

Hunter Development Program

Workshop Lesson Guide

Workshop Title:

Muzzleloading Rifle

Workshop Objective:

Participants will demonstrate the ability to use safe and proper procedures when transporting, loading firing and cleaning a muzzleloading rifle.

Topic	Time	Technical Information to cover	Suggested Activities
Firearm Safety Review	2 min	Safety Rules for Muzzleloaders	Instructor lead, group discussion
	3 min	Workshop range rules	Explain range rules that will govern activities during the workshop
Know your firearm	2 min	Types of Muzzleloaders	Demonstration with training firearm
	3 min	Parts of a Muzzleloading Rifle	Point out different locations for safeties, special features that are possible or unique to manufacturers.
Know your ammunition	3 min	Different Types of Powders	Have Examples of both synthetic and black powder
	2 min	Caliber, bullet weight, type and range	Have examples of different types of projectiles used in Muzzleloaders
Transporting and carrying your firearm	2 min	Safe methods of transporting firearms in various vehicles and in the field	Demonstrate and discuss
Backstops and other precautions	3 min	How to select a safe shooting venues	Describe the requirements that are necessary to conduct safe rifle shooting activities with consideration given to bullet containment, ricochets, noise and lead exposure
Firing a Muzzleloader	2 min	Matching ammunition to the firearm	Show proper projectile selection
	3 min	Mechanics of loading and unloading	Demonstrate proper loading techniques for muzzleloaders (use HE Tools 2011 if possible)
	5 min	Mechanics of shooting	Explain, demonstrate, discuss eye dominance, shooting positions, breath and trigger control

Topic	Time	Technical Information to cover	Suggested Activities
Sighting in	15 min	How to sight in a rifle	Use HE Tools 2011 for animations that explain the types of rifle sights and the sight picture. Explain the process of sighting in and making adjustments. Have participants sight in their rifle.
	10 min	Live fire	Set reactive targets at various known distances and allow participants to shoot using their sighted-in rifles from the position of their choice.
Cleaning a Muzzleloader	10 min	Process of Cleaning a Muzzleloader	Demonstrate field stripping and cleaning

HE Field Day Manual : Muzzleloading Rifle

1. Introduction

2. Firearm Safety Review

General Firearm Safety

Firearm Safety Specific to Muzzleloading Rifles

Safe Transport and Field Carry

Safe Shooting Venues

Workshop Range Rules

3. Know Your Firearm

Types of Muzzleloaders

Parts of a Muzzleloading Rifle

4. Know Your Ammunition

Types of Powders

Types of Bullets

- Caliber
- Weight
- Configuration
- Range

5. Firing a Muzzleloader

Selecting Correct Ammunition and Powder

Mechanics of Loading and Unloading

Mechanics of Shooting

Sighting In

6. Cleaning a Muzzleloader

1. Introduction

- A. Opening Statement
- B. Introduction of Instructors
- C. Purpose of the Course – to provide instruction to new shooters on how to safely and correctly handle a muzzleloading rifle at home, on the range, and in the field.

2. Firearm Safety Review

- A. Firearm Safety – Discuss the 10 rules of firearm safety and provide examples for new shooters.

1. Always point the muzzle in a safe direction.
2. Treat every firearm as though it were loaded.
3. Be sure of your target and what is in front of and beyond it.
4. Keep your finger off the trigger until you are ready to shoot.
5. Make sure your firearm is safe to operate and you have the correct ammunition.
6. Never shoot at a hard surface or water.
7. Do not run, jump or climb with a loaded firearm.
8. Unload firearms when not in use
9. Firearms and ammunition should be stored separately and safely.
10. Avoid alcohol, prescription, over-the-counter, and other drugs before and during shooting.

- B. Firearm Safety Specific to Muzzleloading Rifles – Muzzleloaders take more knowledge and skill to operate than modern firearms. Several additional rules must be followed to ensure safe operation.

1. Do not lean over, stand in front of or blow down the muzzle.
2. Use only black powder or a safe substitute.

3. Do not prime or cap a muzzleloader until ready to fire.
4. Always wear shooting glasses and ear protection. A long-sleeve shirt is also advisable.
5. Never smoke while shooting, loading or near a powder horn or flask.
6. Do not load from a horn, flask or other container. Use a container that has a calibrated powder measure.
7. Load only one charge at a time.
8. Unload a muzzleloader before bringing it into your home, camp or vehicle.
9. Stay with a charged muzzleloader at all times.

C. Safe Transport and Field Carries – Explain and demonstrate the proper method of transporting a muzzleloading firearm, supplies and equipment in a vehicle. Demonstrate the different carry methods and provide examples of when to use each.

1. Sling Carry – Good for long walks in open country, not recommend for thick brush.
2. Trail Carry – Do not use when walking behind someone or through snow or brush
3. Cradle Carry – Comfortable and reduces arm fatigue
4. Elbow or Side Carry – Comfortable, but least amount of muzzle control; not recommend when walking behind someone or through snow or brush.
5. Shoulder Carry – Good for walking beside or behind someone, do not use if someone is behind you.
6. Two-Handed or Ready Carry – Provides best control

D. Safe Shooting Venues – Remind students of safety rule #3 (Be sure of your target, and what is in front of and beyond it) as well as rule #6 (never shoot at a hard surface or water) and how they especially apply to rifle shooting, as shots fired from a rifle can travel further than intended, and that shooting at a hard surface or water can

cause ricochets. Remind them to always use a safe backstop and to shoot in a safe direction where no one or nothing will be accidentally hit.

E. Workshop Range Rules – Follow muzzleloader procedures found in the appendix to the letter.

3. Know your Firearm

A. Types of Muzzleloaders – Use training firearms and HE TOOLS program to illustrate the differences between the types of muzzleloading firearms.

- Flintlock –
- Matchlock –
- Percussion Cap –
- Wheel Lock –
- In-Line –

B. Parts of a Muzzleloading Rifle – Use training firearms and HE TOOLS program to illustrate the parts of muzzleloading firearms.

- Stock
- Butt Plate or Recoil Pad (on in-line models)
- Patch Box
- Action will or may include: trigger, (set trigger on some rifles), lock plate, cock, striker, flint, pyrite, slow match or cap, frizzen, pan, pan or breech cover, touch hole or nipple. Parts depend on the type of muzzleloading firearm being used.
- Front and rear sites
- Barrel
- Ramrod

4. Know Your Ammunition

A. Black Powder and Black Powder Substitutes – Black powder is made of potassium nitrate, sulfur and charcoal. It comes in four sizes or granulation: Fg (coarse), FFg (medium), FFFg (fine) and FFFFg (extra-fine). Black powder is the only type of powder that should be used in muzzleloaders. However synthetic substitutes, such as Pyrodex and Clear Shot can be used in equal amounts to black powder, but loading may vary. DO NOT use modern-day smokeless powders in black powder firearms.

B. Bullet Types

- Bullet Weight – Will depend on the type selected for use
- Bullet Configuration – round, conical, sabot or belted
- Caliber or Size – Round Balls-use balls sized .010 under bore diameter, all others-use bore diameter
- Effective Range – up to 300 yds.

5. Firing a Muzzleloader

A. Selecting Correct Ammunition and Powder – Use synthetic powders to simplify cleaning

B. Mechanics of Loading and Unloading - See Handout #1 for loading instructions. Unload a muzzleloader by discharging it into a suitable backstop or by using a compressed air device.

C. Mechanics of Shooting

1. Breath and Trigger Control – Explain and demonstrate breath and trigger control (squeezing instead of pulling) and explain how each aids in accuracy.

2. Sight In Procedure – Explain the procedure for sighting in a rifle (3 shots at a time, adjusting the sights until all shots are hitting the bull's eye). Remind participants that bullets do not travel in straight lines, but in arcs; this is an important consideration for taking shots that are shorter than the distance the rifle was sighted in at, as well as distances greater than what the rifle was sighted in at.

If a rifle is sighted in at 100 yards, a shot at a target 50 yards away will hit slightly high of the bull's eye, and a shot taken at a target 150 yards away will hit just below the bull's eye.

3. Shooting Positions_– Explain and demonstrate the four rifle shooting positions; remind participants that when hunting they should always shoot from the most stable position possible. Explain to participants that muscles will easily fatigue, affecting the accuracy of a shot, and that the four positions rely on bone structure for support instead of muscles.

1. Standing
2. Sitting
3. Kneeling
4. Prone

6. Cleaning Procedure

Firing a muzzleloader leaves a corrosive residue (called fouling) inside the barrel that causes pitting, reduces accuracy and will make loading difficult. To avoid fouling, swab the barrel with a moist patch between each shot. The patches or cleaning rags should be made of cotton or approved synthetic material and be the proper size. Thoroughly clean a muzzleloader after each shooting session. For cleaning muzzleloaders while using synthetic black powder, use cleaning solvents such as; Birchwood Casey Powder Blaster or Balistol. Clean the gun's lock



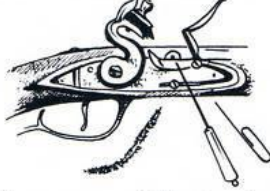
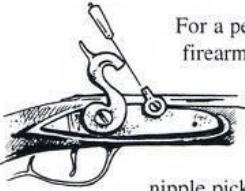
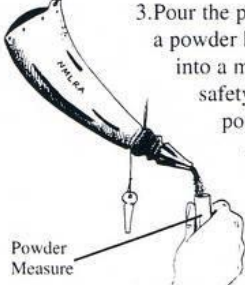
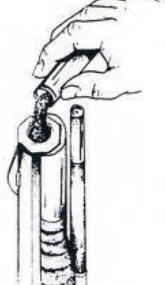


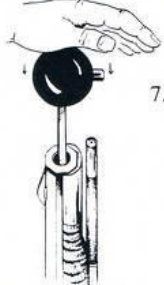

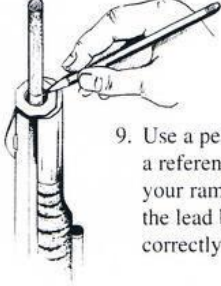
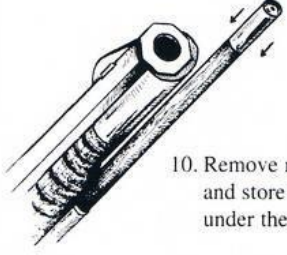
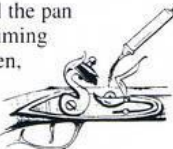




periodically by removing and using a brush and hot water to scrub both sides of the lock. Dry the lock completely, lightly oil it and reinstall.

7. Live Fire Suggestions

While not required, these suggestions are provided to help reinforce the material covered in this lesson plan.

- A. If providing rifles for new shooters to use for a live fire class, provide rifles that have less than 15 ft-lbs of recoil (kick); this will make shooting a rifle for a new shooter much more enjoyable and allow them the chance to shoot a rifle that they can reasonably handle. Use the amount of powder equal to the bore diameter. (ex. 50 grains synthetic powder for .50 cal Muzzleloader)
- B. Offer participants the chance to shoot silhouette targets to illustrate shooting at greater distances (and shooting within ability).
- C. While shooting from a bench is always preferred for sighting in a rifle and for new shooters, if space and facilities allow, offer participants the chance to shoot from all four rifle shooting positions, as well as the chance to use shooting sticks to simulate hunting conditions in the field.
- D. Provide targets that are NOT in the shape of people, including “tombstone” and “zombie” targets; the focus of the Family Day at the Range Program is on imparting safe and accurate shooting skills and knowledge to new shooters, not self-defense or video game type shooting; there should be no reason to provide targets that resemble people. Bull’s eye and game animal targets are acceptable.

How to Load a Muzzleloader

 <p>1. Make sure the bore is dry by using a cleaning jag and a clean, dry patch.</p>	 <p>2. With the hammer down for safety, clean the frizzen, pan, and flint (watch out for the sharp edges on the flint). Be sure the flash hole is clear of obstruction by inserting a vent pick, paper clip, or pipe cleaner. Load a flintlock with the frizzen and hammer all the way forward.</p>	
 <p>For a percussion firearm, inspect the nipple for obstruction by using a nipple pick or paper clip. With an unloaded firearm snap a cap or two. Always point the muzzle in a safe direction.</p>	 <p>3. Pour the powder from a powder horn or flask into a measure. For safety, never pour powder directly into the bore from a horn or flask.</p>	 <p>4. Pour the measured powder charge down the bore. Avoid placing hands or face directly over the muzzle.</p>
 <p>5. Center a lubricated or moistened patch over the bore and place the lead ball onto the patch.</p>	 <p>6. With the short end of a short starter, set the patched ball into the bore. Use the palm of your hand.</p>	 <p>7. Push the ball deeper with the long end of the short starter by using the palm of your hand.</p>
 <p>8. Firmly seat the load against the powder charge by using short strokes with your ramrod. NEVER fire a muzzleloader if the ball is not firmly seated on the powder charge.</p>	 <p>9. Use a pencil to make a reference mark on your ramrod when the lead ball is correctly loaded.</p>	 <p>10. Remove ramrod and store it under the barrel.</p>
<p>11. For a flintlock, fill the pan 1/4 to 1/3 full of priming powder, close frizzen, and place hammer into the half-cock position until ready to fire. When ready to shoot, bring the hammer into the full cock position.</p>  	 <p>For a percussion-type muzzleloader, place a cap firmly onto the nipple and bring the hammer into the half-cock position. When ready to shoot, place the hammer into full cock.</p>	 <p>12. Be certain of your target and what lies beyond, aim, and fire. Run a damp cleaning patch down the bore and begin the process again (except for step #9).</p> 

Hunter Development Program

Workshop Lesson Guide

Workshop Title:

Hunter Safety Trail

Workshop Objective:

Participants will demonstrate knowledge of how to safely carry firearms, cross obstacles and choose safe zones of fire in the outdoors. (Activities will vary depending on location, terrain and equipment available.)

Topic	Time	Technical Information to cover	Suggested Activities
Types of firearm carry	10 min	Six types of safe firearm carries (sling, trail, cradle, elbow/side, shoulder, two-hand/ready)	Appropriate use of each firearm carry and practice
Crossing obstacles	10 min	How to safely cross a fence, ditch, etc.	Set up makeshift fence and practice crossing alone and w/ another hunter
Zones of Fire	10 min	Zones of fire in a group, recognizing other hunters' zones of fire, shoot/don't shoot scenarios	Set up 45-degree zones for (3) hunters and practice identifying correct zones of fire. (Live fire after review if possible).
Ethics and bag limits	5 min	Importance of taking ethical shots/fair chase and knowing state game laws	Present situations with unethical shots and/or knowledge of game limits apply
Safety trail challenge	25 min	Shoot/Don't Shoot scenarios w/ group discussion	Set up trail shooting scenarios and have participants explain why or why not shot should/ should not be taken. (Ex. - Doe behind a buck, duck on water, dove on powerline/tree limb, hen in close proximity to strutting turkey, home/road behind game animal, etc.)

HE Field Day Manual : Hunter Safety Trail

1. Introduction

2. Safe Firearm Carries

Application of the six safe firearm carries

3. Crossing Obstacles

Safely navigating obstacles when hunting alone or with a partner

4. Zones of Fire

Recognizing other hunters' zones-of-fire

5. Hunter Ethics

Demonstrating responsible and ethical behavior in hunting activities

6. Safety Trail Challenge Scenarios

Sample shoot/don't shoot scenarios

Class Time: 1 hour

1. Introduction

A. Opening Statement

B. Introduction of Instructors

C. Purpose of the Course – to provide instruction on how to exercise rational, legal, ethical and safe decisions while involved in hunting activities.

2. Safe Firearm Carries

There are six ways to carry a firearm safely while hunting and still have it ready for quick action. Regardless of the method selected, there are three rules that should always be applied to each carry:

- The muzzle is always pointed in a safe direction and kept under control.
- The safety will always remain “on” until immediately before you are ready to shoot.
- Your finger will remain outside the trigger guard.

Trail Carry – Using the trail carry, the firearm is supported by one hand underneath the action while the stock of the firearm is cradled by the upper-arm of the supporting hand. The muzzle is pointed toward the ground in front of the hunter. This carry leaves a hand free for balance and **SHOULD NOT** be used while walking behind someone.

Sling Carry – In the sling carry, the firearm is supported by a sling that is worn over the shoulder of the hunter with the muzzle pointed toward the sky. The hunter should keep a hand on the sling while walking to prevent the sling from sliding off of the shoulder should the hunter trip.

Elbow or Side Carry – This carry closely resembles the Trail Carry with the muzzle pointed toward the ground in front of the hunter. The firearm is supported underneath the action in the crook of the elbow and upper-arm. This carry style offers the least muzzle control and **SHOULD NOT** be used when walking behind someone.

Two-Handed or “Ready” Carry – This carry offers the most control of the firearm and allows it to be brought into action quickly. In this carry, the muzzle is pointed toward the sky, to the left or right side of the hunter, and is supported by one hand on the forearm and another on the grip of the stock.

Cradle Carry – Comfortable and secure; reduces arm fatigue. In this carry, the firearm is supported under the action by the “off” hand while the forearm is cradled in the crook of the elbow and upper-arm. The muzzle is pointed toward the sky to the right or left of the hunter.

Shoulder Carry – This carry is a good choice in waist-high brush. It **SHOULD NOT** be used if someone is following you. The muzzle is pointed toward the sky, behind the hunter and is supported by the hunter’s shoulder at the firearm’s forearm and controlled at the grip of the stock by the hunter’s hand.

Selecting the Right Carry – Carry selection will be based on the hunter’s ability to control the muzzle of the firearm and the terrain that is to be covered. Particular attention to proper carry selection must be used when hunting with others. The basic rule

to follow in this situation is NEVER BE IN A POSITION WHERE A MUZZLE IS POINTING AT ANOTHER HUNTER OR AT YOU.

3. Crossing Obstacles

In any hunting situation there will be obstacles that must be navigated safely – whether that is a fence, downed tree, stream or severe elevation change. Extra care must be observed, when hunting alone or with a partner, to ensure that the obstacle is crossed safely.

- Always unload firearms before crossing fences or other obstacles or before negotiating rough terrain.
- Place the unloaded firearm on the other side of the fence or obstacle to be crossed with the muzzle pointing away from you and your crossing point.
- Cross wire fences close to a post to prevent damage to the wire.
- If two people are crossing, allow one hunter to hold the unloaded firearm while the other crosses the fence or obstacle. After crossing, pass the unloaded firearms to the other hunter while the second hunter crosses.
- If hunting alone, always remember to pull a firearm toward you by the butt- never the muzzle.

4. Safe Zones of Fire

The area in which a hunter may shoot safely is referred to as a zone-of-fire. Before setting off in a group, hunters should agree on the zone-of-fire each person will cover. For safety purposes, it is best to have no more than three hunters in a group. Hunters should be spaced 25 to 40 yards apart and always in sight of one another. Each hunter will have a zone-of-fire approximately 45 degrees in front of them. Hunters should not swing or fire into any area that is not included in their zone-of-fire. In the event that an animal turns and flies or runs

back across the line of hunters, it is best if all the hunters in the group hold their swings and do not fire.

5. Hunter Ethics

Hunting laws are put into place to achieve multiple goals. Chief among the goals is to conserve wildlife so that future generations will have the opportunity to enjoy safely. To achieve this goal, game laws are enacted to:

- Establish hunting seasons that limit harvesting and protect nesting and mating seasons.
- Limit hunting methods and equipment.
- Set “bag” limits.
- Establish check stations and game tag requirements.
- Establish safety guidelines.
- Offer equal opportunity for hunters.
- Ensure funding for wildlife programs through license fees.
- Define the rules of fair chase.

Hunting Laws define and govern hunting practices. **Ethics** define and govern a hunter’s behavior and the respect that the hunter shows toward natural resources, other hunters, landowners and non-hunters.

Aldo Leopold’s definition of ethics is: “Ethical behavior is doing the right thing when no one else is looking – even when doing the wrong thing is legal.”

6. Safety Trail Challenge Scenario Examples

Scenario 1.

A climbing tree stand has been attached to a tree for use. Should it be used as it is? Back up your decision.

Answer: No. (1) It is missing the tether between the seat and platform.

(2) The platform is fixed at an improper angle for use.

Scenario 2.

During archery deer season, a deer comes into range and gives a head on presentation to a hunter. Should the shot be taken?

Answer: No, there is too much bone structure in front of the vital organs.

Scenario 3.

Two items used for tree stand safety equipment will be laid out for identification and description for use.

Answer: (1) Full Body Harness/Fall Arrest System – to support hunter in the event of a fall.

(2) Lifeline – to ensure constant contact during ascent and descent.

Scenario 4.

A 3-D archery target will be displayed with a camouflaged hat visible in the vicinity. Competitor will be asked shoot/don't shoot and to explain their response.

Answer: No, there may be another hunter in the area as evidenced by the presence of the hat.

Scenario 5.

Fence crossing situation when hunting alone; competitor will be asked to explain or demonstrate the correct procedure.

Answer: Competitor should (1) unload the firearm, (2) open the action, (3) lay the gun on the ground on the other side of the fence before crossing.