

FEU04 – SOP for Performing Test Fires

Table of Contents

1. Scope
2. Background
3. Safety
4. Materials Required
5. Standards and Controls
6. Calibration
7. Procedures
8. Sampling
9. Calculations
10. Uncertainty of Measurement
11. Limitations
12. Documentation
13. References

1. Scope

- 1.1. This protocol establishes a standard operating procedure for safely and correctly test firing and handling firearms. The FEU member should attempt to discharge the firearm in the same condition in which it was received.

2. Background

- 2.1. To establish the practices for documenting the examination of firearm evidence to conform to the requirements of the Department of Forensic Sciences (DFS) Forensic Science Laboratory (FSL) *Quality Assurance Manual*, the accreditation standards under ISO/IEC 17025:2005, and any supplemental standards.

3. Safety

- 3.1. For proper handling of firearm see the *FEU01 - SOP for the Safe Handling of Firearms*.
- 3.2. After the test fire process is complete the firearm will be secured with a “zip tie” to ensure the firearm is unloaded.

4. Materials Required

- 4.1. Bullet recovery tank, Forensic Buddy Portable Bullet Recovery System; test fire ammunition (must be ammunition similar to the evidence in question. i.e., brand, caliber, cartridge case finish); indoor range; eye and ear protection.

5. Standards and Controls

5.1. Not applicable

6. Calibration

6.1. Not applicable

7. Procedures

7.1. Test Fire Examination without a criminal charge

7.1.1. Before any test fires are performed, the FEU member handling the firearm will perform all safety checks on the firearm to determine if the firearm is safe to test fire as per *FEU01 – SOP for Safe Handling of Firearms*.

7.1.2. The following forms shall be completed by the FEU member:

7.1.2.1. Data/Database documentation

7.1.2.2. NIBIN Worksheet

7.1.2.3. Test fire envelope

7.1.3. The following documentation is required (may be presented in paper or electronic format):

7.1.3.1. Property Information

7.1.3.2. Recovery Information

7.1.3.3. Testing Request

7.1.4. The FEU intake member completing the data entry into computer database systems will ensure all pertinent information is captured, including, but not limited to, administrative information, firearm information, recovery information, defendant/complainant information, and any form(s) which needs to be scanned into the electronic file.

7.1.5. The FEU member will perform a functional test by attempting **four (4)** test fires including, but not limited to, two (2) nickel and two (2) brass finish primers, in the bullet recovery tank, Forensic Buddy Bullet Recovery System or the indoor range. The cartridge cases and bullets shall be placed in a designated envelope. The envelope shall be appropriately labeled and properly sealed in accordance with the *DOM10 – Evidence Handling Procedures*.

- 7.1.6. All shotguns shall be test fired in the long range using primed casings only. Only authorized FEU personnel are designated to go onto the range when test firing weapons. The cartridge cases and bullets will be etched/marked with the FEU #, and the FEU member's initials. The FEU member shall etch their initials and the witness's initials on the left side of the weapon (under the grip when possible), in the presence of the witness.
 - 7.1.7. All BB/Pellet weapons shall be discharged in the FEU indoor range. The FEU member will discharge the BB/Pellet weapon once, using a target board placed down range.
 - 7.1.8. If witnessed, the witness shall receive the necessary completed certificate. The FEU shall retain copies to be filed and scanned into the database system.
 - 7.1.9. A firearm with an obliterated or removed serial number will be submitted and placed on the FEU property book and retained for serial number restoration examination.
- 7.2. Test Fire Examination with a criminal charge
- 7.2.1. Before any test fires are performed, the FEU member handling the firearm shall perform all safety checks on the firearm to determine if the firearm is safe to test fire based on *FEU01- SOP for Safe Handling of Firearms*.
 - 7.2.2. The following documentation will be completed by the FEU member:
 - 7.2.2.1. Electronic documentation
 - 7.2.2.2. NIBIN Worksheet
 - 7.2.2.3. Test fire envelope
 - 7.2.3. The following documentation is required:
 - 7.2.3.1. Property Information
 - 7.2.3.2. Arrest Information
 - 7.2.3.3. Recovery Information
 - 7.2.3.4. Testing Request
 - 7.2.4. The FEU intake member completing the data entry into the database systems will ensure all pertinent information is captured, including, but not limited to, administrative information, firearm information, recovery information, defendant/complainant information, and any form(s) which needs to be scanned into the electronic file.

- 7.2.5. The FEU member will perform a functional test by attempting **four (4)** test fires, to include but not limited to, two (2) nickel and two (2) brass finish primers, in the bullet recovery tank / Forensic Buddy Bullet recovery System or the indoor Range. The cartridge cases and bullets will be placed in a designated envelope. The envelope will be appropriately labeled properly sealed in accordance with the *DOM10 - Evidence Handling Procedures*.
- 7.2.6. All shotguns and rifles shall be test fired at the FEU indoor range with primers only. Only authorized FEU personnel are designated to go onto the range when test firing weapons. The cartridge cases and bullets will be etched/marked with the FEU #, and the FEU member's initials. The FEU member shall etch their initials and the witness's initials on the left side of the weapon (under the grip when possible), in the presence of the witness.
- 7.2.7. All BB/Pellet weapons will be discharged/ n the FEU indoor range. The FEU member will discharge the BB/Pellet weapon once, using a target board placed down range.
- 7.2.8. If witnessed, the witness shall receive the necessary completed certificate. The FEU shall retain copies to be filed and scanned into the database system.
- 7.2.9. All firearms with an obliterated or removed serial number shall be submitted and placed on the FEU property book and retained for serial number restoration examination.

8. Sampling

- 8.1. Not applicable

9. Calculations

- 9.1. Not applicable

10. Uncertainty of Measurement

- 10.1. When quantitative results are obtained, and the significance of the value may impact the report, the uncertainty of measurement must be determined. The method used to determine the estimation of uncertainty can be found in the *FSL Quality Assurance Manual – Estimation of Uncertainty of Measurement (Section 5.4.6)*.

11. Limitations

- 11.1. Test fire ammunition must be ammunition similar to the evidence in question, i.e., brand, caliber, cartridge case finish.
- 11.2. When a firearm needs to be test fired 13 times consecutively, a letter from the U.S. Attorney's Office on their letterhead is required.
- 11.3. If the firearm is received in parts, the FEU member shall not reassemble the firearm and attempt to test fire without a letter from the U.S. Attorney's Office on their letterhead.
- 11.4. When unable to discharge a firearm, the FEU member shall document reason(s) for inoperability on the appropriate paperwork.

12. Documentation

- 12.1. Documentation provided by outside agency
- 12.2. FEU Examination Worksheets
- 12.3. FEU Report

13. References

- 13.1. Mathews, J.H., Firearms Identification, Vols. I-III, Charles C. Thomas, Springfield, IL (1962)
- 13.2. Gunther, J.D., and Gunther, C.O., The Identification of Firearms, John Wiley, New York (1935)
- 13.3. Cyber National, Inc., Bullet Recovery System & Remote Firing Platform Operating Guide (2004)
- 13.4. Forensic Buddy, Savage Arms Operating Guide, (2008)
- 13.5. Savage Arms, Forensic Buddy, (2008)
- 13.6. *DFS Health and Safety Manual* (Current Version)
- 13.7. *Forensic Science Laboratory Quality Assurance Manual* (Current Version)

13.8. *FSL Departmental Operations Manuals (Current Versions)*

13.9. *FSL Laboratory Operations Manuals (Current Versions)*

13.10. *FEU01 - SOP for Safe Handling of Firearms (Current Version)*