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## Training Outline for IBIS Technicians

- 1.0 Purpose** – The purpose of this procedure is to provide a training program for IBIS Technicians working only cases involving cartridge cases in the North Carolina State Crime Laboratory. This program shall provide individuals theoretical background and working knowledge in the areas of firearms and ammunition safety, microscopy, fired ammunition class characteristics, IBIS entry, and presentation of evidence in court. Upon completion and final approval, the trainee will be permitted to perform IBIS casework.
- 2.0 Scope** – This training outline shall be followed by all IBIS Technician trainees regardless of experience level.
- 3.0 Module 1 – General Firearms and Ammunition Overview and Safety**
- 3.1 Objectives:** Through completion of this module, the trainee shall have developed and demonstrated knowledge of:
- 3.1.1** The fundamentals of firearm and ammunition safety.
  - 3.1.2** General safety rules that should be followed when handling firearms in any environment.
  - 3.1.3** Proper firearms and ammunition nomenclature.
  - 3.1.4** Lead exposure awareness.
- 3.2 Reading Assignments**
- National Institute of Justice, Firearms Examiner Training, Module 15: Safety <https://firearms-examiner.dna.gov>
  - National Rifle Association, Gun Safety Rules <http://training.nra.org/nra-gun-safety-rules.aspx>
  - Association of Firearm and Tool Mark Examiners (AFTE) Glossary, current edition.
  - U.S. Department of Labor, Occupational Safety & Health Administration (OSHA) Regulations: 29 CFR 1910.1025, Toxic and Hazardous Substances – Lead [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=standards&p\\_id=10030](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10030)
  - Firearm Safety Fundamentals [www.firearmsid.com](http://www.firearmsid.com)
  - Firearms Safety Depends on You, National Shooting Sports Foundation (NSSF), 2009
  - National Rifle Association, Gun Safety Rules, <http://training.nra.org/nra-gun-safety-rules.aspx>
  - Firearms Safety Training (PowerPoint Presentation)
  - Lead Exposure, SBI 2014 In-Service Law Enforcement Firearms Training, Pages 14-16.
  - Dutton, G., Firearms Safety in the Laboratory, AFTE Journal, 1997; 29 (1): 37-41.
  - Safety with Firearms (Parts 1-3), The American Rifleman, February – April, 1965.
- 3.3 Exercises**
- 3.3.1** Read the above literature pertaining to firearm and ammunition safety.
  - 3.3.2** List 10 key rules of safe firearm handling, to include the three common fundamental safety rules.

**3.3.3** Identify and label firearm and ammunition component diagrams using correct nomenclature.

**3.3.4** Complete a set of study questions that is reviewed by the Training Officer.

### **3.4 Evaluation**

**3.4.1** Successfully complete a written test on topics covered in the reading assignments and exercises.

## **4.0 Module 2 – Microscopy**

**4.1 Objectives:** Through completion of this module, the trainee shall have developed and demonstrated knowledge of:

**4.1.1** The basic theory of microscopy.

**4.1.2** The fundamental terminology of microscopy.

**4.1.3** The composition, function and operation of the stereomicroscope and comparison microscope.

### **4.2 Reading Assignments**

- Unit Microscopy Notebook
- The Microscope and Its Applications - Hans Gerterman and Friedrich Lepusch, Leitz-Wetzlar
- AFTE Glossary
- An Introduction to the Optical Microscope - Royal Microscopical Society, Saville Bradbury, Oxford Press, 1984.(unit microscopy notebook)
- “Basic Optics” - Claude W. Cook (unit microscopy notebook)
- Wild Stereoscope Instructional Manual
- Leica FS C Operating Manual

### **4.3 Exercises**

**4.3.1** Read the above literature pertaining to microscopy and the stereomicroscope.

**4.3.2** Given a set of terms and study questions, identify all terms and answer all study questions as they relate to microscopy.

**4.3.3** Receive instruction from the Training Officer or designee on the operation and proper use of the stereomicroscope and comparison microscope.

**4.3.4** Given a set of fired cartridge cases, label the extractor and ejector, when present.

### **4.4 Evaluation**

**4.4.1** Successfully complete a written test on topics covered in the reading assignments and exercises.

## **5.0 Module 3 – Fired Ammunition Class Characteristics**

**5.1 Objectives:** Through completion of this module, the trainee shall have developed and demonstrated knowledge of:

**5.1.1** Cartridge case class characteristic terminology.

**5.1.2** The various class characteristics associated with cartridge cases.

### **5.2 Reading Assignments**

- Unit Class Characteristics Notebook
- Firearms Identification, Vol. I - J.H. Mathews
- Firearms Identification - Jury, Weller, and Hatcher
- Tool Marks and the Striagraph - John Davis
- AFTE Glossary

### **5.3 Exercises**

**5.3.1** Read the above literature pertaining to class characteristics of cartridge cases.

**5.3.2** Given a set of terms and study questions, identify all terms and correctly answer all study questions as they relate to fired ammunition class characteristics.

**5.3.3** Given a set of fired cartridge cases, identify and group the fired cartridge cases based on their class characteristics, and identify at least one (1) in each group for IBIS entry.

**5.3.4** Discuss possible result statements and conclusions with the Training Officer or designee.

### **5.4 Evaluation**

**5.4.1** Successfully complete a written test on topics covered in the reading assignments and exercises.

**5.4.2** Given a practical problem concerning IBIS entries, successfully group the fired cartridge cases, identify at least one (1) from each group for IBIS entry, compile notes, and write a report on the findings.

## **6.0 Module 4 – Integrated Ballistics Identification System Entry**

**6.1 Objectives:** Through completion of this module, the trainee shall have demonstrated knowledge of:

**6.1.1** The processing of entering fired cartridge cases into IBIS.

### **6.2 Reading Assignment:**

- Unit IBIS Notebook
- IBISTrax HD3D Brochure

- IBIS Software associated information
- IBIS Folder on SharePoint

### **6.3 Exercises**

**6.3.1** Receive instruction on the procedure to enter cartridge cases into IBIS.

**6.3.2** Observe the entry of several cartridge cases into IBIS.

If available, attend BATFE course to obtain IBIS entry certification. \*NOTE: If the course is not completed, trainee will not be authorized to make IBIS entries

### **6.4 Evaluation**

**6.4.1** If IBIS certification has been obtained, successfully enter the NIST fired cartridge case into IBIS.

## **7.0 Module 5 – Presentation of Evidence in Court**

**7.1 Objectives:** Through completion of this module, the trainee shall have developed and demonstrated knowledge of:

**7.1.1** Court related terminology and the various steps in the court process.

**7.1.2** General understanding of typical qualifying questions during courtroom testimony.

### **7.2 Reading Assignments**

- Lesson Plan, “Court Preparation Training for NC State Crime Laboratory Personnel”
- Perspectives in Expert Testimony Literature, West Virginia University
- Arrest, Search, and Investigation in North Carolina [Chapter 6 – Rules of Evidence in Criminal Cases] - Robert L. Farb
- AFTE Code of Ethics
- Ethics in Forensic Science Literature, West Virginia University

### **7.3 Exercises**

**7.3.1** Read the above literature pertaining to presentation of evidence in court.

**7.3.2** Given a set of terms related to the presentation of evidence in court, correctly define all terms.

**7.3.3** Prepare a set of qualifying questions and associated responses. Review these with the Training Officer or designee.

**7.3.4** The trainee shall attend court and observe the testimony of senior Forensic Scientists as available.

**7.3.5** Update Curriculum Vitae.

### **7.4 Evaluation.**

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**7.4.1** Complete a mock case.

**7.4.2** Successfully complete a moot court based on the analysis of one or more competency cases.

**7.4.3** Successfully complete a final IBIS training written test.

**8.0 Records**

- Training file
- Training checklist

**9.0 Attachments – N/A**

Revision History		
Effective Date	Version Number	Reason
02/28/2017	1	Original Document
09/22/2017	2	Update header information 1.0 – limit scope to cases involving cartridge cases only Remove old 3.1.4, 3.1.5, 3.3.4, 3.3.5, 4.0 (in entirety). Adjust module numbers. Fix numbering of 4.3.4.