



Firearms Section
NIBIN Technician Training Manual
Comparative & Analytical Division



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Introduction to Student

Welcome to the Houston Forensic Science Center. As a NIBIN Technician trainee, you have met the minimum educational, experience, and skills requirements as required by the job posting and have passed a background check and drug screening. This training program will guide you through the various areas of knowledge integral to the field of ballistic imaging. It is paramount that you keep before you the objectives of this training period:

- Independently and competently function test firearms,
- Test fire firearms,
- Recover test fired specimens,
- Evaluate fired cartridge cases for NIBIN entry,
- Enter fired cartridge cases into NIBIN,
- Review correlations in NIBIN and identify NIBIN leads,
- Complete duties in a professional, ethical, competent and impartial manner.

The obligation is yours to maximize the effectiveness of the training period as an opportunity to learn substantial, valuable, and applicable information pertaining to this field. The extent to which you exert yourself during this training and evaluation period will bear directly on the quality of your performance in the laboratory. You have a moral and ethical obligation to prepare yourself technically and professionally during training to be able to perform according to the standards of the Houston Forensic Science Center (HFSC).

This training program provides a framework for addressing the most important part of your training. This on-the-job, hands-on experience is the core of your training and you will be assigned to work with one or more Principal Instructors during your training period. **Principle Instructors are qualified analysts/technicians authorized to perform the tasks you are being trained to do and/or have completed training and have practical experience on the same topics.** This will ensure that you have sufficiently covered each aspect of this training program and have a basis for continued development after your initial qualification. Your training will be monitored and assisted by your Principal Instructors, who have primary responsibility for training matters.

You will be expected to read and understand the Firearms Section's Standard Operating Procedures, the HFSC Quality Assurance Manual, and the HFSC Safety Manual, company policies and procedures, as well as print, video, and physical reference files. Integral to your course of study will be frequent daily contacts with section personnel with special expertise in certain areas. Do not hesitate to ask anyone a question, whether a supervisor or examiner.

Your study will include many printed references or electronic versions of printed references, including the basic material listed within each area of study. It is expected that during the training



period you will become thoroughly familiar with these basic references. Further, it should be noted that you should not restrict your efforts and research to those required references. One of your primary sources of additional information will be the section's reference library. Familiarize yourself with the library's contents, including the reference files, related indices, manufacturers' literature, and the journal of the Association of Firearm and Toolmark Examiners.

In addition to maintenance of this manual, you will be required to keep a record of your study notes on each of the items shown in the training program. This record can include hand or type-written notes, charts, graphs, photographs, photocopied material, etc. **Your training record** must address and broaden on each of the required items of study set out in the training **program and include the number of hours or days you spend on training (this may be in the form of a calendar or a training schedule)**. Organization of your records in a format that parallels the training program is suggested. This record will assist the documentation of your progress during training and serve as a ready reference in the months and even years following the completion of training.

Written tests will require a grade of 80% or greater to pass. You must receive a passing grade for all written tests to successfully complete the training program. You must participate in discussions, answer questions, complete activities, etc. to the satisfaction of the Principle Instructor(s). You must complete an oral exam to the satisfaction of Section Management. NIBIN Technicians may demonstrate competency and obtain authorization to do work all at once, or in stages, as appropriate for the needs of the student, principal trainers, and the section.

Due to restrictions in the function of a Firearms/Toolmark Technician as defined in §651.202 of the Texas Administrative Code, NIBIN Technicians are not expected to testify regarding the results of NIBIN processing. However, they may be called to testify about chain of custody issues or basic NIBIN entry information. If they are called to testify, a mock trial will be completed at that time.

In the event retraining of a Technician is required, all or part of this training manual may be utilized to structure a retraining plan. Additional materials and/or activities may be included to supplement the existing program.



1. Administrative Orientation

1.1. Sections

- 1.1.1. Houston Forensic Science Center (HFSC) New Hire Orientation
- 1.1.2. HFSC Tour
- 1.1.3. Firearms Section In-Processing

1.2. Training Objectives

To provide the student with an understanding of the mission and operation of HFSC, the operation of the Firearms Section, and ethics in forensic science.

1.3. Method of Testing

Oral discussion

1.4. Training Methods

- 1.4.1. Self-directed study
- 1.4.2. Discussion
- 1.4.3. Tour of some or all sections of HFSC
- 1.4.4. HFSC New Hire Orientation (if applicable)

1.5. Practical Exercise

1.5.1. Houston Forensic Science Center (HFSC) New Hire Orientation

The student will attend the HFSC New Hire Orientation if he/she is a new hire. If the student transferred from another section within HFSC, this step is not needed. New Hire Orientation is documented by Human Resources.

1.5.2. HFSC Tour

- 1.5.2.1. The student will receive a tour of HFSC facilities pertinent to his/her daily activities as a NIBIN Technician. Other areas/facilities may also be included.

Principal Instructor Signature and Date

1.5.3. Firearms Section In-Processing

- 1.5.3.1. The student will read the HFSC Quality Manual and discuss with the Principal Instructor in the context of the job duties of a NIBIN technician.

Principal Instructor Signature and Date



1.5.3.2. The student will read the section's Standard Operating Procedures and discuss the section's mission with the Principal Instructor.

Principal Instructor Signature and Date

1.5.3.3. The student will read HFSC policies and procedures as required by HFSC New Employee On-Boarding and/or at the discretion of the Section Manager or Supervisor. Each manual, policy, and/or procedure read by the student must be documented.

Principal Instructor Signature and Date

1.5.3.4. The student will discuss ethics in forensic science with the Principal Instructor. The student will read the HFSC Code of Ethics, any ethics document issued by HFSC's accrediting bodies, (e.g., ANAB and/or TFSC), and any ethics document issued by the Association of Firearm and Toolmark Examiners with the Principal Instructor.

Principal Instructor Signature and Date

1.5.3.5. The student will define the difference between accreditation, certification, and licensing and discuss these differences with the principle instructor.

Principal Instructor Signature and Date

1.5.3.6. The student will define what kind of organization HFSC is, as well as how it is similar and different from other crime laboratories in the United States and discuss this with the principal instructor.

Principal Instructor Signature and Date

1.6. Reading

1.6.1. Required Reading

- HFSC Quality Manual
- Firearms Section Standard Operating Procedures



- HFSC Health and Safety Manual
- HFSC Security Manual
- HFSC Corporate Policies and Procedures
- ANAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists
- AFTE Code of Ethics
- All reading, *etc.* listed by TFSC as required for the Professional Responsibility of the Technician License Exam.

Student Signature and Date of Reading Completion

1.7. Terminology

Common Acronyms

HFSC	Houston Forensic Science Center
TFSC	Texas Forensic Science Commission
SOP	Standard Operating Procedures
ANSI	American National Standards Institute
ANAB	American National Standards Institute (ANSI) National Accreditation Board
AFTE	Association of Firearm and Toolmark Examiners

1.8. Estimated Training Time

50 hours



2. Firearm Functionality, Assembly, and Disassembly

2.1. Sections

- 2.1.1. Safe Firearm Handling
- 2.1.2. Firearm Terminology and Identification
- 2.1.3. Handguns (Semiautomatic and Full Automatic)
- 2.1.4. Rifles and Carbines (Semiautomatic and Full Automatic)
- 2.1.5. Shotguns (Pump Action and Semiautomatic)

2.2. Training Objectives

To develop in the student a thorough knowledge of semiautomatic/full automatic handguns, semiautomatic/full automatic rifles, as well as pump action and semiautomatic shotguns so that he/she will know how to assemble and disassemble these firearm types, be familiar with firearm safety designs, and have a knowledge of operability of those weapons most frequently encountered. In addition, a working knowledge of firearm terminology will be developed. **This unit does not address test firing weapons.**

2.3. Method of Testing

- 2.3.1. Written/practical examinations
- 2.3.2. Manual demonstration

2.4. Training Method

- 2.4.1. Reading
- 2.4.2. Discussion
- 2.4.3. Practical exercises

2.5. Practical Exercises

In the following practical exercises involving the disassembly of firearms, substitutions of similar types, makes, and models shall be used if any of the listed firearms cannot be obtained. The use of the section's videos is recommended if a particular firearm is not available. Use of various assembly/disassembly guides is recommended.

2.5.1. Safe Firearm Handling

- 2.5.1.1. Review safe firearm handling rules with your Principal Instructor. Demonstrate your ability to safely handle firearms to the satisfaction of your Principle Instructor.

Principal Instructor Signature and Date

2.5.2. Firearm Terminology and Identification



2.5.2.1. Explain and illustrate the similarities and differences between the following types of firearms:

- Shotgun
- Rifle
- Handgun
- Long gun
- Pistol
- Revolver

Principal Instructor Signature and Date

2.5.2.2. Explain and illustrate the differences between the operations of the following types of actions found in pistols, rifles, and shotguns. Include the loading of cartridges, and the subsequent movement of the cartridge case/shotshell and bullet/projectile after firing:

- Blowback action
- Gas operated action
- Recoil operated action
- Pump action
- Automatic action
- Semiautomatic action
- Blow forward action
- Bolt action
- Break open action
- Hybrid action
- Double action
- Single action
- Lever action
- Revolver action

Principal Instructor Signature and Date

2.5.2.3. Define each of the following terms and explain their significance, if any, in the forensic examination of firearms and their accessories.

- Submachine gun
- Assault rifle
- Antique firearm
- Suppressor
- Carbine
- Machine gun
- Curio/relic
- Silencer

Principal Instructor Signature and Date

2.5.2.4. Research, define, and/or determine the implications of the following terms as they relate to safety in the operation of a firearm:

- Inadequate/improper sear engagement
- Bore obstruction
- Barrel bulge
- False half-cock
- Slam fire
- Excessive headspacing



- Broken extractor
- Rail splitting
- Hairline cracks
- Defective safety
- Push off
- Excessive pressure
- Dented barrel
- High primer

Principal Instructor Signature and Date

2.5.2.5. Demonstrate your knowledge of the basic nomenclature of handgun, rifle, and shotgun parts.

2.5.2.5.1. Include, but do not restrict your study to the following:

- Breechface
- Breechbolt
- Bolt
- Bolt face
- Extractor
- Ejector
- Firing pin
- Bore diameter
- Gauge
- Barrel
- Ramp
- Magazine
- Clip
- Ejection port
- Receiver
- Lifter
- Choke
- Pump/slide action

2.5.2.5.2. Point out these parts in several handguns, rifles, and shotguns.

Principal Instructor Signature and Date

2.5.2.6. Review and record the references in the Firearms Section library, which can be used to identify the manufacturer and/or source of a firearm using the following criteria:

- Proof mark
- Part number
- Serial number
- Inspector mark
- Company logo
- Factory number/markings

Principal Instructor Signature and Date

2.5.2.7. Discuss with your Principal Instructor how to conduct an examination to determine if a firearm is capable of firing full automatic. Using firearms that are capable of firing full automatic from a closed bolt and an open bolt, conduct this type of examination and verbally report your findings.



Principal Instructor Signature and Date

2.5.3. Handguns (Semiautomatic and Full Automatic)

2.5.3.1. Function test and identify parts for the following types of firearms (assembly and disassembly should be done to the extent necessary to show an understanding of the operating method/system and how the individual parts interact):

- Single action only recoil operated pistol (i.e. Model 1911/1911A1)
- Blowback operated pistol (i.e. Walther PPK/S)
- Gas operated pistol (i.e. 44 Magnum or 50 AE IMI Desert Eagle)
- Recoil operated double action only pistol (i.e. Glock 17)
- Recoil operated single action/double action pistol (i.e. Beretta 92S)
- Recoil operated pistol with a magazine disconnect (i.e. Browning Hi-Power)
- A single action only blowback pistol (i.e. Raven MP-25)
- Blowback pistol (i.e. SWD/Cobray M-11) (Full Automatic, if available)
- Full automatic submachine gun that fires from open bolt (i.e. Uzi Model A)

Principal Instructor Signature and Date

2.5.3.2. The Principal Instructor gives an **oral** practical examination involving at least four of the above listed firearms, including one full automatic firearm. The student discusses all the safety features of the included firearms, as well as the operating method/system and how the individual parts interact.

Principal Instructor Signature and Date

2.5.4. Rifles and Carbines (Semiautomatic and Full Automatic)

2.5.4.1. Function test and identify parts for the following types of firearms (assembly and disassembly shall be done to the extent necessary to show an understanding of the operating method/system and how the individual parts interact):

- Gas operated carbine with a crossbolt safety (i.e. M-1 Carbine)
- Gas operated rifle with a trigger guard lever and hammer block (i.e. Ruger Mini-14)
- Gas operated rifle with a trigger guard lever (i.e. AKS/SKS type)
- Gas operated rifle having different firing modes (i.e. AR-15, both selective fire and semiautomatic)



- Full automatic gas operated rifle (i.e. AK 47)

Principal Instructor Signature and Date

2.5.4.2. The Principal Instructor gives an **oral** practical examination involving at least four included firearms, including one full automatic rifle, as well as the operating method/system and how the individual parts interact.

Principal Instructor Signature and Date

2.5.5. Shotguns (Pump Action and Semiautomatic)

2.5.5.1. Function test and identify parts for the following types of firearms (assembly and disassembly should be done to the extent necessary to show an understanding of the operating method/system and how the individual parts interact):

- Gas operated shotgun (e.g., Remington 1100)
- Pump action shotgun with a crossbolt safety (e.g., Remington 870)
- Semiautomatic shotgun (e.g., Winchester 1200)
- Pump action shotgun (e.g., Ithaca 37 or Mossberg 500)
- Browning Auto 5

Principal Instructor Signature and Date

2.5.5.2. The Principal Instructor gives an oral practical examination involving at least two of the above listed firearms. The student discusses all the safety features of the included firearms, as well as the operating method/system and how the individual parts interact.

Principal Instructor Signature and Date

2.6. Reading

2.6.1. Required Reading for Firearm Terminology and Identification

- *The Story of Firearm Ignition* by James Edsall; Pioneer Press, 1974.
- *The Age of Firearms, A Pictorial History* by Robert Held; Gun Digest Company, 1970.
- *Cartridges; A Pictorial Digest of Small Arms Ammunition* by Herschel C. Logan; pp. 1-10; Standard Publication, 1959.



- *The Development of Firearms* by H.L. Peterson; Parts 1-3; American Rifleman, March-April-May, 1960.
- *The Complete Handgun* by Ian V. Hogg; – 1300 to the Present; Peerage Books, 1984.
- *The Story of the Gun* on the Arts & Entertainment (A&E) Channel - (Video).
- *Guns and How They Work* by Ian V. Hogg; Everest House (1979); pp. 6-25.
- *The Standard Directory of Proof Marks* by Gerhard Wirncherger; Blacksmith Publishers.
- *Gunmarks* by David Byron Crown Publishers (1979).
- *The Identification and Registration of Firearms* by Vaclav “Jack” Krcma; Charles C. Thomas (1971).

Student Signature and Date of Reading Completion

2.6.2. Required Reading for Handguns (Semiautomatic and Full Automatic)

- *Small Arms of the World, 9th or 10th Edition* by Smith; Chapter 9 and Chapter 12, pp. 179-192.
- *Military Pistols and Revolvers* by Ian V. Hogg; pp. 7-11 and 35-77.
- *American Pistol and Revolver Design and Performance* by L.R. Wallack; Chapters 3 and 4 and pp. 51, 69-70.
- *Book of Pistols & Revolvers* by Smith; pp. 36-43.
- *Guns and How They Work* by Ian V. Hogg; Everest House (1979); pp. 90-107, 118-124.
- *The Worlds Submachine Guns, Vol. I* by Thomas B. Nelson, and Hans B. Lockhaven; T.B.N. Enterprises (1977); pp. 1-28; and briefly review remainder of text as necessary.
- *The Worlds Machine Pistols and Submachine Guns Vol. IIa* by Thomas B. Nelson and Daniel D. Musgrave; T.B.N. Enterprises (1980); Chapter III, pp. 95-104; Chapter V, pp.297-354; Chapter X, pp. 647-658; and briefly review remainder of text as necessary (esp. pp. 407-416, 507-522).
- *The Terrifying Three* by Duncan Long; Paladin Press (1989).

Student Signature and Date of Reading Completion

2.6.3. Required Reading for Rifles and Carbines (Semiautomatic and Full Automatic)

- *Small Arms of the World, 9th or 10th Edition* by Smith; Chapters 7-8.
- *The Book of Rifles* by Smith; Chapter 6 and pp. 86-88.



- *Guns and How They Work* by Ian V. Hogg; Everest House (1979); pp. 60-67, 80-89, 110-115, 125-157.

Student Signature and Date of Reading Completion

2.6.4. Required Reading for Shotguns (Pump Action and Semiautomatic)

- *American Shotgun Design and Performance* by L.R. Wallack; Chapters 1-9 and 13.
- *NRA Firearms Fact Book, 3rd Edition*, pp. 169-181.
- *The World's Fighting Shotguns* by Thomas F. Swearingen; Ironside International Publishers (1978); pp. 1-19 and review Chapters 7-8 as necessary.

Student Signature and Date of Reading Completion

2.6.5. Other Reading (as necessary)

- *AFTE Journals* (as identified by Principal Instructor).
- *AFTE Glossary*.
- *Hatcher's Notebook* by Hatcher, Chapters VII to IX, pp. 180-231.
- *Firearms Investigation, Identification, and Evidence* by Hatcher, Jury and Weller; The Stackpole Company (1957); Chapter 5, pp. 106-136 and 187-196.
- *Firearms Identification Vol. II* by J. Howard Mathews; Charles C. Thomas (1962); Part VI, pp. 467-492.
- *Firearms Identification Vol. III* by J. Howard Mathews; Charles C. Thomas (1962); Part VII, pp. 703-714.
- *American Pistol & Revolver Design and Performance* by L.R. Wallack; Winchester Press (1978); pp.71-80.
- *American Rifle Design and Performance* by L.R. Wallack; Winchester Press (1977); pp.71-88.
- *Encyclopedia of Modern Firearms, Parts and Assembly, Vol. 1* by F.R. "Bob" Brownell; (1959).

2.7. Terminology

Research the following terms using the AFTE Glossary and discuss each with your Principal Instructor. (If the term is not in the AFTE Glossary, consult with your Principal Instructor on how to research the term.):

2.7.1. Firearm Terminology and Identification

Factory Markings	Inspector Mark	Logo
Part Number	Proof Mark	Serial Number



Principal Instructor Signature and Date

2.7.2. Handguns (Semiautomatic and Full Automatic)

ACP	Autoloading	Barrel
Bore	Bore Diameter	Bullet
Bullet Diameter	Caliber	Cartridge
Cock	Cocking Indicator	Delayed Fire (Hangfire)
Discharge	Firearm	Full Cock
Extraction	Extractor	Full Automatic
Function Testing	Grip Safety	Gunpowder
Gas Operated	Gas Piston	Gas
Half Cock	Hammer	Hammer Strut
Lug, Barrel	Malfunction	Misfire
Magazine	Magazine, Box	Gas Port
Magazine Lock	Magazine Well	Magazine Follower
Magazine, Rotary	Magazine Floorplate	Magazine, Detachable
Muzzle	Obturation	Pistol
NATO Cartridge	Open Bolt System	Muzzle Flash
Projectile	Propellant	Semiautomatic
Stock	Disconnecter	

Principal Instructor Signature and Date

2.7.3. Rifles and Carbines (Semiautomatic and Full Automatic)

Barrel	Bolt Body	Bolt Carrier
Bolt Face	Bolt Handle	Bolt Release
Breech	Breechblock	Breech Bolt
Breech Face	Butt Plate	Feed Ramp
Extraction	Extractor	Full Automatic
Gas Operated	Gas Piston	Gas
Magazine	Magazine, Box	Gas Port
Magazine, Rotary	Magazine Floorplate	Magazine, Detachable
Magazine Lock	Magazine Well	Magazine Follower
NATO Cartridge	Open Bolt System	Muzzle Flash
Firing Pin	Forearm	Function Testing
Hammer	In Battery	Locked
Locking Bolt	Muzzle	Out of Battery



Rifle	Single Action	Stripper Clip
Trigger	Trigger, Double Pull	Trigger Guard
Trigger Pull	Disconnecter	

Principal Instructor Signature and Date

2.7.4. Shotguns (Pump Action and Semiautomatic)

Action, Slide or Pump	Barrel	Barrel Band
Barrel Extension	Barrel Guide	Barrel Length
Barrel Threads	Bore Diameter	Butt
Butt Plate	Carrier	Choke
Choke Tube	Crossbolt	Discharge
Extraction	Forearm	Leading
Lifter	Magazine Plug	Safety, Automatic
Selector	Shotgun	Smooth Bore
Subcaliber Device	Trigger Bar	

Principal Instructor Signature and Date

2.8. Estimated Training Time

312 hours total

2.8.1. Safe Firearm Handling (24 hours)

2.8.2. Firearm Terminology and Identification (72 hours)

2.8.3. Handguns (Semiautomatic and Full Automatic)

2.8.4. Rifles and Carbines (Semiautomatic and Full Automatic) (72 hours)

2.8.5. Shotguns (Pump Action and Semiautomatic)



3. Ammunition Development and Identification/Cartridge Loading and Ballistics

3.1. Sections

- 3.1.1. Cartridge Manufacture and Identification
- 3.1.2. Terminology Used in Cartridge Loading and Ballistics

3.2. Training Objectives

- 3.2.1. To develop in the student a thorough knowledge of the developments of gunpowder and ammunition, the relationship of cartridge improvement to firearm design, manufacturing methods of cartridges, and firearm terminology.
- 3.2.2. To teach the student the terminology used in cartridge loading and ballistics.

3.3. Method of Testing

- 3.3.1. Written/practical examination

3.4. Training Methods

- 3.4.1. Self-directed study
- 3.4.2. Practical exercises
- 3.4.3. Discussion

3.5. Practical Exercises

- 3.5.1. Cartridge Manufacture and Identification
 - 3.5.1.1. Become familiar with the Firearm Section Standard Ammunition File (SAF) and/or its electronic equivalent, CartWinPro™. Practice using the CartWinPro™ program to search for headstamps at the direction of your Principal Instructor.

Principal Instructor Signature and Date

- 3.5.1.2. Discuss the range of bullet styles and weights based on the stock ammunition in the section's ammunition supply.

Principal Instructor Signature and Date

- 3.5.1.3. Know and discuss the different cartridge case and primer materials and how these materials can affect the markings imparted to the cartridge case during the firing process.



Principal Instructor Signature and Date

3.5.1.4. Know and discuss the difference between caliber and caliber class. Illustrate this difference by relating these terms to a discussion of the .22 caliber, .30 caliber and .38 caliber families of cartridges.

Principal Instructor Signature and Date

3.5.1.5. Discuss what the NATO designation on cartridges indicates with your Principal Instructor.

Principal Instructor Signature and Date

3.5.1.6. Discuss different specific caliber designations that are similar to each other (e.g., 38 Auto vs 38 Super, 223 Remington vs 5.56x45mm) with your Principal Instructor. Include in your discussion how the cartridges are similar, how they are different, and the implications of using them interchangeably when test firing.

Principal Instructor Signature and Date

3.6. Reading

3.6.1. Required Reading for Cartridge Manufacture and Identification

- *Book of Pistols and Revolvers by Smith*; pp. 23-25.
- *Cartridges for Collectors by Datig*; pp. 9 through 18.
- *Pistol and Revolver Cartridges, Vols. I and II, by White and Munhall; revised by Bearse*; pp. 1-13 in each volume.
- *Small Arms of the World, 9th or 10th Edition, by Smith*; pp. 43-47.
- *Centerfire Pistol and Revolver Cartridges, by White, Munhall and Bearse*; pp. 140-146.
- *Cartridges of the World 7th Edition, by Barnes*; Chapter 11; *8th Edition*, Chapter 12; *7th Edition*, Chapter 10.
- *Ammunition Making* by H. L. Peterson; NRA, 1990.
- *Firearms Investigation, Identification, and Evidence by Hatcher, Jury, and Weller*; Chapter 4 pp. 63-105.



Student Signature and Date of Reading Completion

3.6.2. Required Reading for Terminology Used in Cartridge Loading and Ballistics

- Lyman Reloaders Manual and Sierra Reloading Manual.
• Cartridges of the World 5th Edition by Barnes; Chapter 14.
• NRA Handloaders Guide, Chapters 1-8.
• Centerfire Pistol and Revolver Cartridges, by White, Munhall and Bearse, Volume II, Chapter 1.
• NRA Handloaders Guide, Chapter 9.
• Cartridges of the World 7th Edition by Barnes; Chapter 10.

Student Signature and Date of Reading Completion

3.6.3. Review as necessary

- Military Small Arms Ammunition of the World by P. Labbett; 1945-1980; Presidio Press, 1980.

3.7. Terminology

Research the following terms using the AFTE Glossary and discuss each with your Principal Instructor. (If the term is not in the AFTE Glossary, consult with your Principal Instructor on how to research the term.):

3.7.1. Cartridge Manufacture and Identification

Table with 3 columns of terminology: Ammunition, Brass, Cannelure, Copper Coated Lead Bullet, Head, Jacketed Bullet, Ogive, Rimmed Cartridge, Semi-Rimmed Cartridge, Soft Point Bullet, Truncated-Nosed Bullet, Gauge, Shotshell, Boattail Bullet, Brass-Coated Lead Bullet, Cartridge, Crimp, Headstamp, Mouth, Primer, Rimless Cartridge, Shoulder, Spitzer Bullet, Wadcutter Bullet, High/Low Brass/Cup, Wadding, Bottleneck Cartridge, Bullet, Cartridge Case, Extractor Groove, Hollow-Point Bullet, Neck, Rebated Rim Cartridge, Round-Nosed Bullet, Silvertip Bullet, Tapered Cartridge, Dram Equivalent, Shot Collar



Principal Instructor Signature and Date

3.7.2. Terminology Used in Cartridge Loading and Ballistics

Ammunition Color Code	Ammunition Lot	Ammunition, Ball
Ammunition, Match	Ammunition, Metallic	Brass Washed Bullet
Bullet, Armor Piercing	Bullet Casting	Bullet, Coated
Bullet, Copper Jacket	Bullet, Copper Washed	Bullet Core
Bullet Diameter	Bullet, Flat-Nosed	Bullet, Full Metal Case
Bullet, Full Metal Jacket	Bullet, Hollow Base	Bullet, Hollow Point
Bullet, Incendiary	Bullet Jacket	Bullet, Lead
Bullet, Plated	Bullet, Round Nose	Bullet, Semi-Jacketed Hollow Point
Bullet, Steel Jacketed	Bullet Puller	Caliber
Cartridge, Center Fire	Cartridge Designation	Cartridge, Magnum
Cartridge, Rimfire	Headspace	Grain
Load, Squib	Misfire	Necking Down
Pressure	Projectile	Reloading
Over Shot Wad	Paper Disc	Shot
Slug	Wad, Cup	Shot Carrier
Buffer	Wad, Filler	Wad, Base
Shot Cup	Shot Column	Shot Size

Principal Instructor Signature and Date

3.8. Estimated Training Time

88 hours total

3.8.1. Cartridge Manufacture and Identification (16 hours)

3.8.2. Terminology Used in Cartridge Loading and Ballistics (72 hours)



4. Evidence Handling, Biohazards, and Safety

4.1. Sections

- 4.1.1. Overview of Evidence Receiving and Transfer
- 4.1.2. Biohazard items
- 4.1.3. Laboratory Safety

4.2. Training Objectives

To instruct the student in the proper methods of handling, preserving, and marking of evidence.

4.3. Method of Testing

- 4.3.1. Written/practical examinations
- 4.3.2. Oral discussion

4.4. Training Methods

- 4.4.1. Self-directed study
- 4.4.2. Practical exercises
- 4.4.3. Discussion

4.5. Practical Exercises

4.5.1. Overview of Evidence Receiving and Transfer

- 4.5.1.1. The student shall be taken through the procedure of receiving evidence for NIBIN processing. Emphasis shall be placed on actions with evidence discrepancies, checking for an unloaded condition in submitted firearms, and handling evidence in unusual circumstances.

Principal Instructor Signature and Date

- 4.5.1.2. The student shall review all procedures pertaining to the marking of evidence and be given practical exercises in marking test fires.

Principal Instructor Signature and Date

4.5.2. Biohazard items

- 4.5.2.1. Review safety procedures for handling biohazardous substances with your Principal Instructor, including, but not limited to PPE and what to do in the event of an exposure.



Principal Instructor Signature and Date

4.5.2.2. Review procedures to be followed before an item marked as a biohazard is processed for NIBIN or casework with your Principal Instructor.

Principal Instructor Signature and Date

4.5.2.3. Review procedures for decontaminating (potentially) biohazardous items with your Principal Instructor.

Principal Instructor Signature and Date

4.5.3. Laboratory Safety

4.5.3.1. Review general laboratory safety policies and procedures with your Principal Instructor. Include, but do not limit the discussion to, PPE, chemical safety, what to do in the event of chemical exposure, chemical spill, medical emergency, or a fire.

Principal Instructor Signature and Date

4.6. Reading

4.6.1. Required reading

- HFSC Quality Manual
- Firearms Section Standard Operating Procedures
- HFSC Health and Safety Manual
- All reading listed by TFSC as required for the Evidence Handling of the Technician License Exam.

Student Signature and Date of Reading Completion

4.7. Terminology

None



4.8. Estimated Training Time

40 hours



5. Function Testing, Test Firing, and Specimen Recovery

5.1. Sections

- 5.1.1. Test Firing Safety
- 5.1.2. Selecting Ammunition for Test Firing
- 5.1.3. Test Firing and Bullet Recovery Methods
- 5.1.4. Function Testing Firearms (Mock Cases)
- 5.1.5. Competency

5.2. Training Objectives

To instruct the student in the proper methods of range safety procedures, basic firearm repair, preparing firearms for test firing, ammunition selection for test firing, test firing, bullet recovery devices, special equipment for firing unsafe weapons, and firearm terminology. The student will demonstrate competency in function-testing and test firing firearms for the NIBIN program. **All mock casework and competency tests are completed utilizing the normal workflow for NIBIN. Only requests, including having 2 reviewers. All mock casework is also reviewed by the principal instructor.**

5.3. Method of Testing

Written/practical examinations

5.4. Training Methods

- 5.4.1. Self-directed study
- 5.4.2. Discussion

5.5. Practical Exercises

5.5.1. Test Firing Safety

- 5.5.1.1. Review the test firing safety rules, cite the rules and explain the reason for each rule with your Principal Instructor. Include, but do not limit the review to, PPE (both required and optional), verbal and visual cues used when firing, and safe directions in the designated shooting area.

Principal Instructor Signature and Date

5.5.2. Selecting Ammunition for Test Firing

- 5.5.2.1. Familiarize yourself with the ammunition storage areas in the section. Know how to locate test ammunition. Discuss with your Principal Instructor the reasons for using substitute ammunition for test firing.



Principal Instructor Signature and Date

5.5.3. Test Firing and Bullet Recovery Methods

- 5.5.3.1. Become knowledgeable about the capabilities and limitations in the section for test firing and recovery of fired test bullets. Know when and how to use the each option. Observe and assist your Principal Instructor in the recovery of fired bullets using any available methods. Know and observe all safety rules.

Principal Instructor Signature and Date

- 5.5.3.2. Recover bullets fired from handguns and rifles into the shooting tank utilized by the Firearm Section.

Principal Instructor Signature and Date

5.5.4. Function Testing Firearms (Mock Cases)

- 5.5.4.1. Perform function tests (under the direct supervision of a trained analyst) on at least 15 pistols and will record the work performed. Firearms tested should be a variety of firearms that are representative of pistols routinely seen in NIBIN work and should include, if possible, an automatic pistol. All work will be entered in LIMS under the appropriate assignment. More than 15 pistols may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date

- 5.5.4.2. Test fire at least 15 pistols (under the direct supervision of a trained analyst) and will record the work performed. Firearms tested should be a variety of firearms that are representative of pistols routinely seen in NIBIN work and should include, if possible, an automatic pistol. All work will be entered in LIMS under the appropriate assignment. More than 15 pistols may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date



5.5.4.3. Perform function tests (under the direct supervision of a trained analyst) on at least 5 rifles and will record the work performed. Firearms tested should be a variety of firearms that are representative of rifles routinely seen in NIBIN work and should include, if possible, a rifle that can fire in either automatic or 3-round burst mode. All work will be entered in LIMS under the appropriate assignment. More than 5 rifles may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date

5.5.4.4. Test fire at least 5 rifles (under the direct supervision of a trained analyst) and will record the work performed. Firearms tested should be a variety of firearms that are representative of rifles routinely seen in NIBIN work and should include, if possible, a rifle that can fire in either automatic or 3-round burst mode. All work will be entered in LIMS under the appropriate assignment. More than 5 rifles may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date

5.5.4.5. Perform function tests (under the direct supervision of a trained analyst) on at least 5 shotguns and will record the work performed. Firearms tested should be a variety of firearms that are representative of shotguns routinely seen in NIBIN work and shall include semiautomatic and pump action shotguns. All work will be entered in LIMS under the appropriate assignment. More than 5 shotguns may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date

5.5.4.6. Test fire at least 5 shotguns (under the direct supervision of a trained analyst) and will record the work performed. Firearms tested should be a variety of firearms that are representative of shotguns routinely seen in NIBIN work and shall include semiautomatic and pump action shotguns. All work will be entered in LIMS under the appropriate assignment. More than 5 shotguns may be assigned to the student at the discretion of the Section Manager or primary trainer.



Principal Instructor Signature and Date

5.5.5. Competency

5.5.5.1. Demonstrates competency in test firing firearms (to test fire without supervision) by demonstrating knowledge of safe firearm handling, ammunition selection, and HFSC test firing procedures to the satisfaction of the Principal Instructor.

Principal Instructor Signature and Date

5.5.5.2. Demonstrate competency in working up handguns for NIBIN by function testing and test firing at least 5 pistols selected from the list in section 2.5.3.1. The work will be recorded in LIMS, including recording proper chain of custody, generating LIMS worksheets, and LIMS reports. At least one handgun must be treated as a biohazard. Demonstrate familiarity with HFSC and Firearms Section policies and procedures when handling biohazard items. More than 5 pistols may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date

5.5.5.3. Demonstrate competency in working up rifles for NIBIN by function testing and test firing at least 3 rifles selected from the list in section 2.5.4.1. The work will be recorded in LIMS, including recording proper chain of custody, generating LIMS worksheets, and LIMS reports. At least one rifle must be treated as a biohazard. Demonstrate familiarity with HFSC and Firearms Section policies and procedures when handling biohazard items. More than 3 rifles may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date

5.5.5.4. Demonstrate competency in working up shotguns for NIBIN by function testing and test firing at least 2 shotguns selected from the list in section 2.5.5.1. The work will be recorded in LIMS, including recording proper chain of custody, generating LIMS worksheets, and LIMS reports. More than 2 shotguns may be assigned to the student at the discretion of the Section Manager or primary trainer.

Principal Instructor Signature and Date



5.6. Reading

5.6.1. Required Reading

- Textbook of Firearms Investigation, Identification and Evidence by Hatcher, Jury and Weller; (Pennsylvania: Stackpole company, 1957) pp. 235-239, Chapter 1.
- Hatcher’s Notebook by Hatcher; (Pennsylvania: Stackpole Company, 1962), Chapters 7, 8, 12, 29, and 35.
- Problems and Advantages of Test Firing Weapons into Water, Journal of The Forensic Science Society, Vol. 6, No. 2, April 1966.
- Horizontal Water Recovery Tank by J.C. Cayton; AFTE Journal; Vol. 6, No. 1 (February 1974) pp. 23-24.
- Water Penetration Test, by L.R. Harden; AFTE Newsletter; Vol. 3, No. NL14 (June 1971) pp. 12-15.
- Firing Chamber and Safety Measures Taken in the Firearm and Toolmark Work Environment, by John Cayton; AFTE Journal; Vol. 17, No. 3 (July 1985), pp. 95-99.
- Firearms Safety in the Laboratory, by Gerard Dutton; AFTE Journal; Vol. 29, No. 1 (Winter 1997) pp. 37-41.
- The Identification of Firearms by Gunther & Gunther; (New York: John Wiley and Sons, 1935), p. 55.
- NRA Guide to Firearms Assembly, Vol. 3, 221.
- NRA Guide to Firearms Assembly, pp.117 and 239.

Student Signature and Date of Reading Completion

5.7. Terminology

Research the following terms using the AFTE Glossary and discuss each with your Principal Instructor. (If the term is not in the AFTE Glossary, consult with your Principal Instructor on how to research the term.):

Bullet Recovery System	Bullet Splash	Backstop
Cotton Box	Face Shield	Full Auto
Function Testing	Test Fire	Tubular Magazine
Vise	Water Tank	

Principal Instructor Signature and Date



5.8. Estimated Training Time

100 hours



6. LIMS and Report Writing

6.1. Sections

- 6.1.1. Overview of the Laboratory Information Management System (LIMS)
- 6.1.2. Writing reports

6.2. Training Objective

To instruct the student in the use of LIMS. The student will also gain experience in writing reports.

6.3. Method of Testing

Written/practical examinations

6.4. Training Method

- 6.4.1. Self-directed study
- 6.4.2. Practical exercises
- 6.4.3. Discussion

6.5. Practical Exercises

6.5.1. Overview of the Laboratory Information Management System (LIMS)

- 6.5.1.1. The student shall be shown the procedure for creating an assignment in **portal and LIMS** and associating evidence items with the assignment. The student shall be shown how to create items and sub-items of evidence. Demonstrate your ability to perform these tasks to the satisfaction of your Principal Instructor.

Principal Instructor Signature and Date

- 6.5.1.2. The student will be shown how to complete the **appropriate** fields in **LIMS** associated with **NIBIN Only** requests. The student will be shown how to create appropriate worksheets in LIMS. Demonstrate your ability to perform these tasks to the satisfaction of your Principal Instructor.

Principal Instructor Signature and Date

- 6.5.1.3. The student should be shown how to query the LIMS **or the Dashboard** for the following: pending requests assigned to him/her, pending AR/TR assigned to him/her (if applicable), **evidence in his/her custody**, common reports, and methods



for searching the database for information. Demonstrate your ability to perform these tasks to the satisfaction of your Principal Instructor.

Principal Instructor Signature and Date

6.5.1.4. The student shall be taken through the procedure for querying LIMS, portal, and EMS for case/evidence information. Demonstrate your ability to perform these tasks to the satisfaction of your Principal Instructor.

Principal Instructor Signature and Date

6.5.2. Writing reports

6.5.2.1. The student will be shown how to properly create an IBIS notification in LIMS. Demonstrate your ability to perform these tasks to the satisfaction of your Principal Instructor.

Principal Instructor Signature and Date

6.6. Reading

- LIMS Training Manual (Current Edition)
- Firearms Section Standard Operating Procedures

Student Signature and Date of Reading Completion

6.7. Terminology

None

6.8. Estimated Training Time

40 hours



7. Instrumentation

7.1. Sections

None

7.2. Training Objectives

To instruct the student in the operation and maintenance of the instruments used in the Firearms Section and continue development of his/her knowledge of firearm terminology.

7.3. Method of Testing

Practical examinations

7.4. Training Methods

- 7.4.1. Self-directed study
- 7.4.2. Demonstration
- 7.4.3. Discussion

7.5. Practical Exercises

7.5.1. Differentiate between the following:

- Compound microscope
- Stereo microscope
- Comparison microscope

Principal Instructor Signature and Date

7.5.2. Familiarize yourself with the mechanical and optical aspects of the comparison microscopes and stereo microscope in the Firearms Section. Your Principal Instructor will review these with you.

Principal Instructor Signature and Date

7.5.3. Examine at least 20 sets of fired cartridge cases using a comparison microscope. Adjust the light sources with respect to angle and vary the intensity of the light source, if possible. Discuss this with your Principal Instructor.

Principal Instructor Signature and Date



7.5.4. Become familiar with and demonstrate the use of an inertia bullet puller.

Principal Instructor Signature and Date

7.6. Reading

7.6.1. Required Reading

- The Stereomicroscope Instrumentation and Techniques, by Schlueter & Gumpertz; American Laboratory, April 1976
- Manufacturer’s Procedure and Operation Manuals
- The Microscope A Practical Guide, by G. H. Needham
- Firearms Identification, by Mathews; (Wisconsin: University Wisconsin Press, 1962), Vol. 1, Chapter 4.
- Firearms Investigation Identification and Evidence, by Hatcher, Jury and Weller; (Pennsylvania: The Stackpole Company, 1957); Chapter 10.
- Basic Optics by Claude Cook; AFTE Journal; Vol. 17, No. 4 (October 1985) pp. 24-29 and 38-52.

Student Signature and Date of Reading Completion

7.7. Terminology

Research the following terms using the AFTE Glossary and discuss each with your Principal Instructor. (If the term is not in the AFTE Glossary, consult with your Principal Instructor on how to research the term.):

Binocular Microscope	Calibration	Comparison Microscope
Compound Microscope	Inertia Bullet Puller	Magnification
Mounting Stage	Objective	Oblique Angle
Ocular lens	Scales (Grain/Gram)	Stereo Microscope

Principal Instructor Signature and Date

7.8. Estimated Training Time

40 hours



8. Cartridge Case Examination and Comparison

8.1. Sections

- 8.1.1. Class Characteristics
- 8.1.2. Subclass Characteristics
- 8.1.3. Individual Characteristics
- 8.1.4. Competency

8.2. Training Objectives

To instruct the student in the methods used in the comparison of cartridge

8.3. Method of Testing

Practical examinations

8.4. Training Methods

- 8.4.1. Self-directed study
- 8.4.2. Practical exercises
- 8.4.3. Discussion

8.5. Practical Exercises

8.5.1. Class Characteristics

- 8.5.1.1. Review the section(s) of the Standard Operating Procedures covering the examination fired cartridge cases. Discuss with your Principal Instructor.

Principal Instructor Signature and Date

- 8.5.1.2. Describe "class characteristics" as the phrase applies to markings on a fired cartridge case. Determine the types of marks that can be left on a cartridge case/cartridge during loading/extracting and firing. Review media (if available) regarding the slow motion of firing sequences using semiautomatic firearms.

Principal Instructor Signature and Date

- 8.5.1.3. Using test cartridge cases, relate the markings imparted to the fired cartridge cases with the parts on the firearm which produced these markings. Note: Your Principal Instructor will provide the test fired casings and will conduct these examinations with you.



Principal Instructor Signature and Date

8.5.2. Subclass Characteristics

- 8.5.2.1. Define subclass characteristics and discuss their implications in evaluating cartridge cases for NIBIN entry.

Principal Instructor Signature and Date

8.5.3. Individual Characteristics

- 8.5.3.1. Using the test fired cartridge cases created during completion of sections 5.5.4.2, 5.5.4.4, and 5.5.4.6, microscopically inter-compare the markings on each set of test fires with each other.

- 8.5.3.1.1. Include the following types of markings in your microscopic comparisons:

- Firing pin impression
- Breechface marks
- Extractor marks
- Ejector marks

- 8.5.3.1.2. Describe “individual characteristics” as the phrase applies to markings on a fired cartridge case.

- 8.5.3.1.3. For each set of test fires created, identify the item or items you would select for NIBIN imaging. Be prepared to discuss your choices with your Principal Instructor. Include in your discussion any items you would not image and why.

Principal Instructor Signature and Date

8.5.4. Competency

- 8.5.4.1. Demonstrates competency in test fired cartridge case evaluation for NIBIN entry by evaluating the test fires created during completion of sections 5.5.5.2-5.5.5.4 and selecting representative items for imaging to the satisfaction of the Principal Instructor.

Principal Instructor Signature and Date

8.6. Reading



8.6.1. Required Reading

- Firearms Identification, by Mathews; (Wisconsin: University Wisconsin Press, 1962); Vol. 1, Part. 1, Chapters 3 and 6.
- Firearms Investigation, Identification and Evidence, by Hatcher, Jury and Weller; (Pennsylvania: The Stackpole Company, 1957); pp. 285-304 and Chapters 12, 13, and 14.
- Introduction to Tool Marks, Firearms and the Striagraph, by Davis; (Illinois: Charles C. Thomas, 1958); Chapter 5.
- Identification of Firearms and Forensic Ballistics, by Burrard; (New York: A. S. Barnes and Co., 1962); Chapters 6, 8, and 9.
- The Identification of Firearms, by Gunther and Gunther; (New York: John Wiley & Sons, 1935); Chapter 1 pp. 13-102.
- Hatcher's Notebook, by Hatcher; (Pennsylvania: The Stackpole Company, 1957); Part 1, Chapter 35, and pp. 431-441.
- Scientific Evidence in Criminal Cases, by Moenssens and Inbau; (New York: The Foundation Press, 1978); Chapter 4 pp. 180-182.
- Forensic Science Handbook Vol. II, by Saferstein; (New Jersey: Prentice Hall, 1988); Chapter 8 pp. 430-434.
- AFTE Journal Index, by Terry LaVoy; (Tampa: TA LaVoy & Associates, 1999); Cartridge Case Section.

Student Signature and Date of Reading Completion

8.6.2. Recommended Reading

- AFTE Glossary, current version (terms as needed).

8.7. Terminology

None

8.8. Estimated Training Time

280 hours



9. NIBIN Acquisition and Correlation Review

9.1. Sections

- 9.1.1. NIBIN Acquisition
- 9.1.2. Correlation Review

9.2. Training Objective

To instruct the student in the use of the section's ballistic imaging program.

9.3. Method of Testing

Practical examination

9.4. Training Methods

- 9.4.1. Self-directed study
- 9.4.2. Practical exercises
- 9.4.3. Lecture
- 9.4.4. Discussion

9.5. Practical Exercises

9.5.1. NIBIN Acquisition

- 9.5.1.1. The student will explain what NIBIN, IBIS, and BrassTrax are and how they are related.

Principal Instructor Signature and Date

- 9.5.1.2. Complete training on the IBIS/NIBIN system and become an authorized NIBIN user for acquisitions. Training must be provided by a NIBIN Authorized Trainer (NAT).

Principal Instructor Signature and Date

- 9.5.1.3. Read the ATF Minimum Required Operating Standards for National Integrated Ballistic Information Network (NIBIN) Sites (MROS). Review this document with your Principle Instructor and discuss the implications of the requirements for HFSC and for you as a NIBIN Technician.

Principal Instructor Signature and Date



9.5.1.4. Demonstrating Competency: (Upon successful completion of an ATF approved NIBIN training program) record at least 20 acquisitions and have them reviewed by the Principal Instructor for conformance to training standards.

Principal Instructor Signature and Date

9.5.2. Correlation Review

9.5.2.1. Review the meaning of class, subclass, and individual characteristics. Discuss their meaning and importance in the context of issuing NIBIN leads with your Principal Instructor.

Principal Instructor Signature and Date

9.5.2.2. Demonstrating Competency: (Upon successful completion of a correlation review training) Demonstrate your ability to locate high confidence candidates in the Matchpoint system by reviewing at least 50 correlation reviews using the current standard practices in place at the Firearms Section of HFSC.

Principal Instructor Signature and Date

9.6. Required Reading

- NIBIN/IBIS training materials issued by Forensic Technology, Inc. (current edition).
- ATF Minimum Required Operating Standards for National Integrated Ballistic Information Network (NIBIN) Sites (current version)
- HFSC Firearms Section Standard Operating Procedures.
- ATF Policy on Issuing NIBN Leads

Student Signature and Date of Reading Completion

9.7. Terminology

9.7.1. Common Acronyms

NIBIN	National Integrated Ballistic Information Network
IBIS	Integrated Ballistics Identification System
BATF/BATF/BATFE	Bureau of Alcohol, Tobacco, Firearms, and Explosives



9.7.2. Define the following terms as they apply to NIBIN

Correlation

NIBIN Lead

NIBIN Hit

IBIS

Brasstrax

Matchpoint

Submit

Synchronize

Principal Instructor Signature and Date

9.8. Estimated Training Time

80 hours



10. Testimony Training and Oral Exam

10.1. Sections

- 10.1.1. General Aspects of Forensic Science
- 10.1.2. Courtroom Procedure, Brady, and Michael Morton
- 10.1.3. Human Factors
- 10.1.4. Root Cause Analysis
- 10.1.5. Oral Exam
- 10.1.6. Mock Trial

10.2. Training Objective

To familiarize the student with basic court procedures, the application of law to forensic science, general aspects of forensic science, and evaluate the student's ability to communicate these ideas in a courtroom setting.

10.3. Method of Testing

Oral exam

Mock Trial – if needed

10.4. Training Methods

- 10.4.1. Self-directed study
- 10.4.2. Discussion (as needed)

10.5. Practical Exercise

10.5.1. The student will be given an oral examination by Section management. The oral exam is designed to evaluate the student's ability to communicate effectively in a courtroom setting as well as evaluate the student's fundamental knowledge needed to carry out day-to-day job duties. The oral examination questions may cover any aspect of this training manual. The student successfully passes the oral exam if the questions are answered to the satisfaction of Section management.

Section Manager Signature and Date

10.5.2. Due to limitations in licensing, NIBIN Technicians are not expected to testify in court. However, in the event a NIBIN Technician is called to testify, he/she will undergo a mock trial proceeding. The mock trial should cover all aspects the Technician may testify to, including accreditation, licensing, chain of custody, evidence integrity, and basic NIBIN imaging information.



Section Manager Signature and Date

10.6. Reading

10.6.1. Required Reading (General Aspects of Forensic Science)

- Houck, M., Siegel, J., Fundamentals of Forensic Science, 2nd edition or newer. Section I, Chapters 1 (Introduction), 2 (Crime Scene Investigation), and 3 (The Nature of Evidence).
- Saferstein, R. Criminalistics: An Introduction to Forensic Science, 8th edition or newer. Chapters 1 (Introduction), 2 (The Crime Scene), and 3 (Physical Evidence).

Student Signature and Date of Reading Completion

10.6.2. Required Reading (Courtroom Procedure, Brady, and Michael Morton)

- Houck, M., Siegel, J., Fundamentals of Forensic Science, 2nd edition (or more recent)., Chapter 23 (Legal Aspects of Forensic Science).
- All reading listed by the Texas Forensic Science Commission (TFSC) as required for the Brady and Michael Morton Act Domain of the Forensic Technician License Exam.

Student Signature and Date of Reading Completion

10.6.3. Required Reading (Human Factors)

- All reading listed by TFSC as required for the Human Factors Domain of the Forensic Technician License Exam.

Student Signature and Date of Reading Completion

10.6.4. Required Reading (Root Cause Analysis)

- All reading listed by TFSC as required for the Root Cause Analysis Domain of the Forensic Analyst License Exam.

Student Signature and Date of Reading Completion

10.6.5. Review as Needed

- All other required reading in this training manual



10.6.6. Recommended Reading (Expert Testimony)

- All reading listed by TFSC as required for the Expert Testimony Domain of the Forensic Analyst License Exam.

10.6.7. Recommended Reading (Statistics)

- All reading listed by TFSC as required for the Statistics Domain of the Forensic Analyst License Exam.

10.7. Estimated Training Time

80 hours