firearm e.g. chassis number, engine number, registration number, identification numbers.
- Mortar
- Concrete
- Fibre, Fabric
- Broken objects
- Electrical cables/wires
- Electric appliance, Electric meter
- Spurious product for infringement
- Papers
- Voice for speaker identification
- Analog/Digital images
- Audio and Video recording media

1. GUIDELINES FOR COLLECTION OF SPEECH/VOICE SAMPLES FOR IDENTIFICATION OF SPEAKER

1.1. Introduction

The technique of speaker identification requires two types of samples namely questioned speech sample(s) (crime sample) and specimen speech sample(s) (control voice sample(s) of suspect). Followings are the guidelines for obtaining speech samples for the purpose of speaker identification.

1.2. Recording of questioned voice samples

1.2.1. Questioned samples can be obtained through a high quality (tape/digital) recorder (like TIR-Telephone Information Recorder, voice logger) installed at police station or police Headquarters.

1.2.2. For telephone calls Recording:-System/TIR should be connected to the victim's telephone lines directly. (A good quality tape cassette of sixty minutes should always be available in the tape recorder, in case tape cassette recorder is used for recording purposes). The digital recorder used for recording the telephone calls should be set so as to record the audio signal at sampling rate not less than 8000 Hz. with quantization @ 8 bit or 16 bit either in unsigned mono or signed stereo.

1.2.3. Mobile phone calls may be through mobile-to-mobile phone or through landline telephone to mobile or mobile to landline telephone. In case of mobile to mobile and landline telephone to mobile calls, the conversation can be recorded on receiving mobile phone itself by inbuilt chip or by taking the output from the mobile at receiving end through a cable-jack for input in the computer or tape recording device. In case of mobile to telephone calls, the conversation can be recorded on telephone information recorder (TIR).

1.2.4. The recorded questioned samples can also be obtained by using hidden or under cover recorder or a transmitter. Sometimes FM transmitter microphone is preferred to record conversation so that the process of recording can be done remotely.

1.3. Recording of specimen samples

1.3.1. An accurate transcript of the text of the recorded criminal call/ conversation should first be made.

1.3.2. Investigating Officer (I.O.) should become familiar with the transcript (the rate of speaking and aural characteristics of the criminal's voice) prior to obtaining samples of the known persons.

1.3.3. The Investigating Officer should state the date, time, place, his name and the name of the suspect. e.g., please Mr. X repeat after me.--------

1.3.4. The recording of the specimen sample should be performed in presence of two independent witnesses. The witnesses should speak about their particulars like name, father's name, residential locality, occupation etc. and

he also should speak that "I Mr. Y son of Mr. A residence of B locality, in my presence the speech sample of Mr. X is being recorded.

1.3.5. In case suspect is not educated and he is unable to read the prepared text or transcript, the sample can be recorded by making the conversation with the suspect. The conversation should be prolonged in such a manner that the relevant words are repeated a number of times. The similar text in the same language should be prepared for recording the specimen samples. The suspect should be able to follow the text spoken by the I.O.

1.3.6. If suspect refuses to acknowledge the text spoken in questioned sample, the samples can be taken in different text of the same language. Sufficient common word must be available in the text spoken.

1.3.7. The recording should be repeated as many times as felt necessary (at least in three repetitions).

1.3.8. A reasonably quiet environment should be maintained.

1.3.9. The microphone should be placed about 30 cm. from the mouth of the suspect. The recording system should ensure a frequency response as same as or better than the telephone line.

1.3.10. Information about the recording environment, recording system used in questioned samples if known to the I.O. should be collected. If it is possible, the same should be maintained in recording of specimen samples and the information regarding recording environment and device should be provided to the laboratory.

1.3.11. Make the suspect conversant with the specimen speech before the recording starts.

1.3.12. If the suspect is not cooperating in giving the samples, it can be done by court order, if necessary.

1.3.13. The speaker should speak with normal speed and loudness. It is an essential requirement to stabilize the speech of the speaker for which he may be asked to speak continuously for two minutes before he reads the prepared text. The speaker should be directed not to speak too fast or too slow but he should read/speak normally.

1.3.14. The investigator should make all efforts to eliminate as much background noise as possible by not playing radio, mobile phone signal disturbance, TV and Air conditioners, fans or overlapping conversation.

1.3.15. In the event of a suspect disguising his voice, the I.O. should ask for the repetition of disguised words, until he feels satisfied.

1.3.16. Recording should be played back before the defendant or suspect leaves so that any deficiency of the sample can be corrected.

1.4. Recording of specimen speech sample with the facility at FSL

FSL Delhi provides recording facility in a quiet room for recording of specimen speech sample for speaker identification.

1.4.1. For availing the facility of FSL, Rohini, Delhi, a requisition letter from the I.O. forwarded by SHO of the concern police station or ACP/DCP of investigating agencies, is to be sent to FSL for getting a schedule for recording session.

1.4.2. After obtaining the schedule date, the accused/witness/complainant (informant) is/are to be produced at FSL along with two independent witness, copy of transcription of conversation and two audio cassettes (one audio cassette for recording in original and other for making a working copy) per informant.

1.4.3. In case the accused is under PC remand, recording of specimen sample with the facility of FSL can be made on special request before the lapse of the PC remand depending on the availability of recording schedule.

1.4.4. In case the accused is running under JC remand, after obtaining the schedule date, the I.O. has to approach the concern court for issuing production warrant to the jail authority.

1.4.5. The recording of specimen sample at FSL is to be made by the I.O. with the assistance of operator of recording system of the laboratory.

1.4.6. The audio cassette (original) is to be sealed by the seal of I.O. after getting signature of the informant, witnesses and I.O. on the cassette. The I.O. has to prepare seizure memo pertaining to the sealed parcel(s) containing audio cassette(s).

1.4.7. In case, any clarification is required, the investigating officer may get in touch with the FSL, Rohini, Delhi.

1.5. Precautions

1.5.1. The recording system should be tested prior to the actual recording of the samples.

1.5.2. Proper placement, an adequate tape/memory and good quality microphone preferable a unidirectional one is to be used.

1.5.3. Original recordings should be sent to the laboratory for examination

1.5.4. Recorded cassettes should be properly labeled.

1.5.5. Questioned and specimen samples should be on separate cassette/media with proper marking, labeling and packing.

1.5.6. Recorded cassettes should be kept away from "Magnet".

1.5.7. Irrelevant portion of the recording should not be deleted by the Investigating Officer rather it should be described.

2. GUIDELINES FOR COLLECTION AND PRESERVATION OF ELECTRONIC DATA FROM DIGITAL CCTV SYSTEMS

2.1. Introduction

Collection of electronic data from digital CCTV system plays vital role in the investigation. If the investigating officer is not familiar with the CCTV system, he/she must ensure if the person from CCTV Installer Company or trained operator is available to assist in collection of the retrieved data.

2.2. Documentation before collection of data from CCTV systems:

Before collecting the electronic data from the system following information should be documented.

2.2.1. Photograph system and its components.

2.2.2. Sketch camera and system placement and position.

2.2.3. Make, Model and serial number of digital video recorder (DVR).

2.2.4. Whether system is PC based or stand-alone embedded.

2.2.5. Number of recording units installed.

2.2.6. Whether system is networked.

2.2.7. Recording capacity of the system and when it will overwrite.

2.2.8. Number of camera(s) installed and number of camera(s) active.

2.2.9. Make and model of each camera.

2.2.10. Are any camera infrared sensitive, if so, identify.

2.2.11. System password, if any.

2.2.12. Date and time displayed by the system.

2.2.13. Actual current time and date (from reference clock)

2.2.14. System setting

i. Image quality.

ii. Frames/picture per second.

iii. Recorded image/frame size

iv. Number of hard disk and storage capacity of each of the hard disks.

v. System firmware version.

vi. Other available system setting (e. g., event log)

2.2.15. Playback software name and version.

2.2.16. Password of software/ to open the concerned file, if any.

2.2.17. Is audio being recorded? If so, how many channels and are they all downloadable/exportable?

2.2.18. Scene contact information

i. Address

ii. Hours of operation.

iii. Contact information of CCTV system installer.

2.2.19. Other information of importance.

2.3. Collection of electronic data

2.3.1. A determination should be made as to how much and what type of data needs to be retrieved from the CCTV recording system.

2.3.2. Consideration of factors like amounts and type of media required and time taken in data transfer is of utmost importance.

2.3.3. Determine the possible output options, e. g., CD/DVD writer, USB drive, network port etc.

2.3.4. Performing a test retrieval will assist in estimating the time and storage requirements for the chosen output option.

2.3.5. Most of the DVR systems have a built-in or external CD/DVD writer to retrieve the data. In this case, following information should be keep in mind

i. Generally the system allows to copy the propriety viewer to the disc while burning where option may be selected manually. 'Write-once' and not 'multi-session' mode should be used for taking data in CD-R/DVD-R.Some system may take only CD-RW/DVD-RW. At the earliest possible time, the data should be transferred to CD-R/DVD-R.

ii. After retrieval of data in CD/DVD, the data should be verified if the data of proper date and time has been retrieved.

iii. If the files are retrieved in multiple CD/DVD, they should be named to ensure that the proper order of playback is identifiable.

iv. The proprietary software (player) should also be provided.

2.3.6. In case the DVR system has not a build-in CD/DVD writer, an external CD/DVD writer can also be connected through a USB/Firewire/SCSI port.

2.3.7. Some CCTV systems have a compact flash card option, which is usually intended for short video sequences. If video is recovered via these drives, at the earliest possible time, all data should be transferred from compact flash card to a more permanent media and hash of the data may be calculated for reference.

2.3.8. USB/Firewire/SCSI ports, if available, can be used to connect external drives, CD/DVD writers and legacy devices. It should first be established that the port is in working condition. Some devices may require installation of necessary drivers on the recording systems. It is advisable to contact the operator /manufacturer of the CCTV systems before making any of such installation.

2.3.9. Most DVR systems have a limitation on the amount of data that can be retrieved (exported/downloaded) at a time, typically 1GB or 2GB. The limit may not be specified in the system manual. It is the best practice to keep the file under 1GB, unless it is known for sure it is capable for more.

2.3.10. Many CCTV systems have network ports and their own proprietary network viewer software which allows for multi-computer connectivity and recovery of the native/proprietary recorded files. By utilizing an Ethernet crossover cable, computer and network viewer, a connection to the DVR can be established and the native/proprietary file(s) downloaded/exported.

2.3.11. In some situations, the quickest solution may appear to remove the hard

drives from the system and replace them. This option should be opted carefully as there are many factors that come into play.

3. GUIDELINES FOR COLLECTION AND PRESERVATION OF SOIL SAMPLE.

3.1.Introduction

Soil is a common form of physical evidence found at the scene of crimes such as hit-and-run accidents, automobile collisions, rapes and burglaries. Soil from the scene of crime may be picked up by an automobile (tyres), thus, providing a valuable link between the automobile and the crime. Similarly, soil or mud found adhering to clothing or shoes may provide the clue that can link a suspect to a particular crime site.

3.2.Procedure for collection/preservation

3.2.1. As soil may be extremely diverse in nature, representative soil samples must always be collected from all the suspected places of the scene of crime.

3.2.2. A sufficient amount of soil sample, preferably, 50 to 100 gm, should be taken from each suspected place at the scene of crime.

3.2.3. Articles bearing soil such as shoes, cloths etc. should be left intact if possible and the entire article should be submitted to the laboratory without any prior sampling.

3.2.4. Before packing moisten soil sample, the investigating officer must air dry the soil sample at room temperature.

3.2.5. Soil on large articles can be collected by cutting out the portion of the object which contains soil or by scraping the adhered soil using spatula/spoon. Before doing so, the article at the place of adhering soil must be photographed.

3.2.6. Soil sample should be wrapped into a druggist's fold of paper and placed into a non-airtight container.

Important Note: Control Soil/Earth control collected against the blood soaked soil/earth from the nearby place should not be submitted to physics division for comparison. Control soil/earth control samples are for the purpose of detection of blood in Biology Division. Control sample of soil/earth shall only be submitted to the laboratory without query as the control sample of soil.

4. GUIDELINES FOR COLLECTION AND PRESERVATION OF GLASS FRAGMENTS

4.1. Introduction

Glass, as a physical clue, is frequently encountered in crimes, such as burglary, road accidents, murder, sexual assault, shooting incidents, arson and vandalism. Mentioning a few for instance, glass fragments of headlight found at the scene of hit-and-run accident may offer clues that confirm the identity of a suspected vehicle. Glass may also be found on the clothing of an alleged assailant, where a bottle is used as weapon. In all such cases, glass acts as one of the evidentiary materials.

4.2. Procedure for collection/preservation

4.2.1. Samples should be collected from the various locations throughout the broken portion of the object in order to have representative sample.

4.2.2. The area from which any sample is collected should be documented as specifically as possible.

4.2.3. There may be possibilities of a reconstruction of the evidence or of a physical match. In such cases, primarily larger size samples are involved. To prevent the damage to the broken edges, the glass pieces should be preserved through soft tissue papers before packing.

4.2.4. If determination of direction of breakage or reconstruction is involved, the inside and outside surface of the known sample should be properly labeled.

4.2.5. Clothing, shoes and similar items thought to contain traces of glass evidence should be carefully looked into to get the glass fragments. Any glass sample found should be properly documented with the source and location.

4.2.6. Glass fragments should be collected, wrapped in papers and kept in plastics container/card board containers, vials, small bottles or other container of suitable size.

4.2.7. Minute glass fragments which are unlikely to break in transit should be collected in druggists' fold followed by keeping in a paper envelope/plastic container. Larger pieces should be kept in a box preserving its edges by soft tissue paper or similar materials.

5. GUIDELINES FOR COLLECTION AND PRESERVATION OF TOOL MARKS EVIDENCES

5.1. Introduction:

A wide variety of tools are used by criminals in cases involving forced entry into building, breaking of vaults, almirahs, locks, cutting of wires etc. The tools used will leave their characteristic marks on the objects and which help in identification of the tool.

5.2. Procedure for collection/lifting/preservation:

5.2.1. Tool marks should be first photographed and the place and material on which the tool mark is present should be properly documented.

5.2.2. Photography should be carried out keeping the camera perpendicular to the surface of tool marks. At least two photographs, one showing the background and another as a close up, should be taken keeping a scale aside.

5.2.3. Photography of the tool marks under oblique light can further add minute details in the photograph. These photographs after proper labelling can also be sent to the laboratory for examination.

5.2.4. A two-dimensional photograph often misses the details. Casting or moulding is another option to lift a tool mark which is simply a reverse or negative-three dimensional image of the impression. Some popular casting/moulding metTMs are as follows.

5.2.4.1. Plastic/rubber: This is a material for lifting fine details of a tool mark. A lump of material is softened by pressing in fingers and then applied on the surface. It is pressed carefully as it is likely to be disturbed by outside pressure.

5.2.4.2. Dental casting material (Dental Stone): This also gives fine details of tool marks.

5.2.4.3. Plaster of Paris: This material is used when the impression is of large size. Plaster of Paris is partly hydrated calcium sulphate. First on the surface of tool marks talcum powder is sprayed. This helps in removing the cast without disturbance. Then solution of plaster of Paris is put on the surface. This is allowed to dry and the cast removed carefully. For preparing plaster of Paris solution, water is taken in a container and plaster of Paris added until water does not absorb any more plaster of Paris. 7 parts of

plaster of Paris are generally put in 4 parts of water. To increase rigidity of surface details a thin layer of shellac dissolved in alcohol is sprayed on the surface by means of sprayer of the type used for spraying insecticides. The shellac is carefully sprayed from a distance of several feet so that air pressure does not disturb the details. The plaster is then poured in. When the caste has hardened the shellac is peeled off. The talcum powder permits the peeling off the shellac without affecting the cast.

5.2.4.4. Cellulose acetate: Tool marks from stone, concrete, wood, etc. can be lifted by cellulose acetate dissolved in acetone. A layer of 1/16 inch is made. However the cellulose acetate cast should be photographed, with scale, immediately otherwise the layer is likely to shrink.

6. GUIDELINES FOR COLLECTION AND PRESERVATION OF FOOT/ FOOTWEAR/ TYRE IMPRESSION

6.1. Introduction:

The impression evidences like footprint, footwear print and tyre marks are the classical evidences which may be found at scene of occurrence. The impression appears when the particular object comes into the direct contact of a surface.

6.2. Procedure for collection/lifting/preservation

6.2.1. The impression marks or the object on which the impression marks are available should, first, be photographed and well documented.

6.2.2. If the footprint/footwear impression is present on movable objects like paper, mat, planks, etc., the object itself should be taken to the laboratory for analysis after proper labelling and packing.

6.2.3. If the footprint/footwear impression is present on immovable or fixed surfaces, one of the suitable metTMs should be used.

6.2.3.1. A close up photography of the impression mark should be done keeping a scale aside the impression. Photography under oblique light gives better clarity of the impression.

6.2.3.2. Casting of impressions: A variety of materials like Plaster of Paris, wax, resins, plastic powders, modelling clay, sulphur, etc. are used to prepare the cast according to the condition and types of objects having the impression.

Among all the mentioned materials, Plaster of Paris (POP) is the most common one. The metTM of casting with POP is as follows.

i. First, all the foreign particles should be carefully removed without disturbing the impression.

ii. A metallic or wooden frame is gently placed around the impression and shellac solution (about 250 grams of shellac dissolved in one litre of alcohol or thinner solution) sprayed from a distance over the impression to form a thin film.

iii. The film is allowed to dry and a thin layer of talcum powder is sprinkled on the layer of shellac to separate the shellac from the cast.

iv. Plaster of Paris and water are mixed in the ratio of 3:7 till it forms a thick creamy consistency. The solution is then poured from a corner of the frame so that the fluid slowly fills and covers the impression to a uniform thickness of about 1/2 inch. Direct pouring must be avoided, it may destroy the impression.

v. The cast is then reinforced with wire gauze pieces over which solution is further added to a total thickness of about one inch.

vi. The cast is allowed to set for about 10-15 minutes. Meanwhile, the particulars of the case, for instance, FIR, PS, sign of I.O. etc. can be engraved on the cast.

vii. Once the POP is set, the frame can be gently removed and the cast can be washed with water.

6.2.3.3. Electrostatic technique: A black vinyl sheet is placed over the suspected area containing the impressions and is covered with aluminium foil through which a high voltage (1500 volts) is applied. The dust particles, which form the impressions, are attracted towards the vinyl sheet and are attached to it. This can be later photographed for a permanent record.

6.2.3.4. Tracing of impressions: A glass sheet should be held over the impressions as close as possible but without touching the impressions. Then the contours of impression are sketched on the glass plate with the maximum possible detail. The glass plate can then be transferred to the laboratory.

7. GUIDELINES FOR COLLECTION AND PRESERVATION OF PAINT SAMPLE

7.1. Introduction

Paint evidence is frequently encountered in hit-and run cases, on tools used by burglars, and occasionally in other types of cases.

7.2. Procedure for collection and preservation

7.2.1. Cross transfers of paint commonly occur in hit-and-run cases where two or more vehicles are involved. If loose paint chips are found, remove it and place them in a druggists' fold.

7.2.2. If, however, the transfers are smeared on the surfaces, flake off chips or scrape out paint should be collected through a rust free knife/blade.

7.2.3. All the flakes/chips collected from different areas should be first placed into druggists' fold followed by paper envelope/plastic jar.

7.2.4. Obtain samples for comparison from all areas showing fresh damage on suspected vehicles. If the paint can be flaked off by bending the metal slightly, remove it in this manner. If not, scrape or chip the paint off, using a clean knife blade. Carefully wipe the blade before collecting each sample. Collect all layers down to the metal. Place each sample in a separate container.

7.2.5. In cases of burglary, tools used to gain entry into building, safes, or other places often contain traces of paint, care must be taken that such traces are not lost.

7.2.6. If such transfers may be present, wrap the end of the tool containing the material in clean paper and seal with tape to prevent loss. In no case, attempts should be made to set the tool into marks or impressions found. If this is done, transfers of paint or material can occur and any traces found later will have no significance as evidence.

7.2.7. Collect specimens of paint from all areas which the tools may have contacted at the crime scene. These samples should include all layers present. Do not destroy the tool mark while collecting the paint sample. If possible, cut out around the mark, and send it to the Laboratory.

7.2.8. Never place paint directly into envelopes unless large pieces are enclosed. Most envelopes have unsealed cracks in the corners which may result into loss or contamination.

8. GUIDELINES FOR COLLECTION AND PRESERVATION OF FIBER/THREADS SAMPLE

8.1. Introduction

Fibers as an evidence may encounter in cases like hit-and-run vehicles, burglary, sexual assaults and murder.

8.2. Procedure for collection and preservation

8.2.1. If threads or large fibers are found, they can often be picked up with the forceps and placed in a druggists' fold, and then in an envelope, which can be sealed and marked.

8.2.2. Never place loose fibers directly into a mailing envelope since they can be lost from this type of envelope.

8.2.3. If the fibers are short or few in number, and if it is possible to do so, wrap the area or the entire item containing the fibers in paper and send the whole exhibit to the laboratory after proper sealing, marking and labeling.

8.2.4. When fibers or threads are recovered, suspected clothing from which they might have originated should be collected separately in an envelope.

8.2.5. In sexual assault cases, fiber may also be found on the body of the victim. The fiber should be collected in a druggists' fold followed by packing in a paper envelope.

9. GUIDELINES FOR COLLECTION OF EXHIBITS RELATED TO RESTORATION OF NUMBERS

9.1. Introduction

The erasure/obliteration of serial numbers and manufacturer's marks is often made to prevent tracing ownership of articles. The laboratory uses mechanical and chemical processes that may restore the original marking in whole or part. Motor vehicles, bicycles, motor cycles, fire arms, ornaments, machinery, valuable tools, cameras, watches, plastic items and many other articles items where serial numbers have been restored.

9.2. Procedure for collection and preservation

9.2.1. If small articles are involved, pack the evidence in the manner that will protect the area where the serial number has been obliterated/ erased.

9.2.2. Bigger articles such as vehicles may be directly submitted to the laboratory.

9.2.3. Submission of motor vehicles**. "Assistance of motor mechanic is required to make the examination of place of engine and chassis number possible."**

10. GUIDELINES FOR COLLECTION OF METALLIC SAMPLE FOR ELEMENTAL PROFILING

10.1. Introduction

Metal evidence is frequently encountered in cheating cases, melting of coinage, theft and occasionally in other types of cases.

10.2. Procedure for collection and preservation

10.2.1. Metals pieces, fillings, dust of metal, ornaments/part of ornaments, melted coin slabs, wires etc should be weighed, packed in plastic container/cloth bags.

10.2.2. In case of large number of article(s), representative samples or sample cut out from the huge article should be collected.

10.2.3. These samples should be collected in plastic container/ cloth bag and properly marked and labeled before forwarding to the laboratory.

11. GUIDELINES FOR COLLECTION OF SAMPLE RELATED TO COPY RIGHT ACT

11.1. Introduction

Imitated/duplicate and original articles often submitted to the laboratory in violation of copy right act for comparison of their trademarks, registered marks, and design and pattern of packaging and labeling.

11.2. Procedure for collection and preservation

11.2.1. In case of bulk samples, random sampling should be done from each type of articles. 5 to 7 representative samples of each type of the articles should be collected.

11.2.2. Each type of original articles from manufacturer/distributor/company firm should also be collected for comparison purpose.

11.2.3. Articles should be properly marked and kept into an envelope/cloth bag or other packing material according to the shape and size of the articles.

12. GUIDELINES FOR COLLECTION OF SAMPLE RELATED TO BUILDING MATERIAL EXAMINATION

12.1. Introduction

Cement and other building materials are frequently received in forensic physics division. Cement is one of the most important materials in building construction and hence has a large sale. Adulteration, illegal sale, etc. amounts to large volume of money. In forensic context, testing of cement is done for identification and purity and not to certify the fitness for construction.

12.2. Procedure for collection and preservation

12.2.1. In cement adulteration cases, at least 10% of the bags should be selected for sampling. Random sampling should be done from the suspected source. The content of each bag selected for sampling, should be thoroughly mixed and kept in separate container preferably in plastic jar or polythene bag, safe from moisture. A quantity which is not less than 1 kg should preferably be collected.

12.2.2. In the case of collapse of building under construction, representative sample of cement, mortar or concrete should be collected from different portions of the structure. The collected sample mortar or concrete should preferably be about 5 kilograms.

12.2.3. Concrete material should be packed in plastic bags/sacks, properly marked and labeled before forwarding to the laboratory.

13. GENERAL GUIDELINES FOR COLLECTION PACKAGING AND FORWARDING THE CASE TO FSL DELHI

13.1. When the materials are recovered or seized in bulk quantity, the exhibits forwarded to the laboratory should be representative of the recovered or seized samples.

13.2. Each article should be separately packed and labeled indicating the serial number of item. Never pack more than one item together; it leads to cross-contamination.

13.3. Each type of exhibits should be collected in containers, which are not reactive to its content.

13.4. The labels should be numbered consecutively and should bear the signature of the I.O./forwarding officer. The case reference should be prominently mentioned on the outer cover of the parcel.

13.5. All parcels should be carefully sealed by the dispatching officers and packed in such a manner that they cannot be opened without destroying the seals. The seal should be the same throughout. Either a private seal or an official seal, which is kept in safe custody, impression of Keys, weights, etc, must not be used.

13.6. A duly filled forwarding letter (FSL form) , an attested copy of FIR, seizure memo, postmortem report, transcription (for speaker identification), sample seal and other relevant documents must be enclosed with the parcels for submission of the case in the laboratory..

BALLISTICS DIVISION

This division examines exhibits related to identification of firearms by means of fired cartridge cases and bullets, identification of shooter, estimation of range of firing, angle of fire, testing of firearms/ammunition and components of firearms/ammunition.

Type of crime exhibits

- Regular/Improvised firearms or parts of firearms, Air guns/Toy guns/Zip guns/Gas operated guns.
- Manufacturing tools used for firearms and ammunition.
- Live and misfired cartridges, fired cartridge cases and parts of cartridge (cap, base, wad, powder, projectile, shots/pellets etc.).
- Tools used for loading and reloading of ammunition.
- Fired bullets, pulled out bullets, shot, pellets, jacket/part of jacket of a bullet, lead/ steal core/tip of the bullet etc.
- Apparel of the victim or accused.
- Gun Shot Residue swabbing from body parts of suspect shooter or victim lifted.
- Smokeless powder, black powder and or its containers.
- Inanimate object(s) in and around shooting place, which might have been hit or pierced by bullets, shots pellets/powder charge.
- Unburnt/partially burnt powder charge.

Guidelines for collection and packing of physical evidences for ballistics examination

1. The latent or visible fingerprints/blood stains, if any on firearms/cartridges are to be taken and preserved before sending it to the laboratory for examination.

   [Action: IO]
2. Loaded firearm should not to be send to the laboratory for examination.

   [Action: IO]
3. All the exhibits for ballistics examination like firearms, live cartridges, fired bullets and empty cartridge cases and target materials like clothing, window pane etc., should be sent in separate sealed covers with labeling on the cover instead on the exhibits.

   [Action: IO]

4. Garments with suspected gunshot holes are to be handled carefully to prevent the loss of gunshot residues and its distribution around the hole. For this, handling should be minimum and the cloths of accused /victims bearing suspected bullet holes should be kept separately with preserving gunshot/bullet in cardboard box. New & clean polythene/paper may please be kept under and above the suspected hole.

[Action: Doctors/IO]

5. Swabs in 5% HNO3 for shooter identification are to be collected from hands of suspects (preferably upper left hand, palm of left hand, upper right hand and palm of right hand) and one control sample should be taken for GSR particle analysis on Atomic Absorption Spectrophotometer.

[Action: Forensic Scientist]

6. Do not pack any weapon before it has been made safe.

[Action: IO]

7. The firearms should be sent for forensic analysis just after the seizure; otherwise, formation of rust in the barrel of the gun may affect the inherent pertinent rifling characteristics of the barrel, thus preventing the expert from getting correct opinion.

[Action: IO]

8. The muzzle ends of sawn-off shot gun barrels should be securely and separately covered using clean covers/ bags. Never cover the end of the barrel directly with adhesive tapes.

[Action: IO]

9. Sufficient ammunition of at least 5 rounds of same caliber and make (preferably) should be sent, if test firings are to be conducted.

[Action: Forwarding Authority]

BIOLOGY/DNA DIVISION

This division examines crime exhibits relating to blood/blood stains, semen/semen stains, saliva stains and their grouping, hairs, bones, plant materials, flesh and in cases related to maternity/paternity disputes and forensic samples.

Types of Crime Exhibits

- Blood/ Blood stains
- Semen/ Semen stains
- Saliva stains
- Hair
- Bone
- Flesh

Collection of Biological & DNA evidence at the crime scene & Doctors during MLC (Medico-Legal Examination)

EVIDENCE	CONDITION	LOCATION	COLLECTION MODE	ACTION TAKEN BY
Biological samples		Hospital/ Scene	All the samples should be collected by wearing hand gloves with all the precautions being taken to avoid any contamination of the specimens. The samples should be labeled with information including type of specimen, (e.g. Blood/urine/vaginal swab/anal swab etc.), case number, name, age and sex of the patient, date of collection, site of collection, name of concerned police official and name with designation of the doctor.	By doctor or In-charge crime team in the presence of investigating officer/ Investigating officer.

Blood Samples		Hospital	Blood samples collected by the doctors during MLC or Postmortem should be preferred on gauze cloth piece thoroughly dried in shade not in direct sunlight and packed in paper or cloth. The blood samples should never be packed in damp/wet conditions and never be packed in polythene/plastic Container/ Air-tight Container.	Doctor
	Liquid	Scene/Hospital	Use syringe to collect into EDTA tubes or on gauze or cotton. Transfer onto cotton cloth & Air dry.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Clot	Scene	Collect clot in test tube & add equal volume of saline. Transfer onto cotton cloth & air dry.	In-charge crime team in the presence of investigating officer/Investigating officer.
	Wet	Clothing	Air dry at room temperature & package in a paper bag. Also avoid direct heat/ ironing to dry the stains as heat destroys the samples. Do not accelerate drying and take care to avoid contamination.	Doctor
	Wet	Object	Air dry at room temperature transfer the stain on gauze air dry and pack in the cotton cloth or envelope paper.	In-charge crime team in the presence of investigating officer /Investigating officer.

Dried Blood	Crust	Small Object	Scratch crust into paper packet. Collect control blank.	In-charge crime team in the presence of investigating officer /Investigating officer.
	Stains	Weapon of offence	Collect item directly. Should be packed separately in boxes with stained areas covered by paper.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Stains	Large Object	Collect entire item, if it is smaller one. For the larger object transfer the stain on gauze soaked in saline and air dry.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Stains	Upholstery Carpet Wallpaper Wood	Cut out stained area. Package separately. Collect control.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Stains	Unmovable surface Concrete wall	Scrape into paper packet. Collect control. Transfer onto moistened cotton thread. Air dry thread.	In-charge crime team in the presence of investigating officer/ Investigating officer.
Semen	Liquid	Victim	Collect sample with swabs and should be air dried and packed in paper envelopes. Smear preparation on slide is more suitable than swab for sperm examination. Reference samples of victim and accused must be taken.	Doctor

	Stains	Victim	Collect sample with swabs and should be air dried and packed in paper envelopes instead of Airtight Plastic container	Doctor
	Liquid	Scene	Transfer on to cotton cloth. Air dry.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Wet	Clothing	Air dry at room temperature and package in a paper bag. Avoid direct heat /ironing to dry the stains as heat destroys the samples. Do not accelerate drying and take care to avoid contamination.	In-charge crime team in the presence of investigating officer/ Investigating officer.
Saliva	Objects	Cigarette	Completely dry cigarette ends and pack separately in paper bag or envelope. Store in a cool, dry environment.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Stains	Clothing	Air dry at room temperature & package in a paper bag. Also avoid direct heat/ ironing to dry the stains as heat destroys the samples. Do not accelerate drying and take care to avoid contamination.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	Objects	Cups or glasses	Should be sent after drying and wrapping it with paper.	In-charge crime team in the presence of investigating officer/

				Investigating officer.
Hair	With tissue	Scene	Collect hair with tissue in container & Keep refrigerated.	In-charge crime team in the presence of investigating officer/ Investigating officer.
	With blood	Scene	Air dry. Collect in a paper packet.	In-charge crime team in the presence of investigating officer/ Investigating officer.
		Person	Samples of hair complete with roots should be taken. Collect in a paper packet.	Doctor
Tissue/ Aborted Foetus		Hospital	Tissue samples and Foetus should be stored in normal saline. Formalin should never be used as preservative. Glass container should not be used. Blood sample of the mother should be sent along with Foetus	Doctor
Bones/ teeth		Hospital	Air Dried at room temperature. Seal the items in suitable cloth or paper.	Doctor

DOCUMENT DIVISION

Nature of examination: -

1. Examination & Authorship of Known / Unknown Hand writings
2. Examination & Authorship of Genuine Signatures and forgeries
3. Examination of Stamp impressions / Seal impressions
4. Examination of Type Writings / Printed documents etc.
5. Examination of Xerox copies / Carbon copies / Mirror image etc.
6. Examination of Anonymous letters / Threatening letters/ Suicide note etc.
7. Examination of paper & inks of the documents
8. Examination of various kinds of Certificates like Birth Certificates, Caste Certificates, Academic Certificates, Marriage Certificates, Domicile Certificates etc.
9. Examination of Stamp papers / Security Documents etc.
10. Examination of Travel Documents (e.g. Passport, Visa)
11. Examination of Unconventional / Crime Scene writings (writings on Walls, Mirrors etc.)
12. Determination of age of documents
13. Examination of Facsimile documents / Scanned documents
14. Examination of Secret Writings
15. Examination of Charred documents
16. Examination of Financial documents (Bank Drafts, Cheques, Pay Orders, Debit /Credit Vouchers etc.)
17. Examination of Indented impressions
18. Examination of Erasures / Addition / Alterations in documents
19. Examination of Fabricated / Built up Documents
20. Examination of obliterated impressions
21. Examination of Indian / Foreign currency notes

Formal requirement from Forwarding authorities: -

1. The questioned documents, in original collected from the individual or from any of the departments should be properly preserved in transparent polythene bag to avoid any deterioration in collected exhibits.
2. The questioned writings / signatures / typewriting etc. should be encircled with red / blue pencil and marking be given in ascending order as Q1, Q2, Q3….
3. The investigation officer should collect appropriate standard materials, in original for comparison and be given markings as S1, S2, S3……
4. Investigation officer should collect similar type of specimen / admitted writings / signatures / type writings / stamp impressions etc. preferable of contemporary period.
5. The investigation officer should mention specific nature of examination required
6. The investigation officer should avoid folding and unusual handling of the documents.
7. The investigation officer should deposit the documents in closed / sealed envelope along with duly filled FSL Forms.

LIE-DETECTION DIVISION
(FORENSIC PSYCHOLOGY DIVISION)

This division helps to establish truth / deceptiveness of the subject in the crime under investigation.

- To identify the deceptiveness of the Subject.
- To identify the Truthfulness of the Subject.
- To identify the perpetrator of the crime.
- To assist the investigation process.
- To replace the third degree methods.
- To verify the veracity of the statements of
    - Accused
    - Suspects
    - Witnesses
    - Complainants

Categories of subjects pursued for lie detection examination:

1. Suspects
2. Witnesses
3. Complainants
4. Accused

Guidelines for registering the cases for lie detection examination:

The following documents are required for polygraph test in the laboratory:

1. FIR/ DD entry.
2. Subject's consent before MM / Court Order for polygraph test (Original/attested).
3. Brief facts of the case.
4. Issues to be probed.
5. Statements of Witnesses, Suspects, Accused, Victims and/or Complainants.
6. Medico Legal Report (Post Mortem Report, Panchnama and other Forensic Report if any, etc.
7. Crime Scene Sketch and Photographs.
8. Passport size photograph and Id-Proof of victim(s) and subject(s) bring for polygraph test.
9. All other evidences relevant to the case if any.

* Documents mentioned in list 1, 3, 5, 6, 7 and 9 should be attested by SHO or Higher

COMPUTER FORENSIC UNIT

Nature of examination: -

Analysis & retrieval of data from various storage devices in cases related with preparation of fake certificates, Video clippings, threatening messages, disputed videos, images, pornographic clippings, documents, online scams, cloning of debit / credit cards etc. used in day to day life, such as: -

1. Hard Disks of various computers
2. Hard Disk of Laptops / Tablet PC etc.
3. SIM Cards/Memory Cards / Magnetic Cards etc.
4. Pen Drives
5. Floppy Disks/ CDs / DVDs
6. CCTV cameras
7. Mobile Phones (General & Smart phones)
8. Other Memory devices

Formal requirement from Forwarding authorities: -

1. The original digital exhibits collected from the individual or from any of the departments should be properly preserved in bubbled bag to avoid any physical damage in collected exhibits.
2. Detached Battery from Mobile Phones / Laptop etc. before packing / sealing.
3. Small Size exhibits like micro SD memory Cards / SIM Cards etc. should be preserved in small plastic box before packing / sealing.
4. The investigation should mention specific nature of examination required.
5. The investigation should deposit the documents in closed / sealed envelope along with duly filled FSL Forms and blank Hard Disk / Storage Device of similar or higher storage capacity for preparation of image copy required in examination.

PHOTO DIVISION

Forensic Photography includes the Photographic documentation of evidence at the scene of occurrence like murder, homicide, suicide, road accident, burglary, fire/arson etc and portrait photography of criminals, documentation of the victims unidentified dead bodies, cadavers, Photography/Videography of criminals/suspects with the help of scientific equipments, different types of light sources, filters, lenses etc. for presentation in the court of law.

The Photo Division renders technical and scientific assistance to all divisions (i.e. Ballistics, Chemistry, Biology & DNA, Physics, Document, Computer Forensic Unit) of the laboratory in providing photographic evidence of the Scene of Crime, Crime exhibits and reconstructions of Crime Scene etc.

Evidential value of Forensic & Police Photography

Forensic Photographic Expert evidence is admissible in India u/s 45 of The Indian Evidence Act, 1872

Forensic & Police Photography and its Uses

- One Photograph speaks more than one thousand words.
- Preservation for evidential permanent record.
- To circulate quickly the description of the corpus delecti
- To record by use of visible and invisible radiation and by magnification, which cannot be seen by the normal eyes?
- Fixing physical evidences at the scene of crime and show their relationship with each other.
- Photography of criminals and unidentified dead bodies for identification purposes.
- Photography of accidents and other scenes of crime for the reconstruction and recording of the crime exhibits for the purpose of evidence and later identification by the experts.
- Photography of physical evidences like fingerprints, footprints, tool marks etc., found on the scenes of crime for identification of individuals, implements/tools involved.

Procedure

- **"Never touch, change or alter anything until it has been Photographed…'' When a body or article has been moved it can never be restored to its original position.**
- Photography of scene of crime depends on the nature of scene, lighting condition, dimension of the scene of crime as well as the availability of space, equipments, accessories available etc. However, three basic types of photographs are taken for the photographic documentation in general range photographs, mid range photographs and close up photographs in all crime scenes.
- Scene of crime photography commences with the location fixation. The location fixation is accomplished by taking long range shots showing the scene of crime along with some permanent landmarks such as buildings, kilometer readings, road signs, sign boards and other features characteristics to the scene.
- After location fixation, the actual scene is photographed. The approach is from general to the specific. Adequate number of photographs from different positions to be taken to ensure complete coverage.
- The scene of crime has to be photographed prior to any intrusive process of examination.
- Shots should be taken in clockwise/anti-clockwise series of overlapping photograph around the scene from opposite ends of scene, by moving the camera from one position to another.
- Mid range photographs are taken to project a specific subject of evidence or a significant portion of the crime scene. Close-up photographs are taken to record the evidence in detail like its location, nature and condition. All close-up photographs are taken with the surface of interest parallel to the camera. A scale is placed on the same plane as the surface of interest.

CRIME SCENE MANAGEMENT DIVISION

To prompt the proper collection of forensic evidence is an important part of modern Crime Scene Investigation. However, such evidences tend to get destroyed or ignored if there is a delay in collecting them from the Scene of Crime, thereby affecting the quality of investigation. Therefore, Crime Scene Management Division has been made available round the clock (24x7) which will reach the scene of crime within the shortest possible time. At present, the Crime Scene Management Division at FSL Rohini is now functioning 24x7 hours.

The contact no for Crime Scene Management Division is 011-27555578 (24*7)

DO'S AND DON'TS

(CASE EXHIBITS SUBMISSION FOR EXAMINATION-REGARDING)

- Parcels/packets should be mentioned properly on Forwarding letter and Road certificate with respect to their serial No., Seal impression, contents and source of exhibits.
- Parcels/packets should be marked (i.e. serial No., FIR, U/S, P.S., MLC No., P.M. No. etc.).
- Parcels/packets should be properly sealed.
- Seal impressions should be legible / complete on parcels/packets.
- Sample/specimen seal should be attached/legible/complete/matching with that on parcels/packets.
- Sample/specimen seal should be attested by I.O. / S.H.O / Medico Legal Officer and case information (FIR, U/s, P.S., MLC No. P.M. No etc.) should be written.
- Parcel/packets must be signed by I.O./concerned doctor etc.
- Attested photocopies of FIR/D.D. entry/seizure memo/MLC/P.M. report should be enclosed.
- Forwarding letter/certificate should be complete (Containing memo No. and case information) and attested by the forwarding authority.
- Nature of examination should be clear/proper and without overwriting/cutting/ correction.
- Overwriting/cutting/correction is/are must be signed by forwarding authority.
- The cases are submitted from 10.00 a.m. to 1.00 p.m. and reports can be received from 02.00 p.m. to 5.00 p.m.
- Separate forwarding letters, Road certificate and other relevant papers should be prepared for Different Divisions for submitting cases and receiving reports.
- **INVESTIGATING OFFICERS SHOULD DEPOSIT EXHIBITS OF ALL CASES FOR EXAMINATION WITHIN 7 DAYS FROM THE DATE OF ITS COLLECTION.**

एक कदम स्वच्छता की ओर

Accredited by the National Accreditation Board for Testing and Calibration Laboratories