

<b>SUBJECT SUBJECT SSSYBS SUSUBM</b>	<b>FIREARM EVIDENCE PROTOCOL</b>
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## **7.0 Firearm Examination Protocol**

### **7.1 Handle evidence firearms carefully**

#### **7.1.1 Refer to the SBI Policy and Procedure Manual - Evidence Which May Carry Infectious Diseases - Page 37-3**

- Read SBI-5 to determine if request for serological examination was made or if summary of incident indicates that such an examination is necessary. If determined that serological examination is necessary, transfer evidence to Molecular Genetics Section prior to examining.

#### **7.1.2 Wear recommended laboratory gloves when handling evidence firearms that may be contaminated with blood/body matter or other biological material.**

### **7.2 Mark all evidence firearms for identification.**

#### **7.2.1 On all firearms except police officer's firearms, engrave an area on the firearm using a Dremel Engraver or a carbide tipped marking tool.**

#### **7.2.2 Do not engrave police officers's service firearms.** Use white plastic numbered evidence tag for police officer's firearms.

#### **7.2.3 Mark with item #, case # and initials.**

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7.3 Handle all firearms safely.

7.3.1 Thoroughly examine all firearms to ensure they are unloaded and safe.

- If the weapon is received loaded, and if the position of fired and live rounds is germane to case, those positions should be noted. On revolvers mark the position of the chamber under the hammer by marking the cylinder on each side of the top strap, then note the relationship of the other cartridges/cartridge cases in relationship to the chamber under the hammer.

7.3.2 Follow safe firearm handling procedures.

- Treat all firearms as if they were loaded.
- Always point firearms in safe direction.
- Never load live rounds in a firearm in an office or examination room.

7.4 Fill out a Firearm Work Sheet with the following fields:

7.4.1 Item #:

- The "K" number assigned to the firearm by the examiner.
- When applicable, the Laboratory Item number assigned to the item(s) by the Evidence Control Unit.
- The item number assigned by the submitting agency to this firearm.

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7.4.2 Make/Manufacturer:

- Normally found engraved/embossed somewhere on firearm frame or barrel..
- If make/manufacturer not on the firearm, compare firearm to known standards.
- If unable to ascertain make/manufacturer, a notation of unknown or NA should be entered.

7.4.3 Caliber/Gauge:

- Normally found engraved/embossed somewhere on firearm frame or barrel..
- If the caliber/gauge is not on the firearm, compare firearm to known standards or measure barrel diameter.

7.4.4 Type:

- Pistol, revolver, derringer, rifle, shotgun, etc.
  - A secondary type may be added by examiner. e.g. top-break, single-shot, double barrel, etc.

7.4.5 Serial Number:

- Complete serial number
- If no serial number found/observed a comparison of known standards for serial number location(s) should be made. If no serial number on

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firearm a notation of none or NA should be entered.

- If the serial number present has been obliterated, this should be noted.

7.4.6 Model:

- Normally found engraved/embossed somewhere on firearm frame or barrel..
- If the model is not on the firearm, compare firearm to known standards.
- If unable to ascertain model, a notation of unknown or NA should be entered.

7.4.7 Finish:

- Describe the finish.
  - Describe multiple finishes. (e.g. stainless slide, gray aluminum frame, or blue barrel and tempered steel receiver)
- Describe any rust/oxidation on finish.
- Describe any wear/damage/trauma to finish.

7.4.8 Capacity:

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- On revolvers, enter the number of chambers in the cylinder.
- For other guns, determine the maximum number of rounds that can be loaded in the firearm, which may include chamber(s), and/or number of rounds in internal magazine and/or number of rounds in submitted detachable magazine(s).
- Always use dummy rounds when determining capacity except in those instance where no dummy rounds are available. Live ammo may be used in a safe area (shoot tank/range).

7.4.9 Magazine:

- Describe type and capacity of magazine(s) submitted with evidence firearm.
- The examiner may assign a “K” number to submitted magazines. If a “K” number was assigned it should be noted in this area along with the item number assigned by the submitter.
- If magazine submitted with firearm does not fit the firearm it should be noted. If the examiner can determine the type/manufacture of the firearm that this magazine does fit, it should be noted.

7.4.10 Direction of Cylinder:

- For revolvers only.
- Describe the direction the cylinder rotates during normal operation.

7.4.11 Flares:

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- For revolvers only.
- Check forward end of chambers for discharge rings.
- If all chambers exhibit discharge rings, note and mark any discharge rings more prominent than others.

7.4.12 Firing Pin Shape:

- Examine firing pin and note its shape. e. g. hemispherical, rectangular, square, etc.

7.4.13 Bore Condition:

- Is the barrel relatively clean and/or oiled or fouled.
  - The examiner may run a clean patch through the barrel to assist in this examination
  - The examiner may note any gunpowder residue, leading, copper fouling, oxidation/rust, dirt/vegetable matter, dust, lint, etc.
  - Specifically note any obstructions in barrel or if the barrel appears bulged or cracked.

7.4.14 Barrel Length:

- Measure the barrel length in inches.

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- For revolvers, measure from the back of the forcing cone to the muzzle.
- For all other types of firearms measure from end of chamber to muzzle.

7.4.15 Overall length:

- Measure the overall length of the firearm in inches.

7.4.16 General Rifling Characteristics (GRC'S):

- Determine the general rifling characteristics (number of lands and grooves and direction of twist).

7.4.17 Land Impression Width (LWD):

- Measure with appropriate measuring eye-piece on a comparison microscope.
- Measure in inches. (Record in thousandths of an inch)
- Measure from end of sloping side of a groove impression across land impression to the beginning of sloping side of the next groove impression. The examiner may measure all land impressions and enter the average width or visually determine that all land impressions are relatively the same width and measure the width of one land impression.

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**7.4.18 Groove Impression Width (GWD):**

- Measure with appropriate measuring eye-piece on a comparison microscope.
- Measure in inches. (Record in thousandths of an inch)
- Measure from the beginning of the sloping side of a groove impression, across the groove impression to the end of the other sloping edge. The examiner may measure all groove impressions and enter the average width or visually determine that all land impressions are relatively the same width and measure the width of one groove impression.

**7.4.19 Safeties:**

- The examiner should list the type and position of all safeties incorporated into the firearm, both manual and passive.

**7.4.20 Operating Condition:**

- On revolvers, does the cylinder rotate and lock-in during the single-action mode? If the revolver will fire in the double-action mode does the cylinder lock-in before the hammer is released from sear engagement?
- When the hammer is cocked on firearms that fire in the single-action mode, can the hammer be pushed off sear?
- Are there any broken or missing parts?



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- The examiner should engage and disengage all safeties and by dry firing or other methods determine if the safeties are functioning properly.
- If any safety or other component/system of the firearm is found to be defective, this defect should be described, investigated and accounted for, to the extent possible.
- Before test-firing, the examiner should test all semiautomatic weapons to ensure that they have not been altered either intentionally or through wear or damage to fire as automatic firearms.
- When appropriate function test firearm according to SAAMI specifications.

#### 7.4.21 Single Action Trigger Pull

- Use the dead weight method with the barrel of the firearm perpendicular to the ground/floor.
- Use the NRA approved weight set provided each examiner.
- The firearm should be cocked in the single action mode. On revolvers measure trigger pull on every chamber.
- Record in pounds the greatest amount of weight the trigger can carry with out releasing the hammer/striker from sear engagement. Record this number in the “greater than” ( ) block. This should be recorded in no less than ¼ pound increments.
- Record in pounds the least amount of weight the trigger can carry that

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releases the hammer/striker from sear engagement. Record this number in the “less than or equal to” (≤) block. This should be recorded in no less than ¼ pounds increments.

**7.4.22 Double Action Trigger Pull:**

- Use the dead weight method with the barrel of the firearm perpendicular to the ground/floor.
- Use the NRA approved weight set provided each examiner.
- The firearm should be in the double action mode with the hammer at rest and the safeties disengaged. On revolvers measure trigger pull on every chamber.
- Record in pounds the greatest amount of weight the trigger can carry with out releasing the hammer/striker from sear engagement. Record this number in the “greater than” (>) block. This should be recorded in no less than ¼ pound increments.
- Record in pounds the least amount of weight the trigger can carry that actuates the internal mechanisms of the firearm and releases the hammer/striker from sear engagement. Record this number in the “less than or equal to” (≤) block. This should be recorded in no less than ¼ pounds increments.

**7.4.22 Location of Identifying Marks:**

- All firearms received as evidence should be marked with the “K”

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item number, laboratory case number and initials. It is the examiners option as to where the marking will be located.. The markings should be permanently etched.

- Exception: Any police officers's service weapon should not be marked permanently. A white plastic locking tag should be attached to the weapon and the markings placed on this tag. Record the tag number.
- Any other exception must be approved by the SAC. e.g. A firearm recovered at a pawn shop and thought to be the suspected weapon but is eliminated by analysis.

7.4.23 Notes (may include):

- Trace evidence
- Further identifying data, e.g. Importer, description of grips, etc.
- Further function testing done in addition to standard procedures.
- The position of the extractor and ejector. Give clock hand settings in the relationship of the shooter (i.e. muzzle forward)\
- Description of method used to obliterate serial number and/or methods used to attempt to restore serial number.
- If weapon cleaned or oiled, methods used.
- Any other information deemed important about this firearm by the examiner.

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- 7.5 A sample firearm examination work sheet may be viewed on the following page.
- 7.6 No formatted spaces on any case work sheets are to be left blank. It is permissible to use N/A (not applicable) or a single line through unused spaces. If a work sheet contains multiple formatted sections, those not utilized must be crossed through or deleted.
- 7.7 After completion of examination and all test firing necessary, firearms should be made safe by blocking the action with a plastic or nylon band/tie before packaging.

**FIREARM AND TOOL MARK SECTION  
TECHNICAL PROCEDURES MANUAL**

**SECTION 7  
JULY 1, 1996**

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<b>Evidence Examination Worksheet</b>		Παγε 2 οφ 15	
		Laboratory #:	
		Examiner's Initials:	

Report #:	Date:
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<b>Firearm Examination</b>			
Item #:		Make:	
Caliber/Gauge:		Type:	
Serial Number:		Model:	
Finish:		Capacity:	
Magazine:			
Revolvers:	Direction of Cylinder:		
	Flares:		
Firing Pin Shape:		Bore Condition:	
Barrel Length ≈:		Overall Length ≈:	
GRC's:	LWD:	GWD:	±
Safeties:			
Operating Condition:			
SA Trigger Pull:		Pounds	
DA Trigger Pull:		Pounds	
Location of Identifying Marks/Tag#'s:			
Container(s):			
Package entered through:			
# of Tests Fired:		Test Marked:	
Manufacturer:			
Type of Ammunition:			
Date Fired:			

<b>Evidence Examination Worksheet</b>
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Παγε 3 οφ 15	
Laboratory #:	
Examiner's Initials:	

Report #:

Date:

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