



TENNESSEE BUREAU OF INVESTIGATION

Forensic Services Division

Firearms/Toolmarks Standard Operating Procedures Manual

Rusted Firearm Procedure

9.0 RUSTED FIREARM PROCEDURE

9.1 Scope: Rusty firearms, or those found in water or other wet environments, may be submitted for examination. Immediate attention shall be given to these firearms to prevent further damage to the firearm. It should be noted that excessive corrosion or rust might prevent the firearm from being restored to a functional condition.

9.2 Precautions/Limitations: The firearm examiner shall visually inspect the firearm to ensure that it is not loaded. If loaded, immediate steps shall be taken to ensure that the firearm is safely unloaded.

9.3 Related Information:

- 9.3.1** Firearm Examination and Classification Procedure 1
- 9.3.2** Safe Firearm Handling Procedure 4
- 9.3.3** Worksheets Appendix 1
- 9.3.4** Firearm Safety Appendix 3
- 9.3.5** Range of Conclusions Appendix 4

9.4 Instruments:

- 9.4.1** Ultrasonic Cleaner
- 9.4.2** Ransom rest or remote firing device

9.5 Reagents/Materials:

- 9.5.1** WD-40[®] or other water-displacing product
- 9.5.2** Penephite or other penetrating oil
- 9.5.3** Gun oil(s)
- 9.5.4** Gunscrubber or other cleaner

9.6 Hazards/Safety:

9.6.1 It is the responsibility of the firearm examiner to employ appropriate safety and health practices. Safe firearm handling procedures shall be strictly followed at all times.

9.6.2 Appropriate hearing and eye protection shall be worn when applicable.

9.7 Reference Materials/Controls/Calibration Checks:

- 9.7.1** Firearms Reference Collection Appendix 5

9.8 Procedures/Instructions:

9.8.1 A firearm examiner shall take all necessary steps to ensure that the firearm is unloaded. Determining whether or not a firearm is unloaded may necessitate a complete disassembly or in



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some cases, destruction (e.g. cutting) of the firearm. The submitting officer/agency shall be notified prior to destruction of the firearm.

9.8.2 The examiner shall determine to what extent restoring the firearm is necessary (i.e., for test firing, for recovering manufacturer information, serial number, etc.).

9.8.3 Soak the firearm in penetrating oil, de-rusting solvents, or similar material and/or use an ultrasonic cleaner if available.

9.8.4 Periodically check the firearm until the firearm functions, parts move freely, or the desired information is recovered.

9.8.5 Clean the firearm with gun cleaning solvent, cleaning patches, and cloth. Care shall be taken if any object is placed down the barrel. Only non-marring items should be placed down the barrel.

9.8.6 Any and all methods used to clean the firearm shall be documented in the case notes.

9.8.7 Extreme care should be taken when test firing rusty/rusted firearms. The use of a remote firing device may be necessary.

9.9 Records: The firearm examiner shall document their findings in the form of handwritten notes, computer generated notes, photography, or by utilizing a firearms worksheet.

9.10 Interpretations of Results: None

9.11 Report Writing: Firearm report writing can be found in the Range of Conclusions Appendix 4. However, it is noted that firearms occasionally are submitted inoperable or in very poor condition and these Range of Conclusions may need to be modified.

9.12 References:

Association of Firearm and Tool Mark Examiners Training Manual, March 3, 2001

Association of Firearm and Tool Mark Examiners Procedures Manual, July 9, 2001

Association of Firearm and Tool Mark Examiners Glossary, 5th Edition, 2007

Denio, Dominic, "Making a Rusted Gun Functional," AFTE Journal, July 1982, Vol. 13, No. 3, pgs. 29-30.

Brown, Cordell, "Rust Removal", AFTE Journal, October 1981, Vol. 13, No. 4, pgs. 85-88.