Firearms Section

General Firearms Examination Methods

1. **Scope**

General methods used in documenting and analyzing firearms for condition and operability.

2. **Safety**

2.1 Take appropriate biohazard precautions when handling evidence that may be contaminated with potentially infectious materials.

2.2 Treat every firearm as if loaded.

2.3 Always keep the muzzle pointed in a safe direction.

2.4 Keep finger off the trigger until ready to fire.

2.5 Test fires will be performed in the firearms range or at outdoor range when needed.

2.6 Use the remote firing device when deemed necessary by the examiner.

2.7 Remove the magazine, examine the chamber and barrel to ensure firearm is unloaded and without barrel obstructions.

2.8 Always were ear and eye protection when test firing.

2.9 Notify a second person when entering the range to conduct test fires.

2.10 Take precautions when handling evidence that is sharp, such as knives, or firearms that have been damaged prior to submission.

2.11 The firearm examiners will undergo annual blood lead testing and hearing tests provided by the state.

3. **Firearm Examination**

3.1 Note how the evidence was received.

3.2 Note the items in the evidence container.

3.3 Worksheets for examination are available.

3.4 Approximate barrel length and overall length can be taken for description and note taking purposes and will not be reported.

3.5 Note and/or photograph the positions of the cartridges in the magazine and/or cylinder in shooting incident cases.

3.6 Note and / or photograph the position of the safety(s). Check function of the safety(s).

3.7 Note and / or photograph any defects when the defect could have altered the performance of the firearm contributing to the incident in question.

3.8 Note and/or photograph scope settings in shooting incident cases.

3.9 Test fires are to be sub-itemized and tracked in the LIMS system.

3.9.1 All test fires are reference specimens only. Additional tests can be made using the evidence firearm. A set of reference tests fires will be retained in the firearms section for all firearms test fired by this laboratory.

3.9.2 At the request of the submitting agency test fires may be acquired into the Bureau of Alcohol, Tobacco and Firearms (ATF) Laboratory's National Integrated Ballistic Information Network (NIBIN).

3.9.2.1 The test samples must be suitable for entry based on the ATF requirements.

3.9.2.2 If necessary, test fires may be sent to Maryland to be entered into the National Integrated Ballistic Information Network (NIBIN). In these instances, a form provided by the ATF will be filled out and submitted with the tests. These tests will be given a barcode and transferred in the laboratory information system (LIMS) to show they were mailed to the ATF lab and when they were returned. The test fires, when returned, may be retained in the test fire reference or returned to the submitting agency. The final location of the tests will be documented in LIMS.

3.9.3 The submission to the ATF for NIBIN entry and any subsequent correlations made with the evidence in the case will be reported.

3.10 Trigger pull may be taken for general documentation. This will not be reported.

3.11 Friction tests will be performed when there is a question if this could have contributed to the incident under investigation.

3.12 A minimum of two test fires will be taken and compared to each other to establish reproducibility when a microscopic examination is needed.

3.13 The results will be documented at least one of the following ways or a combination of these ways.

- Written or typed description
- Diagram
- Photography
    - Photographs are not used in place of verification. Photos are used for case documentation only. Verifications are done by another qualified examiner utilizing the microscope to view the same markings used to form their conclusion.

3.14 Any other relevant firearms examinations will be conducted as needed, such as point of aim, field of view, and cartridge case ejection pattern, or other. When requested, relevant information about the scene is necessary, but not limited to, shooters stance, location and distance to bullet impact site.

3.15 These notes and / or photographs will be maintained by the Crime Laboratory.

3.16 A report will be generated.

4. Barrel and Overall Length of a Firearm

4.1 The measurements should include compensators, flash suppressors, or any other permanently affixed attachments to the muzzle for overall length.

4.3 Routine measurements for general documentation can be made with standard measuring devices such as lab rulers or tape measures and they are documented as approximations.

4.4 Overall and barrel lengths will not be reported.

5. Trigger Pull Examination

5.1 Dead weights are used to measure trigger pull in this laboratory.

5.2 Trigger pull may be weighed for general documentation. It is measured by holding the gun vertically with the muzzle pointed toward the ceiling. Place the trigger hook on the trigger. With the weights hanging parallel to the bore, lift the gun up, this lifts the weights off the table; weights are added until the trigger releases fully.

5.3 Trigger pull may be measured in single and double action when applicable.

5.4 Trigger pull may be measured for every chamber in a revolver.

5.5 Trigger pull will not be reported.

6. Friction and Drop Tests

6.1 This is done when there is a question if the firearm discharged from being dropped or jarred.

6.2 Additional tests may be done to recreate events reported to have occurred at the shooting incident. Deviations from these tests will be documented in the case notes.

6.1.1 **Friction/Jar-off tests**
Cock the firearm and test it by striking it with a Babbitt rod, wooden, brass or rubber mallet or another non-marring device. Strike the firearm on the muzzle, butt, the right, left, top and bottom of the receiver or frame. After each mallet strike pull the trigger. If the firing pin was released during a strike, it will not fire. This can be repeated with a primed cartridge case if necessary.

6.1.2 **Hammer Push-off test**
Cock the hammer and apply moderate pressure to the rear of the hammer to see if the hammer will drop without pulling the trigger. If the hammer falls, a primed cartridge can be inserted to confirm if it will fire a cartridge when this occurs.

6.1.3 **Drop tests**
Cock the firearm and drop it approximately 4 feet onto a rubber mat. Drop it with muzzle downward and again with the muzzle pointed up. This should only be done when a there is a question of an accidental discharge from the firearm being dropped. If the incident in question dictates the firearm was dropped from a different position, test will be done to recreate that event. This will be documented in the notes. Drop tests are done after the firearm has been checked for function and test fired.