

# INDIANAPOLIS-MARION COUNTY FORENSIC SERVICES AGENCY

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## EVIDENCE SUBMISSION GUIDELINE

### FIREARMS EVIDENCE

#### INTRODUCTION

Generally, crimes of violence involve the use of a firearm. The value of firearms and fired ammunition evidence will depend, to a significant degree on the recovery and submission techniques employed at the shooting event or later during autopsy. Trace evidence adhering to surfaces should be collected and submitted to the appropriate agency.

This submission guideline is designed to assist you in your laboratory examination request decisions. Any situation not sufficiently explained to your specific needs may be handled on an individual basis by contacting the laboratory at (317) 327-3670 or the Firearms Section Supervisor at (317) 327-3777.

A. The following is a list of items most commonly submitted to the Firearms Section for analyses:

1. Firearms
2. Cartridge Cases
3. Cartridges
4. Fired Bullets / Fragments
5. Shotshells
6. Wads
7. Slug / Pellets
8. Victim's Clothing



B. The I-MCFSA Firearms Section can conduct the following analysis:

1. Examination of firearms for function and safety, including test firing in order to obtain test bullets, cartridge cases and shot shells.
2. Comparison of evidence bullets, fired cartridge cases and shot shells to determine if they were or were not fired by the same firearm or the submitted firearm.
3. Examination of fired bullets to potentially determine caliber and possible make and type of firearm involved.
4. Imaging and comparing fired cartridge cases and test shots from firearms to similar exhibits recovered in unsolved crimes utilizing the NIBIN system (see NIBIN Submission Guideline #14).

5. Examination of clothing for the presence of gunpowder patterns and shot (pellet) spread patterns to determine a possible muzzle to target distance.
6. Restoration of obliterated serial numbers and other markings on firearms.

NOTE: To ensure the maximum value of this evidence is obtained, it first shall be properly identified, preserved and packaged. These steps should be documented with notes and photographs.

NOTE: Photos shall contain a measurable scale for later usage.

NOTE: To ensure that the appropriate analysis is completed, the contributor shall submit a request card. This request card can be completed electronically at <http://gateway.indy.gov/sites/FSA/SitePages/Home.aspx> or hand written at the IMPD Property Room desk or I-MCFSA.

## FIREARMS

### SAFETY CONCERNS

- A. General Considerations and Precautions: As important as physical evidence or DNA/fingerprints may be, safety is of greater concern. When practical, always render a firearm safe to handle before proceeding with further investigation or examination, but with caution so as to preserve any possible DNA trace and/or fingerprint evidence that may be present.
1. To ensure the safe handling, storage and submission of firearms, follow these safety steps:
    - a. Keep the **firearm unloaded** at all times, if possible. Package and submit the firearm **unloaded**.
    - b. Keep the action closed.
    - c. Insertion of a nylon zip tie through the magazine well and the ejection port will allow the action to close while ensuring that the firearm is not loaded. The nylon zip tie shall never be placed down the barrel of the firearm.
  2. If loaded firearms must be submitted, the Property Room and/or laboratory personnel accepting the evidence must be notified of the loaded condition of the firearm prior to submission of the firearm.
  3. When it is suspected that firearms being collected have been contaminated with biological fluids, it is extremely important that at a minimum, latex, nitrile or other non-porous polymer gloves be worn when recovering and packaging this evidence. Personal protective equipment such as eye protection and lab coat are recommended in addition to the gloves. **The outermost packaging shall be labeled with a biohazard sticker.**



4. All biological stains and reference samples should be treated as a biohazard (Universal Bloodborne Pathogen Precautions). These samples could potentially expose the handler to HIV, Hepatitis B and C, or other pathogens.

### COLLECTION

- A. The collection process is relatively simple and not damaging to any firearms related item. Any damage that has occurred has normally been a result of firing, impact or accidental. However, damage can occur when attempting to mark the items. It is strongly recommended that the evidence NOT BE marked. Damage can occur in the form of altering or affecting any microscopic marks or patterns that may be present and useful for analyses and comparison. As an alternative to marking the firearm, use the serial number for later identification or affix an evidence tag as outlined later.
- B. Firearms recovered in water should be submitted in a watertight container of the same water. However, the Firearms Section shall be contacted **prior** to submission to expedite water repellent procedures. Additionally, the Firearms Section shall be advised of the loaded condition of the firearm.

## PACKAGING

- A. The purpose of correctly packaging firearms is to protect the breechface and bore from damage. Proper packaging techniques include:
1. Attach an evidence tag to trigger guard, if desired.
  2. Firearms should not be dismantled before packaging as this could alter their evidentiary value.
  3. **DO NOT** place metal in the bore, breech or magazine well.
  4. Loaded magazines and unfired cartridges should be removed and secured with the associated firearm.
    - a. If the magazine is in the firearm, it may be included in the same exhibit as the firearm for submission to the laboratory, however, if it is not found in the firearm it should be submitted as a separate item.
    - b. If DNA/latent fingerprint processing is requested, the cartridges may be left in the magazine but should not be left in the chamber.
  5. Fired cartridge cases and unfired cartridges should be individually packaged by placing them in a sealed pill box or envelope and pertinent information placed on the container (See Projectiles: General Considerations and Precautions).
  6. Legibly mark the contents of each package (include case number, contents, date of recovery, etc.)
  7. Outermost packaging must be properly sealed with date and initials.
  8. Containers can vary from boxes, evidence envelopes, coin envelopes, plastic bags, etc. The important consideration is to protect the item to be examined from loss or contamination. Firearms should be properly packaged in a box. Again, the container should be sealed, dated and initialed, with a description of the item contained within.

## UNLOADING THE FIREARM

- A. **Revolvers** – If cocked, cautiously de-cock the firearm using the knurled areas if possible. Preferably using a permanent marker, make two marks on the cylinder, one on each side of the top strap, to indicate the chamber that is in the firing position. If uncocked, these marks will indicate the chamber found indexed in front of the firing pin. Your notes should contain the following information:
1. Appearance of cylinder as recovered:

Mark the cylinder on each side of top strap

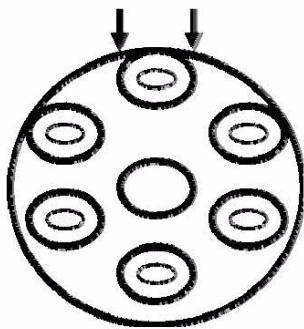


Diagram to be used in notes

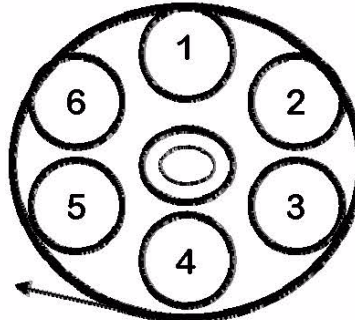
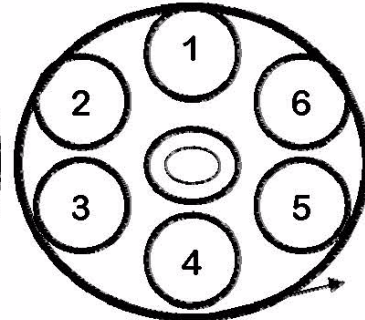


Diagram to be used in notes



Direction of rotation

2. Example index card: Chamber

Position	Condition	Headstamp
#1	Fired	U. S. Cartridge Co.
#2	Fired	Remington Arms Co.
#3	Fired	Winchester Repeating Arms Co.
#4	Unfired	Dominion Cartridge Co.
#5	Loaded	Western Cartridge Co.
#6	Loaded	Peters Cartridge Co.

- B. **Semiautomatics / Full-Automatics:** Note the positions of any manual safety devices or cocking indicators. Carefully disengage the magazine and remove it from the firearm. Open the action and visually check the chamber for a cartridge or fired cartridge case. If possible, lock the slide to the rear and insert a plastic zip-tie into the ejection port and down through the magazine well. Then carefully release the slide forward and engage any manual safety devices that may be on the firearm.
- C. **Shotguns and Rifles:** These are handled in similar manner to the handguns listed above. Safety and preservation of physical evidence should always be considered.
- D. DNA, Trace Evidence and Fingerprints:
  - 1. After the firearm is in a safe condition, examine it for trace material; i.e. blood, hair, fiber, tissue. If in doubt about proper processing, do not proceed further until contacting the laboratory and discussing the situation with latent print personnel.
  - 2. Rubber gloves and masks shall be worn when DNA is collected or fingerprinting is needed. Gloves shall be changed with each piece of evidence being handled.

**DO'S and DON'TS**

**DO record the serial number, make, model and caliber of the firearm for identification before submission.**

- **DO place the firearm in a cardboard box or similar container.**
- **DO call the laboratory ahead of time if submitting a LOADED firearm.**
- **Mark the packaging with: *WARNING: LOADED FIREARM***
- **DO submit the magazine with the firearm.**
- **DON'T place any object into the barrel (*secure a plastic zip-tie through the firearm action and magazine well*)**
- **DON'T clean the bore, chamber or cylinder of the firearm.**
- **DON'T take the firearm apart or test-fire it before the firearm is submitted to the laboratory.**

**PROJECTILES (FIRED BULLETS / FRAGMENTS)**

- A. Bullets should always be handled with the utmost care to avoid destroying the microscopic striations. A visual examination of each bullet should occur to preserve obvious blood, fluid, etc. The appropriate preservation and collection techniques should be applied prior to submission for firearms examination. The bullets should be packaged and sealed in a white slider box (pillbox) within a sealed envelope, and the container marked for identification.

NOTE: Do not mark the bullet due to the possibility of destroying valuable evidence.

NOTE: Plastic or glass airtight containers should never be used for bullets or firearms. They could allow moisture to cause corrosion on the firearm or identifiable detail on the fired bullet. Paper or cardboard should be used.

- 1. Projectiles Embedded in Wood, Plaster, etc:

Unless absolutely necessary, do not attempt to dig out a projectile(s). If practical, remove a section of the material around the projectile(s) in which it's embedded and submit the entire piece to the laboratory. Then the projectile(s) can be recovered by removing the material, adjacent to the projectile to prevent damage to the evidence. This procedure can be explained in detail by contacting a Firearms Examiner.

2. Projectile or Projectiles from a Person or Body:

X-rays should be taken to locate the position of the projectile. They should be removed with rubber-tipped forceps or by using just the fingers to prevent mutilation of the projectile. Caution should be taken as some projectiles have sharp edges. The projectile should not be rinsed off. Proper cleaning procedures will be employed by the laboratory.

**DO'S and DON'TS**

- **DO place bullets in rigid containers (Place only one bullet in each container. Multiple pieces or pellets from the same area may be placed in the same container).**
- **DO submit all bullets and fragments recovered.**
- **DO mark the containers for identification.**
- **DON'T place identification marks on bullets as this could destroy marks made by the firearm.**

**FIRED CARTRIDGE CASES (SHOTSHELLS), WADS and UNFIRED CARTRIDGES**

A. Fired Cartridge Cases (Shotshells):

Fired cartridge cases should be handled in the same manner as projectiles. A visual examination of each cartridge case should occur to preserve obvious latent print detail, blood, fluid, etc. The appropriate preservation and collection techniques should be applied prior to submission for firearms examination. Historical testing supports that significant evidence is unlikely to be recovered on fired cartridge cases, therefore they will not routinely be processed to develop possible latent prints or swabbed for possible DNA. Remember that proper packaging prevents the destruction of valuable evidence.

B. Shotshell Wads:

Attempt to locate wads fired from shotshells. When a shotshell is fired, the wad or wads travel along with or behind the shot charge. When located, the shotshell wad or wads should be handled exactly as projectiles. If a relatively close muzzle to target distance, the wadding may be found in the victim's clothing or body.

C. Unfired Cartridges:

If relatively few, these should be packaged in a sealed manila envelope. Larger quantities should be grouped together as to location of recovery and may be listed as a single item. The larger quantities may be packaged in cardboard or other appropriate containers. The containers should then be marked for identification. All Federal guidelines shall be followed in the shipment of explosive substances through the mail.

**DO'S and DON'TS**

**Fired Cartridge Cases/Shot Shells**

- **DO submit all fired evidence cartridge cases/shotshells recovered.**
- **DO mark the containers for identification.**
- **DO place each fired cartridge case(s)/shotshell(s) in a separate container.**
- **DON'T place marks on fired evidence and protect the primer areas of the fired cartridge case/shotshell.**

**AMMUNITION**

- **DO try to recover any ammunition of the same brand and type for potential test firing and comparison purposes.**
- **DO mark the container for identification**
- **DON'T mark ammunition.**

**RANGE DETERMINATIONS (GUNSHOT RESIDUE)**

- A. Muzzle to target range determinations may provide invaluable information to your case if certain conditions exist. To obtain the most value from this evidence, it shall be properly submitted.

- B. Clothing should be air-dried before packaging. The clothing should then be individually packaged in clean paper bags, sealed and marked for identification to avoid cross contamination. Any deviations from this will be documented in the Firearms Examiner's work notes and will be qualified during testimony. Failure to properly package evidence to be examined for range determination testing may result in the request being cancelled. When projectiles have passed through a garment or garments, a photograph of the bullet hole position in the victim is desirable. A scale shall be used when taking these photos.
- C. If a Firearms Examiner is requested to conduct a range determination based on a photograph, the photograph(s) shall contain a measureable scale to enable 1:1 prints to be made.
- D. The Indianapolis-Marion County Forensic Services Agency (I-MCFSA) in an effort to ensure objective scientific results and mitigate potential influencing variables associated with Gunshot Residue analysis and subsequent Range Determinations testing, I-MCFSA requires the following:
  - 1. The requester is required to schedule a meeting at the laboratory with the assigned Firearms Examiner to discuss the case. If the requester believes the assigned Prosecutor has a bearing on whether or not the testing is conducted, then that assigned Prosecutor's participation should be included in the meeting.
  - 2. Upon laboratory receipt of a gunshot residue and range determination testing request, the assigned I-MCFSA Firearms Examiner will email a Gunshot Residue/Range Determination Testing Requirements form (IMCCRM67) to the requester which contains requirements and discussion topics related to the gunshot residue and range determination testing. The requester shall be prepared to discuss potential crime scene evidence influences (variables), viewing of crime scene photographs (if available), outlining the justification for the analysis and/or any other potential concerns related to the evidence and/or analysis. If supporting documents are available prior to the meeting, they should either be emailed to the assigned Firearms Examiners or brought to the meeting.
  - 3. Failure of the requester to schedule a meeting within 30 days of issuance of the Gunshot Residue/Range Determination Testing Requirements form will automatically result in cancellation of the Gunshot Residue and Range Determination request.
- E. Requirements that shall be addressed by the requester before a range determination analysis will be performed at the I-MCFSA:
  - 1. The requester shall inform the Firearms Examiner of a compelling range of fire dispute or the probative value of the analysis.
  - 2. The requester shall inform the Firearms Examiner of any known intervening/intermediate object(s) within the path of the discharge. (i.e.: door, glass or wall in the path of discharge)
  - 3. The requester shall inform the Firearms Examiner if more than one firearm was being discharged toward the target.
  - 4. The requester shall inform the Firearms Examiner of the weather conditions (if outdoors) at the time of the shooting incident. If the garment was exposed to the elements, the requester shall convey the length of exposure, if known.
  - 5. The requester shall inform the Firearms Examiner of the assigned IMPD Property Room batch list tracking number for the garment (outermost) to be tested and how the garment(s) was worn at the time of the shooting incident.
  - 6. The requester shall inform the Firearms Examiner how/where the garment was removed from the victim (i.e.: cut, pulled off, etc.) or any other rough handling concerns that may be known.
  - 7. The Firearms Examiner shall be provided with evidence ammunition for testing. In the event that the evidence ammunition is not available, similar laboratory ammunition, if available, shall be utilized; however, the range determination findings and testimony will be qualified to reflect this variable.

8. A copy of the pathology report should be provided to the Firearms Examiner prior to range determination testing.
9. If a range determination opinion has already been reported by an outside entity (i.e. Pathologist, Doctor or other scientific professional), a range determination will not be conducted.
10. The Firearms Section does not perform range determination testing for maximum distance when no gunshot residues are observed. The guiding principle of range determination relies on the physical effects and residues which are present as a basis for reproduction and comparison. Range determinations are not based on the absence of residues.
11. If macroscopic and microscopic examination of the garment (target) results in a conclusion of at or near contact, a range determination test shall not be conducted.
12. It is required that the identified firearm be used for testing.
  - a. In cases where a bullet(s) is not recovered/identified or shotgun / other smooth barreled firearm was used, the Firearms Examiner will qualify their range determination findings in the laboratory report and when testifying.
13. If the request is to examine a questioned garment for the presence of gunshot residues and the questioned garment is suspected of not containing a bullet hole (i.e. person shot on exposed skin, etc.), this examination may occur on a case by case basis with prior approval from laboratory management.

#### DO'S and DON'TS

- DO note the sequence of the clothing, i.e. T-shirt under open flannel shirt
- DO handle carefully to preserve any gunshot residue around suspected bullet holes
- DO completely air dry clothing prior to submission
- DO package each item in a separate paper bag
- DO mark the paper bag for identification
- DON'T submit suspect's clothing for GSR analysis without laboratory management approval

#### SERIAL NUMBER RESTORATIONS

- A. The serial number of firearms may be removed or altered in an attempt to prevent the identification of the original owner. The serial number may be restored depending on the method and degree of the obliteration or alteration.
- B. All modern firearms manufactured post the Gun Control Act of 1968 are required by federal law to be stamped with a unique serial number. Many firearms, particularly shotguns and rifles made prior to 1968 are not serialized so the absence of a serial number does not necessarily indicate an altered firearm.
- C. When a number is stamped into a metal object, the properties of the metal are changed. Although the visible number may have been removed, often the altered metal has not. Utilizing chemical, magnet or electrolytic techniques that react with the altered metal, the original stamped number may be revealed. This is commonly referred to as "raising the serial number", but the restored visible characters are not always permanent.
- D. Package the firearm as previously described assuring that no additional marring can occur to the obliterated area. Do not place any covers or substances on the obliterated area.

#### DO'S and DON'TS

- DO protect the area where the serial number has been obliterated.
- DON'T attempt to restore any serial number prior to submitting to the laboratory.