

[illegible]

Their pamphlet is useful for those interested in muzzle loading weapons and is reprinted here (except for pictures) to help you understand black powder firearms and the safety precautions required when using them. Study this well. If you have further interest, please contact us for other black powder related books. Combat Arms can send them to you and you may order them by phone or over the BBS. The titles change from time to time, so a listing is not presented here.

=====

fêêêêêêêêêêÊ  
¼ ¼  
¼ CAUTION ¼  
¼ ¼  
ééééééééééê¹

Page 1

The term "black powder" refers to a TYPE of gun powder, NOT A COLOR! If in doubt, don't use it!

#### BLACK POWDER TYPES

- Fg            The coarsest type of black powder. It is to be used in big bore (.70 caliber and larger) fire-arms, scale model cannons and black powder shot-guns.
- FFg           For use in smooth bore muskets, in muzzle loading rifles over .45 caliber and in black powder shotguns.
- FFFg          The most commonly used powder. Use it in muzzle loading rifles over .45 caliber and in black powder shotguns.
- FFFFg        This is the finest granulation of black powder. It is used for priming flintlocks ONLY.

#### PATCHING

Use only linen or 100 % cotton for shooting patches. The fabric you use should have a hard finish and be tightly woven, between .007" and .020" thick.

#### -Recommended Precut Patch Sizes-

Caliber	Patch Diameter
---------	----------------

.45	1"
.50	1 1/8"
.54	1 1/4"

All of your patches should be lubricated before loading. Use a clean burning grease or commercial patch lube such as Hoppe's 9 Plus, Hodgdon's Spit Patch, or saliva.

#### BALL OR BULLET?

The patched round ball is thought to be the most accurate bullet for use in rifled, single shot muzzle loading firearms. If your rifle's manufacturer recommends a Minie-ball or conical type bullet, by all means, try it.

Be sure to use only pure lead in casting any type of bullets for use in muzzle loaders. Plumber's lead is good. Wheel weights are too hard. Always use a lubricated cloth patch when using a round ball. Always load round ball with the sprue end up (the sprue is the flat place on the cast round ball).

#### IGNITION SYSTEMS

The two most common forms of ignition in contemporary muzzle loaders are flintlock and percussion. In the flintlock system, a piece of flint strikes a hardened piece of steel (the frizzen), causing a shower of sparks, which in turn ignites a small quantity of powder in the lock pan. This ignites the main charge in the barrel and fires the gun.

In the percussion system, the priming charge is replaced by the percussion cap. This cap is placed on the nipple, or cone. When struck by the hammer, it produces a small, hot flame which ignites the main powder charge. Of the two systems, the percussion cap system (also called a "caplock system") is the least complicated and the least susceptible to the effects of

dampness.

Check the action of your firearm's hammer group (called "locks"), especially in muzzle loading shotguns. If performance is doubtful, take it to a gunsmith who knows muzzle loading locks. Poor locks are a decided menace to shooters and spectators alike.

#### LOADING PROCEDURE FOR RIFLE AND SINGLE SHOT PISTOL

1. Check to be sure the firearm is empty and unprimed.
2. Pull the hammer back to the half-cock position.
3. Run a dry patch through the barrel to remove any remaining oil.
4. When the shooting line is clear to handle your firearms, place a percussion cap onto the nipple of the caplock weapon and, with no powder or ball in the firearm, fire it downrange. This dries the breech. On flintlock firearms, place priming powder in the flashpan (again, with no powder or bullet in the barrel) and fire the gun downrange to dry the breech of any moisture or oil residue.
5. If using a rifle, put the butt of the rifle on the ground between your feet, with the muzzle pointing away from you.
6. Measure a charge of powder, level full without jarring the powder measure.
7. Pour the measured charge into the barrel. Tap the side

of the barrel with your hand to settle the powder into the breech.

8. Center a lubricated patch on the muzzle.
9. Place a round ball on the patch, with the sprue up.
10. Drive the patched ball into the barrel using a short starter (bullet starter).
11. Using the ramrod, press the ball and patch all the way down the barrel against the powder charge. Seat them firmly with even pressure.
12. Remove the ramrod.
13. Cap or prime with powder.
14. Bring the hammer to the full-cock position.
15. Aim and fire.

#### DETERMINING POWDER CHARGES

Charge Tables were intentionally omitted from this document because of the many variances to be found among arms available in today's market. Here we again urge you to follow the manufacturer's suggestions. Should you seek advice from a reputable dealer or Muzzle loading expert, be sure to have your firearm with you. He will want to see the gun before advising you. Greater safety with all firearms is a part of the National Muzzle Loading Rifle Association's (N.M.L.R.A.) Platform. Therefore, assume nothing; follow directions concerning powder charges as you become more familiar with your firearm. Remember, SAFETY ALWAYS. In any

Muzzle Loading firearm MODERATE LOADS ARE MORE ACCURATE.

LOADING PROCEDURE FOR MUZZLE LOADING SHOTGUNS

1. Check to be sure the shotgun is empty and unprimed.
2. Pull the hammer back to the half-cock position.
3. Run a dry patch through the barrel to remove any remaining oil.
4. When the shooting line is clear to handle your fire-arms, place a percussion cap onto the nipple of caplock weapon and, with no powder or ball in the firearm, fire it downrange. This dries the breech. On flintlock shotguns, place priming powder in the flashpan (again, with no powder or bullet in the barrel) and fire the gun downrange to dry the breech of any moisture or oil residue.
5. Place the butt of your shotgun on the ground between your feet, with the muzzle pointing away from you.
6. Measure a charge of powder, level full without jarring the powder measure.
7. Pour the measured charge into the barrel. Tap the side of the barrel with your hand to settle the powder into the breech.
8. Place a wad over the powder charge, followed by a wet fiber wad. The fiber wad must be moist to scrub, lubricate and clean the bore, thus preventing barrel fouling. Seat each wad firmly.

#### Muzzle>Loading\_2004.txt

9. Pour a measured shot load into the barrel. Equal powder and shot charges by volume work best.
10. Place the over-shot wad into the barrel and seat firmly with the ramrod - don't pound the wad down.
11. Remove the ramrod.
12. Cap or prime with powder.
13. Pull the hammer(s) to the full-cock position.
14. Aim and Fire.

After firing one or both barrels of your shotgun, make it a habit to always put the hammers into the half-cock position to lessen the chance of an accidental discharge. If reloading one barrel while other barrel is still loaded, REMOVE THE CAP from the nipple of the loaded barrel to prevent an accidental discharge of that barrel.

Shooting glasses should always be worn when shooting firearms, especially muzzle loading firearms, to protect your eyes in case of an accidental discharge or from a hot ember or piece of cap. Remember, SAFETY ALWAYS.

#### LOADING PROCEDURE FOR THE MUZZLE LOADING REVOLVER

1. Make sure that the revolver is empty and unprimed.
2. Run a dry patch through the barrel and cylinder to remove any remaining oil.

3. When the shooting line is clear to handle your fire-arms, fire a percussion cap in each chamber WITHOUT powder or bullets in the revolver to make sure every nipple is clear of oil or powder fouling.
4. Pour measured powder into chamber.
5. Seat your ball (.001" to .002" over the cylinder bore diameter) firmly down on powder. Try to apply same pressure in loading each chamber. That even pressure will yield consistent shots.
6. When all of the chambers are loaded, place grease over the top of each ball. Use commercial lubes, Crisco, or similar grease.
7. Cap each chamber nipple with a tight fitting cap. Choose your caps wisely and make sure they fit well (almost too tight) and that they break up uniformly and completely when fired rather than merely enlarging.
8. Carefully aim and fire.

As an alternative to placing grease over the end of each cylinder chamber, you may wish to use a greased or waxed felt wad of approximately 1/8" thickness. This will go on top of the powder charge, under the ball. Some competitive shooters will use a filler of cornmeal, Cream of Wheat, or such (whichever shoots best) on top of the small powder charge. This filler brings the ball up flush with the end of the cylinder chamber and seems to produce better accuracy than having the ball seated farther down in the chamber. Grease is still required on top of the ball.

#### CLEANING

Hot, soapy water is excellent for cleaning your muzzle loader. The commercial solvents are good too. Scrub the bore until the patches come out clean and then dry and oil. Remove the lock and carefully clean and oil all fouled surfaces. Pipe cleaners or cotton swabs are good for this. Don't forget to do the nipple area on caplocks or the vents on flintlocks.

#### HINTS AND CAUTIONS

1. Treat every gun as if it were loaded. NEVER point it at anything you don't intend to shoot. NEVER handle a firearm that you are not familiar with until properly instructed by an expert. Remember, SAFETY ALWAYS.
2. NEVER pour powder directly from a horn or flask into a gun - ALWAYS use separate measurers.
3. Treat a misfire or failure to fire with extreme care, ESPECIALLY with flintlocks. Keep the gun pointed down range and wait one (1) full minute before repriming.
4. Carry your tools on the hunt. (Ball puller, nipple wrench, screwdriver, etc.) It may save the whole day.
5. If you are shooting a caplock and you ram home a patched ball without powder, pull the nipple and you can put enough (priming) powder behind the ball to clear the barrel (fire it in a safe direction). If you are shooting a flintlock and do the same thing, use the ball puller. With a percussion shotgun, clear the load as you would a percussion rifle. With a flintlock shotgun, however, clear the gun by pulling the load out

using a worm tool.

6. NEVER, BUT NEVER, drink alcoholic beverages or smoke around black powder or Pyrodex powders.
7. NEVER, BUT NEVER, use drugs in any form, whether they be stimulants or depressants and then attempt to handle firearms. Blurred vision, loss of concentration, losing track of time, loss of desire to improve and extreme agitation are just some of the debilitating effects of drugs to a shooter's ability, health and safety.
8. A little butcher's wax on the wood around the lock area will help protect it against burning from your caps or pan flash.
9. Drop your ramrod down the empty barrel of your rifle, shotgun, or single shot pistol and mark it at the muzzle. Now you can always gauge if the gun is loaded, or if the barrel is obstructed.