In the "For whatever it's worth, if anything" category …

Maintaining a Military Musket

Cleanliness is next to reliability. Failure to keep a firelock clean - particularly directly after an event or range shooting - will degrade reliability in less than a New York minute.

Prior to shooting, I know my musket is clean and should therefore be reliable. The hammer steel (frizzen) face and pan cover, pan, flint edge, and touch hole are brightly clean. The entire lock and bore are clean and have a very light and sparse hint of oil, as a preservative. In the bbl (barrel) is left a jagged rod along with an oily patch. It is ready for duty service – ignition, detonation, firing – once the bbl oil preservative is swabbed out.

At an event, I may prime, load, and fire my Bess in succession as many as a dozen times. Not all firelocks can do this, and some can do far more good firings with naught a pan flash or lack of spark.

Know your firelock. The only way to understand its limits is through practical blank firing practice. This is NOT about firing live ball loads. Practice blank loads of 10 to 20 grains will get the job done, no need to waste good gun powder.

After a number of firings (whatever any firelock can offer reliably, be it a few or many), clean the hammer face and pan cover, pan, flint edge, and touch hole. Some firelocks will require this cleaning after only a few firings, some can go for a dozen or more firings without any cleaning. Some bbls, with event blank firing, will also require cleaning.

When the event or range practice firing has ended, as immediately as possible after the last shot is taken, it's time to begin "early maintenance". All that entails is wiping down the entire lock with an oily cloth, remove much of the black powder fouling residue, then run one oily patch down and out the bore, then run another oily patch down the bore and leave it in the barrel. That's it. This will make full cleaning go quickly and easily whence you are back at your homestead. This is particularly important for soldiers who will have a long trek back home, where during the trip firelock fouling residue begins to congeal and harden, be difficult to remove, and if left too long will begin to corrode metal.

Cleanliness is next to reliability, but also ease of maintenance.

A full and complete cleaning can be accomplished in as little as 15 minutes.

Cleaning Tools and Equipment That I Employ

Ballistol oil. I prefer this oil (a mineral oil blend that's non-toxic) because it's not only great for metal, it's good for wood and leather – it's water soluble and will mix with any residual water to prevent rusting. It's an early 20th century German military lubricant. I use both an aerosol spray and pump spritzer.

"Moose Milk" – This is a 1:6 mix of Ballistol:water. I keep it in a small flip top bottle and use it with a patched jag for barrel bore cleaning and fouling control.

100% cotton patch material – typically a 2" square or round of cut up clothing is fine as long as it's 100% cotton and not any synthetic blend.

A gunsmith quality screwdriver for removing stock lock screws. This is a hollow ground screwdriver that with a thin blade to fit 18th century type screws. A rather wide one will be required to remove the lock and the cock jaws (most cock jaws also include a hole where a large nail can be used to open and close the jaws without the need to use a screwdriver.

A ramrod with a brass jag that is commensurate in diameter for cleaning out the bore diameter of your musket. As a reenactor, all that matters is the loading and firing of blank cartridge powder, so the metal rod is only needed to proof an unloaded bbl. If out on a skirmish and your firelock's bbl requires fouling control, it will take a LOT of wasted time to remove the rod, screw in the cleaning patch worm, and work out the fouling (this is where saliva spit on the patch or tow helps to break up the residue).

Round toothpicks for plugging touch holes.

Paper toweling or cotton rags for wiping down and cleaning.

A pail or pot or bowl for lock cleaning.

A stiff bristle nylon toothbrush.

Access to plain tap water access. NO other "cleaning fluids" required.

My Cleaning Process

Remove the patched jag that was left in the barrel.

Remove the lock and remove its flint. Place the entire lock into a pail or pot or bowl of nothing more than tepid tap water and leave it there.

Plug the barrel touch hole with a round toothpick, stand the musket on its butt, pour tepid tap water down the barrel (NO soap or other "cleaning" liquids). The bbl can be fully filled, but 2/3rds to 3/4ths is fine so that bbl water overflow won't be dripped onto stock wood.

The lock is scrubbed with a stiff nylon toothbrush. Scrub and flush with clean tepid tap water (hot water isn't necessary or wanted). When the lock is clean, shake off excess water and then pat dry with a cloth or paper towel. Spray or wipe oil all over the lock. Use a cloth or paper towel to remove all excess oil - only a hint of oil remains.

Dump out the barrel water. With a proper size brass jag on a ramrod, a patch well soaked in Moose Milk is run down the bore 'til it touches the breech plug face. Twist the rod around a few times to clean the plug's face. Remove the patch. Employ a new oiled patch and do it again. Repeat for a total of 3 to 6 patches. Patches will NEVER come out perfectly clean. This is due to fouling getting into the molecules of the bbl metal. In comparison to the heavy dark black fouling of the first patch, the last patch will just appear as a light grayish color. The bore is clean – waste no more cleaning efforts.

Run down and out 2 to 3 dry patches. Run down and leave a jagged oily patch. Done.

Firelocks In General

Use the correct size knapped English black or French amber flint in the lock's cock jaws, commesurate in size with your musket's lock size.

Square up the flint's cutting edge to the hammer steel face.

Keep flint edges SHARP – know how to properly knap a flint edge.

Try sparking a flint as bevel up and bevel down and see which position hits the hammer steel face best and sparks the best.

Keep the lock innards clean and lightly lubed.

In my many decades of working on offshore built muskets with flat faced breech plugs, 99% of the time I've found the breech plug face has been partially drilled into when the touch hole had been drilled. This leaves a narrow trough in the breech face that will quickly and readily accumulate black powder residue that can block the heat of a pan flash from getting to the chamber powder upon firing. This can necessitate constant touch hole picking to clean it out, wasting time. The fix is to pull the bbl out of the stock, pull the breech plug and expand that narrow plug face channel 3 or 4 times wider than it is, using a Dremel tool with a coned stone bit.

100% of all offshore (and some onshore) built flintlock long guns will have breech plugs installed either dry or with some manner of oil. ANYTHING screwed into a bbl will quickly find its threads compromised by black powder residue that will harden and make removal almost impossible. The fix for this is to remove anything screwed into the bbl, coat its threads with anti-seize grease – oil alone will not protect threads - and reassemble. Fouling compromised threaded objects such as breech plugs can be removed by sending steam down the bbl and softening the black powder residue.

A good flint that makes a good strike on the hammer steel but produces little or no sparks typically means the hammer steel face needs re-hardening, which requires special knowledge, components, and tooling – take it to a gunsmith.

A good lock that is clean and properly set up will not only be reliable but will work well with coarse black powder as large grained as 1-1/2F, or even coarser, in both its pan and tube.

There is more, but the above is a good start for firelock maintenance and reliable firing.

Cheers,
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