Latent Print Section

Latent Print Processor Program of Instruction (POI)

Comparative & Analytical Division
1. Latent Print Processor Program of Instruction

1.1. Scope

1.1.1. This document defines the standards for the training program for Latent Print Processor, assigned to the Latent Print Section of the Houston Forensic Science Center (HFSC).

1.1.2. Upon successful completion of this training program, the Latent Print Processor will be technically proficient in the examination and processing of physical evidence for the detection of friction ridge impressions. In addition, they will be proficient at documenting their results, photographing or lifting potential latent impressions, and writing reports of their findings. The Latent Print Processor will also be able to testify as an expert witness in a court of law, as required, to their findings and procedures used.

1.1.3. The full Program of Instruction (POI) for a Latent Print Processor is 1560 hrs. The total hours may be more or less than written and is dependent on the ability, skills, incentive of the trainee, and those situations which cannot be controlled, such as leave, sickness, or work load.

1.1.4. When the training program is modified for a trainee, the Section Manager, Technical Lead, or designee must approve the modification.

1.1.5. The training program is maintained by the Section Manager, Technical Lead, or designee and may not be altered without his or her permission. Any new training handouts must be approved before being used.

1.2. Responsibilities

1.2.1. Trainee Responsibilities

1.2.1.1. Trainees are examiners and/or trainees employed at HFSC after meeting the requirements of education, experience, and skills and who have passed the required background check and drug screen.

1.2.1.2. The trainee will be assigned to an authorized Latent Print Processor who will act as their primary trainer. Authorized Latent Print Processors and/or Examiners may also provide training in various areas if needed.

1.2.1.3. The trainee must satisfactorily complete all practicals which are graded as satisfactory or unsatisfactory.

1.2.1.4. The trainee will provide the primary trainer with weekly Training Logs.

1.2.1.5. During the training, all cases processed and examinations performed by the trainee will be reviewed by a qualified Latent Print Processor.

1.2.1.6. The trainee should continue reading available books and articles within the Latent Print Section library.

1.2.1.7. The trainee should accompany processors and/or examiners to court to gain exposure to expert testimony on latent prints.

1.2.1.8. Any latent print training classes available during the training phase may be attended by the trainee.

1.2.1.9. The trainee will keep a record of all their experience obtained during this training program. This should include time spent working, classes attended, classes instructed, court testimony observed, and special projects completed during the training phase. This information will be a valuable aid for future court testimony.
1.2.2. Primary Trainer Responsibilities

1.2.2.1. The primary trainer will provide Monthly Training Reports (MTR) to the Section Manager and Technical Lead. These reports are due within ten working days of the last day of each month.

1.2.2.2. MTR’s will be submitted in the form of a memorandum and will include the following information:

- The trainee’s name and POI title.
- The courses covered during the month and if the course was completed successfully.
- The courses scheduled for the next month.
- The trainee’s progress through the POI and scheduled completion date (i.e. ahead or behind schedule, account for adjustments).
- Significant trainee accomplishments during the month.
- Other remarks the primary trainer deems appropriate.

1.2.3. When a trainee fails a written examination or practical exercise, the primary trainer will provide a memorandum to the Section Manager. The memorandum will include the following information:

- The trainee's name and POI title.
- The course failed and the score received. In the case of practical examinations, give the reason for the failure.
- State the remedial actions implemented and the date for the re-examination.

1.2.4. After each test or practical, the primary trainer will meet with the trainee to discuss the trainee’s performance.

1.2.5. In the event the trainee fails to complete a chapter satisfactorily, the chapter will be reviewed with the trainee and the chapter will be repeated. If the trainee does not perform to an acceptable level on the retraining and retesting, a memorandum will be issued to the Trainee’s supervisor and Section Manager or designee listing the deficiencies and remediation steps taken. The supervisor and Section Manager or designee will determine the course of action based on the primary trainer’s recommendations.

1.3. Overview of Training Program

1.3.1. This course listing does not preclude the instructor from adding other pertinent topics as applicable and/or related to the science of fingerprints, forensic science, and the criminal justice system. The Section Manager must approve additional courses or topics prior to instruction or incorporation into the program.

1.3.2. Blocks of instruction may be segmented as necessary for optimal trainee understanding of the subjects and concepts presented. All courses will be supplemented by required readings, group discussion, independent and directed study, practical exercises, or research (or any combination thereof).
<table>
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<th>Chapter</th>
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<th>Training Hours</th>
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<tr>
<td>12</td>
<td>Court Testimony, Ethics, and Human Factors</td>
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<td><strong><strong><strong><strong><strong>/</strong></strong></strong></strong></strong></td>
</tr>
</tbody>
</table>
1.4. Chapter 1: Introduction to Forensic Science

1.4.1. Training Objectives:

1.4.1.1. Familiarization with HFSC, the Quality Division, and the Latent Print Section.
1.4.1.2. Introduction to the HFSC Quality Manual as well as section specific Standard Operating Procedures.
1.4.1.3. Understanding of quality assurance/quality control guidelines at HFSC.
1.4.1.4. Understanding of ISO 17025:2017 and accreditation as it is applied to HFSC and the Latent Print Section.
1.4.1.5. Understanding of the way evidence flows through the laboratory.
1.4.1.6. Basic understanding of the way other disciplines at HFSC analyze evidence.
1.4.1.7. Understanding of best evidence handling practices to ensure the integrity of the evidence for all disciplines.
1.4.1.8. Understanding of how Multiple Disciplinary Requests (MDRs) are handled at HFSC.
1.4.1.9. Working knowledge of latent print development techniques that may interfere with laboratory analysis by other forensic disciplines.

1.4.2. Required Readings: Trainee/Completion Date

1.4.2.1. HFSC administrative policies and procedures ________/__________
1.4.2.2. Quality Manual, Houston Forensic Science Center ________/__________
1.4.2.3. Security Manual, Houston Forensic Science Center ________/__________
1.4.2.4. Standard Operating Policies, Latent Print Section ________/__________
1.4.2.5. ISO 17025:2017 and ANAB supplemental documents ________/__________
1.4.2.6. Fingerprint Sourcebook, NIJ, Chapter 12 ________/__________
1.4.2.7. NIST Expert Working Group on Human factors, Latent Print Examination and Human Factors, NIJ, 2012, Chapter 5 ________/__________
1.4.2.8. Forensic Comparative Science, Vanderkolk, Chapters 1, 2, 7, 8, 9 ________/__________
1.4.2.9. Forensic Science: An Introduction to Scientific & Investigative Techniques, Chap. 13 ________/__________
1.4.2.10. Criminalistics, 12th edition, Saferstein, Chapters 1-4 ________/__________
1.4.2.11. NAS Report Strengthening Forensic Science, 2009 Report _____/___________

1.4.2.12. P-CAST Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods, 2016 Report _____/___________

1.4.3. Training Practicals: None

1.4.4. Training Standards:

1.4.4.1. Self-study for required reading _____/___________

1.4.4.2. The trainee must pass a written test on required reading _____/___________

1.4.4.3. Tour of other HFSC forensic disciplines _____/___________

1.4.4.4. Attend at least one MDR meeting _____/___________
1.5. **Chapter 2: Evidence Handling and Safety**

1.5.1. Training Objectives:

1.5.1.1. Obtain the knowledge and practical skills to properly handle, mark, package, and transport physical evidence, thereby preserving its integrity and evidentiary value.

1.5.1.2. Learn about the equipment used by the Latent Print Section.

1.5.1.3. Understanding of the procedures for the preparation and handling of chemicals.

1.5.1.4. Understanding of firearms safety.

1.5.1.5. Understanding of basic health and safety issues such as potential biological hazards, personal safety hazards posed by bloodborne pathogens, procedures for handling sharps, and the use of personal protective equipment (PPE).

1.5.1.6. Understanding of the importance of proper chain of custody.

1.5.1.7. An introduction to basic health and safety issues.

1.5.2. Required Reading:

1.5.2.1. Health and Safety Manual, Houston Forensic Science Center

   _____/___________

1.5.2.2. Fingerprint Sourcebook, NIJ, Chapter 11

   _____/___________

1.5.2.3. Safety for the Forensic Identification Specialist, Masters Chapters 4-6, 8, 13, 14, 16-18, and 20

   _____/___________

1.5.2.4. Safety Data Sheets (SDS), as applicable

   _____/___________

1.5.2.5. Equipment Operating Manuals, as applicable

   _____/___________

1.5.3. Training Practicals: None

1.5.4. Training Standards:

   1.5.4.1. Self-study for required reading

      _____/___________

   1.5.4.2. The trainee must pass a written test on required reading

      _____/___________

   1.5.4.3. Complete Firearms Safety

      _____/___________
1.6. Chapter 3: History of Fingerprint Identification

1.6.1. Training Objectives

1.6.1.1. Gain knowledge on the background and history of the science of fingerprints.

1.6.1.2. Learn about historical people, events, and early methods of identification.

1.6.1.3. Learn the earliest recorded awareness of fingerprints.

1.6.1.4. Understanding of the scientific observations leading to modern fingerprint identification.

1.6.1.5. Learn the chronology of fingerprints throughout the world and in the United States.

1.6.2. Reference Reading

1.6.2.1. Fingerprint Source Book, NIJ, Chapter 1

1.6.2.2. Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapters 1-2

1.6.2.3. Advances in FP Technology, 2nd Edition, Lee and Gaensslen, Chapter 1

1.6.2.4. Criminalistics, 12th edition, Saferstein, Pages 130-131

1.6.2.5. Friction Ridge Skin, Cowger - Chapter 1

1.6.2.6. Finger Prints, Palms and Soles, Cummins and Midlo, Chapters 1 & 2


1.6.3. Training Practicals:

1.6.3.1. Write a short synopsis of the contributions of each of the following figures: Hershel, Faulds, Galton, Vucetich & Henry

1.6.3.2. Create a timeline of important historical events as they pertain to friction ridge skin
1.6.4. Training Standards:

1.6.4.1. Self-study for required reading

_____/___________

1.6.4.2. The trainee must pass a written test on required reading

_____/___________
1.7. Chapter 4: Biological Aspects of Friction Ridge Skin

1.7.1. Training Objectives:

1.7.1.1. Gain knowledge on the biology/physiology of friction ridge skin

1.7.1.2. Understanding of the formation of friction ridges that are formed during fetal development prior to birth

1.7.1.3. Understanding that the friction ridge skin arrangement is unique and persistent through the life of the individual, except through damage by scarring or from certain diseases

1.7.1.4. Understanding of the biological significance of friction skin ridge patterns, their formation, the basic anatomy and terminology of the hands and feet.

1.7.2. Required Readings:

1.7.2.1. Fingerprint Source Book, NIJ, Chapters 2 & 3

2020-09

1.7.2.2. Criminalistics, 12th edition, Richard Saferstein, pages 131-134

2020-09

1.7.2.3. Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapter 3

2020-09

1.7.2.4. Fingerprints and Other Ridge Skin Impressions, Champod, CRC, Chapter 1

2020-09

1.7.2.5. Scott’s Fingerprint Mechanics, Olsen, Chapter 1, Pages 5-14 and 24-30

2020-09


2020-09


2020-09

1.7.2.8. Defined Pattern, Overall Pattern, and Unique Pattern, Ashbaugh, D., JFI, 42(6):503-512

2020-09

1.7.2.9. Congenital Malformations of Human Dermatoglyphs, David, T.J., Download from adc.bmj.com, January 2009

2020-09
1.7.2.10. Scars in Friction-Ridge Skin, Maceo, A., Evidence Technology Magazine, July-August 2005, pp. 26-28


1.7.3. Training Practicals:

1.7.3.1. Find and read two articles published within the past 7 years on the biology and physiology of friction ridge skin.

1.7.3.2. Present a short synopsis of the papers you read to the Latent Print Section

1.7.4. Training Standards:

1.7.4.1. Self-study for required reading

1.7.4.2. The trainee must pass a written test on required reading
1.8. Chapter 5: Friction Ridge Pattern Recognition

1.8.1. Training Objectives:

1.8.1.1. The trainee will be introduced to common terminology and definitions associated with friction ridge pattern recognition.

1.8.1.2. Understanding of pattern recognition.

1.8.1.3. Understanding of basic classification systems (Henry, NCIC)

1.8.1.4. Basic understanding of friction ridge formations as they relate to recognition, orientation, interpretation and identification.

1.8.2. Required Readings:  

1.8.2.1. The Self-Made Tapestry: Pattern Formation in Nature, Ball, Chapter 1  

1.8.2.2. Fingerprint Source Book, NIJ, Chapter 5  

1.8.2.3. The Science of Fingerprints, FBI, Chapters 2-8  

1.8.2.4. Friction Ridge Skin, Cowger, Chapter 3  

1.8.2.5. Scott’s Fingerprint Mechanics, Olsen, Chapter 1, pp 15-23  


1.8.3. Training Practicals:

1.8.3.1. Classify five fingerprint cards including ridge counts and reference patterns.

1.8.4. Training Standards:

1.8.4.1. Self-study for required reading

1.8.4.2. The trainee must pass a written test on required reading
1.9. Chapter 6: Friction Ridge Analysis

1.9.1. Training Objectives:

1.9.1.1. Understanding of the scientific methodology and its application to friction ridge examination and the ability to analyze fragmentized friction ridge detail to determine its value.

1.9.1.2. Understanding of friction ridge characteristics, the varying definitions/interpretations assigned to combinations of ridge characteristics and their use in comparisons.

1.9.1.3. Understanding the value of incipient ridge characteristics in an impression.

1.9.1.4. Basic understanding of the ability to recognize and utilize ridge flow configurations, scars, creases, and other friction ridge characteristics to support latent print examination.

1.9.1.5. Basic ability to recognize/determine anatomical source from which a latent print originated.

1.9.1.6. Basic understanding of the effects of deposition distortion and how to properly analyze distortion.

1.9.1.7. Basic ability to recognize simultaneous impressions and understanding their value for comparison.

1.9.2. Required Readings: Trainee/Completion Date

1.9.2.1. Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapters 4 & 5 ____/___________

1.9.2.2. Fingerprint Source Book, NIJ, Chapters 6, 9, 10, 14, & 15 ____/___________

1.9.2.3. Friction Ridge Skin, Cowger, pages 129-206 ____/___________


1.9.3. Training Practicals: Trainer/Completion Date

1.9.3.1. Analyze 100 latent prints to determine value ____/___________
1.9.3.1.1. Of value for comparison
1.9.3.1.2. No value
1.9.3.2. Analyze 100 latent prints
   1.9.3.2.1. Determine anatomical origin
   1.9.3.2.2. Mark orientation per SOP
   1.9.3.2.3. Demonstrate knowledge of ridge flow and/or pattern type
   1.9.3.2.4. Demonstrate knowledge of second level detail
   1.9.3.2.5. Demonstrate knowledge of third level detail
   1.9.3.2.6. Demonstrate knowledge of “Red Flag” areas (ie. distortion, pressure, tonal reversal, etc.)
   1.9.3.2.7. Demonstrate ability to trace ridges accurately

1.9.4. Training Standards:  
   1.9.4.1. Self-study for required reading
   1.9.4.2. The trainee must pass a written test on required reading
1.10. Chapter 7: Latent Print Development Techniques

1.10.1. Visual Detection of Latent Prints

1.10.1.1. Training Objectives:

1.10.1.1.1. Understanding of the personal safety hazards associated with Alternate Light Sources (ALS) and TracER Laser.
1.10.1.1.2. Understanding of fluorescent chemical procedures used in conjunction with an ALS/Laser.
1.10.1.1.3. Understanding of equipment maintenance relative to the ALS/Laser.
1.10.1.1.4. Knowledge of luminescence, fluorescence, inherent luminescence, light wavelengths, band-pass filters, lasers, and light delivery systems as they relate to ALS/laser detection of latent prints.

1.10.1.2. Required Readings: Trainee/Completion Date

1.10.1.2.1. Fingerprint Sourcebook, NIJ, Sections 7.10, 11.3.3 __________/___________
1.10.1.2.2. Latent Print Section Visual Examination Procedure, HFSC _______/___________
1.10.1.2.3. Latent Print Section TracER LASER Operating Procedure, HFSC _______/___________
1.10.1.2.4. Latent Print Section CrimeScope CA-16-500 Operating Procedure, HFSC _______/___________
1.10.1.2.5. TracER Laser Operating Manual _______/___________
1.10.1.2.6. Crimescope Operating Manual _______/___________
1.10.1.2.7. Fingerprint Detection with Lasers, Menzel, Sections 1.4-1.6, 3.7, 4.2-4.3, Ch 7, 8.2, 8.5, 8.6, 8.9, Ch 9 _______/___________
1.10.1.2.8. Fingerprint Detection by Fluorescence Examination, Police Scientific Development Branch _______/___________

1.10.1.3. Training Practicals: Trainer/Completion Date

1.10.1.4. Trainer led demonstration of ALS and Laser examination _______/___________

1.10.2. Powder Development of Latent Prints

1.10.2.1. Training Objectives:
1.10.2.1.1. Understanding of the basic types of brushes and their composition, as well as the proper usage for each type.

1.10.2.1.2. Understanding of surfaces and environmental factors when determining brush type, powder type, and color selection.

1.10.2.1.3. Understanding of safety procedures related to powder development.

1.10.2.1.4. Understanding of proper usage of different lift materials.

1.10.2.2. Required Readings: 

1.10.2.2.1. Fingerprint Sourcebook, NIJ, Sections 7.3, 11.2.2, and 11.2.3

Trainee/Completion Date

1.10.2.2.2. The Science of Fingerprints, FBI, Chapter 14, pages 173-174

Trainee/Completion Date

1.10.2.2.3. Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapters 1 & 8

Trainee/Completion Date

1.10.2.2.4. Latent Print Section Fingerprint Powder Procedure, HFSC

Trainee/Completion Date

1.10.2.3. Training Practicals:

1.10.2.3.1. Trainer-led orientation of powder processing

Trainee/Completion Date

1.10.2.3.2. Trainer-led orientation of lifting techniques

Trainee/Completion Date

1.10.2.3.3. Trainee practice lifting from multiple surfaces

Trainee/Completion Date

1.10.3. General Chemical Development of Latent Prints

1.10.3.1. Training Objectives:

1.10.3.1.1. Understanding of safety hazards associated with each of the chemicals used for development of latent prints by HFSC; knowledge shall include proper disposal, spill procedures/equipment, and the use of personal protective equipment.

1.10.3.1.2. Understanding which latent print residue component is targeted by different chemical development procedures.

1.10.3.1.3. Understanding the effects of various solvents on different evidence surfaces (inks, plastics, varnishes, etc.).
1.10.3.1.4. Understanding of surface and environmental factors effecting selection and sequencing of chemical development procedures.

1.10.3.1.5. Understanding of various ways to do sequential processing and best practices for utilizing reagents in the correct sequence.

1.10.3.1.6. Understanding of chemical storage, application and development procedures for:

- 1.10.3.1.6.1. 1,2-Indandedione (IND)
- 1.10.3.1.6.2. 1,8-Diazafloren-9-one (DFO)
- 1.10.3.1.6.3. Amido Black
- 1.10.3.1.6.4. Basic Yellow 40 (BY40)
- 1.10.3.1.6.5. Cyanoacrylate Ester (CA)
- 1.10.3.1.6.6. Gentian Violet
- 1.10.3.1.6.7. Gun Blue
- 1.10.3.1.6.8. Leucocrystal Violet (LCV)
- 1.10.3.1.6.9. Ninhydrin (NIN)
- 1.10.3.1.6.10. Rhodamine 6G (R6G)
- 1.10.3.1.6.11. Small Particle Reagent (SPR)
- 1.10.3.1.6.12. Stick Side Powder-Wetwop
- 1.10.3.1.6.13. Sudan Black
- 1.10.3.1.6.14. ThermaNin
- 1.10.3.1.6.15. Acid Yellow 7

1.10.3.2. Required Readings:

- 1.10.3.2.1. Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapters 3, 4, 5, 7, 10, & 13
  Trainee/Completion Date

- 1.10.3.2.2. All Latent Print Section Sequential Procedures, HFSC
  Trainee/Completion Date

- 1.10.3.2.3. Sequencing of Reagents for the Improved Visualization of Latent Prints, JFI
  Trainee/Completion Date

1.10.4. 1,2-Indandedione (IND)

1.10.4.1. Required Readings:

- 1.10.4.1.1. Fingerprint Sourcebook, NIJ, Sections 7.6
  Trainee/Completion Date
1.10.4.1.2. Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapter 2

1.10.4.1.3. “Variability in Visualization of Latent Fingerprint Marks Developed with 1,2-Indanedione-Zinc Chloride”, JFI, Vol. 63, No. 6, 2013


1.10.4.1.6. Latent Print Section 1,2-Indanedione (IND) Procedure, HFSC

1.10.4.1.7. Latent Print Section Processing Thermal Paper using 1,2-Indanedione (IND) Procedure, HFSC

1.10.4.1.8. MSDS for 1,2-Indandedione


1.10.4.2. Training Practicals:

1.10.4.2.1. Prepare 1,2-Indan-dione

1.10.4.2.2. 1,2-Indandedione Application, Examination, and Preservation

1.10.4.2.3. 1,2-Indanedione Exam

1.10.5. 1,8-Diazafloren-9-one (DFO)

1.10.5.1. Required Readings:

1.10.5.1.1. Fingerprint Sourcebook, NIJ, Sections 7.5

1.10.5.1.2. “The effectiveness of 1,2-Indanedione- Zinc Formulations and Comparison with HFE-Based 1,8-Diazafluoren-9-one for Fingerprint Development”, JFI Vol. 59, No. 6, 2009

1.10.5.1.4. Latent Print Section 1,8-Diazafluoren-9-one (DFO) Procedure, HFSC

   

1.10.5.1.5. MSDS for 1,8-Diazafluoren-9-one

   

1.10.5.1.6. http://www.cbdiai.org/Reagents/dfo.html

   

1.10.5.2. Training Practicals:  

   

1.10.5.2.1. Prepare 1,8-Diazafluoren-9-one

   

1.10.5.2.2. 1,8-Diazafluoren-9-one Application, Examination, and Preservation

   

1.10.5.2.3. 1,8-Diazafluoren-9-one Exam

   

1.10.6. Amido Black  

1.10.6.1. Required Readings:

   

1.10.6.1.1. Fingerprint Sourcebook, NIJ, Sections 7.12

   

1.10.6.1.2. Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapters 6 and 9

   

1.10.6.1.3. “The Effect of Common Fingerprint Detection Techniques on the DNA Typing of Fingerprints Deposited on Different Surfaces”, JFI, Vol. 54, No.1, 2004

   


   

1.10.6.1.5. Latent Print Section Amido Black Procedure, HFSC

   

1.10.6.1.6. MSDS for Amido Black

   

1.10.6.1.7. http://www.cbdiai.org/Reagents/amidom.html

   

1.10.6.2. Training Practicals:  

   

1.10.6.2.1. Prepare Amido Black

   

1.10.6.2.2. Amido Black Application, Examination, and Preservation

   

1.10.6.2.3. Amido Black Exam

   

1.10.7. Basic Yellow 40 (BY40)  

1.10.7.1. Required Readings:

   

1.10.7.1.1. Fingerprint Sourcebook, NIJ, Sections 7.10
1.10.7.1.2. Fingerprints and Other Ridge Skin Impressions, Champod, Lenard, Margot, and Stoilovic, Pages 142-145

1.10.7.1.3. Latent Print Section Basic Yellow 40 Procedure, HFSC

1.10.7.1.4. MSDS for Basic Yellow 40

1.10.7.1.5. [Link]

1.10.7.2. Training Practicals:

1.10.7.2.1. Prepare Basic Yellow 40

1.10.7.2.2. Basic Yellow 40 Application, Examination, and Preservation

1.10.7.2.3. Basic Yellow 40 Exam

1.10.8. Cyanoacrylate Ester (CA)

1.10.8.1. Required Readings:

1.10.8.1.1. Fingerprint Sourcebook, NIJ, Sections 7.9

1.10.8.1.2. Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapter 11


1.10.8.1.5. Ridge Detail through Latex Gloves, Hall JFI 41(6), 1991 pp. 415-416


1.10.8.1.7. Factors Affecting the Recovery of Latent Prints on Firearms. JFI, 1997, 47(2)

1.10.8.1.8. Latent Print Cyanoacrylate Ester (Superglue) Fuming Procedure, HFSC
1.10.8.1.9. MSDS for Cyanoacrylate


1.10.8.2. Training Practicals:  
1.10.8.2.1. Cyanoacrylate Application, Examination, and Preservation

1.10.8.2.2. Cyanoacrylate Exam

1.10.9. Gentian Violet  
1.10.9.1. Required Readings:  
1.10.9.1.1. Fingerprints and Other Ridge Skin Impressions, Champod, Lennard, Margot, and Stoilovic, Page 160

1.10.9.1.2. Latent Print Gentian Violet Procedure, HFSC

1.10.9.1.3. MSDS for Gentian Violet

1.10.9.1.4. http://www.cbdiai.org/Reagents/gent.html

1.10.9.2. Training Practicals:  
1.10.9.2.1. Prepare Gentian Violet

1.10.9.2.2. Gentian Violet Application, Examination, and Preservation

1.10.9.2.3. Gentian Violet Exam

1.10.10. Gun Blue  
1.10.10.1. Required Readings:  
1.10.10.1.1. Fingerprint Sourcebook, NIJ, Sections 7.13.4

1.10.10.1.2. Latent Print Gun Bluing Solution Procedure, HFSC

1.10.10.1.3. MSDS for Gun Blue

1.10.10.1.4. http://www.cbdiai.org/Reagents/bluing.html

1.10.10.2. Training Practicals:  
1.10.10.2.1. Prepare Gun Blue

1.10.10.2.2. Gun Blue Application, Examination, and Preservation

1.10.10.2.3. Gun Blue Exam

1.10.11. Leucocrystal Violet (LCV)
1.10.11. Required Readings:

1.10.11.1.2. Latent Print Leucocrystal Violet Procedure, HFSC
1.10.11.1.3. MSDS for Leucocrystal Violet
1.10.11.1.4. http://www.cbdiai.org/Reagents/lcv.html

1.10.11.2. Training Practicals:

1.10.11.2.1. Prepare Leucocrystal Violet
1.10.11.2.2. Leucocrystal Violet Application, Examination, and Preservation
1.10.11.2.3. Leucocrystal Violet Exam

1.10.12. Ninhydrin (NIN)

1.10.12.1. Required Readings:

1.10.12.1.1. Fingerprint Sourcebook, NIJ, Sections 7.4
1.10.12.1.3. The Science of Fingerprints, FBI, "Ninhydrin Method", Pages 177-179
1.10.12.1.4. Latent Print Ninhydrin Procedure, HFSC
1.10.12.1.5. MSDS for Ninhydrin

1.10.12.2. Training Practicals:

1.10.12.2.1. Prepare Ninhydrin
1.10.12.2.2. Ninhydrin Application, Examination, and Preservation
1.10.12.2.3. Ninhydrin Exam

1.10.13. Rhodamine 6G (R6G)

1.10.13.1. Required Readings:

1.10.13.1.2. Latent Print Rhodamine 6G Procedure, HFSC

1.10.13.1.3. MSDS for Rhodamine 6G


1.10.13.2. Training Practicals:

1.10.13.2.1. Prepare Rhodamine 6G

1.10.13.2.2. Rhodamine 6G Application, Examination, and Preservation

1.10.13.2.3. Rhodamine 6G Exam

1.10.14. Small Particle Reagent (SPR)

1.10.14.1. Required Readings:


1.10.14.1.3. Latent Print Small Particle Reagent Procedure, HFSC

1.10.14.1.4. MSDS for Small Particle Reagent


1.10.14.2. Training Practicals:

1.10.14.2.1. Small Particle Reagent Application, Examination, and Preservation

1.10.14.2.2. Small Particle Reagent Exam

1.10.15. Stick Side Powder-Wetwop

1.10.15.1. Required Readings:


1.10.15.1.3. Fingerprints and Other Ridge Skin Impressions, Champod, Lennard, Margot, and Stoilovic, Pages 161-162
1.10.15.1.4. Latent Print Sticky Side Powder-Wetwop SOP, HFSC ______/__________
1.10.15.1.5. MSDS for Sticky Side Powder and Wetwop ______/__________
1.10.15.1.6. http://www.cbdiai.org/Reagents/sticky.html ______/__________
1.10.15.2. Training Practicals:  
   Trainer/Completion Date
   1.10.15.2.1. Sticky Side Powder-Wetwop Application, Examination, and Preservation ______/__________
   1.10.15.2.2. Sticky Side Powder-Wetwop Exam ______/__________

1.10.16. Sudan Black

1.10.16.1. Required Readings:  
   Trainee/Completion Date
   1.10.16.1.1. Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Section 4.1 ______/__________
   1.10.16.1.2. Latent Print Sudan Black Procedure, HFSC ______/__________
   1.10.16.1.3. MSDS for Sudan Black ______/__________

1.10.16.2. Training Practicals:  
   Trainer/Completion Date
   1.10.16.2.1. Prepare Sudan Black ______/__________
   1.10.16.2.2. Sudan Black Application, Examination, and Preservation ______/__________
   1.10.16.2.3. Sudan Black Exam ______/__________

1.10.17. ThermaNin

1.10.17.1. Required Readings:  
   Trainee/Completion Date
   1.10.17.1.2. Latent Print ThermaNin Procedure, HFSC ______/__________
   1.10.17.1.3. MSDS for ThermaNin ______/__________

1.10.17.2. Training Practicals:  
   Trainer/Completion Date
   1.10.17.2.1. Prepare ThermaNin ______/__________
   1.10.17.2.2. ThermaNin Application, Examination, and Preservation ______/__________
1.10.17.2.3. ThermaNin Exam

1.10.18. Acid Yellow 7

1.10.18.1. Required Readings:

1.10.18.1.1. Fingerprint Sourcebook, NIJ, Sections 7.12.5

1.10.18.1.2. “Enhancement of Fingerprints in Blood”, JFI, Vol. 55, No. 6, 2005

1.10.18.1.3. “The Use of Various Chemical Blood Reagents to Develop Blood Fingerprint or Footwear Impressions”, JFI, Vol. 64, No. 1, 2014

1.10.18.1.4. Latent Print Acid Yellow 7 Procedure, HFSC

1.10.18.1.5. MSDS for Acid Yellow 7

1.10.18.2. Training Practicals:

1.10.18.2.1. Prepare Acid Yellow 7

1.10.18.2.2. Acid Yellow 7 Application, Examination, and Preservation

1.10.18.2.3. Acid Yellow 7 Exam

1.10.19. Module Training Practicals:

1.10.19.1. The trainee must pass a written test on required reading

1.10.19.2. Write an essay on why latent prints may not be developed on surfaces
1.11. Chapter 8: Latent Print Photography

1.11.1. Training Objectives:

1.11.1.1. An understanding of latent print photography to include:

1.11.1.1.1. Cameras and their operation
1.11.1.1.2. Lenses and their uses and operation
1.11.1.1.3. Lens Filters

1.11.1.2. An understanding of photographic procedures to include:

1.11.1.2.1. Adjusting for exposure settings including aperture and shutter speed for optimal depth of field
1.11.1.2.2. Use of scales in images

1.11.1.3. Photography of powdered and chemically developed latent prints of various colors with various backgrounds.

1.11.1.4. Photography of patent and plastic prints.

1.11.1.5. Techniques for photographing fluorescent images.

1.11.1.6. Understanding of the proper procedures for camera capture and digital scanning of latent images.

1.11.2. Required Readings:

1.11.2.1. Fingerprint Sourcebook, NIJ, Chapters 8, 10

1.11.2.2. Friction Ridge Skin, Cowger, Chapter 5

1.11.2.3. Fundamentals of Forensic Photography, Mancini, Ch 1-4, Ch 6, Ch 8

1.11.2.4. Identification Photography, by Robert E. May (Booklet)

1.11.2.5. Fingerprints and Other Ridge Skin Impressions, Champod, Chapters 3 & 4, Appendix 3

1.11.2.6. The Science of Fingerprints, FBI, Chapters 13 – 15

1.11.2.7. “Focus Stacking in Photoshop – Depth of Field Optimization In Macrophotography”, JFI, Vol. 64, No.1, 2014

1.11.3. Training Practicals:

1.11.3.1. Photograph latent prints developed from various porous substrates.

Trainee/Completion Date

Trainer/Completion Date
1.11.3.2. Photograph latent prints developed from various non-porous substrates.

1.11.3.3. Photograph latent prints developed on curved surfaces

1.11.3.4. Photograph latent prints from various colored backgrounds

1.11.3.5. Photograph latent prints from reflective surfaces

1.11.4. Training Standards:

1.11.4.1. Self-study for required readings.

1.11.4.2. The trainee must pass a written examination on the required readings.

1.12.1. Understanding of digital enhancement techniques using Adobe Photoshop or other similar programs to improve the quality of latent print images.

1.12.1.1. Tonal reversal
1.12.1.2. Position reversal
1.12.1.3. Use of layers
1.12.1.4. Image contrast
1.12.1.5. Image calibration/resolution
1.12.1.6. Use of digital filters

1.12.2. Required Readings:  

1.12.2.1. Criminalistics, 12th edition (Saferstein), pages 146-148  


1.12.2.5. “Standard for Friction Ridge Digital Imaging”, swgfast.org  

1.12.3. Training Practicals:  

1.12.3.1. Trainer-led instruction to Adobe Photoshop:  

1.12.3.2. The trainee will independently capture, calibrate, enhance, and document latent prints (to be determined by the primary trainer)
1.12.4. Training Standards:

1.12.4.1. Self-study for required readings.  
________/_____________.

1.12.4.2. The trainee must pass a written examination on the required readings.  
________/_____________.
1.13. Chapter 10: Competency Test

1.13.1. The trainee must successfully complete all designated modules in the training manual as well as the competency test before acquiring authorization to perform supervised dependent casework.

1.13.2. Competency Test will include:

1.13.2.1. Practical that will consist of mock evidence. The trainee will be expected to process the mock evidence as well as preserve and enhance any possible latent prints.

1.13.2.2. The trainee has passed all modules through a comprehensive assessment and/or written examinations. This is used to fulfill the final written exam as required by the quality manual.

1.13.2.3. The Trainee will give a presentation on a topic of their choosing to the Latent Print Section
1.14. Chapter 11: Dependent Supervised Casework

1.14.1. During dependent supervised casework, the trainee processes cases from start to finish with supervision. At each stage of dependent supervised casework, the trainee’s work will be reviewed by the primary trainer to ensure all applicable procedures are being followed and adequate documentation is recorded. Cases worked under dependent supervised casework will be assigned to the primary trainer in LIMS. The primary trainer will regularly update the Technical Lead, Latent Print Supervisor and Latent Print Manager on if a recommendation to be signed off on dependent supervised casework is warranted or if further training is required.

1.14.2. The trainee will keep a spreadsheet of cases processed to include case numbers, results, processes used, and any other notes deemed necessary.

1.14.3. Training Standards:

1.14.3.1.1. The trainer will select five final cases to be worked by the trainee under supervised casework. These cases will be worked without asking the primary trainer questions if possible. There should be few to no corrections made. All work will be performed by the trainee including the writing of the report and checked by the trainer before issuance. These cases will be used to gauge the competency of the trainee to write test reports as required by the Quality Manual. However, it should be noted that these cases will bear the signature of the trainer.

______/_____________
1.15. Chapter 12: Court Testimony, Ethics, and Human Factors

1.15.1. Training Objectives:

1.15.1.1. Understanding of the role of expert witness testimony.
1.15.1.2. Knowledge of factors regarding the admissibility of evidence.
1.15.1.3. Understanding of courtroom operational procedures.
1.15.1.4. Knowledge of major court decisions and their significance.
1.15.1.5. Understanding of professional ethics.

1.15.2. Required Readings:

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<tr>
<th>Required Readings</th>
<th>Trainee/Completion Date</th>
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<tbody>
<tr>
<td>1.15.2.1. Fingerprint Sourcebook, NIJ, Chapters 12-15</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
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<tr>
<td>1.15.2.2. Advances in FP Technology, 2nd Edition, Lee and Gaenslen, Chapter 10</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
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<tr>
<td>1.15.2.3. Friction Ridge Skin, Cowger, Chapter 9</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
</tr>
<tr>
<td>1.15.2.4. NIST Expert Working Group on Human factors, Latent Print Examination and Human Factors, NIJ, 2012, Chapter 9</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
</tr>
<tr>
<td>1.15.2.5. NAS Report Strengthening Forensic Science, 2009 Report (as pertaining to latent prints)</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
</tr>
<tr>
<td>1.15.2.6. P-CAST Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods, 2016 Report (as pertaining to latent prints)</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
</tr>
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<td>1.15.2.7. Qualifying as an Expert Fingerprint Witness: Designing a Set of Questions to Assist in Court Testimony. Wertheim JFI, 1990, 40 (2). pp. 60-68, 1990</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
</tr>
<tr>
<td>1.15.2.8. Confirmation Bias, Ethics, and Mistakes in Forensics, Jon Byrd, Journal of Forensic Identification, 511\523 56 (4), 2006</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
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<td>1.15.2.9. Defending Against the Critics Curse, Glenn Langenburg, The Chesapeake Examiner, Spring 2003 Vol. 41 No. 1</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
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<td>1.15.2.11. “Why Experts Make Errors”, JFI, Vol. 56, No. 4, 2006</td>
<td><em><strong><strong><strong>/</strong></strong></strong></em>________</td>
</tr>
</tbody>
</table>
1.15.2.12. Ethics and the Practice of Forensic Science, Bowen, Chapters 1 – 9

1.15.2.13. Buffey rape case sets precedent: Prosecutors must disclose evidence, 11/10/15, Gazette Mail, Qualtrax TFSC Reading Material

1.15.2.14. Judge reverses murder conviction, saying crucial DNA information not disclosed, 10/24/17, San Diego Union Tribune, Qualtrax TFSC Reading Material

1.15.2.15. A Perspective on Errors, Bias, and Interpretation in the Forensic Sciences and Direction for Continuing Advancement*, JFS, July 2009, Vol. 54, No. 4, Qualtrax, TFSC Reading

1.15.2.16. Cognitive and Human Factors in Expert Decision Making: Six Fallacies and the Eight Sources of Bias, Dror, Analytical Chem 2020, pp. 7998

1.15.2.17. Practical Solutions to Cognitive and Human Factor Challenges in Forensic Science, Dror, Forensic Science Policy & Management, 2013, Qualtrax, TFSC Reading

1.15.3. Training Practicals:

1.15.3.1. Prepare Statement of Qualifications (SOQ) and Curriculum Vitae (CV)

1.15.3.2. Prepare list of court qualifying questions

1.15.4. Training Standards:

1.15.4.1. Prepare for and successfully participate in a moot court

1.15.4.2. A testimony evaluation form has been completed by at least the primary trainer and may include participants in the moot court such as the individuals serving as the prosecution, the defense, and the judge

1.15.4.3. Self-study for required readings.

1.15.4.4. The trainee must pass a written examination on the required readings.