



# Conserve O Gram

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## Caring For Historic Longarms: Storage And Handling Requirements

Museum collections often include guns; however, not all museum staff members are familiar with the proper procedures for handling and maintaining firearms. This *Conserve O Gram* will give you basic information about caring for longarms (e.g., muskets, rifles, shotguns), stressing the importance of weapons safety. This information will also help you care for handguns.

Detailed information about gun identification, classification, care, and preservation is available in the publications listed in the references. You should identify the types of guns in your collection before doing any maintenance procedures. Refer to the glossary if you have questions about the gun terminology used throughout this publication.

### *Safe Handling of Firearms*

Firearms must always be handled carefully to prevent risk of injury to staff, and to eliminate the risk of damage to the weapon. Always handle firearms as though they are loaded. Never point a weapon toward anyone and always keep fingers away from the trigger. Check for loose or broken parts on each gun. Carry only one weapon at a time, using both hands, and pad the surfaces it rests on with closed-cell polyethylene foam. Always wear cotton or plastic gloves when handling weapons.

Before handling a firearm, always check to be sure that it is not loaded. There are two basic methods of checking whether a firearm is loaded; the choice is determined by what kind of weapon you have. A muzzle-loading weapon is loaded through the front-end of the weapon, and a

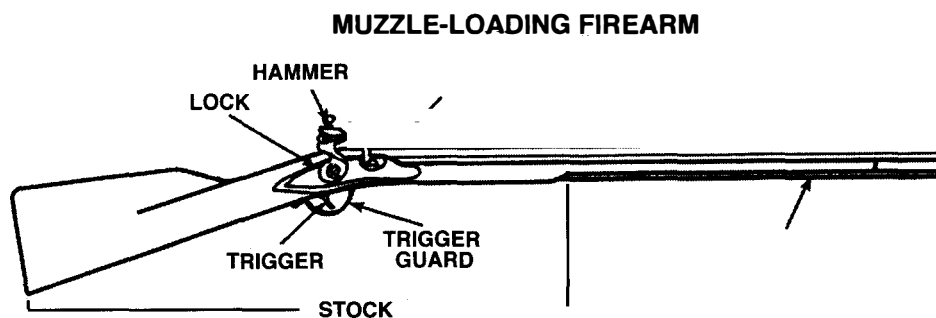
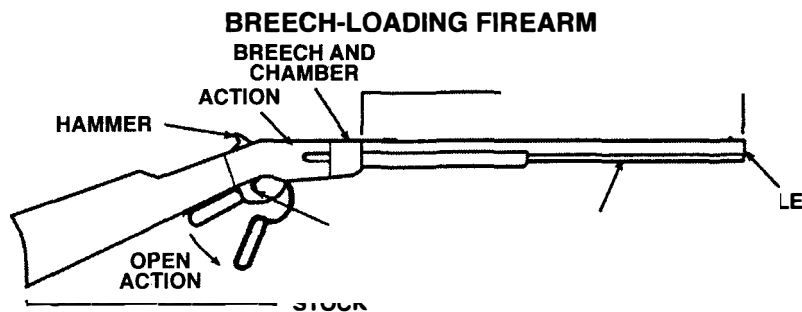
breech-loading weapon is loaded through the rear of the barrel.

### **Muzzle-Loading Firearms:**

- Be sure the hammer is carefully lowered into its resting position by firmly holding the hammer in one hand and pulling the trigger with the other while allowing the hammer to slowly and gently drop into its resting position. Never pull a trigger on what appears to be an empty weapon. Never fire an antique weapon.
- Carefully insert a wooden dowel into the barrel until it stops. Mark the muzzle location on the dowel. Withdraw the dowel and hold it alongside the barrel with the marked portion at the muzzle and the tip pointing toward the breech.
- If the dowel reaches the breech of the weapon, it probably does not contain a charge or live round.
- If the dowel stops 3 cm (1 ¼") or more away from the breech, it is possible the weapon is loaded. Immediately stop working with the firearm and consult a conservator or gun specialist who is familiar with antique firearms. **Caution: gunpowder, regardless of age, is dangerous.**

### **Breech-Loading Firearms:**

- Carefully open the action (bolt, slide, or lever).
- Shine a light down the barrel and/or use a small mirror to look at the breech in order to determine if the barrel is blocked.



- If a cartridge is lodged in the breech, the bottom of the cartridge will be visible at the mouth of the breech.
- If a cartridge will not easily eject from the breech, leave the action open and immediately consult a conservator or gun specialist who is familiar with antique firearms.

**Remember, many people have been shot with guns that were assumed to be empty.**

### *Care of Firearms*

Firearms, like all other museum objects, are susceptible to variable temperature and relative humidity. Museum staff should look for splitting, shrinking, checking, loss of inlay, and mold growth on wooden parts of a weapon. Metal components may display active corrosion and deposits. Outdoor and indoor pollutants cause metal corrosion, especially when combined with high humidity. Wood-boring pests can also cause severe damage to a firearm

if left unchecked. Dust can cause damage by absorbing moisture, attracting pests, and abrading surfaces.

This *Conserve O Gram* will not tell you how to dismantle and conserve guns. These techniques require specialist knowledge of firearms and cleaning and stabilization materials. The instructions in this leaflet will allow you to do basic preservation maintenance to preserve these objects. If firearms in your collection need to be dismantled and cleaned, contact a conservator with experience in firearms for advice.

### *Maintaining Firearms*

Dust weapons using a soft bristle brush and an adjustable powered vacuum with a small nozzle. Vacuum through a piece of cheesecloth or a fine screen to protect small, loose parts and inlay. Remove dried dirt, grease, and oils from wood and metal components by using wooden toothpicks, or obtain sharp wooden or

bone styluses from conservation suppliers. Do not use metal picks or tools because they can easily scratch finished wood and polished metal surfaces.

Clean the wood with a light application of mineral spirits and quickly wipe dry with a clean, white cloth. Apply a coat of Renaissance® wax or other high quality hard wax to the wood, being careful not to apply wax directly to inlaid decoration. Buff the wax dry, leaving a light film of wax to protect the surface. (See *NPS Museum Handbook*, Part I, Appendix N: Curatorial Care of Wooden Objects, as well as *Conserve O Grams* 7/1, Cleaning Wood Furniture, and 7/2, Waxing Furniture and Wooden Objects.)

Apply a small amount of lightweight, non-drying oil (lubricating or gun oil) on moving parts with a cotton swab. Remove excess oil with a soft, clean cloth. Wipe fresh fingerprints from metal using non-drying oil and a soft, clean cloth. For more information about metal objects, see *NPS Museum Handbook*, Part I, Appendix O: Curatorial Care of Metal Objects.

Record the condition of each firearm before and after each maintenance treatment. Report all methods and materials you use for each firearm.

### ***Environmental Conditions***

Firearms are composite objects, made up of wood, metal, and sometimes, in newer weapons, high-impact plastics. Since each material reacts differently to light, temperature, and humidity, it is essential to closely control the environment. When storing and handling firearms, keep the following in mind:

- Maintain constant relative humidity (RH) levels. Work with the regional curator or a conservator to decide on an appropriate RH. Temperature levels should remain between 64° and 68°F for human comfort. (See *NPS Museum Handbook*, Part I,

Chapter 4: Museum Collections Environment.)

- Avoid exposing the weapons to sunlight.
- Provide ultra-violet filters for fluorescent light bulbs and windows.
- Use approved gun safes to store weapons. (See *Tools of the Trade*, Chapter VI, Museum Cabinets, Shelving and Storage Racks, for information about gun safes.)
- Wear white cotton gloves when examining or inspecting firearms.
- Inspect weapons regularly, especially after repeated handling, as coatings may have to be re-applied.
- Avoid storing weapons with leather slings or in leather scabbards. The leather can react with the metal on guns, causing deterioration. Metal buckles, snaps, and swivels may scratch the surface of the firearms. Clean and store these accessories separately. (See *Conserve O Gram* 9/1, Leather Dressing: To Dress or Not to Dress.)
- Store guns and ammunition separately.

For information about tools, equipment, and supplies, contact the Museum Management Program Supply Program at (304) 535-6072.

### ***Glossary***

**Action** - the operating parts of a modern firearm (bolt, slide, or lever) that eject and insert cartridges into the firing chambers and cock the weapon, making it ready to fire

**Barrel** - the metal tube, forward of the breech, through which the bullet is fired

**Breech** - the part of a firearm at the rear of the barrel

**Cartridge** - a single metal charge made up of a casing, a primer, gun powder, and a bullet that is inserted into the breech of a modern firearm

**Chamber** - the part of the breech that is designed to receive a cartridge

**Charge** - combination of gunpowder, patch, and shot, used in muzzle-loading firearms

**Firing pin** - a pin that strikes the cartridge primer in the breech mechanism of a firearm, causing it to detonate

**Flintlock** - a lock for a gun or pistol having a flint in the hammer for striking a spark to ignite the charge

**Hammer** - a part of the action of a modern gun that strikes the primer of the cartridge in firing or that strikes the firing pin to ignite the cartridge

**Lock** - the mechanism for exploding the charge or cartridge of a firearm

**Muzzle** - the forward discharging end of a weapon

**Stock** - The part of a firearm that serves as a handle and holds all metal parts in position

**Trigger** - the part of the action pulled with the finger to fire the gun

### ***Firearms Information***

Remington Gun Museum  
Catherine Street  
Illion, NY 13357

Springfield Armory NHS  
National Park Service  
One Armory Square  
Springfield, MA 01105-1299

Winchester Museum  
P. O. Box 1000  
Cody, WY 82414

National Firearms Museum  
11250 Waples Mill Rd.  
Fairfax, VA 22030

### ***References***

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Guldbeck, Per E. *The Care of Antiquities and Historical Collections*. Rev. edition. Edited by A. Bruce MacLeish. Nashville, TN: American Association for State and Local History, 1985.

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