

Firearms and Toolmark Training Record

Trainee Name: _____ Training Coordinator: _____

Each section in the chart below must be initialed and dated upon completion of the specified task. If any task is not completed, for any reason, this must be explained in the training file and approved by the Physical Evidence Program Manager.

The start date listed below is the day training began, the completion date is the date the trainee successfully completes the competency test.

Start Date: _____ Completion Date: _____

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Lectures /Assignments/ Exercises / Exams	Date completed	Trainee initials	TC initials	Comments
1.12.2 Orientation <ul style="list-style-type: none"> • Quality Manual • Firearm/Toolmark Procedures Manual • Firearm/Toolmark Training Manual 				
1.13 Firearm Safety Training				
1.14.1 Exam <ul style="list-style-type: none"> • Oral Session (Quality Manual) 				
1.14.2 Exam <ul style="list-style-type: none"> • Written (Firearms Safety) 				
2 Instrumentation				
2.3 Assignments <ul style="list-style-type: none"> • Reading • Study Questions 				
2.5 Exercises <ul style="list-style-type: none"> • Stereomicroscope Practical Exercise (2.5.1) • Comparison Microscope Practical Exercises (2.5.2 and 2.5.3) • Use and Performance Check of Equipment Practical Exercise (2.5.7) 				
2.5.5 Exercise <ul style="list-style-type: none"> • Cartridge case Practical Exercise 				
2.5.6 Exercise <ul style="list-style-type: none"> • Bullet Practical Exercise 				

2.6 Exam				
<ul style="list-style-type: none"> • Oral Session 				
3 Machining Processes				
3.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
3.5.1 Video				
<ul style="list-style-type: none"> • Watch DFS Machining Video 				
3.5.1 Exercise				
<ul style="list-style-type: none"> • Machining Video exercise 				
3.6 Exam				
<ul style="list-style-type: none"> • Oral Session 				
4 Introduction to Toolmark Identification				
4.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
4.5 Exam				
<ul style="list-style-type: none"> • Oral Session 				
5 Toolmark Examinations and Comparisons				
5.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
5.4 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
5.4.3 Exercise				
<ul style="list-style-type: none"> • Casting Practical Exercise 				
5.5 No Tool Cases				
<ul style="list-style-type: none"> • Reading • Study Questions 				
5.6 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				

5.6.3.1 Exercise				
<ul style="list-style-type: none"> A/B Tools Practical Exercise 				
5.6.3.2 Exercise				
<ul style="list-style-type: none"> Door Knob Practical Exercise 				
5.6.3.3 Exercise				
<ul style="list-style-type: none"> Telephone Cable and Pinching Tool Practical Exercise 				
5.6.3.4 Exercise				
<ul style="list-style-type: none"> Saw Blade Practical Exercise 				
5.6.3.5 Exercise				
<ul style="list-style-type: none"> Files Practical Exercise 				
5.6.3.6 Exercise				
<ul style="list-style-type: none"> Tire/tubing and Knife Practical Exercise 				
5.6.3.7 Exercise				
<ul style="list-style-type: none"> Knife Identification Project Practical Exercise 				
5.7 Assignments				
<ul style="list-style-type: none"> Reading Study Questions 				
5.7.3 Exercise				
<ul style="list-style-type: none"> Subclass Practical Exercise 				
5.8.2 Exam				
<ul style="list-style-type: none"> Oral Session 				
5.8.3 Exam				
<ul style="list-style-type: none"> Practical 				
6 Firearm and Toolmark Evidence Admissibility Criteria and Defense				
6.3.1 Assignment				
<ul style="list-style-type: none"> PowerPoint Presentation 				
6.3.2 Assignment				
<ul style="list-style-type: none"> PowerPoint Presentation 				
6.4 Assignment				
<ul style="list-style-type: none"> Study Questions 				

7 History of Firearms Identification				
7.3 Assignments				
<ul style="list-style-type: none"> • Reading • NFSTC History Module • Study Questions 				
7.3.3 Assignment				
<ul style="list-style-type: none"> • History of Firearms Identification Training Assignment 				
7.3.5 Exam				
<ul style="list-style-type: none"> • History of Firearms Identification Presentation 				
7.3.5 Exam				
<ul style="list-style-type: none"> • Oral Session 				
8 Ammunition				
8.3 Assignments				
<ul style="list-style-type: none"> • Reading • NFSTC Propellants, Ammunition, Firearms Development Module • Study Questions 				
8.3.3 Assignment				
<ul style="list-style-type: none"> • Historical Development of Ammunition Training Assignments 				
8.4 Assignments				
<ul style="list-style-type: none"> • Reading • NFSTC Small Arms Ammunition Module • Study Questions 				
8.4.3 Assignments				
<ul style="list-style-type: none"> • Berdan/Boxer Training Assignment (8.4.3.2) • Cartridge Label/Define Training Assignment (8.4.3.3) • Shotshell Label/Define Training Assignment (8.4.3.4) • Shot Size/Weight Training Assignments (8.4.3.5) 				

8.4.3.1 Assignment				
<ul style="list-style-type: none"> Written report detailing trends in cartridge and bullet development 				
8.4.5.1 Exercise				
<ul style="list-style-type: none"> Visit ammunition manufacturing facility, if possible 				
8.4.5.2 Exercise				
<ul style="list-style-type: none"> Ammunition/ammunition component practical exercise 				
8.5 Assignments				
<ul style="list-style-type: none"> Reading Study Questions 				
8.5.2 Assignments				
<ul style="list-style-type: none"> Written document to include bullet diameter, bullet weight and cartridge design of handgun calibers (8.5.2.1) Cartridge interchangeability (8.5.2.2) Written document to include bullet diameter, bullet weight and cartridge design of rifle calibers (8.5.2.3) Development/progression of military rifle cartridge (8.5.2.4) Bore diameters (8.5.2.5) 				
8.5.4 Exercises				
<ul style="list-style-type: none"> Design characteristics of the different caliber types within each caliber family (8.5.4.1) Determining gauge and/or shot size based on wads and pellets (8.5.4.2) Determining caliber and manufacturer of bullet samples (8.5.4.3) 				
8.6 Exam				
<ul style="list-style-type: none"> Oral Session 				
8.6.1 Exam				
<ul style="list-style-type: none"> Practical 				
8.6.3 Exam				
<ul style="list-style-type: none"> Written 				

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9 Firearms				
9.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.3.2 Assignment				
<ul style="list-style-type: none"> • Chronological outline of early firearms development 				
9.3.4 Exercise				
<ul style="list-style-type: none"> • Visit firearm collection of a museum, if possible 				
9.4 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.4.2 Assignment				
<ul style="list-style-type: none"> • Paper describing the different rifling techniques 				
9.4.4.1 Exercise				
<ul style="list-style-type: none"> • Determine difference between barrels rifled using the broach method and those rifled using the button method 				
9.4.4.2 Exercise				
<ul style="list-style-type: none"> • Visit firearm and/or barrel manufacturing facilities and prepare and present a PowerPoint 				
9.5 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.5.2 Assignment				
<ul style="list-style-type: none"> • Written paper on terms as they relate to the manufacturer of firearms 				
9.5.4 Exercise				
<ul style="list-style-type: none"> • When available attend armorer training offered by various firearms manufacturers. 				

9.6 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.6.2 Assignment				
<ul style="list-style-type: none"> • Define parts on various revolvers 				
9.6.4.1 Exercise				
<ul style="list-style-type: none"> • Assembly/disassembly/safeties/test fire various revolvers 				
9.7 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.7.2 Assignment				
<ul style="list-style-type: none"> • Written paper on the differences between various types of semiautomatic pistols 				
9.7.4.1 Exercise				
<ul style="list-style-type: none"> • Assembly/disassembly/safeties/test fire various pistols 				
9.8 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.8.2 Assignment				
<ul style="list-style-type: none"> • Written paper on the different actions 				
9.8.4 Exercise				
<ul style="list-style-type: none"> • Assembly/disassembly/safeties/test fire various rifles 				
9.9 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.9.2 Assignment				
<ul style="list-style-type: none"> • Written paper on the different actions 				
9.9.4 Exercise				
<ul style="list-style-type: none"> • Assembly/disassembly/safeties/test fire various shotguns 				

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9.10 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
9.10.2 Assignments				
<ul style="list-style-type: none"> • Discussion of a firearm altered to fire full automatic (9.10.2.2) • Discussion of a firearm that may fire without a pull of the trigger (9.10.2.3) • Discussion about note taking, photographs, marking evidence, etc (9.10.2.4) 				
9.10.2.1 Assignment				
<ul style="list-style-type: none"> • Written paper defining and explaining safety implications of a list of terms 				
9.10.4.1 Exercise				
<ul style="list-style-type: none"> • Complete firearm worksheet for a list of firearms with various broken, missing or incorrect assembled parts 				
9.11.1 Exam				
<ul style="list-style-type: none"> • Oral Session (Historical Development of Firearms) 				
9.11.1 Exam				
<ul style="list-style-type: none"> • Oral Session (Firearm Manufacturing) 				
9.11.1 Exam				
<ul style="list-style-type: none"> • Oral Session (Examination of Firearms) 				
9.11.2 Exam				
<ul style="list-style-type: none"> • Complete firearm worksheet on a revolver (9.6) 				
9.11.2 Exam				
<ul style="list-style-type: none"> • Complete firearm worksheet on a pistol (9.7) 				
9.11.2 Exam				
<ul style="list-style-type: none"> • Complete firearm worksheet on a rifle (9.8) 				

9.11.2 Exam				
<ul style="list-style-type: none"> Complete firearm worksheet on a shotgun (9.9) 				
9.11.2 Exam				
<ul style="list-style-type: none"> Complete firearm worksheet on inoperable firearm (9.10) 				
10 Bullet and Shotshell Component Examinations and Comparisons				
10.3 Assignments				
<ul style="list-style-type: none"> Reading NFSTC Characterization and Evaluation of Fired Projectiles Module NFSTC Bullet Comparison and Identification Module Study Questions 				
10.3.3 Exercises				
<ul style="list-style-type: none"> 9mm Luger bullets exercise (10.3.3.2) 357 Magnum bullets exercise (10.3.3.3) 32 S&W bullets exercise (10.3.3.4) 25 Auto bullets exercise (10.3.3.5) 22 Long Rifle bullets exercise (10.3.3.6) 30-30 Winchester bullets exercise (10.3.3.7) 7.62x39mm bullets exercise (10.3.3.8) 				
10.3.3.1 Exercise				
<ul style="list-style-type: none"> 10 bullets exercise 				
10.3.3.9 Exercise				
<ul style="list-style-type: none"> Caliber interchangeability exercise 				
10.3.3.10 Exercise				
<ul style="list-style-type: none"> Ten barrel exercise 				
10.3.3.11 Exercise				
<ul style="list-style-type: none"> Various components exercise 				
10.3.3.12 Exercise				
<ul style="list-style-type: none"> Downloading a 7.62x39mm cartridge exercise 				

10.3.4 Assignment				
<ul style="list-style-type: none"> List of reasons why bullet identifications cannot always be made 				
10.4.1 Exam				
<ul style="list-style-type: none"> Practical 				
10.4.2 Exam				
<ul style="list-style-type: none"> Oral Session 				
11 Cartridge and Shotshell Case Examinations and Comparisons				
11.3 Assignments				
<ul style="list-style-type: none"> Reading NFSTC Cartridge and Shotshell Examination Module Study Questions 				
11.3.3.1 Assignment				
<ul style="list-style-type: none"> Slow motion video 				
11.3.3.2 Assignment				
<ul style="list-style-type: none"> Written report on reloading and manufacturing marks 				
11.3.4 Exercise				
<ul style="list-style-type: none"> Visually relate marks on cartridges and cartridge cases to parts on the firearm (11.3.4.1) Microscopically compare various test fired cartridge cases (11.3.4.2) Microscopically compare cartridge cases fired in the same chamber and different chambers of a revolver (11.3.4.3) Microscopically compare cycled cartridges (11.3.4.4) Class characteristics exercise (11.3.4.7) 				
11.3.4.5 Exercise				
<ul style="list-style-type: none"> Caliber interchangeability exercise 				
11.3.4.6 Exercise				
<ul style="list-style-type: none"> Comparing elliptical firing pins from different manufacturers 				

11.4.1 Exam				
<ul style="list-style-type: none"> • Practical 				
11.4.2 Exam				
<ul style="list-style-type: none"> • Oral Session 				
12 Gunshot Residue and Distance Determination				
12.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
12.5 Exercises				
<ul style="list-style-type: none"> • Preparing materials (12.5.1) • Visual, microscopic and chemical processing of white fabric (12.5.2) • Visual, microscopic and chemical processing of dark fabric using transfer techniques (12.5.3) • Visual, microscopic and chemical processing of a “complex” sample (12.5.4) • Evaluation of pellet pattern(s) (12.5.5) • Produce pattern(s) to determine “unknown” distance (12.5.7.2) • Chemically process non-porous materials (12.5.9) 				
12.5.6 Exercise				
<ul style="list-style-type: none"> • “Unknown” exercise 				
12.5.7.1 Exercise				
<ul style="list-style-type: none"> • Reproduce “complex” sample pattern(s) 				
12.5.8 Exercise				
<ul style="list-style-type: none"> • Evaluate pellet pattern to determine approximate distance 				
12.6.2 Exam				
<ul style="list-style-type: none"> • Completion of “unknown” 				
12.6.3 Exam				
<ul style="list-style-type: none"> • Oral Session 				

13 Fracture Match Examinations				
13.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
13.5.1 Exercises				
<ul style="list-style-type: none"> • 3 sets of broken objects • Observations of cuts vs. tears 				
13.5.2 Exam				
<ul style="list-style-type: none"> • “Unknown” sample 				
13.5.3 Exam				
<ul style="list-style-type: none"> • Oral Session 				
14 Number Restoration				
14.3 Assignments				
<ul style="list-style-type: none"> • Reading • Study Questions 				
14.5 Exercises				
<ul style="list-style-type: none"> • Conduct several number restorations (14.5.1) • Conduct magnetic particle inspection restoration (14.5.2) • Bar code decryption of know serial numbers (14.5.3) • Discussion about use of references to aid in serial number restoration (i.e. font style, etc) (14.5.4) • Discussion about safe handling and storage of chemicals (14.5.5) • Discuss heat procedures used for plastic (14.5.6) • Restore serial numbers on samples (14.5.7) 				
14.5.8 Exercise				
<ul style="list-style-type: none"> • “Unknown” bar code sample 				
14.5.9 Exercise				
<ul style="list-style-type: none"> • “Unknown” restoration samples 				
14.6.2 Exam				
<ul style="list-style-type: none"> • Oral Session 				

15 Report Writing, Expert Testimony and Professionalism

<p>15.3 Assignments</p> <ul style="list-style-type: none"> • Reading • Study Questions 				
<p>15.5 Exercises</p> <ul style="list-style-type: none"> • Discussion on note taking, chain of custody and report writing (15.5.1) • Discussion on file maintenance and location, courtroom testimony monitoring (15.5.2) • Read copies of reports to become familiar with report format and phraseology (15.5.3) • Discussion on local, state, federal law enforcement agencies and court systems (15.5.4) • Confer with other examiners about personal hints and recommendations for courtroom testimony (15.5.6) • Discussion on how the laboratory meets current ASCLD/LAB criteria (15.5.7) • Prepare a list of qualifying questions (15.5.8) • Discussion about laboratory policy in regards to reexamination of evidence (15.5.9) • Discussion about various laboratory policies (15.5.10) • Discussion about proficiency testing program (15.5.11) • Describe uncertainty measurement in a courtroom testimony situation (15.5.12) 				
<p>15.5.5 Exercise</p> <ul style="list-style-type: none"> • Observe other examiners testify 				
<p>15.5.13 Exercise</p> <ul style="list-style-type: none"> • Document the review of at least 5 cases files using the appropriate Technical Review Form 				

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15.5.14 Exercise				
<ul style="list-style-type: none"> Complete an ASCLD/LAB-<i>International</i> Audit Trail Worksheet on at least one case 				
15.5.15 Exercise				
<ul style="list-style-type: none"> Complete at least one mock case in the stage database of LIMS 				
15.6.2 Exam				
<ul style="list-style-type: none"> Oral Session 				
16 Uncertainty of Measurement				
16.3 Assignments				
<ul style="list-style-type: none"> Reading Study Questions 				
16.5.1 Exercise				
<ul style="list-style-type: none"> Create an uncertainty budget using the NIST 8 step process 				
16.5.2 Exercise				
<ul style="list-style-type: none"> Write a brief description of the traceability of standard/calibration that is traceable to NIST 				
17 Evidence Handling				
17.3 Assignments				
<ul style="list-style-type: none"> Reading Study Questions 				
17.5 Exercises				
<ul style="list-style-type: none"> Discuss with TC standards regarding chain of custody as it relates to QM and Firearm and Toolmark Technical Procedures Manual (17.5.1) Demonstrate proper chain of custody practices with TC (17.5.2) 				
17.6 Exam				
<ul style="list-style-type: none"> Written 				
18 Cognitive Factors in Comparative Analysis				
18.4 Assignments				
<ul style="list-style-type: none"> Reading Study Questions 				

Competency Exam				
Midterm Mock Trial				
Practical Test				
Technical Final				
Mock Trial				

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