



The USACIL's Evidence Collection, Preservation, and Submission Guide

US Army Criminal Investigations Laboratory

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One of the most important parts of an investigation consists of properly collecting evidence and submitting it to the USACIL. Improperly collected or packaged evidence may result in processing and examination delays, poor or inconclusive laboratory results, and could cause needless challenges in the courtroom as defense counsels question the handling and control of the evidence.

Each USACIL discipline handles unique types of evidence. The following are guidelines in the appropriate collection, preservation and submission of certain types of evidence to the laboratory.

If questions arise, contact the laboratory's Forensic Case Management Branch (FCMB) at DODFSCCMB@mail.mil, 404-469-5150. For after hours, contact the USACIL Hotline 404-469-7490 or DSN:797-7490.

Can USACIL assist with testing in your case?

- ✓ If the incident occurs on the installation where you have exclusive/concurrent jurisdiction regardless of the status of the victim or suspect – Yes, we can assist.
- ✓ If the incident occurs off the installation and the suspect is military, regardless of the status of the victim, and you are working a joint investigation with the locals – Yes, we can assist.
- ✓ If the incident occurs off the installation and the suspect is unknown, but the victim is military and you are working a joint investigation with the locals – Yes, we can assist.
- If the incident occurs off the installation and the victim is military, but the suspect is a known civilian - we typically decline; however, please contact the laboratory with case details for review.
- ✗ If the incident occurs off the installation and the victim and suspect are known civilians - we CANNOT work it even if you are working a joint investigation.
- ✗ Do not send evidence that has already been tested by another laboratory. If additional testing is needed, contact USACIL first.

General Collection and Packaging Recommendations:

- ❌ If sending evidence to the laboratory, please do NOT mark on the evidence item. Please document the case information on the evidence container.
- ✓ When providing a count, weight or other measurement, use the word “approximately”.
- ✓ Ensure the evidence container is marked for identification across the edges of the evidence seal whether this be evidence tape, paper tape, heat seal, etc. Marked for identification is (at a minimum) date of collection and the initials of who collected the item.

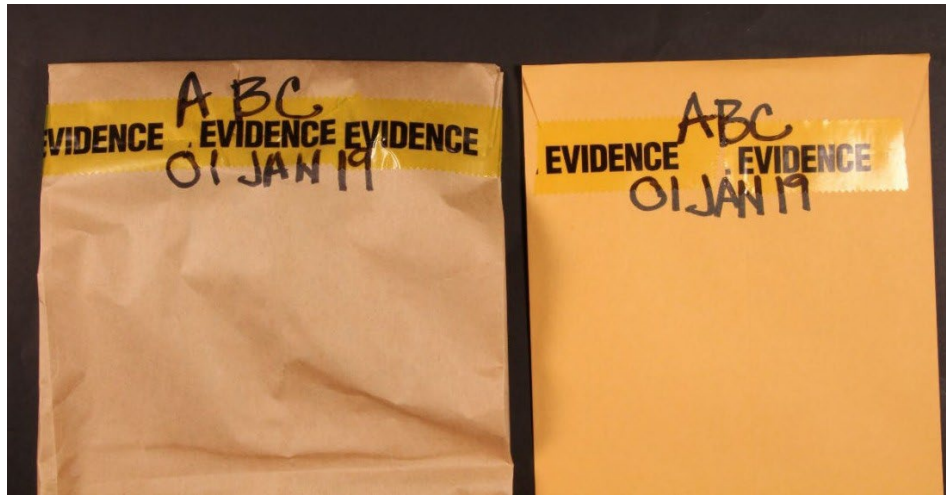


Figure 1 - Correctly sealed evidence with date and initials across the tape and evidence packaging.

- ✓ Leave plenty of room in the packaging for opening the evidence and resealing it. Do not “burrito” wrap the evidence.

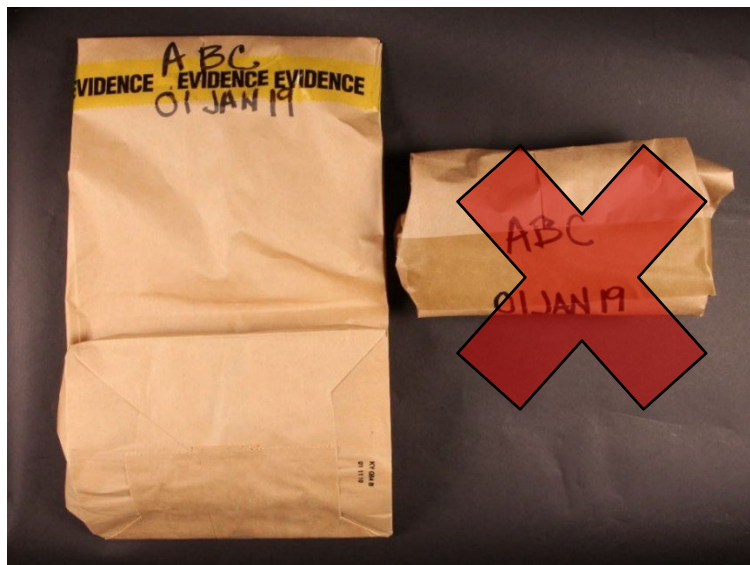


Figure 2 - Do not tightly package evidence. Leave room for repackaging once testing has been completed.

- ✓ Use sharps containers when appropriate.

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Digital Evidence Branch:

The Digital Evidence Branch offers services in the following sub-disciplines:

- Digital Forensics (Digital and Multimedia Analysis/exploitation/repair)
- Digital Imaging (authentication/comparison/enhancement/photography/3D Crime Scene Documentation)
- Audio/Video (authentication/comparison/enhancement/conversion/restoration)

Digital Forensics

- ✓ Provide a Search Authorization for USACIL examiners to search the specific item. Note-Search Authorizations must include language that authorizes USACIL examiners/DFEs to conduct the extraction/search. For assistance contact FCMB.
- ✓ Provide information about why the exam needs to be conducted and what needs to be searched for. (i.e., text messages, Snapchat and other texting applications, images, video, etc.)
- ✓ Provide information that could be used as a PIN code or password (social security numbers, phone numbers, important dates such as birthdays, anniversaries, etc.)
- ✓ Send power cords and data cables for electronic devices that will be examined.
- ✓ Provide PIN codes and passwords if applicable and available.
- ✓ Charge items prior to sending them.
- ✓ For smartphones, please leave on if the device was on when collected. Place in airplane mode and attach to an external battery pack. Ship by the quickest method available.
- ✗ Do not pack items in material that may cause static electricity such as plastic bags.
- ✗ Do not remove batteries.

GrayKey/Cellebrite Premium Extraction

GrayKey and Cellebrite Premium are software tools that may be able to unlock specific smartphones allowing extractions and examinations without the passcode. Please coordinate with FCMB to determine if your evidence can be successfully examined using the software.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Computer/ laptop/tablets	Collect power and data cables associated with the item. If on, seek assistance from a DFE or other qualified personnel prior to shut down.	Mark the evidence container with pertinent case information. Annotate the owner of the item, if applicable.	All associated with the suspected incident.	Package in paper. Pack in manner to avoid shifting if multiple items are packed in a single box/container.	Clearly describe what needs to be extracted or searched for.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
(1. Continued)	Consider other testing (Latent Print, DNA, etc.).				
2. Cellphones / mobile devices	<p>Collect power and data cables associated with the item.</p> <p>If on, place the phone into airplane mode and/or into a faraday container. Do not turn off. Charge items prior to sending.</p> <p>If off, leave off and do not charge. Adding power to the phone could cause the phone to turn on.</p> <p>Consider other testing (Latent Print, DNA, etc.).</p>	<p>Mark the evidence container with pertinent case information.</p> <p>Annotate the owner of the item, if applicable.</p>	All associated with the suspected incident.	Package in paper. Pack in manner to avoid shifting if multiple items are packed in a single box/container.	Clearly describe what needs to be extracted or searched for.
3. Drones / Unmanned Aerial Vehicles / Systems (UAV / UAS)	<p>Render safe / inoperable. Always assume the device is on and remove the battery.</p> <p>Approach from the rear as the camera could be active and communicating with the operator.</p> <p>Throw a blanket over the device or flip it over to avoid injury from the spinner rotors.</p> <p>Use proper PPE for personal safety and to protect for traditional forensics (e.g., DNA, fingerprints).</p> <p>Avoid turning on the device as power cycling</p>	<p>Mark the evidence container with the pertinent case information.</p> <p>Annotate the owner of the device, if known.</p> <p>Consider legal implications and whether a search authorization is required (e.g., found versus seized property).</p>	<p>Submit drone and all removeable media for analysis (e.g., SD cards).</p> <p>Collect and submit controller (to include associated cellphone/mobile device) when possible.</p>	<p>Package in paper. Pack in manner to avoid shifting if multiple items are packed in a single box/container.</p> <p>Package battery separately.</p>	<p>Discovering the purpose of the drone's flight and the identity of the operator.</p> <p>Flight telemetry and recorded content.</p>

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
3. Drones / Unmanned Aerial Vehicles / Systems (UAV / UAS) cont'd	could cause data loss. Seek additional assistance from qualified USACIL personnel if needed.				

Digital Imaging

- ✓ Coordinate with FCMB to determine what is needed for this analysis.
- ✓ Film development is outsourced by the USACIL. Coordinate with FCMB prior to sending film.

Audio/Video Enhancement

- ✓ Be very specific with the request as to what is needed and provide the specific time/date stamps or a time log of the areas of interest on the recording.
- ✓ Send original files (or copies of the original files) Do not send compressed files.
- ✓ USACIL maintains the equipment for analyzing magnetic tapes. This includes older VHS, VHS-C, micro cassette and full-size cassette tapes. Coordinate with FCMB prior to sending these items.
- ✓ Depending on the file size of the video/audio files, they can often be sent via DoD Safe file transfer (<https://safe.arl.army.mil>).
- ✓ USACIL does not provide transcripts for all audio submissions, however we can outsource a limited amount of audio for transcription for USACIDC elements. Please contact the Audio/Video section if transcriptions are required.
- ✗ Do not send in evidence for facial comparison. USACIL does not offer this service.
- ✗ Do not send in evidence for spectral (voiceprint) analysis. USACIL does not offer this service.

DNA Branch:

- ✓ DNA testing will only be conducted when all applicable standards (Victim, Subject, Elimination - additional standards for family cases may be required) have been obtained and submitted to the laboratory. For Unknown Subject cases, Victim and Elimination standards are required. If DNA standards cannot be obtained, please provide the reason.
- ✓ Superglue fuming for the protection of latent prints on non-porous items will not affect DNA testing. Superglue fuming is strongly encouraged on this type of evidence.
- In cases where both parties state that sex occurred (consent issue), the DNA analysis will be limited. Typically, testing would be conducted on the Sexual Assault Collection Kit or underwear. If the best evidence is something other than these items, it should be indicated on the Laboratory Examination Request Form (DD 2922) and/or discussed with FCMB.
- Touch DNA on clothing will generally be limited to undergarments or the inside of outer clothing (shirts, pants) depending on the case scenario. Specific locations need to be identified for samples to be collected for “touch” DNA. Outer clothing and bedding are not generally suitable for “touch” DNA, however, please discuss the submission of these items with FCMB prior to sending items to USACIL.
- When sending the evidence to the lab, please do not conduct presumptive testing prior to submission.
- Larceny cases will be limited to 2-4 exhibits which best answer the investigative question.
- ✗ The DNA branch does not perform testing on items collected in routine drug possession, use or other simple crimes involving drug evidence. Testing of drug evidence may be considered when associated to major cases such as sexual assault, assault and death cases.
- ✗ Clothing or bedding items that have been washed are not suitable for DNA testing. The only exception to this is female underwear.
- ✗ DNA testing is not routinely conducted on high traffic items such as doorknobs, money, etc.
- ✗ There are no screening tests for vaginal secretions, vomit, urine or fecal matter.
- ✗ Currently, USACIL is not testing items for the presence of saliva or amylase.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Known DNA Standards.	Collected via buccal swabs (swabs of the inside cheeks of the mouth) or known blood sample using an FTA card of a known individual.	Clearly annotate the person’s name on the evidence container along with other case information.	Two swabs per person for buccal swabs. Blood cards are typically made by medical professionals.	Package in envelopes, no plastic. If whole blood is to be collected, use purple top tubes for collection.	Provides a known DNA profile for comparison to question profiles developed from evidence. Should be from the victim(s), subject(s), and elimination.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
2. Questioned Samples – possible blood at the scene.	Ensure the swabs used are sterile and minimize the risk of contamination.	Mark the evidence container with pertinent case information. Annotate where the collection is from (e.g., Stain A of E wall. Possible blood on door, etc.).	Depends on the size of the stain/sample being collected. If a small stain, one swab. If a large stain, two swabs may be used. May need to coordinate with a Bloodstain Pattern Analysis (BPA). Examiner to ensure patterns and groupings have a representative sample collected from each area needed.	Package in paper envelopes. If wet, allow the swabs to dry prior to packaging in paper envelopes.	Determine if the substance is blood and determine the source.
3. Question Samples – possible blood on items of evidence	Consider other testing (Latent Print, Trace Evidence, etc.).	Mark the evidence container with pertinent case information.	All items.	If wet, allow to dry prior to packaging. Package items in paper or cardboard.	Determine if the substance is blood and determine source.
4. Sexual Assault Evidence	If PERK kits are collected, obtain copies of the PERK paperwork. If used condom(s) are collected, do not swab. Send the condom for testing. Consider other testing (Latent Print, Trace Evidence, etc.).	Mark the evidence container with pertinent case information. Annotate the owner of the item. Case information can be annotated on the outside of the PERK or the evidence packaging.	All assault related items.	Package items in paper. Allow used condom(s) to dry prior to packaging.	Examined to determine if there is DNA present to associate the victim(s) and subject(s).
5. Clothing / Bedding	Use care to not lose or contaminate trace and DNA evidence. Consider other testing (Trace Evidence, damage, etc.).	Mark the evidence container with pertinent case information. Annotate the owner of the item, if applicable.	Unwashed, assault related items. Assault related underwear may be washed. Touch DNA on clothing will be limited to undergarments only. If the undergarments have been laundered or are unavailable, the inside of outer clothing may be tested.	If wet, allow to dry prior to packaging. Package items separately and once packaged do not remove them as it may dislodge trace evidence.	Trace evidence may be collected. Examined to determine if there is DNA present to associate the victim(s) and subject(s).
6. Items from crime scene for touch DNA	Consider other testing (Latent Print, Trace Evidence, etc.)	Mark the evidence container with pertinent case information. Annotate the owner of the item, if applicable.	Items believed to have been touched or moved by subject(s). DNA testing is not routinely conducted on high traffic items such as doorknobs, money, etc.	Package in paper or cardboard. No plastic.	May be able to associate a person to an item of evidence.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
7. Hair (crime scene)	Carefully remove hairs from crime scene with a pair of tweezers or a gloved hand.	Mark the evidence container with pertinent case information. Annotate where the collection is from.	All possible hairs.	Use a pharmacist's fold and place hair into the fold. Can also use a glassine envelope. Package the folded paper or glassine envelope into the evidence packaging envelope.	Used to determine human vs. non-human. May be suitable for DNA testing.

Drug Chemistry Branch:

Analyzes evidence for the presence of controlled and/or related substances. Non-controlled substances may be identified depending on the circumstances of the case.

- ✓ If material is field tested, provide results to the laboratory. Use only the minimal amount needed for field testing.
- ✓ Superglue fuming for the protection of latent prints on non-porous items will not affect Drug Chemistry testing. Superglue fuming is strongly encouraged on this type of evidence.
- USACIL performs testing on steroids however this does not include growth hormones.
- USACIL performs testing of cannabis to differentiate between hemp and marihuana.
- USACIL performs testing to identify THC, CBN, and synthetic cannabinoids.
- ✗ Do not perform field tests on residues (paraphernalia, syringes, smoking devices, etc.).
- ✗ Do not send the field test kit to the laboratory. It is not needed for testing.
- ✗ Do not send biological samples for drug testing (urine, blood, vomit, etc.). USACIL does not perform toxicology testing. Toxicology samples should be submitted directly to the Division of Toxicology at the Armed Forces Medical Examiner System (AFMES).
<https://health.mil/Military-Health-Topics/Combat-Support/Armed-Forces-Medical-Examiner-System>
- ✗ Do not send water from smoking devices such as “water bongs.”
- ✗ Do not send plant seeds, mushroom spores or growing medium.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Liquids, including ethanol samples	Leave in original container if leak proof. Consider other testing (Latent Print) on outer packaging.	Mark the evidence container with pertinent case information.	All of specimen. If over 20L, contact USACIL for further guidance.	Leave in original container if leak proof. If not, place contents into a leak proof container and send the new and original container. If glass, package to prevent breakage.	Identification of controlled and/or related substance(s), if present.
2. Tablets, Powder, Solids, and Dry Plant Material	Leave in original container if leak proof. Consider other testing (Latent Print) if there is outer packaging such as plastic bags.	Mark the evidence container with pertinent case information.	All of specimen. If over 5Kg, contact USACIL for further guidance.	Package pills, tablets or other solids in plastic bags. If a small amount of loose material is to be collected, swab or use tweezers to place it in a pharmacy folded piece of paper first, then package it in a plastic bag.	Identification of controlled and/or related substance(s), if present.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
3. Fresh plant material (marihuana plants, mushrooms, etc.)	<p>Collect the plant only, including the root ball. No need to send the soil, plant container, etc.</p> <p>Allow to dry.</p> <p>Consider other testing (Latent Print) if there is outer packaging such as plastic bags.</p>	Mark the evidence container with pertinent case information.	All material. If large number of whole plants, contact the laboratory before submitting.	<p>Package in paper once dry.</p> <p>Send dried mushrooms to the laboratory for analysis as soon as possible.</p>	Identification of controlled and/or related substance(s), if present.
4. Paraphernalia	<p>Handle with care to not disturb the possible drug material / residue.</p> <p>Consider other testing (Latent Print).</p>	Mark the evidence container with pertinent case information.	Depends on the case and the other items at the scene.	<p>Package in plastic bags.</p> <p>If sharp objects are collected (razors, syringes, etc.) package in appropriate sharps containers.</p>	Identification of controlled and/or related substance(s), if present.
5. Electronic Smoking Devices	<p>Handle with care to not disturb the possible drug material or residue.</p> <p>Consider other testing (Latent Print).</p>	Mark the evidence container with pertinent case information.	All material.	<p>Ensure the device is turned off.</p> <p>Remove batteries from the device or ensure the device will not turn on during shipping.</p> <p>If liquid/oil is present, place item in a secondary sealed plastic bag or container prior to placing in outer evidence bag/container.</p> <p>If possible, remove the vape cartridge and place into a leak proof container prior to placing item in outer evidence bag/container.</p>	Identification of controlled and/or related substance(s), if present.
6. Light Sensitive Evidence (LSD – liquid or blotter paper, mushrooms, etc.)	<p>If already in a light proof or opaque container, do not remove.</p> <p>Consider other testing (Latent Print) if there is outer packaging such as plastic bags or foil.</p>	Mark the evidence container with pertinent case information.	All material.	If not already in a light proof or opaque container, package the item(s) in such (paper bag, brown bottle, etc.)	Identification of controlled and/or related substance(s), if present.


Firearm and Toolmark Branch:


The Firearm and Toolmark Branch offers additional services other than Firearm function testing and Toolmark comparisons to include the following:

- Distance Determination (Muzzle to Target) of Firearm Discharge Residues
- Fired Ammunition Component Comparisons
- Serial Number Restoration
- Fracture Match Determination


Firearms

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
FIREARMS					
1. Pistol/Revolver	Handle carefully. Protect possible DNA, trace evidence, and/or latent prints that may be present. Do not take the firearm apart. Unload the firearm. Do not place objects down the barrel.	Document the position of safeties, selector lever, hammer, and the positions of any ammunition in a revolver cylinder, as applicable Mark the evidence container with pertinent case information.	All firearms recovered at the scene, from a suspect, or otherwise involved in the incident. Submit all magazines that are recovered with firearms, as applicable.	Place the weapon in a small cardboard gun box. Secure the firearm to ensure it will not move (or break free from packaging) during shipping. Ammunition needs to be packaged and shipped separately from the firearm.	Determine if firearm is functional and/or was used to fire a submitted bullet (projectile) or cartridge case.
2. Rifle/Shotgun	Handle carefully. Protect possible DNA, trace evidence, and/or latent prints that may be present. Do not take the firearm apart. Unload the firearm. Do not place objects down the barrel.	Document the position of safeties, selector lever, and hammer, as applicable Mark the evidence container with pertinent case information.	All firearms recovered at the scene, from a suspect, or otherwise involved in the incident. Please submit all magazines that are recovered with firearms, as applicable.	Place in a large cardboard gun box. Secure the firearm to ensure it will not move (or break free from packaging) during shipping. Ammunition needs to be packaged and shipped separately from the firearm.	Determine if firearm is functional and/or was used to fire a submitted bullet (projectile) or cartridge case.

 DO NOT send loaded firearms to the laboratory.

 Do not clean firearms prior to sending them to the laboratory.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
AMMUNITION					
1. Bullets (aka: fired projectiles)	Use gloved hands. Avoid damage to rifling marks on the circumference.	Mark the evidence container with pertinent case information. Include where the bullet was recovered.	All bullets located at the crime scene or in victim.	Package each separately to prevent damage.	Determine the make, caliber, possible type of firearm from which bullet could have been discharged. Compare to test fired bullets to determine if fired from submitted firearm.
2. Cartridge cases (aka: shell case, fired casings)	Use gloved hands. Avoid damaging the cartridge case. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All cartridge cases located at the scene.	Package in paper or plastic bags. May be packaged together.	Determine the make, caliber, possible type of firearm from which cartridge case could have been discharged. Compare to test fired cartridge cases to determine if fired from submitted firearm.
3. Cartridges / Unfired Ammunition (aka: rounds)	Use gloved hands. Avoid damage to the case or bullet. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	If CONUS, submit all ammunition collected. If OCONUS, only submit ammunition if a CONUS return address can be supplied. Live ammunition cannot be returned to OCONUS location.	Package ammunition in an appropriate container that will not rip/tear due to the weight of the ammunition. Ship in separate package from firearms.	Used for comparison purposes and/or for function testing a firearm.
4. Shotgun shells (fired)	Use gloved hands. Avoid damaging the shotgun shells. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All shotgun shells located at the scene.	Package in paper or plastic bags. May be packaged together.	Used to determine the gauge of the shotgun. Compare to test fired shot shells to determine if fired from submitted firearm.
5. Shotgun pellets	Use gloved hands. Avoid any damage to the pellets.	Mark the evidence container with pertinent case information.	All pellets.	Place pellets in a container such as a pill box.	May be able to determine the shot size and composition.
6. Wadding	Use gloved hand. Avoid any damage to the wadding.	Mark the evidence container with pertinent case information.	All Wadding.	Place in paper envelope.	May be able to determine the gauge of the weapon from firing wads. Possible determination of ammunition brand.

 Do not mark for identification directly on bullets or cartridge cases.

Toolmarks

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Toolmark damage on objects that can be collected.	Handle carefully to prevent loss of any trace evidence. Protect area to avoid damage to the toolmark. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information. Annotate left/right, up/down direction and interior vs exterior, as applicable.	Entire object with toolmark damage. Photographs of the object at the scene may be needed.	Do not superglue fume. Package in a manner that will prevent damage to the toolmark or possible latent prints, if applicable.	Determine type of tool used to damage the item. Compare damage to tests toolmarks to determine if submitted tool was used to make the damage.
2. Toolmark on an item that cannot be collected (casting)	Photograph toolmark with and without scale. Cast the impression with appropriate casting material. Photograph with cast in place for orientation purposes.	Mark the evidence container with pertinent case information. Annotate left/right, up/down direction and interior vs exterior, as applicable.	Casts of all damage. Multiple casts of the same area of damage may be submitted to ensure that the casts capture all necessary detail.	Mix casting material well according to package instructions. Ensure the cast is completely dry prior to packaging.	Determine type of tool used to damage the item. Compare damage to tests toolmarks to determine if submitted tool was used to make the damage.
3. Tools	Minimize manipulation of tool mechanism. Cutting/working surface may contain trace evidence. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All tools associated with a suspect believed to be involved in making the questioned toolmarks.	Do not superglue fume. Carefully package to prevent loss of trace evidence and package securely to prevent movement that may damage the tool working surface or latent prints.	Used to compare with items damaged by a tool.
4. Standards (undamaged material similar to the damaged item)	Collect similar materials from an area adjacent to the toolmark to be used to create standards from submitted tools.	Mark the evidence container with pertinent case information. Annotate that the items are allowed to be altered for use as a standard.	Adequate amount to allow for test toolmarks to be made.	Package in a manner to prevent damage during the shipping process.	Used for creating test toolmarks for comparison purposes.

 Send keys and combinations with locks.

 Do not place the suspected tool into the toolmark.

 Do not make toolmarks with the suspected tools.

Distance Determination (Muzzle to Target) of Firearm Discharge Residues

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Clothing	Avoid vigorous shaking or excess cutting if possible. Keep clothing from each individual separate.	Mark the evidence container with pertinent case information. Annotate who was wearing the clothing. Provide information about cuts made by medical personnel or investigators.	Only outermost garment struck by bullet. No underclothing, socks, or shoes (unless bullet strike present)	Each item of clothing should be wrapped in paper and packaged individually. Package in paper.	Determine if muzzle residues are present and report Contact, Close or Undetermined distances descriptions.
2. Bullet strikes in non-clothing items	Avoid vigorous shaking or excess cutting if possible.	Mark the evidence container with pertinent case information.	Only first item struck by a bullet.	Package separately. Protect the surfaces with possible residues by securing the item.	Determine if muzzle residues are present and report Contact, Close or Undetermined distances descriptions.



Figure 3 - Place clothing on paper and then cover the item with another piece of paper. This protects each surface from coming into contact with one another.

Serial Number Restoration

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Object with obliterated serial number	Handle carefully to protect the damaged area. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	Object/item with damaged area.	Package in a manner that will prevent additional damage to the area or possible latent prints, if applicable. If there is a possible known serial number, provide it.	May be able to restore the original serial number on an item.

Fracture Match Determination

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Broken object	Handle carefully. Do not try to fit two sides of broken object back together. Consider other testing (Latent Print, DNA, etc.)	Mark the evidence container with pertinent case information.	All suspected pieces of broken object	Package in a manner that will prevent additional damage to the broken area or possible latent prints, if applicable.	Determine if two objects were once connected at the point of breakage.

Forensic Documents Branch:

In addition to handwriting and/or signature comparisons, the Forensic Documents Branch conducts other examinations including the following:

- Rubber stamps
- Printer and office machine examinations
- Indented writing
- Shredded documents reconstruction
- Preservation/decipherment of charred and liquid soaked documents
- Detection and decipherment of altered, obliterated or erased entries (ex. White board erased entry examinations)
- Counterfeiting and watermarks
- Optical ink differences

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Questioned Documents	Use gloves. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information. Do not write on the evidence container with the documents in the envelope. This could interfere with indented writing.	All documents. Submit originals, not copies, when possible. Copies can be examined if originals are not obtainable.	Document should be handled, folded, and marked as little as possible. If folding cannot be avoided, the fold should be along old lines. Package in paper envelopes.	Used to determine possible identity of the author and to check for authenticity.
2. Known Writing Standards	Find existing writings from the person such as letters, checks, military records, etc. Need to be similar writing styles as the question documents (cursive, printed, etc.).	Mark the evidence container with pertinent case information.	As many as possible. Collect tablets and samples of paper from the living area.	Package known writing from one person together and place the documents on a Chain of Custody.	Used to associate or exclude an individual as the author.
3. Known Writing Exemplars (dictated)	Exemplars should repeat the format, content, style(s), of writing of all questioned entries in the questioned documents. Use a black ballpoint pen.	Mark the evidence container with pertinent case information. On each exemplar, document the number in sequence for which it was obtained.	Collect 25-30 from the writer's dominant hand. Collect 5 from the writer's weak/non-dominant hand. If the writer is ambidextrous,	Package known exemplars from one person together and place the documents on a Chain of Custody. Clearly document which hand was used to make each exemplar.	Used to associate or exclude an individual as the author.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
(3. continued)	Exemplar repetitions of questioned writing should be made on separate pages.		collect an equal amount for each hand. If the question writing is extensive, contact USACIL for additional guidance.		

- ✓ Prepare exemplars that repeat the circumstances of the questioned writing, if known. For example: if questioned writings, like graffiti or hate remarks, are spray painted on a fence or wall, subjects(s) should use spray paint to write exemplars on wrapping paper affixed to a wall at the same height as the questioned writing.
- ✓ All documents (questioned and standards, copies, originals, etc.) should be on a chain of custody.
- ✗ Do not show the questioned documents (or copies) to a person providing known writing exemplars.
- ✗ Do not fold a questioned document to fit inside a container.
- ✗ Do not shake bags or containers containing shredded paper fragments. Limit their movement as much as possible.

Latent Print Branch:

The Latent Print Branch is comprised of the following sub-disciplines:

- Latent Print
- Footwear Impressions
- Tire track Impressions

Latent prints are a chance impression – not every touch will result in a latent print. The USACIL Latent Print Branch has an Automated Fingerprint Identification System (AFIS) section to assist with the searching, retaining and maintaining of the USACIL databases and has access to AFIS systems around the world. The USACIL Latent Print Branch also has access to footwear and tire databases for search. The impression can be searched, and results may include the brand and model of the shoe/tire.

Latent Print

Latent print evidence is often divided into two types of evidence (based on surface types):

- Porous evidence: paper, cardboard, unfinished wood, etc.

Porous evidence is normally very durable in its preservation of latent prints as the latent print residue is absorbed into the item.

- Non-porous evidence: glass, plastic, metal, finished wood, etc.

Non-porous evidence is fragile because the latent print residue sits on the surface of the evidence and is very susceptible to obliteration and loss due to handling that could wipe or smear the latent print residue away.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Latent lifts	Photograph the latent print with and without scale prior to lifting. Label the latent print so that it is visible in the photograph and use that labeling on the lift to allow the examiner to pair the two together. Only lift latent prints from items that cannot be sent to the lab. For a summary on the technique	Mark the evidence container with pertinent case information.	All latent prints.	Photograph the latent print prior to lifting. See handling column. Develop the latent print using powder or another lift-able development medium. Use fingerprint lift tape, hinge lifter, or gel lift to preserve the latent print. The print shall be transferred from the object to a card. The card shall be sealed in an envelope.	Used to determine who may have touched objects.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
(1. Continued)	for handling the latent lifts, see preservation and packing column.				
2. Porous items of evidence	<p>Porous items should be handled as little as possible, with gloves on, and submitted to the laboratory. No processing in the field is needed.</p> <p>Consider other testing (Forensic Documents, DNA, etc.).</p>	Mark the evidence container with pertinent case information.	All porous items pertinent to the investigation.	Paper should be handled, folded, and marked as little as possible. If folding cannot be avoided, the fold should be along old lines. Place in proper enclosure envelope and seal.	Used to determine who may have touched objects.
3. Non-Porous items of evidence	<p>Items should be superglue fumed for latent print preservation as soon as possible. Only if Trace Evidence exams are needed, do not superglue fume. Contact the lab prior to fuming internal computer components.</p> <p>Consider other testing (DNA, etc.).</p>	Mark the evidence container with pertinent case information.	All non-porous items pertinent to the investigation.	Package in a way that will reduce the amount of movement possible during shipping. (i.e., Zipties in a cardboard box)	Used to determine who may have touched objects.
4. Patent (visible) prints	Photograph the print prior to collection.	Mark the evidence container with pertinent case information.	All patent prints.	Depending on the item of evidence and what the print is composed of, see above.	Used to determine who may have touched objects.
5. Print standards (Major Case Prints, ten-print cards, palm prints, etc.)	Ensure a complete and legible recording of the friction skin is obtained. For fingers, that means rolling the finger from the edge of the nail bed to the other edge of the nail bed. For palm prints, that means from the wrist to the tips of the fingers and all areas in between.	When using a paper card, ensure all blocks are completely filled and legible. When using livescan, complete the required fields.	All fingers and both palms. Collect standards from subject(s), victim(s), and/or anyone else that may have touched the evidence.	<p>Place hard copy records in an envelope.</p> <p>Livescan prints are the primary method for collection. They can be submitted electronically and provide the Transaction Control Number (TCN) on the Examination Request or send eft. file.</p> <p>Hard copies need to be on the correct FBI standard cards.</p>	Used for comparison to any latent prints developed or visible on the evidence.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
(5. continued)				Fingerprints on FD-249 and Palm prints on Form FD-884.	

- ☒ Do not write on the evidence, you could be writing over a latent print.
- ☒ Other than superglue fuming, do not process items that can be shipped to the lab in the field.

Superglue fuming information:

- ✓ If items are both porous and non-porous, superglue fume the item. Fuming will not interfere with other porous processing.
- ✓ Superglue fuming will not interfere with drug chemistry, forensic documents, DNA or firearms/toolmark exams.
- ☒ Do not superglue fume items going to the Trace Evidence Branch for analysis. Secure the items in a box to prevent movement during the shipping of the evidence. Once at the laboratory, trace evidence collections will be made and then the item(s) will be superglue fumed.
- If internal components of computers need to be examined by both, Digital Evidence and Latent Print Branches, contact the laboratory's FCMB prior to fuming.

Other considerations:

- ✓ If the crime/death scene is bloody, often blood prints are not visible without chemical enhancement. If items of evidence are bloody, allow them to dry, superglue fume if non-porous, and submit to the lab. If the item cannot be submitted (too large, immovable, etc.), please contact the laboratory prior to processing in the field.
- ✓ Add a note to the Examination Request if items have been wet. Especially important for porous items.
- ✓ If you need items back in original condition, note this on the Examination Request or communicate with FCMB. Latent print processing is destructive. There is a very good possibility the evidence will not appear or function the same as when you submitted it.
- If electronic items are being submitted, please note on the Examination Request if they need to be returned in working order. If so, limited latent print processing will be conducted. If not, the item may or may not work once returned as items are typically rinsed with various liquid chemicals.

Footwear/Tire Impressions

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Photography of Impressions	<p>Photograph the impression at a 90-degree angle (plane parallel to the impression) and include a ruler in the picture to keep in proper perspective.</p> <p>Using a flash at an oblique angle, take multiple photographs from different directions (i.e., North, South, East, and West).</p>	Document photographs per agency requirements.	Crime Scene images as well as exam quality images.	Images can be submitted on disc or electronically.	<p>Used for comparison purposes.</p> <p>Can be searched in footwear/tire databases to determine make/model.</p>
2. 3D Impressions –casting	<p>During photography, the ruler should be at the same depth as the impression.</p> <p>Often 3D impressions are fragile. May need to stabilize the impression prior to casting.</p>	Once dry, the back of the cast can be marked with pertinent information.	All impressions.	Allow to dry at the scene. Once collected from the scene, allow an additional 48hrs to dry at the office. Package in such a way to prevent breakage. No need to clean excess dirt from the casts.	<p>May be compared with known shoe or tire standards.</p> <p>Can be searched in footwear/tire databases to determine make/model.</p>
3. 2D Impressions –lifts	<p>Dust impressions can be fragile.</p> <p>Wet impressions that have since dried may need to be dusted with fingerprint powder prior to lifting.</p>	<p>Do not write on Electrostatic dust lifts. Mark the evidence container with pertinent information.</p> <p>The back of gel lifts may be marked with pertinent information.</p>	All impressions.	<p>Electrostatic Dust Lifts should be placed flat in a clean cardboard box. Ensure the lift does not roll up upon itself.</p> <p>Gel lifts should be placed into a clean box and secured from movement. Do not place film cover back on a used gel lift. Protect the gel lift from collecting other dust or debris during shipment. If that cannot be done, the film may be reapplied.</p>	<p>May be compared with known shoe or tire standards.</p> <p>Can be searched in footwear/tire databases to determine make/model.</p>

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
4. Footwear standards	Do not clean or remove debris from the soles.	Do not mark the shoe. Mark pertinent information on the evidence container.	<p>Collect shoes with similar class characteristics of the impressions.</p> <p>Document the soles of footwear for first responders, anyone who had access to the scene (non-subject or victim).</p>	<p>Package the shoes in such a manner to prevent any debris trapped in the soles from dislodging.</p> <p>Non-subject/victim shoes can be photographed or known impressions made for elimination purposes.</p>	May be compared with impressions.
5. Tire standards	<p>Tire standards need to be made with the tires on the vehicle. For comparison purposes, it may become necessary for the tires to be removed and submitted for comparison.</p> <p>Do not clean or remove rocks/debris stuck in the tread. Clean off any loose debris prior to making tire standards.</p>	Mark the tire standard impressions with the following information: Vehicle (including VIN), wheel being recorded, tire information, direction of travel and wear bars as the impression is recorded.	All tires and spare if the spare could have been on the vehicle at the time.	There are different methods for taking tire standards. Contact FCMB for assistance.	May be compared with impressions.

Trace Evidence Branch:

Trace Evidence is comprised of the following sub-disciplines:

- Paint, Coatings, Plastics, Polymers, and Related Materials
- Glass (Comparisons, Impact Velocity, Container Type, and Direction of Force)
- Fire Debris / Ignitable Liquids
- Firearm Discharge Residues / Gunshot Residue (GSR) / Bullet Hole Analysis
- Explosives and Explosive Residues
- Textile Material / Fabric Damage
- Pressure Sensitive Tape
- Physical Fit
- Lubricants
- Hair (root end analysis, suitability for DNA testing)
- Non-Routine Testing - The Trace Evidence Branch may have the capabilities of conducting other examinations not listed here. For special requests, contact the FCMB for guidance.

Paint, Coatings, Plastics, Polymers, and Related Material

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Questioned Paint Chips or Material	Handle with tweezers or scoop chips with a piece of paper. Chips should be collected so as to keep them intact.	Mark the evidence container with pertinent case information. Annotate collection location.	All of specimen. Ensure the collection accounts for the full thickness of the paint when possible. The amount should be about the size of a quarter if possible.	Place in folded paper packets (pharmacy fold) or paper bag and then further secure in a heat sealed or zip lock type plastic bag. Metal tins can also be used.	Chips found at scene may be traced to suspect and used for comparison (paint comparison and physical fit) Investigative lead information and automotive make/model/year determinations.
2. Standard Paint Chips or Material	Use a disposable scalpel or clean razor blade to collect from areas adjacent to the damage. With multiple areas of damage, collect from each adjacent area.	Mark the evidence container with pertinent case information. Annotate that the sample is a standard, and the location on the vehicle or item where the sample was collected. For vehicle samples, include make, model, year, color of vehicle and the vehicle identification number (VIN).	Ensure the collection accounts for the full thickness of the paint. The amount should be about the size of a quarter if possible.	Place in folded paper packets (pharmacy fold) or paper bag and then further secure in a heat sealed or zip lock type plastic bags. Metal tins can also be used.	Chips from the suspect object may be linked to evidence/question samples recovered from the scene via comparison. Investigative lead information and automotive make/model/year determinations.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
3. Liquid Paint	<p>Leave sample in original container, if possible. Consider other testing (Latent Print, DNA, etc.)</p> <p>If transfer is necessary, pour cautiously being careful not to spill any of the sample.</p>	Mark the sealed container with pertinent data.	All, if in leak proof container. Otherwise, up to 4 ounces. In original, unopened container up to 1 gallon per standard.	Pack to prevent spillage.	Used to determine texture and content for comparison.

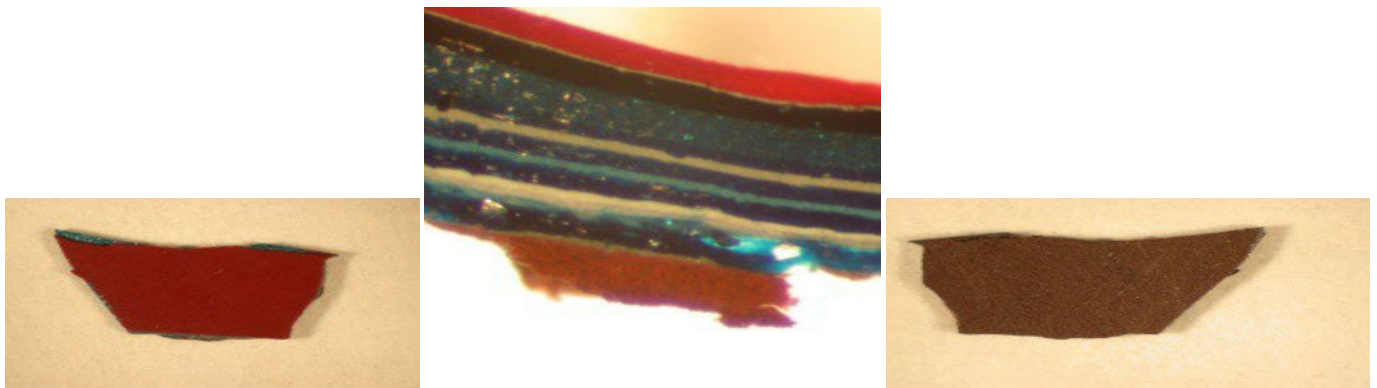


Figure 4 - Left image - Red topcoat. Middle image - Cross section of multi-layer paint chip. Right image - Brown bottom coat.

- ✓ If paint is collected from a vehicle, provide the following information: make, model, year, color of vehicle and the vehicle identification number (VIN).
- ✓ Painted objects (such as tools, striking or cutting object) can be packaged in box or paper bag depending on size/weight and submitted directly to the laboratory.
- ✓ Clothing may be packaged in paper bag and submitted directly to the laboratory for examination. This may include victim clothing from impact with a vehicle or even suspect clothing in a suspected graffiti/damage to property case.
- ✗ Do not use adhesive tape to collect paint samples.
- ✗ Do not place collected paint chips directly into plastic or paper bags or envelopes.
- ✗ Do not collect paint samples in or from toolmarks. Submit the toolmark and collections can be made at the laboratory.

Glass

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Fragments (question samples)	<p>Photograph any glass remaining in the frame and submit images with the evidence.</p> <p>Use gloved hands on the edge of larger pieces. Do not touch flat surfaces. Process for latent prints where indicated.</p> <p>Use tweezers for pieces too small for gloved hand.</p>	<p>Mark the evidence container with pertinent case information. Annotate the location where the glass was collected from.</p> <p>If possible, indicate what side was facing outside and what side was facing inside. Also mark top, bottom, left, right, if possible.</p>	<p>All fragments.</p>	<p>Pack to prevent shifting further breakage. Place in pillbox, seal and protect from further breakage.</p> <p>Do not use glass containers to package glass evidence.</p> <p>Submit the entire piece of laminated glass if possible. Secure between plywood or sturdy cardboard.</p>	<p>Used to identify fragments taken from scene of crime.</p> <p>Used to determine direction a break force.</p>
2. Standards	<p>Photograph any glass remaining in the frame and submit images with the evidence.</p> <p>Protect glass from additional breakage.</p>	<p>Mark the evidence container with pertinent case information. Annotate the location where the glass was collected from.</p> <p>If possible, indicate what side was facing outside and what side was facing inside. Also mark top, bottom, left, right, if possible.</p>	<p>Collect multiple samples from representative areas of a single glass pane if it is large and if the break occurred over a large area.</p> <p>For direction of force cases, all of the glass should be submitted.</p>	<p>Pack to prevent shifting further breakage. Place in pillbox, seal and protect from further breakage.</p> <p>Do not use glass containers to package glass evidence.</p> <p>Submit the entire piece of laminated glass if possible. Secure between plywood or sturdy cardboard.</p>	<p>Used to identify fragments taken from scene of crime.</p> <p>Used to determine direction a break force.</p>

- ✓ Search for particles in the victim(s) and subject(s) hair, and wounds. Submit clothing to include shoes, for examination. Each item of clothing needs to be packaged separately.
- ✓ For direction of force, collect all pieces that are present to reconstruct the window. This allows for radial cracks near the point(s) of impact be identified.
- ✓ Submit striking objects (bat, hammer, pipe, rock, brick, etc.) as there may be glass adhered to such items.
- ✗ Do not place any objects into the impact area.

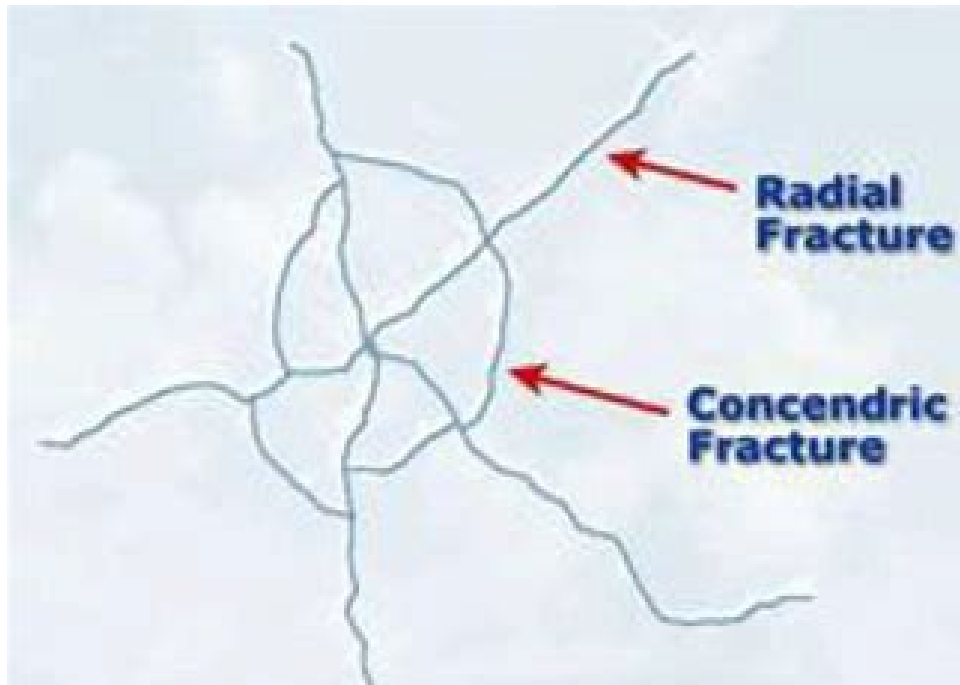


Figure 5 - Fractures in glass

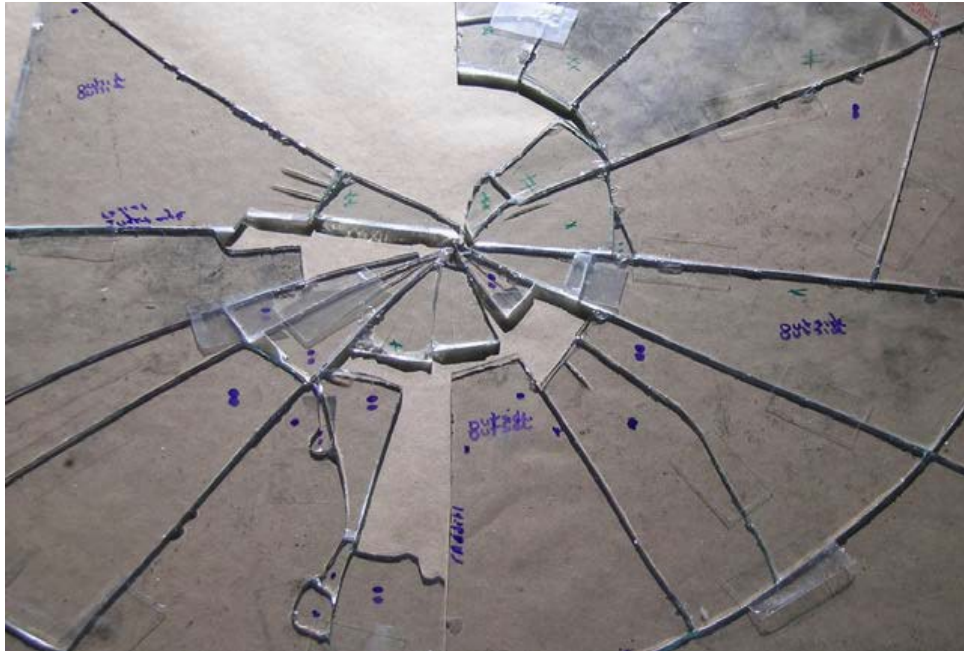


Figure 6 - Broken glass showing fractures

Fire Debris / Ignitable Liquids

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Liquid	Leave in original container in minimal liquid is present. Consider other forensic disciplines (latent prints and/or DNA). If a large amount or container will leak, remove liquid from original container. Submit samples to the laboratory as soon as possible.	Mark the evidence container (not the original liquid container) with pertinent case information.	Up to 4 ounces.	Place a specimen in a clean and dry container (New, unlined metal paint cans or new glass jars with Teflon-lined lids). Ensure containers will not leak.	Used to determine the properties and the fluid, which may be utilized as investigative leads.
2. Non-liquid (i.e., ashes and debris taken from point of origin and all mechanical or electrical devices which may have used to ignite the fire)	Use tweezers for small particles. Handle as carefully as possible to keep specimen intact. Use piece of stiff paper to slide under ash. Collect samples of fire debris from each suspected point of origin.	Mark the evidence container with pertinent case information. Annotate the location where the sample was collected from.	All of specimen.	Place a specimen in a clean and dry container (New, unlined metal paint cans or new glass jars with Teflon-lined lids). Place in container and seal securely, leaving 1/3 unfilled for headspace sampling at lab.	Used to determine the elements utilized to create the fire, thereby possibly finding a modus operandi.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
(2. continued)	Submit samples to the laboratory as soon as possible.			If cans are not available or items are too large, use specific fire debris plastic bags. Last resort: package in multiple layers of plastic and coordinate with USACIL to submit these items as soon as possible.	
3. Standards and Control Samples	Submit samples to the laboratory as soon as possible.	Mark the evidence container with pertinent case information. Annotate the location where the sample was collected from.	Collect control samples from an area NOT suspected of having an accelerant present, but a representative of the same types of materials involved in the fire at the suspected point(s) of origin.	Place a specimen in a clean and dry container (New, unlined metal paint cans or new glass jars with Teflon-lined lids).	Used for comparison during the testing of evidence.

- ✓ Seek assistance from the fire investigator on scene when possible.
- ✓ May be necessary to remove fire debris to expose areas where an accelerant may have soaked into and may still be present.
- ✗ Do not package fire debris evidence in paper or regular plastic bags or cardboard boxes.
- ✗ Do not air-dry fire debris evidence prior to shipping samples to the laboratory.
- ✗ Do not ship question samples with known standards or with suspected accelerants.
- ✗ Do not swab for fire debris evidence.



Figure 7 - Unlined paint cans that can be used for fire debris evidence packaging



Figure 8 - Glass jars that can be used for fire debris evidence packaging

Firearm Discharge Residue / Gunshot Residue (GSR) / Bullet Hole Analysis

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Gunshot Residue Kit (person)	<p>Follow kit instructions. Wear clean gloves (usually provided in the kit).</p> <p>Avoid GSR collections being performed by investigators or special agents who have recently fired or handled their service weapon.</p> <p>Perform the collection on the person as soon as possible.</p> <p>Make note of any debris, soil, blood, or similar on the sampling area.</p>	<p>Mark the evidence container with pertinent case information. Annotate the person's name for whom the collection is from. Each sampling device must be labeled with collection location (Right Back, Right Palm, etc.).</p> <p>Provide the following information: time of incident, time of collection, if the person's hands have been washed between the incident and collection, type of firearm, location of incident, and where the collection was made (scene, hospital, police station, etc.) When possible, include subjects' occupation and hobbies.</p>	1 kit per person.	Seal the kit(s) with the seal provided prior to packaging with other evidence.	May assist in determining if an individual was recently in the vicinity of a fired weapon.
2. Gunshot Residue Kit (objects)	<p>Follow kit instructions. Wear clean gloves (usually provided in the kit).</p> <p>Avoid GSR collections being performed by investigators or special agents who have recently fired or handled their service weapon.</p>	<p>Mark the evidence container with pertinent case information. Annotate the location where the sample was collected from.</p> <p>Provide the following information: time of incident, time of collection, what object is being sampled for each stub, type of firearm, and location of incident.</p>	<p>Use one adhesive stub per surface.</p> <p>Use additional stubs if a stub loses adhesive tackiness (e.g., when sampling cloth upholstery).</p>	Seal the kit(s) with the seal provided prior to packaging with other evidence.	May assist in determining if a firearm was recently fired in the vicinity of the object.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
3. Clothing	Keep clothing from each individual separate.	Mark the evidence container with pertinent case information. Annotate the person's name for whom the collection is from.	Unwashed outer clothing that may have been exposed to GSR.	Each item of clothing should be wrapped in paper and packaged individually.	May assist in determining if an individual was recently in the vicinity of a fired weapon.




Figure 9 - Place clothing on paper and then cover the item with another piece of paper. This protects each surface from coming into contact with one another.

- If a Gun Shot Residue Kit with adhesive stubs is not available, contact FCMB for alternative collection methods.
- If it is necessary to transport a person prior to collection of GSR samples, secure their hands in paper bags (i.e., not plastic) to preserve any GSR present on their hands and to prevent contamination from outside sources (e.g., vehicle surfaces).
- GSR analysis of kits or clothing collected from deceased individuals will not be routinely performed if the cause of death is a gunshot wound.
- In certain circumstances, clothing may be examined in cases where reconstruction of the shooting incident may be probative. Contact the laboratory to see if this might be a viable option for your investigation.
- If a defect in material is submitted for bullet hole identification, we require the defect itself for full testing. Ensure you cut the piece of material (drywall, wood, etc.) far enough away from the defect in question that it will not impact our testing--general rule of thumb would be at least 12" away from the defect on all sides.
- ❌ Do not allow person(s) to wash their hands, rub their hands together, wipe their hands on the clothing or put their hands in their pockets until after the GSR collection.
- ❌ Kits collected from people more than 12 hours post incident will not be analyzed.
- ❌ Kits collected from victims (alive or deceased) of gunshot wounds will not be analyzed.
- ❌ Materials that have a lodged projectile in it will not be routinely examined.

Explosives and Explosive Residues

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Exploded devices	Consider other forensic disciplines (latent prints, DNA, etc.)	Mark the evidence container with pertinent case information.	<p>Collect any items or fragments that may have been part of the original device (wire pieces, circuitry, metal, etc.)</p> <p>Collect any items or fragments from victims.</p> <p>Collect items that are forensically relevant (explosive analysis or other forensic discipline testing).</p>	Package materials which may have explosive residues in a clean and dry container (New, unlined metal paint cans or new glass jars with Teflon-lined lids).	Used to determine the properties and the explosive, which may be utilized as investigative leads.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
2. Unexploded devices	<p>Use whatever means (EOD, local law enforcement bomb squad) to ensure the device is rendered safe.</p> <p>Determine how the device was made safe and provide that additional information.</p> <p>Consider other testing (Latent Print, DNA, etc.).</p>	Mark the evidence container with pertinent case information. Annotate the location collected from.	Contact FCMB to determine the amount of the material required to be submitted for analysis.	<p>If the device is made safe without detonation and the explosive material is intact, contact USACIL prior to shipment.</p> <p>If the device is made safe with detonation, obtain samples of any materials used in the process (cartridge cases, etc.).</p> <p>Include copies of photographs and x-rays.</p>	Used to determine the properties and the explosive, which may be utilized as investigative leads.
3. Suspected Explosive Materials	Consult EOD or other agency experts in the safe handling of the material.	Mark the evidence container with pertinent case information. Annotate the location where the sample was collected from.	Contact FCMB to determine the amount of the material required to be submitted for analysis.	Package per EOD or other guidance.	Used to determine the properties and the explosive, which may be utilized as investigative leads.

 Do not submit explosive material via postal channels.

Textile Materials (Fibers) / Fabric Damage

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Fibers	<p>Avoid any actions that might result in potential loss or accidental contamination of the evidence.</p> <p>Keep items from victims and subject separate. Different agents should collect items from victims and subjects.</p>	Mark the evidence container with pertinent case information.	All fibers. Original garment or cloth, if possible.	<p>Packing in a pharmacist's fold or glassine envelope and place in envelope or pillbox. Seal tightly to prevent loss.</p> <p>If adhesive tape is used, don't stick it to itself. Place on a sheet of acetate or a page protector.</p>	Fiber evidence may be able to associate a person or item to the scene or another person.
2. Clothing / Material (question evidence)	<p>Avoid any actions that might result in potential loss or accidental contamination of the evidence.</p> <p>Keep items from victims and subject separate. Different agents should collect items from victims and subjects.</p>	Mark the evidence container with pertinent case information.	Collect what was worn or used at the time of the alleged assault.	<p>Package in paper bags and once packaged, do not open again.</p> <p>For large items (bedding, blankets, etc.) document why it was collected and what side may have been the contact surface.</p> <p>Package items separately. If clothing /material is already commingled, leave it as is. Do not repackage.</p>	Fiber evidence may be able to associate a person or item to the scene or another person.
3. Large items that cannot be submitted to the laboratory (question evidence).	<p>Avoid any actions that might result in potential loss or accidental contamination of the evidence.</p> <p>Divide the item (sofa seat, vehicle, etc.) into smaller areas to be collected (driver's head rest, driver's seat back area, driver's seat seat area, etc.)</p>	<p>Mark the evidence container with pertinent case information.</p> <p>Annotate the location where the collections were made (e.g., driver's seat seat, driver's seat back, left couch cushion seat, etc.)</p>	Collect fiber evidence from the contact surfaces of the object.	Use 8-9 in piece of clear tape to collect from the specific area. Use the tape to collect from the surface and change to a new piece of tape once it loses tackiness. Place used tape onto clear plastic or acetate. Do not let tape stick to itself. Place the plastic or acetate into an envelope and seal.	Fiber evidence may be able to associate a person or item to the scene or another person.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
4. Clothing / Material (standards)	Look for items that shed fibers easily. Consider potential fiber donors such as rugs, carpets, throw pillows, upholstered furniture and stuffed animals.	Mark the evidence container with pertinent case information.	Collect what was worn or used at the time of the alleged assault.	Collect standards (cuttings approx. 2in x 2in) of large items (carpets, car seats, vehicle trunk liners, upholster furniture, etc.) Package in paper bags or envelopes.	Fiber evidence may be able to associate a person or item to the scene or another person.
5. Damage to textile material	Handle with care to not damage the item further.	Mark the evidence container with pertinent case information. Document if a statement was made as to how the damage was made (ripped, torn, cut, etc.)	All potentially damaged items	Package items individually in paper bags or envelopes.	May be able to determine if the material was cut, torn, burnt or abraded.



Figure 10 - Tape lift collections placed onto a sheet protector.

- ❌ Do not use masking tape, duct tape, etc. for fiber collection. Only use clear packing tape.
- ❌ Do not place tape onto paper or cardboard or fold tape onto itself. Use clear acetate sheets. These sheets can then be marked/labeled to describe their origin/location of collection.
- ❌ Do not use tape lifts to collect fiber standards.



Figure 11 – Sweater with missing button



Figure 12 - View of remaining button thread on sweater



Figure 13 - Button recovered at scene



Figure 14 - Button recovered at the scene next to a button on the sweater



Figure 15 - Cut fabric



Figure 16 - Torn fabric

Pressure Sensitive Tapes

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Tape (question sample)	Use care to not damage the ends of the tape. If tape is on an item that can be submitted to the lab, collect the item as is. If the tape needs to be removed from an item that cannot be sent to the lab, remove the tape (without cutting) and place onto acetate. Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All tape associated with the incident.	If adhesive side of tape is exposed, place in plastic.	Provide information about the type of tape for investigative leads.
2. Tape (standard)	Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All tape that may be a source of the question sample.	Package in paper if adhesive side is not exposed. If so, package in plastic.	Used for comparison to determine if question samples have similar class characteristics as the standard. May be able to associate the question sample to a standard through physical fit comparison.



Figure 17 - Tape placed on plastic protecting the adhesive side

- ❌ Do not allow tape to stick to itself.
- ❌ Do not place tape into paper packaging without protecting the adhesive side first.

Lubricants

Lubricant analysis related to sexual assaults will be dependent upon the results of the DNA testing. If the DNA branch is able to associate the victim and subject with their analysis, no additional testing will be conducted. However, if DNA is unable to provide scientifically probative results and there is a reason to believe a condom or lubricant may have been used, Lubricant Analysis may be conducted.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Condom (used)	Do not swab.	Mark the evidence container with pertinent case information.	All used condoms associated with the incident.	Package items in paper. Allow condom(s) to dry prior to packaging.	Determine if there is DNA present to associate the victim(s) and subject(s). May be used in chemical comparisons.
2. Condoms (unused)	Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All condoms.	Package items in paper.	May be used as a standard during lubricant testing.
3. Bottles of possible lubricants	Consider other testing (Latent Print, DNA, etc.).	Mark the evidence container with pertinent case information.	All lubricants associated with the incident.	Package in paper or heat-sealed plastic bag if potential for leaking.	May be used as a standard during lubricant testing.
4. Sexual Assault Evidence (Sexual Assault Collection Kit(s) and/or clothing)	Consider other testing (DNA, Trace Evidence – hairs/fibers, etc.).	Mark the evidence container with pertinent case information.	All assault related items.	Package items in paper.	Determine if condom and/or lubricant residues are present.

- ✓ Superglue fuming does not interfere with lubricant testing.
- ✓ Lubricant testing on clothing is limited to intimate items of clothing only (underwear or what was worn in lieu of underwear).
- Lubricant testing may be performed on unlaundered bedding however contact FCMB for additional guidance.
- ❌ Lubricant testing cannot be performed on laundered clothing.

Hair

Hair analysis is conducted to determine root end type (aids in determining forcibly removed hair), suitability for DNA testing, and presence of dye or color alteration. Root end assessment for DNA suitability will be dependent upon the results of the DNA testing. If the DNA Branch is able to associate the victim and subject with their analysis, no additional DNA testing will be conducted. However, if DNA is unable to provide scientifically probative results, hair analysis may be conducted.

Item	Handling	Marking	Quantity Needed	Preservation and Packing	Investigative Value
1. Questioned Hair	Carefully remove hair(s) from crime scene with a pair of tweezers or a gloved hand. Clear office tape may also be used to collect and preserve hair(s).	Mark the evidence container with pertinent case information. Annotate collection location.	All possible hairs.	Place hair into pharmacist's/drug gist fold. Package the fold into the evidence packaging envelope, seal envelope.	Morphological features (ex. growth stage, chemical treatment, etc.), human hair root assessment to determine suitability for DNA testing.

You are ready to ship evidence to the USACIL. Now what??

USACIL Forensic Case Management Branch (FCMB) offers a service called Pre-submission. The Pre-submission process is voluntary. Participation in the pre-submission process allows the laboratory to analyze your case more effectively and efficiently ensuring you only package and mail what is necessary for analysis. The Pre-submission process will also allow for a “fast-track” of the case to be entered into the USACIL’s Laboratory Management Information System (LIMS) and assists in reducing the turnaround time for you to receive results. During this process, you will receive a USACIL case number, effectively holding your case’s spot in the testing queue. The USACIL will make every effort to contact you by the next working day upon receipt of your pre-submission email. If you elect not to participate, please see the “Evidence Submission to USACIL” Section below,

To initiate the Pre-submission process, please submit the following items to the FCMB email (dodfscmb@mail.mil):

All cases need to have, at minimum, the documents listed below. Please see below for different case types and additional documents that may be needed.

- Draft copy of the Laboratory Examination Form (DD 2922)
- Chain of Custody document(s) (Evidence custody documents or Evidence and Property Custody Documents)
- Case summary or synopsis

Sexual assault cases:

- Sexual Assault Collection Kit paperwork (if applicable)
- Victim(s) statements or statement summaries
- Subject(s) statements or statement summaries

Complex or death cases:

- Crime scene images may be helpful
- Witness(es) statements or statement summaries
- Other relevant documents depending on the type of case such as Search Authorizations allowing USACIL examiners to perform Computer Forensic examinations.

The information provided will be reviewed to assist you develop a testing strategy for the specific case.

Please do not ship any evidence until a USACIL case number is provided and you are asked to mail the evidence. This ensures you send only the evidence needed.


Evidence Submission to USACIL

Before sending evidence to the lab please ensure the below has been completed. Any errors or omissions may delay processing and examination.

Case Documentation:

- ✓ Case numbers, ECD/Log numbers and item numbers need to correspond on all documents - Laboratory Examination Form (DD 2922), Chain of Custody documents, Evidence tags (AF 52, DA 4002, OPNAV 5580, etc.).
- ✓ Spelling of individuals' names are correct and consistent on all documents.
- ✓ Ensure evidence tags are attached to the evidence container.
- ✓ Ensure the correct items are released on the Chain of Custody document with the mail method and tracking numbers annotated.

Shipping considerations:

- ✓ Place documents in an envelope and tape it to the outside of the shipping container. Wrap the shipping container in brown paper and affix/labels to brown paper.
-  **DO NOT** ship multiple cases in a single shipping container.

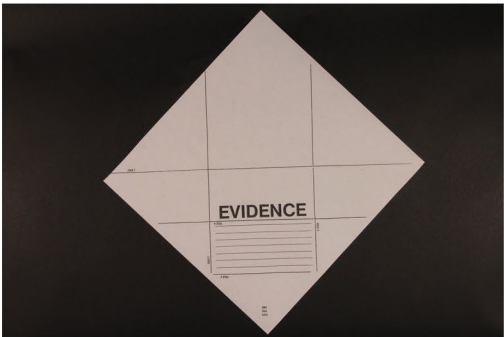
Digital Submission:

For cases that have electronic evidence (i.e., Images of latent prints or footwear, digital video files, etc.), you may be able to digitally submit these cases. Contact the FCMB for details. A signed Laboratory Examination Form will be needed along with the digital files. The files can be submitted via email or DoD Safe file transfer (<https://safe.apps.mil>).

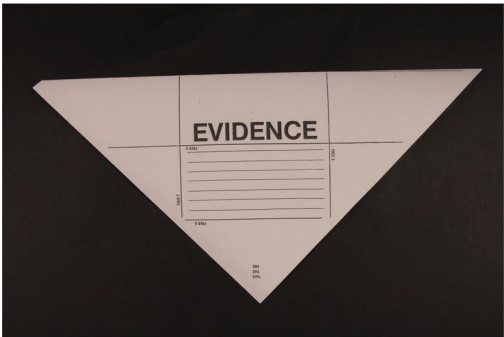
Other testing USACIL does not provided:

If USACIL does not offer the necessary laboratory testing, contact FCMB for outsourcing information. We may be able to assist with providing information on laboratories that perform the required testing. See Appendix B for other laboratory information.

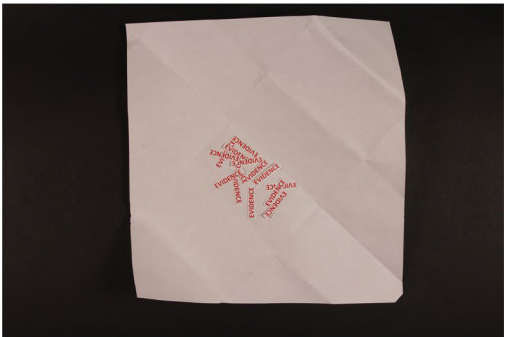
Appendix A: Instructions for making a Pharmacists Fold



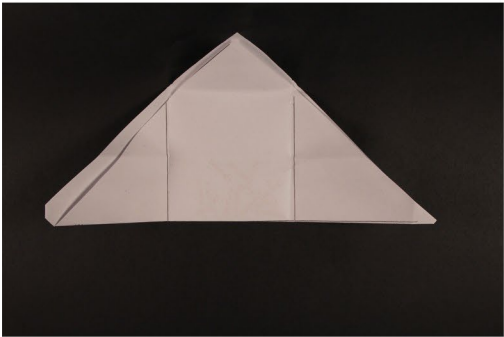
Step 1 - Cut along line



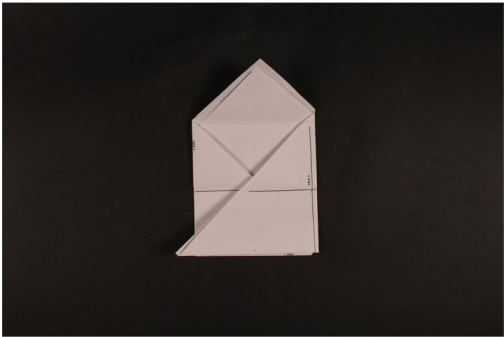
Step 2 - Fold 1



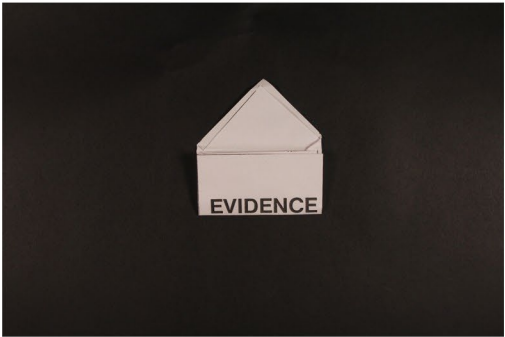
Step 3 - Place evidence



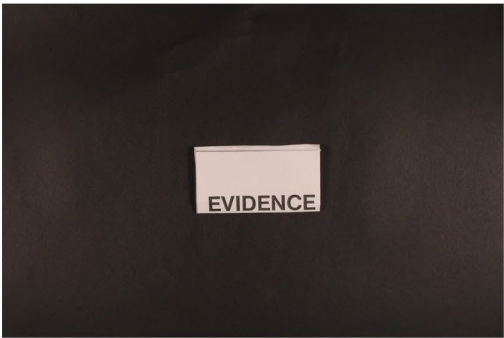
Refold fold 1



Step 4 - Folds 2 and 3



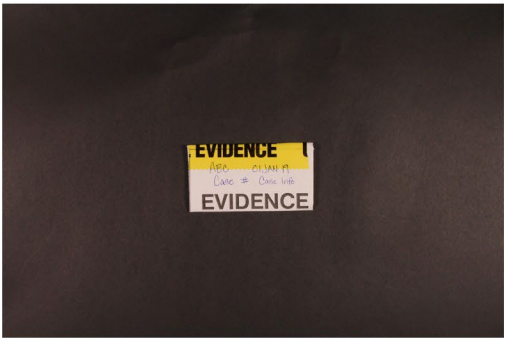
Step 4 - Fold 4



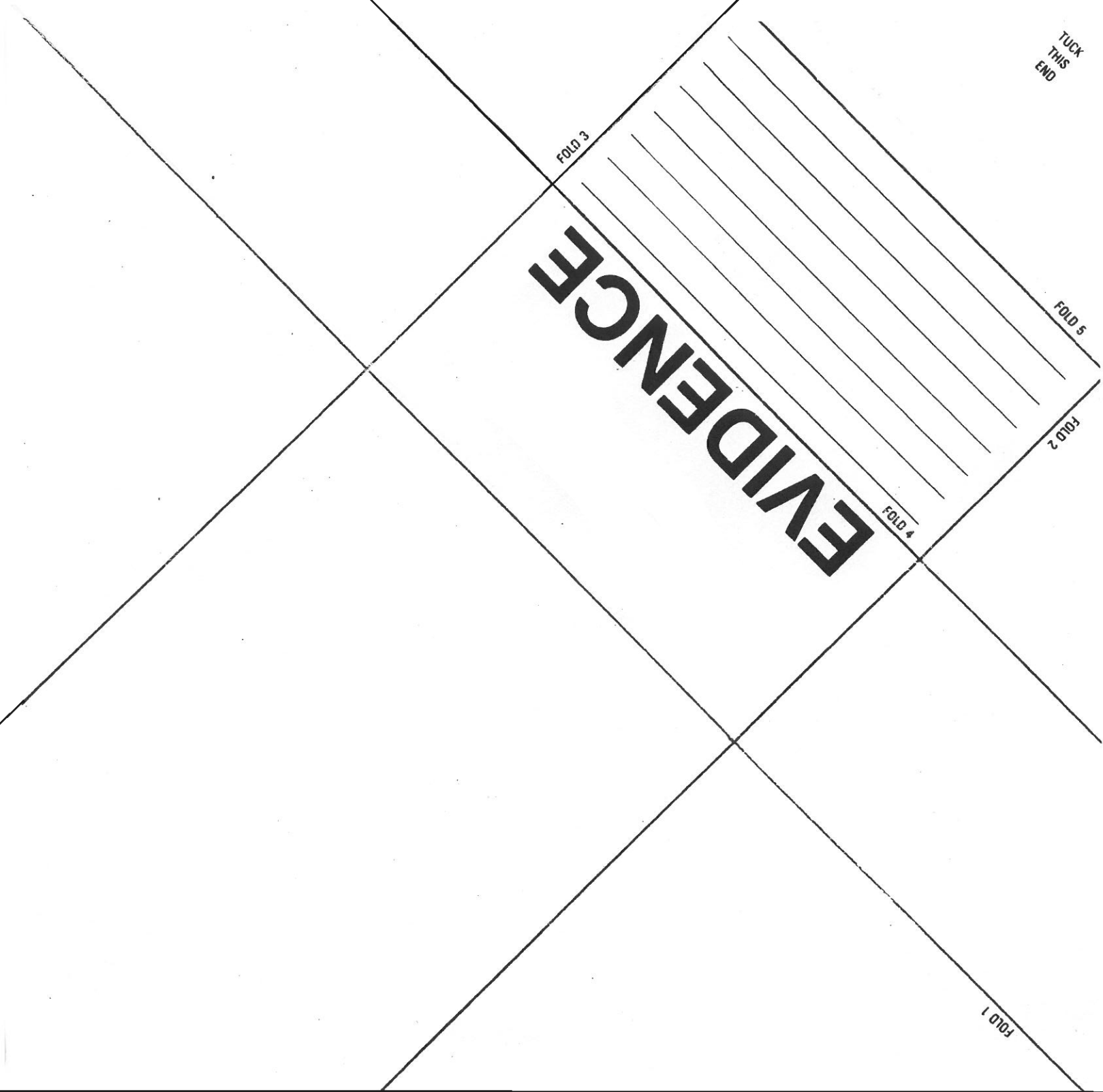
Step 5 -Tuck flap within



Step 5 - From above



Step 5 - Seal with tape



Cut along this line

Instructions:

1. Cut along line to make a square piece of paper.
2. Perform fold 1, keeping.
3. Place evidence on the back side of the paper, near center.
4. Perform the remaining folds carefully to prevent loss of the evidence.
5. Tuck the flap and place evidence tape over to seal.
6. Place the sealed Pharmacist fold into an envelope, seal and mark for identification.

*Helpful hint - Perform a practice run of folding the paper prior to placing the evidence. This allows for you to know what fold follows the other and helps keep the evidence in place when packaging.

Appendix B: Other Laboratory Information

Routine Toxicology

Armed Forces Medical Examiner System

115 Purple Heart Drive

Dover Air Force Base, DE 19902

Phone 302-346-8724

Request a completed AFMES Form 18 from the submitter (available at www.health.mil/afmes) Original custody docs should not be sent. Submission to AFMES should be final disposition, as they do not return samples or original paperwork.

Steroid Toxicology

DoD Toxicology Laboratory

Fort Meade, Maryland

No contact info available, have the submitter coordinate with the urinalysis program coordinator at their installation for direct submission to the DoD contract laboratory for steroid testing.

Urine Adulteration Testing

DoD Toxicology Lab

Fort Meade, Maryland

Coordinate by telephone at 301-677-3807/3829 prior to submission.

Submit with request memorandum and chain of custody to:

COMMANDER

DoD Toxicology Laboratory

2490 Wilson Street

Fort Meade, MD 27055

Human Growth Hormone (HGH) Identification

FBI Laboratory

ATTN: Evidence Control Unit

Federal Bureau of
Investigation 2501

Investigation Parkway

Quantico, VA 22135

POC is Rebecca Reynolds, phone 703-632-7600

Parentage Testing

Armed Forces DNA Identification Laboratory (AFDIL)

115 Purple Heart Drive

Dover Air Force Base, DE 19902

POC: Dr. Timothy McMahon, Phone: 302-346-8912

***If AFDIL is not accepting forensic casework due to casualty ID casework backlog use the FBI Laboratory (see HGH above).

Terrorist Incidents

Terrorist Explosive Device Analytical Center (TEDAC)
Coordinate with SA Roger Shields, Director of TEDAC, Phone: 703-632-8489 Submit to FBI Laboratory via Les McCurdy (FBI contact info above) after coordination.

Weapons and Weapons Systems Engineering Analysis

POC: Gregory Papatrefon
US ARMY REDCOM ARDEC RDAR-MEM-G, Bldg. 64S
Picatinny Arsenal, NJ 07806-5000
Telephone: 973-724-5681, Email: gregory.g.papatrefon.civ@mail.mil.

Chemical and Biological Agent Characterization

Chemical/Biological Forensic Analytical Center
Dr. Joy Ginter, Edgewood
RDCB-DRC-F, Bldg. E5100
8820 Fleming Road, APG MD 21010-5424
Phone 410-436-7658, Email joy.m.ginter.civ@mail.mil

And/or

National Bio-Forensic Analysis Center (NBFAC)
ATTN: Jamie Saynuk, phone 301-619-5630
8300 Research Plaza
Fort Detrick, MD 21702
NBFAC is operated by DOJ. Submissions must be coordinated PRIOR TO SUBMISSION through Dr. Neel Barnaby, FBI Laboratory-SRAU, Phone: 703-632-8406, Cell: 703-898-7012, Email: ngbarnaby@fbi.gov

Facial Recognition Support

Margery Broadwater (Federal POC for FACE)
Phone 304-625-2446, Email mebroadwater@fbi.gov;
General Contact Info:
FACE Services, FR_IPS@leo.gov, Phone 304-625-3223

Contact FCMB for additional information on:

Bloodstain Pattern Interpretation
Engineering and Contract Specification Testing
Hair Comparison
Mitochondrial DNA Testing
Hair Toxicology Testing



Helpful Evidence List & Practices (HELP)



Case documentation

1. Case numbers/item numbers on all documents (Evidence Custody Documents, DD Form 2922 Laboratory Examination Request, Evidence tags) correspond.
2. Document/Log numbers on ECD correspond with 2922.
3. Evidence tags have case numbers/document numbers present and accurate to corresponding Custody Documents.
4. DD Form 2922 contains the full names of all suspects and victims.
5. DD Form 2922 contains contact information for primary and alternate points of contact.
6. Spelling of individuals' names correct and consistent on all documents.
7. Correct items released on the COC to USACIL with Mail method and tracking numbers.
8. Examination request is clear and concise.

Evidence packaging

9. No holes or tears in evidence packaging. Breaches of seals documented on ECD or MFR.
10. Container with evidence tag (one tag per container is sealed and marked for identification (MFID). Description of MFID on the ECD corresponds with seals.
11. Sharp/large objects shipped in sturdy packaging/syringes in SHARPS containers.
12. DNA standards/Physical Evidence Recovery Kits (PERKs) have subject's name on the paperwork and/or packaging to associate the evidence.

****DNA standards collected using CODIS Kits will not be examined due to potential legal ramifications.****

Shipping considerations

13. Documents sealed in an envelope and taped to the outer box before wrapping.
14. Do not ship multiple cases in a single shipping container. Cases for submission **MUST** be shipped separately.