



Manual Of Instruction For The Safe Use Of Reproduction Springfield Rifle And Carbine Calibers .45 And .50 and the Colt Revolver Caliber .45 in Interpretive Demonstrations



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PART I - INTRODUCTION

This manual sets forth the procedures that must be followed by persons demonstrating the use of the arms commonly known as the Springfield “Trapdoors” and the Colt Revolver to the public in areas administered by the National Park Service (NPS). It also provides instruction on proper maintenance, inspection, and repair procedures. This manual must be used in conjunction with the service wide standards for Historic Weapons Firing Demonstrations (NPS-6 Guidelines for Interpretation).

The information below largely comes from primary sources of the period during which the weapons described were used. Several generations of NPS historic weapons personnel have modified these original texts in order to improve demonstrator and visitor safety, make the original texts more comprehensible and to incorporate knowledge gained from years of actually using these weapons in the field.

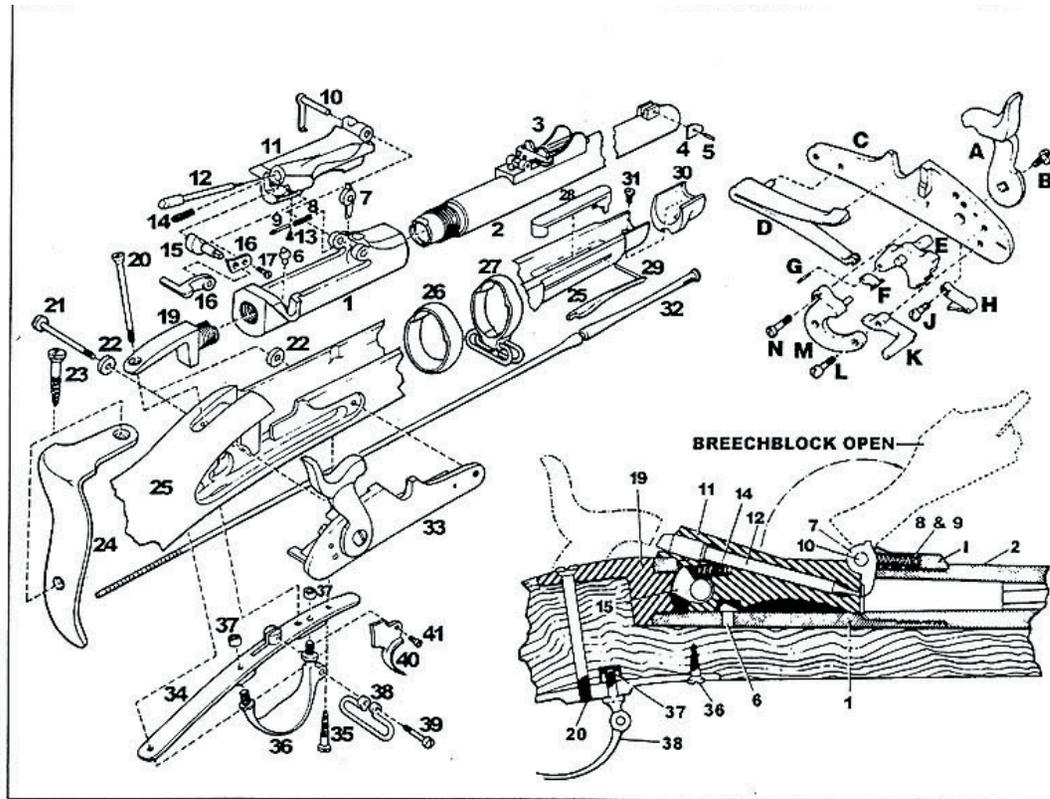
The Park’s Certified Historic Weapons Firing Demonstration Supervisor is responsible for the training and safety of the demonstrators, as well as the safety of the visitors. The following criteria will help determine when a demonstrator has been adequately trained.

The series of arms commonly known as the Springfield “Trapdoors” served the U. S. Army from 1865 to 1894 when the Model 1892 Springfield-Krag bolt-action rifle was issued as the official successor. All of the Allin-system Springfields operated in basically the same manner and have therefore been grouped into this single manual. Because there are minor differences between the .50 caliber and the later .45 caliber weapons (principally the number of tumbler notches), there are slight differences in the loading procedures. In addition, the Army wrote the two drills somewhat differently with regard to having the breech open or closed prior to taking a cartridge from the box. Where these original discrepancies do not present safety hazards, they have been retained for the sake of authenticity. The demonstrator should be aware of these differences and make certain that he uses the section appropriate to the weapon being fired.

The manual also contains data on loading ammunition, range safety requirements, powder storage regulations, nomenclature, and other information that will be of use to “living history” demonstrators and supervisors.

PART II - NOMENCLATURE

TRAPDOORS



KEY #	DESCRIPTION
06	Ejector Stud
07	Extractor
08	Ejector Spring
09	Ejector Spindle
10	Hinge Pin
11	Breech Block
12	Firing Pin
13	Firing Pin Screw
14	Cam Latch Spring
15	Cam Latch
16	Breech Block Cap
17	Breech Block Cap Screw
18	Thumbpiece, Cam Latch & Cap Assembly
19	Breech Screw
20	Tang Screw
21	Side Plate Screw (2 Req'd)
22	Washer (2 Req'd)
23	Buttplate Screw (2 Req'd)
24	Buttplate
26	Lower Band Rifle
28	Cleaning Rod Stop
29	Band Spring
30	Stock Tip
34	Trigger Plate, Stripped
35	Trigger Guard Screw (2 Req'd)

KEY #	DESCRIPTION
36	Trigger Guard
37	Trigger Guard Nut (2 Req'd)
A	Hammer, Fully Finished, Replacement
D	Mainspring
EFG	Tumbler Assembly, 2 Position
K	Sear, 3 Position
K1	Sear, 2 Notch Style
L	Sear Screw
M	Bride
N	Bride Screw
PARTS UNIQUE TO MODEL 1869	
Breech Block, .30/70 Cal.	
PARTS UNIQUE TO MODEL 1870	
Breech Block, .50 Cal.	
PARTS UNIQUE TO MODEL 1879	
Receiver	
PARTS UNIQUE TO MODEL 1884	
Breech Block, Receiver	
ALL IN CONVERSION FOR .50 CALIBER	
Firing Pin Spring	

KEY #	DESCRIPTION
-	Firing Pin Lock Screw
-	Thumbpiece Screw
-	Fear Sight Screw
-	Breech Block Cover
-	Pamrod Stop
06	Ejector Stud
07	Extractor
11	Breech Block, 1861
12	Firing Pin
15,	
16, 18	Thumbpiece & Cam Latch Assy
17	Breech Block Cap Screw



COLT REVOLVER

PART III - INSPECTION AND MAINTENANCE

INSPECTIONS

Frequency of Inspections

All weapons shall be inspected before demonstrations and after the final cleaning on that particular day. Weapons in storage should be periodically checked for rust or other types of damage due to moisture.

If a weapon does not meet safety standards for any reason, a large string tag should be tied to it detailing the specific problem. Repairs should be affected as soon as possible.

Problems Encountered During Inspections

1. Overall Poor Cleaning - If a musket is not cleaned immediately after use, the residue in the barrel will harden. Effective cleaning is made more difficult and there is a possibility of coke buildup in the bore. This is very dangerous, as, in subsequent firings, this coke buildup can retain a spark or smolder and ignite the fresh powder charge as soon as it drops into the barrel.

2. Weak Mainspring - When cocking the piece, if there appears to be a weak mainspring, it should be replaced or taken to a competent gunsmith to be hardened.

3. Weapon Fires on the Half Cock - This is probably due to wear of the half-cock notch on the tumbler. It may also be the fault of a weak or broken sear-spring. If the tumbler is at fault, it may be corrected or broken sear-spring. If the tumbler is at fault, it may be corrected by carefully deepening the half-cock notch. If the tumbler is badly worn, it should be replaced

4. Bent or Bulged Barrel - This problem is fairly easy to see and should be noticed during any good inspection. If it is not badly bent, it can be straightened by any competent gunsmith; however, it is recommended that it be replaced. Bulged barrels are caused by firing ball ammunition (“live rounds”) without seating the mine ball all the way down on the powder charge. **THIS SHOULD NEVER BE DONE.** A bulged or even a burst barrel will result. If a ball cannot be seated firmly on the powder charge by normal pressure of the ramrod, the ball and charge should be withdrawn by use of the ball puller.

5. Cleaning Patch Lodged In Barrel - Attempt to remove a stuck patch by careful use of the wiper. Always turn the wiper in a clockwise direction or the wiper may unscrew itself from the cleaning rod. If this procedure doesn't work, it may be necessary to pull the breech-plug.

The park demonstration supervisor should be equipped with the following basic items:

1. Bore light
2. Aluminum or brass cleaning rod of sufficient length
3. A set of quality screwdrivers that fit the screw slots properly
4. A broken shell extractor
5. Cleaning patches
6. Gun oil
7. Bore solvent
8. A wood tompon (described under Rules for Dismounting & Cleaning)
9. Bore brush of proper size.
10. An Allen wrench of proper size to fit the thumb latch cam
11. Main spring vise
12. A fine flat file
13. A fine triangular file
14. A set of pin punches
15. A small brass hammer

The following checklists should be used when inspecting individual firearms. Newly purchased firearms should be inspected using this checklist prior to placing into service.

CHECKLIST FOR INSPECTING A BREECH LOADING “TRAPDOOR” RIFLE OR CARBINE

Prior to disassembly:

- () Make sure the weapon is unloaded
- () Is your overall first impression favorable or unfavorable?

The Stock:

- () Is it cracked or split?
- () Does the butt plate, trigger guard, etc., fit tightly and snugly?
- () Are there any burrs on butt plate or trigger guard screw heads that would snag clothing or hands?
- () Do the band springs function smoothly or are they bound by the wood?
- () In general, are there any splinters or rough edges?
- () On reproductions with two-piece stocks are the two pieces securely joined together?

The Lock:

- () Does it work smoothly?
- () Does the hammer or cock fit tightly on the tumbler?
- () Are all the “clicks” or positions firm and solid?
- () Does the half-cock (safety) position work properly?
- () When the trigger is pulled, does it let off smoothly and without snagging on the half-cock position?
- () Is the trigger pull proper, not too heavy and not a “hair” trigger?
- () Does the lock fit properly into the stock and snugly against the barrel?
- () Is the striking face of the hammer battered?

The Barrel:

- () Does it fit the stock properly?
- () Is it free of visible dents or cracks?
- () Is the muzzle dented or worn?
- () Are the sights complete and operable?
- () Do the barrel bands hold the barrel securely?
- () Is there excessive side-to-side play on the opened breech block? There must be some play in order for the breech to function properly.
- () Does the latch have adequate spring tension and function properly?
- () Does the firing pin move freely within the breech block? (.50 cal. Rifles have firing pin springs.)
- () Does the breech block close and lock securely?
- () Does the ejector work properly?
- () Is the ramrod straight? Does it fit the stock properly: Are the threads at the lower end clean and free of burrs?

After disassembly:

The Stock:

- () Are there shiny spots in the lock recess indicating rubbing by metal?
- () Is the lock recess clean and free of splinters? Any indication of splitting or cracking?
- () Is there any indication of splitting or cracking around tang screw hole?
- () Is the bed for the barrel clean and free of dirt?
- () If there is a ramrod spoon or spring, does it work freely and is the recess for it clean?
- () If there is a noscap, is it securely fastened to the stock?
- () If it is a two-piece stock, check the joint again—carefully.

The Lock:

- () Are all internal screws tight?
- () Are any internal parts broken, cracked or chipped?

- () Check the nose of the sear and the tumbler notches—
are they sharp and in good condition or are they
wearing down or chipped?
- () Are there any signs of metal rubbing on the inside of
the lockplate?
- () Are there any signs of improper repairs or incorrect
replacements?
- () With the hammer or cock fully forward, does the
mainspring disconnect from the tumbler or does any
part of it protrude below the lockplate?
- () Are all parts clean and lightly oiled?

The Barrel:

- () Is the breech plug seated and properly aligned?
- () Check the bore with lights and reflectors—is it clean
and in good condition? Try a patch—does it come
out clean?
- () is the chamber clean and in good condition?

COMMENTS REGARDING THE HARRINGTON AND RICHARDSON SPRINGFIELD REPLICA

1. The breech mechanism of this weapon presents a safety hazard. Whereas the cam on original Springfields is an integral part of the thumb piece shaft, the corresponding parts in the replica are assembled as two separate parts. The cam is held to the shaft by two small superposed Allen screws. The firing of ball ammunition eventually causes the nose of the bearing (lower) screw to shear, thereby allowing the cam to rotate upon the shaft. The result is one of two things: a) When the breech is in the closed position, the thumb piece shaft will turn, but the cam will not. Therefore the breech is almost impossible to open, or, b) When the breech is closed, the cam will remain in the “up” position or open position but the thumb piece will indicate that the breech is locked. Upon firing, the breech may open directly in the shooter’s face.

This problem has not been experienced with blank ammunition, but particular attention should be given to the proper maintenance of this part of the mechanism.

2. The lock should be checked to insure that the hammer holds in the safety and half-cock notches. In the H&R replica the bridle screws sometimes loosen or tighten. This may cause the hammer to accidentally fall from the safety or half-cock positions. In some instances, the hammer may either stick at the full-cock or it may not hold in that position, thereby causing a premature shot.

3. The rifle stock has a joint located under the rear barrel band. This joint has been known to separate.

4. If the carbine is to be carried by the sling on horseback, it is advisable to remove the saddle ring bar and to braze the bases to the bar on the reverse sides. Otherwise, when the full weight of the carbine is placed on the bar, it may pull out of the bases.

5. The rifle-cleaning rod should not be used to clean the bore. It may scratch the rifling and is prone to breakage because of the poorly tempered steel.

6. The screw which holds the lower sling swivel on the rifle is prone to break.



Historic Weapons Program

Colt and Smith and Wesson Revolver Inspection Checklist

Park: _____ **Weapon:** _____ **S.N./Prop.#** _____

- The piece is confirmed to be unloaded.
- Your overall first impression is favorable.
- The grips fit snugly and are free of cracks, serious chips or splinters.
- The action works smoothly and with definite "clicks".
- The half-cock and safety positions function properly.
- The cylinder rotates freely on the half-cock.
- The cylinder rotates and 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.
- The bore is in good condition.
- There is adequate tension on the mainspring.
- The cylinder bushing on Colt's Revolvers is clean and functioning properly.
- The ejector rod works smoothly and the spring is of the proper tension.
- The loading gate closes securely on Colt's Revolvers.
- The barrel-catch on S&W revolvers latches securely.
- The cylinder pin is held in place securely.
- The firing pin is free of burrs and other excessive damage.
- Park staff reports no problems in using this firearm.

This Firearm: _____ **Passed:** _____ **Failed:** _____

Comments:

RULES FOR DISMOUNTING AND CLEANING THE RIFLE AND CARBINE, M1868 – M1873

To Dismount

1. Bring the hammer to half-cock, open the breech, make certain the piece is unloaded.
2. If a rifle, draw the ramrod and unhook the sling.
3. Turn out the tang screw.
4. Unscrew both lock screws (left side) a few turns until they slightly protrude from the washers. Lightly tap both screw heads with a wooden or plastic mallet. This will loosen the lock from its bed in the stock. Do not try to pry it out with a tool or try to remove it by using the hammer as a pry-handle. When the lock is free, or nearly so, remove the screws and dump the lock into the right hand.
5. Take off the band or bands by depressing the springs with your thumb or a piece of soft wood. Carefully slip the bands up the stock without scraping it.
6. Take out the barrel. To do this, hold the rifle horizontally with the barrel downward, holding the barrel loosely with the left hand below the rear sight, the right hand grasping the stock by the wrist. If it does not leave the stock, follow steps 7 and 8. Do not lift it out by using the barrel as a lever. If the tang binds in the wood, the head of the stock will likely be split.
7. Place a wood tompson in the muzzle. Make sure it has a large shoulder to prevent it from being jammed completely into the bore.*
8. With tompson in place, hold the piece muzzle down and tap it on the floor or ground a few times until the barrel and tang loosen from the stock.

*a tompson can be made by drilling a hole (1/2" deep) in the center of one end of a 1" dia. X 2" long piece of dowel. Insert and glue a 1 1/2" long piece of 7/16" diameter dowel in the hole.

9. Remove the hinge-pin by pressing on its point with the point of the tumble-punch (or tap with a mallet) until the end carrying the arm projects sufficiently far to enable it to be grasped and removed by the fingers.
10. Remove the breech-block carefully to prevent the extractor and its spring from falling out.
11. Remove the extractor and extractor spring.
12. Turn out the set-screw and remove the cam-latch (H&R replica) or, turn out the breech-block cap screw and remove the cam-latch assembly (Springfield design).
13. Turn out the firing pin screw and remove the pin from the block.

To Clean

Black powder weapons should be cleaned as soon as possible after firing. Do not leave them over night as the residue will become hard and the chemical reaction that erodes the bore will be underway.

1. Wet a patch of cloth with solvent (or water) and run it through the bore to loosen the residue. Remove the patch from the rod at the breech. (The bore may be flushed with water first to remove much of the fouling.)
2. Run a bore brush through and back out again to remove hardened residue and bits of lead. Do not reverse the brush in the bore as this will soon ruin the bristles.
3. Repeat steps 1 and 2. Inspect the bore closely, particularly the corners of the rifling. Small amounts of powder and lead can remain in them and will gradually ruin the rifling.
4. Use as many patches as needed until they come out clean. A good way to make certain that you have the bore clean is to run the bore brush back through the bore, followed by one last patch. If it comes out clean, you can proceed to the next step.
5. Make a tight fitting dry-patch which will squeeze the water out of the bore. Remove it at the breech.
6. Run another dry patch both down and back up the bore. This will continue to dry the bore; and, the return trip will catch any water or solvent remaining at the juncture of the chamber and the bore proper.
7. Use a patch dampened with water to wipe out the receiver.
8. The breech-block and its parts can be washed and then dried in an oven set at 200 degrees. In the field, they can be wiped down.
9. Run a lightly oiled patch through the bore and back again.

10. Wipe the block and receiver with an oiled patch.
11. Wipe and lightly oil or grease the remaining working parts. Do not put a heavy coat of oil on the firing pin because a gas escape may blow it back in the face on a subsequent firing.
12. Reassemble the block and its parts.
13. Put the extractor assembly in the receiver and replace the extractor so that the spindle fits into the dimple on the extractor.
14. Hold the extractor assembly in place and fit the block so that it is in the closed and locked position in the receiver. This will very nearly align the hinge and extractor holes to receive the pin.
15. Insert the hinge-pin from the left side of the receiver. It will probably slip in with finger pressure, but if not, a few taps with a mallet will align the ejector and allow it to slip into place.
16. Wipe all external surfaces with a lightly oiled patch.
17. Reassemble the arm.

Locks, once they have been properly cleaned and lubricated, usually do not require much attention under normal conditions. They should be inspected for worn or broken parts and occasionally lubricated.

After the arm is reassembled, wipe down the stock with a soft cloth. If desired, it can be wiped down with a small amount of linseed oil.

If the arm is to be stored for some time, check the bore, receiver, and external metal surfaces for any signs of rust or corrosion. This should be done about three days after cleaning.

RULES FOR DISMOUNTING THE RIFLE M1866

The parts should be dismounted in the following order, viz.:

1. Unscrew and draw the ram rod.
2. Take off the bands.
3. Turn out the tang screw, with the hammer down on the firing-pin.
4. Put the hammer at half-cock; remove the barrel from the stock in the ordinary manner.
5. Remove the hinge screw by inserting the forked screwdriver in the slot of the hinge screw nut use the screwdriver, which is on the tumbler punch, to turn out the screw. Remove the screw from the nut, keep the nut hard pressed to its place. After the screw is taken out, turn the arm over to the left and the nut will droop out in the hand; otherwise, it may drop on the ground and be lost.
6. To take out ejector spring, remove the ejector cap screw and insert the end of the band spring punch in the counterbore for the screw head. Drive out the cap toward the bottom of the barrel.

7. Remove the friction spring, by unscrewing the friction Spring screw.
8. The cam latch is removed by unscrewing the breech block cap and loosening the cap with the point of the screwdriver.
9. Turn out the thumb piece screw.
10. Remove the cam shaft from the thumb piece by driving the point of the band spring punch into the screw hole.
11. Turn out the firing-pin nut; then take out the pin and spring from the breech block.
12. Remove the cam latch spring.

NOTE: in assembling, the parts are put together in the inverse order of taking them apart, care being taken to see that the screws and nuts—and particularly the firing pin nut—are screwed well into their places.

RULES FOR DISMOUNTING AND CLEANING THE REVOLVER

1. Draw the hammer to half-cock, open the gate and turn the cylinder so that each chamber can be checked to see that the piece is unloaded.
2. Remove the center-pin catch screw or, on post-1896 revolvers, depress the spring-loaded catch from the left side and remove the center-pin. If it is stuck, **Do Not** use pliers or other tools to remove it. Use a mallet and a brass drift to tap the rear end of the pin until it is free (In stubborn cases, the hammer may have to be removed to get a straight-line drive. The cause is usually a rough pin. It can be smoothed down with emory paper.)
3. Dump the cylinder out into the right hand.
4. Remove the center-pin bushing from the cylinder.
5. Place both pieces in a pan of water and wash.
6. Remove the ejector and wash in water.
7. Clean the bore basically as with the carbine and rifle.
8. Dry the cylinder, bushing, and ejector assembly in the oven at low heat (200 degrees) for a few minutes. In the absence of an oven, say under field condition, the pieces can be cleaned the same way as the barrel and dried thoroughly by blowing the excess water or solvent out with the mouth. Then dry with patches.
9. With a damp patch, wipe the inside surfaces of the frame.
10. With a patch dampened with oil, wipe the entire piece including the hammer and its slot in the frame.
11. Lightly grease or oil the bushing and replace it.
12. Oil and replace the ejector assembly.
13. Replace the cylinder, lightly grease or oil the pin and slip it into place. The cylinder may have to be slightly aligned with the right had while it is held in place. Do not force the pin under any circumstances.
14. Replace the catch screw, turn the cylinder to insure that it rotates freely. Close the gate, draw the hammer to full cock and gently let it down with the thumb.

PART IV - "TRAPDOOR" AND COLT REVOLVER DRILL

MANUAL FOR FIRING - .45 SPRINGFIELD RIFLE AND CARBINE

THIS PIECE IS HABITUALLY CARRIED ON SAFETY

CAUTION - It has been determined that firing ball ammunition in the Harrington and Richardson replica 1873 Springfield is dangerous. Because the breech-block cam-latch is not designed like the original Springfield, the breech can sometimes open upon firing. Therefore, only blank ammunition should be fired in this weapon.

MANUAL OF ARMS

1. The piece is in the right hand; the barrel, nearly vertical, rests in the hollow of the shoulder, guard to the front; arm hanging nearly at its full length near the body. The thumb and forefinger embrace the guard; the remaining fingers closed together and grasp the stock just under the hammer, which rests on the little finger. This is the position of Carry Arms.



1. Squad 2. Load

2. Execute the first motion of About Face, the left knee slightly bent. At the same time, drop the piece into the left hand at the lower band, elbow against the body, muzzle at the height of the chin, butt against the hip.



Place the thumb on the hammer and bring to halfcock.



(Two) lower the barrel at an angle of about 25 degrees. Look toward the chamber, place the right thumb under the thumb-piece and open the breech,



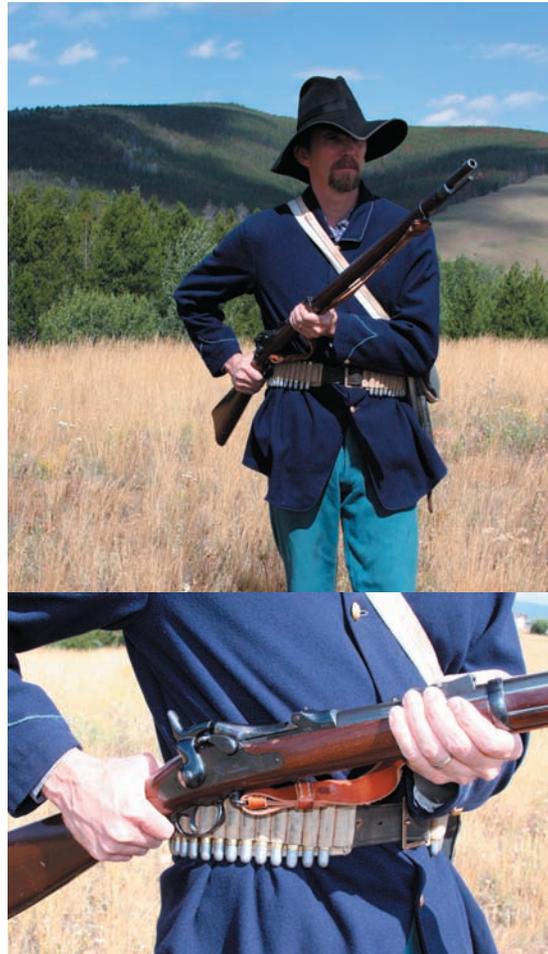
with the right hand take a cartridge from the cartridge box or belt, hold it between the first two fingers, the thumb on the head and place it in the chamber.



Draw the breech-block closed with the fingers of the right hand. Carry the right hand to the small of the stock.



(Three) Raise the muzzle to the height of the chin, the butt against the hip, fingers on the small of the stock behind the guard-bow. (Note: In closing the breech, do not hold the thumb-piece forward. Allow it to work on its own and to snap shut like a door. Holding it forward will negate the safety effect of the thumb-piece extension covering the firing pin during closing).



1. *Squad* 2. *Ready*

3. With the right hand, cock the piece and then grasp it at the small of the stock, taking care to keep the finger out of the trigger guard. All fingers should be wrapped around the small of the stock.



Aim

4. Raise the piece with both hands and support the butt firmly against the right shoulder with the left elbow down, the right elbow as high as the shoulder and the body inclined slightly forward. Incline the head upon the stock so that the right eye may quickly perceive the notch of the rear-sight, the front-sight, and the object aimed at; the left eye closed, the right thumb extended along the stock, the forefinger on the trigger. (The index finger is not placed upon the trigger until the butt is brought to the shoulder.)



1. Recover 2. Arms

At the command recover, withdraw the finger from the guard-bow. At the command arms, retake the position of Ready, look at the hammer and lower it to the Safety notch.

(The hammer should be lowered nearly to the firing pin and then drawn back to Safety.) Replace the fingers on the small of the stock. (Recover will normally be taken with unloaded arms for training purposes. Only in emergencies will it be done with loaded arms.)



Fire

5. Press the forefinger against the trigger; fire without deranging the aim or turning or lowering the head. If subsequent shots are to be fired, the order is immediately given to load.



Load

6. The piece is brought to the position described in the first motion of load. The fingers on the small of the stock, the hammer is brought to half-cock with the thumb. The second and third motions of load or repeated. When firing is to be done at will, the order is At Will, Commence Firing. Soldiers will strictly follow the Manual for Firing even though orders may not be given for the separate motions.



1. Cease 2. Firing

7. At this command, given immediately after a volley, the piece is brought to Recover (except that the hammer is left down).

1. Open 2. Chamber

8. Bring the hammer to half-cock, lower the muzzle as in Load and open the chamber. Replace the right hand on the small of the stock.



1. Close 2. Chamber

9. Draw the breech-block closed with the fingers of the right hand and resume the position of Recover. Lower the hammer to the safety notch.



MANUAL FOR FIRING THE .50 SPRINGFIELD RIFLE

(This piece is habitually carried on Half Cock. The .50/70 Springfields have only two tumbler positions. – Half and Full Cock.)

MANUAL OF ARMS

Squad Load

Handle Cartridge

(* Indicates an alteration from the original Upton Manual.)

Carry Arms

1. The piece in the right hand, the barrel nearly vertical and resting in the hollow of the shoulder; the guard to the front; the arm hanging nearly at its full length, near the body; the thumb and forefinger embracing the guard; the remaining fingers closed together and grasping the swell of the stock just under the cock which rests on the little finger.



*2. Make a half face to the right on the left heel; carry the hollow of the right foot three inches to the rear of the heel of the left, the feet at right angles, the left knee slightly bent; drop the piece into the left hand at the lower band, the thumb extended along the stock, the barrel sloping downward, elbow against the body, carry the right hand to the cartridge box.



3. Take a cartridge from the cartridge box with the thumb and first two fingers of the hand; place the thumb under the thumb-piece, holding the cartridge in the two forefingers, closed.



Charge Cartridge

*4. Raise the breech-block by pressing the thumb forward; place the cartridge in the bore with the thumb and two forefingers pressing it home with the thumb. With the fingers in front of the breech-block, close the breech-block and press down the thumb-piece. Carry the right hand to the small of the stock. Raise the muzzle to the height of the chin, the butt against the hip, fingers on the small of the stock behind the guard-bow. (Note: When closing the breech, do not hold the thumb-piece forward. Allow it to work on its own and to snap shut like a door.)



Squad Ready

*5. Place the right thumb on the head of the cock, the other fingers supported against the guard and the small of the stock. Cock and then seize the piece with the right hand at the small of the stock, the fingers outside and behind the guard.



Aim

6. Raise the piece with both hands and support the butt against the right shoulder, the left elbow down and the right as high as the shoulder. Incline the head upon the stock so that the right eye may quickly perceive the notch of the rear sight, the front sight, and the object aimed at with the left eye closed the right thumb extended along the stock, the forefinger on the trigger. (The index finger is not placed upon the trigger until the butt is placed upon the shoulder.)



To accustom the recruits to wait for the command “Fire”, when in the Position of Aim, the instructor will command.

Recover Arms

7. At the command Recover, withdraw the finger from the trigger. At the command Arms, , retake the position of Ready. The hammer should be carefully lowered nearly to the firing pin and then drawn back to the half-cock position.



Fire

*8. Press the forefinger against the trigger; fire without deranging the aim, lowering, turning the head and remain in this position. If subsequent shots are to be fired, the order is immediately given to load.



Load

*9. The piece is brought to the position of Load. The positions Handle-Cartridge and Charge-Cartridge are repeated.

When firing is to be done at will, the order is At Will – Commence Firing. Recruits will strictly follow the Manual for Firing even though orders may not be given for the separate motions.

Cease Firing

*10. At this command, given immediately after a volley, the piece is brought to a Recover (except that the cock is left down).

Open Chamber

*11. The recruits quit the piece with the right hand, bring the cock to half-cock, lower the muzzle as in Load, open the chamber and return the right hand to the small of the stock.



Close Chamber

*12. Draw the breech-block closed with the fingers of the right hand and press down the thumb piece. Resume the position of Recover.



MANUAL OF THE PISTOL

1. Draw 2. Pistol

1. At the command draw, unbutton the flap of the holster with the right hand and grasp the stock, the back of the hand to the body. At the command pistol, draw and raise the pistol. The hand holds the stock with the thumb and last three fingers, the forefinger over the guard, the guard to the front, barrel vertical, elbow near the body, the wrist as high as the right shoulder and six inches in front of it. This is the position of raise pistol.

When out of the holster, the pistol is habitually carried in the position of raise pistol.

To load and fire, the instructor command:

1. Squad 2. Load

2. Lower the pistol into the left hand, the barrel pointing to the left and front and downward at an angle of 45 degrees. The left index finger around the front frame, the thumb over the top of the frame. With the right hand, grasp the stock and half-cock the pistol. (Two) Open the chamber with the right thumb. If necessary, eject the cartridge cases, take a cartridge from the cartridge-box with the right hand and hold it near the chamber between the thumb and first two fingers. (Three) Place the cartridge in the chamber, pressing it home with the thumb. Turn the cylinder with the left thumb and continue to insert cartridges until five chambers are loaded. Rotate the cylinder one more notch so that an empty chamber appears at the gate. (Chambers on either side of it will be loaded.) Close the loading gate. Grasp the pistol with the right hand, index finger over the guard. Rotate it over to the right, keeping the muzzle pointed down. With the left hand, rotate the cylinder until the empty chamber is in the 11 o'clock position. With the right hand, raise the pistol at a 45 degree angle in front of the right shoulder, draw the hammer to full-cock with the thumb still on the hammer, release the trigger and lower the hammer on the empty chamber. Remove the finger from the trigger and place it over the guard.

1. *Squad* 2. *Ready*

3. Cock the pistol with the thumb of the right hand.

Aim

4. Lower the pistol to the front, the arm about $\frac{3}{4}$ extended, forefinger upon the trigger; close the left eye, and sight with the right.

Fire

5. Press the forefinger against the trigger, fire, and raise the pistol, elbow bent, to a 45 degree angle in the front of the right shoulder. For repeat shots, the pistol should be cocked in this position.

1. *Return* 2. *Pistol*

6. Drop the muzzle, insert the pistol in the holster, back of the hand to the body, button the flap, and drop the hand by the side.

PART V - MISFIRE PROCEDURES

Each park shall develop a written Misfire Plan to address the action necessary to render a firearm safe in the event of a Level I or Level II Misfire.

TYPES OF MISFIRES

A “Level I Misfire” is defined as a misfire that can be cleared on the demonstration area and the demonstration can continue.

A “Level II Misfire” is defined as a misfire that cannot be cleared at the demonstrations area without disrupting the demonstration. Specialized equipment is needed to render the firearm safe.

CAUSES OF MISFIRES

--Improperly cleaned firearm: If a firearm is not properly cleaned immediately after use, the residue in the barrel will harden, rust and corrosion will form.

--Faulty Ammunition: The main cause of misfires on

cartridge weapons is the primer failing to ignite the charge,

MISFIRE PROCEDURES

Springfield Rifle and Carbine

When a Level I misfire occurs:

1. Continue to hold the piece at the shoulder for ten seconds.
2. Bring the piece to “Recover.” (Keep the weapon pointed down-range at all times.)
3. Bring the hammer to “Full Cock” as in the Manual of Firing.
4. Take aim and press the trigger.
5. If the cartridge fails again, repeat steps 1 and 2.

If the weapon fails to fire after three attempts, clear the Level II misfire.

6. Bring the hammer to half-cock, then lower the muzzle as in the Manual.

7. Open the chamber and eject the failed cartridge.

Colt Revolver

Should a misfire occur:

1. Remain at position of aim for ten seconds.
2. Keep muzzle pointed downrange. Lower the piece to the position of Prime. Cock the pistol to rotate the cylinder to the next chamber. Aim and fire.

Note: Remember that you will have one or more loaded cartridges in the cylinder after the firing program is completed. Remove the failed cartridges and empty them according to the park's misfire plan at the conclusion of the demonstration.

PART VI - LABORATORY

RULES FOR HANDLOADING METALIC CARTRIDGES CALIBERS .45/70, .50/70, AND .45 COLT

1. No reloading device shall be utilized which requires either the case or the tool to be struck a blow. Bench-mounted presses and hand tools like the Lyman 310 are approved.
2. All hand loading is performed in a location set aside for that purpose alone.
3. No ball ammunition will be loaded. Blank rifle cartridges will contain 70 grains FFG black powder, while carbine blanks will be loaded with 55 grains FFG. Card wads of the proper caliber (enough to make approximately on-quarter inch thickness) should be seated, under pressure, over the powder. The bullet seating die should be adjusted to compress the powder charge about one-quarter of an inch.
4. Only standard Large Rifle Primers should be used for rifle and carbine blanks.
5. Revolver blanks (.45 Colt) should be loaded with 28 grains of FFG black powder with a card wad of approximately one-eighth inch thickness seated over the charge.
6. Only standard Large Pistol Primers should be used for revolver blanks.
7. Powder shall be measured using scales or bench-mounted measures designed for the purpose or by hand-held scoops of non-ferrous material and accurate to within 25/100 of a grain, average.
8. Always prime cases before charging them with powder. Never prime a charged case.
9. Check each primed case to see that the primer is seated flush with the cartridge head.
10. If more than one case is charged prior to wad seating, visually check each one to insure that all cases have been properly charged.
11. All loaded cartridges should be wiped clean and inspected for swelling or other defects. Any questionable rounds shall be tested for correct chambering in a weapon of the proper caliber.
12. All cases should be inspected for cracks prior to loading. Any cracked cases should be discarded.
13. Only trained and authorized personnel shall perform hand loading. No other persons shall be admitted to the loading facility.

14. After firing, wash all empty cases in hot, soapy water. Rinse and dry them in the sun or in an oven under low heat (200 degrees). The fired cases should be washed within 24 hours after firing—the sooner the better, otherwise they will corrode.

Table of Maximum loads

<u>19th Century Metallic Cartridge Small Arms</u>	<u>Caliber</u>	<u>Maximum Blank Load</u>
U. S. Springfield Rifle	.50	70 grains FFG
Sharps Carbine	.50	55 grains FFG
U. S. Springfield Rifle	.45	70 grains FFG
U. S. Springfield Carbine	.45	55 grains FFG
M1873 Colt Revolver	.45	28 grains FFG

Specifications For Springfield Breech-loaders

	<u>WEIGHT</u>	<u>LENGTH</u>	<u>CALIBER</u>	<u>PRACTICAL RANGE</u>
Model 1866 Rifle	10 lbs.	56 in.	.50/70	600 yds.
Model 1868 Rifle	9.25 lbs.	52 in.	.50/70	800 yds.
Model 1873 Rifle	8.4 lbs.	52 in.	.45/70	1000 yds.
Model 1873 Carbine	6.9 lbs.	41.3 in.	.45/55	600 yds.

Ammunition

<u>CALIBER</u>	<u>MUZZLE VELOCITY</u>	<u>PENETRATION*</u>	<u>RECOIL</u>	<u>BULLET WT.</u>
.50/70	1240 f.p.s.	7.2 in.	95 lbs.	450 gr.
.45/70	1350 f.p.s.	8.8 in.	174 lbs	405 gr.
.45/55	1100 f.p.s.	7.25 in.	155 lbs.**	405 gr.

*The penetration figures presented are in inches of white pine at 500 yards.

**The recoil of the carbine with the rifle cartridge is 182 lbs.

Rapidity Of Fire

Army tests showed that a practiced person could fire the Springfield breech loader at a rate of 12 to 13 times a minute, while a well-experience person could fire 23 shots per minute, while a well-experience person could fire 23 shots per minute. All tests required the person to load from the cartridge box. Using the muzzle-loader, three shots per minute was considered to be the maximum rate.

Specifications For Colt Revolver

	<u>Weight</u>	<u>Length</u>	<u>Caliber</u>	<u>Orig. Bullet wt.</u>	<u>Charge</u>
Model 1873	2.31 lbs.	12 ½ in.	.45	230 gr.	28 gr.

PART VII - SMALL ARMS DEMONSTRATION CHECKLIST

BEFORE

- () The piece has been inspected, inside and out. Bore is clean of foreign material.
- () The demonstrator approaches the demonstration area carrying the firearm in a safe and military fashion.
- () He is not encumbered with superfluous equipment.
- () Misfire equipment is in place at the demonstration area.
- () Visitors have a good field of vision of the demonstration.
- () The interpreter has a clear view of all the visitors and down range area.
- () Physical barriers between the visitors and the demonstration area are in place.
- () Conditions are not too dry or windy to risk a range fire from the muzzle blast.
- () First aid kit and emergency communications are available.

DURING

- () He is competent with the manual he is using.
- () There is sufficient additional people for interpretation and crowd control.
- () The demonstration area is safe for the size of the audience.
- () The firearm is always pointed in a safe direction.
- () At no time are there any parts of the demonstrator's body placed in a hazardous position in relation to the firearm.
- () In the event of a misfire or other unscheduled event the demonstrator reacts properly.

AFTER

- () The demonstrator maintains military bearing and leaves the area carrying the firearm safely and in a military fashion.
- () The demonstration area is policed for dropped cartridges, cartridge papers, etc.
- () Any remaining cartridges are returned to storage facility
- () The piece is cleaned, dried and oiled. The piece is returned to the storage facility.
- () Any accessories are accounted for.
- () Your overall impression is favorable.

BIBLIOGRAPY

Description and Rules for the Management of the Springfield Breech-Loading Rifle Musket.

Model 1866. Springfield, United States Armory, 1867. (Republished by Ray Riling Books, 1956)

Description and Rules for the Management of the Springfield Breech-Loading Rifle Musket.

Model 1868. Springfield, United States Armory, 1869. (Republished by Ray Riling Books, 1960)

Description and Rules for the Management of the Springfield Breech-Loading Rifle, Carbine, and

Army Revolvers. Caliber .45. Springfield, National Armory, 1874. (Republished by Ray Riling Books, 1960)

Cavalry Tactics, United States Army. New York, D. Appleton & Co., 1874.

Butler, David F. *United States Firearms – The First Century 1776-1875.*

Fuler, Claude E. *The Breech-Loader in the Service 1816-1917,* Norwal, Conn., N. Flayderman & Co., 1965.

Hammer, Kenneth M. *The Springfield Carbine on the Western Frontier.* Bellevue, Neb., Old Army Press, 1970

Stockley, Col. Philip M. *The Trapdoor Springfield in the Service*

Upton, Bvt. Maj.-Gen. Emory. *Infantry Tactics, Single and Double Rank.* New York, D. Appleton & Co., 1875.