



Idaho State Police Forensic Services

CRIME SCENE TRAINING MANUAL

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Revision History

Revision #	Description of Changes

1.0 Introduction

The purpose of this manual is to provide an in-house training program that will result in a competent and qualified expert Crime Scene Investigator (CSI). The CSI shall possess knowledge, skills, and training in numerous tools and techniques relevant to crime scene investigations. This manual shall serve to establish a minimum standard of competency and shall aid in maintaining quality and consistency among CSIs.

The training program is designed for the Forensic Scientist who has been trained to competency in their primary discipline(s), but who has little to no prior background or experience as a CSI, or for the Forensic Scientist for whom Crime Scene is their primary discipline. Each section of the manual consists of reading materials and practical exercises. Each section has a written test and/or a competency test. Section tests shall evaluate the ability of the CSI trainee to perform examinations and/or techniques. If the CSI trainee has successfully completed a comparable training in their primary discipline, the completion of that training will be noted in their crime scene training record and shall satisfy the training requirement.

The sections included in this manual are the minimum requirements for completion of training. Additional exercises or readings may be assigned at the discretion of the Discipline Lead, as necessary. The training may be abbreviated for CSIs with prior experience and training or for those individuals who perform limited duties at crime scenes. The background and experience of each individual will be assessed by the Discipline Lead prior to the CSI trainee beginning the training program. Training sections do not need to be completed in the order they are presented in this manual; the order of completion may vary depending on the individual and/or operational needs.

To familiarize themselves with the procedures for crime scene response, the CSI trainee shall read the Crime Scene Manual. The Crime Scene Manual should be read in its entirety prior to beginning training; however, at a minimum, the related sections of the manual shall be read prior to the completion of the training section.

During training, the CSI trainee may respond to crime scenes in a limited capacity. During these responses, the CSI trainee may only be able to observe and/or assist with non-technical aspects of the investigation (e.g., writing notes, getting supplies for CSIs, holding supplies, etc.). As the CSI trainee gains competence in training sections, they may begin to perform those tasks on scene. The CSI trainee shall be observed by a trainer and/or the Discipline Lead; feedback shall be communicated to the Discipline Lead in order to document the trainee's progress. Due to the varying nature of crime scene responses, there is no particular number of responses necessary for a CSI trainee to respond to in order to satisfy the training requirements; the nature of each response and the tasks performed at

that scene will determine the satisfaction of training requirements, as determined by the Discipline Lead.

External training is used to supplement and/or meet certain portions of the training program. Trainees should attend training classes in the areas of Crime Scene Investigation, Photography, and Bloodstain Pattern Analysis. Attendance at outside training is subject to course availability and budget constraints. Requests for training shall be approved through the chain of command.

Progress is monitored by the trainer and/or the Discipline Lead. The CSI trainee shall pass each written test with a minimum score of 80%. All tests are closed book unless otherwise noted. If a written test is assessed as "fail", the CSI trainee will be given additional training and/or exercises until competency is achieved.

Practical exercises shall be graded as "pass" or "fail" as noted. In order to receive a passing mark, the CSI trainee must demonstrate comprehension of the subject and demonstrate to the trainer and/or Discipline Lead that they are able to complete the assignment with satisfactory results. If a practical exercise is assessed as "fail", the CSI trainee will be given additional training and/or exercises until competency is achieved.

The CSI trainee shall pass a final competency test and mock court exercise. Competency tests and mock court are also "pass" or "fail". Should the CSI trainee provide incorrect results or inaccurate testimony during these exercises, additional training or testing will be necessary and mock courts may be repeated until competency is achieved. Training is considered complete upon formal approval by the Discipline Lead and authorization by the Quality Manager.

The length of the training program may fluctuate between CSI trainees, based on the availability of crime scene responses and by the type of examinations conducted at those scenes. The training program may also be affected by the training and case work needs of the trainee's primary discipline. The pace of training is dictated by agency resources and needs, as well as the CSI trainee's progress and demonstrated proficiency.

2.0 Roles and Responsibilities

2.1 Supervisor

The Supervisor shall maintain an employee training file with all associated authorizations and shall assist the CSI trainee with planning their goals related to crime scene training.

2.2 Discipline Lead

The Discipline Lead shall assess any prior applicable training, review and/or modify the current training plan to reflect the CSI's prior training, assign the appropriate modules, and organize the training. The Discipline Lead should regularly monitor the trainee's progress and review their training record for completeness and accuracy, procure final competency tests, and schedule mock court. The Discipline Lead shall provide input regarding mock court performance to the Supervisor and/or other members of management. At the completion of the section of Crime Scene Investigation training, the Discipline Lead shall review all documentation regarding the training to determine if the trainee performed all required training and is competent to respond to crime scenes and perform related tasks. If the trainee is competent to respond, the Discipline Lead shall forward all required documentation to the Quality Manager. The Discipline Lead may designate a Trainer.

2.3 Trainer

The trainer will frequently be a more experienced CSI but may also be the Discipline Lead. Different trainers may oversee different portions of the training program. The trainer shall provide a copy of the training plan to the trainee with an estimated timeline for completion. The trainer is responsible for coordination of practical exercises, demonstrating techniques, reviewing assignments, providing feedback, and administration of section tests. The trainer should monitor comprehension and competency in theoretical knowledge and basic practical skills. The trainer shall communicate progress, delays, or the need for supplemental activities to the Discipline Lead and/or Supervisor. Deficiencies should be openly discussed among the trainee, trainer, Discipline Lead, and/or Supervisor to rectify them.

2.4 Trainee

The CSI trainee shall maintain a record of training. This record shall include, but is not limited to daily training received, observed events, activities performed by the trainee, court testimony observed or performed, crime scenes observed or performed, completed assignments, and checklists. All steps in training shall be documented as they are completed.

The trainee should provide a monthly report to the Discipline Lead and/or trainer to include activities accomplished during the month (e.g., readings/exercises completed, crime scene responses, classes attended, etc.). The trainee should keep the Discipline Lead and/or their trainer informed of any problems or questions that may arise.

As training sections are completed, the trainee will advance to supervised work. Supervised work will not begin until approval has been granted by the Quality Manager.

The CSI trainee shall ensure that all training records for outside classes are forwarded to the Quality Manager for inclusion in their training file and shall ensure that their curriculum vitae (CV) accurately reflects successfully completed training.

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3.0 Safety

3.1 Background and Theory

- 3.1.1 Safety at the crime scene is an essential part of the job of a CSI. The Occupational Safety & Health Administration (OSHA) was created in 1970 to protect workers. It mandates that each person be knowledgeable about blood borne pathogens, chemical hygiene, universal precautions, biohazard disposal, decontamination, and vaccinations. It requires that all of the applicable information for the scene is given to the CSI so that they may maintain safety. It is also imperative that employees are able to access the Safety Data Sheets (SDS) from the laboratory in order to maintain safety around applicable chemicals.
- 3.1.2 Crime scenes present a unique challenge to safety because they are not controlled environments. CSIs may encounter natural hazards (e.g., uneven terrain, weather), man-made hazards (e.g., structural instability, chemicals, etc.), and biohazards (i.e., biological materials).
- 3.1.3 When crime scenes are on a roadway, traffic moving through the area must be considered. If a suspect is still at large, the potential risk of the suspect returning to the scene must be considered. Distraught family members and/or friends may be present and could present a variety of risks to CSIs. If news media is on scene, they may present difficulties in entering and/or exiting the scene.
- 3.1.4 While officers and/or detectives should be present while CSIs are on scene, the CSI shall always remain aware of their surroundings and potential threats.

3.2 Objectives, Principles, and Knowledge

- 3.2.1 Understand safety hazards associated with crime scenes.
- 3.2.2 Knowledge of the use of personal protective equipment.
- 3.2.3 Knowledge of the potential explosion, fire, and contamination safety hazards associated with chemicals and powders used at crime scenes.
- 3.2.4 Proper disposal of chemicals and biohazard waste.

3.3 Health and Safety Hazards

- 3.3.1 N/A

3.4 Reading and Practical Exercises

- 3.4.1 Required Reading

Initials/Date

Criminalistics, Saferstein, Richard, Eighth Edition, Chapter 2:
The Crime Scene, pp. 49-50, Pearson Education, Inc., 2004

_____/____

3.4.2 Written test on safety.

Pass/Fail

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

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4.0 Documentation- Notes and Sketches

4.1 Background and Theory

4.1.1 Investigative notes are a staple of any crime scene examination. The notes should begin with notification of the crime, identify specific actions taken upon arrival, and provide a clear and detailed record of all observations and actions taken while in the scene.

4.1.2 The crime scene sketch serves as a graphic document to show the layout, orientation, and interrelationships of the scene and the evidence.

4.1.3 Notes and sketches are used in conjunction with photographs to corroborate and support each other.

4.2 Objectives, Principles, and Knowledge

4.2.1 Ability to demonstrate proper documentation of the observations made and actions taken during crime scene processing. Documentation should be such that the report can be composed from the notes and sketch without referencing photographs taken.

4.2.2 Understand which worksheet(s) may be utilized to streamline the note taking process and what information should be completed for each worksheet.

4.2.3 Understand the benefits and drawbacks of several types of sketches to determine which would be most appropriate to document the details of the scene.

4.2.4 Ability to demonstrate the creation of a cross-projection/exploded sketch, an elevation sketch, and a three-dimensional sketch.

4.2.5 Understand the different methods for recording locations of items (mapping) in the scene in order to determine which would be the most appropriate.

4.2.6 Ability to demonstrate the recording of locations of items (mapping) within an area by rectangular coordinates, triangulation, and/or baseline coordinates.

4.3 Health and Safety Hazards

4.3.1 Do not direct the laser measuring device's beam at persons or animals. Do not stare into the laser beam. The laser measuring device produces class 2 laser radiation and looking into the beam can lead to blindness. Never aim the beam at an object with a reflective surface as it could direct the beam back towards the operator.

4.4 Reading and Practical Exercises

4.4.1 Required Reading

Initials/Date

Practical Crime Scene Processing and Investigation, Gardner, Ross M., Second Edition, Chapter 7: Crime Scene Sketching and Mapping, pp. 183-222, and Chapter 8: Narrative Descriptions, pp. 223-228, CRC Press, 2012.

_____/____

4.4.2 Practical Exercise- Trainer led lessons on sketching and documenting item location to include:

- How to use the laser measuring device
- When/how to use a Reference Point (RP)
- How to document locations of items based on type of mapping

Trainee	Date	Trainer

4.4.3 Competency Test: Trainee shall independently document an area using each of the following:

- Cross-projection or exploded sketch
 - Elevation sketch
 - Three-dimensional sketch
 - Rectangular coordinates
 - Triangulation
 - Baseline coordinates
- Pass/Fail

Training successfully completed:

Analyst	Date
Trainer/ Crime Scene Discipline Lead	Date

5.0 Photography

5.1 Background and Theory

- 5.1.1 Crime scene photographs are intended to lead the viewer of the photographs through the scene, from an overall perspective through the details of specific items of evidence. Someone viewing the crime scene photographs should comprehend significant details and aspects of the scene. The crime scene photographs should accurately depict the scene without introducing distortion or visual bias.
- 5.1.2 Photographic composition is accomplished by organization of the space and items depicted in the photographs so that the various visual elements relate to one another properly. Composition involves controlling contrast, properly framing the subject, and maintaining simplicity in the photograph.
- 5.1.3 The shutter speed, ISO, and aperture settings are inter-related and affect the depth of field and exposure of the resulting photograph. Understanding how the settings relate to and affect one another is fundamental in creating the intended image.
- 5.1.4 The type and quality of light will significantly affect the resulting photograph. Understanding how to manipulate light will provide the photographer with the ability to create the photograph they intend.

5.2 Objectives, Principles, and Knowledge

- 5.2.1 Understand the proper procedures for capture of digital images using a Digital Single Lens Reflex (DSLR) camera.
- 5.2.2 Familiarization with common digital photography terminology to include camera parts (e.g., body, lens, shutter diaphragm, shutter release) and function, file types (JPEG, RAW), compression, resolution, depth of field, bracketing, f-stop, shutter speed, aperture, exposure, etc.
- 5.2.3 Understand the interrelationships between aperture, shutter speed, depth of field, and ISO.
- 5.2.4 Understand the properties of light and how those properties relate to the use of lighting techniques (e.g., oblique lighting, bounce lighting, etc.).
- 5.2.5 Ability to manipulate the aperture (f-stop), shutter speed, ISO, and external flash to capture a photograph as intended, to accurately depict the scene or item.
- 5.2.6 Ability to utilize camera accessory items (e.g., tripod, shutter release, etc.).

5.3 Health and Safety Hazards

- 5.3.1 N/A

5.4 Reading and Practical Exercises

- 5.4.1 Required Reading Initials/Date

Practical Crime Scene Processing and Investigation, Gardner, Ross M., Second Edition, Chapter 6: Crime Scene Photography, pp. 135-181, CRC Press, 2012.

_____/____

A Short Course in Photography- Digital, London, Barbara and Stone, Jim, Third Edition, Chapter 1, Camera, pp. 14-19, 22-23, 26-29; Chapter 2, Lens, 31-35, 43-49; Chapter 3, Light and Exposure, pp. 53-59, 66, 70-72, 85; Chapter 8, Using Light, pp. 135-143, 146-149; Chapter 10, History of Photography, pp. 181-187, 210-213; Pearson Education Inc., 2015.

_____/____

5.4.2 Practical Exercise- Trainer led lessons on photography techniques to include fill flash, long exposure, paint by light, depth of field, oblique lighting, overall/relationship/identification methodology, and impression photography (finger/palm/footprints, shoe, tire).

_____	_____	_____
Trainee	Date	Trainer

5.4.3 Competency Test (Part 1): Trainee shall independently document areas, indoors and outdoors, to illustrate the use of each of the following:

- Fill flash
- Long exposure
- Paint by light
- Depth of field

Pass/Fail

Competency Test (Part 2): Trainee shall independently photograph a location (e.g., residence, business) using overall, relationship, and identification photographs. Evidence markers should be utilized. Pass/Fail

Competency Test (Part 3): Trainee shall independently photograph a fingerprint, a palm print, a shoe impression, and a tire mark/impression using appropriate photography techniques and tools. Pass/Fail

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

6.0 LizQ Captures and Sphericals

6.1 Background and Theory

6.1.1 The LizQ imaging system utilizes traditional photographic techniques and marries them with modern software to create a three-dimensional representation of a crime scene location. By utilizing the LizQ system, a more complete and robust representation of the crime scene can be documented. With the tools available in the software, our law enforcement partners can virtually revisit the crime scene at any time. This enhanced documentation of the crime scene may assist agencies with their investigations, assist attorneys with understanding of the scene for presentation in court, and assist juries in the mission to make a finding of guilty or not guilty in trial.

6.2 Objectives, Principles, and Knowledge

6.2.1 Understand the capabilities and limitations of the LizQ camera system.

6.2.2 Understand how the LizQ system can interact with other media in order to create a “return to scene” project.

6.2.3 Understand the methodology of utilization of the LizQ system at a crime scene.

6.2.4 Understand how the LizQ system utilizes bracketing and other photographic techniques to create sphericals.

6.2.5 Proficiency in the use of the LizQ camera system for use on crime scenes and other projects.

6.3 Health and Safety Hazards

6.3.1 The LizQ camera system and the tripod are heavy. Care should be taken to lift and carry the items in such a way as to prevent movements that could cause injury.

6.3.2 When the tripod is in place in the scene, care should be taken to avoid the tripod legs, which can present a tripping hazard.

6.3.3 As with other electrical appliances, guard against electrical shock. This can be accomplished by ensuring that all connections are proper and that no loose, damaged, or frayed wires exist.

6.4 Reading and Practical Exercises

6.4.1 LizQ manual, pages 1-30 and 37

Trainee

Date

Trainer

7.0 Storage of Digital Images

7.1 Background and Theory

7.1.1 Digital images from crime scenes are captured and stored using digital devices.

7.1.2 Digital images captured using a regular DSLR camera may be for documentation of the scene or may be for capture of impression evidence. Both types of images are stored in a digital imaging system (Adams Web).

7.1.3 Adams Web maintains a log of all actions taken on every image from the time it is uploaded into the system. This log maintains the integrity of each image.

7.1.4 Digital images captured and sphericals created using the LizQ system are stored in duplicate on external drives due to their large size.

7.2 Objectives, Principles, and Knowledge

7.2.1 Understand the process to upload and document digital images in Adams Web.

7.2.2 Proficiency in navigating Adams Web.

7.3 Health and Safety Hazards

7.3.1 As with other electrical appliances, guard against electrical shock. This can be accomplished by ensuring that all connections are proper and that no loose, damaged, or frayed wires exist.

7.4 Reading and Practical Exercises

7.4.1 Read "Introduction to Foray"

Initials/Date

____/____

7.4.2 Practical Exercise- Trainer led lessons on the digital imaging system to include navigation, features, how to upload, storage settings, locations, etc.

7.4.3 Competency Test: The Trainee will acquire training images from SD cards into the digital imaging system as practice. Pass/Fail

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

8.0 Presumptive Blood Testing

8.1 Background and Theory

8.1.1 Most screening tests for blood depend on the catalytic action of the heme group. To minimize false positives, the test is frequently performed as a multi-step test.

8.1.2 In crime scenes, there may be a variety of reddish-brown stains to be considered for collection as biological evidence. By utilizing a presumptive test, the CSI can eliminate stains that are not presumptive positive for blood, thereby reducing unnecessary collection of stains from the scene.

8.2 Objectives, Principles, and Knowledge

8.2.1 Understand the way presumptive blood tests work and what kinds of materials could cause a false positive result.

8.2.2 Understand how to determine which stains can be tested, and which should be collected without testing.

8.2.3 Become competent at utilizing the chemicals of the presumptive blood test to determine if a substance is presumptive positive, indicating the presence of blood.

8.3 Health and Safety Hazards

8.3.1 Any possible blood should be treated as if it is infectious. Appropriate personal protective equipment (PPE) should be utilized.

8.3.2 Phenolphthalein: Zinc is flammable. When using lab-prepared Phenolphthalein, the unreacted portions and used filter paper are to be disposed of properly.

8.3.3 O-tolidine: designated as a potential carcinogen and should be used with caution.

8.3.4 Chemicals/Reagents shall be labeled using NFPA labels in accordance with the Health and Safety Manual.

8.4 Reading and Practical Exercises

8.4.1 Required Reading

Initials/Date

A Study of the Sensitivity and Specificity of Four Presumptive Tests for Blood. Journal of Forensic Sciences, September 1991; 36(5): 1503-1511.

_____/____

Effect of Fabric Washing on the Presumptive Identification of Bloodstains. Journal of Forensic Sciences, November 1990; 35(6): 1335-1341.

_____/____

Evaluation of Six Presumptive Tests for Blood, Their Specificity, Sensitivity, and Effect on High-Molecular Weight DNA. Journal

_____/____

Of Forensic Sciences, 2007; 52(1): 102-109.

Sourcebook in Forensic Serology, Immunology, and Biochemistry, _____/_____
Gaensslen, R. (1983) U.S. Dept. of Justice, Washington, D.C.,
p. 101-105.

A Study of the Sensitivity, Stability, and Specificity of Phenolphthalein _____/_____
As an Indicator Test for Blood, Higaki, R.S. and Philp, W.M.S., (1976)
Canadian Journal of Forensic Science, Vol 9, No. 3, p. 97-102.

Practical Crime Scene Processing and Investigation, Gardner, Ross M, _____/_____
Second Edition, Chapter 11: Applying Bloodstain Pattern analysis in the
Crime Scene, "Presumptive Tests for Bloodstains", pp. 353-355, CRC
Press, 2012.

Principles of Bloodstain Pattern Analysis, Theory, and Practice, James, _____/_____
Stuart H., Kish, Paul E., and Sutton, T. Paulette, Chapter 14: "Presumptive
Testing and Species Determination of Blood and Bloodstains", pp. 349-
356, CRC Press, 2005.

Idaho State Police Forensic Services, Quality Documents, "Field _____/_____
Services", "Presumptive blood testing"

Powerpoint presentation, "Presumptive Blood testing training" _____/_____

8.4.2 Using the Phenolphthalein test kit, test stains on a minimum of five (5)
different types of substrates. Note your results.

Substrate:

Results:

Trainee

Date

Trainer

8.4.3 Using the Phenolphthalein test kit, test stains on a minimum of three (3) different stain dilutions. Note your results.

Dilution:		Results:
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____	_____	_____
Trainee	Date	Trainer

8.4.4 Written test on presumptive blood testing. Pass/Fail

8.4.5 Competency test on presumptive blood testing. Pass/Fail

Process items with various stains to determine if any of the stains are presumptive positive, indicating the presence of blood. Include detailed notes/sketches/photographs to indicate what was observed that prompted the analyst to determine that the area(s) should be tested Write a report indicating the results of the presumptive blood test.

Training successfully completed:

_____	_____
Analyst	Date
_____	_____
Trainer/ Crime Scene Discipline Lead	Date

9.0 Alternate Light Source (ALS)

9.1 Background and Theory

- 9.1.1 Alternate light sources (ALSs) allow the crime scene investigator (CSI) to employ a variety of wavelengths of the light spectrum to identify, visualize, and document a variety of different types of physical evidence.
- 9.1.2 The spectrum of visible light is a small part of a much broader band of radiant energy. When light energy encounters an object, it can act on the object in different ways; the energy will be reflected, absorbed, transmitted, converted, or any combination of those.
- 9.1.3 Light energy can be converted from one wavelength to another, creating the condition known as luminescence. Luminescence occurs as both fluorescence, which happens as long as the object is exposed to an active energy source (e.g., the continued presence of an ALS), and phosphorescence, in which the object continues to give off light even after the removal of the ALS. It is in the conversion of light energy in which the ALS can be most widely utilized at a crime scene.
- 9.1.4 The use of barrier filters for the eyes or the camera lens allows the converted light energy from the object to be observed. Through the barrier filter, the CSI can observe and document the fluorescence.

9.2 Objectives, Principles, and Knowledge

- 9.2.1 Knowledge of luminescence, fluorescence, light wavelengths, and barrier filters as they relate to the visualization and documentation of potential evidence at the crime scene.
- 9.2.2 Knowledge of equipment procedures and maintenance as it relates to the use of an ALS at a crime scene.

9.3 Health and Safety Hazards

- 9.3.1 ALSs may be a hazard to the eyes and skin. Care should be taken to avoid direct exposure to the ALS beam. Clothing such as gloves and long-sleeved shirts should be worn when using the ALS.
- 9.3.2 Barrier filter goggles, or other barrier filters, appropriate based on the wavelength used, shall be worn/used by the ALS operator and all people within approximately 50 feet of an operating ALS unit.
- 9.3.3 Care should be taken around highly reflective surfaces as the light may be reflected and scattered off the surface being examined.
- 9.3.4 When using an ALS powered by electricity, guard against electrical shock. Ensure all connections are tightly made and that no damaged or frayed wires exist. Unplug the ALS before attempting any maintenance. Do not use it outdoors if conditions are wet.

9.4 Reading and Practical Exercises

- 9.4.1 Required Reading Initials/Date
- Rofin Polilight-Flare Plus 2 User Guide (Version 3.0) _____/_____
- Practical Crime Scene Processing and Investigation, Gardner, Ross M, _____/_____
 Second Edition, Chapter 9: Basic Skills for Scene Processing,
 "Applying Light Technology", pp. 239-253, CRC Press, 2012.
- Illuminating the benefits and limitations of forensic light sources, _____/_____
 Finnis, Jonathan, Davidson, Geraldine; Fraser, Isla; Murphy, Charlotte;
 Hargreaves; Charlotte, Stevenson, Nighean; Doole, Sharon; and Rogers,
 Carol; Science and Justice, Vol 63, p. 127-134.

9.4.2 Practical Exercise: Examine training samples/stains made from known biological and other materials using a variety of wavelengths and barrier filters. Determine which wavelength/filter combination should be utilized for the type of stain/material, visualize the stain/material using the appropriate wavelength, and compare the results with other wavelength/filter combinations.

9.4.3 Written test on ALS. Pass/Fail

9.4.4 Competency test on ALS. Pass/Fail

Use an ALS to examine items with possible stains. Write detailed notes/sketches to indicate what was observed, including what ALS unit/wavelength/filter was used. Write a report indicating the results of the examination.

Training successfully completed:

 Analyst Date

 Trainer/ Crime Scene Discipline Lead Date

10.0 Crime Lite Auto

10.1 Background and Theory

10.1.1 The Crime Lite Auto combines the functionality of a camera, video recorder, alternate light source (ALS), filters, and a touch screen controller to visualize and document potential biological and other types of evidence at crime scenes.

10.2 Objectives, Principles, and Knowledge

10.2.1 To search for and document biological evidence related in crime scene investigations using a variety of lights and filters.

10.2.2 Document the presence of potential evidence on surfaces using photography and/or videography in combination with lights and filters.

10.3 Health and Safety Hazards

10.3.1 Ultraviolet (UV) light is emitted from the Crime Lite Auto. Eye or skin irritation may result from exposure; use appropriate shielding/goggles.

10.3.2 Possibly hazardous optical radiation emitted from the Crime Lite Auto; do not stare at the LEDs as they may be harmful to the eyes.

10.3.3 The Crime Lite Auto is intended for indoor use only; it should not be used outdoors in inclement weather.

10.3.4 The Crime Lite Auto may overheat and become excessively hot. Allow the equipment to cool down before resuming its use.

10.4 Reading and Practical Exercises

10.4.1 Required Reading Initials/Date

Crime Lite Auto User Manual _____/____

“Infrared Imaging of the Crime Scene: Possibilities and Pitfalls”,
Edelman, Gerda J; Hoveling, Richelle; Roos, Martin; van Leeuwen,
Ton G; and Aalders, Maurice; *Journal of Forensic Science*, September
2013, Vol. 58, No. 5, pp. 1156-1162. _____/____

“Forensic Light Sources for Detection of Biological Evidence in Crime
Scene Investigation: A Review; Lee, Wee-Chuen and Khoo, Bee-Ee;
Malaysian Journal of Forensic Sciences, 2010, Vol. 1, pp. 17-27. _____/____

10.4.2 Practical Exercise: Examine training samples/stains made from known biological and other materials using a variety of wavelengths and barrier filters. Determine which wavelength/filter combination should be utilized for the type of stain/material, visualize the stain/material using the appropriate wavelength, and compare the results with other wavelength/filter combinations.

10.4.3 Written test on Crime Lite Auto.

Pass/Fail

10.4.4 Competency test on Crime Lite Auto.

Pass/Fail

Use the Crime Lite Auto to examine items with possible stains. Capture an image of the stain on the item of evidence.

10.4.5

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

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11.0 Friction Ridge Exemplars

11.1 Background and Theory

11.1.1 Recording inked finger, palm, and footprints is necessary for latent print examinations. These impressions can be made in the field using different techniques, including traditional ink and powder/ adhesive lift methods. Care and determination in recording the prints should always be exercised in order to obtain the best quality recordings for comparison.

11.2 Objectives, Principles, and Knowledge

11.2.1 Understand the various methods for recording known friction ridges for criminal history or personal identification including knowledge of chemical (inkless) systems, printer's ink, and the black powder / adhesive (Handiprint®) method.

11.2.2 Understand the quality of friction ridge detail produced by each method.

11.2.3 Understand the benefits associated with obtaining victim/elimination prints and complete friction ridge exemplars (i.e., major case prints).

11.2.4 Understand the proper method of completing finger and palm print card information, sequence for recording fingers, and method of printing plain impressions.

11.2.5 Demonstrate the ability to properly use ink and brayer to record finger, palm, and footprints.

11.2.6 Demonstrate the ability to properly record complete friction ridge exemplars (i.e., major case prints).

11.3 Health and Safety Hazards

11.3.1 Safety concerns when using commercial fingerprint powders are minimal.

11.3.2 When fingerprint powders are to be used for an extended period of time, a dust mask or half face respirator with dust filters should be worn to minimize the inhalation of the powder particles.

11.4 Reading and Practical Exercises

11.4.1 Required Reading

Initials/Date

Video, YouTube, "How to Roll Ink Fingerprints", How to Fingerprint
<https://www.youtube.com/watch?v=Q5jib9Zu-PI>

_____/____

Scott's Fingerprint Mechanics, Robert D. Olsen Sr., Chapter 2,
"Taking Finger, Palm, and Footprints"

_____/____

Finger Prints, Palm and Soles, Harrold Cummins, Charles Midlo,
Chapter 3, "Methods of Printing", pages 45-55.

_____/____

The Fingerprint Sourcebook, Brent T. Cutro, Sr., Chapter 4,

_____/____

“Recording Living and Postmortem Friction Ridge Exemplars”

- 11.4.2 Practical Exercise – Rolling inked prints- Instruction by trainer followed by hands-on exercise on at least three people. Exemplars will be evaluated by and discussed with trainer. Pass/Fail
- 11.4.3 Practical Exercise- Black Powder Adhesive Lift method- instruction by trainer followed by hands-on exercise on at least three people. Exemplars will be evaluated by and discussed with the trainer. Pass/Fail
- 11.4.4 Practical Exercise- Taking Complete Friction Ridge exemplars (i.e., major case prints). Instruction by trainer followed by hands-on exercise on at least three people. Exemplars will be evaluated by and discussed with the trainer. Pass/Fail
- 11.4.5 Written test on collecting friction ridge exemplars. Pass/Fail

Training successfully completed:

Analyst Date

Trainer/ Crime Scene Discipline Lead Date

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12.0 Powder Processing to Develop Latent Prints

12.1 Background and Theory

12.1.1 The development of latent prints using powder involves the application of fine particles that physically adhere to the aqueous or oily components in latent print residue. Powder is one of the most common methods of latent print development utilized on non-porous and some semi-porous surfaces. It is also one of the oldest dating back to 1891. At that time, available substances including charcoal, lead powder, soot, and cigar ashes, were used for latent print development.

Most commercial powders use two essential elements to provide adhesion to latent print residue: pigment and binder. The pigment in the powder provides effective visualization, giving contrast against the background surface. The binder provides for maximum and preferential adhesion to latent print residue. There are different kinds of powders including black powder, bi-chromatic powder, and magnetic powder. No powder is universally applicable to all types of evidence.

There are several different types and sizes of brushes that can be used when applying fingerprint powders. Types include fiberglass, animal hair, and magnetic wands. Certain types of brushes are used in conjunction with certain types of powders.

12.2 Objectives, Principles, and Knowledge

12.2.1 Understand the basic types of powders and brushes.

12.2.2 Knowledge of surfaces and environmental factors determining brush type and powder type.

12.2.3 Understand the proper procedures for using different types of fiberglass and magnetic brushes.

12.2.4 Knowledge of lifting tape and lifting procedures.

12.2.5 Understanding of elements that should be included on the latent lift card.

12.3 Health and Safety Hazards

12.3.1 When fingerprint powders are to be used for an extended period of time, a dust mask should be worn to minimize the inhalation of the powder particles.

12.3.2 When fingerprint powders are used, the user should self-monitor for skin and respiratory reactions (if any) to the fingerprint powders.

12.4 Reading and Practical Exercises

12.4.1 Required Reading

Initials/Date

Video, YouTube, "Developing Latent Fingerprints with Black Powder", _____/_____
CSInetwork
<https://www.youtube.com/watch?v=tqFzVfPRd5s>

The Fingerprint Sourcebook, Brian Yamashita and Mike French, et.al. _____/_____
Chapter 7, Sections 7.1 and 7.3; Laura Hutching, Chapter 8,
Section 8.6; Alice V. Maceo, Chapter 10, Sections 10.1.4,
and 10.2.1-10.2.4

Practical Crime Scene Processing and Investigation, Gardner, Ross M, _____/_____
Second Edition, Chapter 2: Understanding the Nature of Physical
Evidence, pp. 28-30, and Chapter 9: Basic Skills for Scene Processing,
"Recovering Fingerprints", pp. 254-272, CRC Press, 2012.

12.4.2 Practical Exercise- Trainer led orientation on powder processing to include standard, magnetic, and bi-chromatic powders.

Trainee Date Trainer

12.4.3 Practical Exercise- Trainer led orientation on lifting techniques to include various tapes (e.g., clear, frosted, and 3-M) and lifts (e.g., gel).

Trainee Date Trainer

12.4.4 Practical Exercise- hands-on powder and lifting exercises by the trainee utilizing training samples. The trainee will be able to explain to the trainer the reasoning behind powder and tape choices.

Trainee Date Trainer

12.4.5 Written test on powder processing. Pass/Fail

12.4.6 Competency test on powder processing. Pass/Fail

Use appropriate powder and brush to develop latent prints on various item types. Use appropriate lifting medium and fill out latent lift card completely. Take notes using the Impression Evidence Notes page. Write a report indicating the results of the examination.

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

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Internet Copy

13.0 Casting and Lifting Shoe and Tire Impressions

13.1 Background and Theory

13.1.1 Tire and shoe impression evidence may be present as two-dimensional or three-dimensional impressions at a crime scene.

13.1.2 Tire and shoe impressions may offer class characteristics that can lead to recognizing the type, brand, and even model of the tire or shoe that left the mark.

13.1.3 Tire and shoe impressions may offer individual characteristics that can lead to the identification or exclusion of an impression left at the scene.

13.2 Objectives, Principles, and Knowledge

13.2.1 Understand the different types of lifters and casting compounds.

13.2.2 Knowledge of surfaces and environmental factors determining lift type.

13.2.3 Understand the proper procedures for using different types of lifting media casting material.

13.2.4 Knowledge of lifters and lifting procedures.

13.2.5 Understanding of identifying elements that should be included on the lift or cast.

13.2.6 Understand how to properly document the location and orientation of an impression at a crime scene.

13.2.7 Knowledge as to how to package a cast to preserve it against breakage.

13.3 Health and Safety Hazards

13.3.1 Dry casting material may be an inhalation hazard; a dust mask should be used when using the dry material in an enclosed environment.

13.4 Reading and Practical Exercises

13.4.1 Required Reading

Initials/Date

Video, YouTube, "How to Cast Footwear Impression Evidence at a Crime Scene", National Forensic Academy

https://www.youtube.com/watch?v=_WYU2f0anjU

_____/____

Video, YouTube, "Casting Footwear Impressions", CSInetwork

<https://www.youtube.com/watch?v=mquyNZaNbPo>

_____/____

Video, YouTube "Casting Shoe Impression Evidence in Snow using Snow Print Plaster", James Wolfe

<https://www.youtube.com/watch?v=5OeqF2kIF1g>

_____/____

Video, YouTube, "How to use a Gelatin Lifter for Evidence

_____/____

Collection”, National Forensic Academy
 https://www.youtube.com/watch?v=aOz7Bqq4g4w

Practical Crime Scene Processing and Investigation, Gardner, Ross M, _____/_____
 Second Edition, Chapter 2: Understanding the Nature of Physical Evidence, “Impression Evidence”, pp. 51-54, and Chapter 9: Basic Skills For Scene Processing, “Casting Impression Evidence”, pp.278-297, CRC Press, 2012.

13.4.2 Practical Exercise- Photograph and cast a shoe/tire impression in soil.

_____	_____	_____
Trainee	Date	Trainer

13.4.3 Practical Exercise- Photograph and lift a dust impression from a solid surface using a gel lifter.

_____	_____	_____
Trainee	Date	Trainer

13.4.4 Practical Exercise- Photograph and cast a shoe/tire impression in snow. While this is important to practice, failing to complete this exercise in a certain time frame will not keep the Trainee from becoming signed off. Due to the seasonality of this exercise, it may not be possible to complete it for an extended period of time. This exercise can be completed as available.

_____	_____	_____
Trainee	Date	Trainer

13.4.5 Competency test on Shoe/Tire impressions. Pass/Fail
 Correctly document and preserve a shoe/tire impression in a mock crime scene.

Training successfully completed:

_____	_____
Analyst	Date

Trainer/ Crime Scene Discipline Lead	Date

14.0 Collection and Preservation of Evidence

14.1 Background and Theory

14.1.1 Evidence can be defined as anything that tends to prove or disprove a fact in contention. Physical evidence takes the form of specific items found at the scene that are often collected for subsequent analysis and presentations.

14.1.2 Physical evidence has a great power and can define what happened at a crime scene. Physical evidence can provide an objective foundation for any theory of the crime and can confirm or refute testimonial evidence. In order to collect physical evidence, the Crime Scene Investigator (CSI) must first recognize it. Before a CSI can expect to process a scene for evidence, they must have a working knowledge of the nature of physical evidence, what the forensic laboratory can do with it, and how best to collect it. It is part of the job of the CSI to take an interest in all aspects of forensics and to try to remain current.

14.1.3 Edmund Locard, a French criminologist, is considered by many to be the father of the modern crime laboratory. Locard's principle of exchange is stated simply: every contact leaves its trace. Locard believed that whenever two objects come in contact with one another, material from one would be transferred to the other. This principle is the underlying theory behind collection and examination of evidence.

14.1.4 Physical evidence must be handled and processed in a way that prevents any change from taking place between the time it is removed from the crime scene and the time it is received by the crime laboratory. Changes can arise through contamination, breakage, evaporation, accidental scratching or bending, or loss through improper or careless packaging.

14.1.5 The chain of custody is a record of the continuity of possession from the time the item is collected at the scene until it is submitted in court. Failure to substantiate the evidence's chain of custody may lead to significant questions regarding the authenticity and integrity of the evidence and the examinations rendered upon it.

14.2 Objectives, Principles, and Knowledge

14.2.1 Knowledge of, and the ability to demonstrate, proper procedures for collection and packaging of all types of evidence.

14.2.2 Knowledge of, and the ability to demonstrate, proper procedures for maintaining the chain of custody.

14.3 Health and Safety Hazards

14.3.1 Biological materials, such as blood, semen, or other bodily fluids, may be present in the crime scene or on items of evidence. All biological materials should be treated as if they are infectious and appropriate personal protective equipment (PPE) should be utilized.

14.3.2 Sharp objects may be present in the crime scene and may be encountered while searching for evidence. Care should be taken to avoid cuts, punctures, or other injury from sharp objects.

14.3.3 Firearms may be present in the crime scene and shall be treated as if they are loaded and ready to fire. The firearm shall be pointed in a safe direction, away from any person. When handling a firearm, care must be taken to be aware of surroundings, in case of an accidental discharge. Care shall also be taken to avoid the handler putting their finger on the trigger.

14.4 Reading and Practical Exercises

14.4.1 Required Reading

Initials/Date

Practical Crime Scene Processing and Investigation, Gardner, Ross M., Second Edition, Chapter 2: Understanding the Nature of Physical Evidence, pp. 25-60, CRC Press, 2012.

_____/____

14.4.2 Complete the "How to Package Evidence" written exercise.

Pass/Fail

14.4.3 Attend "Collection and Preservation of Evidence" class.

*May have been completed as a part of Core training.

Trainee Date Trainer

14.4.4 Competency Test: Package five items of provided mock evidence correctly.

Pass/Fail

Training successfully completed:

Analyst Date

Trainer/ Crime Scene Discipline Lead Date

15.0 Report Writing and Review

15.1 Background and Theory

15.1.1 In order to accurately document the condition of the scene, the narrative should be detailed, with all pertinent facts and conditions documented; accurate, with few inferences or subjective evaluations; and understandable, i.e., logical and organized.

15.1.2 The crime scene report should be a combination of the facts, observations, actions, and efforts taken, combined into a functional organized document.

15.1.3 A report should not include every detail contained in the notes. It should include the salient details so that the reader can understand the scene and the actions taken there. Organizing the report into sections is a way to organize the report so it can be easily comprehended.

15.1.4 Entry of crime scene processing details into the ILIMS system is a way to document the work completed and a way to route the report to all responders to verify the report content. It also contains report wording samples for consistency between reports.

15.2 Objectives, Principles, and Knowledge

15.2.1 Ability to navigate and query ILIMS for field services cases.

15.2.2 Ability to make entries into ILIMS to accurately reflect the work done on the crime scene.

15.2.3 Knowledge of, and the ability to demonstrate, proper procedures for reporting results of crime scene investigations in an accurate, concise, and clear manner.

15.2.4 Understand release of information policies, i.e., with whom, when, and how results may be given to customers.

15.3 Health and Safety Hazards

15.3.1 N/A

15.4 Reading and Practical Exercises

15.4.1 Required Reading

Initials/Date

Practical Crime Scene Processing and Investigation, Gardner, Ross M, ____/____
Second Edition, Chapter 8: Narrative Descriptions,
"Crime Scene Reports", pp. 228-237, CRC Press, 2012.

15.4.2 Practical Exercise – Trainee review of three (3) approved crime scene reports and associated notes.

Lab Number:

Reviewed by:

15.4.3 Practical Exercise- Trainer led session on entry of crime scene information into matrix of ILIMS.

_____	_____	_____
Trainee	Date	Trainer

15.4.4 Competency Test: Write a mock report for a crime scene response. Have another responder from that scene review the report for content and to provide feedback. Have the Discipline Lead review the report for content and to provide feedback. Complete the mock report process for three (3) crime scene responses.

Pass/Fail

Lab Number:

Reviewed by:

Training successfully completed:

Analyst Date

Trainer/ Crime Scene Discipline Lead Date

16.0 Testimony

16.1 Background and Theory

16.1.1 Part of the Crime Scene Investigator's job is to ensure that the work they do on-scene will meet the rigors demanded of the court system. The Crime Scene Investigator must be able to explain and defend what they did on scene and why they did it.

16.2 Objectives, Principles, and Knowledge

16.2.1 Through observation of actual testimony, discussion with the trainer, and participation in technical sessions, the trainee will gain familiarity with presenting testimony in court and the role of the expert witness.

16.2.2 Knowledge of factors regarding the admissibility of evidence, relevant court cases, and rules of evidence.

16.3 Health and Safety Hazards

16.3.1 N/A

16.4 Reading and Practical Exercises

16.4.1 Required Reading

Initials/Date

Federal Rules of Evidence 701, 702, and 703, Cornell Law Institute website, <https://www.law.cornell.edu/rules/fre>

_____/____

Daubert v Merrell Dow Pharmaceuticals, Supreme Court website, <https://supreme.justia.com/cases/federal/us/509/579/>

_____/____

Frye Standard, Cornell Law Institute website, https://www.law.cornell.edu/wex/frye_standard

_____/____

16.4.2 Create a list of questions that you would anticipate being asked when testifying. Include the questions that you are most concerned about being asked, or ones you have the greatest difficulty determining how to answer.

Trainee

Date

Trainer

16.4.3 Competency Test:

Pass/Fail

Attend a technical review session (e.g., mock court) in which questions that may be posed in court will be discussed.

Mock court completed in another discipline?

Discipline:

Date of mock court:

Testimony given in another discipline?

Discipline:

Date of Testimony:

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

17.0 Vicarious Trauma

17.1 Background and Theory

17.1.1 CSIs are exposed to the aftermath of violent crime and its victims. Research has shown that individuals exposed to disturbing situations may present symptoms of post-traumatic stress disorder (PTSD) and may rely on unhealthy coping mechanisms. This phenomenon is known as vicarious trauma because the person affected was exposed to the trauma through the course of their work and did not experience it themselves.

17.1.2 Vicarious trauma is an inevitable occupational challenge to CSIs. Vicarious trauma may be present after a single exposure to a traumatic incident. It may also have a cumulative effect on the CSI after responding to multiple crime scenes.

17.1.3 Those experiencing Vicarious Trauma have reported trouble sleeping, nightmares, irritability, outbursts of anger, difficulty concentrating, a constant feeling of alertness, and being easily startled. Some have reported physical aches and pains with no apparent cause and feelings of detachment, mistrust, or betrayal. There are numerous symptoms, some of which may seem completely unrelated to the trauma itself.

17.1.4 There are a number of ways to treat and deal with the symptoms of Vicarious Trauma. Idaho State Police offers the Employee Assistance Program (EAP) and peer support services. Other treatments may be based on what works well for the individual, including exercise, journaling, meditation, and massage. Treatment should focus on productive ways to work through stress and trauma rather than avoidance/dissociated methods (e.g., alcohol abuse, drug use, anger, etc.).

17.2 Objectives, Principles, and Knowledge

17.2.1 Understand the ways in which CSIs may experience Vicarious Trauma.

17.2.2 Knowledge of the symptoms of Vicarious Trauma to recognize them in oneself and in other CSIs.

17.2.3 Knowledge resources available for the treatment of Vicarious Trauma.

17.3 Health and Safety Hazards

17.3.1 Vicarious Trauma has the same psychological classification as Post Traumatic Stress Disorder (PTSD). People suffering from Vicarious Trauma/PTSD may experience symptoms including, but not limited to fatigue, muscle tension, muscle pain, joint pain, headaches, back pain, anxiety, depression, anger, and difficulty sleeping.

17.4 Reading and Practical Exercises

17.4.1 Required Reading

Initials/Date

Factors Influencing Successful Coping among Crime Scene Investigation (CSI) Personnel: Recruiting for Resilience – A Mixed Methods Study. Craven, H.P, M. Hallmark, F. Holland, F.A. Maratos, pp. 549-568, Journal of Police and Criminal Psychology, June 13, 2022.

_____/____

Life Kit for Death Investigators, Pope, Katharine C., Forensics Found

_____/____

American Society of Crime Laboratory Directors (ASCLD) documents, “Trauma and Stress in the Field of Forensic Science”, Feb. 19, 2019 and “Management Detection and Mitigation of Stress, Vicarious Trauma and Burnout in Forensic Practitioners”,

_____/____

Forensic Workforce Resiliency: Vicarious Trauma & Workplace Stress Webinar Series, Forensic Technology Center of Excellence, <https://forensiccoe.org/vicarious-trauma-workplace-stress-series/>

_____/____

The Vicarious Trauma Toolkit, Office for Victims of Crime (OVC) <https://ovc.ojp.gov/program/vtt/introduction>; Compendium of Resources, <https://ovc.ojp.gov/program/vtt/compendium-resources>

_____/____

17.4.2 Locate and review “Vicarious Trauma Resources” folder.
I: Crime Scene/Vicarious Trauma resources

_____/____

17.4.3 Create a ComPsych login to access EAP resources

_____/____

<https://www.guidanceresources.com/groWeb/login/login.xhtml>

Employees who decline to create a ComPsych login shall sign a Declination Form indicating they understand the resources provided therein and do not want to participate.

17.4.4 Written test on vicarious trauma.

Pass/Fail

Training successfully completed:

Analyst

Date

Trainer/ Crime Scene Discipline Lead

Date

Crime Scene Training Manual
Vicarious Trauma

Revision 1
Issue Date: 10/30/2023
Issuing Authority: Quality Manager