



TENNESSEE BUREAU OF INVESTIGATION

Forensic Services Division

Firearms/Toolmarks Standard Operating Procedures Manual

FTIU Training Procedures

2.0 Firearm and Toolmark Identification Unit Training Program

The TBI Firearm and Toolmark Identification Unit (FTIU) will have a program for training new Forensic Scientists and Forensic Technicians. The FTIU training program will follow the guidelines provided by the Association of Firearm and Tool Mark Examiners (AFTE) located in the AFTE Training Manual found in the TBI Forensic Services Division's document control system (ensur System) as well as the National Institute of Justice (NIJ) Firearms Examiner Training Manual located on-line at <https://firearms-examiner.dna.gov/>. The training of new Forensic Scientists and Forensic Technicians is not limited to these guidelines, and may be supplemented by additional internal or external training. The length of training for new Forensic Scientists is approximately two years. Every new Forensic Scientist will be required to successfully complete the training program prior to performing independent casework analyses. If an experienced Firearm Examiner is hired by the FTIU, an abbreviated training program and competency test will be required, at minimum, before he/she may perform independent casework analyses. Forensic Technicians assigned to the FTIU will have an abbreviated training program.

2.1 Training of all FTIU Personnel

2.1.1 The following is required reading for all employees of the TBI FTIU:

- TBI Policies and Procedures
- TBI Safety Manual
- TBI Quality Assurance Manual
- TBI FTIU Standard Operating Procedures Manual
- TBI FTIU Training Manual

2.1.2 The following is suggested reading for all employees of the TBI FTIU, and will provide a basic understanding of Firearms Identification:

- Hatcher, Jury, Weller, *Firearms Investigation, Identification and Evidence*, Stackpole Co., 1957.
- Gunther, J.D and C.O Gunther, *The Identification of Firearms*, John Wiley and Sons, New York, 1935.
- Heard, B., *Handbook of Firearms and Ballistics*, John Wiley and Sons, West Sussex, 1997.
- Davis, *Tool Marks, Firearms, and the Striagraph*, Charles C. Thomas, Springfield., Illinois., 1958.
- Matthews J.H., *Firearms Identification*, Volumes I and II.
- Di Maio, J.M., *Gunshot Wounds*, CRC Press., 2nd Ed., 1999.
- Saferstein, *Criminalistics: An Introduction to Forensic Science*.
- Saferstein, *Forensic Science Handbook*, Volume II (Chapter 8).
- AFTE Glossary.

2.1.3 All new employees will undergo training in basic forensic science to gain a general understanding of each forensic discipline and testing performed therein. This may be



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accomplished by spending time in each unit of the laboratory, attending TBI Basic Forensic Crime Scene Processing School, and/or attending TBI Special Agent Academy. This will be documented in the training notebook.

2.1.4 All new employees will undergo training in legal matters and the law. For the FTIU, this may include reading state and federal guidelines and law concerning firearms and their regulations, legal definitions of firearm types (short barrel shotguns, automatic firearms, etc.), and hunting regulations. Civil law training will address receipt of subpoenas and requests for documents related to case files. This training will be supplemented by attending pre-trial conferences with other court qualified examiners, court proceedings, and trials. A record of this training will be maintained in the training notebook.

2.1.5 All new employees will undergo training in ethics and ethical practices in forensic science. This will be supplemented with required annual ethics training. A record of this training will be maintained in the ensur System.

2.1.6 All new employees will successfully complete a competency test in evidence handling prior to handling actual evidence items. The evidence handling competency test will evaluate the following areas:

- Proper use of personal protective equipment (PPE).
- Proper documentation of packaging and evidence items.
- Proper labeling/markings of packaging and evidence items.
- Proper repackaging of evidence items after completion of testing.
- Proper sealing of evidence packages.

The evidence handling competency test will consist of a minimum of two items of mock evidence in proper packaging and properly sealed. The Training Officer or FTIU Supervisor/Technical Leader will monitor the Forensic Scientist or Forensic Technician in training during the test and will evaluate and document the following:

- The use of PPE.
- Accurate documentation of the packaging, seals, labels/markings, and evidence items.
- Opening of packaging away from previous seals when applicable.
- Opening of only one item at a time, maintaining separation of items, and placing of identifying marks on evidence items.
- Returning of evidence items to packaging in the same manner as received.
- Sealing of evidence packaging with TBI Evidence tape, marking seals with initials, and ensuring packaging is marked with Laboratory number, Exhibit number, and initials.

2.2 Training of Forensic Scientists

2.2.1 The FTIU Supervisor will designate a Training Officer to be responsible for the training of the new Forensic Scientist. The Training Officer will work one-on-one with the Forensic Scientist



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in training, and will have the following responsibilities:

- To demonstrate safe firearms handling and firearms safety.
- To demonstrate proper evidence handling and documentation procedures.
- To demonstrate the proper methods used to examine all types of evidence.
- To provide a basic understanding of microscopic techniques and to demonstrate the fundamentals of microscopic comparisons.
- To provide instruction in the use and maintenance of all instruments utilized in the FTIU.
- To provide training in courtroom etiquette and testimony preparation.
- To ensure that training is progressing in a timely manner, and that training assignments and practical exercises are satisfactorily completed. Feedback will be provided to the new Forensic Scientist's immediate supervisor and FTIU Technical Leader.
- To issue a quarterly training memorandum documenting the progress of the examiner in training. These memorandums will be forwarded to the Quality Assurance Manager, Crime Laboratory Regional Supervisor, and FTIU Technical Leader.

2.2.2 Forensic Scientists in training will be required to successfully complete:

- Training assignments and practical exercises outlined in the FTIU Training Manual in the ensur System. Successful completion will include obtaining the expected results on all training assignments and practical exercises outlined in the FTIU Training Manual.
- Obtaining a score of at least 80% on the multiple-choice assessments included with all applicable NIJ Modules referenced in the FTIU Training Manual.
- Casework examinations and comparisons under the direct supervision of experienced examiners.
- A series of competency tests and proficiency tests.
- Moot court sessions.
- A final competency test that includes evidence processing, comparisons, report writing, and testimony in a mock trial.
- Tours of firearms manufacturers and ammunition manufacturers.
- Training for entering and correlating images in the National Integrated Ballistic Information Network (NIBIN) system.
- Basic Forensic Crime Scene Processing School.
- External courses in serial number restoration, gunshot residue distance determination, and trajectory analysis/shooting reconstruction are recommended, and should be attended if classes are available.
- At the Training Officer's discretion, the original AFTE modules (1-7) may be assigned.

2.2.3 Each examiner in training will also prepare three short presentations to be presented to the FTIU. The following topics may be used for these presentations, or other topics may be substituted with the approval of the Training Officer or FTIU Supervisor/Technical Leader:

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- The History of Firearms
- The History of Ammunition
- The History of Firearms Identification
- Microscopy, including the history of the comparison microscope
- NIBIN
- Admissibility Standards

A minimum of two of the three presentations will cover “History” topics.

2.2.4 Each examiner in training will maintain a training notebook documenting his/her progress. The Training Officer and FTIU Supervisor/Technical Leader will periodically review the notebook and document the successful completion of training by placing their initials and date by each portion of training.

2.2.5 Each Forensic Scientist in training should keep a record of the microscopic examinations performed in order to ascertain the total number of microscopic comparisons completed during the training program.

2.2.6 Forensic Scientists in training should stay abreast of developments within the field of Firearm and Toolmark Identification by reading current scientific literature and by attending seminars, professional meetings and other training sessions. Documentation of all training and continuing education will be maintained in each examiner’s training notebook and/or in the ensur System. Documentation of periodical reviews will be maintained in the FTIU.

2.2.7 Training of new Forensic Scientists may include attendance of the National Firearms Examiners Training Academy sponsored by the ATF or California Criminalistics Institute’s Firearm and Toolmark Examiner Training Academy. These external training opportunities supplement the TBI training, but are not designed to replace it.

2.2.8 Upon successful completion of the training program and final moot case with mock trial, the new Forensic Scientist will be authorized to perform independent casework analyses, issue reports, and testify to those findings. The new Forensic Scientist will be authorized to perform verifications, technical reviews, and administrative reviews on other examiners’ cases after conducting a sufficient number of supervised verifications and reviews to ensure competency.

2.3 Training of Forensic Technicians

2.3.1 The FTIU Supervisor will designate a Training Officer to be responsible for the training of the new Forensic Technician. The Training Officer will work one-on-one with the Forensic Technician in training and will have the following responsibilities:

- To demonstrate safe firearms handling and firearms safety.
- To demonstrate proper evidence handling and documentation procedures.
- To demonstrate the proper methods used to examine all applicable types of evidence.



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- To provide a basic understanding of microscopic techniques and to demonstrate the fundamentals of microscopic comparisons.
- To provide instruction in the use and maintenance of all instruments utilized in the FTIU.
- To provide training in courtroom etiquette and testimony preparation.
- To ensure that training is progressing in a timely manner and satisfactorily. Feedback will be provided to the Forensic Technician's immediate supervisor and the FTIU Technical Leader.
- To issue a quarterly training memorandum documenting the progress of the Forensic Technician in training. These memorandums will be forwarded to the Quality Assurance Manager, Crime Laboratory Regional Supervisor, and FTIU Technical Leader.

2.3.2 Forensic Technicians in training will be required to successfully complete:

- Training in entering and correlating images in the NIBIN system.
- Casework examinations and comparisons under the direct supervision of experienced, court qualified Forensic Scientists.
- A series of small proficiency tests.
- Moot courts sessions.

2.3.3 Each Forensic Technician in training may also be required to prepare and give presentations on the following topics:

- The History of Firearms
- The History of Ammunition
- The History of Firearms Identification
- NIBIN

2.3.4 The Forensic Technician in training will maintain a training notebook documenting his/her progress. The Training Coordinator and FTIU Supervisor will periodically review the notebook and document the successful completion of training by placing their initials and date by each portion of training.

2.3.5 Forensic Technicians in training should stay abreast of developments within the field of Firearm and Toolmark Identification by reading current literature. Documentation of periodical reviews will be maintained in the FTIU.

2.3.6 Upon successful completion of the training program and final moot case with mock trial, the new Forensic Technician will work independently to enter casework samples into the NIBIN system and perform the correlations. The new Forensic Technician may be authorized to write reports on NIBIN-only cases.

2.4 Remedial Training/Retraining:

If a deficiency is detected in an examiner/technician's casework or annual proficiency test, that

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examiner/technician may be subject to a remedial training/retraining period. The course of action shall be determined by the FTIU Technical Leader/Unit Supervisor, Quality Assurance Manager, and Crime Laboratory Regional Supervisor. Depending on the severity of the deficiency, the examiner/technician may be suspended from casework during the period of remedial training/retraining. If remedial training/retraining occurs, the following requirements shall be met before the firearm examiner is permitted to resume normal casework within that discipline: review of casework involving the specific discipline in which a deficiency was detected, supervised casework, and a competency test. The successful completion of these requirements will be documented and maintained within the FTIU by the FTIU Supervisor and the examiner/technician will receive authorization to resume casework examinations in that discipline.