

Longstreet's Corps Artillery Regulations and Procedures for Muzzle-loading Artillery

Revised May 5, 2008

Artillery Piece

The following procedures presume the crew is firing blank charges with a Civil War period original or replica muzzle-loading artillery piece manufactured (or refitted, if an original) to modern safety standards. Therefore, all guns and limbers must be original or reproduction full-scale field artillery pieces representative of the period. They must have proper size wheels, limber chest, and equipment. All parts and equipment are to be free of rot, rust, and in good working order. The bore should be lined with seamless steel tubing with a minimum 3/8 - inch wall thickness and yield strength of 85,000 psi or greater. The breech plug (if so fitted) should be threaded and pinned. Welded and pinned breech plugs are acceptable but require expert installation by competent manufacturers. Sand-cored bores are not recommended for shooting. If the vent has been "sleeved" or replaced, the vent should be drilled in a threaded copper bolt similar to original cannon vent liners of the 1840 -1865 period in order to provide an unbroken passage through the casting and the liner into the bore.

General appearance of the gun and crew must be acceptable to the commanding officer. Mountain Howitzers and Mortars will not be allowed unless approved by the Commanding Officer.

Accepted Artillery Drill Standard

National Civil War Artillery Association (NCWAA) or U.S. Field Artillery Association (USFAA) drills will be followed at all times.

Artillery Rounds

Rounds shall be rolled before you arrive at any event. Do not roll rounds at the event site. All rounds must be triple-wrapped using only aluminum foil. The powder charge should be 4 ounces of black powder for each inch of bore. Black powder only! No flour, cornmeal, sawdust, or any other wadding or filler is to be used in the rounds. Black powder that is not obtained in labeled containers shall not be used for round construction. Obtain your powder from a reliable source.

Firing Method

Only friction primers should be used to ignite the powder charge. No fuses or linstocks.

Age Limitations

No one under eighteen years of age will be allowed to man positions 1-4 or Gunner, unless approved by the Artillery Commanding Officer. Fourteen years of age and older may man positions 5, 6, and 7. Absolutely no one under the age of fourteen will be allowed to man any position of the cannon crew. However, if event rules require older age limits, the event rules take precedence.

Side Arms and Knives

No crewmember will have side arms or long knives. A sidearm should only be carried by officers who are not on a cannon crew. (Battery commanders, Battalion Commander) If the battle scenario requires artillery to fight, weapons will be hidden away from the cannon and ammunition boxes.

Longstreet's Corps Artillery Regulations and Procedures for Muzzle-loading Artillery

Revised May 5, 2008

Safety Zone

Establish a 50-foot wide safety zone around the gun. Only crewmembers and other authorized personnel are allowed to enter this zone.

The ammunition chest should be located 17 ft. behind the gun and 35-50 ft. forward of the spectator line. Spectators Smoke! Watch out for them!

Equipment Required

Ammunition box with a self-closing lid restricted to opening at no greater than an 80-degree angle; Vent brush; Vent pick; Thumb-stall; Heavy welder's gloves; Leather powder handlers bag; Leather friction primer pouch; Leather vent pick pouch; Rammer; Wet sponge; Dry sponge; Worm; Water bucket; Friction primers; Stopwatch; Pliers; flashlight; and Gimlet. Individual safety containers for powder charges are highly recommended. However, if containers are not available, rounds must be stored such that they are secured during transport to prevent damage.

Equipment Description:

*The **vent brush** is a properly sized bronze, copper, or brass cleaning brush on a suitable rod.*

*The **thumb-stall** should be a standard period style leather thumb-stall and fit the users thumb snugly. An optional leather strap or string can be used to secure it around the wrist.*

*The **gloves** used by #1 and #2 are to be heavy leather welder or foundry type gloves.*

*The **rammer and sponge** shaft combination should be at least one foot longer than the guns bore length.*

*The **rammer head** used should be slightly concaved or flat on the end opposite the shaft to properly seat the round without breaking it and tapered on the shaft side so that it may force the hand open should a premature ignition occur. It is good practice to mark the rammer in advance in two places, one to show the amount of shaft which should be left sticking out of the muzzle when the rammer is against the breech without a charge and the second mark to show when the charge is properly seated. These markings will provide a visual cue to #1 that the round has been properly seated.*

*The **sponge head** is to be tight fitting and constructed of lambs wool or wool carpeting over a wooden cylinder affixed to the shaft opposite the rammer. The end of the sponge head should conform to the shape of the breech plug, hemispherical or flat.*

*The **worm tool** is to be an original or replica cannon-cleaning worm tool. The worm should fit the bore and breech closely so the tine points will pick up debris easily. The tines of the worm should be sharp and extend beyond the face of the worm coil.*

Longstreet's Corps Artillery Regulations and Procedures for Muzzle-loading Artillery

Revised May 5, 2008

Drill Procedure

NCWAA or USFAA rules apply and take precedence over the following, however, the following is a summary procedure for general reference within this document.

1. Clean the Vent (Tend vent)

Using the vent brush, brush the entire vent twice. The vent shall be brushed after each round fired.

2. Stop the Vent

Using the thumb-stall seal the vent with thumb pressure during the entire cleaning and loading procedure. This means no air should escape the vent from the time the worm enters the muzzle until the rammer is removed after the projectile has been seated.

3. Worm (or Search) the Bore

Insert the worm into the bore giving two complete turns at the breech to pick up any foil remnants and to loosen any powder residue.

4. Wet Sponge the Bore

Sponge with a wet (but not sopping) sponge. Seat the sponge against the breech with hand pressure and give two full rotations of the shaft. Withdraw the sponge half-length, twist, then repeat against the breech and give another two full rotations. Remove the sponge. If any powder container (foil) remnants or unburned powder come out with the sponge, wipe off the sponge and repeat the entire process, starting with Step 3.

5. Dry Sponge the Bore or Repeat Step 4 Without Re-wetting the Sponge

After wet sponging, the same procedure is used with the dry sponge. The dry sponge is cleaned and dried off periodically with an absorbent towel- type rag. (The purpose of the dry sponge is to remove excess moisture from the bore; if water is left in the bore it may cause incomplete burning of the next powder charge, possibly leaving burning embers or residue).

6. Load Charge

Open the limber chest only long enough to remove one round and transfer it to the leather haversack.

Do not open the limber chest following a warning that a gun is about to fire until 5 seconds after that gun has been discharged. This is to prevent hot debris from falling into the limber chest.

Carry the round within the leather haversack to the gun. Do not proceed to load unless three minutes has elapsed since the gun was last fired even though the cleaning procedure has been completed. Use the stopwatch.

Position #2 removes foil-wrapped charge from the bag and places it in the muzzle while wearing heavy leather gloves.

Longstreet's Corps Artillery Regulations and Procedures for Muzzle-loading Artillery

Revised May 5, 2008

Position #1, also wearing heavy leather gloves, stands to the side of the barrel with as much of his body as possible behind the plane of the muzzle. Grasp the rammer underhand, with one hand; thumb to the side and seat the charge lightly with smooth, short strokes. Do not pound the rammer against the charge.

Immediately upon feeling the charge reach the breech, #1 drops his hand away, releasing the rammer. After three to five seconds and after ascertaining that the charge is fully home (presumably by using the rammer marks as your guide), remove the rammer with one hand underhanded and thumb to the side. This may require grasping and releasing the shaft a few times. At no time should more of the body than absolutely necessary be forward of the muzzle face and NEVER in front of it. With practice this removal procedure can take place in one swift motion with minimal body exposure to the now loaded piece. Never have two hands on the rammer while seating the charge or removing the rammer.

7. Load the Projectile

The artillery arm of Longstreet's Corps is a re-enactment organization only. Currently, the Corps does not sanction live projectile loading and firing at Corps events and, therefore, live projectile firing procedures are beyond the scope of this document. This does not prohibit member units from participating in live projectile firing at other non-Corps events or in private non-Corps related demonstrations. It is strongly recommended that anyone desiring to fire live projectiles obtain proper training before doing so.

8. Pick the Charge

To insure ignition, pick the powder charge wrapper through the vent with a proper vent pick held by the shaft or ring pinched between fore-finger and thumb (NO finger parts should be through the ring portion of the standard pick and do not push the pick into the vent with any portion of the fingers or hand directly above the vent). Refer to NCWAA or USFAA rules for proper pick construction and configuration.

9. Prime

Priming the vent depends on the type of ignition to be used. However, the Longstreet's Corps only sanctions the standard friction primer method.

10. Fire the Piece

The person designated to ignite the charge (No. 4 gun position in Civil War period Drill) calls out "Piece is ready" in a loud voice to alert other crews on the line that a gun is about to fire and to notify the person in the Gunner position that the piece is primed. At this call, any open ammunition chests are immediately closed. The Gunner makes a visual inspection of the range forward of the muzzle to make sure NO ONE is in danger and then continues to the "Fire" command as prescribed in the NCWAA or USFAA procedures. The primer is then ignited by #4 pulling the lanyard.

Start your stopwatch to be sure at least three minutes elapses before powder is reloaded.

Longstreet's Corps Artillery Regulations and Procedures for Muzzle-loading Artillery

Revised May 5, 2008

Misfires

If the gun fails to fire, ANYONE can issue the command: "Do not advance, the piece has failed". No one is to approach the piece until it is safe to do so. PROCEED ONLY ACCORDING TO THE NCWAA OR USFAA RULES! The causes of misfires are varied and the method of properly handling them is lengthy and deliberate in its execution and is, therefore, outside the scope of this document.

Additional Safety Considerations

- 1) Spent aluminum foil casings wormed out after firing often yields unburned powder and should be handled with care.*
- 2) All crewmembers should wear ear protection devices.*
- 3) NO one should cross in front of the muzzle at any time during the cleaning, loading or firing procedure.*
- 4) The ammunition box (limber) shall be attended at all times or securely locked.*
- 5) The interior of the ammunition box shall be lined with a non-sparking material and the box itself shall be stoutly constructed of wood or metal.*
- 6) NO smoking at any time within the safety zone of 35 - 50 feet.*
- 7) NO wadding will be used to pack the round after it is loaded.*
- 8) Inspect your gun tube for signs of stress.*
- 9) Walk, Do not run, and work at a smooth pace. Be aware of what you are doing and always use care in performing your duties as prescribed by the NCWAA or USFAA School of the Piece guidelines.*
- 10) Practice dry fire drills at least twice before commencing operations with live charges.*
- 11) Use common sense. STOP if anything is not correct. Think it through. Then act to correct it. The stop and think approach gives more opportunity to avoid accidents, DO NOT use the press onward out of sequence method. SAFETY FIRST!!!!*
- 12) Failed primers must be collected and removed from the field in a safe receptacle.*

WARNING:

Loading and firing antique or replica muzzle loading cannon is a highly dangerous activity and may result in death, dismemberment or serious injury. Structural integrity of the barrel, powder charge preparation, premature discharge, reliance on others to follow proper procedures and other unforeseen and unanticipated conditions may contribute to accidents, serious injury or death. The authors and publishers of these procedures, rules and guide lines specifically recommend you do not engage in this activity unless you are thoroughly trained by competent instructors and are fully aware of the potential for injury or death. Do not rely on the information contained herein to protect you from the dangers of engaging in the loading and firing of Civil War period muzzle loading artillery. This document is ONLY a summary of what the writers and publishers consider the essential safety rules and procedures they themselves follow when engaging in this extremely hazardous activity.