MARYLAND PARK SERVICE

STANDARDS FOR HISTORIC WEAPONS USE

Revised September 2018

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I) **Purpose**: These **standards** apply to the use of historic weapons, both firearms and edged weapons, for interpretive demonstration purposes by individuals and reactivated military units on lands administered by the Maryland Park Service (MPS). These Standards further elaborate and articulate the MPS Policy 51, "Use of Historic Weapons and Agency-Owned Artillery Pieces." Live-fire demonstrations and competitions that use historic weapons is limited to small arms. The only MPS property where live fire is permitted is at Fort Frederick State Park.

II) **Definitions**:

A) **Historic Weapons:** historic firearms, artillery and edged weapons brought onto MPS lands for demonstration purposes. There are three types of historic weapons:

1) **Flintlock/Slow-Match and Lintstock Era Weapons:** firearms that utilize priming powder and flints as the primary ignition system for small-arms, and utilize slow-match and lintstock as the primary ignition system for artillery. This definition also covers all edged weapons and other weapons used during this period.

2) **Percussion/Friction Primer Era Weapons:** firearms that utilize percussion caps as the primary ignition system for small-arms, and utilize friction primers as the primary ignition system for artillery. This definition also covers all edged weapons and other weapons used during this period.

3) **Other Era Weapons:** Either firearms that utilize an ignition system or edge-weapons that are different from the above categories. These include (but are not limited to) match-locks and post-Civil War weapon systems.

B) **Demonstration:** means employing the use of one or more historic weapons on MPS lands, for the purpose of public education, under the direction of a Certified MPS Historic Weapons Safety Officer. Five types of weapons demonstrations are permitted:

1) **Individual Demonstrations** are demonstrations during which one demonstrator employs the use of a historic weapon. This also applies to a group of demonstrators employing the use of a historic weapon that requires more than one person to fire (such as artillery).

2) **Group Demonstrations** are those in which two or more demonstrators employ the use of historic weapons, but without opposing lines.

3) **Tactical Demonstrations** are those where demonstrators employ the use of historic weapons under simulated battle conditions, with multiple tactical units, with or without opposing lines or "sides."

4) **Non-Firing Demonstrations** are those demonstrations that employ the use of historic weapons, but the firearms are not loaded and fired.

5) **Live-Firing Demonstrations** are those demonstrations that employ the firing of projectiles out of either MPS-owned historic weapons, and/or non-agency-owned historic weapons on MPS lands. Individual and group demonstrations can be live-firing demonstrations, but these demonstrations should be governed by the additional safety precautions required for live-firing.

C) **Certified Historic Weapons Safety Officer:** A MPS employee or volunteer who has successfully completed the most recent MPS Historic Weapons Safety Training Course, and holds a certificate signed by the Superintendent.

D) **Certified Historic Weapons Safety Instructor:** A MPS employee who has been trained by the National Park Service, and whose training is renewed once every four years.

E) **Historic Weapons Safety Committee:** The committee of Historic Weapons Safety Instructors.

F) **Unit Safety Officer:** A member of the demonstrating group who reports to the MPS Historic Weapons Safety Officer.

III) **Rules and Roles for the Historic Weapons Safety Committee, Instructors and Officers**:

A) **Historic Weapons Safety Committee:** The Historic Weapons Safety Committee recommends policies and standards to MPS senior staff. The Committee, as delegated by the Superintendent, has the final authority regarding the interpretation and implementation of these standards. The Committee works cooperatively to review and approve all tactical demonstrations that involve either MPS-owned weapons and/or take place on MPS-managed lands. Safety Instructors **may** act as Safety Officers for historic weapons from any time period.

B) **Historic Weapons Safety Officer:**

1) **Certification:** MPS Safety Officers are required to recertify every two years in either flintlock or percussion era weapons.

2) **Classified Employee Requirement:** An MPS land unit (State Park, State Battlefield, Natural Environment Area, etc.) must have at least one classified employee who is currently certified as an MPS Safety Officer assigned to that land unit in order for that land unit to host historic weapons programs and/or retain historic weapons in its inventory (this does not apply to museum and display pieces). A land unit may apply to the Historic Weapons Safety Committee for a temporary exemption during extenuating circumstances, e.g. a temporary vacancy due to transfer, resignation, retirement, etc.

3) **Time-Period Specialization:** Generally, the MPS Safety Officer is only permitted to oversee demonstrations in the period in which he/she receives training. See below for exceptions for tactical demonstrations.

4) **Tactical Demonstration Requirements:** In tactical demonstrations, there must be at least one MPS Safety Officer with each "side." If artillery is involved, at least one safety officer must be dedicated to observe artillery for each "side" (these officers would be in addition to safety officers observing other demonstrators). MPS Safety Officers will not simultaneously serve as narrators, nor will they be tasked with any responsibilities other than serving as safety officer during tactical demonstrations. MPS Safety Officers trained in historic weapons from a different era are permitted to assist on the field in **small-arm tactical demonstrations**, but all unit inspections must be completed by a Safety Officer trained in same era as the portrayed demonstration. **This exemption does not apply to artillery.** Any demonstration that includes **artillery** requires an MPS Safety Officer trained in same era as the portrayed demonstration.

5) **Advance Approval Required:** The Safety Officer shall approve demonstrations and scenarios in advance. <u>The Safety Officer must consult with, and seek approval from, the Historic Weapons Safety Committee prior to any tactical demonstrations held on MPS property</u>. Applications for tactical demonstrations must be submitted to the Committee at least four months in advance of the demonstration (see Appendix Q).

6) **Other-Era Weapons:** MPS Safety Officers <u>must</u> consult with the committee **in advance** for advice regarding the use of unusual and unique weapons, or historic weapons that date from periods preceding and immediately following the flintlock and percussion periods (see Appendix Q).

7) **Lead Safety Officer:** In the event that there is more than one MPS Safety Officer onsite, one MPS Safety Officer will be clearly designated the lead MPS Safety Officer prior to any demonstration. The Lead MPS Safety Officer has final authority over any question or dispute that may arise concerning these standards during a demonstration.

C) **Unit Safety Officer:** Every group performing a demonstration is required to have a Unit Safety Officer. The Unit Safety Officer is responsible for the safe conduct of all demonstrators in his/her unit; and must acknowledge and adhere to these standards.

IV) Universal Standards for **All** Historic Weapons Demonstrations:

A) **Standards:** All historic weapons programs on MPS-managed lands and/or involving MPS-owned equipment will be governed by these standards. All demonstrations will be conducted under the guidance and supervision of a certified MPS Historic Weapons Safety Officer.

B) **Period appropriate:** All historic weapons used in any demonstration must be appropriate to the time-period being interpreted. For historic weapons programs conducted on MPS property, the program must be appropriate and relevant to that land unit's history.

C) **Prior approval:** All historic demonstrations shall have prior approval of the MPS Safety Officer. *All tactical demonstrations shall have the prior approval of the MPS Historic Weapons Safety Committee. Applications for tactical demonstrations must be submitted to the Committee at least **four** months in advance of the demonstration* (See Appendix Q).

D) **Open to the public:** All demonstrations will be open to the public.

E) **Weapons and drill inspections:** An MPS Safety Officer must inspect all weapons brought onto MPS lands, whether small arms, artillery, or edged weapons. In addition, the Safety Officer will observe the drill, manual of arms, or loading sequence to be used in weapons demonstrations.

1) This assessment will ensure all weapons and accouterments:
   (a) Are clean and well-maintained;
   (b) Function correctly and have no missing parts;
2) And that the demonstrator(s) is (are):
   (a) Able to execute the required drill, manual of arms, or loading sequence without error;
   (b) Competent in performing the appropriate misfire procedures without mistake;
   (c) Familiar with the nomenclature of the weapons they use;
   (d) Instructed in a proper manner to present demonstrations with maximum safety to themselves and to the visitors.
3) Only upon inspection and approval will any demonstrator(s) be allowed to participate in, or will a weapon be used in a demonstration. The Safety Officer will have definitive authority to fail any weapon or demonstrator they feel is unsafe.

F) **Participation:** Participation in demonstrations will be limited to **units** and **individuals invited** by the MPS Safety Officer. No "walk-ons" will be permitted.

G) **Safe conduct:** The MPS Safety Officer and the Unit Safety Officer have the power to order correction of any situation that he/she determines is a violation of safety. This power extends to stopping an unsafe demonstration and up to and including ejection of violators from the event and future events (future ejections will require incident reports to be prepared). The **Unit Safety Officer** will be responsible for the safe conduct of any arms demonstration undertaken by his/her unit.

H) **Weapons loading and discharge:**

1) No weapon will be loaded and/or primed prior to the beginning of the demonstration or outside the demonstration area.
2) Under NO circumstances will a weapon be discharged anywhere other than a duly constituted demonstration area. Weapons will not be discharged in camp or anywhere off the field of demonstration (See Appendices A, B and D for ranges).
3) Weapons will not be fired in the direction of the public unless there is an interval of at least 100 yards between the firing line and the public.

I) **Safety message:** Before firing a cannon or small arm, a safety message must be delivered to the public. This message must warn them of the loud noise, recommend caution to individuals with hearing aids, and advise control of children and/or pets.

J) **Weapon control:** At NO time will a demonstrator surrender control of a weapon to a member of the public. A visitor may be permitted to feel the heft of the weapon while the demonstrator maintains control of the weapon. The public is prohibited from touching or handling any edged weapon (see section P below).

K) **Age minimum:** Individuals must be at least 16 years of age in order to carry and fire small arms, or to perform as part of an artillery crew. This age requirement also applies to carrying and possessing ammunition, primers, or other explosive materials associated with historic weapons. No one under the age of 12 is permitted in the demonstration area. Participants aged 12-15 may participate only as functional musicians.

L) **Clothing:** For the protection from burns, all clothing worn by demonstrators firing historic weapons must be made of natural fibers. All garments must be appropriate to the program, portrayal, and historic period being interpreted.

M) **Powder and Ammunition:**

1) **Table of Maximum Loads:** All weapons will not exceed the maximum loads in the Table of Maximum Loads for the weapon being demonstrated (see Appendix E).

2) **Live and Blank Ammunition:** At NO time will a demonstrator carry **live or ball ammunition** during an event designed for blank firing. Live fire and blank fire will be conducted separately, with the demonstrator carrying **only the type ammunition appropriate** to the event.

3) **Ammunition:** Ammunition will be brought onto a MPS site in secure, non-sparking boxes. After issuance to troops, ammunition will be kept in well-constructed and maintained **cartridge boxes**, with secure leather or cloth webbing straps, and which are kept clean of loose powder granules. When left in camp, cartridge boxes will be under guard. **Neither loaded nor empty cartridges will be given to the public**. Ammunition will be kept away from open flame.

4) **Powder Horns:** Powder horns may be used to carry black powder when appropriate to the weapon and time period being interpreted. Powder horns will be well constructed and maintained and must not leak powder. As with cartridge boxes, powder horns carrying black powder must be under guard when left in camp and should not be given to the public. At no time should a powder horn contain more powder than is necessary for the demonstration being performed. The MPS Safety Officer has discretion to determine if an unreasonable amount of powder is being carried in a horn.

5) **Bulk Powder:** Bulk powder (loose powder or powder in kegs, cans, etc.) may not be brought onto MPS lands by volunteers or reenactors participating in weapons demonstrations. All powder must be in cartridges appropriate to the type of weapon being demonstrated, which were prepared off park property. Exceptions are allowed for riflemen with powder horns.

6) **Wadding:** Wadding with cartridge paper and the use of **ramrods** are permitted for Individual and Group Demonstrations when there are no people downrange. *Wadding with paper cartridges and ramrod use are not permitted in Tactical Demonstrations*.

N) **Clean-up:** Following any firing demonstration, individuals or units will clean-up and dispose of **empty cartridges**, for both small arms and artillery.

O) **Swordplay and Hand-to-Hand Combat:** *There will be NO swordplay simulation of **hand-to-hand combat**. There will be NO unplanned or impromptu closing of units or of individuals*. Any unit or individual in violation of this rule may be ejected from the event and disqualified from participation in future events.

P) **Horses, Mules and Asses:** Upon arrival at a MPS site all **horses, mules and asses from outside Maryland** will have health documentation complying with the Annotated Code of Maryland, Title 15, subtitle 11.01.05, "Horses, Mules, and Asses." If, for any reason, the MPS safety officer

is uncomfortable with way an animal is behaving, they have the sole authority to have that animal removed from the interpretive program.

Q) **Non-Firing Demonstrations:** Well-trained employees and volunteers are permitted to conduct individual non-firing demonstrations without the presence of a MPS Safety Officer, provided that the demonstrators and weapons have been inspected prior to the demonstration. No ammunition will be brought onsite and/or utilized during a non-firing demonstration.

V) **Edged Weapons and Tools:**

A) **Rules for all Edged Weapons:**

1) **Sheaths Required:** Knives, hatchets, tomahawks, swords, bayonets and other edged weapons or tools must be carried in a properly made sheath that completely and safely covers sharp edges.

2) **Weapons Control:** The public is prohibited from touching or handling any edged weapon or tool.

B) **Edge-Weapons Use for Individual and Group Demonstrations:**

1) **Public Viewing:** Edged weapons or tools may be unsheathed for public view as long as the demonstrator maintains control of the weapon or tool, and it is never pointed at or towards the public.

2) **Exercises:** Demonstration of edged weapon exercises, such as bayonet drills or sword exercises in accordance with period manuals, are permissible provided they are performed in a safe area and with prior approved by a MPS Safety Officer.

3) **Infantry Charges:** Infantry charges with fixed bayonets, halberds, spontoons and pikes will have the prior approval of the MPS Safety Officer. In NO CASE will bayonet charges be conducted on the run or over broken/obstructed ground. In NO CASE will firearms being used in bayonet charges be loaded. In NO CASE will bayonet charges close to within a 30-yard *interval of spectators*.

C) **Additional Rules of Edged Weapons and Tools for Tactical Demonstrations.** In addition to the rules above, the following rules also apply to edged weapons in tactical demonstrations:

1) **Bayonets and swords** carried by ranks will remain in their scabbards during tactical demonstrations, except by specific command of the demonstration's designated field commander, who must receive prior approval of the MPS Safety Officer.

2) **All other edged weapons**, including **hatchets, tomahawks, axes and knives, etc.** will remain sheathed at all times during tactical demonstrations.

3) **Halberds, spontoons**, **and pikes**, when carried, will remain vertical except by order of the event's field commander, and then only in accordance with period military drill and practice.

4) **Infantry Charges:** Infantry charges with fixed bayonets, halberds, spontoons and pikes will have the prior approval of the MPS Safety Officer. In NO CASE will bayonet charges be conducted on the run or over broken/obstructed ground. In NO CASE will firearms being used in bayonet charges be loaded. In NO CASE will bayonet charges close to within a 30-yard *interval of an opposing line*

D) **Stacking:** Military units may fix bayonets in order to stack their weapons, but the stacks must be guarded in order to ensure safety of the public.

E) **In Camp:** Hatchets, tomahawks, knives and tools may be unsheathed when being used as a camp tool.

VI) Rules for **Small Arms Demonstrations (Infantry and Cavalry):**

A) **Small Arms Demonstration Checklist:** All small arms demonstrations must conform to the appended Small Arms Demonstration Checklist (see Appendix G).

B) **Manual of Arms:** The loading and firing of any small arm will follow the correct Manual of Arms for the type weapon being demonstrated. Small arms for which there is no prescribed manual will nevertheless be operated in the safest manner possible.

C) **Cartridges:**

1) Small arms will be loaded from **pre-wrapped paper cartridges** prepared off-site prior to the demonstration and according to correct period procedures. Aluminum foil, coin wrappers, metal staples, and other modern expedients will not be used.

2) **Flintlock Rifles** may be loaded with powder from **horns**; however, the powder will first be poured into a **powder measure** conforming to the **Table of Maximum Loads**, then poured into the muzzle. Riflemen may prime directly from a **priming horn**, provided the horn contains fine grade (FFFFg) powder. Riflemen will carry loose powder in well-maintained horns that are kept well stoppered.

3) Repeating shoulder arms (such as Henry rifles) and breech-loading carbines using properly fixed ammunition are exempt from this paragraph.

D) **Cartridge Boxes:** Demonstrators will carry cartridges in an authentic cartridge box comprised of leather and wood block or leather with tin inserts as appropriate for the time period being interpreted. The cartridge box must be worn well around on the right hip, away from the gunlock. The flap will be kept down at all times except when a cartridge is drawn. For flintlock era demonstrations, **belly boxes** are permitted, but the demonstrator will exercise extreme caution closing the flap because of the box's proximity to the gunlock at the time of firing.

E) **Hammer Stalls and Flashgaurds:** All flintlock arms will have hammer stalls (frizzen covers) and flashguards. The hammer stall will be utilized while the weapon is loaded or being loaded. The hammer stall will be removed only in preparation for discharging the weapon.

F) **Percussion Caps:** Only four-wing percussion caps are permitted to be used with percussion shoulder arms. Pistols and revolvers may be fired with wingless caps.

G) **Small Arms Misfire Drill:** In the event of a **Misfire**, small arms must be cleared according to the Small Arms Misfire Drill (see Appendix K or L).

1) Attempting to clear a small arm by simply dumping the powder out of the barrel onto the ground is **not** acceptable.

2) Dropping the rifle butt on the ground in an attempt to "seat" the powder is **prohibited**.

H) **Springing Rammers:** Following any small arms demonstration, all firearms will be cleared by springing rammers. In a group or tactical demonstration, this will be conducted under the supervision of the **Unit Safety Officer**. As an alternative, percussion weapons may be cleared by priming and firing twice – first from the typical "Fire" position, and then with the muzzle pointed towards the ground. Revolvers, breechloaders, and any firearms that do not have ramrods should be physically examined to ensure they are not loaded. The demonstrator (in an individual demonstration or) the **Unit Safety Officer** (in a group or tactical demonstration) has responsibility to confirm that firearms in his unit are clear.

I) **Pistols and Revolvers:** Pistols and revolvers may be discharged during individual and group demonstrations only. Revolvers must be unloaded while inspected. As with long-arms, pistol rounds must be kept wrapped in paper cartridges and secured in cartridge boxes. Revolver chambers must be sealed with grease if multiple chambers are loaded for a single demonstration. *Pistols and revolvers may be carried by officers and cavalry during tactical demonstrations, but*

they must be unloaded and remain holstered at all times. See section N below for additional rules for cavalry.

J) **Volunteers:** A minimum of **two volunteers** will be present for an individual small arms demonstration—one to operate the weapon, the other to provide crowd control and to watch for safety. Either may address the public. Each will be at least 16 years old. Well-trained MPS employees may singly perform individual small arms demonstrations.

K) **Range for Small Arms Blank Firing:** Demonstrations will be held in an area that conforms to the appended Range for Small Arms Blank Firing (See Appendix A). *Ranges for tactical demonstrations vary slightly. Ranges for tactical demonstrations are identical to individual and group demonstrations, except demonstrators may continue to discharge weapons towards opposing lines until they close to 30 yards* (See Appendix D). *Demonstrators will not discharge weapons at each other unless there is an interval of at least 30 yards between them. In all cases, **muzzles** will be elevated above the opposing force when weapons are fired*.

L) **Ramrods:** Ramrods may not be used when people are downrange. *Ramrods will **not** be used during tactical demonstrations.*

M) **American Indian Portrayals:** *Demonstrators portraying American Indians are permitted to participate in tactical demonstrations in organized units, with Unit Safety Officers. They may do so by organizing their own units or by being attached to other organizations, with those organizations' permission.*

N) **Cavalry and Mounted Officers:** In additional to all the rules above, the following rules also apply to cavalry:

1) **Weapons Discharge from Horseback:** Discharging weapons from horseback is permitted in individual and group demonstrations with the prior approval of the Safety Officer. *Discharging weapons from horseback is strictly prohibited during tactical demonstrations.*

2) **Pistols and Revolvers:** *Pistols and revolvers may be carried by officers and cavalry during tactical demonstrations, but they must be unloaded and remain holstered at all times.*

3) **30-Yard Buffer Zone:** *During Tactical Demonstrations, mounted participants will maintain at least a 30-yard buffer zone between themselves and opposing troops and the public at all times. Special care will be exercised around "casualties."*

4) **Cavalry Charges:** *Mounted cavalry charges are prohibited in tactical demonstrations.*

VII) Rules for **Artillery Demonstrations.**

A) **Full-Scale Artillery only:** Only **full-scale** cannons will be fired.

B) **MPS Safety Officers:** Cannons are extremely dangerous to load and fire because of the possibility of premature discharges during the ramming procedure. Cannons will only be demonstrated by employees and/or volunteers **who are under the direct supervision of a MPS Safety Officer certified in the period portrayed**.

C) **Rate of Fire:** An interval of three minutes will elapse from the time of one discharge and the loading of the subsequent round. Double worming and double sponging as well as are required during this three-minute interval.

D) **Artillery Demonstration Checklist:** All artillery demonstrations must conform to the Artillery Demonstration Checklist (see Appendix J).

E) **Ranges:** Cannon demonstrations will be held in an area that conforms to the Range for Blank Cannon Firing (see Appendix B). *In tactical demonstrations, **smaller pieces** (three pounders and less) will not be discharged at opposing forces at ranges of less than 50 yards. In tactical demonstrations, l**arger pieces** (above three pounders) will not be discharged at opposing forces at ranges of less than 100 yards* (see Appendix D).

F) **Ammunition:** All ammunition will be prepared off MPS land prior to the date of the demonstration, or, if on MPS property, in a black powder laboratory approved by and under the supervision of the MPS Safety Officer. **Cartridges** will be made of at least three layers of heavy-duty aluminum foil, fashioned around a former of a width conforming to the caliber of the gun to be demonstrated (see Appendix C). **Powder charges** will not exceed the specifications in the **Table of Maximum Loads** (see Appendix E). Cartridges will have damp peat moss or lightly crumpled aluminum foil as extender in order to assure the cartridge is at least one and a half times longer than the caliber of the gun. This will prevent the cartridge from tumbling during loading.

G) **Misfires:** In the event of a Misfire, cannons must be cleared according to the **Artillery Misfire Drill** (see Appendix M or N).

H) **Minimum Number of Demonstrators:** No cannon will be loaded and fired with fewer than five Gunners or Cannoneers and one Gun Commander. Six or more cannoneers are desirable. Demonstrations of cannon drill by reduced numbers are permitted, provided the gun is not actually loaded and fired with fewer than five gunners or cannoneers and one gun commander. The **required positions** are described below.

1) For Artillery using linstock and slow match:

(a) **Gun Commander**: This position has overall command of the gun and the crew. He gives all commands for service of the gun and assures that the Gunners execute their duties correctly and safely. The Gun Commander never assumes any of the duties of the Gunners.

(b) **Position #1**: This Gunner maintains the linstock and slowmatch. He touches off the priming charge at the command of the Gun Commander, while remaining outside the left wheel. Gunner #1 is also responsible for ensuring that the burning slowmatch is kept well away from Gunner #5 while the cartridge is being carried to #4. In the event of a misfire, #1 returns to a position outside the wheel and in line with the cannon trail #1 remains in this position until the Gun Commander gives the "Fire" command.

(c) **Position #2**: This Gunner tends the vent using a leather thumbstall to prevent air escaping through the vent during all sponging and ramming procedures. When the cartridge is seated, this Gunner uses a brass vent wire to pick open the cartridge through the vent and primes the piece. In the event of a misfire, this position hands the vent wire to #4 over the top of the right wheel. When #4 is finished, he returns the wire to #2 over

the right wheel. #2 then hands a priming tube to #4 and returns to the "Ready" position.

(d) **Position #3**: This Gunner sponges the piece after each discharge and rams home each load. He is responsible for the sponge being in proper condition and sees to it that there is always a bucket of water on the ground below the muzzle of the piece. He will wear heavy-duty leather gauntlets to protect the hands during all sponging and ramming procedures. In the event of a premature discharge, this Gunner is at the greatest risk for injury, and therefore must exercise utmost caution at all times. In the event of a misfire, this position remains stationary during the entire repriming and firing procedures.

(e) **Position #4**: This Gunner worms the piece after each discharge to extract the remains of the cartridge. He also inserts the new round in the muzzle for Gunner #3 to ram. Like #3, this Gunner wears heavy leather gauntlets to protect the hands at all times while servicing the gun. In the event of a misfire, this position re-primes the piece while standing in front of the axle between the barrel and left wheel.

(f) **Position #5**: This Gunner conveys each round, as the Gun Commander calls for it, from the ammunition box to Gunner #4. The round must be carried in a well-made and secure leather or heavy canvas haversack while being transported from the ammunition box to #4. In the absence of Gunner #6, this Gunner assumes those duties in addition to his own.

(g) **Position #6**: While this Gunner is not required, it is strongly recommended. This Gunner remains at the ammunition box at all times, issues out the ammunition as the Gun Commander calls for it, and assumes responsibility for security of the ammunition box.

(h) **Additional personnel** may be present, at the Gun Commander's discretion, to serve as Matrosses or to further assist in the operation of the gun, so long as the MPS Safety Officer observes no unsafe practices.

(i) For guns **without detachable powder boxes** (gallopers), rounds may not be served out of the side boxes; an acceptable powder box posted 10 yards to the rear of the gun will be used.

2) For Artillery Using Friction Primers:

(a) **Gunner**: This position has overall command of the gun and the crew. He gives all commands for service of the gun and assures that the Cannoneers execute their duties correctly and safely. The Gunner never assumes any of the duties of the Cannoneers.

(b) **Position #1**: This Cannoneer sponges the piece after each discharge and rams home each load. He is responsible for the sponge being in proper condition and sees to it that there is always a bucket of water on the ground below the muzzle of the piece. He will wear heavy-duty leather gauntlets to protect the hands during all sponging and ramming procedures. In the event of a premature discharge, this Cannoneer is at the greatest risk for injury, and therefore must exercise utmost caution at all times. In the event of a misfire, this position remains stationary during the entire repriming and firing procedures.

(c) **Position #2**: This Cannoneer worms the piece after each discharge to extract the remains of the cartridge. He also inserts the new round in the muzzle for Cannoneer #1 to ram. Like Cannoneer #1, this position wears heavy leather gauntlets to protect the hands at all times while servicing the gun. In the event of a misfire, this position re-primes the piece while standing in front of the axle between the barrel and left wheel.

(d) **Position #3**: This Cannoneer tends the vent using a leather thumbstall to prevent air escaping through the vent during all sponging and ramming procedures. When the cartridge is seated, this Cannoneer uses a brass vent wire to pick open the cartridge through the vent. This Cannoneer also mans the handspike to assist the gunner in pointing the piece. In the event of a misfire, this position hands the vent wire to #2 over the top of the right wheel. When #2 is finished, he returns the wire to #3 over the right

wheel.

(e) **Position #4**: This Cannoneer maintains the lanyard, the friction primers in a proper leather tube pouch, attaches the primer to the lanyard, primes the piece, and, upon the Gunner's command, fires the gun. In the event of a misfire, this position hands a primer attached to the lanyard to #2 over the top of the left wheel. On #2's prompt, this position extends the lanyard to the ready position.

(f) **Position #5**: This Cannoneer conveys each round, as the Gunner calls for it, from the limber chest to #2. The round must be carried in well-made and secure leather or heavy canvas gunner's haversack while being transported from the limber to #2. In the absence of Cannoneers #6 and #7, Cannoneer #5 assumes their duties in addition to his own.

(g) **Positions #6 and #7**: While these Cannoneers are not required, they are strongly recommended. These Cannoneers remain at the limber chest at all times, issue out the ammunition as the Gunner calls for it, and assume responsibility for security of the limber chest.

3) **Note**: It is essential for the safe operation of a muzzle loading cannon that the people serving as Gun Commander and Positions #1-#5 be well trained and experienced working together as a team. "Pick-up" crews assembled on the day of the demonstration are discouraged. In any case, the MPS Safety Officer has final authority to stand down any artillery crew that does not perform the gun drill satisfactorily.

I) **Priming:** All priming and firing will be done by means appropriate for the time period being interpreted.

1) For 18th and early 19th century artillery, priming with **paper** priming tubes is preferred, however, priming by means of a **paper cartridge** or **loose powder** is allowed. Paper cartridges will contain only enough powder for one priming charge, and all the powder is to be poured into and atop the vent. Loose powder priming will be accomplished by means of pouring the powder from a well-stoppered horn or flask into a measure, then into the vent, **never** directly from horn or flask into the vent. Firing will be done by means of a **linstock and slow-match**.

2) For Civil War period artillery, **priming and firing** will be done by means of properly constructed friction primers, properly used with lanyards. Loose powder **will not** be used.

3) In either case, fuses, open sources of flame, or unauthentic modern priming mechanisms will not be used.

J) **Required Implements:** Artillery detachments are **required** to have the following **implements** in their kits:

1) Non-sparking ammunition box or limber chest with securely closeable-hinged lid;
2) Vent brush;
3) Non-sparking vent pick or priming wire;
4) Leather thumbstall;
5) Two pairs of heavy leather gauntlets;
6) Leather or heavy canvas gunner's haversack for use as ammunition pass container;
7) Leather or tin primer box on a leather belt, as appropriate to period being interpreted;
8) Rammer staff with a dry sponge;
9) Rammer staff with a damp sponge;
10) One full water bucket;
11) One worm;
12) Priming tubes, or priming powder in well stoppered horn with measure, or friction primers as

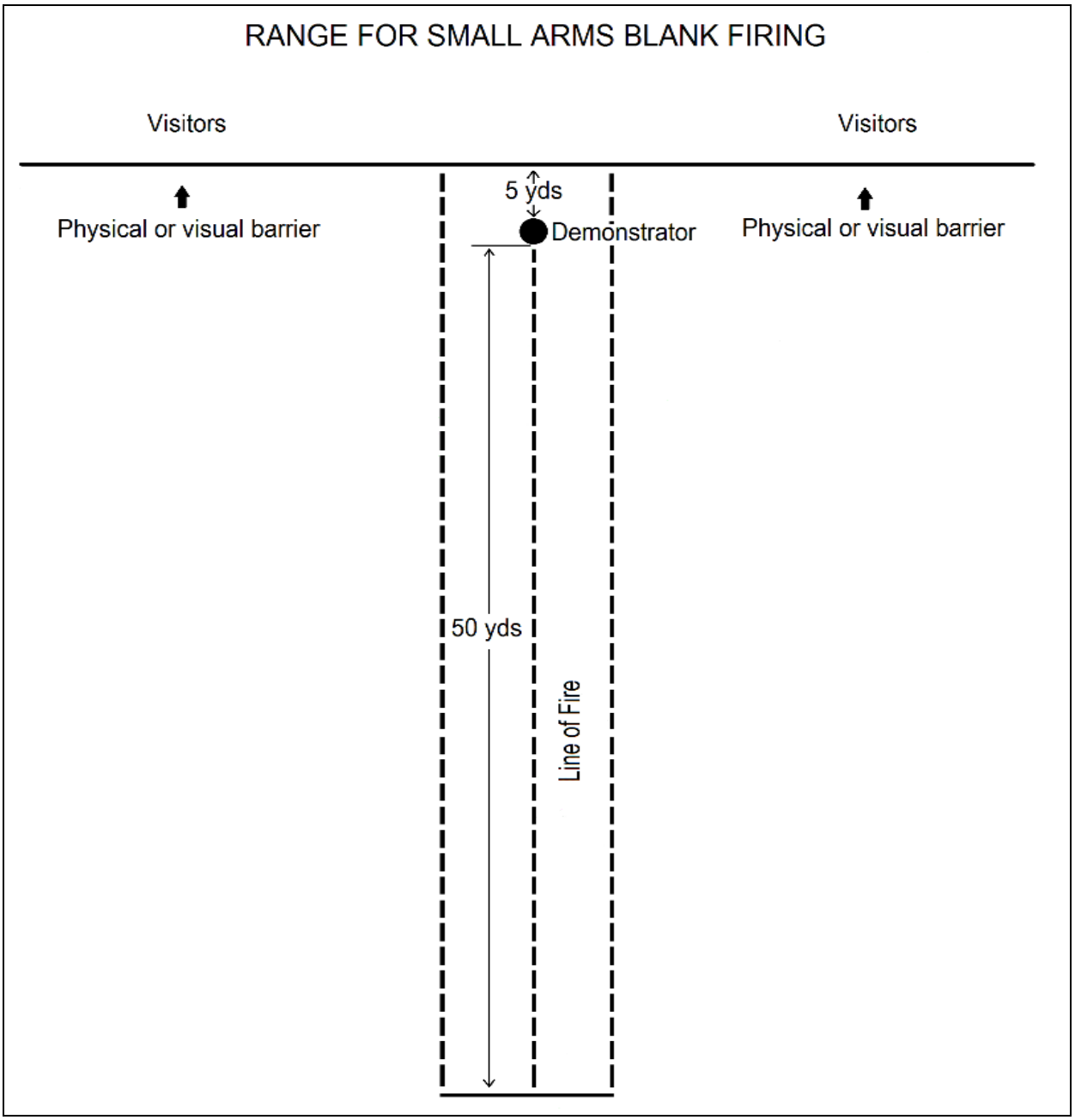
appropriate for period being interpreted;

13) One Linstock and slowmatch, or one lanyard as appropriate for period being interpreted;
14) One high intensity flashlight;
15) One high-pressure syringe for swamping vent in case of three successive misfires,
16) One gimlet for friction primer era guns only.

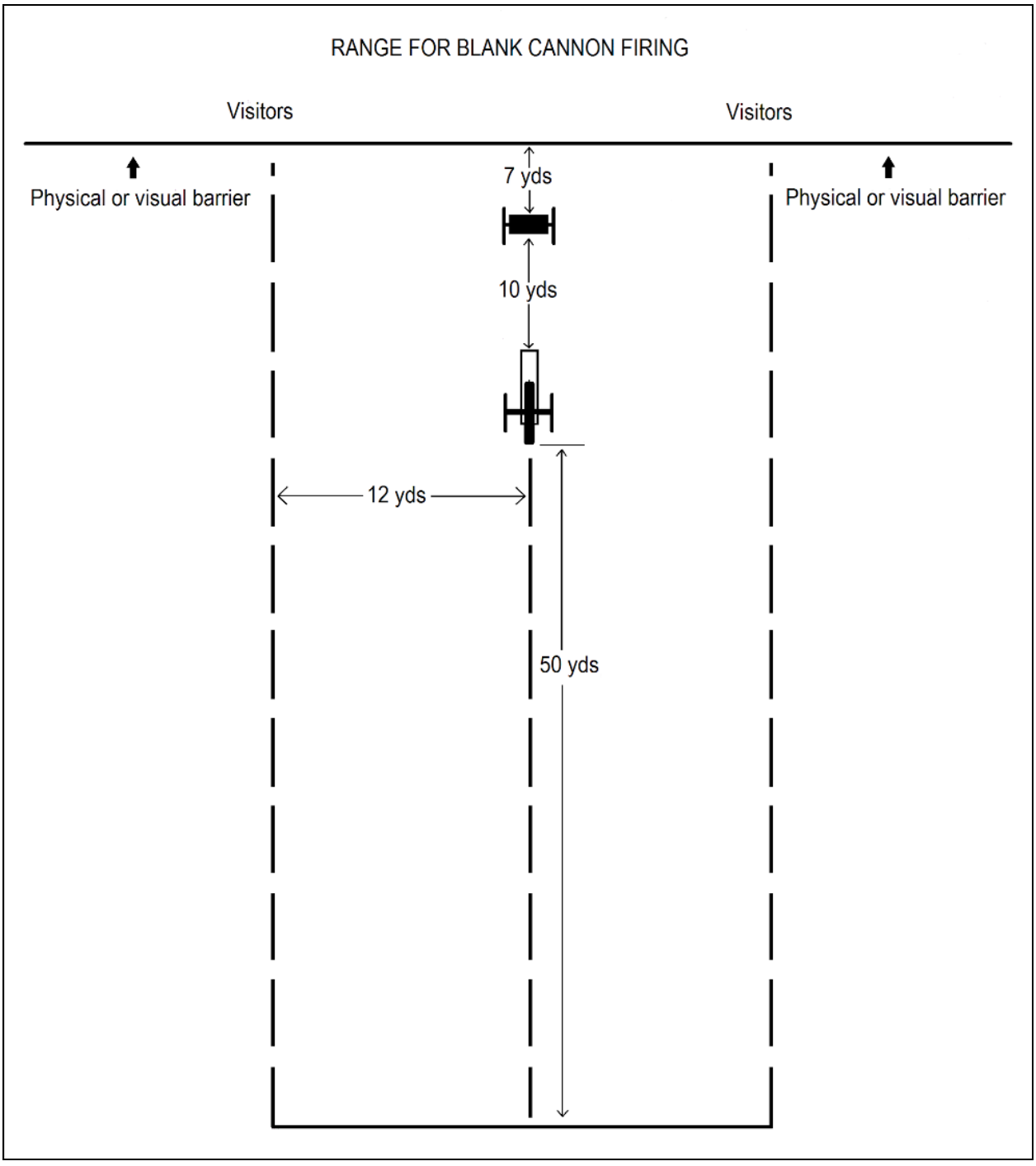
K) **Mortars**, **Cohorns and Swivel Guns:** Mortars, cohorns and 18th century Swivel Guns may be fired in individual demonstrations provided they follow the Artillery Standards as outlined above. Swivel Guns must also adhere to the MPS **Swivel Gun Manual** (see Appendix S).

1) ***Mortars and cohorns*** *will not be used in Group and Tactical Demonstrations*.
2) ***Swivel Guns*** *may be used in tactical demonstrations provided they are in a fixed position, obey the 50-yard range requirement, and are fired in accordance with the MPS Swivel Gun Manual (see appendix S).*

Appendix: A

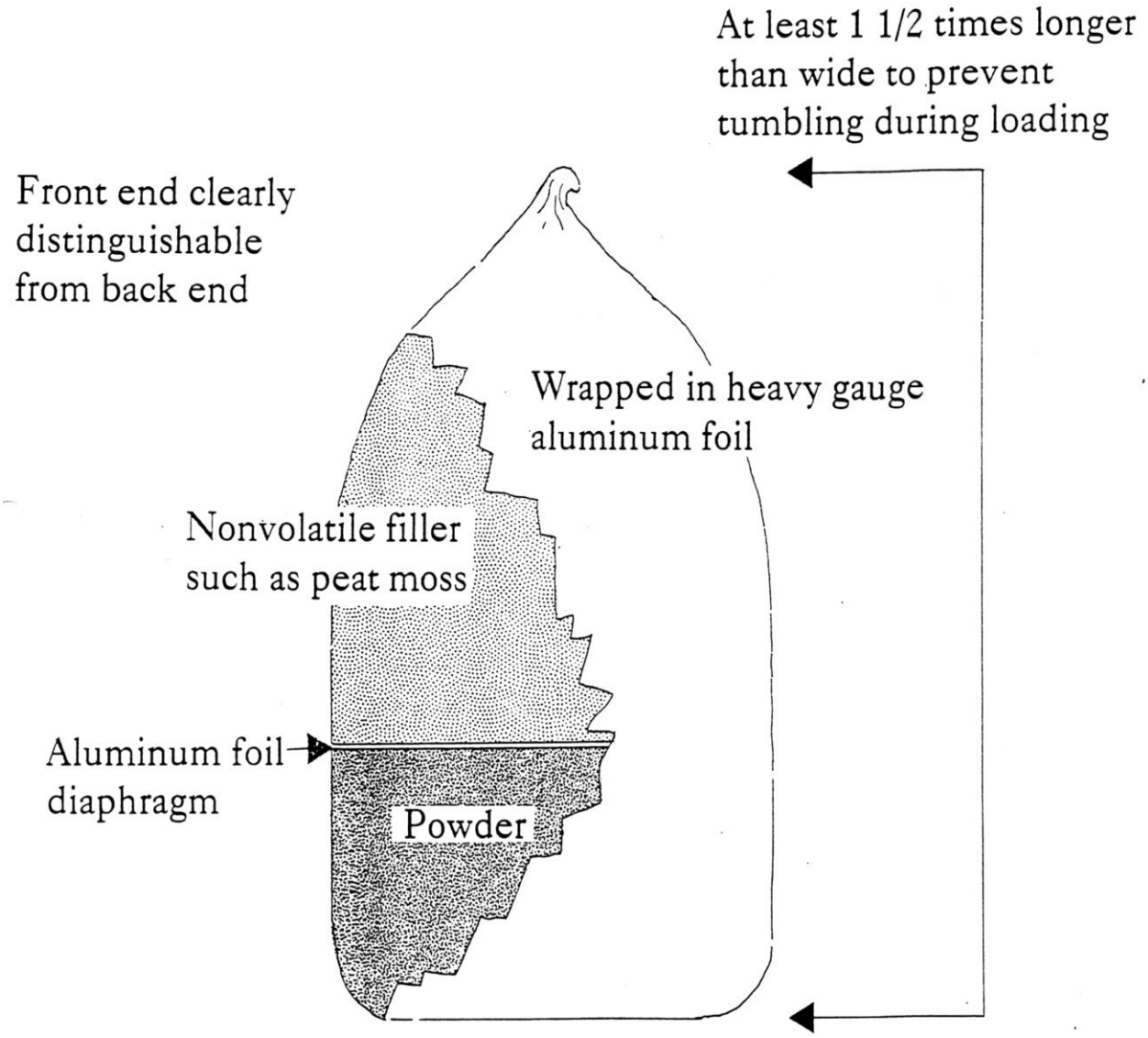

RANGE FOR SMALL ARMS BLANK FIRING
Visitors
Visitors
Physical or visual barrier
5 yds
Demonstrator
Physical or visual barrier
50 yds
Line of Fire

Appendix: B

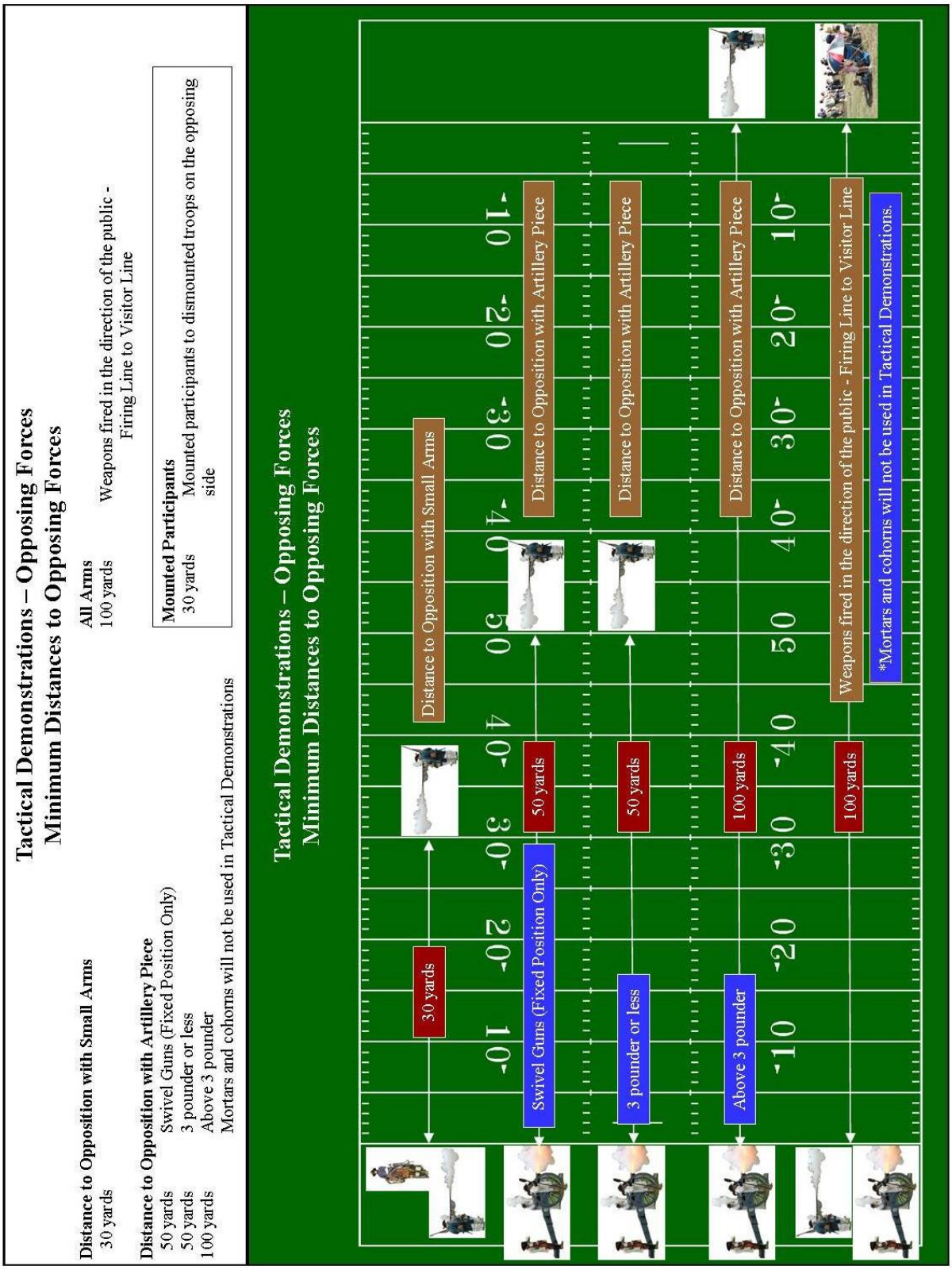

RANGE FOR BLANK CANNON FIRING
Visitors
Visitors
Physical or visual barrier
Physical or visual barrier
7 yds
10 yds
12 yds
50 yds

Appendix: C

What a Blank Artillery Round Should Look Like



Appendix D:


Tactical Demonstrations – Opposing Forces
Minimum Distances to Opposing Forces
Distance to Opposition with Small Arms
30 yards
All Arms
100 yards
Weapons fired in the direction of the public - Firing Line to Visitor Line
Distance to Opposition with Artillery Piece
50 yards Swivel Guns (Fixed Position Only)
50 yards 3 pounder or less
100 yards Above 3 pounder
Mortars and cohorns will not be used in Tactical Demonstrations
Mounted Participants
30 yards Mounted participants to dismounted troops on the opposing side
Tactical Demonstrations – Opposing Forces
Minimum Distances to Opposing Forces
30 yards
Distance to Opposition with Small Arms
Swivel Guns (Fixed Position Only)
50 yards
Distance to Opposition with Artillery Piece
3 pounder or less
50 yards
Distance to Opposition with Artillery Piece
Above 3 pounder
100 yards
Distance to Opposition with Artillery Piece
100 yards
Weapons fired in the direction of the public - Firing Line to Visitor Line
*Mortars and cohorns will not be used in Tactical Demonstrations.

Appendix: E

TABLE OF MAXIMUM LOADS

Weapon Type	Caliber	Maximum Load
Flintlock Era Small Arms		
Musket	.69 - .75	125 grains ffg
Fusile, Fowler, or Trade Gun	.62 - .67	90 grains ffg
Rifle	Varies	80 grains ffg
Pistols and Horse Pistols	Varies	50 grains ffg
Percussion Era Small Arms		
US Rifle, 1841	.54/.58	60 grains ffg
US Rifle Musket 1861-64	.58	60 grains ffg
British Enfield Rifle	.58	60 grains ffg
Rifle Musket, Musketoon	.58	60 grains ffg
US Musket, 1842	.69	75 grains ffg
Percussion Revolver	.44/.36	28/24 grains fffg
Metallic Cartridge Small Arms		
US Springfield Rifle	.50	70 grains ffg
Sharps Carbine	.50	55 grains ffg
US Springfield Rifle	.45	70 grains ffg
US Springfield Carbine	.45	55 grains ffg
M1873 Colt Revolver	.45	28 grains fffg

All artillery loads will consist of Cannon Grade or Fg black powder.

Weapon Type	Caliber	Maximum Load
Slow-Match Era Artillery		
Bronze Guns	3 pounder	8 ounces fg/cg
	6 pounder	12 ounces fg/cg
	9 pounder	16 ounces fg/cg
	12 pounder	20 ounces fg/cg
Iron Guns	3 pounder	6 ounces fg/cg
	4 pounder	8 ounces fg/cg
	6 pounder	10 ounces fg/cg
	9 pounder	12 ounces fg/cg
	12 pounder	16 ounces fg/cg
Howitzers	4.76 inch	8 ounces fg/cg
	5.8 inch	10 ounces fg/cg
Friction-Primer Era Artillery		
Napoleon	12 pounder	20 ounces fg/cg
M1841 Howitzer	12 pounder	10 ounces fg/cg
Mountain Howitzer	12 pounder	6 ounces fg/cg
Gun – 1841	6 pounder	10 ounces fg/cg
Parrott Rifle	3 inch	10 ounces fg/cg
Ordnance Rifle	3 inch	10 ounces fg/cg

Appendix: F

SMALL ARMS INSPECTION CHECKLIST

Park: _____Weapon:_____ Serial/Inventory#: _____

Field Inspection

- ☐ The weapon is confirmed to be unloaded by springing the rammer
- ☐ Your overall first impression is favorable

The Stock:

- ☐ No cracks or splits
- ☐ Butt plate, trigger guard, etc., fit tightly
- ☐ No burrs on butt plate or trigger guard screw heads that would snag clothing or hands.
- ☐ If band springs, they work smoothly (not bound by wood)
- ☐ If pin-fastened, pins all there, tight, wood not splintered
- ☐ No burns around the top of the lock
- ☐ Generally, no splinters or rough edges
- ☐ Two-piece stocks have sections securely joined

The Lock:

- ☐ Lock works smoothly
- ☐ The hammer or cock fits tightly on the tumbler
- ☐ All the positions are firm and solid
- ☐ The half-cock (safety) position works properly
- ☐ When trigger is pulled, it lets off smoothly without catching on half cock
- ☐ Trigger pull is proper; not too heavy, not "hair" trigger
- ☐ If a set trigger, it is adjusted properly and works smoothly
- ☐ Lock fits properly into the stock and snugly against the barrel
- ☐ The striking face of a percussion hammer is not battered. It strikes the cap or cone squarely and in the center.
- ☐ A flintlock's cock screw works smoothly; jaws grip flint securely
- ☐ There is a proper leather or lead flint cap
- ☐ The flint is in good condition and set at a proper angle
- ☐ The feather (frizzen) spring of a flintlock is of the right tension
- ☐ The hammer (frizzen) is in good condition and not gouged
- ☐ The pan of a flintlock is clean and in proper relationship to the touchhole of the barrel

The Barrel:

- ☐ Barrel fits the stock properly
- ☐ Free from visible dents or cracks
- ☐ On flintlocks, the flint is not striking the barrel
- ☐ The muzzle is not dented or worn
- ☐ The cone of percussion pieces is well-seated and not battered
- ☐ The hole is clear and of an acceptable size. The shoulders are not worn down.
- ☐ On flintlocks, the vent is clear and of an acceptable size
- ☐ No signs of heavy corrosion around the vent or cone
- ☐ The sights are complete and operable
- ☐ The barrel bands or pins hold the barrel securely
- ☐ The ramrod is straight, fits the stock properly, and the threads at the lower end are clean and free of burrs

Lab Inspection

After Disassembling Weapon:

The Stock:

- There are no shiny spots in the lock recess from rubbing metal
- Lock recess is clean and free of splinters; no splitting or cracking
- No splitting or cracking around the tang screw hold
- The bed for the barrel is clean
- Any ramrod spoon or spring works freely; its recess is clean
- Any nose cap is securely fastened to the stock
- Careful recheck of two-piece stock shows firm joint

The Lock:

- All internal screws are tight
- No internal parts are broken, cracked, or chipped
- The nose of the sear and the tumbler notches are sharp and in good condition
- No signs of metal rubbing on the inside of the lockplate
- No signs of improper repairs or incorrect replacements
- On flintlocks, the hammer (frizzen) fits down snugly on top of the pan
- All parts are clean and lightly oiled

The Barrel:

- The breech plug is fully seated and properly aligned
- On modern "patent breeches", there is no indication of separation
- Check the bore with lights and reflectors. It is clean and in good condition. A patch goes in smoothly and comes out clean.
- On pin-fastened pieces, all lugs under the barrel for the pins are complete and in good condition.
- On percussion pieces, the bolster is tight in the barrel.

Additional Comments:

Percussion Revolvers (Field Inspection):

- The piece is confirmed to be unloaded.
- Your overall impression is favorable.
- Grips fit snugly and are free of cracks, serious chips and splinters.
- Action works smoothly.
- Half-cock and safety positions function properly.
- Cylinder rotates freely on half-cock.
- Cylinder locks properly when the hammer is brought smartly to full-cock.
- There is no excessive longitudinal play to the cylinder, nor is there any excessive gap between the cylinder and the barrel.
- Cylinder chambers display no fouling.
- Bore is in good condition.
- There is adequate tension on the main spring.
- The cones fit into the cylinder snugly.
- Loading lever functions properly and its catch secures it beneath the barrel.
- Cones show no excessive wear or damage.
- Hammer functions properly and holds securely at half-cock and full-cock.
- Hammer displays no excessive wear, and strikes cone squarely.
- Trigger releases hammer with sufficient tension.

Appendix: G

SMALL ARMS DEMONSTRATION CHECKLIST

Park: _____

- ☐ The demonstrator approached the demonstration area carrying the weapon in a safe and military fashion
- ☐ The demonstrator has all the equipment he needs for the demonstration (weapon, cartridge box, cap box, a cartridge)
- ☐ The demonstrator is not encumbered with superfluous equipment
- ☐ The demonstrator seems knowledgeable and familiar with the manual he is using
- ☐ There are sufficient additional people for interpretation and crowd control
- ☐ The demonstration area is safe for the size of the audience
- ☐ Visitors are kept at a safe distance. They can see and hear without shoving.
- ☐ The weapon is always pointed down range
- ☐ At no time are there any parts of the demonstrator's body placed in a hazardous position in relation to the weapon
- ☐ In the event of a misfire or other unscheduled event the demonstrator reacts properly
- ☐ After the demonstration the interpreter maintains military bearing and leaves the area carrying the weapon safely and in a good military fashion
- ☐ Your overall impression was favorable

Additional Comments:

Appendix: H

ARTILLERY INSPECTION CHECKLIST

Park: _____Weapon:_____ Serial/Inventory#: _____

- ☐ Your overall first impression is favorable

The Tube:

- ☐ Tube is clean and free of rust or corrosion
- ☐ No sign of external damage or strain (dents, cracks, etc.)
- ☐ Inside of the bore is clean and relatively smooth
- ☐ No internal signs of damage (bulges, lodgments, pits, etc.)
- ☐ No sign of corrosion damage at breech of the bore
- ☐ On iron guns with liners, the liner is secure
- ☐ The vent is clear and of acceptable size
- ☐ No signs of cracks or bending around the trunnions
- ☐ No signs of weakness at the chaplets on bronze tubes

The Carriage:

- ☐ Wheels are tight and free of rot and insect infestation
- ☐ Body of the carriage is free of rot and insect infestation
- ☐ No pieces or parts missing, cracked, bent or broken
- ☐ Wheels move freely
- ☐ Elevating mechanism works smoothly and properly
- ☐ None of the ironwork is coming loose
- ☐ Tube rotates freely on its trunnions
- ☐ Trunnion caps fit snugly and are properly keyed
- ☐ Lids of side boxes and limber chests fit snugly
- ☐ Limber chests and side boxes are clean and free of spilled powder
- ☐ Wood generally free of serious checking and splintering
- ☐ Wheel hub does not gouge the end of the axletree
- ☐ Linchpin is not digging into wheel hub

Equipment:

- ☐ All necessary equipment is present
- ☐ Sponge is in good condition and fitted to the bore
- ☐ Rammer head is secure and free of cracks
- ☐ Small items in good condition (linstock, thumbstall, buckets, etc.)
- ☐ Prongs of the worm are sharp and not bent
- ☐ Haversack is clean and free of spilled powder

Additional Comments:

Appendix: J

ARTILLERY DEMONSTRATION CHECKLIST

Park:_____

Before:

- ☐ The gun has been inspected, inside and out. Bore is clean of foreign material
- ☐ The carriage if in good condition and all keys secure
- ☐ The accessory equipment is in good condition—sponge head in good repair, rammer and sponge head secure on staff, etc.
- ☐ Sponge head fits bore snugly but not too tight
- ☐ Ammunition boxes, haversacks, etc., are clean and free of spilled powder
- ☐ Ammunition is properly prepared, with just enough on hand for one demonstration
- ☐ The equipment is on hand to handle a misfire
- ☐ There is good visibility by the visitors so there will be no jostling and pushing to see and hear
- ☐ The interpreter can see all of the visitors and also see downrange
- ☐ The carriage is free to recoil if necessary so it won't buck or break something
- ☐ The visitors are properly contained and at a safe distance
- ☐ The ammunition boxes are at a safe distance from the piece as well as from the visitors
- ☐ The wind is not too strong for a safe demonstration
- ☐ Conditions are not so dry as to risk a range fire from the muzzle blast. Equipment is available should one develop.
- ☐ There is a first aid kit and emergency communications system available
- ☐ There are no open fires nearby—campfires, etc.
- ☐ The required number of personnel is present to safely fire the piece
- ☐ The gun is situated safely in relation to the visitors

During:

- ☐ The crew is following the approved manual with each person where he is supposed to be at any given moment
- ☐ The sponge is adequately damp but not soaking wet
- ☐ The man ramming is holding the rammer properly and the vent is being properly tended at the same time
- ☐ The rammer man is wearing gauntlets, but they are not so stiff and heavy as to cause fumbling or other difficulty
- ☐ The sponge head does not contact the ground at any time during demonstration to prevent grass, sand, etc., from sticking to it
- ☐ If there is a misfire, it is handled safely and properly

After:

- ☐ After firing, the piece is wormed and then washed out and dried
- ☐ All weapons, explosives, and accessory pieces are accounted for
- ☐ The weapon is secured and stored properly
- ☐ The demonstration area is inspected carefully for smoldering residue
- ☐ Sponge head is thoroughly rinsed out and dried
- ☐ All remaining explosives are promptly returned to proper storage area

Additional Comments:

Appendix: K

FLINTLOCK SMALL ARMS MISFIRE DRILL

Level One:

1. Demonstrator or Interpreter explains to the public what is happening.
2. Hold weapon in firing position for 10 seconds to make sure there is no hang fire.
3. Return to the priming position, half cock the firelock, and **place the hammer stall over the hammer**.
4. If the firelock did not spark, check the priming and the flint. Using a clean, dry rag carried in the cartridge box or pouch, wipe off the hammer and flint. Replace flint or reprime if necessary.
5. If there was a flash in the pan, pick the touchhole and re-prime. It is also helpful to wipe any fouling off the hammer and flint.
6. Return to the "Shoulder Firelock" position and continue firing demonstration from the "Make Ready" command.
7. If, after the third attempt, the weapon does not fire, dismiss the visitors. Remove the weapon to a safe area and follow the procedure for a Level 2 misfire.

Level Two:

1. Remove the weapon to a safe area.
2. Flood the barrel with water.
3. Wait five minutes.
4. Dump remaining water from barrel and using a worm withdraw the cartridge.
5. Clean the weapon.

Level Two (LIVE):

1. Keep the muzzle pointed down range at all times.
2. Eject the round using a CO2 discharge device.

If this fails:

a. Flood the barrel with water.
b. Wait five minutes.
c. Dump remaining water from barrel and using a worm withdraw the cartridge.
d. Clean the weapon.

Appendix: L

PERCUSSION SMALL ARMS MISFIRE DRILL

Level One:

1. Demonstrator or Interpreter explains to the public what is happening.
2. Hold weapon in firing position for 10 seconds to make sure there is no hang fire.
3. Return to the priming position and half cock the weapon.
4. Re-prime the weapon, picking the touchhole in the cone if necessary.
5. Repeat firing demonstration from "Ready" command.
6. If, after the third attempt, the weapon does not fire, dismiss the visitors. Remove the weapon to a safe area and follow the procedure for a Level 2 misfire.

Level Two:

1. Remove the weapon to a safe area.
2. Flood the barrel with water.
3. Wait five minutes.
4. Dump remaining water from barrel and using a worm withdraw the cartridge.
5. Clean the weapon.

Level Two (LIVE):

1. Keep the muzzle pointed down range.
2. Eject the round using a CO2 discharge device.

If this fails:

a. Remove the cone with a musket tool.
b. Flood both the breech and the barrel with water.
c. Wait five minutes.
d. Use a ball puller and pull out the projectile.
e. Dump remaining water from barrel and using a worm withdraw the cartridge.
f. Clean the weapon.

Appendix: M

ARTILLERY MISFIRE DRILL
For Cannons Using Linstocks and Slow Match

Level One:
When the "Fire" command is given, the priming tube fails to ignite, or ignites but the gun does not fire. All Gunners hold position and remain at attention. Uneasiness and indecision will quickly transmit itself to an audience. The following procedures must be followed.

1. Wait two to five minutes after the last wisp of smoke is seen at the vent. In the meantime, buy some time with interpretation.
2. After waiting, the Gun Commander commands "Re-prime the Piece." #4 steps inside the wheel, back to the muzzle, and positions himself near the axletree.
3. #2 hands the priming wire to #4 while standing outside the right wheel at its highest point. #3 should hold the priming wire in his right hand, palm down with the point towards #2, while #2 should take the wire with his left hand, palm up.
4. Using the priming wire, #4 removes and discards the spent primer and picks the cartridge. While doing this #4 must make sure his fingers and hands are not on top of the ring of the priming wire, and that his fingers do not pass through the ring.
5. With his palm up, #4 hands the priming wire back to #2, who receives the wire with his palm down. #2 hands #4 a priming tube and returns to the "Make Ready" position.
6. #4 inserts the priming tube in the vent and moves outside the wheel to the "Make Ready" position.
7. When #4 is clear he gives the "Make Ready" command. The Gun Commander checks to be sure that both gun and detachment are in order for firing, then gives the "Fire" command, and #1 fires the cannon.
8. If the gun does not fire, the above procedure should be repeated using loose powder (from a cartridge or horn) instead of the priming tube.
9. If the cannon fails to fire after three attempts move to the procedure for Level 2 misfires.

Notes: In the event the gun is being fired using loose powder in place of priming tubes, the procedure is the same. When called for, #2 simply hands the cartridge or horn with measure to #4 who re-primes the cannon. Also, on guns with a wheelbase that is not wide enough to stand in front of the axle, re-priming may be done from a position opposite the breech. In this case #4 and #2 must ensure they are standing outside of the wheels.

Level Two:
Three attempts have failed to fire the cannon. Do not re-prime. Once again, the Gunners remain in position while the visitors are dismissed. The following procedures must be followed.

1. Several bulbs of water are slowly squeezed into the vent using a "turkey baster". This should be done from a position in front of the axletree to the left of the barrel, however, on smaller guns may be done from a position opposite the breech, but from outside of the wheel.
2. After flooding the vent, the quoin is removed or elevating screw is adjusted to bring the muzzle to full elevation.
3. The flooding device, a 3 ft. length of hose with an attached funnel, is inserted into the bore. A bucket of water is slowly emptied into the funnel.
4. The water is allowed to sit in the bore for at least 30 minutes. During this time the Gunners stay with the cannon to keep the area secure.
5. The wad hook or worm is gently introduced into the bore, hooked into the charge and it is withdrawn. It should then be placed in a bucket of water. The remains of the cartridge should be disposed of safely.
6. The gun should be thoroughly cleaned and the crew may be dismissed.

Appendix: N

ARTILLERY MISFIRE DRILL
For Cannons Using Friction Primers

Level One:

When the "Fire" command is given, the friction primer fails to discharge, or discharges but the gun does not fire. All Cannoneers remain at the "Ready" position. Uneasiness and indecision will quickly transmit itself to an audience. The following procedures must be followed.

1. Wait at least 30 seconds after the primer ignites. If the Gunner feels it is necessary, the wait may be longer. In the meantime, buy some time with interpretation.
2. After waiting, the Gunner commands "Re-prime the Piece." #2 steps inside the wheel, back to the muzzle, and positions himself near the axletree. #2 removes and discards the spent primer.
3. #3 hands the priming wire to #2 while standing outside the right wheel at its highest point. #3 should hold the priming wire in his right hand, palm down with the point towards #2, while #2 should take the wire with his left hand, palm up.
4. #2 picks the cartridge. While doing this #2 must make sure his fingers and hands are not on top of the ring of the priming wire, and that his fingers do not pass through the ring.
5. With his palm up, #2 hands the priming wire back to #3, who receives the wire with his palm down and returns to the "Ready" position.
6. #4 hands #2 a prepared primer over the left wheel at its highest point. #2 inserts the primer in the vent and holds the lanyard while #4 moves into position.
7. When in position, #4 will nod his head to indicate he is ready. #2 will release the lanyard and move outside the wheel to the "Ready" position.
8. When #2 is clear he gives the "Ready" command. The Gunner checks to be sure that both the gun and detachment are in order for firing, then gives the "Fire" command, and #4 fires the cannon.
9. If the gun does not fire, the above procedure should be repeated.
10. If the cannon fails to fire after three attempts move to the procedure for Level II misfires.

Level Two:

Three attempts have failed to fire the cannon. Do not reprime. Once again, the Cannoneers remain in position while the visitors are dismissed. The following procedures must be followed. You should still wait the three minutes after the last wisp of smoke is seen.

1. Several bulbs of water are slowly squeezed into the vent using a "turkey baster." This should be done from a position in front of the axletree to the left of the barrel.
2. After flooding the vent, the elevating screw is adjusted to bring the muzzle to full elevation.
3. The flooding device, a 3 ft. length of hose with an attached funnel, is inserted into the bore. A bucket of water is slowly emptied into the funnel.
4. The water is allowed to sit in the bore for at least 30 minutes. During this time the gun detachment stays with the cannon to keep the area secure.
5. The wad hook or worm is gently introduced into the bore, hooked into the charge and it is withdrawn. It should then be placed in a bucket of water. The remains of the cartridge should be disposed of safely.
6. The gun should be thoroughly cleaned after which the detachment may be dismissed.

Appendix: P

BLACK POWDER STORAGE, HANDLING, AND TRANSPORTATION BY MPS STAFF

I. Introduction

Several MPS units have the necessity to store black powder, as well as manufacture cartridges. The following standards apply to all situations in which parks purchase, store, and handle black powder for interpretive demonstrations.

II. General Provisions

A. Storage, handling, and transportation must comply with all current applicable provisions of Federal and State safety codes and standards.

B. Where there are not more restrictive regulations, storage, handling, and transportation will comply with Occupational Safety and Health Administration (OSHA) Standard 1910.109. This standard is available online at:

www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9755

C. Transportation of black powder by service personnel or in service vehicles outside of park boundaries is subject to OSHA 1910.109. Because the requirements are complex, transportation should be avoided whenever possible. Direct delivery is preferable when acquiring powder from a distributor.

D. A responsible employee must perform regular openings and inspections of magazines to ensure that there have been no unauthorized attempts at entry or removal of materials. The date of these inspections along with the amounts and types of black powder on hand must be recorded. Likewise, when powder is added or removed from the magazine, the date and types of powder must be recorded. The black powder stock should be kept as small as program demand allows, and in no case shall black powder be stored more than two years. Containers should be dated and oldest powder used first.

E. Ammunition loading areas will be in an uninhabited building in compliance with OSHA 1910.109. The loading area will provide a non-sparking worktable or bench, adequate spark-free lighting, non-sparking floor surface, and entrance control by the person handling the black powder. The loading area should be cleaned frequently with water to prevent the accumulation of black powder dust.

F. A spark-proof pass box will be used to transfer black powder from a magazine to an ammunition loading area. While loading cartridges, exposed powder should be kept to a minimum and not exceed one pound or enough for one artillery round if that is in excess of one pound. Additional powder must be kept in the pass box. As cartridges are completed they will be placed in a pass box dedicated to that purpose.

G. When ammunition is conveyed from a magazine or loading area it must be contained in a spark-proof pass box. If necessary, ammunition should be transferred from the pass box to suitable historical containers for demonstration purposes. Unused ammunition should likewise be contained in a pass box when returned to a magazine.

H. If warranted by the requirements of an interpretive program or demonstration, volunteers or reenactors may bring bulk powder onto MPS lands as long as it is pre-arranged with the park's Safety Officer and the powder is stored in the park's magazine as defined by OSHA 1910.109

Appendix: Q

MARYLAND STATE PARK SERVICE
APPLICATION FOR
HISTORIC WEAPONS FIRING DEMONSTRATION
&
OPPOSING LINE TACTICAL DEMONSTRATION

It would be ideal if requests to hold Historic Weapons Demonstrations on Maryland Park Service land be submitted within the month of January the year the demonstration is to take place.

Reenactment Unit or Group must submit a **SPECIAL EVENT SITE REQUEST FORM** to the park where they want to hold a demonstration of historic weapons. (Must be submitted a MINIMUM Four Months in Advance of the Demonstration Date)

Once the park approves the **SPECIAL EVENT SITE REQUEST FORM,** the park then fills out a **PROPOSAL FOR HISTORIC WEAPONS DEMONSTRATION.** Both forms are then sent to the Historic Weapons Program Safety Committee. (Must be submitted a MINIMUM of 90 Days in Advance of Demonstration Date). If a park is requesting the demonstration and inviting reenactment units or a group, only the **PROPOSAL FOR HISTORIC WEAPONS DEMONSTRATION** needs to be submitted.

The Historic Weapons Safety Committee will respond within 30 days of the receipt of the request.

The Historic Weapons Safety Committee will send the requesting unit(s) or park the Maryland Park Service's Standards for Historic Weapons Use. (They will have 14 days to return a signed acknowledgement form that they will abide by the Standards.)

The Historic Weapons Safety Committee will verify that the correct number of Maryland Park Service Safety Officers are available to support the demonstration and if needed appoint a Lead Safety Officer for the Event.

The Historic Weapons Safety Committee will send a written approval or reason why the demonstration was not approved to the park at least 60 Days in Advance of Demonstration Date.

MARYLAND PARK SERVICE
HISTORIC WEAPONS FIRING DEMONSTRATION &
OPPOSING LINE TACTICAL DEMONSTRATIONS
SPECIAL EVENT SITE REQUEST FORM

ORGANIZATION INFORMATION

Organization Name:		
Organization Address:		
City:	**State:**	**Zip Code:**
Primary Contact:	**Day/Night phone #:**	
E-mail Address:		
Secondary Contact:	**Day/Night phone #:**	
E-mail Address:		

SITE REQUEST

Area of the park:		
Start date/ time:	**End date/ time:**	
Number of Participants:		
Over Night Camping YES NO	**If yes number of participants**	
Radios being used YES NO	**If possible try to provide an extra unit for park staff.**	

OVERVIEW OF THE EVENT

EQUIPMENT/ VEHICLES

List number and type of any special equipment needed. (Campers, generators, sound system, mobile command center, etc)

PARK FACILITIES TO BE USED

Restrooms, Campsites, Shelters, Electrical Hookups, Field, Wooded Area.

ASSISTANCE REQUESTED

If any park staff assistance is requested; please explain:

FOR PARK USE ONLY:

Site request reviewed by:	**Date:**
Comments:	
Approved	**Not Approved**
Park Ranger Contact:	**Phone #**

All special events must be submitted at least four months (120 days) before event date. Submitting. <u>All events require the organizer to have a 1 million dollar liability insurance policy.</u> This form does not guarantee approval. If the park approves the event, it will be sent to the Historic Weapons Safety Committee for approval and an approval packet will be sent to the event contact person in care of the organization. In the event is not approved a letter of explanation will be sent.

Maryland Park Service
PROPOSAL FOR HISTORIC WEAPONS DEMONSTRATION

Park: _____

Park Contact: _____

MPS Safety Officer at Park: _____

Special Event/Program: _____

Dates of Demonstration(s): _____

Type of weapon(s) to be demonstrated: _____

Volunteer group(s) or employee involved in demonstration: _____

_____

_____

Approximate number of Demonstrators: _____

Location of Demonstration Area: (Include Images of Area) _____

_____

Description of Program/Demonstration:

Justification of Program: How is this program relevant to the interpretive theme at your site?

Appendix: R

I. **Rules for Live-Firing Demonstrations.**

A. **Individual and Group Small Arms Demonstrations.** All rules outlined in the blank-fire demonstrations will be followed in live-fire demonstrations, but also include the following guidelines and procedures.

1. Range
   a. The demonstration must take place at an MPS approved range intended for the use of firing live ammunition.
   b. The range backstop will substitute for the 50-yard down-range buffer used in blank firing.
   c. The safety officer will determine and announce to the demonstrators and to the public when it is safe for demonstrators and public to enter and exit the range.
   d. As with blank-firing demonstrations, a safety message must be delivered to the public before firing a small arm. This message must warn them of the loud noise, recommend caution to individuals with hearing aids, and advise control of children and/or pets.
2. Ammunition
   a. The demonstrator is only permitted to fire ammunition appropriate to the weapon.
   b. The demonstrator must follow the Table of Maximum Loads
3. **Misfire Procedures**. Level One misfire procedures for blank and live-fire demonstrations are identical, but demonstrators must follow the Level Two (Live) misfire procedure appropriate to his/her weapon for live-firing demonstrations. A CO2 discharge device must be present for all live fire demonstrations.

Appendix S

MARYLAND PARK SERVICE

STANDARDS FOR THE USE OF 18TH CENTURY SWIVEL GUNS IN INTERPRETIVE DEMONSTRATIONS

A. **These** standards **apply to the use of 18th Century Swivel Guns for interpretive demonstration purposes by individuals and reactivated military units on lands administered by the Maryland Park Service (MPS). They serve as a supplement to the MPS** "Standards for Historic Weapons Use."

B. For the purpose of these standards **and any aspects referred to in the MPS** "Standards for Historic Weapons Use," **Swivel guns are considered to be** artillery**. As such, they must be treated with the same care and consideration as any artillery.**

C. Details not specifically addressed in this document will be treated as directed by the MPS "Standards for Historic Weapons Use."

D. The **prime rule** in the demonstration of artillery is: **An interval of three minutes will elapse from the time of one discharge and then loading of the subsequent round**. This rule applies not only to individual artillery blank round demonstrations, but also to **live fire** demonstrations and to the use of cannons in **tactical demonstrations**. Double worming and double sponging are required during this three-minute interval.

E. All Swivel Gun demonstrations will have **prior approval** of the MPS Safety Officer and must conform to the appended **Swivel Gun Demonstration Checklist**. The MPS Safety Officer will have final authority.

F. Swivel Gun **drill** will conform to the appended **Swivel Gun Demonstration Checklist**. The MPS Safety Officer will have final authority.

G. Swivel Gun demonstrations will be held in an area that conforms to the appended **Range for Blank Cannon Firing**.

H. In the event of a **Misfire**, swivel guns must be cleared according to the appended **Swivel Gun Misfire Drill.**

I. **Powder charges** for Swivel Guns will not exceed the specifications in the following **Table of Maximum Loads**. Other details of cartridge construction/manufacture are as outlined in the MPS **"Standards for Historic Weapons Use."**

Table of Maximum Loads for Swivel Guns

½ Pounder	**1.5" Diameter**	**2 Ounces**
¾ Pounder	**1.75" Diameter**	**2 ¼ Ounces**
1 Pounder	**2.1" Diameter**	**2 ½ Ounces**
1 ½ Pounder	**2.5" Diameter**	**2 ¾ Ounces**
3 Pounder	**2.9" Diameter**	**3 Ounces**

J. No swivel gun will be operated with fewer than **four Gunners**. Five or more Gunners are desirable. The **required positions** are described below.

1. **Position #1**, situated to the left rear of the gun in position to clearly observe the loading and firing sequence: This position acts as the **Gun Commander** and maintains the linstock and slowmatch. This position has overall command of the gun and the crew. He gives all commands for service of the gun and assures that the Gunners execute their duties correctly and safely. He touches off the priming charge at the command. Gunner #1 is also responsible for ensuring that the burning slowmatch is kept well away from Gunner #4 while the cartridge is being carried to #3.

2. **Position #2**, situated to the right of the breech of the gun: This Gunner tends the vent using a leather thumbstall to prevent air escaping through the vent during all sponging and ramming procedures. When the cartridge is seated, this Gunner uses a brass vent wire to pick open the cartridge through the vent and primes the piece. On swivel guns with tillers, this Gunner also tends the tiller throughout the loading and firing sequence.

3. **Position #3**, situated to the left and just to the rear of the muzzle: This Gunner worms the piece after each discharge to extract the remains of the cartridge, sponges the piece after each discharge, inserts the new round in the muzzle, and rams home each load. He is responsible for the sponge being in proper condition and sees to it that there is always a bucket of water on the ground below the muzzle of the piece. He will wear heavy-duty leather gauntlets to protect the hands during all worming, sponging, loading, and ramming procedures.

4. **Position #4**, situated at the ammunition box: This Gunner conveys each round from the ammunition box to Gunner #3. <u>The round must be carried in a well-made and secure leather or heavy canvas haversack while being transported from the ammunition box to #3</u>.

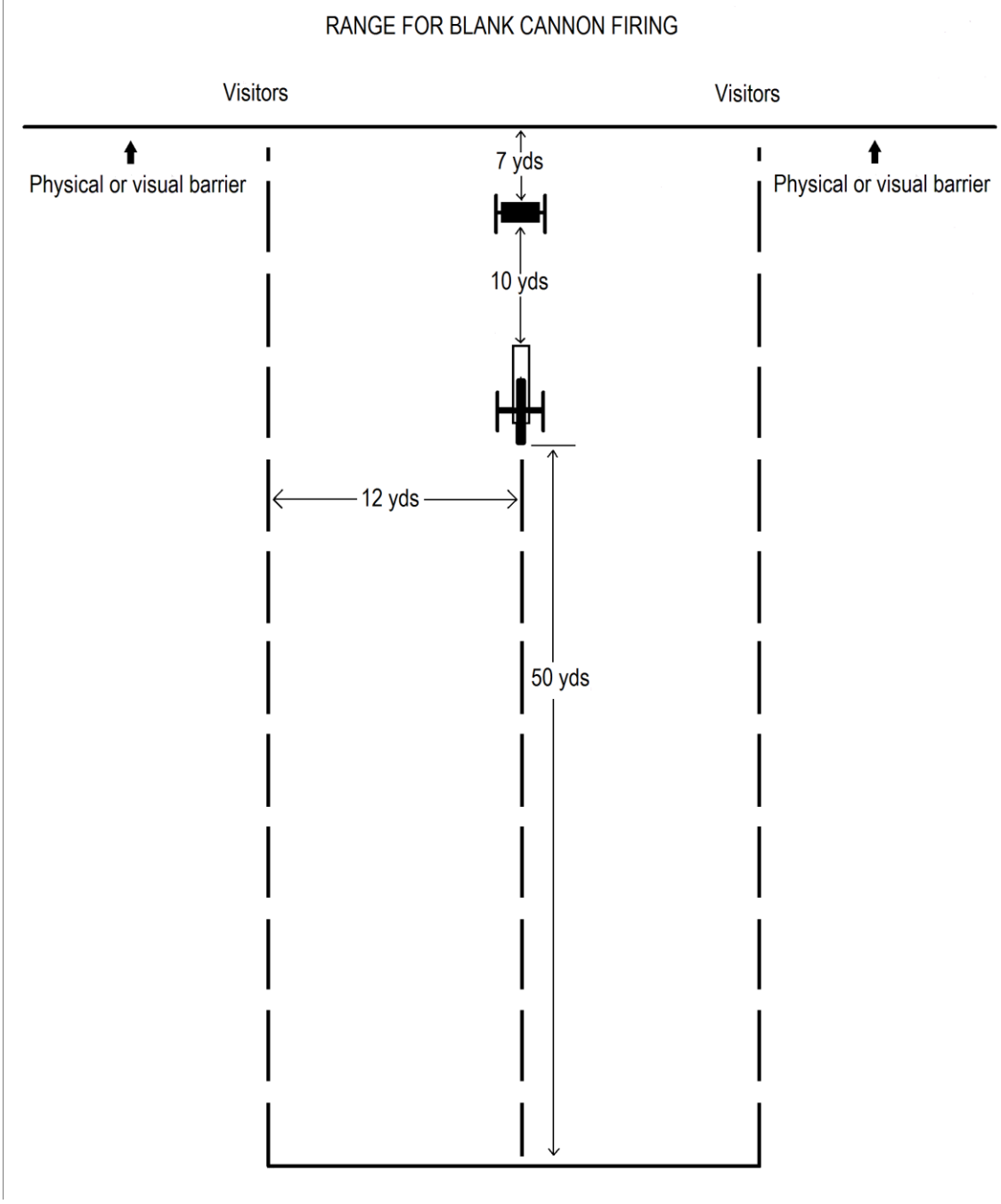
5. **Position #5**, situated at the ammunition box: While this Gunner is not required, it is strongly recommended. This Gunner remains at the ammunition box at all times, issues out the ammunition to Gunner #4, and assumes responsibility for security of the ammunition box.

K. For swivel guns, priming with **paper** priming tubes is preferred, however, priming by means of a **paper cartridge** or **loose powder** is allowed. Paper cartridges will contain only enough powder for one priming charge, and all the powder is to be poured into and atop the vent. Loose powder priming will be accomplished by means of pouring the powder from a well-stoppered horn or flask into a measure, then into the vent, **never** directly from horn or flask into the vent. Firing will be done by means of a **linstock and slowmatch**.

L. Artillery detachments are **required** to have the following **implements** in their kits:

1. Non-sparking ammunition box securely closeable-hinged lid;
2. Vent brush;
3. Non-sparking vent pick or priming wire;
4. Leather thumbstall;
5. One pair of heavy leather gauntlets;
6. Leather or heavy canvas gunner's haversack for use as ammunition pass container;
7. Leather or tin primer box on a leather belt;
8. Rammer staff with a dry sponge;
9. Rammer staff with a damp sponge;
10. One full water bucket;

11. One worm;
12. Priming tubes or priming powder in well stoppered horn with measure;
13. One Linstock and slowmatch;
14. One high intensity flashlight;
15. One high-pressure syringe for swamping vent in case of three successive misfires.



SWIVEL GUN INSPECTION CHECKLIST

- ❑ **Your overall impression is favorable**

The Tube:

- ❑ **The tube is clean and free of dust and corrosion.**
- ❑ **No sign of external damage or strain (dents, cracks, etc.)**
- ❑ **Inside of the bore is clean and relatively smooth.**
- ❑ **No internal signs of damage (bulges, lodgments, pits, etc.)**
- ❑ **No sign of corrosion damage at breech of the bore.**
- ❑ **On iron guns with liners, the liner is secure.**
- ❑ **The vent is clear and of acceptable size.**
- ❑ **No signs of cracks or bending around the trunnions.**
- ❑ **No signs of weakness at the chaplets on bronze tubes.**

The Yoke:

- ❑ **The yoke is mounted securely on the post.**
- ❑ **The yoke accommodates the tube easily (i.e. the trunnion fit securely, yet allow the tube to swivel with ease.)**
- ❑ **No signs of cracks or bending in any portion of the yoke.**

The Post:

- ❑ **The post is mounted securely in the ground.**
- ❑ **There are no signs of deterioration (rot, insect damage), which would cause an unsafe demonstration.**
- ❑ **No serious cracks which would make the demonstration unsafe.**
- ❑ **Deep cracks have been repaired.**

Equipment:

- ❑ **All necessary equipment is present.**
- ❑ **Sponge is in good condition and fitted to the bore.**
- ❑ **Rammer head is secure and free of cracks.**
- ❑ **Small items in good condition (linstock, thumbstall, buckets, etc.)**
- ❑ **Prongs of the worm are sharp and not bent.**
- ❑ **Haversack is clean and free of spilled powder.**
- ❑ **The gun book is being kept up to date.**

Additional Comments:

SWIVEL GUN DEMONSTRATION CHECKLIST

Before:

- ❑ **The gun has been inspected, inside and out. Bore is clean of foreign material.**
- ❑ **The accessory equipment is in good condition—sponge head is in good repair, rammer and sponge head secure on staff, etc.**
- ❑ **Sponge head fits bore snugly, but not too tight.**
- ❑ **Ammunition boxes, haversacks, etc., are clean and free of spilled powder.**
- ❑ **Ammunition is properly prepared, with just enough on hand for one demonstration.**
- ❑ **The equipment is on hand to handle a misfire.**
- ❑ **The required number of personnel is present to fire the piece.**
- ❑ **The gun is situated safely in relation to visitors.**
- ❑ **There is good visibility by the visitors so there will be no jostling and pushing to see and hear.**
- ❑ **The interpreter can see all of the visitors and also see downrange.**
- ❑ **Visitors are properly contained at the required safe distance.**
- ❑ **The ammunition box is at the required safe distance from the piece as well from visitors.**
- ❑ **The wind is not too strong for a safe demonstration.**
- ❑ **Conditions are not so dry as to risk a range fire from the muzzle blast. Equipment is available should one develop.**
- ❑ **There is a first aid kit and emergency communications system available.**
- ❑ **There are no open fires nearby—campfires, etc.**

During:

- ❑ **The crew is following the approved manual with each person where he is supposed to be at any given moment.**
- ❑ **The sponge is adequately damp but not soaking wet.**
- ❑ **The man ramming is holding the rammer properly and the vent is being properly tended at the same time.**
- ❑ **The rammer man is wearing gauntlets, but they are not so stiff and heavy as to cause fumbling or other difficulty.**
- ❑ **The sponge head does not contact the ground at any time during demonstration to prevent grass, sand, etc. from sticking to it.**
- ❑ **If there is a misfire, it is handled safely and properly.**

After:

- ❑ **After firing, the piece is wormed and then washed out and dried.**
- ❑ **All weapons, explosives and accessory pieces are accounted for.**
- ❑ **The weapon is secured and stored properly.**
- ❑ **The demonstration area is inspected carefully for smoldering residue.**
- ❑ **Sponge head is thoroughly rinsed out and dried.**
- ❑ **All remaining explosives are promptly returned to proper storage area.**

Additional Comments:

ARTILLERY MISFIRE DRILL FOR SWIVEL GUNS

Level One:

When the "Fire" command is given, the priming tube fails to ignite, or ignites but the gun does not fire. All Gunners hold position and remain at attention. Uneasiness and indecision will quickly transmit itself to an audience. The following procedures must be followed.

1. Wait two to five minutes after the last wisp of smoke is seen at the vent. In the meantime, buy some time with interpretation.

2. After waiting, the Gun Commander commands, "Reprime the Piece." Using the priming wire, #2 removes and discards the spent primer and picks the cartridge. While doing this #2 must make sure his fingers and hands are not on top of the ring of the priming wire, and that his fingers do not pass through the ring.

3. #2 inserts a fresh priming tube in the vent and returns to the "Make Ready" position.

4. When #2 is clear he gives the "Make Ready" command. The Gun Commander checks to be sure that both gun and detachment are in order for firing, then gives the "Fire" command and fires the swivel gun.

5. If the gun does not fire, the above procedure should be repeated using loose powder (from a cartridge or horn) instead of the priming tube.

6. If the swivel gun fails to fire after three attempts move to the procedure for Level 2 misfires.

Notes: In the event the gun is being fired using loose powder in place of priming tubes, the procedure is the same.

Level Two:

Three attempts have failed to fire the Swivel Gun. Do not reprime. Once again, the Gunners remain in position while the visitors are dismissed. The following procedures must be followed.

1. After flooding the vent, the swivel gun is adjusted to bring the muzzle to full elevation.

2. The flooding device, a 3 ft. length of hose with an attached funnel, is inserted into the bore. A bucket of water is slowly emptied into the funnel.

3. The water is allowed to sit in the bore for at least 30 minutes. During this time the Gunners stay with the cannon to keep the area secure.

4. The wad hook or worm is gently introduced into the bore, hooked into the charge and it is withdrawn. It should then be placed in a bucket of water. The remains of the cartridge should be disposed of safely.

5. The gun should be thoroughly cleaned and the crew may be dismissed.