



California Cadet Corps Curriculum on Military Knowledge



“On Target!”

M13/B: Marksmanship Fundamentals



Agenda

B1. Introduction to Marksmanship Fundamentals

B2. Steadying the Rifle & Firing Positions

B3. Aiming, Sights, and Zeroing the Rifle

B4. Breath Control

B5. Trigger Control

B6. Familiarization and Qualification



INTRODUCTION TO MARKSMANSHIP FUNDAMENTALS

B1. Cadets are safely able to use marksmanship fundamentals to engage targets with an air rifle or smallbore rifle. 50% of cadets will qualify at least at the Marksman level.



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Marksmanship Fundamentals

OBJECTIVES

- *Cadets are safely able to use marksmanship fundamentals to engage targets with an air rifle or smallbore rifle. 50% of cadets will qualify at least at the Marksman level.*

Plan of Action

1. Explain why marksmanship fundamentals are key to being able to accurately hit a target with an air rifle or smallbore rifle.
2. Name the parts of a rifle.

Essential Question: What are the four fundamental techniques of rifle marksmanship?



What are Fundamentals?

fun·da·men·tal

[ˌfʌndəˈmen(t)əl]

NOUN

fundamentals (plural noun)

a central or primary rule or principle on which something is based.

"two courses cover the fundamentals of microbiology"

Synonyms:

Basics / essentials / rudiments / foundations / basic principles / first principles

Preliminaries / crux / essence / core / nucleus / heart / base / bedrock / groundwork



Marksmanship Fundamentals

The four fundamental techniques you must master to be a good marksman are:

1. Stance
2. Aiming
3. Breath Control
4. Trigger Control



Bottom Line

- The bottom line for marksmanship is the ability to stabilize the rifle and properly aim it at the target
- Therefore, to be successful, you have to be able to hold the rifle so it is stable (very little movement) and you have to know how to use the sights so the bullet will hit what you aim at.



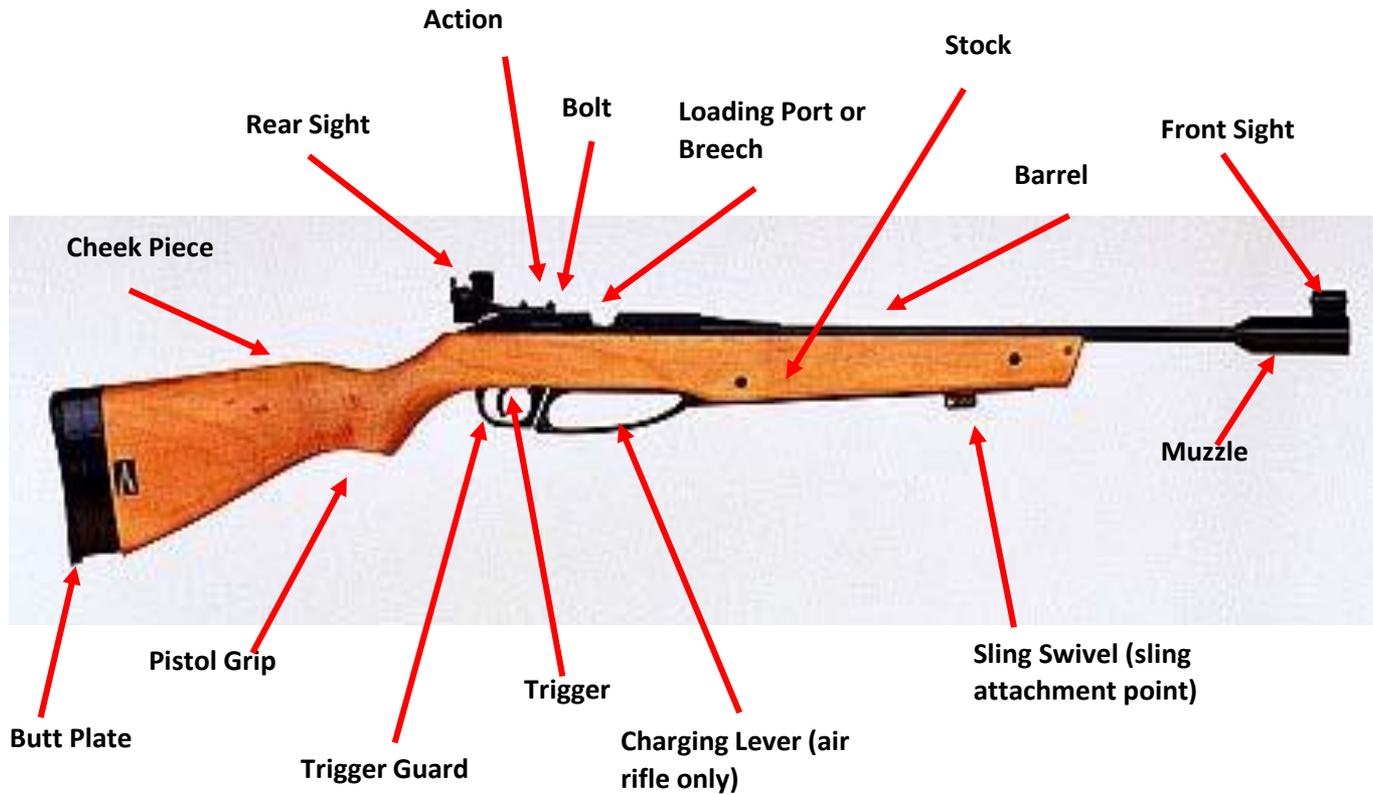
Steady Rifle and Accurate Sight Picture

- Keeping the rifle steady involves:
 - Stance
 - Breath Control
 - Trigger Control

- Getting an accurate sight picture involves:
 - Aiming & Sight Picture
 - Zeroing the Rifle



Names of Rifle Parts



You should be able to refer to the parts of the rifle by their proper name



Check on Learning

1. Is “correct stance” part of Steady Rifle or Accurate Sight Picture?
 - a. Steady Rifle
 - b. Accurate Sight Picture

2. Is “trigger control” part of Steady Rifle or Accurate Sight Picture?
 - a. Steady Rifle
 - b. Accurate Sight Picture

3. Which of the following is not the correct name for a part of a rifle?
 - a. Trigger
 - b. Barrel
 - c. Cheek rest
 - d. Sling Swivel



STEADYING THE RIFLE & FIRING POSITIONS

B3. Demonstrate how to properly hold a rifle while firing at stationary targets, and the prone, kneeling, and standing firing positions.



Steadying the Rifle & Firing Positions

OBJECTIVES

- *Cadets are safely able to use marksmanship fundamentals to engage targets with an air rifle or smallbore rifle. 50% of cadets will qualify at least at the Marksman level.*

Plan of Action

3. Demonstrate how to properly hold a rifle while firing at stationary targets, and the prone, kneeling, and standing firing positions.

Essential Question: How do you hold a rifle so that there is minimal movement, allowing you to engage a target?



Firing Positions

- Prone



- Kneeling



Shown and described for right-handed shooters. Reverse for left-handed shooters.

- Standing



**High School Cadets fire from all three positions to qualify.
Middle School Cadets fire only from the prone position to qualify.**



Eye Dominance

- We all have a dominant eye and a submissive eye. It's best to fire using your dominant eye, even if it doesn't match your dominant hand.
- In other words, if you're right-handed but your left eye is dominant, it's best to fire left-handed.



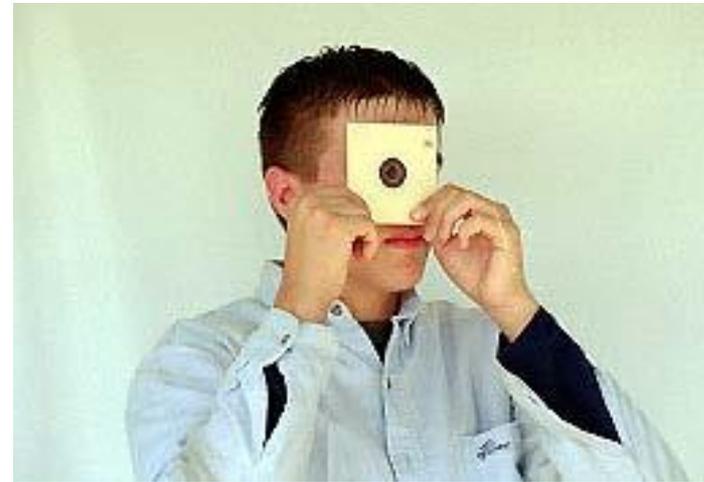
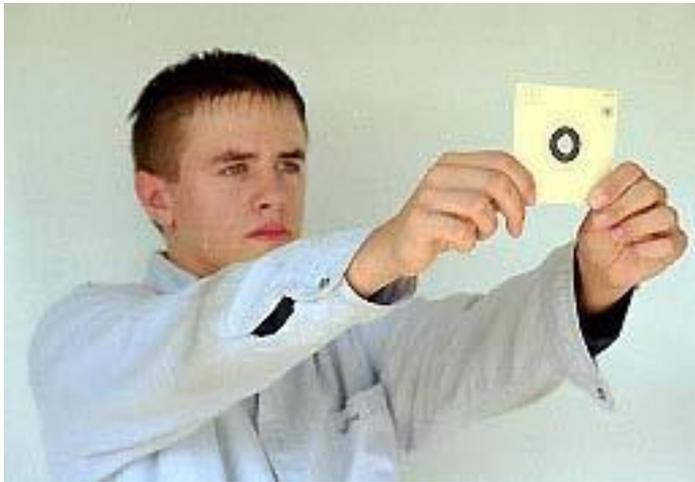


Determining Eye Dominance

- Take an index card or piece of paper, and cut a $\frac{1}{2}$ " hole in the middle.
- Hold it out in front of you, and (through the hole) focus on an object that you can see with both eyes open.
- Slowly bring the paper toward your eyes, keeping focused on the object.
- The paper will end up at your dominant eye.



Determining Eye Dominance



Source: US Army Cadet Command LET-Unit 7



Prone Firing Position

- Steadiest of the three positions
- Supported or Unsupported
 - Supported uses something to prop the rifle on
 - Unsupported uses only your body and a sling



Photo Source: US Army Cadet Command LET-Unit 7

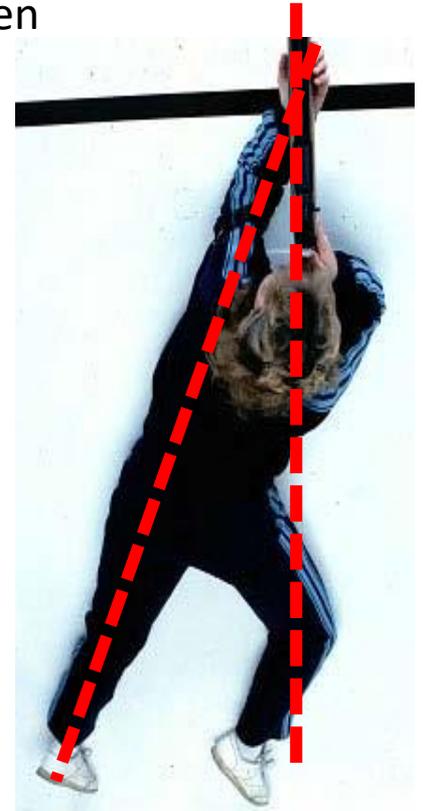


Prone Firing Position

- With the rifle pointing toward the target, align the body 10-20 degrees from the line of fire.
- Bend the right knee
- Insole of right foot is toward the ground, left toes may point to the ground
- Role slightly to the left to take pressure off the chest and abdomen
- Left elbow on the ground forward of the head
- Rifle butt is high in shoulder
- Rest the rifle on the left hand (don't grip it)
- Rest right cheek along the buttstock 1-3" behind the rear sight
- Much more stable if you use a sling



Photo Source: US Army Cadet Command LET-Unit 7





Using a Sling

- Loop and secure the sling around the left upper arm. It may be attached to the coat
- Other end attaches to the Sling Swivel
- Left hand between rifle and sling
- Taught enough to bear the weight of the rifle

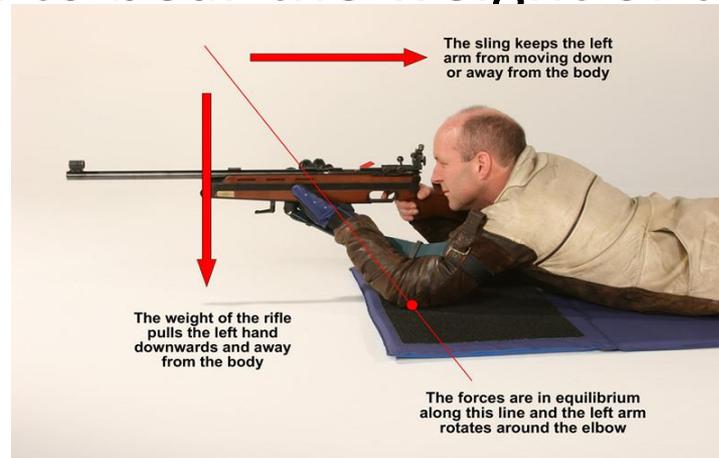


Photo: US Army Cadet Command LET-Unit 7



Attaching the Sling



Extend the sling and rotate the sling swivel one-half turn to the right (clockwise)



To properly place the arm in the sling, extend the arm and then rotate it clockwise around the sling so that the hand rests between the sling and fore end. The sling should pass around the back of the hand.



With the left hand in position, move the sling attachment point or sling swivel back to the hand and tighten it in place.



Finish the sling adjustment by tightening the sling until the sling and not the left arm muscles, do the work of holding up the rifle.



Kneeling Firing Position

- Kneel to sit on the right foot, supported by a kneeling roll
- Rifle is supported by the sling & left arm that rests on the left leg
- Right elbow free of any support
- Left knee must touch the ground/shooting mat
- Left leg close to vertical from foot to knee
- Rifle seated high against right shoulder



Diagram Source: NRA



Photo: Kneeling Pad

Source: US Army Cadet Command LET-Unit 7



Kneeling Firing Position

1. Foot is placed on a kneeling roll. The kneeling roll allows the shooter to comfortably sit on the foot for long periods.
2. Almost all of the weight of the shooter's body rests on the heel.
3. The torso is fairly erect, but the shoulders are rolled forward. The shoulders are not erect, but instead are rolled forward or slumped down.
4. The head is fairly erect. It is tipped toward the target, but not to the right.
5. The support hand (left hand) location is far enough back on the fore end to place the rifle fairly high in the shoulder and keep the head erect. The sling supports the weight of the rifle.
6. The body is turned 30-45 degrees away from the target.
7. The elbow of the support (left) arm is located on top of the knee. Other successful shooters place the left elbow just behind the knee. The elbow is normally not placed ahead of the knee.
8. The left lower leg that supports the rifle (left leg) is vertical. Some shooters move the left foot farther forward so that the foot is slightly in front of a point directly below the knee. The foot is never pulled back so that it is behind this point. (US Army Cadet Command)

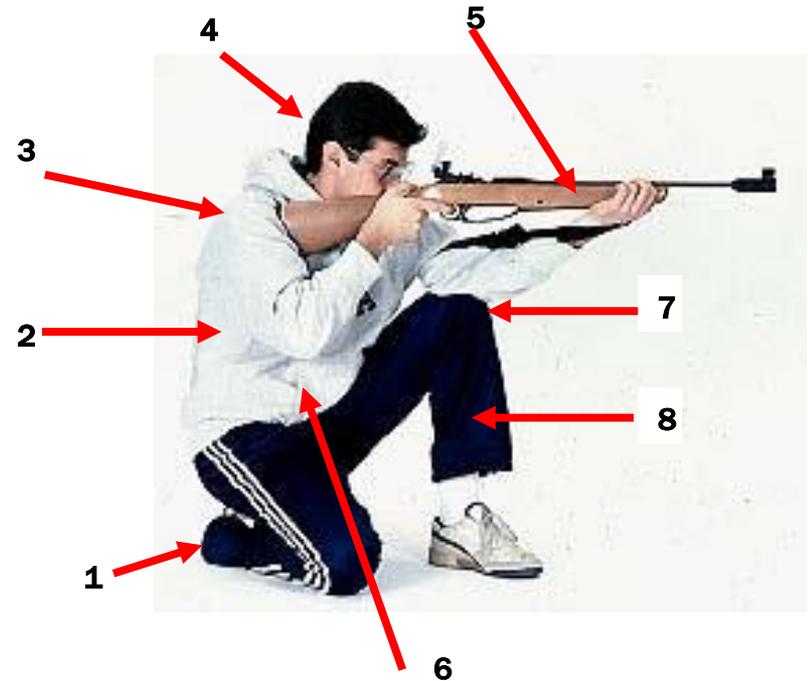


Photo: US Army Cadet Command LET-Unit 7



Sling Supported Kneeling Position

Place butt high enough in shoulder to keep head erect.

Shift left hand forward and rearward until sights are at target height. Move the sling swivel back to the hand and tighten it.



Move the sling swivel back to the left hand.

Then tighten the sling until it fully supports the weight of the rifle.

Photo: US Army Cadet Command LET-Unit 7

Ensure:

- 1) Your body weight is resting on your heel**
- 2) Your left lower leg is vertical**
- 3) Your left elbow rests on your left knee or upper leg just above the knee, and**
- 4) Your sling is tight enough to fully support the weight of the rifle.**



Standing Firing Position

- Stand with feet shoulder width apart
- Feet & body 90-degrees away from target
- Left side points toward target
- Both legs & knees straight, leg muscles relaxed
- Hold rifle with both hands and the shoulder (or upper right chest)
- Rifle fairly high in the shoulder so that the head can be kept nearly erect
- Left upper arm & elbow tucked into the left side directly under the rifle
- Rest elbow on hip or side of body
- Left hand serves as a platform for the rifle – depending on length of rm and torso – differs for every shooter
- No sling for standing position



Photos: US Army Cadet Command LET-Unit 7



Check on Learning

1. Which positions should you use a sling with for better stability?
2. How many degrees should your body be from the line of fire when in the prone position?
3. If you are Left-Eye Dominant, should you fire right-handed, left-handed, or whatever hand is dominant?
4. In the Kneeling Position, where is your elbow placed?
 - a. In front of the knee or just behind the knee
 - b. On top of the knee or just behind the knee



AIMING, SIGHTS, & ZEROING THE RIFLE

B4. Use a rifle's sights to accurately aim a rifle to hit the target. Demonstrate the process of zeroing a rifle.



Aiming, Sights, & Zeroing the Rifle

OBJECTIVES

Cadets are able to identify the safety rules used in rifle marksmanship and conduct themselves safely while handling weapons and on a range. Cadets pass the Firearms Safety Exam with 100%.

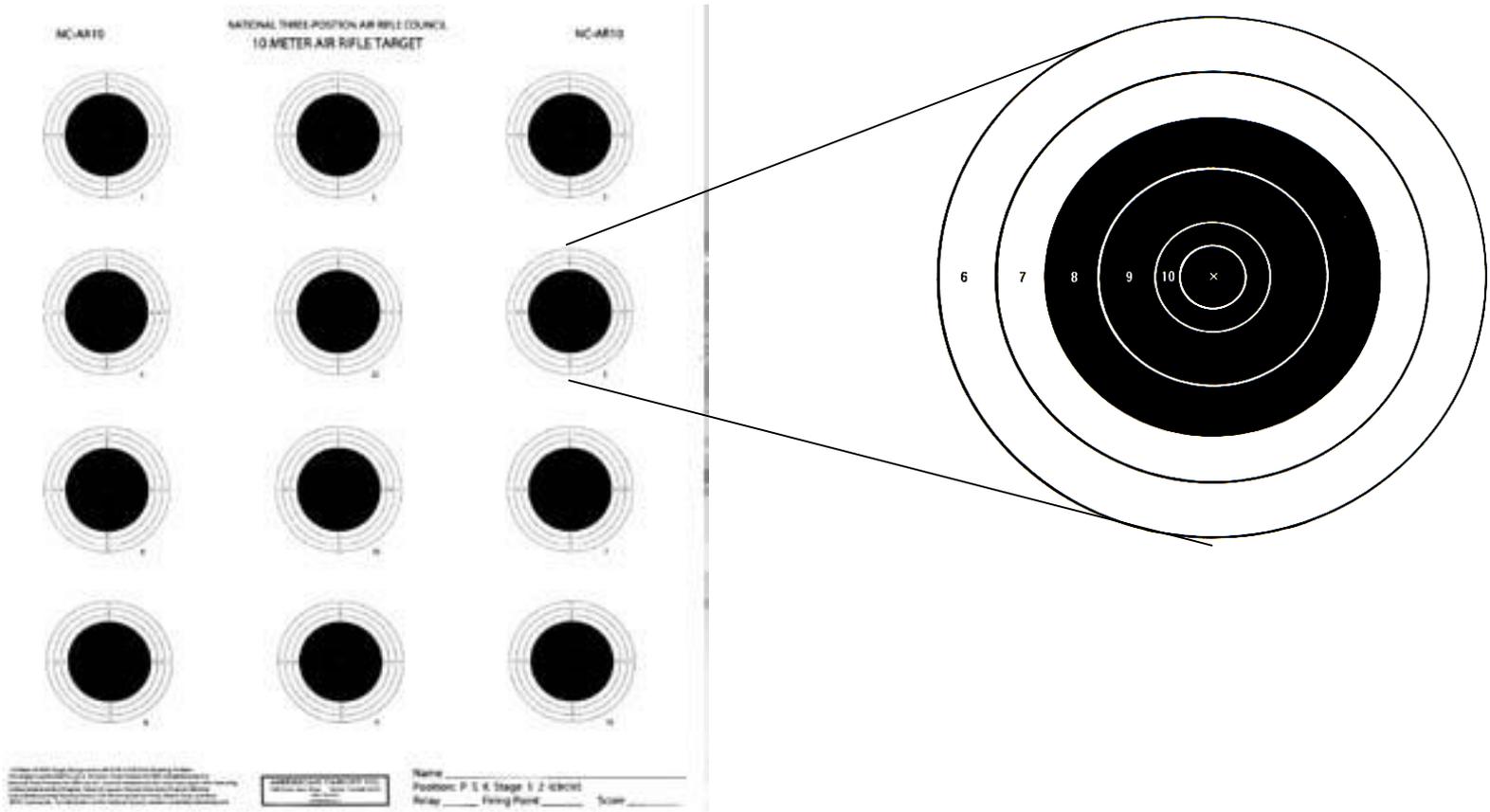
Plan of Action

4. Use a rifle's sights to accurately aim a rifle to hit the target. Demonstrate the process of zeroing a rifle.

Essential Question: How do you use the sights on a rifle to accurately hit the target?



The Target





The Sights

- Rear Sight
- Front Sight
- Different on different rifles



Photos: US Army Cadet Command LET-Unit 7

- Look through the Rear Sight at the Front Sight, placing the aiming point of the Front Sight on the Target



Various Sight Pictures

REAR SIGHT	FRONT SIGHT	SIGHT ALIGNMENT	TARGET	CORRECT SIGHT PICTURE



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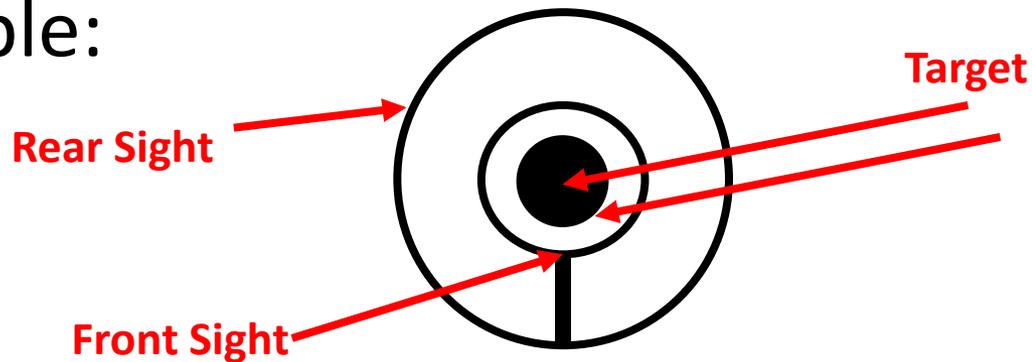
Aiming

- Place your eye in the same place every time by getting a consistent cheek mold on the rifle
- Look through the Rear Sight (usually a small circular hole). Your eye should be within 2-3 inches of the sight.
- Center the front sight within the circle of the rear sight
- Center the aiming point of the front sight on the target.
- Keep your focus on the front sight.



Aiming

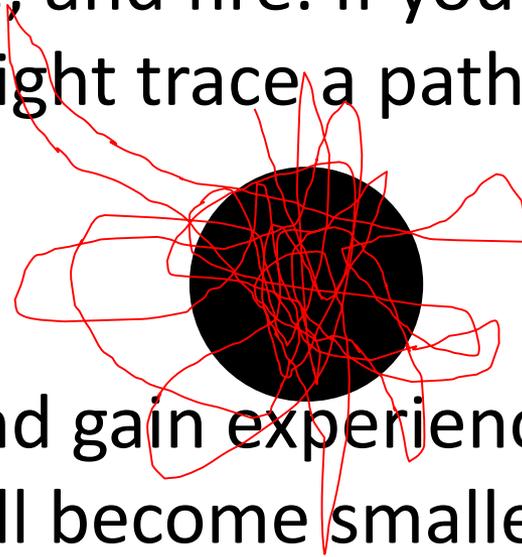
- In a prone supported position, the rifle doesn't move, and your sight picture should be stable.
- It should look like the correct sight picture
- Example:





Aiming

In an unsupported position, the rifle does move. Your goal is to steady it as much as you can, keep a good sight picture, and fire. If you followed the aiming point, it might trace a path like this:



As you practice and gain experience, the trace of the movement will become smaller, as you steady the rifle better and your aim focuses more on the center of the target.



Aiming

- How are you going to hit anything?
- Focus on your fundamentals:
 - Control the movement as much as you can
 - Control your breathing
 - Squeeze – don't jerk – the trigger
- Avoid the instinct to jerk the trigger just as the aiming point seems to be passing through the target. It doesn't work! Just keep consistent on movement, breathing, and trigger squeeze!



Zeroing Your Rifle

- Rifle sights must be set for YOUR technique
- Sights move the aiming point left-right (windage) and up-down (elevation).

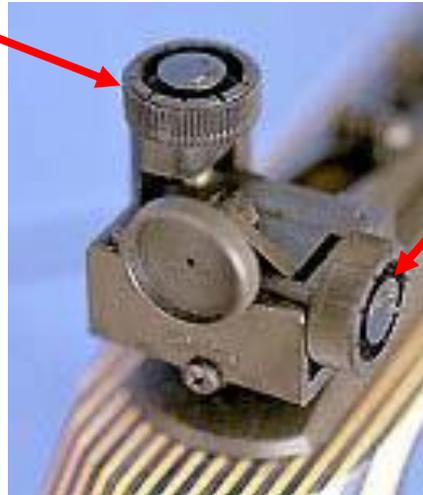
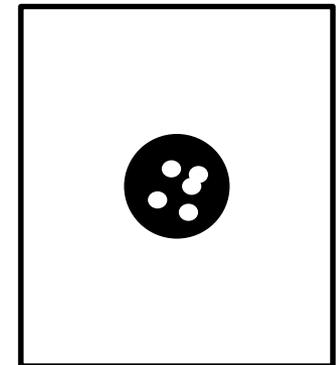
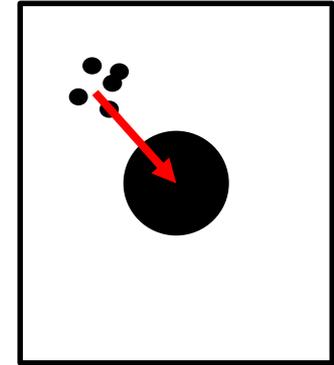


Photo: US Army Cadet Command LET-Unit 7



Zeroing Your Rifle

- Consider this shot group:
- It's pretty tight – that means your shooting technique is good
- But it's high and left
- To Zero the Rifle, you need to adjust the sights down and to the right





Zeroing Your Rifle

- Find the middle of your shot group
- Count the number of scoring rings from the horizontal line through the center of the group to the center of the target. In this example, this vertical distance is five rings.
- Multiply by the number of clicks per ring your sight uses (let's say 4). $4 \times 5 = 20$ clicks
- Turn the elevation knob on your rear sight 20 clicks (to move down, turn counter-clockwise)
- Do the same to move your zero to the right. 6 rings to the right at 4 clicks a ring is 24 clicks. To move the zero right, turn the windage counter-clockwise.
- Different sights work differently. Different targets have differing numbers of clicks per ring. Learn your rifle's sights!

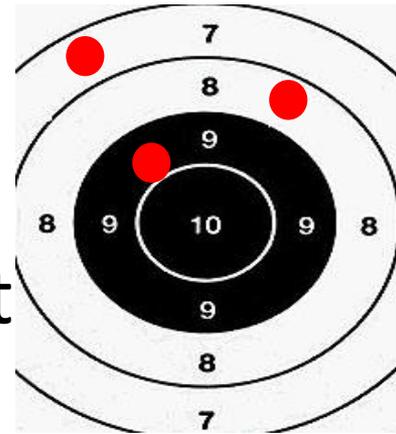


Photo: US Army Cadet Command LET-Unit 7



Scoring

- Once your rifle is zero'd, you can fire at and score your targets
- A hit receives the number of points shown in the ring where it hits
- If a shot hits (even a little) on a ring line, it's in the higher of the two rings.



Hits score 7, 8, and 10 points.



Check on Learning

1. Which do your eyes focus on?
 - a. Rear Sight
 - b. Front Sight
 - c. Target

2. TRUE or FALSE

All sights are the same, with the same sight picture and same elevation and windage adjustments

3. TRUE or FALSE

You can't hit anything if your sight picture isn't exact.



BREATH CONTROL

B5. Demonstrate proper breath control while firing an air rifle or smallbore rifle.



Breath Control

OBJECTIVES

Cadets are able to identify the safety rules used in rifle marksmanship and conduct themselves safely while handling weapons and on a range. Cadets pass the Firearms Safety Exam with 100%.

Plan of Action

- 5. Demonstrate proper breath control while firing an air rifle or smallbore rifle.

Essential Question: What effect does your breathing have on your accuracy hitting the target, and how do you minimize it?



Breath Control Practical Exercise

Practical Exercise:

For 30 seconds, freeze in place. Stay as still as you can be, without moving at all.

GO



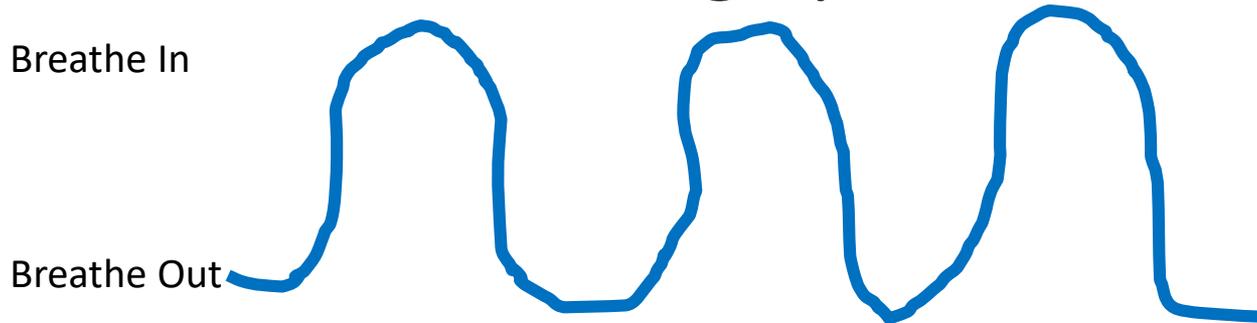
Breath Control Practical Exercise

- Were you able to stop moving?
 - Did your eyes move?
 - Were you breathing?
 - Was your blood flowing?
-
- We can try to be still, but our bodies are moving all the time! In precision marksmanship, the tiniest bit of movement has an effect on your score.



Breath Control

- Imagine the effect breathing has on your body. You can simulate this by taking very deep breaths, then letting them out.
- As you breathe in, your body expands
- As you breathe out, your body contracts
- Here's how it looks in graphic form:



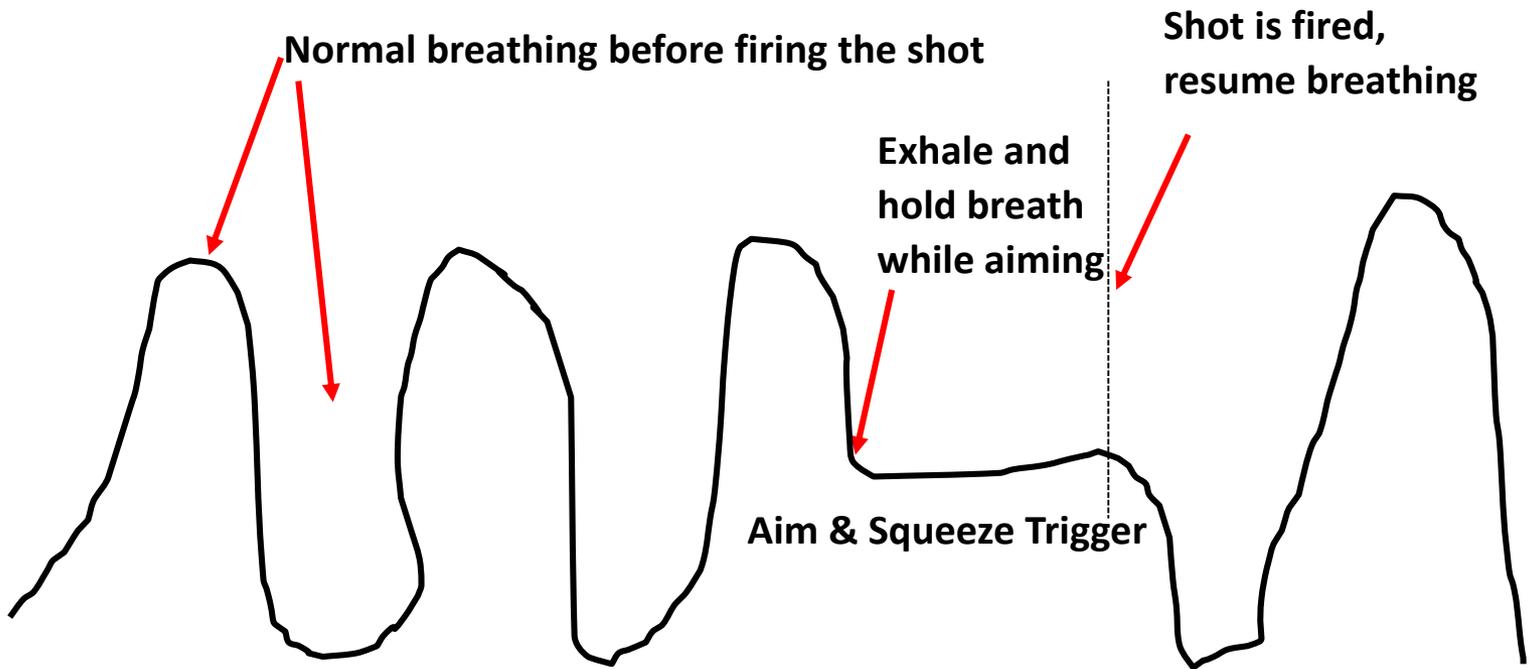


Breath Control

- The answer is NOT to just hold your breath when you fire – it's a little more complicated
- You should breathe normally as you prepare to fire – keep your body normal and calm
- **As you are exhaling, about halfway through a breath, hold your breath, aim, and squeeze the trigger**
- Then complete your exhale and resume breathing



Breath Control





Breath Control

- One way to minimize the movement in the rifle when breathing is to raise the right knee when firing in the prone position.
- This has the effect of raising the diaphragm allowing for expansion and contraction of the lungs without the body lifting significantly up and down.



Photo: US Army Cadet Command LET-Unit 7



Check on Learning

1. When should you hold your breath as you fire?
 - a. After you've inhaled a full breath
 - b. After you've exhaled a full breath
 - c. After you've inhaled about half a breath
 - d. After you've exhales about half a breath

2. TRUE or FALSE

Raising your knee helps control rifle movement from breathing because it allows your lungs to expand.



TRIGGER CONTROL

B5. Demonstrate proper trigger control while firing an air rifle or smallbore rifle.



Trigger Control

OBJECTIVES

Cadets are able to identify the safety rules used in rifle marksmanship and conduct themselves safely while handling weapons and on a range. Cadets pass the Firearms Safety Exam with 100%.

Plan of Action

- 6. Demonstrate proper trigger control while firing an air rifle or smallbore rifle.

Essential Question: What is the best technique to ensure your trigger control doesn't adversely affect your accuracy?



Trigger Control

- The last fundamental marksmanship technique we'll cover is control of the trigger
- How can THAT effect movement of the rifle?



Photo: US Army Cadet Command LET-Unit 7



Trigger Control

- If you think about what's happening when you pull the trigger of a rifle, it makes sense that this affects the movement of the rifle – just a little bit (that's all it takes to throw off your shot)



Photo: US Army Cadet Command LET-Unit 7



Trigger Control

- If you 'jerk the trigger' by pulling it quickly, the rifle will move with the trigger
- If your finger isn't in the right place, you can 'push' the rifle when you pull the trigger
- If you anticipate the shot, you may inadvertently move your body, moving the rifle



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Trigger Control

- Where should your finger be on the trigger?
- It depends on how sensitive the trigger is.
- The best method is to place the fleshy part of the index finger on the trigger – not the very tip of the finger or the joint
- If the rifle's trigger is really hard to pull, you may have to use the joint
- If it's very sensitive, use the tip of your finger





Trigger Control

- Some triggers have slack to take up
- How far you pull the trigger before it fires differs. Some triggers seem to take forever!
- First you take up the slack
- Then apply steady pressure on the trigger until the shot fires
- If you do it right, you won't know when it's coming, so you won't anticipate



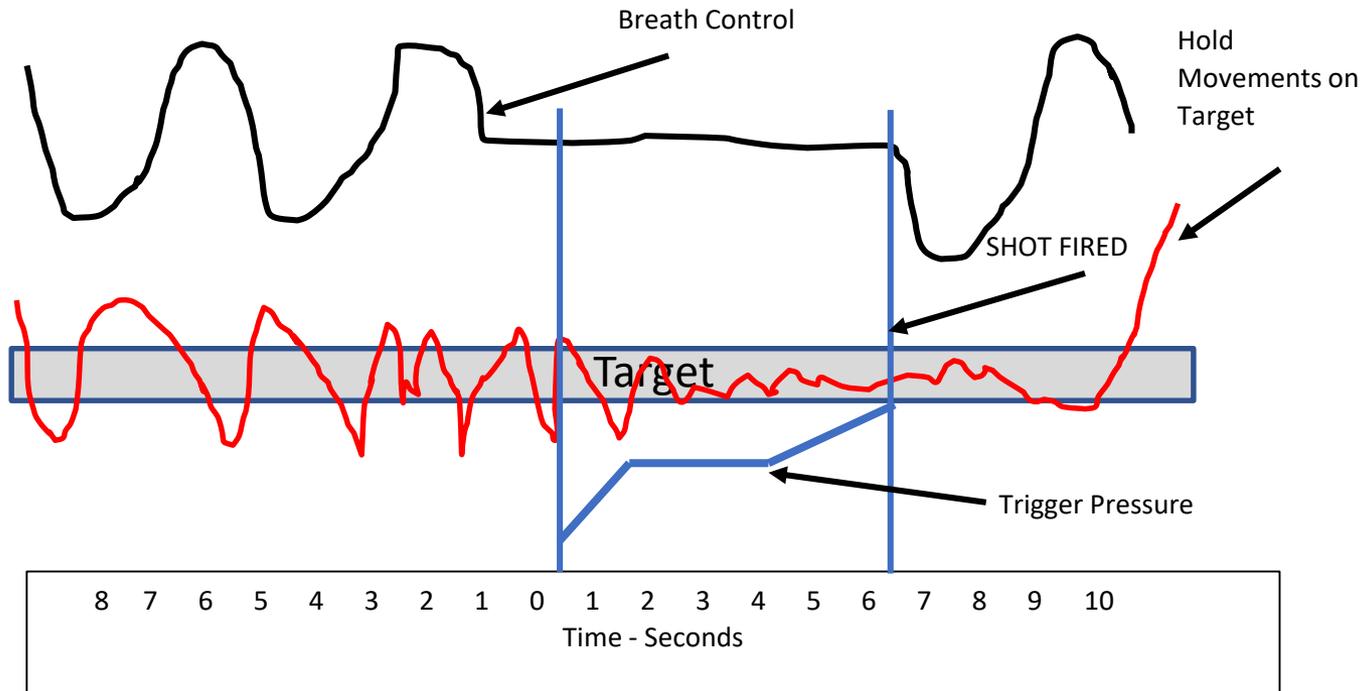
Follow Through

- Follow through control avoids more movement of the rifle
- Beginners often squeeze the trigger too fast and too hard, followed by immediately releasing the trigger, often accompanied by a movement of the head away from the sights
- Keep the trigger squeezed for a short time after the shot, then resume breathing and release the trigger



Breath & Trigger Control

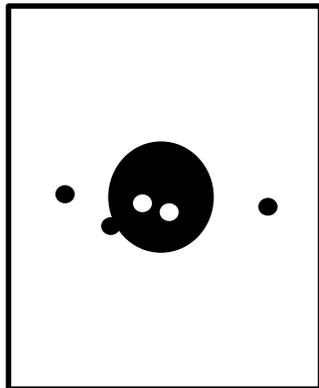
Here's a graphic representation of the elements of firing and how they're coordinated:



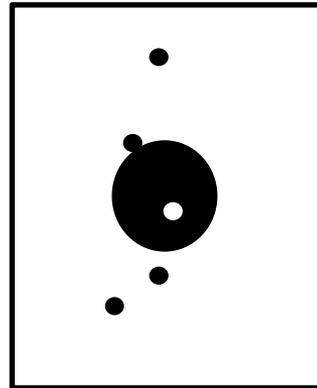


Breath & Trigger Control

- If your shots are dispersed on the target horizontally, it's probably due to jerking the trigger
- If your shots are dispersed on the target vertically, it's probably due to lack of breath control



Issue: Trigger Control



Issue: Breath Control



Check on Learning

1. Which part of your finger should normally be on the trigger?
 - a. Tip
 - b. Fleshy part
 - c. First joint

2. TRUE or FALSE

Follow Through means don't immediately release the trigger once you've fired.

3. Shots dispersed on the target vertically are a sign of
 - a. Poor trigger control
 - b. Poor breath control
 - c. Sights aren't aligned



FAMILIARIZATION & QUALIFICATION

B7. Experience the processes of Familiarization and Qualification with the air rifle or smallbore rifle.



Familiarization & Qualification

OBJECTIVES

Cadets are able to identify the safety rules used in rifle marksmanship and conduct themselves safely while handling weapons and on a range. Cadets pass the Firearms Safety Exam with 100%.

Plan of Action

- 6. Experience the processes of Familiarization and Qualification with the air rifle or smallbore rifle.

Essential Question: How do you Familiarize or Qualify with an air rifle or smallbore rifle?



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Rifle Familiarization

- Rifle familiarization is all the training you receive regarding firing a rifle
- It also refers to the specific act of actually firing a rifle, usually for the first time, or in any capacity less than actually qualifying
- In Cadet Corps, it consists of firing at least five rounds with a rifle
- Ideally, familiarization includes 5 or more rounds fired from each firing position
- Rifle Familiarization is noted in a cadet's Form 13
- You must pass the Firearms Safety Exam with 100% before you are allowed to fire a rifle



Rifle Qualification

- Rifle qualification standards are in CR 3-17
- Cadets can qualify with:
 - Air Rifle
 - Smallbore Rifle (.22 cal)
 - Engagement Skills Trainer (EST)
- CACC Cadets wear the US Army qualification badges for Marksman, Sharpshooter, & Expert



Rifle Qualification

High School Cadets (Senior Division)

- 10 shots each in Prone, Kneeling, & Standing
- 30 shots total = max of 300 points

Marksman: 165/300 (55%)

Sharpshooter: 195/300 (65%)

Expert: 240/300 (80%)



Expert



Sharpshooter



Marksman



Clasp (typical)



Rifle Qualification

Middle School Cadets (Junior Division)

- 30 shots in Prone Unsupported Position
- max of 300 points

Marksman: 165/300 (55%)

Sharpshooter: 195/300 (65%)

Expert: 240/300 (80%)



Expert



Sharpshooter



Marksman



Clasp (typical)



Qualification on the EST

- Engagement Skills Trainer (EST)
- US Army marksmanship simulator
- Fire simulated M4 Rifle for qualification
- Provides diagnostics to help shooter ID problems in their shooting technique



EST Qualification Standards

Senior Division

- 20 shots prone supported
 - 10 shots prone unsupported position
 - 10 shots kneeling position
 - Fire at “pop up targets” at various distances
-
- Marksman = 23-29 “hits” out of 40
 - Sharpshooter = 30-35 “hits” out of 40
 - Expert = 36 or more “hits” out of 40



EST Qualification Standards

Junior Division

- 40 shots prone supported
- Fire at “pop up targets” at various distances
- Marksman = 23-29 “hits” out of 40
- Sharpshooter = 30-35 “hits” out of 40
- Expert = 36 or more “hits” out of 40



Check on Learning

1. How many shots do you need to fire to familiarize?
 - a. 5
 - b. 10
 - c. 30

2. TRUE or FALSE

There are different courses of fire for high school and middle school cadets. The standards (scoring) are the same

3. TRUE or FALSE

If you qualify, you can wear a US Army marksmanship badge on your Cadet Corps uniform