

Core Module





Core Module

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Event and Demonstration Definitions

Purpose

The Florida Park Service Historic Weapons Firing Program consists of events and demonstrations, including battle reenactments and other interpretive programming involving the use of historic weapons. Safety is a priority during all demonstrations and events involving historic weapons. The Florida Park Service Historic Weapons Firing Safety Manual outlines the Division-approved practices and procedures.

Event

An Event is an occurrence of single or multiple program elements; often a large-scale or multiple-day function. Examples of events with historic weapons firing include Olustee Battle Reenactment, Dade Battle Reenactment, Battle of Natural Bridge Reenactment, Fort Zachary Taylor Pirate Invasion, Fort Mose Historic State Park's Flight to Freedom Event, The Battle of Okeechobee and Monthly Garrison Weekends at Fort Clinch.

Demonstration

A Demonstration is a single act of presenting a "how-to" subject. Examples of demonstrations include Fort Foster Tours, the Kissimmee Cow Camp and Daily Fort Tours at Fort Clinch.

Event and Demonstration Supervision Requirements

Event

At least one *Safety Supervisor* must be physically present within the historic weapons firing demonstration area(s) of each event.

Safety Supervisors may designate *Safety Assistants* during the event to delegate duties, as they see appropriate.

Demonstration

Either a *Safety Supervisor* or a *Safety Assistant* must be physically present at all historic weapons demonstrations.

Safety Supervisors may designate *Safety Assistants* during the demonstration to delegate duties, as they see appropriate

Roles

Demonstrator

A paid FPS Staff or Volunteer who is 16 years of age or older, which will be trained by Safety Supervisors to safely carry out demonstrations of historic weapons during FPS events and demonstrations.

Safety Assistant

A paid FPS Staff or Volunteer who is 21 years of age or older, which will be trained by Safety Supervisors to safely assist in safety supervision duties, as deemed appropriate by the Safety Supervisor.

- A Safety Assistant can perform any and all duties for which the safety Supervisor deems him/her qualified and for which he/she is certified through Park-Level Historic Weapons Firing Safety Training (HWFST), **other than serving as the primary responsible party at a historic weapons event.**
- If the Safety Supervisor deems him/her qualified, examples of what a Safety Assistant may do include demonstrating weapons, inspecting weapons, “supervising” demonstrations, managing the park black powder supply, providing instruction to demonstrators, and managing reenactors at large events (provided he/she is under the direct oversight of the Safety Supervisor – who must be physically present at all historic weapons events).
- Either a Safety Assistant or a Safety Supervisor must be physically present at all historic weapons demonstrations.

Safety Supervisor

A paid FPS Staff who is 21 years of age or older, which will be trained and certified through FPS Division-Level HWFST to supervise and conduct historic weapons demonstrations and events.

- Division-Level HWFST Course must be completed every two years to maintain certification as a Safety Supervisor.
- Division-Level HWFST Refresher Course must be completed every other year to maintain certification as a Safety Supervisor.
- At least one Safety Supervisor must be present within the historic weapons firing demonstration area(s) of each event.
- Either a Safety Supervisor or a Safety Assistant must be physically present at all historic weapons demonstrations.
- A Safety Supervisor must review and approve all demonstrations that take place at the park on an annual basis. Since these regular demonstrations may not always have a Safety Supervisor present, this extra step will confirm safety procedures are understood and followed by reenactors. The Safety Supervisor should review and approve any demonstration each time the demonstration agenda or reenactors change during the year.
- While the Safety Supervisor will be limited to paid FPS Staff, a Safety Supervisor may always delegate Safety Assistants (who can be paid FPS Staff or Volunteers) within their event or demonstration to help

with supervision duties, as he/she sees appropriate.

- Each Safety Supervisor should maintain a Tool Kit upon completion of FPS Division-Level HWFST. The Tool Kit will reside with the individual Safety Supervisor (regardless of which Park the Safety Supervisor is currently employed). Once the individual is no longer serving as a Safety Supervisor, the complete Tool Kit should be returned to the Bureau of Operational Services for redistribution. This Tool Kit should include consumable and non-consumable products that will support the role of Safety Supervisor, as well as support Park-Level HWFST.

Instructor

Paid FPS Staff or Highly-Qualified Volunteer who is 21 years of age or older must receive advanced training from a Division authorized program to serve as an Instructor for a Division-Level HWFST Course. Both paid FPS Staff and Volunteers can serve as Instructors.

- Advanced training must be completed every 4 years in order to maintain Instructor-level certification.
- Highly-qualified volunteers are those deemed by their park's Safety Supervisor to be knowledgeable in the demonstration of historic weapons, the history of the time period they typically portray, and effective in communicating their knowledge to others. Safety Supervisors, Instructors or Division Management may nominate highly-qualified volunteers to serve as Instructors. Recommendations will be reviewed by the Bureau of Operational Services before they are accepted as Instructors for Division-Level Training. Volunteers who serve as Instructors for Division-Level Training will be required to participate in or give proof of the same level of external training required of Florida Park Service staff serving in the same capacity as Instructors for Division-Level Training.
- Each Instructor should maintain a Tool Kit upon becoming an Instructor. The Tool Kit will reside with the individual Instructor (regardless of which Park the Instructor is currently employed). Once the individual is no longer serving as an Instructor, the complete Tool Kit should be returned to the Bureau of Operational Services for redistribution. This Tool Kit should include consumable and non-consumable products to support the role of Instructor, as well as support the Division-Level HWFST Course.

Instructor & Safety Supervisor Recommended Tool Kit Contents	
<i>Non-Consumable Items</i>	<i>Consumable Items</i>
Examples of F-FFF Grain Sizes (replicas)	Small Lint-Free Cotton Cloths
Empty 1 lb Black Powder Cans (washed and rinsed with H ₂ O)	3 Rem Oil Wipes (with Teflon Lubricant)
Tables of Charges	2, 4oz Cans of Rem Oil (with Teflon Lubricant)
Tape Measure	1, 6oz can Gun Scrubber (Solvent/Degreaser)
1 Small MagLight	1 Can Percussion Caps for Muzzle Loaders (Muskets) (#1081)
1 Extra Small MagLight	1 Can Percussion Caps for Pistols (#11)
Bore Light	Extra Sets of Ear Protection
Multi-Tool (Gerber/Leatherman)	12oz Bottle of Water
Combination Tool with Pick	Black Sharpie Marker
Cone Wrench with a Cone Pick	Pen
1 Compact Mirror	Pencil
Scissors	Duct Tape
Flathead Screwdrivers (2 sizes)	Balloons
Turkey Baster	Plastic Bags
Toothbrush	Paper (for producing paper cartridges)
Bore Brush	Aluminum Foil
Vent Pick	Scotch Brite Pad
CO ₂ Canister	Bore Butter
2 Powder Measures (one with a funnel, one without a funnel)	Pipe Cleaners
Pouring Cone	
Little Oiler	
Cleaning Rod	
Former (Template for Paper Cartridges)	
PVC Cannon Form/Plunger/Roller	
Wooden Dowel	

Section I

Program Organization

16 oz Measuring Cup	
Videos of Weapons Scenarios	
PowerPoint Presentations	
Support Photos	
Kitty Litter (to Make Practice Charges)	

Example of Training Kit Contents



Age Requirements

A 16 year old Boy Scout was killed when the cannon he was firing as part of the scout camp's daily ceremony blew apart. Rag and potato wading in addition to a canister of sand being used as a projectile were reported. It was determined that scout leaders had no formal training and the camp's training videos showed

Demonstrator

The minimum age at which Demonstrators are permitted to participate in carrying or firing historic weapons during FPS demonstrations = 16 years.

If reenactors are under 16 years of age, they may still participate in areas appropriate to the event or demonstration that do not require weapons handling, while under proper supervision.

- Reenactors must remain under parent, guardian or unit supervision at all times.
- Reenactors must be in correct period clothing, as with all period Demonstrators.
- Those reenactors who are able to play an appropriate instrument are welcome to participate as a musician.

someone standing in front of the barrel to load and didn't cover the amount of propellant or use of a rammer. The victim was in his second year on the summer staff, was a member of the National Honor Society, a blacksmith and member of 4H. He has been a scout since 1993 and his father is a scoutmaster. The camp was fined \$11,500.

Artillery Man Magazine. Tillamook, Oregon. 8/1/2003.

Training

A man was killed when his homemade grenade blew up. The victim had demolition training in the National Guard and a commercial explosives license, but had not worked with black powder.

Artillery Man Magazine. Hillsboro, Oregon. 5/1998.

Examples of Roles for Reenactors Under 16 Years of Age

- Courier
- Flag Bearer
- Drummer
- Bugler
- Camp Cooking/Camp Life Assistant
- Fifer
- Army Shoe Shine Boy
- Medical Procedures Assistant
- Blacksmith Duties Assistant
- Carpenter Duties Assistant

Summary of Minimum Age Requirements

Role	Minimum Age
Demonstrator	16 years
Safety Assistant	21 years
Safety Supervisor	21 years
Instructor	21 years

Division-Level Training

Historic Weapons Firing Safety Training for Safety Supervisors will be held annually with a separate refresher course also offered annually. Certificates will be effective for two years if both courses are taken.

Attendees..... Safety Supervisors

Taught By..... Instructors

Division-Level Training

Attendee Requirement..... Every 2 Years

Refresher Course

Attendee Requirement..... Every Other Year

Offerings..... Both the Division-Level Training and the Refresher Course will be offered annually

Park-Level Training

Historic Weapons Firing Safety Training for Safety Assistants and Demonstrators will be conducted on an as-needed basis, with a minimum of one training per year offered. Curricula for these trainings will be approved by the Division and a list of participants who complete this level of training will be maintained by the Bureau of Operational Services.

Attendees	Safety Assistants and Demonstrators
Taught By	Safety Supervisors
Attendance Requirement	Based on park-specific needs
Offerings	A minimum of 1 training per year will be offered

Instructor-Level Training

Instructors must complete a Division-approved advanced-level training in order to qualify as an Instructor. Advanced training must be completed at a minimum of every four years to maintain this certification.

Attendees	Instructors
Taught By	Outside Agency (National Park Service or other Division-approved training)
Attendance Requirement	Every 4 Years (based on availability and approval)

**General
Event and
Demonstration
Safety**

- Alcoholic beverages will not be consumed during normal park operating hours. Any individuals under the influence will be removed.
- Park visitors are not permitted to handle any edged weapons.
- Park visitors are not permitted to handle any weapon or equipment containing black powder.
- Never allow loose powder in the event or demonstration area.
- To protect against flash burns, all demonstrators must wear long-sleeved, natural fiber or animal skin clothing appropriate to the time period being portrayed.

- Before firing, warn the visitors of the loud noise, and caution visitors with hearing aids and small children to cover their ears.
- The demonstration area shall be safe for the size of the event of demonstration. **All events or demonstrations where weapons are fired will follow the *Primitive Weapons Range Diagram, Small Arms Range Diagram, Artillery Range Diagram, or Opposing Troops Range Diagram* as appropriate.**
- No bullets, musket balls, projectiles, or loading blocks will be carried AT ANY TIME during an event or demonstration.
- Demonstrators are not permitted to fire their weapons in the encampments or along marching routes without prior approval from the Safety Supervisor or Safety Assistant in charge of the event or demonstration. An area for weapons testing will be designated, if needed.
- Campfires will be in designated areas only.
- Opposing troops will not advance within 45 feet (15 yards) of another unit at any time during a battle reenactment. Exceptions will only occur if they have been carefully planned and approved prior to the event.
- All firing will be done at an elevated angle. Never aim a weapon directly at another person.
- Each unit commander is responsible for the conduct of all reenactors in the unit. (This includes women and children). The unit commander is responsible for making sure the reenactors are aware of the safety rules and that they understand and abide by them.
- If a weapon misfires, explain the procedures to the visitors, keeping them at a safe distance until the weapon is discharged or is rendered safe. If attempts fail to correct a misfire, then small arms will be removed from the area. Visitors will be removed from the demonstration area for artillery misfires which are not able to be rendered safe. Standard unloading procedures will then be followed.
- In the event of an actual injury needing immediate attention during an event or demonstration, either the injured person or someone going to his aid will shout the word "MEDIC" to signify this injury. The word "MEDIC" is to be used ONLY in the case of an ACTUAL INJURY requiring immediate attention. Once the term "MEDIC" is heard, all activity will cease and the injured person will be cared for.

**Olustee
Battlefield
Historic State
Park**

- No hand-to-hand combat is permitted (including swords, sabers or other weapons).



**Natural Bridge
Battlefield Historic
State Park**



Definition and Composition**Definition**

An explosive mixture of potassium (K) or sodium nitrate (KNO₃), charcoal (C), and sulfur (S).

Composition

75% potassium or sodium nitrate, 15% charcoal and 10% sulfur.

Characteristics of Black Powder**Color**

Varies from black to grayish black.

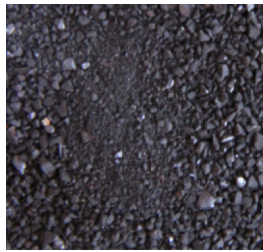
Size

Black powder is sized or graded from coarse to fine. The grains of black powder are sized or graded by the letter "F" followed by a small "g" which represents "grains". "F" means "fine," "FF" means "fine fine," and so forth. The size of the grains has a direct influence on the speed at which the powder burns. The larger the grains, the more coarse the powder, the slower the powder burns.

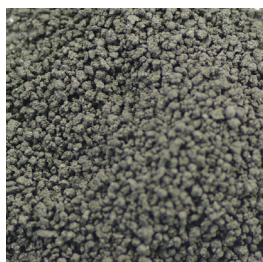
**Fg Black Powder
Cannon or C
Grade (1F)**
(shown left)



**FFg Black Powder
(2F)**
(shown right)



**FFFg Black
Powder (3F)**
(shown left)



**FFFFg Black
Powder (4F)**
(shown right)

Fireworks Grade
(shown left)

Pyrodex
(shown right)

ONLY SPORTING GRADE BLACK POWDER IN THE FORM OF OF CANNON GRADE (C) OR Fg (1F) AND FFg (2F) ARE ALLOWED

THE USE OF FFFg (3F) AND FFFFg (4F) IS NOT PERMITTED DURING FLORIDA PARK SERVICE EVENTS OR DEMONSTRATIONS OR IN FLORIDA STATE PARKS.

PYRODEX OR OTHER SYNTHETIC BLACK POWDERS ARE NOT PERMITTED IN FLORIDA PARK SERVICE EVENTS OR DEMONSTRATIONS OR IN FLORIDA STATE PARKS.

NOTHING MAY BE ADDED TO THE BLACK POWDER FOR SPECIAL EFFECTS, SUCH AS FLOUR, ACCELLERANTS, ETC.

Black Powder Behavior

- Is very sensitive to heat, friction, and static.
- Rapidly builds up pressure in relatively weak confinement.
- Produces an explosion which creates hazardous sulfides and gases.

Safe Handling Tips

- Wear appropriate shoes or boots that are rubber/vibram soled and do not have treads that will trap stones or explosive materials. Shoe uppers must be made of materials which will not produce static or spark.
- Wear cotton or non-synthetic clothing and gloves. Synthetic fabrics may produce static electricity.
- To avoid contact with the eyes, wear safety glasses when necessary. If contact occurs, flush eyes with water.
- Wear a dust mask if there are harmful amounts of chemicals or dust in the air.
- Handle only when absolutely necessary. Lift and carry product with care.
- Do not drag, push, drop or toss explosives or packages of black powder.
- Avoid impact, friction, heat, sparks and **open flame**.

- Clean up any spill with non-static producing broom and dust pan. Follow proper disposal techniques.
- Keep away from children.
- Wash hands thoroughly after handling.
- Do not store in the same area as other highly combustible materials.
- Use care when opening packaging or containers. Do not allow box cutters, knives, etc. to touch metal case fasteners or the black powder cans.
- Refer to the Material Safety Data Sheet (MSDS) for the specific brand of black powder being used.

Laws and Regulations

The U.S. Department of Justice, Federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), and the Florida Park Service classify black powder as a low explosive. Low explosives are defined as explosive materials which can be caused to deflagrate (burn rapidly) when confined.

- U.S. Department of Justice, Federal Bureau of Alcohol, Tobacco, Firearms and Explosives, Federal Explosives Law and Regulations apply.
- **The Explosives Control Act of 1970 (Title XI of the Organized Crime Control Act of 1970, 18 U.S.C., Chapter 40)**
 - Manufactured black powder in quantities of 5 lbs or less is exempted commercially from licensing, transportation, distribution, recordkeeping.
 - Intended to be used solely for sporting, recreational, or cultural purposes. Example: Civil War Reenactments.
- **Amendment of 1973 to Federal Law Relating to Explosives, 18 U.S.C. Section 845 (a)(5)**
 - Increased the amount of black powder that is exempt from 5 lbs to 50 lbs.
 - Intended to be used solely for sporting, recreational, or cultural purposes. Example: Civil War Reenactments.

While black powder alone does not constitute ammunition, black powder blanks used in small arms are considered small arms ammunition under the Federal Explosives Law.

ATF Explosives Industry Newsletter, 12/2009.

Purchase and Delivery

- This exemption applies to Federal, State or local government entities, or persons who act on behalf of a government entity. **The Florida Park Service policy is to follow the same safe practices as required by non-government entities.** Please see the following sections for details.
- The exemption only applies to purchasers of black powder, not manufacturers or dealers.
- **State or Local Government entities are NOT exempt from storage requirements.**
- State or Local Government entities are NOT exempt from ATF regulations if more than 50 pounds of black powder are being stored. **The Florida Park Service policy is to follow ATF regulations even when black powder in amounts less than 50 pounds are being stored.**
- No sale of black powder is permitted, per the Federal Explosives Law (Public Law 91-452) & Title 27, Code of Federal Regulations Part 55, Commerce in Explosives, Subpart D-Licenses and Permits in Florida State Parks.

Purchase of Black Powder

- Must be purchased from a fully licensed dealer or manufacturer.
- Must be purchased in one pound cans only.
- Must purchase only the amount of black powder required for the immediate event/programming needs.
- At no time will the total inventory exceed the maximum quantities allowed within a specific magazine.
- The invoice/packing slip accompanying the shipment should be dated and retained at the park for a minimum of five years. The location of these files should be noted in the Black Powder Log.
- Black powder purchased by a CSO must follow the Division black powder purchasing policies.

Section II

Examples of 1 pound cans of black powder

Black Powder



The following black powder distributors are registered with MyFlorida Market Place (MFMP) as of September 2013:

Jacks Powder Keg

Corporate Office
Judge Angelo J. Piazza, III
P.O. Box 429
Marksville, Louisiana 71351

Powder Pick Up

Jacks Place
282 H. Booty Lane
Kisatchie, Louisiana 71468
(318) 253-6423
Toll Free (888) 245-9631
Evenings/Weekends (318) 253-8031
jack@jackspowderkeg.com or ajp3@bellsouth.net

Jerry's Sport Center

P.O. Box 121, Main Street
Forest City, PA 1842
(800) 520-3366
www.jerrysportscenter.com

Parks & Son, Inc.

Bingham and Parks Road
Advance, North Carolina 27006
Phone (336) 998-8182
Toll Free (Sales Only) 1-800-992-6504
Fax (336) 998-2696
www.parksandson.com

Delivery Steps

1. Once a delivery of black powder has been accepted by the Park (at the Ranger Station or other typical delivery location), the appropriate person should immediately be contacted and made aware of the delivery. Delivery should be coordinated when this person is working a shift which will allow them the ability to accept the delivery appropriately. The black powder must remain in direct Park attendance and away from visitor access following delivery.
2. The black powder should immediately be transported directly to the Park's approved permanent storage facility.
3. The package should then immediately be opened, inspected and logged into the Park's Black Powder Log Book.
4. The black powder should be properly secured into the Park's approved storage facility.
5. The invoice/packing slip accompanying the shipment should be dated and retained at the Park for a minimum of five years. The location of these files should be noted in the Black Powder Log.

Storage

Storage of black powder shall comply with the Federal Bureau of Alcohol, Tobacco, and Firearms (ATF) requirements. All explosive material must be kept in a locked magazine, meeting the ATF standard, unless they are in the process of manufacture, being physically handled in the operating process of a user, being used or being transported to a place of storage.

Moving a Magazine

If a magazine needs to be moved to a different location (within a park or from one park to another), contact BOS. BOS will coordinate the move with the Park, District and ATF. ATF must approve the new location prior to the move and use of the magazine in the new location.

Definitions of Types of Magazines for Black Powder Storage

(See *Construction Specifications* below for additional details)

Type 1 Magazine

A type 1 magazine is a permanent structure: a building, an igloo or "Army type structure", a tunnel, or a dugout.

• Maximum Storage Capacity

Limited by the *Table of Distances for Storage of Low Explosives*. The amount of black powder stored is based on the distance of the magazine from any inhabited buildings, public railroad or highway or any other above ground magazine.

Section II

Black Powder

Type 1 Magazine

Photo: ATF

The practice of storing explosives in an unattended day-box is not only a violation of Federal explosives regulations, but it also exposes the day-box and the explosives stored therein to theft and illegal use.

ATF Explosives Industry Newsletter, 12/2009.

Type 2 Magazine

Photo: U.S Explosives



Type 2 Magazine

A type 2 magazine is a mobile and portable indoor or outdoor magazine. It is a box, trailer, semi-trailer, or other mobile facility.

- **Maximum Storage Capacity**
 - **Outdoor Magazine:** Limited by the *Table of Distances for Storage of Low Explosives*. The amount of black powder stored is based on the distance of the magazine from any inhabited buildings, public railroad or highway or any other above ground magazine.
 - **Indoor Magazine:** Must not exceed 50 pounds of black powder.



Type 3 Magazine

A type 3 magazine is a portable outdoor magazine for the temporary storage of explosives while attended - a type 3 magazine is a "day-box" or other portable magazine. Explosive materials may not be stored unattended in type 3 magazines but must be removed to type 1 or type 2 magazines for unattended storage.

Type 3 Magazine ("Day Box")

Photo: U.S.
Explosives

- Maximum Storage Capacity**
 Limited by the *Table of Distances for Storage of Low Explosives*. The amount of black powder stored is based on the distance of the magazine from any inhabited buildings, public railroad or highway or any other above ground magazine. If located indoors, must not exceed 50 pounds of black powder.



Type 4 Magazine

A type 4 magazine is a building, igloo or "Army-type structure," dugout, box, trailer or semitrailer or any other mobile magazine.

- Maximum Storage Capacity**
 - Outdoor Magazine:** Limited by the *Table of Distances for Storage of Low Explosives*. The amount of black powder stored is based on the distance of the magazine from any inhabited buildings, public railroad or highway or any other above ground magazine.
 - Indoor Magazine:** Must not exceed 50 pounds of black powder.

Type 4 Magazine (Indoor)



**Type 4 Magazine
(Outdoor)****What May be Stored in Magazines?**

- Black powder in the original manufacturers packaging up to the maximum quantity allowed for the specific type of magazine. One pound cans may be stored within a magazine inside of the cardboard shipping boxes, within ammo cans or directly in the magazine.
- Black powder in the form of cartridges or cannon rounds. Cartridges (paper or metallic) or cannon rounds may be stored within a magazine up to the maximum quantity of black powder allowed for the specific type of magazine. They must be stored within ammo cans within the magazine.

Location

- Outdoor magazines in which black powder is stored must be located no closer to inhabited buildings, passenger railways, public highways, or other magazines in which explosive materials are stored, than the minimum distances specified in the table of distances for storage of low explosives. Refer to the Table of Distances below.
- Distances may not be reduced by the presence of barricades.

Table of Distances for Storage of Low Explosives

Pounds		From Inhabited building distance (feet)	From public railroad and highway distance (feet)	From above ground magazine (feet)
Over	Not Over			
0	1,000	75	75	50
1,000	5,000	115	115	75

Table: Department of Defense Ammunition and Explosives Standards, Table 5-4.1 Extract; 4145.27 M, March 1969

Security

- Limit access to the site(s) where black powder is being stored to essential personnel only.
- Restrict access to the magazine by limiting the number of keys and those who can open the magazine. Account for all keys. Suggestion: Have a log book for essential personnel to sign in and sign out keys, or you could number or mark keys and assign them to specific individuals.
- Change magazine locks if keys are missing or remain in the possession of terminated employees/volunteers.
- Consider installing fences, floodlights, alarms, locked gates, or other security devices at the site to better monitor the location.
- Employees should be trained to recognize what constitutes a suspicious person or an unusual situation.

Inspection

- Visually inspect magazine and locks at least once a week (every 7 days) to check for leaks, debris, needed repairs, signs of unauthorized entry or attempted unauthorized entry, unauthorized removal of explosives from the magazine, etc. The magazine does not need to be inspected if no explosive materials are being stored.
- The details of each inspection should be recorded in the Park's Black Powder Log.
- If you would like ATF to conduct a courtesy inspection of your magazine, the Bureau of Operational Services can contact your local ATF office to set-up the inspection.

Record keeping violations accounted for 50% of the violations cited by ATF in 2009.

ATF Explosives Industry Newsletter, 12/2009.

Inventory and Record Keeping

- **Summary of Magazine Transactions**

A record of magazine transactions is to be kept at each magazine of an approved storage facility; however, these records may be kept at one central location in the Park if separate records of transactions are kept for each magazine.

The following information must be recorded following any addition or removal of black powder from the magazine:

- Date of receipt or removal of black powder
- Manufacturer's name or brand name
- The total quantity received in and removed from each magazine during the day
- The total remaining on hand at the end of the day
- Conduct an inventory of black powder supply once per year or:
 - Upon commencing use of black powder
 - When changing location of premises
 - Upon discontinuing use of black powder

Unsafe Conditions

- Volatile materials too close to magazine.
- Combustible materials and chemicals stored in magazines with explosives.
- Exposed metal.
- Poor ventilation.
- Poor housekeeping.
- Improper packing and repacking.
- Black powder not stored in appropriate packaging, or broken packaging.
- Spilled black powder.
- Rotting wood in the magazine.
- Signs of pests or animal presence.

Personal Safety Considerations

- Remove cigarettes, matches and lighters from pockets and do not smoke or permit any open flame or any spark producing device in any magazine, within 50 feet of an outdoor magazine or any building where explosive materials are handled, stored or used, or in any room containing an indoor magazine.
- Remove spark-producing jewelry and accessories prior to entering a storage facility.
- Be aware of areas prone to or conditions which may contribute to forest or brush fires.
- Turn off CB radios, cell phones, pagers and remove remote entry devices from pockets.
- Be aware of radio frequency problems. Do not operate two-way communication or radio equipment in any storage area.
- Park at a safe distance facing the nearest exit. Avoid parking in areas of high grass or dried brush. Leave doors unlocked and ensure keys are immediately accessible.
- Be alert for dogs, snakes, bees, visitors or other distractions.
- Be aware of humidity levels. If the relative humidity level is below 20%, use extreme caution.
- Immediately survey the interior of any magazine upon approach for residue powders on the floor, deteriorated explosives or spilled product. Do not enter the area if deteriorated or spilled product is present.
- Ground yourself prior to entering a storage facility. Touching the metal exterior of a magazine will ground you.

Housekeeping

- Magazines should be kept clean, dry, and free of grit, paper, empty packages and containers.
- Floors must be regularly swept.
- Do not keep spark producing metal in magazines.

- All black powder leakages on floors must be cleaned according to the manufacturer instructions (check MSDS sheet).
- Deteriorated explosives must be destroyed according to manufacturer's instructions. Contact the Bureau of Operational Services for guidance.
- The exterior of the magazine must be kept clear of brush, dry grass or trees (live trees under 10 feet in height) within 25 feet of the magazine.
- Volatile materials must be kept no less than 50 feet away from the magazine.

Lighting

- Battery powered safety lights or battery powered safety lanterns may be used in explosives storage magazines.
- Electric lighting must meet standards prescribed by the "National Electric Code" (National Fire Protection Association, NFPA, 70-81). All electrical switches must be located outside of the magazine.
- Documentation that lighting complies with the National Electric Code must be available for inspection by ATF officers.

Repair

- Before repairing the interior of magazines, all explosive materials are to be removed and the interior cleaned.
- Before repairing the exterior of magazines, all explosive materials must be removed if there is any possibility that repairs may produce sparks or flame.
- Any removed explosive materials must be placed in other appropriate magazines or placed a safe distance from the magazine under repair where they are to be properly guarded and protected until the repairs have been completed.

Recommended Quantities

- Parks conducting programs using black powder on a monthly or more frequent basis are required to maintain black powder inventories of 50 pounds or less.

Recently, ATF Investigators have encountered magazines that were overly-packed or in such a state of disorder that the owners were not aware of the contents.

ATF Explosives Industry Newsletter, 6/2010.

- If more than 50 pounds of black powder is needed for an event or demonstration, the park must arrange to provide proper storage.

Protocol for Empty Magazines

- The magazine's Black Powder Log must reflect the current amount of powder being stored in the magazine.
- The magazine does not need to be inspected if no explosive materials are being stored.

CONSTRUCTION SPECIFICATIONS FOR TYPE 1 MAGAZINE

- **Buildings**
All building type magazines are to be constructed of masonry, wood, metal, or a combination of these materials, and have no openings except for entrances and ventilation. The ground around building magazines must slope away for drainage or other adequate drainage provided.
- **Masonry wall construction**
Masonry wall construction is to consist of brick, concrete, tile, cement block, or cinder block and be not less than 6 inches in thickness. Hollow masonry units used in construction must have all hollow spaces filled with well-tamped, coarse, dry sand or weak concrete (at least a mixture of one part cement and eight parts of sand with enough water to dampen the mixture while tamping in place). Interior walls are to be constructed of, or covered with, a non-sparking material.
- **Fabricated metal wall construction**
Metal wall construction is to consist of sectional sheets of steel or aluminum not less than number 14-gauge (.0641 inches), securely fastened to a metal framework. Metal wall construction is either lined inside with brick, solid cement blocks, hardwood not less than four inches thick, or will have at least six inch sand fill between interior and exterior walls. Interior walls are to be constructed of, or covered with, non-sparking material.
- **Wood frame wall construction**
The exterior of outer wood walls is to be covered with iron or aluminum not less than number 26-gauge (.0179 inches). An inner wall of, or covered with non-sparking material will be constructed so as to provide a space of not less than six inches between the outer and inner walls. The space is to be filled with coarse, dry sand or weak concrete.

- **Floors**

Floors are to be constructed of, or covered with, a non-sparking material and shall be strong enough to bear the weight of the maximum quantity to be stored. Use of pallets covered with a non-sparking material is considered equivalent to a floor constructed of, or covered with a non-sparking material.
- **Foundations**

Foundations are to be constructed of brick, concrete, cement block, stone, or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the buildings is to be enclosed with metal.
- **Roof**

Except for buildings with fabricated metal roofs, the outer roof is to be covered with no less than number 26-gauge (.0179 inches) iron or aluminum, fastened to at least $\frac{7}{8}$ inch sheathing.
- **Bullet-resistant ceilings or roofs**

Where it is possible for a bullet to be fired directly through the roof and into the magazine at such an angle that the bullet would strike the explosives within, the magazine is to be protected by one of the following methods:

 - A sand tray lined with a layer of building paper, plastic, or other nonporous material, and filled with not less than four inches of coarse, dry sand, and located at the tops of inner walls covering the entire ceiling area, except that portion necessary for ventilation.
 - A fabricated metal roof constructed of $\frac{3}{16}$ inch plate steel lined with four inches of hardwood. (For each additional $\frac{1}{8}$ inch of plate steel, the hardwood lining may be decreased one inch.)
- **Doors**

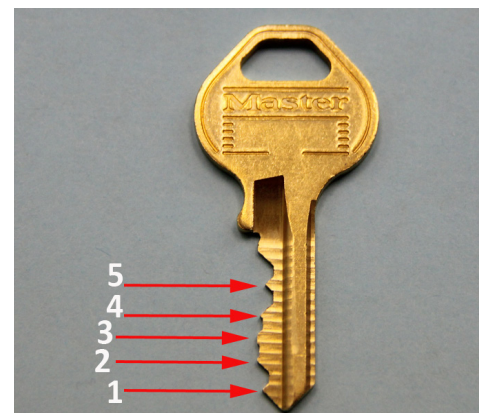
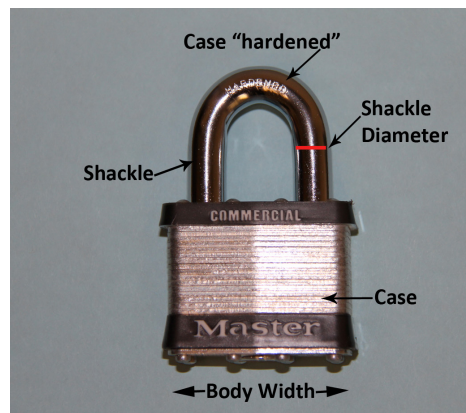
All doors are to be constructed of not less than $\frac{1}{4}$ inch plate steel and lined with at least two inches of hardwood. Hinges and hasps are to be attached to the doors by welding, riveting or bolting (nuts on inside of door). They are to be installed in such a manner that the hinges and hasps cannot be removed when the doors are closed and locked.
- **Locks**

Each door is to be equipped with (1) two mortise locks; (2) two padlocks fastened in separate hasps and staples; (3) a combination

of a mortise lock and a padlock; (4) a mortise lock that requires two keys to open; or (5) a three-point lock. Pad locks must have at least five tumblers and a case-hardened shackle of at least $\frac{3}{8}$ inch diameter. Padlocks must be protected with not less than $\frac{1}{4}$ inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

Diagram of a Padlock
(shown left)

A Key to a Five-Tumbler Padlock
(has 5 points)
(shown right)



Measuring the diameter of a shackle



- **Ventilation**

Ventilation is to be provided to prevent dampness and heating of stored explosive materials. Ventilation openings must be screened to prevent the entrance of sparks. Ventilation openings in side walls and foundations must be offset or shielded for bullet-resistant purposes. Magazines having foundation and roof ventilators with the air circulating between the side walls and the floors and between the side walls and the ceiling must have a wooden lattice lining or equivalent to prevent the packages of explosive materials from being stacked against the side walls and blocking the air circulation.

- **Exposed metal**

No sparking material is to be exposed to contact with the stored explosive materials. All ferrous metal nails in the floor and side walls, which might be exposed to contact with explosive materials, must be blind nailed, countersunk, or covered with a non-sparking lattice work or other non-sparking material.

Igloos, “Army-type structure”, tunnels, and dugouts

Igloo, “Army-type structure”, tunnel, and dugout magazines are to be constructed of reinforced concrete, masonry, metal, or a combination of these materials. They must have an earthmound covering of not less than 24 inches on the top, sides and rear unless the magazine meets additional requirements. Interior walls and floors must be constructed of, or covered with, a non-sparking material. Magazines of this type are also to be constructed in conformity with additional ATF requirements.

CONSTRUCTION SPECIFICATIONS FOR TYPE 2 MAGAZINES**Outdoor magazines**

- **General**

Outdoor magazines are to be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and ventilated. They are to be supported to prevent direct contact with the ground and, if less than one cubic yard in size, must be securely fastened to a fixed object. The ground around outdoor magazines must slope away for drainage or other adequate drainage provided. When unattended, vehicular magazines must have wheels removed or otherwise effectively immobilized by kingpin locking devices or other methods approved by ATF.

- **Exterior Construction**

The exterior and doors are to be constructed of not less than ¼ inch steel and lined with at least two inches of hardwood. Magazines with top openings will have lids with water-resistant seals or which overlap the sides by at least one inch when in a close position.

- **Hinges and hasps**

Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

- **Locks**

Each door is to be equipped with (1) two mortise locks; (2) two padlocks fastened in separate hasps and staples; (3) a combination

Storage violations accounted for 37% of the violations cited by ATF in 2009.

ATF Explosives Industry Newsletter, 12/2009.

of a mortise lock and a padlock; (4) a mortise lock that requires two keys to open; or (5) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least $\frac{3}{8}$ inch diameter. Padlocks must be protected with not less than $\frac{1}{4}$ inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of bolt, lock, or bar that cannot be actuated from the outside. **Please see reference photos in the *Construction Specifications for Type 1 Magazines* on page 27 of this manual.**

CONSTRUCTION SPECIFICATIONS FOR TYPE 2 MAGAZINES

Indoor magazines

- **General**

Indoor magazines are to be fire-resistant and theft-resistant. They need not be bullet-resistant and weather-resistant if the buildings in which they are stored provide protection from the weather and from bullet penetration. No indoor magazine is to be located in a residence or dwelling. More than one indoor magazine may be located in the same building if the total quantity of explosive materials stored does not exceed 50 pounds. Detonators must be stored in a separate magazine.

- **Exterior construction**

Indoor magazines are to be constructed of wood or metal according to one of the following specifications:

- Wood indoor magazines are to have sides, bottoms and doors constructed of at least two inches of hardwood and are to be well braced at the corners. They are to be covered with sheet metal or not less than number 26-gauge (.0179 inches). Nails exposed to the interior of magazines must be countersunk.
- Metal indoor magazines are to have sides, bottoms and doors constructed of not less than number 12-gauge (.1046 inches) metal and be lined inside with a non-sparking material. Edges of metal covers must overlap sides at least one inch.

- **Hinges and hasps**

Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

- **Locks**
Each door is to be equipped with (1) two mortise locks; (2) two padlocks fastened in separate hasps and staples; (3) a combination of a mortise lock and a padlock; (4) a mortise lock that requires two keys to open; or (5) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least $\frac{3}{8}$ inch diameter. Padlocks must be protected with not less than $\frac{1}{4}$ inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. Indoor magazines located in secure rooms that are locked as provided in this subparagraph may have each door locked with one steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least $\frac{3}{8}$ -inch diameter, if the door hinges and lock hasp are securely fastened to the magazine. **Please see reference photos in the *Construction Specifications for Type 1 Magazines* on page 27 of this manual.**
- These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

CONSTRUCTION SPECIFICATIONS FOR TYPE 3 MAGAZINES

A type 3 magazine is a "day-box" or other portable magazine. It must be fire-resistant, weather-resistant, and theft-resistant. A type 3 magazine is to be constructed of not less than number 12-gauge (.1046 inches) steel, lined with at least either $\frac{1}{2}$ inch plywood or $\frac{1}{2}$ inch Masonite-type hardboard.

- **Doors**
Doors must overlap sides by at least one inch. Hinges and hasps are to be attached by welding, riveting or bolting (nuts on inside).
- **Locks**
One steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least $\frac{3}{8}$ inch diameter is sufficient for locking purposes. Explosive materials are not to be left unattended in type 3 magazines and must be removed to type 1 or 2 magazines for unattended storage. **Please see reference photos in the *Construction Specifications for Type 1 Magazines* on pages 26 and 27 of this manual.**

CONSTRUCTION SPECIFICATIONS FOR TYPE 4 MAGAZINES**Outdoor magazines**

- **General**

Outdoor magazines are to be fire-resistant, weather-resistant, and theft-resistant. The ground around outdoor magazines must slope away for drainage or other adequate drainage be provided. When unattended, vehicular magazines must have wheels removed or otherwise be effectively immobilized by kingpin locking devices or other approved methods.

- **Construction**

Outdoor magazines are to be constructed of masonry, metal-covered wood, fabricated metal, or a combination of these materials. Foundations are to be constructed of brick, concrete, cement block, stone, or metal or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the building is to be enclosed with fire-resistant material. The walls and floors are to be constructed of, or covered with, a nonsparking material or lattice work. The doors must be metal or solid wood covered with metal.

- **Hinges and hasps**

Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

- **Locks**

Each door is to be equipped with (1) two mortise locks; (2) two padlocks fastened in separate hasps and staples; (3) a combination of a mortise lock and a padlock; (4) a mortise lock that requires two keys to open; or (5) a three-point lock. Padlocks must have at least five tumblers and case-hardened shackle of at least a inch diameter. Padlocks must be protected with not less than ¼ inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples.

These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside. **Please see reference photos in the *Construction Specifications for Type 1 Magazines* on page 27 of this manual.**

Indoor magazines

- **General**

Indoor magazines are to be fire-resistant and theft-resistant. They need not be weather-resistant if the buildings in which they are stored provide protection from the weather. No indoor magazine is to be located in a residence or dwelling. The indoor storage of low explosives must not exceed a quantity of 50 pounds. More than one indoor magazine may be located in the same building if the total quantity of explosive materials stored does not exceed 50 pounds. Detonators that will not mass detonate must be stored in a separate magazine and the total number of electric detonators must not exceed 5,000.

- **Construction**

Indoor magazines are to be constructed of masonry, metal-covered wood, fabricated metal, or a combination of these materials. The walls and floors are to be constructed of, or covered with, a nonsparking material. The doors must be metal or solid wood covered with metal.

- **Hinges and Hasps**

Hinges and hasps are to be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps must be installed so that they cannot be removed when the doors are closed and locked.

- **Locks**

Each door is to be equipped with (1) two mortise locks; (2) two padlocks fastened in separate hasps and staples; (3) a combination of a mortise lock and padlock; (4) a mortise lock that requires two keys to open; or (5) a three-point lock. Padlocks must have at least five tumblers and a case-hardened shackle of at least a inch diameter. Padlocks must be protected with not less than ¼ inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. Indoor magazines located in secure rooms that are locked as provided in this subparagraph may have each door locked with one steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least a inch diameter, if the door hinges and lock hasp are securely fastened to the magazine. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside. **Please see reference photos in the *Construction Specifications for Type 1 Magazines* on page 27 of this manual.**

TEMPORARY STORAGE

(Ammo Cans, Pass Boxes, Cartridge Boxes, Ammo Belts and Limbers)

- All explosive material must be kept in a locked magazine, meeting the ATF standard, unless they are in the process of manufacture, being physically handled in the operating process of a user, being used or being transported to a place of storage.
- Black powder in amounts of less than 50 pounds in 1 pound cans or in cartridge format (paper, metal or cannon rounds), may be temporarily stored for transport or immediate use within an ammo can or pass box.
- Any black powder in the form of 1 pound cans must be immediately secured in an appropriate magazine following transport or use.
- Any black powder in the form of cartridges (paper, metal or cannon rounds), should be secured in an appropriate magazine following transport or use.
- Ammo cans and pass boxes containing black powder in any format must remain secured and under supervision.
- Black powder in the form of cartridges (paper or metal) may be carried in cartridge boxes or ammo belts only for immediate use. **(Cartridge boxes should be lined with a metal tin or a wooden cartridge blocks.)**
- Black powder in the form of cartridges (cannon rounds) may be temporarily stored in a limber only for immediate use.

Left photo:
Pass Box (*left*);
Ammo Can (*right*)

Right photo:
Ammo Belt (*left*);
Cartridge Box (*right*)



Section II

Black Powder

Left photo:
Limber

Right photo:
Limber Contents



Transportation and Distribution

Transportation

- No more than 50 lbs of black powder can be transported in a vehicle.
- The transportation of black powder, in the form of cartridges or in 1 pound cans, must be packaged for transport in one of the following methods:
 - In 1 pound cans placed within the original manufacturers cardboard shipping packaging.
 - In 1 pound cans placed within an ammo can or pass box.
 - In the form of cartridges (paper, metal or cannon rounds) placed within an ammo can or pass box.
 - In 1 pound cans or cartridges (paper, metal or cannon rounds) placed within a portable magazine.
- After packaging the black powder using one of the above methods, it must be secured within a vehicle to prevent theft or loss during transport.

Distribution

- Black powder shall not be distributed to anyone under the age of 21.
- When black powder is distributed at events, no more than 50 lbs may be removed at a time from the magazine.
- All distribution of black powder must be recorded in the Black Powder Log.

- Unless otherwise specified for a specific event or demonstration, reenactors should not bring powder or cartridges to an event or demonstration. Appropriate supplies will be provided.

Safe Handling Tips

- Handle, lift, and carry product with care.
- Avoid impact, friction, heat, sparks and open flame.
- Wear appropriate shoes or boots that are rubber/vibram soled and do not have treads that will trap stones or explosive materials. Shoe uppers must be made of materials that will not produce static or spark.
- Wear cotton or non-synthetic clothing and gloves. Synthetic fabrics may produce static electricity.
- To avoid contact with eyes, wear safety glasses when necessary. If contact occurs, flush eyes with water.
- Wear a dust mask if there are harmful amounts of chemicals or dust in the air.
- Handle only when absolutely necessary. Lift and carry product with care.
- Do not drag, push, drop or toss explosives or packages of black powder.
- Clean up any spilled powder with non-static producing broom and dust pan. Follow proper disposal techniques.
- Keep away from children.
- Wash hands thoroughly after handling.
- Do not store in the same area as other highly combustible materials.
- Use care when opening packaging or containers. Do not allow box cutters, knives, etc. to touch metal case fasteners or the black powder cans.
- Refer to the Material Safety Data Sheet (MSDS) for the specific brand of black powder being used.

Disposal

Deteriorated explosives are materials that have become dangerous or unstable by virtue of the deterioration of the explosive materials or the immediate bag, cartridge, shell or whatever is used to contain the explosive materials.

ATF

Black powder is an organic material, but can cause unnecessary danger if not disposed of properly.

NEVER DISPOSE OF ANY AMOUNT OF BLACK POWDER IN A TRASH RECEPTACLE OR DUMPSTER!

Disposal Steps

For proper disposal of small amounts of spilled black powder (less than 8 ounces), follow the following steps:

1. Collect all spilled black powder using a non-sparking broom and dustpan or a plastic shovel.
2. Completely dissolve collected black powder into a container of water.
3. Once completely dissolved, discard black powder/water solution into a dirt area within a low/no traffic area that is away from any public areas so that the solution may be absorbed into the soil.

For disposal of larger amounts of black powder (more than 8 ounces) or deteriorated black powder, please contact the Bureau of Operational Services for specific disposal instructions.

Bureau of Operational Services

3900 Commonwealth Blvd., MS 535
Tallahassee, Florida 32399

Phone: 850-245-3076

- All surplus black powder should be properly transferred to a park which conducts continuous black powder programs or to a park that has the appropriate magazine and has an upcoming event demonstration.
- All disposal or transfer of black powder must be noted in the Park's Black Powder Log.
- Refer to the product MSDS sheet for more information.

Emergency Management**Accident Procedure**

In the event of a black powder accident:

1. Seek appropriate medical attention.

2. Secure the scene.
3. Contact your immediate supervisor and follow the Park Protection Plan for major injury or death.
4. Prepare the necessary reports. (Incident Report, General Loss and Liability)
5. Contact the District Office to discuss and prepare the official response. Do not discuss with the media or speculate on what the agency's official response will be.
6. Distribute the official response and reports with an additional copy to the Bureau of Operational Services (address on previous page). (The Bureau of Operational Services will forward copies to current Instructors.)

Theft/Loss Procedures

The following procedures must be followed for stolen or missing black powder:

Priority	Action	Responsibility
1	Ensure safety and preserve evidence <ul style="list-style-type: none"> • First and foremost, make sure you and your employees are safe • Do not disturb the crime scene • Do not enter the crime scene until law enforcement authorities determine it is safe 	Park HWFST Safety Supervisor or Staff that first discovered theft/loss
	Notify the Park Manager	Park HWFST Safety Supervisor or Staff that first discovered theft/loss

Section II

Black Powder

On 4/21/2007, 4 men in Montana used a tow rope and truck to pull the door off of a magazine and stole 250 lbs. of powder. On 4/23/2007, the theft was discovered and reported. Using tire tracks and other evidence obtained from the scene, ATF agents were able to identify probable suspects. On 4/25/2007, ATF recovered the stolen explosives and gained sufficient evidence for prosecution.

ATF Explosives Industry Newsletter, 6/2010.

Priority	Action	Responsibility
2	Notify FWC Enforcement	Park Manager
	Contact Local Law Enforcement	Park Manager
	Notify the District Bureau Chief	Park Manager
	Notify the Bureau of Operational Services	Bureau Chief
	Contact Local ATF Office <ul style="list-style-type: none"> The local ATF office will work with local law enforcement to investigate the theft ATF must be notified within 24 hours of discovery 	Park HWFST Safety Supervisor
	Prepare Incident Report	Park Manager
3	Contact U.S. Bomb Data Center <ul style="list-style-type: none"> The U.S. Bomb Data Center must be notified within 24 hours of discovery 	Park HWFST Safety Supervisor
4	Prepare ATF Report of Theft or Loss Report must include the following: <ul style="list-style-type: none"> The manufacturer or brand name The manufacturer's marks of identification (date and shift code) Quantity (applicable quantity units, such as pounds of explosives, number of detonators, etc.) Description (black powder, etc.) and the United Nations identification number, hazard division number and classification letter, e.g., 1.1D, as classified by the U.S. Department of Transportation at 49 CFR 172.101 and 173.52 Size (length and diameter of magazine or lost materials) Report form available at http://www.atf.gov/ 	Park HWFST Safety Supervisor
5	Notify ATF of any recovered explosives <ul style="list-style-type: none"> If you find that explosives were actually misplaced, notify ATF immediately 	Park HWFST Safety Supervisor

Emergency Contact Information

ATF Website	www.atf.gov
ATF 24-Hour Hotline	Toll Free 800-800-3855
Explosives Theft Hotline	Toll Free 888-461-8841
Bomb Hotline	Toll Free 888-283-2662
U.S. Bomb Data Center (M-F, 8 a.m. to 5 p.m. ET)	Toll Free 800-461-8841 Email USBDC@atf.gov

Pyrotechnics

- All pyrotechnic materials must be stored in conformity with Federal regulations.
- The State does not need to maintain a license, but must be under physical control of all pyrotechnic materials at all times. A volunteer may handle the pyrotechnics under the guidance of the State, but the State must maintain ultimate control of the materials.
- If the State should wish to distribute pyrotechnics to a licensed vendor hired to handle the pyrotechnics for a specific event, the State must receive a signed copy of the vendor's license and must reflect this distribution on the Distribution Log.

Section III

Forms & Checklists

The following is a summary of Division approved Historic Weapons Firing Safety Training-related forms and checklists:

Black Powder Log

When to Complete:	Following any magazine inspection, acquisition of black powder or distribution of black powder
Who Should Complete:	Safety Supervisors and/or Safety Assistants
How to Distribute:	Keep in Park magazine

HWFSP Event Planning Worksheet

When to Complete:	Prior to and during an event
Who Should Complete:	Event Coordinator and/or Safety Supervisor
How to Distribute:	Keep with Park files

HWFSP Event Evaluation

When to Complete:	Prior to, during and after an event
Who Should Complete:	Event Coordinator and/or Safety Supervisor
How to Distribute:	Send Copies to: <ul style="list-style-type: none"> • Park Manager • District Office • Bureau of Operational Services

A Guide for Reenactors

When to Complete:	Prior to an event
Who Should Complete:	Safety Supervisor or Safety Assistant
How to Distribute:	Hard Copy or Electronically

Small Arms Demonstration Checklist

When to Complete:	Prior to, during and after a demonstration using small arms
Who Should Complete:	Safety Supervisor or Safety Assistant
How to Distribute:	Keep in Park files

Artillery Demonstration Checklist

When to Complete:	Prior to, during and after a demonstration using artillery
Who Should Complete:	Safety Supervisor or Safety Assistant
How to Distribute:	Keep in Park files

**Small Arms
Inspection
Checklist**

(Percussion Musket & Rifle; Flintlock Musket & Rifle; Colt & Smith & Wesson Revolver; Breech Loading Trapdoor Rifle or Carbine)

When to Complete:	Prior to use of a small arms for an event or a demonstration
Who Should Complete:	Safety Supervisor or Safety Assistant
How to Distribute:	Keep in Park files

**Artillery
Inspection
Checklist**

When to Complete:	Prior to the use of an artillery piece for an event or a demonstration
Who Should Complete:	Safety Supervisor or Safety Assistant
How to Distribute:	Keep in Park files

Appendix

Table of Maximum Loads: Small Arms

Table of Maximum Loads: Artillery

Primitive Weapons Range Diagram

Small Arms Range Diagram

Artillery Range Diagram

Opposing Troops Range Diagram

Magazine Inspection Checklist

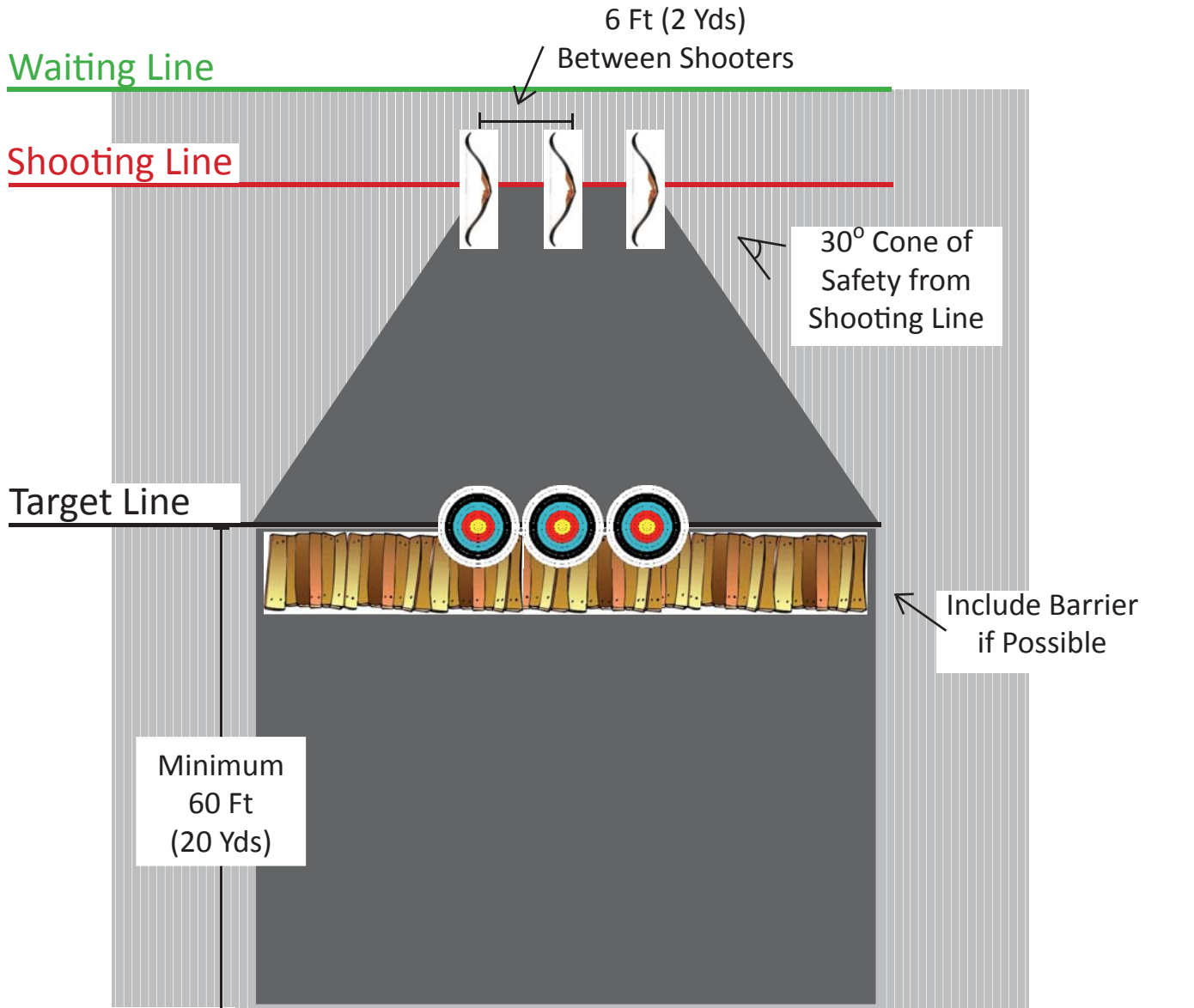
Weapon Type	Caliber	Maximum Blank Load
18th Century Muskets, Rifles & Pistols		
"Brown Bess" Musket (<i>flintlock</i>)	.75	125 grains FFg
Charleville Musket (<i>flintlock</i>)	.69	125 grains FFg
American Musket (<i>flintlock</i>)	.69	125 grains FFg
Kentucky Rifle (<i>flintlock</i>)	variable	90 grains FFg
Pistols & Horse Pistols (<i>flintlock</i>)	variable	90 grains FFg
19th Century Rifles, Muskets & Revolvers		
U.S. Rifle, 1841 (Mississippi Rifle) (<i>percussion</i>)	.54 or .58	60 grains FFg
U.S. Rifle Musket, M1855-1864 (<i>percussion</i>)	.58	60 grains FFg
Springfield, 1855-1864 (<i>percussion</i>)	.58	60 grains FFg
British Enfield Rifle, 1853/1858 (<i>percussion</i>)	.58	60 grains FFg
U.S. Musket, 1842 (<i>percussion</i>)	.69	75 grains FFg
Sharps Carbine/Rifle (<i>percussion</i>)	.54	60 grains FFg
Revolver (<i>percussion</i>)	.36 or .44	30 grains FFg
19th Century Metallic Cartridge Small Arms		
U.S. Springfield Rifle	.50	70 grains FFg
U.S. Rifle, 1866-1870	.45	70 grains FFg
Sharps Carbine	.50	55 grains FFg
U.S. Springfield Rifle, M1866-1860	.45	70 grains FFg
U.S. Springfield Carbine	.45	55 grains FFg
Colt Revolver, M1873	.45	28 grains FFg
Henry Repeating Rifle	.44	25 grains FFg
Spencer Rifle, M1860	.52	25 grains FFg
U.S. Carbine, M1873-1884	.45	28 grains FFg


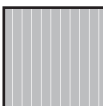
*All musket charges include priming. For muzzle loading rifles and muskets not listed, the general guideline should be about **one grain of powder per caliber**.

Weapon Type	Size	Maximum Blank Load
18th Century Artillery		
Swivel Gun 2	2 pounder	4 ounces Fg or C grade
"Grasshopper" Bronze 3	3 pounder	6 ounces Fg or C grade
British Light Gun 6	6 pounder	12 ounces Fg or C grade
British Field Howitzer	5.8 inch	10 ounces Fg or C grade
Iron Gun	3 pounder	6 ounces Fg or C grade
Iron Gun	4 pounder	8 ounces Fg or C grade
Iron Gun	6 pounder	10 ounces Fg or C grade
Iron Gun	12 pounder	20 ounces Fg or C grade
Howitzer	8 inch	36 ounces Fg or C grade
Howitzer	8.76 inch	16 ounces Fg or C grade
Iron Gun (Armstrong)	9 pounder	16 ounces Fg or C grade
Iron Gun (Armstrong)	18 pounder	32 ounces Fg or C grade
Iron Gun (Artmstrong)	24 pounder	36 ounces Fg or C grade
19th Century Artillery		
Napoleon (M1857 Gun Howitzer)	12 pounder	20 ounces Fg or C grade
M1841 Howitzer (Field Howitzer)	12 pounder	10 ounces Fg or C grade
Mountain Howitzer (M1841)	12 pounder	6 ounces Fg or C grade
Gun, 1841 (M1841 Gun)	6 pounder	10 ounces Fg or C grade
Parrott Rifle	2.9 inch	10 ounces Fg or C grade
Ordnance Rifle	3 inch	10 ounces Fg or C grade
Lyle Line-Throwing Gun	————	1.5 ounces Fg or C grade

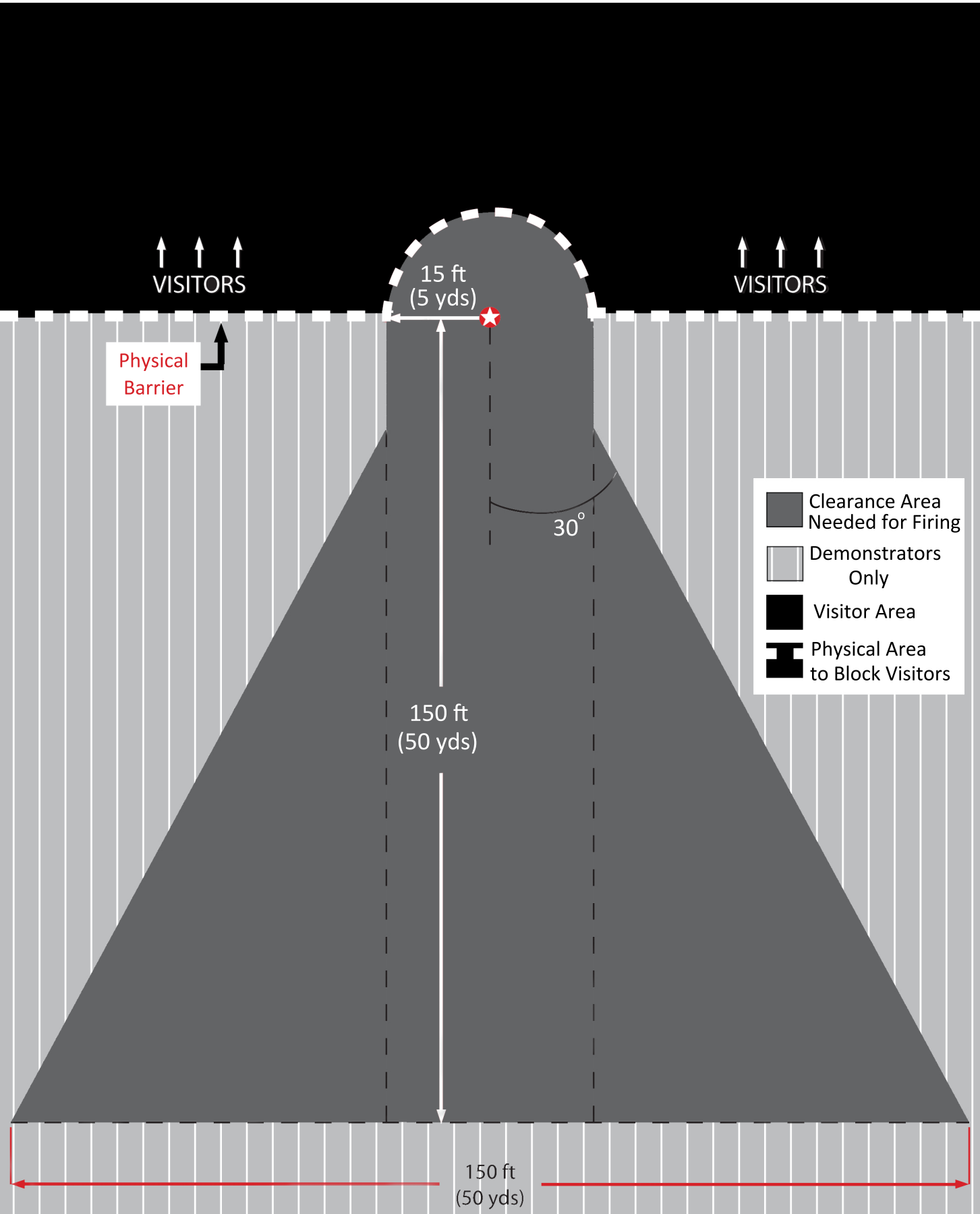
*For cannons smaller than full scale and for cannons not listed, the maximum charge is **no more than 2.5 ounces Fg or C grade powder per one full inch of bore opening.**

Primitive Weapons Range Diagram

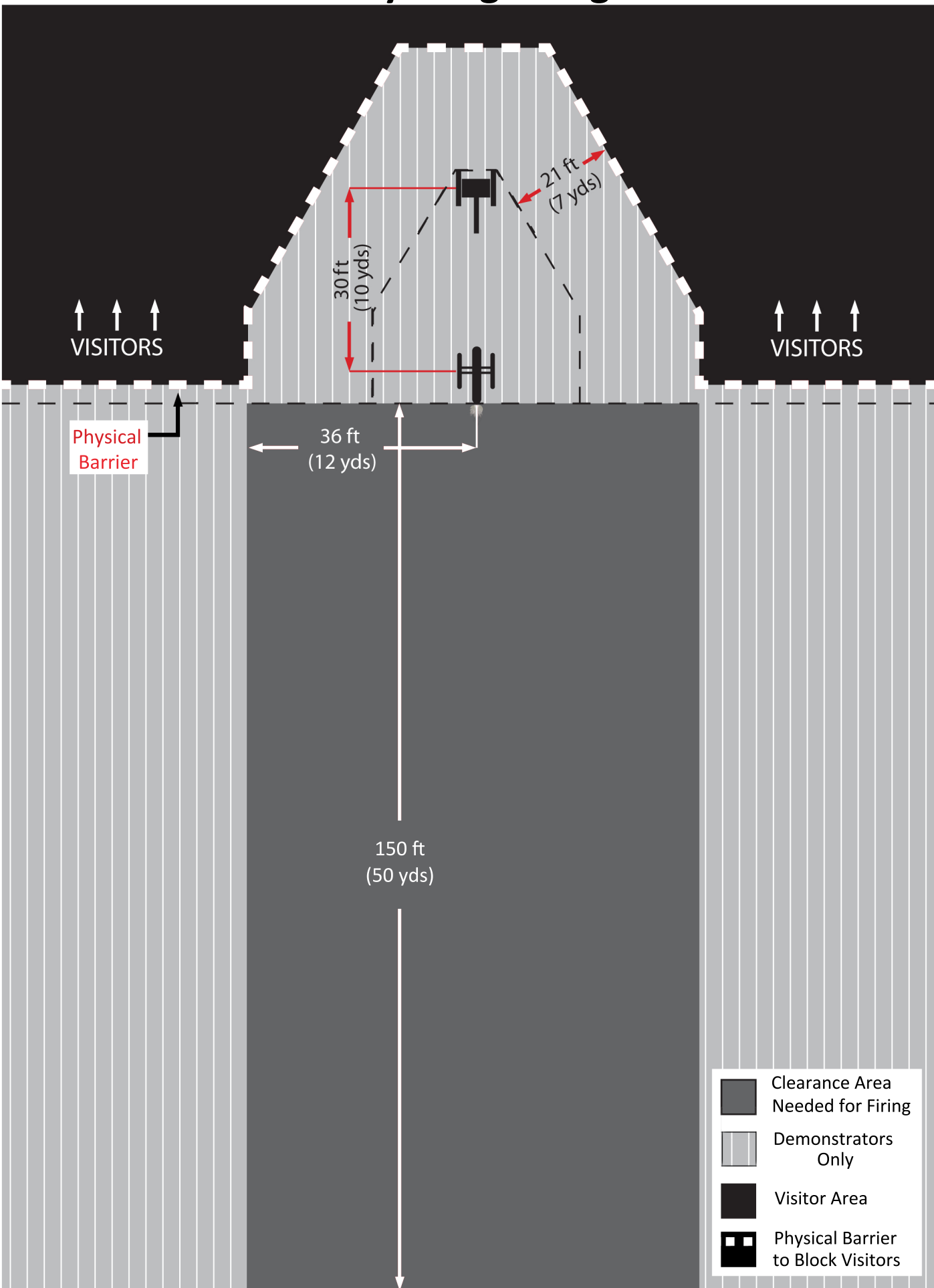


-  Clearance Area Needed for Firing
-  Prohibited Area for Vistors

Small Arms Range Diagram



Artillery Range Diagram



Physical Barrier

↑
↑
↑
VISITORS

↑
↑
↑
VISITORS

36 ft
(12 yds)

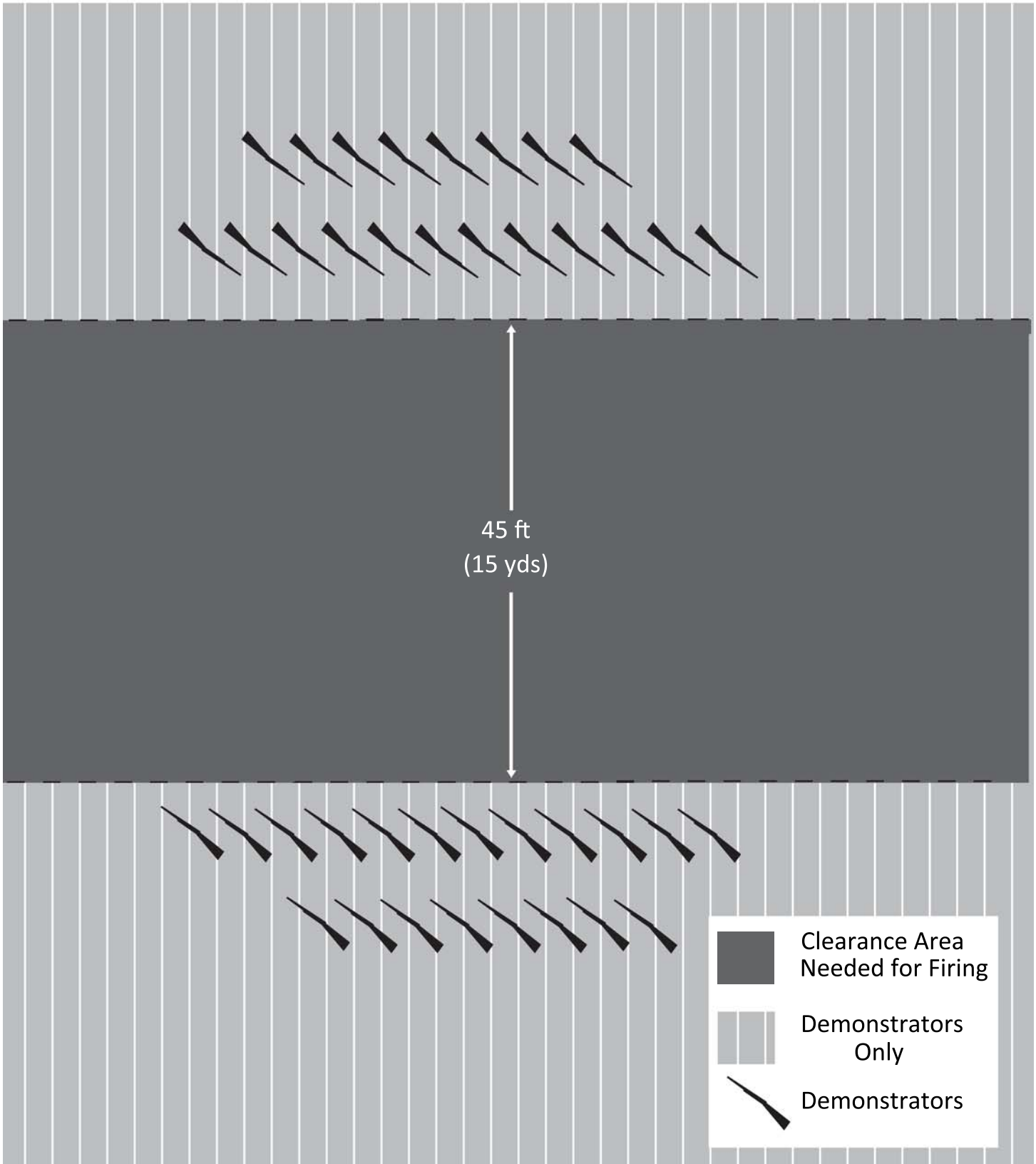
30 ft
(10 yds)

21 ft
(7 yds)

150 ft
(50 yds)

-  Clearance Area Needed for Firing
-  Demonstrators Only
-  Visitor Area
-  Physical Barrier to Block Visitors

Opposing Troops Range Diagram





Magazine Inspection Checklist

Park: _____

Date: _____

Inspector Name: _____

- Safety Supervisor
- Safety Assistant

The Magazine Site

- Keys are accounted for and only accessible by authorized staff.
- Magazine is in the approved location.
- Exterior of magazine is clear of brush and dry grass or trees (live trees under 10 feet in height) within 25 feet of the magazine.
- No volatile materials are kept within 50 feet of magazine.
- No signs of unauthorized entry.

Comments:

Inside the Magazine

- No signs of unauthorized removal of materials from magazine.
- All locks are functional.
- Black powder is present in magazine.
- Quantity of black powder stored does not exceed maximum storage capacity.
- No other items except for black powder (in original shipping box(es), 1 pound cans or cartridge/round format), ammo can(s), metallic cartridges, and Black Powder Log Book are present inside magazine.
- Cartridges/rounds and metallic cartridges are stored within ammo cans within the magazine.
- No signs of residue powders on the floor, deteriorated explosives or spilled product.
- Magazine is clean, dry, and free of grit, paper, empty packages and containers.
- No signs of pest or animal presence (droppings, residue, etc.).
- Floor is swept.
- No spark producing metal present inside magazine.

Magazine Inspection Checklist

- No leaks, wood rot, poor ventilation or faulty seals.
- No other repairs are needed.

Comments:

Records

- Black Powder Log is present inside magazine.
- All powder transactions accounted for in Black Powder Log (all applicable parts of log are completed).
- Inspection / Inventory is noted in Black Powder Log.
- All invoices/packing slips for black powder purchased available in Park files (not in magazine).

Comments:

**Copies of this checklist can be maintained in Park files at the Park's discretion.*



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