

Firearms 101



Shotgun Course and Rifle Muzzleloader Course have been combined into one all inclusive Firearms Course.

Firearms Course now covers

- Shotgun shooting
- Rifle shooting
- Airguns
- Muzzleloaders

Live Fire will only be done with the shotgun.

New Course Completion Cards say "Firearm"

- Will allow you to buy both a firearms hunting license and a rifle permit

Three Primary Safety Rules

Treat Every Firearm as if it were Loaded



Treat every firearm as if it were loaded

- Never accept a firearm from someone until they have proven it is unloaded
- Safety is always ON. When does it come off? – When firearm is mounted on your shoulder and you know your target and what is beyond.
- Do I use the scope as binoculars? No

Three Primary Safety Rules

Keep Muzzle in a Safe Direction



Keep Muzzle pointed in a safe direction

- What is a safe direction?
A safe direction is always changing.
- Need to be very aware of your surroundings anytime you have a firearm in your hand.
- Two Hand Ready Position gives you best control of the muzzle

Three Primary Safety Rules

Be Sure of Your Target and Behind



Know your target and beyond

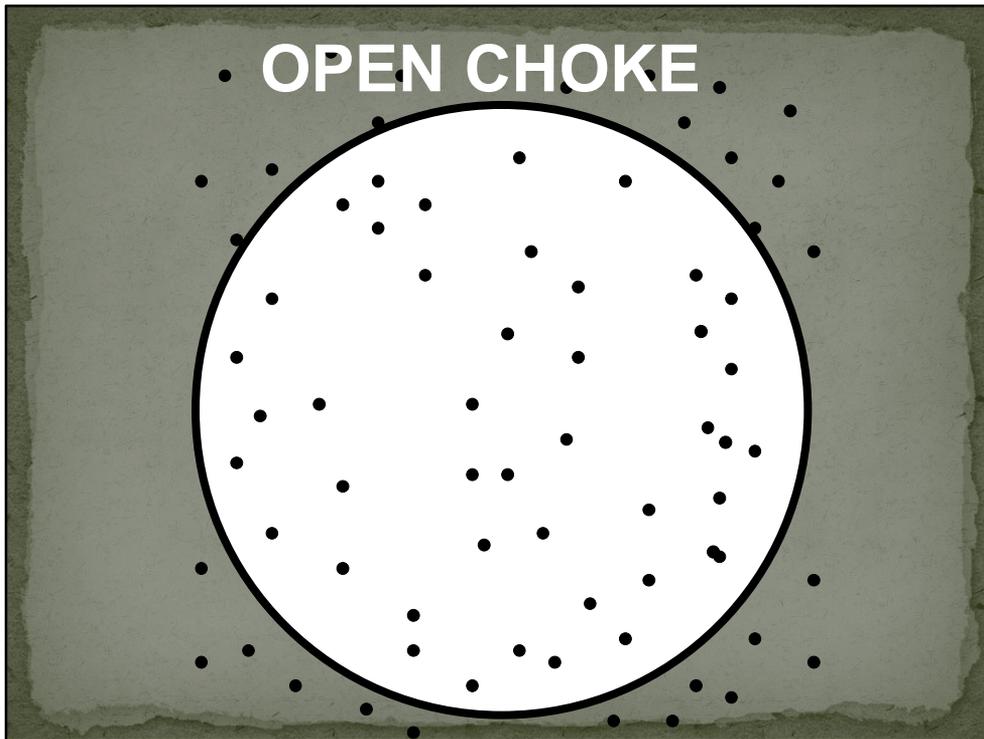
- .22 ammo = 1 mile
- Shotgun slug = about 3600 ft
- 00 Buckshot = about 1800 ft
- Fine shot 500 – 900 ft
- Distances above are with firearm pointed at optimum angle in the air. Projectile can ricochet even further
- Should never shoot at a deer on crest of hill or bear in a tree.
- Puts in perspective just how far a shotgun slug can go.
- 450 ft Safety zone is not a ballistic cloak, but just a small buffer between us hunters and those that don't hunt.

How Far Can Your Slug Shoot?

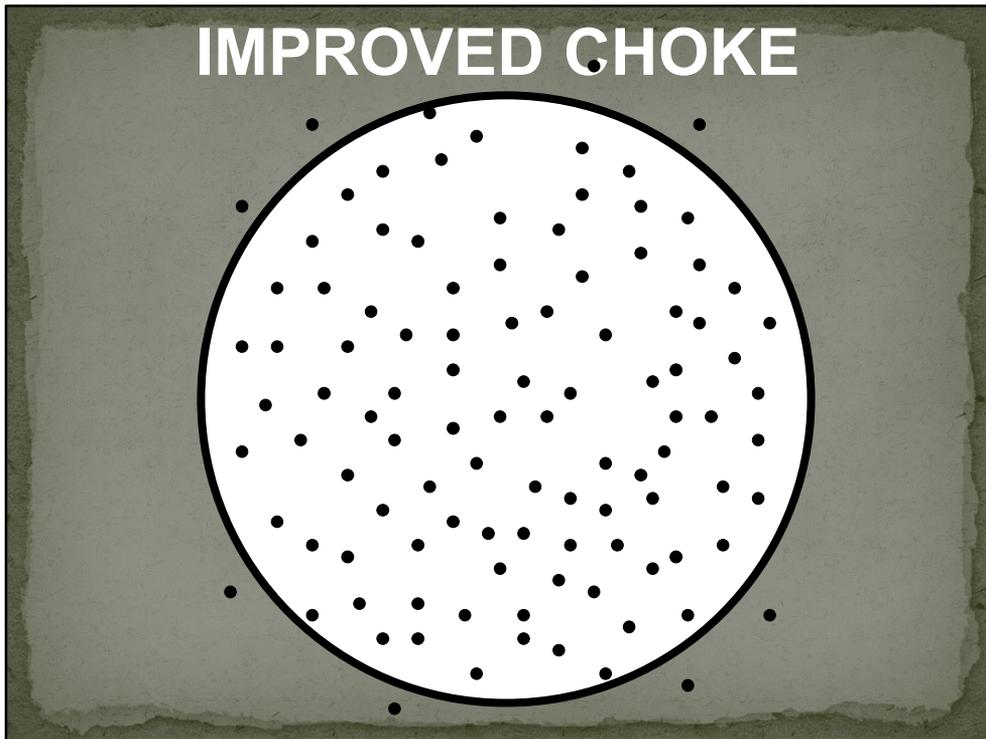


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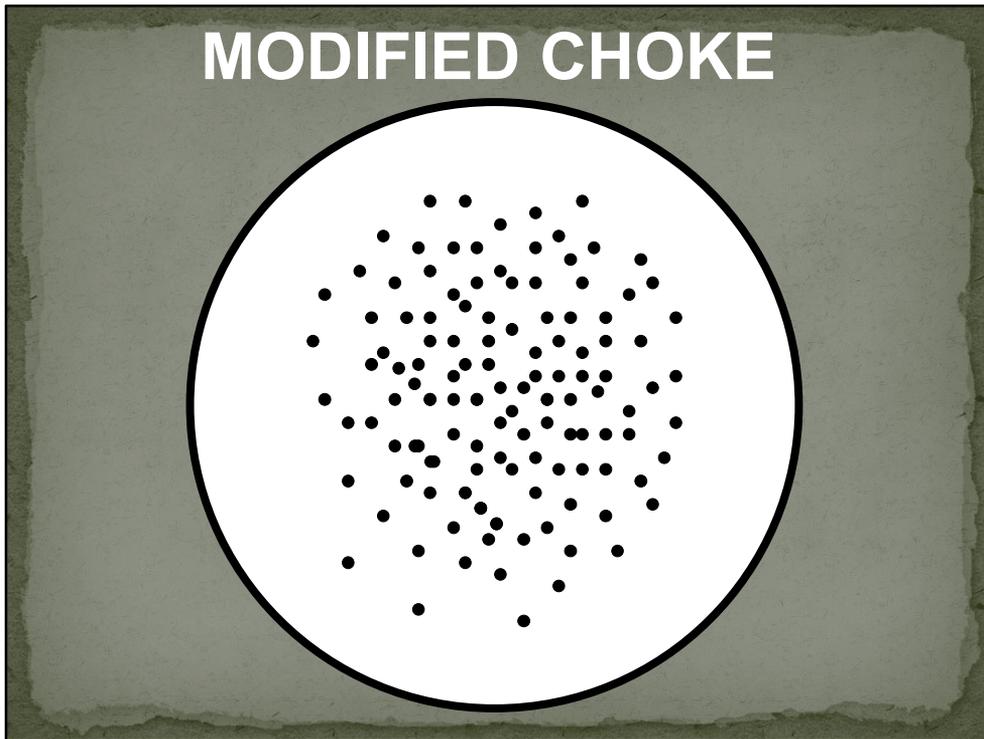
- Choke is the constriction at the end of the barrel that controls how much the fine shot spreads out. Can be a fixed choke or a screw in style choke...
- Most open of all chokes – OPEN sometimes called Cylinder or Skeet
- Virtually no choke at all. Spreads out very quickly
- Used for close range targets that move very quickly.
 - Ie. Rabbit, quail, woodcock



You can “improve” the open choke by making it slightly tighter with the IMPROVED CYLINDER

Excellent choke for relatively close range shots 20 -25 yards.

Great chocked when hunting over a pointing dog.

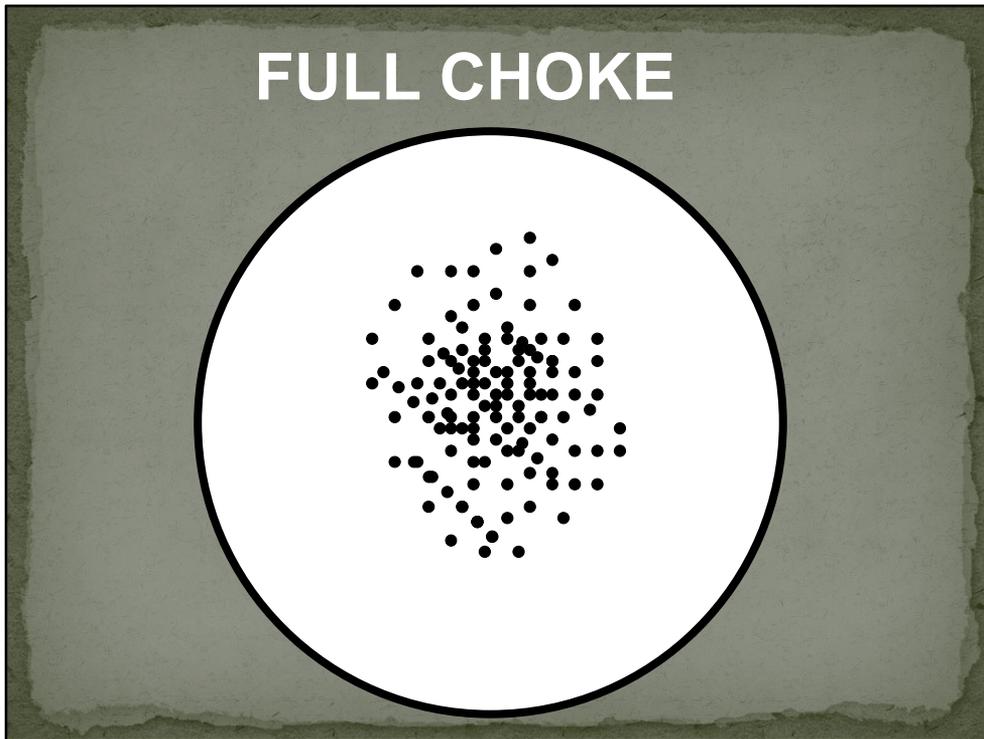


MODIFIED CHOKE – “M” = middle of all the chokes

Good all round choke that can be used in most situations

Good choke for hunting over flushing dogs

Good out to about 35 yards



FULL CHOKE – Tightest of all the chokes. Think “F” for full = “F” in fist which is also tight.

Used when you want a lot of pellets in small area or for further shots. Perfect for Turkey hunting where you need to hit the bird in the head and neck.

Still need all your shots to be within 40 yards

Wrap up

Patterns can change with different brand or size of shot.

What type shot must you use for waterfowl?

Non-toxic – example – steel, tungsten, bismuth, etc.

- Nontoxic shot is harder than lead – therefore pattern might be tighter.

Need to pattern your gun on paper, before shooting at moving targets.

Eye Dominance



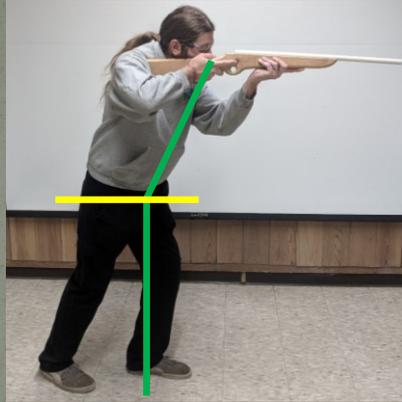
- Shotgun shooting at moving targets is done with BOTH eyes open while focusing on the target. Shooting with both eyes open gives you
 - Better depth perception
 - Better peripheral vision
 - Better balance
- Eye dominance is separate from hand dominance. Need to check.
- Hunter Ed homework has several tests on how to tell what your eye dominance is. If you are not sure, ask the instructor on the range to help you determine.
- You do better to learn how to shoot with your dominant eye.
 - Ie. If you are right handed and left eye dominant, you do better to shoot off your left shoulder.
 - There are ways to shift your eye dominance by wearing shooting glasses with a piece of scotch tape over the dominant eye.
- Just like some people are ambidextrous, some people have eyes that are co-dominant. Co-dominant people can shoot off whatever shoulder they feel more comfortable with.

Shotgun Shooting Stance



- Stance – Legs shoulder width apart. Toes facing direction of target, leaning forward with upper half of body.
- Shouldering of firearm – Elbow up. Bring firearm to cheek and shoulder. Head should be slightly forward on comb.
- Sight picture – Dominant eye should be lined up with top of rib focusing on target. Sight picture card, which instructors might use on the range, can be used to be sure of the proper sight picture.
- Point – Pointer finger should be extended on the hand that is holding the forearm.
- Lead – Swing through, pull away and sustained lead.
- Slap trigger – Trigger should be slapped lightly like typing on a keyboard
- Follow through – Follow through

Aggressive Shooting Stance

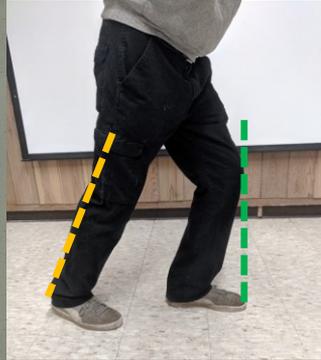


Lean Forward with
Upper Half of Body

Right eyed dominant shooter is shooting off of his right shoulder

Upper half of the body is leaning into the shot

Knee Over Toe

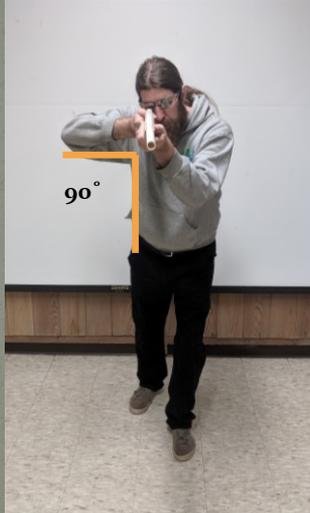


Back Leg Straight

When leaning into shot, lead leg's knee is over toe

Back leg is straight

Arm Parallel to Ground



Arm that is shouldering the firearm should be parallel to the ground making a right angle to your body.

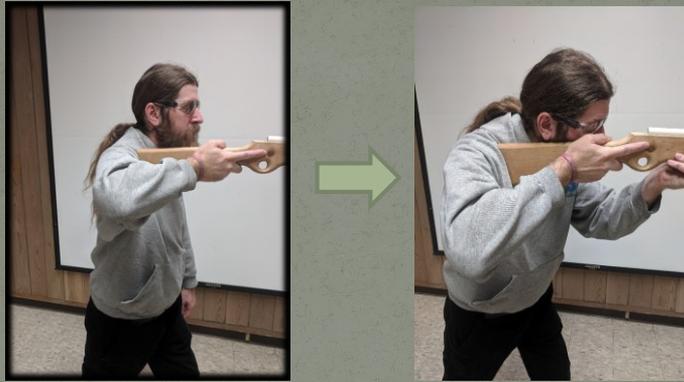
This will create a pocket for the stock of the firearm to fit in.



Stock of the firearm needs to be tight to the body. As long as there is no air space between the stock and the shoulder, the firearm won't have a "kick".

Be sure to have stock square to the shoulder to absorb the recoil.

Bring Head Forward on Stock



Bring head forward on the stock so your dominant eye is lined up with the rib of the barrel.

Point the Firearm

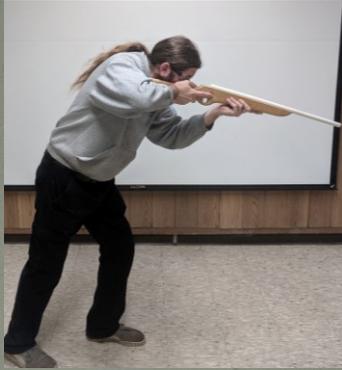


When shooting a shotgun at a moving target the firearm is pointed.

By holding your pointer finger under the forend of the firearm, the firearm acts as an extension of your body.

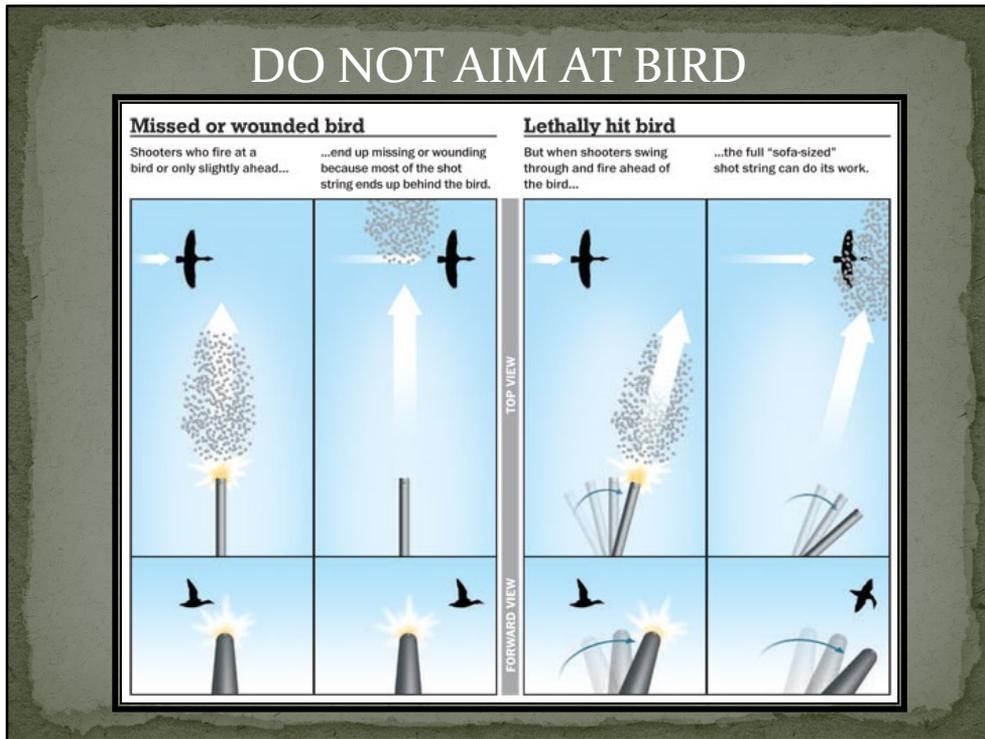
Wherever you are pointing your finger is where the firearm is pointing.

Keep Upper Half of Body Locked in Position While Moving



By keeping upper portion on body locked in position you maintain the proper sight picture with you cheek firmly on the stock

DO NOT AIM AT BIRD



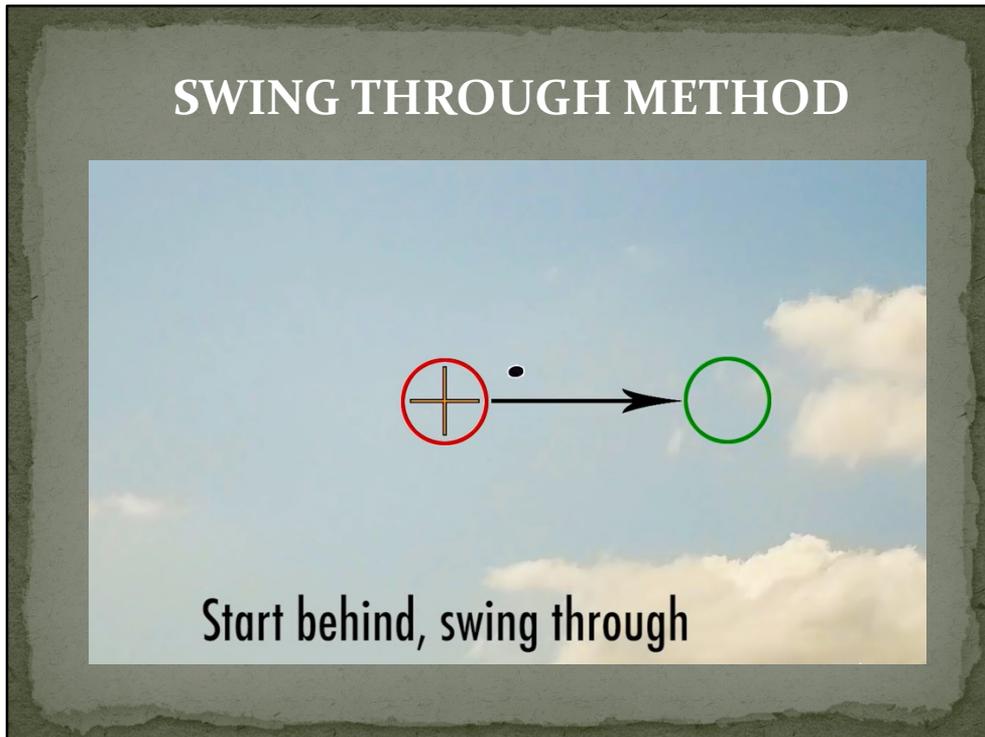
Very important to keep the gun moving.

If you stop the gun while swinging, the shot string of pellets will stop before reaching the target.

Swing out in front of target and keep the gun moving while slapping the trigger.

If you have a hard time hitting crossover targets at the range, try to "miss further out front". Most people shoot behind on a crossover shot.

SWING THROUGH METHOD



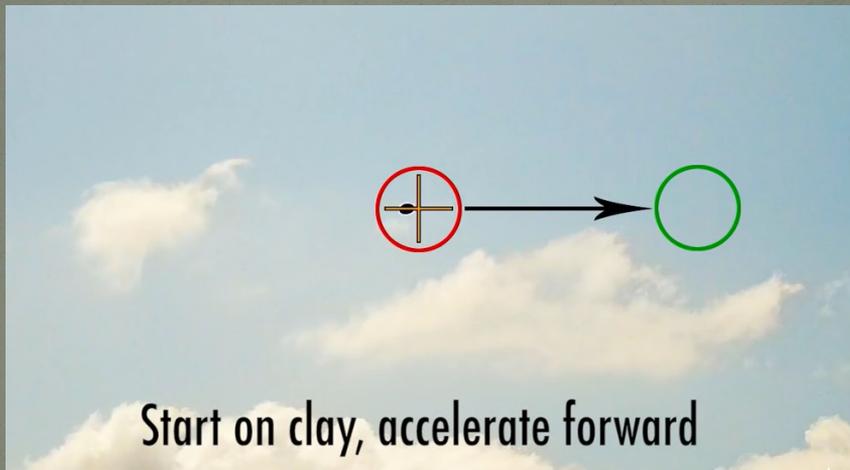
Shooter starts by pointing firearm behind the target

Shooter then moves firearm up to the target and then in front of it

While in front of the target, shooter slaps the trigger while keeping the firearm in motion.

All this movement is done in one fluid motion while focusing on the target.

PULL AWAY METHOD



Shooter starts by pointing firearm directly at target.

Shooter then moves firearm in front of target while slapping trigger, keeping the firearm in motion.

SUSTAINED LEAD



Shooter maintains the same lead on the target the entire time.

Shooter maintains lead while slapping the trigger.

How far do I lead the target?

Depends upon:

- Speed
- Distance
- Shot angle



Distance of lead depends upon the speed, distance and shot angle of the target.

Only way to determine how far to point in front of the target is through practice. Lots of practice!

Parts of a Shotgun Shell



Parts of a shotgun shell

How can I tell the gauge of the shell? – Head stamp

Does the color of the shell tell you anything? - No

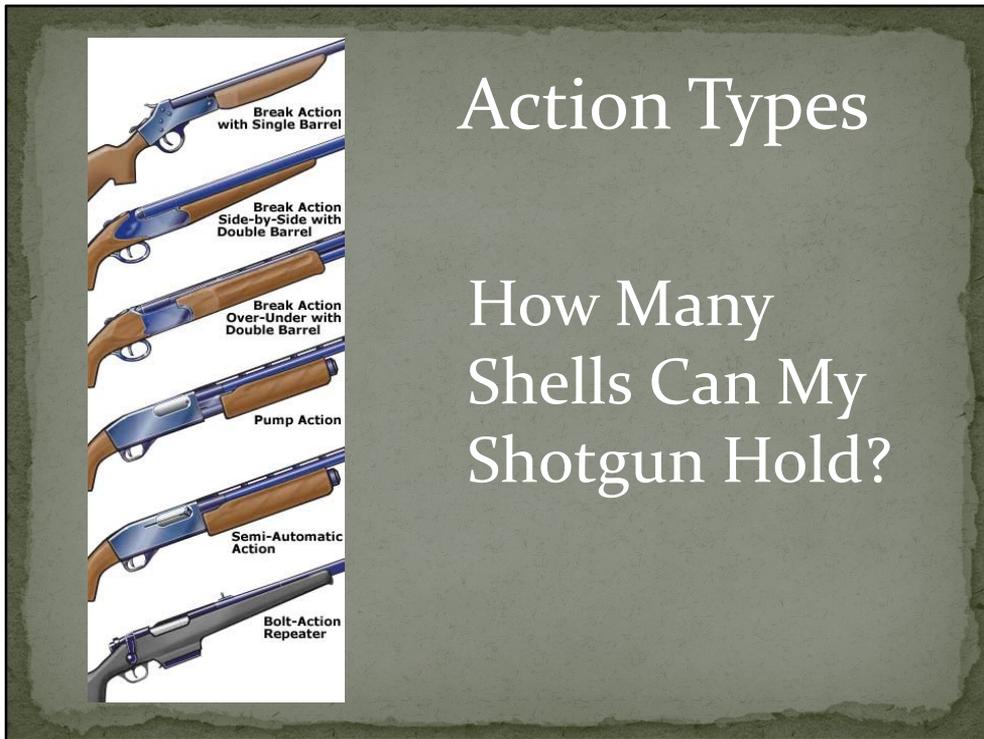
Barrel Stamp



HEAD STAMP on the shell needs to match the BARREL STAMP on the barrel.

Barrel Stamp – Tells you the Gauge and the size chamber.

- Can a 3 ½" shell fit in this gun with a 2 ¾" chamber? - No



What is your favorite action type? List them all. No picture of a lever action on the slide.

How many shells can my shotgun legally hold while hunting??

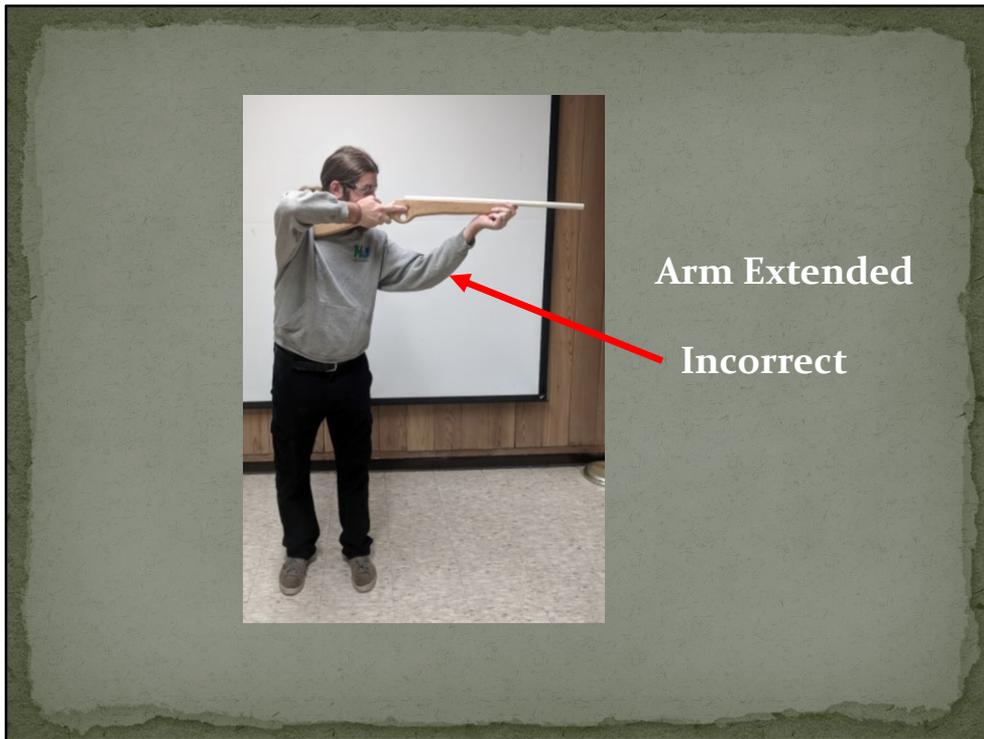
- 3 shells – Pump or semi-automatic need to be plugged to hold no more than three shells total
- Exceptions – Early September goose and late season snow goose.



Shooting Stationary Targets

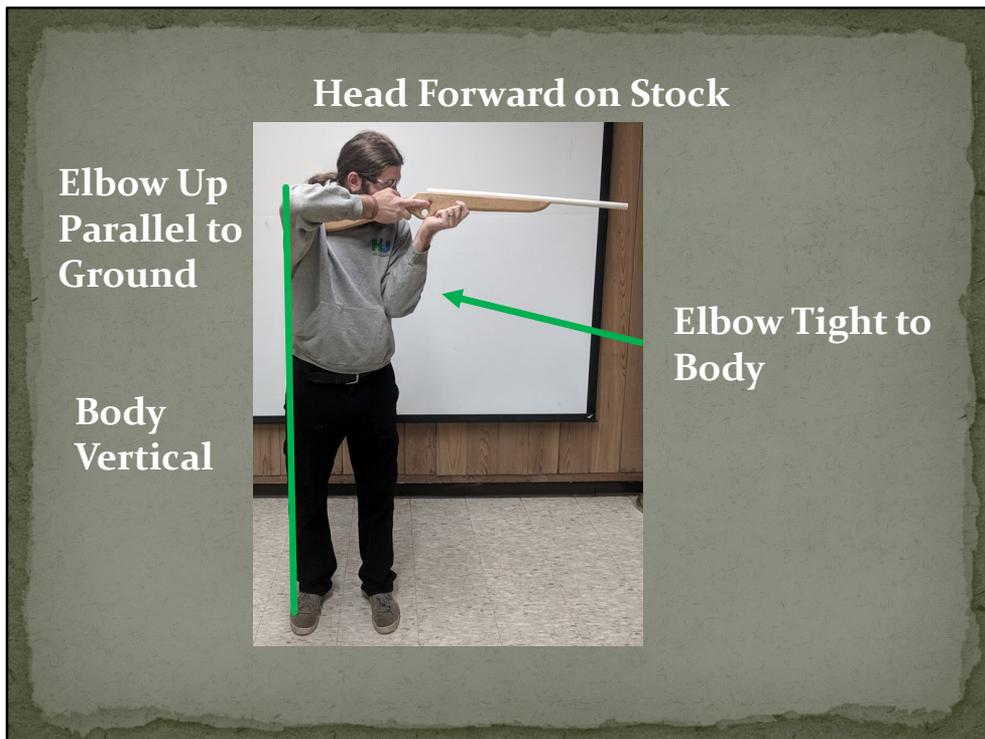
Mechanics of shooting STATIONARY targets (rifle shooting style) standing

- **Stance** – Legs shoulder width apart. Shoulders directly over your feet and hips.
- **Shouldering of firearm** – Elbow up parallel to ground on shooting arm. Opposite elbow braced against body to support forend of firearm.
- **Sight picture** – Dominant eye should be lined up with open sights, peep or scope.
- **Aim** – Eyes can only physically focus on one item. Front sight should be where you are concentrating most.
- **Control breathing** – Take deep breath in. Then exhale half way and pause.
- **Squeeze trigger** – Slowly squeeze trigger slow and steady.
- **Follow through** - After the shot is fired continue to squeeze the trigger and keep your eyes on the target you intend to hit.



Holding arm extended for extended period makes the firearm feel heavy.

One cannot hold the firearm steady in this position.



Elbow tight to the body creates a steady brace.

Arm bone against ribs is more steady than using just your arm muscles.

Focus on the Front Site



Center Target Just Above Front Site

Your eyes can only focus on one thing. Focus on the front site. Target and rear sites might be slightly out of focus.

Continue to focus on front site even after you squeeze the trigger.

Proper Eye Relief



When shooting a scoped firearm, be sure to give yourself a few inches of eye relief from the scope to allow for recoil from the firearm.

Shooting Positions

Most Steady vs Least Steady



Standing = Least steady

Laying Prone = Most steady

The more points of contact down to the ground the more steady you will be.

When shooting from a sitting position, try to get both elbows down on your knees.

When shooting from a treestand, try to bench off the rail.

Sitting Position



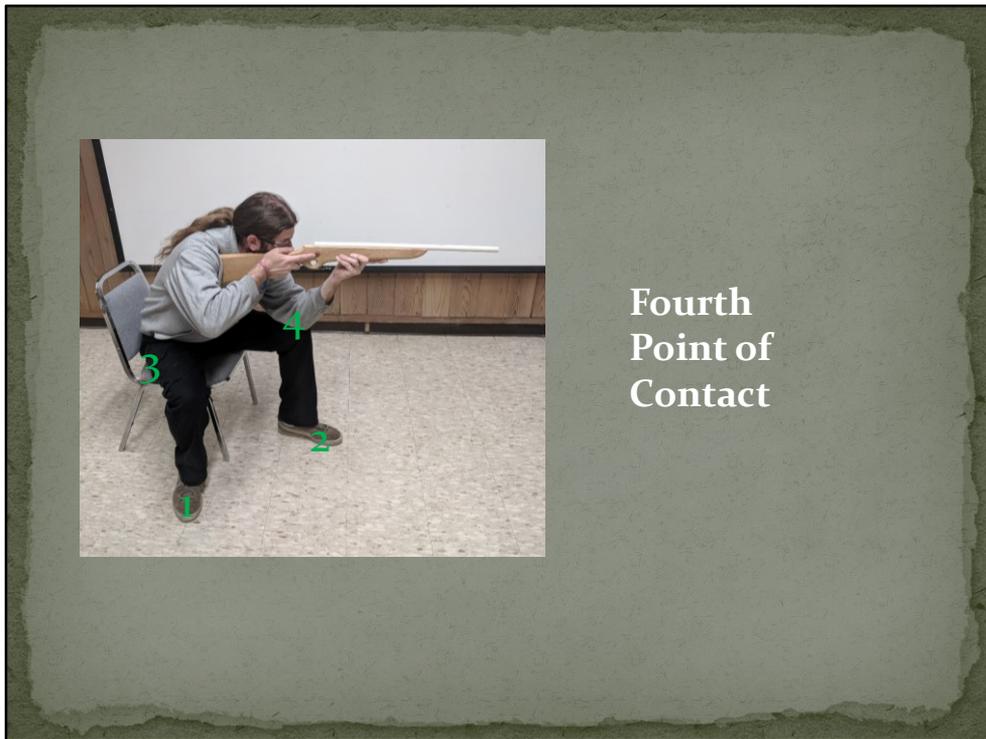
Three Points of Contact

More points of contact = More steady

Sitting is more steady than standing, because you have three points of contact to something solid.

Three points of contact:

- 1 - Foot
- 2 - Second foot
- 3 - Seat in chair



More points of contact = More steady

You will be more steady if you can find a way to mount your elbow on your knee

Three points of contact:

- 1 - Foot
- 2 - Second foot
- 3 - Seat in chair
- 4 - Elbow on knee



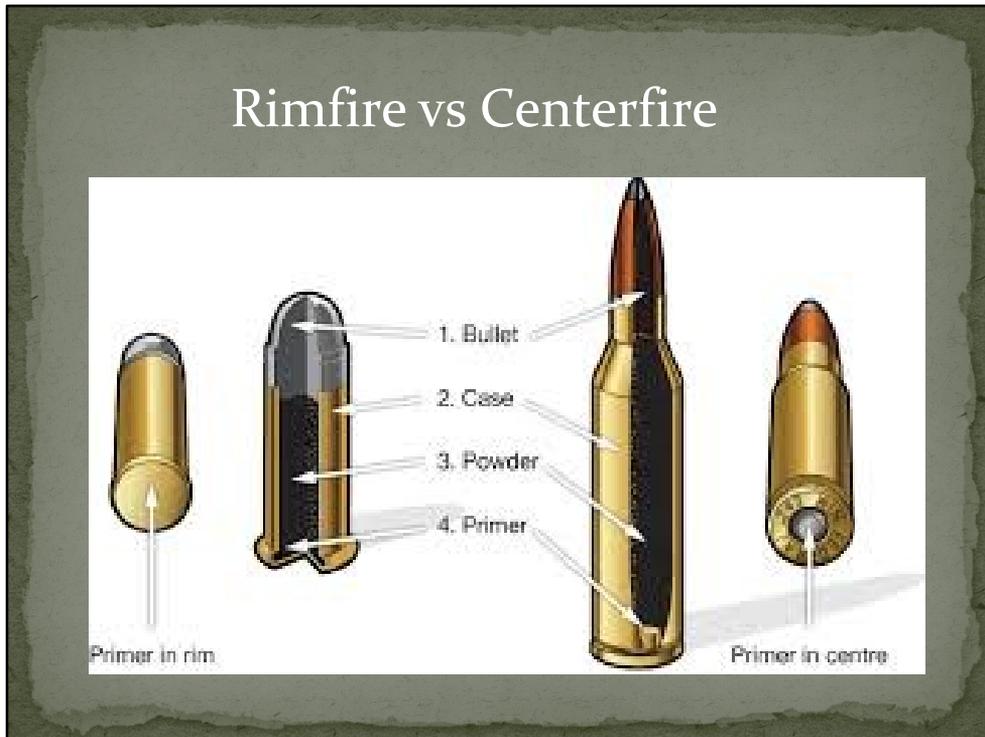
Most points of contact = Most steady

You will be the most steady if you can find a way to mount both of your elbows on your knees or something else solid like a shooting bench.

Three points of contact:

- 1 - Foot
- 2 - Second foot
- 3 – Seat in chair
- 4 – Elbow on knee
- 5 – Second elbow on second knee

Rimfire vs Centerfire



Difference between Rimfire and Centerfire ammo

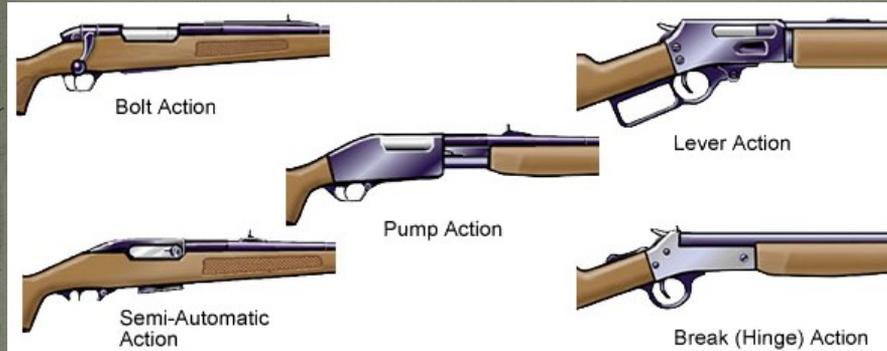
Rimfire – Has primer located around the rim of the cartridge

Centerfire – Has primer located in the center

Review all the parts of the rifle cartridge.

No wad in a rifle cartridge.

Action Types of Rifles



How Many Cartridges Can My Rifle Hold?

Quick review of all the action types – All the same actions as found in shotgun, but lever and bolt are much more common.

Rifles don't need to be plugged / pinned, but one can not carry any more than three cartridges in the firearm at any time.

Hunting with the Airgun



Airguns now legal for hunting.

Need basic firearm license to hunt. Do not need rifle permit.

.177 cal. through .22 cal.
At Least 600 ft/sec at the Muzzle
No BB's



Where Do You Aim?

What can I hunt?

Rabbits and squirrels only.

Legal Firearms

- .177 cal (diameter of a bb although bb's can't be used for hunting) through .22 cal
- At least 600 ft/ sec at the muzzle
- .22 has a lot more energy downrange than the .177

Where do I aim?

- Aim for the head

Need to have lots of practice and need to keep shots close.

- Should be able to do quarter size groups or smaller before you go in the woods.

Buy the Loudest Air Gun You Can!



NJ State Firearm Laws are more restrictive than Federal Firearm Laws.

Air guns fit the definition of a firearm in NJ. Therefore all firearm laws apply equally to air guns as well.

Possession of a silenced firearm is illegal in the state of NJ.

Any air gun that has a noise reduction or dampening device in the barrel is considered illegal to possess.

If you buy an air gun in NJ, it should be NJ legal.

If you go out of state to purchase, more than half the air guns being sold would not be legal to possess in NJ. Buy the loudest air gun you can if you are buying it out of state.

Four Types of Airguns



Pneumatic



CO₂



Spring



Pre-Charged
Pneumatic

- Pneumatic – Pump 10 times. Shoot and miss. Have to pump up another 10 times. Least expensive of all the air guns
- Spring action – Cock it once and it compresses a spring in the stock. When you squeeze the trigger, a spring pushes a cylinder of air forward. Since the stock is full of the spring mechanism, it is heavy and manufacturers generally don't make youth sizes.
- CO₂ – Very easy to use but CO₂ doesn't work well in cold weather. Won't give you consistent pressure below freezing.
- Pre-Charged Pneumatic – Tank charged from a scuba tank or expensive hand pump. Pressure over 3500 psi. Shoots projectile 1200-1300 fps.

Airgun manufactures recommend that airgun be shot to unload at the end of the day

MUZZLELOADER SHOOTING



Three Types of Legal Hunting Muzzleloaders



Flint lock



Side lock Percussion



In-line

Three types – Briefly describe the differences between

- Flintlock – Flint on hammer hits steel and makes a spark. Spark ignites the fine 4fg power in pan. Some sparks from the large flash travel through the touch hole and ignite the main powder charge in the barrel.
- Side lock percussion – Hammer drops and hits cap. Cap makes a spark and travels through the nipple, makes a right angle and ignites main powder charge in barrel
- In-line – Cap is in line with the barrel. Less ignition delay should give you a more consistent shot. More weather proof.

All three legal to use for deer hunting in NJ.

Check to See if it is Loaded??



Spring a Rod



Check Unloaded
Mark

First thing you do when you pick up any firearm is to check to see if it is loaded.

How do you do that with a muzzleloader?

Spring a rod – Listen for that high metallic sound. Look for the rod to bounce back up. If you hear a thud and rod doesn't bounce it is loaded

Check unloaded mark on your ram / range rod.*

- Remember this mark will be different if you use the same rod in different guns

* Ram rod - is the rod that comes with your gun that is usually held under the barrel

Range rod – is an aftermarket rod you can buy that is much longer than the barrel. Usually has a T-grip style handle. Easier to use while at the range.

Capping the Muzzleloader



#11 capper



Capping a side lock



Capping an inline

Most side lock muzzleloaders use a # 11 cap or musket cap.

- Using a capper makes it easier to handle the caps.

Most inline muzzleloaders use a 209 primer – the same primer used in a shotgun shell

Snapping a Cap



First Cap Down Range



Second Cap at Ground

You don't know if your firearm has a clear line of ignition. Before you load the firearm, you want to fire a few caps to burn off any residual oil that may be in the barrel or nipple.

Even though you already checked to see if the gun is loaded, it is still good practice to take first cap with firearm pointed down range.

- Tells you if gun is unloaded but not if you have a clear line of ignition.

Aim second cap at a blade of grass or leave on the ground

- When cap goes off you should be able to see the air movement telling you the firearm now has a clear line of ignition.

Types of Powder / Propellants



Black Powder



Propellants



Pellets



Size of Powder -
FFg for .45 Cal and
larger

Use Black Powder or black powder substitute propellants only.

- Gas pressure is significantly higher in modern rifle and shotgun powder. Most muzzleloaders are not designed for this high pressure.

Loose powder – size measured in “Fg’s”

- 4Fg – finest of powders – priming flintlocks
- 3Fg – pistols and small caliber rifles under 45 caliber
- 2Fg – 45 caliber and larger
- 1Fg – Cannons

Propellants can also come in loose powder or preformed pellets.

Measuring Powder



Use powder measure to measure powder.

50 cal. muzzleloader – Start with 50 grains and work your way up 5 grains at a time until you find the sweet spot.

Pour powder in measure

Level off powder – Do not pack powder in

Pour powder down barrel

Never pour powder from powder can or horn directly in the barrel –
Always use a measured amount of powder



Use Pipe Cleaner
When Handling
Pellets
1 pellet = 50 grains



Remember to Close
Container

When using preformed pellets – handle with the pipe cleaner – Try not to handle with your hand

Close powder container after using.

All the loading should be done at the loading bench, 8 to 10 feet away from the shooting bench.

Types of Projectiles



Patch & Roundball



Lead Conical



Sabot



Powerbelt

Types of Projectiles

- Patch and round ball
- Lead conical
- Sabots
- Powerbelt

What do they all have in common? – They all have something to act as a gas seal.

Follow recommendations from the manufactures.

Loading Projectile



Loading Projectile

- Center patch over the barrel – Center ball over the patch
- Use ball starter (short Starter) to start ball into of muzzle of barrel.
- Flip ball starter around and push ball further down the barrel.
- Use **short strokes** with ram rod / range rod. 6"-8" at a time. Push projectile all the way down until it is firmly seated on the powder charge. No air spaces!!
- Can also put a loaded mark on the ram rod.

Can I Legally Transport a Firearm Now?



Not Capped and in Safe Position



Flintlock Has Boot or Hammer Stall Over the Frizzen

Gun is not considered loaded until there is cap in the firearm.

Gun can still be legally transported in a case.

Side lock – Keep hammer in half cock position

Flintlocks – Leather boot / Hammer stall needs to be kept over the frizzen

Inline – Safety on

Shooting the Muzzleloader



Keep all loading supplies at loading bench 8 to 10 feet away
Cap Muzzleloader on the Shooting Line

Be sure all powder containers on the loading bench are sealed.

Bring only the firearm and the capper to the shooting bench.

Cap on the shooting line.

What if the Muzzleloader Doesn't Go Off???

- Hang Fire vs. Misfire
- Hold Gun Aimed Down Range for at Least Two Minutes
- Reseat Projectile and Try Again

What if the muzzleloader does not go off??

- Hang Fire – Cap goes off and then there is a delay before the main charge goes off
- Misfire – Cap goes off and main charge doesn't go off

Hold gun pointed down range for at least two minutes in case of a hang fire.

Reseat the projectile and try again.

Hold gun pointed down range for at least two minutes in case of a hang fire.

If firearm doesn't go off after the second time, you probably have a stuck projectile. Most common reason for a stuck projectile is when one forgets to load the powder in.

Removing a Stuck Projectile



Silent Ball / CO2
Ball Discharger



Remove Breech Plug



Ball Puller

Silent Ball / CO2 Ball Discharger – Place over nipple and squeeze trigger. Compressed CO2 will push projectile out

- Same CO2 cartridge used in air gun. Keep gun pointed down range while using.
- Works best on side locks
- **Ball Puller** - Screws into soft lead projectile.
 - Since you need to lean over barrel to screw into projectile, it is recommended that you take barrel off gun and soak in a bucket water first.
 - Works best for flint locks
- **Remove Breech Plug** – Most in-lines have breech plugs that can be removed very easily. Push projectile out.

Cleaning Between Shots?



Unlike modern rifles and shotguns, muzzleloaders use a very corrosive powder that leaves a heavy layer of residue in the barrel. You will notice that by your second or third shot it will be tighter to load.

For the most consistent shooting, you want the ball to see the same barrel every time. When at the range, it is recommended that you clean between every shot.

Use whatever cleaning solvent the manufacturer recommends.

With a cleaning jag on your rod, swab the barrel up and down until you reach the bottom of the barrel. Flip patch over and repeat.

Firearm is not spotless clean, but clean enough to reload.

End of the day, thoroughly clean muzzleloader by following manufacturer's instructions.

What Do I Need to Hunt Deer with the Muzzleloader?

- - Firearm License
- - Rifle Permit
- - Zone Permit

To muzzleloader hunt for deer,
You need:

- A. – Firearm license
- B. -- Rifle permit
- C. -- Zone permit / buck stub *
- D. All the above

* During Six Day Firearm Season you can harvest two bucks with muzzleloader without zone permit / buck stub. Zone permit / buck stub is needed for rest of the muzzleloader season.