Document Title: Training Manual/Work Instructions
Controlled: Yes, with red stamp present
Controlled By: Quality Manager

Prepared By: _____ Date: _____

Approved By: _____ Date: _____

A. PURPOSE:

To train forensic science examiners to examine evidence, perform serological tests and use the LIMS computer system.

B. RESPONSIBILITY:

Forensic Science Examiner 2 or designee of the Forensic Biology Section.

C. SAFETY:

Use appropriate measures for the proper handling of physical evidence, biological materials and chemicals according to SOP-GL-2 (Safety Manual).

D. DEFINITIONS:

1. LIMS: Laboratory Information Management System
2. SAEC Kit: Sexual Assault Evidence Collection Kit
3. ABAcard® HemaTrace® and p30: Rapid Immunoassays
4. RSID: Rapid Stain Identification
5. KM: Kastle-Meyer
6. o-tol: o-Tolidine
7. AP: Acid Phosphatase
8. PBS: Phosphate Buffered Saline
9. OCME: Office of the Chief Medical Examiner
10. PTT: Purple Top Tube
11. RTT: Red Top Tube

E. PROCEDURE:

Training Guidelines for the Forensic Biology Section

As of January 1, 2011 this training outline will be followed for all persons newly assigned to the Forensic Biology Section. The amount of time necessary to achieve proficiency in any area may be affected by the previous experience and training of the individual examiner. The Forensic Biology Supervisor or designee will oversee all training.

An electronic copy of the following check-list will be separately maintained as a working copy and will be printed out for use as needed.

I. Introduction

Complete	Initials	Date	
_____	_____	_____	**Goals:** Upon completion, the examiner will be familiar with the Forensic Laboratory operation.
			Tasks:
_____	_____	_____	Orientation to the Laboratory facility and personnel
_____	_____	_____	Instruction on the organizational structure, code of ethics and the chain of command
_____	_____	_____	Familiarized with building security and confidentiality requirements
_____	_____	_____	Introduction to the quality control measures, including required documentation
_____	_____	_____	Familiarized with safety procedures, chemical handling and proper handling of biohazardous materials such as blood and body fluids, incident reports and fire/emergency procedures.
			Reading:
_____	_____	_____	SOP-GL-1 (Quality Manual)
_____	_____	_____	DPS A & O Manual
_____	_____	_____	SOP-GL-2 (Safety Manual)
_____	_____	_____	SOP-FB-19 through SOP-FB-30

II. Scientific Knowledge

Complete	Initials	Date	
_____	_____	_____	**Goals:** To ensure the examiners has the formal education and working knowledge of the fundamental basis of serology and physical evidence examination.
			Tasks:
_____	_____	_____	Document a Bachelor's degree or higher in a physical or closely related science.
_____	_____	_____	Document Laboratory training and experience in Forensic Science or a closely related field.
			Reading:
_____	_____	_____	SOP-FB-01 through SOP-FB-31 and Appendix
_____	_____	_____	DeForest, P. R., Gaensslen, R. E. and Lee, H. C., Forensic Science: An Introduction to Criminalistics, Chapter 6:"Transfer and Trace Evidence," Chapter 9: "Blood" and Chapter 10: "Body Fluids," McGraw-Hill, Inc., 1983.
_____	_____	_____	Lee, H. C. "Identification and Grouping of Bloodstains," Forensic Science Handbook,vol.1, ed. Richard Saferstein, Prentice hall, Inc. 1982, pp267 – 337.
_____	_____	_____	AS A REFERENCE: Gaensslen, R. E., Sourcebook in Forensic Serology, Immunology, and Biochemistry, National Institute of Justice, 1983.

III. Applied Technical Knowledge

Complete	Initials	Date	
_____	_____	_____	**Goals:** To demonstrate specific knowledge related to the field of Forensic Biology.
			Tasks:
_____	_____	_____	Received instruction on the theory and techniques specific to the examination of physical evidence for the presence of blood and/or body fluids, including but not limited to:

- Recognition of evidence
- Recognition of patterns
- Documentation of damage
- Documentation and identification of blood and/or body fluid stains
- Proper preservation of evidence, transport and/or transfer of evidence for further testing

Reading:

_____	_____	_____	Validation studies for various procedures utilized in Forensic Biology
_____	_____	_____	SOP-FB-01 through SOP-FB-31 and Appendix
_____	_____	_____	Review of 10 case files completed by another examiner in the area of Forensic Biology to be chosen by the Section Supervisor.

IV. Evidence Handling and Examination

Complete	Initials	Date	
_____	_____	_____	**Goals:** Upon completion, the examiner will be familiar with the proper techniques for documentation, handling and the transfer of physical evidence, both general and specific to the Forensic Biology Section. The examiner will also develop the critical thinking skills necessary to evaluate the case circumstances and ensure all necessary testing has been requested.
			Tasks:
_____	_____	_____	Familiarized with the proper procedures for documenting the evidence packaging and labeling.
_____	_____	_____	Learned to properly handle physical evidence with blood/body fluid stains and to preserve and package cuttings, swabs and/or trace materials for future testing.
_____	_____	_____	Learned the proper technique for handling and preserving liquid blood samples
_____	_____	_____	Learned the operation of the LIMS system, packaging designation of sub-items, maintenance of the chain of custody of the evidence, transfer of evidence to another section, and transfer of submission-items into their proper storage locations
			Reading:
_____	_____	_____	SOP-GL-1 (Quality Manual)
_____	_____	_____	SOP-GL-4 (LIMS/Justice Trax)
_____	_____	_____	SOP-FB-01, SOP-FB-02 & SOP-FB-05

V. Laboratory Analytical Procedures

Complete Initials Date

_____ _____ _____ **Goals:** To provide practical instruction to the examiner on routine analytical procedures utilized in the Forensic Biology Section.

Tasks:

_____ _____ _____ Received instruction and training in the following procedures:

- Screening tests for blood and body fluids – KM, o-tol, AP, Jaffe, urobilinogen, amylase
- Identification tests for blood and body fluids – staining for spermatozoa, sperm searches, ABAcard p30, RSID-Semen, Takayama, ABAcard HemaTrace for blood and RSID-Blood.
- Successful completion of a competency and/or proficiency for each type of examination and evaluated by the supervisor or a designee.
- Side by side examination of evidence with a supervising examiner or a designee.

Tasks:

_____ _____ _____ Received instruction and training in the following procedures:

- After a 6 month probationary period and the successful completion of above training, the examiner will be assigned small cases. All work will be checked by another examiner, who will also co-sign the reports.
- With increasing experience, the examiner will be assigned more complex/larger cases.

Reading:

Complete Initials Date

_____ _____ _____ SOP-FB-06 through SOP-FB-18 and Appendix

_____ _____ _____ Corresponding journal articles relating to the specific procedure, as applicable.

VI. Report Writing and Review

Complete Initials Date

_____ _____ _____ **Goals:** To learn the Laboratory protocol for report writing, report review, finalization of reports and review of LIMS procedures.

Tasks:

_____ _____ _____ Learned Laboratory and Section guidelines for the writing of reports, and the completion of the documentation in LIMS.

_____ _____ _____ Completed a written report of proficiency or competency test results.

Reading:

_____ _____ _____ Review of 10 reports and supporting documents prepared by another examiner, as determined by the section supervisor.

_____ _____ _____ SOP-GL-4 (LIMS/Justice Trax)

VII. Legal Issues

Complete Initials Date

_____ _____ _____ **Goals:** To become familiar with the legal requirements for testimony in the state of Connecticut.

Tasks:

_____ _____ _____ Received instruction on the following:

- Qualifications
- Technical testimony
- Courtroom dress and demeanor
- Ethical responsibilities of an expert witness
- Laboratory courtroom monitoring procedures
- Presentation of evidentiary findings
- Pertinent rules of the courtroom

_____ _____ _____ Attended a minimum of 2 courtroom testimonies of another examiner in the Forensic Biology Section.

_____ _____ _____ Moot court conducted by examiners in the Forensic Biology Section

Reading:

_____ _____ _____ Transcripts or sample testimony of examiners in the Forensic Biology Section

_____ _____ _____ Admissibility requirements: *State v. Porter, Frye, Daubert*

Work Instructions

1. Work Instructions for the Collection of Samples from Evidence
   a. For Testing

aa. Moisten a cotton swab with PBS and lightly swab the questioned stain.
bb. Scrape the stain from a hard surface and test directly.
cc. Cut a piece of fabric, swab or other substrate and test directly.

b. For Retention
aa. Collection Methods
- Moisten a cotton swab with sterile distilled water. Swab the questioned stain or the area for touch/wearer DNA.
- Scrape the stain or debris from a hard surface.
- Cut the stain from a piece of clothing or other material.
- For stains on swabs, retain the swab tip.

bb. Samples can be retained in a plastic tube, a paper-fold or a tin.
cc. When appropriate, outline the area of the sample retained on the piece of evidence and label the area with the designated sample number (e.g. S1, S2).

2. Work Instructions for Sexual Assault Evidence Collection (SAEC) Kit Examination

a. Enter the Lab #, town, date of submission, hospital, suspect/no suspect and smears to be examined in the SAEC Kit log book, noting any problems with the kit collection made by the hospital.

b. Transfer the kit into your name in LIMS according to SOP-GL-4 (LIMS/Justice Trax).

c. Fill out a SAEC Kit worksheet (FBQR-05).

d. Make a copy of the yellow medical form, the front cover of the kit and any additional labels/seals as needed. Label these photocopies with the Lab ID# and examiner's initials in the upper right corner.

e. Inventory
aa. Check the contents of the kit and cross out any items that were not collected on page 1 of the worksheets. Place the unused envelopes and bags back in the kit (unlabeled). Place examiner's initials in the appropriate location on page 1 of the worksheets.
bb. Label the used envelopes/bags with the Lab ID#, item #/letter (from page 1 of the worksheets) and examiner's initials.
cc. Record any written information from the envelopes, such as sample origin or reason sample not collected, on the worksheets.

f. Known Blood Sample
aa. Retain a known bloodstain according to SOP-FB-06 (Whole Blood Sampling and Preservation).

E. 2. f. bb. Current Version of the 'CT 100' Kit
- If a Toxicology request has been made, retain a bloodstain from the red top tube and transfer the purple top tube to the Evidence Receiving Unit.
- If a known blood sample is not included in the kit, retain the inner envelope of the known saliva sample. Label this envelope with the Lab ID#, item #/letter and

examiner's initials.

cc. Revised Version of the 'CT 100' Kit
- No red top tube blood sample will be included in the new version. If a Toxicology request has been made, transfer the purple top tube to the Evidence Receiving Unit and request a known buccal sample from the victim.
- No saliva sample will be included in the new version. Request a known buccal sample from the victim if a known blood sample is not included in the kit.

g. Sperm Search
aa. Label the smear holder with the Lab ID#, item #/letter and examiner's initials.
bb. Current Version of the 'CT 100' Kit
- Label the two (2) smear slides on the frosted edge in pencil with the Lab ID#, item #/letter and examiner's initials.

cc. Revised Version of the 'CT 100' Kit
- Label the one (1) smear slide on the frosted edge in pencil with the Lab ID#, item #/letter and examiner's initials.

dd. Conduct a preliminary, unstained search at 200X of a smear appropriate for the case (vaginal, oral and/or anal), placing the slide on a microscope stage with the frosted edge to the left. Note red blood cells if present on the worksheets.
ee. If positive, record the results of the sperm search on the worksheet according to the following rating:
- 4+ - numerous sperm in every field
- 3+ - a few sperm in every field
- 2+ - sperm not in every field but easy to locate unstained
- 1+ - a few sperm (coordinates are needed to relocate)

ff. Record coordinates (if needed to relocate the sperm), scope # and examiner's initials.
gg. If no spermatozoa are located after a quick preliminary search, stain a smear from each appropriate orifice according to SOP-FB-13 (Identification of Spermatozoa). Conduct a full search of each smear.
hh. Record the results (including rating) and the method of staining on the worksheets.
ii. Record search results in the SAEC Kit logbook.

h. Positive Smears
aa. If spermatozoa are identified on the smears, retain the corresponding swabs for future testing. *Note: If vaginal smear is positive, retain the genital swabs and/or dried secretion swabs (depending on location).*
bb. Note appearance of swabs on worksheets.

E. 2. h. cc. Retain any trace from swabs/smears in a paper fold and place into a coin envelope. Label the paper fold and coin envelope with the Lab ID#, item #/letter and examiner's initials. *Note: Sub-item the trace retained using the letter 'S' designation with the corresponding sample number (ex. #1C-S1).*
dd. Place swab tip(s) with ~ ½" of the stick in a microcentrifuge tube or paper fold. Label the tube or paper fold with the Lab ID#, item #/letter and examiner's initials.

ee. The tubes/paper folds are placed in a Ziploc bag with the Lab ID#, heat sealed and initialed. Store Ziploc bag in freezer storage.

i. Negative Smears

aa. If no spermatozoa are identified, proceed to processing the corresponding swabs (vaginal, oral and anal) for acid phosphatase according to SOP-FB-11 (Screening Test for Semen) and/or amylase according to SOP-FB-15 (Test for Amylase) as the case warrants.

bb. If assault was vaginal or anal, process the genital swabs for acid phosphatase according to SOP-FB-11 (Screening Test for Semen) and/or amylase according to SOP-FB-15 (Test for Amylase) as the case warrants.

cc. Process the dried secretion swabs for acid phosphatase according to SOP-FB-11 (Screening Test for Semen) and/or amylase according to SOP-FB-15 (Test for Amylase) as the case warrants and depending on the location.

dd. Note appearance of swabs on worksheet. *Note: If swabs are heavily saturated with blood-like stains, examiner may proceed directly to extraction according to SOP- FB-12 (Extraction of Samples for Semen) without performing the acid phosphatase test.*

ee. Retain any trace on swabs/smears in a paper fold and label with the Lab ID#, item#/letter and examiner's initials. Place into a coin envelope and label with the Lab ID#, item #/letter and examiner's initials. *Note: Sub-item the trace retained using the letter 'S' designation with the corresponding sample number (ex. #1C-S1).*

ff. If the acid phosphatase test is negative, no further testing is conducted for semen.

gg. If the acid phosphatase test is positive, extract swabs according to SOP-FB-12 (Extraction of Samples for Semen).

hh. Make a smear of the extract pellet or positive acid phosphatase swab, stain and search according to SOP-FB-13 (Identification of Spermatozoa).

ii. If no spermatozoa are identified, test the extract for the presence of human semen according to SOP-FB-14 (Rapid Immunoassay Tests for Human Semen). *Note: If sample is heavily stained with fecal-type material or if breast milk is suspected, the ABAcard p30 test should not be used.*

jj. Retain the remaining swabs by placing the tip(s) with ~ ½" of the stick in a microcentrifuge tube or paper fold. Label the tube or paper fold with the Lab ID#, item #/letter and examiner's initials. Place the tubes or paper folds in a plastic Ziploc bag with the Lab ID# and examiner's initials.

kk. Retain the extracts by wrapping the top of the microcentrifuge tube with parafilm. Place extract tubes in a plastic Ziploc bag and place into the main plastic bag with the other samples or staple the two bags together. Store Ziploc bags in freezer storage.

ll. For the current version of the 'CT 100' kits, search the second smear of each orifice (according to #3g) if case warrants.

E. 2. j. If the orifice is not indicated, retain all swabs not tested.

k. Trace/Hairs

aa. Examine pubic hair combings for any trace/hair-like fibers. If trace/hair-like fibers are present, retain in the inner paper fold. Record the contents on the worksheet. Label the inner paper fold with the Lab ID#, item #/letter and examiner's initials. Seal paper fold with tape.

bb. Known head hair and known pubic hair samples are retained in the inner envelopes. Label the inner envelopes with the Lab ID#, item #/letter and examiner's initials. Seal the inner envelopes.

cc. Examine the debris collection envelope and retain any trace/debris in a paper fold. Label the paper fold with the Lab ID#, item #/letter and examiner's initials. Place into a coin envelope and label with the Lab ID#, item #/letter and examiner's initials.

dd. All retained trace/hair envelopes and paper fold/coin envelopes are stored in a sealed manila envelope. The manila envelope is labeled with the Lab ID#, incident town and examiner's initials. Store the envelope at room temperature in Trace Storage-retained trace.

l. Fingernail Scrapings/Clippings:

aa. Examine the fingernail scrapings/clippings and wooden sticks for blood according to SOP-FB-07 (Screening Tests for Blood).

- Record presence of fingernail fragments, wooden sticks and/or trace/debris.

bb. If hair-like fibers and/or fibers are observed, retain separately in a paper fold. Label the paper fold with the Lab ID#, item #/letter and examiner's initials and place into a coin envelope. Label the coin envelope with the Lab ID#, item #/letter and examiner's initials. Retain coin envelope with other trace samples.
Note: Sub-item the hair-like fibers/fibers using the letter 'S' designation with the corresponding sample number(ex. #1N-LS1).

cc. Record whether blood-like stains or tissue-like material were observed and the test results. If positive, retain inner paper folds and label them with the Lab ID#, item #/letter and examiner's initials.

dd. Place paper folds in a plastic Ziploc bag with other retained samples and store in freezer storage.

m. For any items not examined, note 'NEATT' (not examined at this time) on the SAEC worksheets.

n. Circle Y or N on the SAEC worksheets if the sample was retained or not retained.

o. Other: Underpants, etc.

aa. Examine underpants or other evidence according to SOP-FB-01 (Physical Evidence Examination).

bb. If an item of evidence is wet, dry under the hood prior to examination.

p. Attach the photocopies to the worksheets in the following order:

E. 2. p. aa. Any appropriate worksheets for additional items examined

bb. Copy of medical report form

cc. Copy of front cover of kit

dd. Copies of any additional labels/seals

q. LIMS:

aa. Create the items that were retained (ex. #1A-1S1) according to SOP-GL-4 (LIMS/Justice Trax).

bb. Store the kit at room temperature in a locked evidence storage area until the report is ready and the evidence is returned to the Evidence Receiving Unit.

r. Reports:

aa. Write a report to the submitting agency summarizing the results of the examination according to SOP-FB-05 (Case Records and Reports).

bb. Positive kits:

- If both the victim's and suspect's known samples were submitted, forward samples to DNA for processing.
- Request known samples from victim and suspect if not submitted.
- Samples may be forwarded directly to DNA before receiving the suspect's knowns, as the case warrants. Include a request in the report for the suspect's knowns as above.
- If it is a no suspect case, send the positive swabs to DNA for processing and comparison to the DNA Databases.

Negative kits:

- More evidence may need to be examined if the kit is negative. Review the paperwork and/or call the submitting agency to see what other evidence may be relevant/significant and is available for testing.

- If questioned hair-like fibers were collected from the kit, they may be forwarded to the Trace Section for further examination. Request known hair samples from the victim (if not collected in the kit) and the suspect (if known).

3. <u>Work Instructions for Office of the Chief Medical Examiner (OCME) Autopsy Samples</u>

a. If OCME autopsy samples are submitted as a sexual assault kit, refer to SOP-FB-02 and the Sexual Assault Evidence Collection Kit work instructions.

b. Known Blood:

aa. Fill out a Whole Blood worksheet (FBQR-07).

bb. Remove blood vial from container and label with the Lab ID#, item # and examiner's initials.

cc. Make a stain from the vial according to SOP-FB-06 (Whole Blood Sampling and Preservation).

E. 3. b. dd. Repackage vial and place the barcode on the container. If no container is present use a tube from the Laboratory. Initial the barcode, reseal with evidence tape, initial the seal and store in the walk-in refrigerator. Return to the Evidence Receiving Unit if the case warrants.

c. Known Hairs:

aa. Label the known hair envelopes (ex. head hairs, pubic hairs) with the Lab ID# and item #.

bb. Place all known hair envelopes in a manila envelope (approximately 4"x 6"). Place the barcode for the known hairs on this envelope. Put this envelope in a larger manila envelope (approximately 9" x 12"), label with the Lab ID#, incident town and examiner's initials. Seal with tape and initial the seal. Place in trace storage.

d. If questioned hairs or other samples were collected, package separately from the known hairs. Label the envelopes/container with the Lab ID# and item #. If there is a barcode, place barcode on the envelope/container and initial the barcode.

e. Fingernail scrapings/clippings:
   aa. Label the fingernail scrapings/clippings envelope(s) with the Lab ID# and item #.
   bb. Place fingernail scrapings/clippings in a manila envelope (approximately 4" x 6"). Place the barcode for the fingernail scrapings/clippings on this envelope. Place this envelope in a plastic Ziploc bag, heat seal and initial the seal. Place in freezer storage.

f. Other Biological Samples: (ex. muscle, liver, bone)
   Place barcode on outer packaging and store in freezer storage.

g. Create the bloodstain in LIMS according to SOP-GL-4 (LIMS/Justice Trax) and transfer all evidence to the appropriate storage areas:
   aa. DNA Storage Room 206 = bloodstain
   bb. Trace storage – retained trace = hairs and questioned samples
   cc. Freezer storage = fingernail scrapings/clippings and other biological samples

h. Complete all LIMS requests according to SOP-GL-4 (LIMS/Justice Trax).

i. Since no analysis is performed on these samples, no report is generated.

E. 4. Work Instructions for the Documentation and Collection of DNA Samples from Firearm Evidence

Firearm:

a. Photocopy or photograph the labeling information from the submitting agency and the laboratory's barcode.

b. Clean all pens, markers, scales, camera and cutting utensils prior to examination with Conflikt® or 20% bleach and EtOH.

c. Upon opening the sealed package, photograph the contents as received.

d. Photograph any additional labels or evidence tags that may be attached to the enclosed weapon. During the photography process, make sure that the camera has been wiped down with a dilute bleach solution and new gloves are used to handle the camera.

e. Photograph the weapon showing both sides of the frame and then photograph from various angles, including weapon manufacturer, model and serial number:

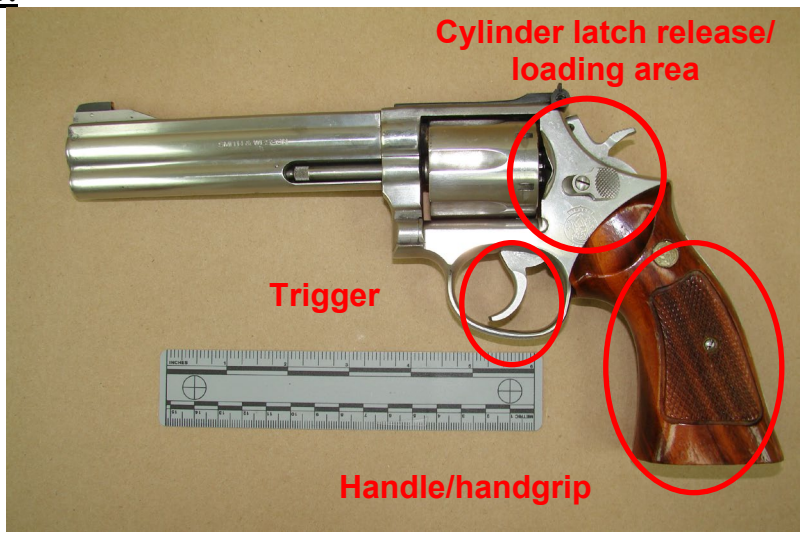
E. 4. f. The following photographs are an example of documentation of all sides of the weapon.

g. The following areas are typically swabbed:

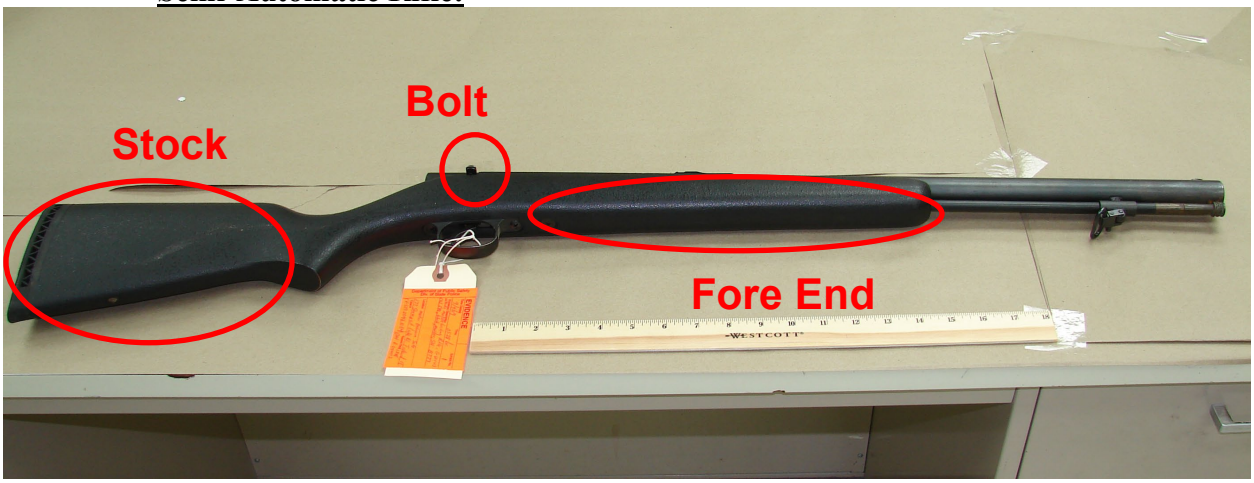
- Handle/handgrip/pistol grip (see photos)
- Trigger
- Slide (pistol)
- Cylinder latch release/loading area (revolvers)
- Fore End/Forearm (rifles and shotguns)
- Bolt (rifles and shotguns)
- Hammer (shotguns)

Semi-Automatic Handgun

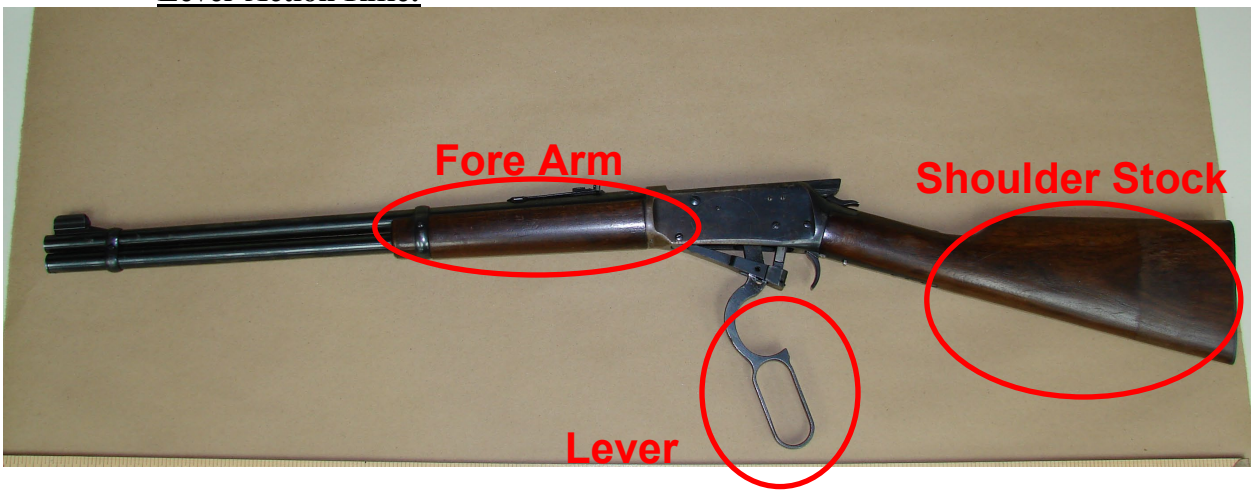
Revolver:



Semi-Automatic Rifle:



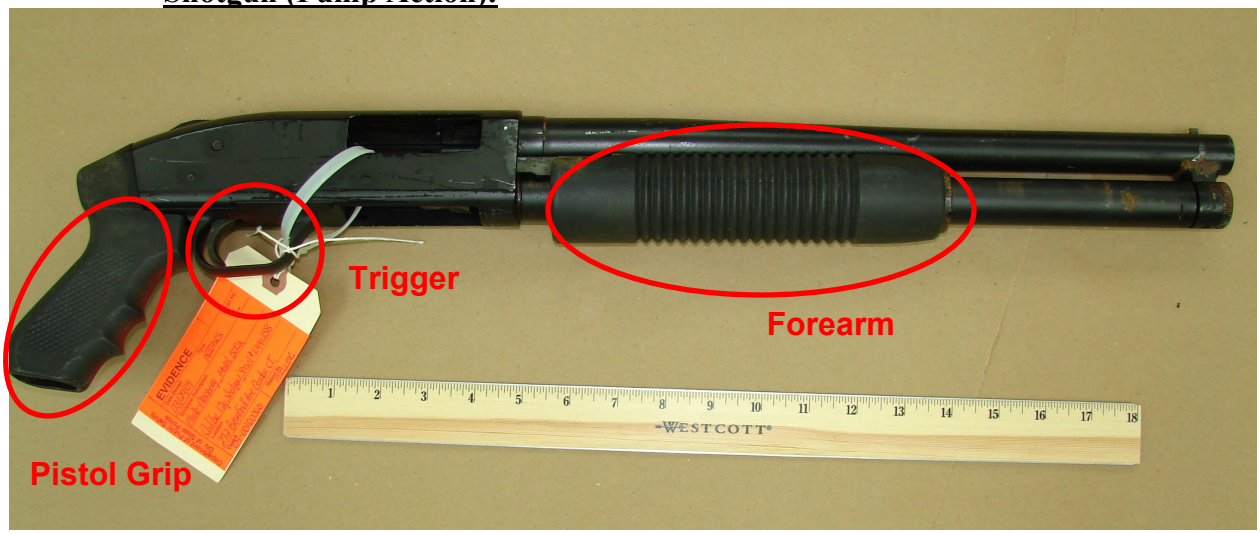
Lever Action Rifle:



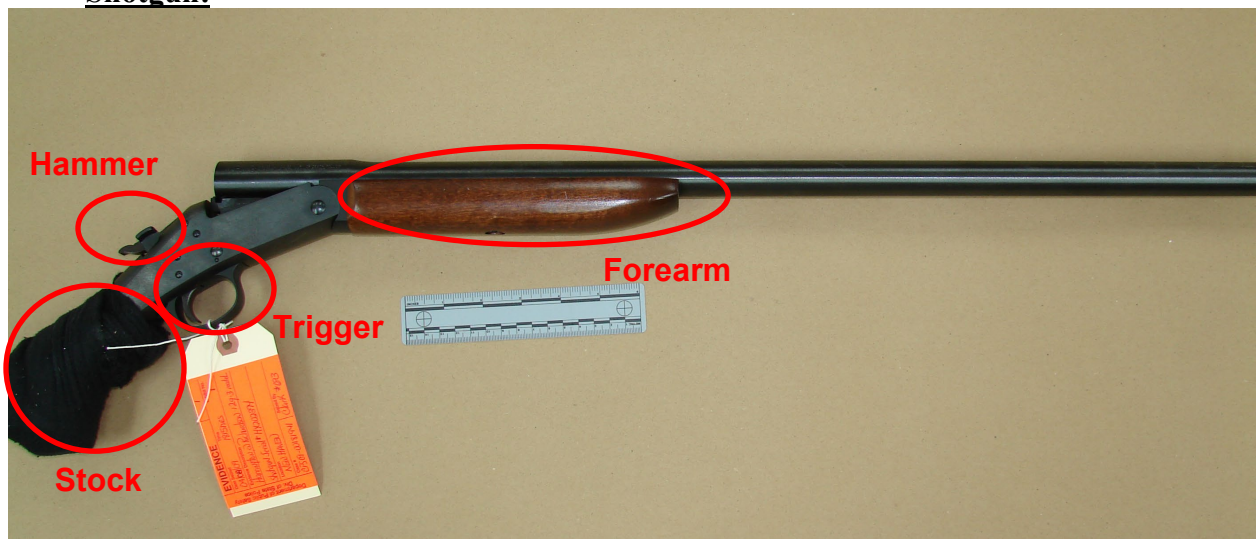
E. 4. g.

Semi-automatic Rifle

Shotgun (Pump Action):

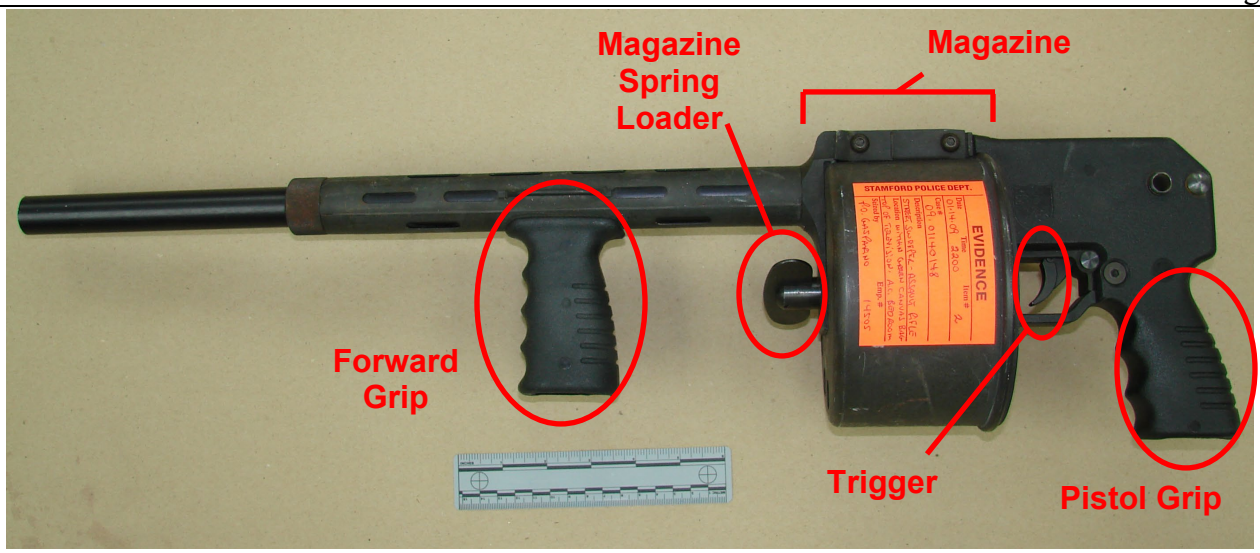


Shotgun:



E. 4. g.

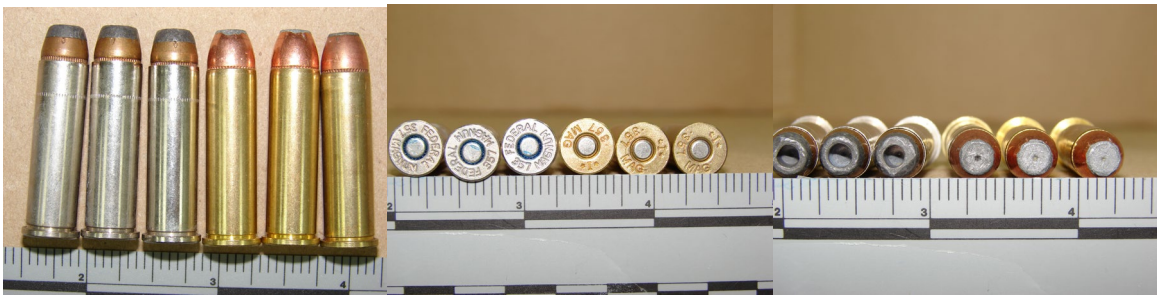
Shotgun:



h. **Cartridges:**

Only cartridges with the following calibers (.22 cal, .25 cal. And .32 cal) are to be swabbed when there is a Latent Print request for processing. If no Latent Print request is present, all calibers of cartridges can be swabbed.

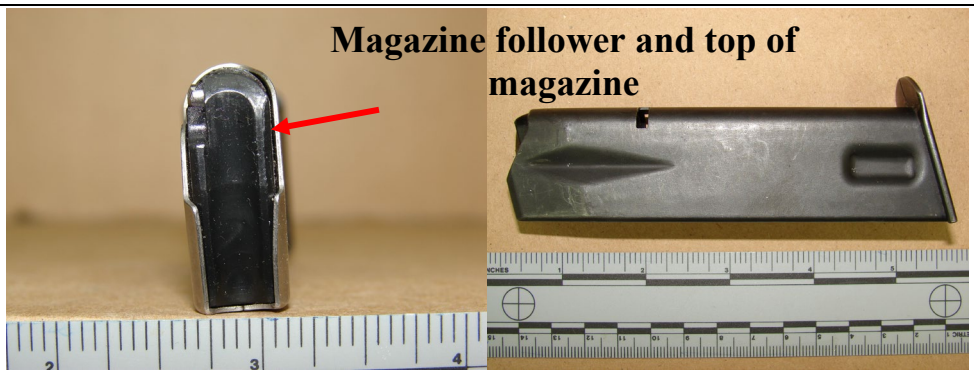
a. Cartridges are to be photographed from all sides noting the caliber and manufacturer headstamp. Any defects should also be noted.



b. All sides of the cartridges are swabbed as one (1) unit using two (2) sterile swabs.

i. **Magazines:**

If a latent print request is noted on the magazine submitted, only swab the magazine follower and top of magazine. If no latent print request is present, the entire magazine is swabbed.



j. Sample collection for DNA:

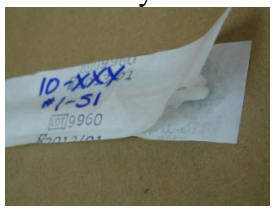
aa. Label one (1) of the sterile swab packages that will be used for sample collection.

bb. Open two (2) sterile swab packages

cc. Moisten the swabs with sterile distilled water.

dd. Swab the area slowly turning the swabs to ensure that all sides come in contact with the area.

ee. Place the swabs back into the 'labeled' package holder with the moistened tip facing outward so that it can air-dry.



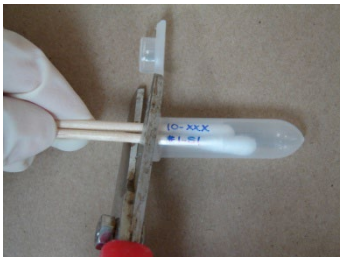
ff. Place this package into a secure locker or under a hood that will not have any other evidence present.

E. 4. j. gg. Allow swab to air-dry for several hours.

hh. After drying, label an autoclaved Eppendorf® tube with the Lab Id Number and

sample number.

ii. Place the swab tips into the base of the Eppendorf® tube and snap off the remainder of the stick, leaving approximately 1" of the stick.



jj. Place the tubes containing the samples collected in this case into a labeled Ziploc® bag, heat seal, initial the heat seal and place in freezer storage.

kk. Create sample in the LIMS system as sub-items of evidence.

ll. Transfer the samples into freezer storage.

mm. Replace the original evidence back into the package, seal the package with evidence tape and initial the seals.

nn. Forward the evidence to the appropriate Section for further testing.

E. 5. These are examples of statements that may be used in Forensic Biology Reports.
[ ] = appropriate description

a. Supplement Report
- For a complete list of evidence examined and results obtained, please refer to the Forensic Biology Report dated [ ].

b. General Description
- Submission/item # [ ] consisted of one (1)/a Sexual Assault Evidence Collection Kit containing the above-/previously listed items.
- Submission/item # [ ] consisted of one (1)/a [ ].

c. Blood

aa. Kastle-Meyer/o-Tolidine

Positive
- A reddish-brown stain(s) located on [ ] gave a positive result(s) with a screening test for the presence of blood.

Negative
- [ ] located on [ ] gave a negative result(s) with a screening test for the presence of blood.
- No blood-like stains were noted upon macroscopical/microscopical examination of [ ].

Inconclusive
- [ ] located on [ ] gave an inconclusive result with a screening test for the presence of blood.

bb. RSID-Blood / ABAcard HemaTrace

Positive
- A portion(s) of the [ ] tested gave a positive result(s) with a confirmatory test for the presence of human blood.

Negative
- A portion(s) of the [ ] tested gave a negative result(s) with a confirmatory test for the presence of human blood.

Inconclusive
- A portion(s) of the [ ] tested gave an inconclusive result(s) with a confirmatory test for the presence of human blood.

dd. Takayama

Positive
- A portion(s) of the [ ] tested gave a positive result(s) with a confirmatory test for the presence of blood.

Negative
- A portion(s) of the [ ] tested gave a negative result(s) with a confirmatory test for the presence of blood.

E. 5. c. dd. Inconclusive
- A portion(s) of the [ ] tested gave an inconclusive result(s) with a confirmatory test for the presence of blood.

ee. Ouchterlony

Positive

Species

- A portion(s) of the [ ] tested gave a positive result(s) with a species test that indicates the presence of [ ] blood.

Human

- A portion(s) of the [ ] tested gave a positive result(s) with a species test utilizing anti-human anti-serum.

Negative

Species

- A portion(s) of the [ ] tested gave a negative result(s) with a species test for the presence of [ ] blood.

Human

- A portion(s) of the [ ] tested gave a negative result(s) with a species test utilizing anti-human anti-serum.

Inconclusive

Species

- A portion(s) of the [ ] tested gave an inconclusive result(s) with a species test for [ ] blood.

Human

- A portion(s) of the [ ] tested gave an inconclusive result(s) with a species test utilizing anti-human anti-serum.

d. Semen

aa. Spermatozoa

Positive

Kit Smears

- A microscopical examination(s) for the presence of spermatozoa was/were positive on the smear(s) examined in item(s) [ ].
- A microscopical examination(s) for the presence of spermatozoa was/were positive on item(s) [ ].

Extract smears

- A microscopical examination(s) for the presence of spermatozoa was/were positive on this/these extract(s).

Negative

Kit Smears

- A microscopical examination(s) for the presence of spermatozoa was/were negative on the smear(s) examined in item(s) [ ].
- A microscopical examination(s) for the presence of spermatozoa was/were negative on item(s) [ ].

E. 5. d. aa. Extract Smears

- A microscopical examination(s) for the presence of spermatozoa was/were negative on this/these extract(s).

bb. Acid Phosphatase

Positive

- [ ] located on [ ] gave a positive result(s) when tested for the presence of acid phosphatase, a screening test for semen. A portion of this/of each [ ] was extracted.
- [ ] (each) consisted of [#] swabs. These swabs gave positive results when tested for the presence of acid phosphatase, a screening test for semen. One (1) swab from this item/each item was extracted. **OR** A portion of one (1) swab from this item/each item was extracted.

Negative

- [ ] located on [ ] gave a negative result(s) with a screening test for the presence of semen.
- [ ] (each) consisted of [#] swabs. These swabs gave negative results with a c screening test for the presence of semen.

Inconclusive

- [ ] located on [ ] gave an inconclusive result(s) with a screening test for the presence of semen. A portion of this/of each stain(s) was extracted.
- [ ] (each) consisted of [#] swabs. These swabs gave inconclusive results with a screening test for the presence of semen. One (1) swab from this/each item was extracted. **OR** A portion of/one (1) swab from this item/each item was extracted.

cc. RSID-Semen / ABAcard p30

Positive

- This/these extract(s) gave a positive result(s) with a confirmatory test for the presence of human semen.

Negative

- This/these extract(s) gave a negative result(s) with a confirmatory test for the presence of human semen.

Inconclusive

- This/these extract(s) gave an inconclusive result(s) with a confirmatory test for the presence of human semen.

e. Amylase

aa. Positive

- A portion(s) of the [ ] tested gave a positive result(s) with a confirmatory test for the presence of amylase.

bb. Negative

- A portion(s) of the [ ] tested gave a negative result(s) with a confirmatory test for the presence of amylase.

E. 5. e. cc. Inconclusive

- A portion(s) of the [ ] tested gave an inconclusive result(s) with a confirmatory test for the presence of amylase.

f. Creatinine
   aa. Positive
      - A portion(s) of the [ ] tested gave a positive result(s) with a confirmatory test for the presence of creatinine.
   bb. Negative
      - A portion(s) of the [ ] tested gave a negative result(s) with a confirmatory test for the presence of creatinine.
   cc. Inconclusive
      - A portion(s) of the [ ] tested gave an inconclusive result(s) with a confirmatory test for the presence of creatinine.

g. Urobilinogen
   aa. Positive
      - A portion(s) of the [ ] tested gave a positive result(s) with a confirmatory test for the presence of urobilinogen.
   bb. Negative
      - A portion(s) of the [ ] tested gave a negative result(s) with a confirmatory test for the presence of urobilinogen.
   cc. Inconclusive
      - A portion(s) of the [ ] tested gave an inconclusive result(s) with a confirmatory test for the presence of urobilinogen.

h. Known Blood Sample
   - A stain was made from a portion of item #1A (known blood sample).

i. Trace Material
   aa. Positive
      - Trace material(s) was/were collected/removed from [ ].
   bb. Negative
      - No trace materials were noted upon macroscopical examination on [ ].

j. "Touch" DNA
   - A sample(s) was/were collected from [ ] of this/these [ ] for DNA analysis.

k. Tissue-like Material
   aa. Positive
      - Tissue-like material(s) was/were located upon macroscopical/microscopical examination of [ ].
   bb. Negative
      - No tissue-like materials were noted upon macroscopical/microscopical examination of [ ].

E. 5. m. Physical Match
   - Upon macroscopical examination,[ ] was found to physically fit to [ ], therefore, they were once part of the same item.

n. Consumption
- Since analysis may consume this/these sample(s), no further serological testing was conducted at this time.

o. Not Examined At This Time
- Submission(s)/item(s) # [ ] were not examined at this time.

p. Retain
- A sample(s) from submission(s)/item(s) # [ ] was/were retained at the Laboratory.

q. Forward/Transfer Samples
- A sample(s) from submission(s)/item(s) # [ ] was/were forwarded/transferred to the [ ] Unit/Section for further analysis/examination.
- Submission(s)/item(s) #[ ] was/were forwarded/transferred to the [ ] Section for further analysis/examination.

r. Database
- A sample(s) from submission(s)/item(s) # [ ] were forwarded/transferred to the DNA Unit for processing and comparison to the Connecticut and National DNA Databases. If a suspect is developed in this case, please notify the Supervisor of the DNA Unit as soon as possible.

s. Requests for known samples from victim/suspect
- Since no known biological sample was submitted from the victim/suspect, no DNA analysis was conducted at this time.
- Since no known hair samples were submitted from the victim/suspect, no hair examinations were conducted at this time.
- Since no known hair or other biological samples were submitted from the victim/suspect, no further testing was conducted at this time.
- A known biological sample is requested from the victim/suspect for comparison purposes.

t. Further Analysis
- **Further analysis upon request.

F. REFERENCES:

1. SOP-GL-1 (Quality Manual).
1. SOP-GL-2 (Safety Manual).
2. SOP-GL-4 (LIMS/Justice Trax).