



Marksmanship Class



Lesson Purpose

This lesson is designed to provide proper safety information and instruction so the Cadet can become a safe and effective shooter while on any range.





Gold
MEDAL



Ginny Thrasher

WOMEN'S 10-METER AIR RIFLE



A person with long dark hair, wearing a black t-shirt with the word "POLICE" in yellow capital letters, is holding a small, light-colored object up in their right hand. The background is a plain, light-colored wall. The image has a slightly grainy, vintage quality.

POLICE

TAPESPACE



Lesson Objectives

1. Identify the main parts of a firearm that concern safety (**MAT**).
2. Understand rules and procedures for safe range operations.
3. Demonstrate rules for safe firearm handling.



Air Rifle Safety & Range Procedures

Section Objective:

To learn about gun and range safety and the actions JROTC cadets must perform to safely participate in air rifle marksmanship





Key Words

- Safety - The condition of being protected from or unlikely to cause danger, risk, or injury.
- Action - A bolt that can be opened or closed.
- Muzzle - The open end of the barrel of a firearm.
- Trigger - A mechanism that actuates the firing sequence of a firearm.



Air Rifle Safety Training

- Safe Gun Handling Rules
- Shooting Range Basics
- Range Commands
- Protecting Your Health
- **Everyone** is a Safety Officer
- Range Firing Procedures
- Self-Discipline & Focus
- Becoming "Marksmanship Qualified"



Safety Performance Objectives

Properly Trained Cadets Will:

- Be aware of the gun muzzle and maintain proper muzzle control at all times
- Check for and maintain an open action, with CBI properly inserted, on every gun they handle
- Keep fingers off of the trigger at all times until actually aiming at a target
- Respond properly to range commands and special range situations
- Be aware of the gun handling of those around them to assist others in following safe gun handling rules



Learning To Handle Guns Safely

- The **goal**—eliminate all gun accidents!
- Know primary gun parts that affect safety:
M-A-T
- Apply M-A-T **performance standards**
- **Practice** handling air rifles--safety comes from practice, not knowledge
- Safe gun handling **rules apply to all guns** and firearms



The goal of JROTC gun safety training is not just to *reduce* gun-related accidents, but to *eliminate* them altogether.

✓ A. True

B. False

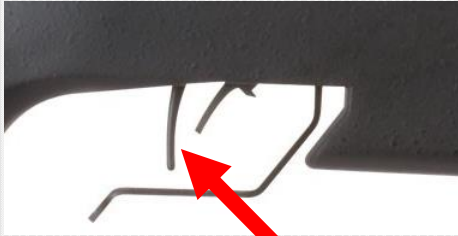
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Primary Gun Parts that Affect Safety

3. Trigger



2. Action



1. Muzzle





Where is the **M** located in MAT?





Where is the **A** located in MAT?





Where is the **T** located in MAT?





How Air Rifle Actions Function



Close
bolt by
pushing
forward

Bolt in open
position,
pulled to
rear

Air rifle actions have a bolt or action that can be opened or closed. Opening the action exposes the breech (rear) end of the barrel for loading. Opening and closing the bolt/action cocks the firing mechanism to prepare the rifle for firing.

Pressing the trigger to the rear releases the mechanism to fire the projectile from the loaded rifle





When you pick up or receive an air rifle from someone else, the **first** thing you must do is:

- A. Engage the safety
- B. Release the trigger
- C. Open action/bolt
- ✓ D. Control the muzzle (point it in a safe direction)

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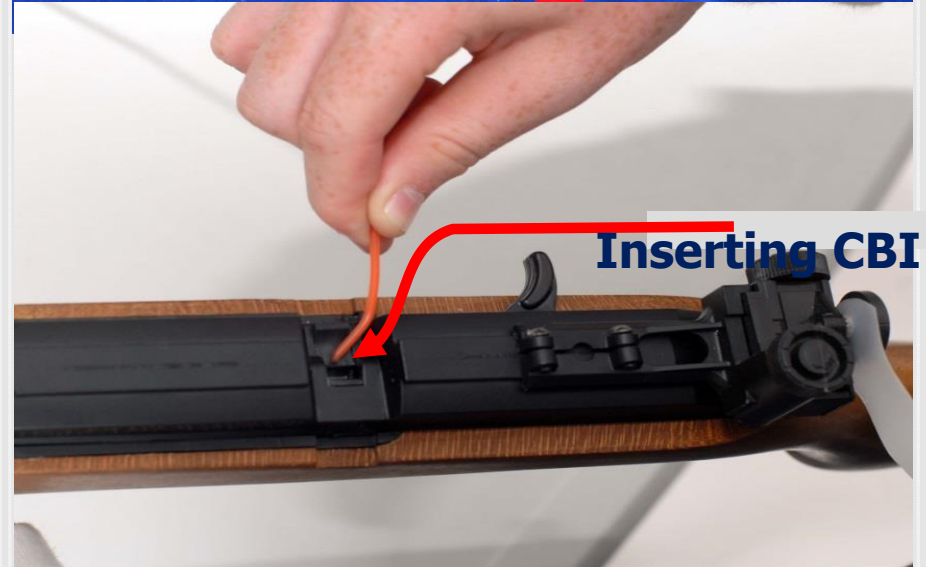
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CBI—Clear Barrel Indicator

- CBI (Clear Barrel Indicator) confirms that rifle is unloaded
- CBI must be in rifle at all times except during firing
- CBI removed on firing line when preparation for firing begins
- When firing is complete, ground rifle, insert CBI
- Keep CBIs clean and off the floor





Rifle Safety

M A T

- When handling a rifle the muzzle should be: **Pointing up or in safe direction, down range.**





Rifle Safety

M A T

- The action of the rifle should always be:
Open, with a CBI inserted until the shooter is on the line ready to fire.





Rifle Safety

M A I

- When handling a rifle, your finger should be:
Outside of trigger guard until ready to shoot.





Rule 1 — Muzzle Control

1st gun handling rule: Control the direction the muzzle points

- Point the gun in a safe direction—usually upward or downrange towards the targets
- Never point a gun at another person
- Carry guns with the muzzle above head level





The **most important component** of rifle safety is:

- A. The trigger
- B. The action
- C. The muzzle
- ✓ D. The person holding the rifle

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Rule 2 — Action Open

OPEN AIR RIFLE ACTIONS



2nd gun handling rule – Keep gun action open, except when firing

- Visually check the action to verify that it is open
- Keep a CBI inserted to confirm that the action is open
- A gun with an open action **cannot** be fired unintentionally
- On target ranges, actions must remain open at all times, with CBIs inserted, except when the rifle is on the firing line where dry or live firing is authorized



After I pick up or receive a gun and have made sure the muzzle is pointing in a safe direction, the second thing that I must do to make sure it is safe is:

- ✓ A. Check the action/bolt to be sure it is open and has a CBI inserted.
- B. Dry fire the rifle to see if it is working.
- C. Give the rifle to an adult.
- D. Take it to the range.

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Rule 3 — Finger Off Trigger

3rd gun handling rule – Keep fingers outside of trigger guard except when aiming

- The trigger guard protects the trigger from being unintentionally pulled
- Place the index finger on the trigger only after starting to aim at the target





Safety Rules Apply to All Guns

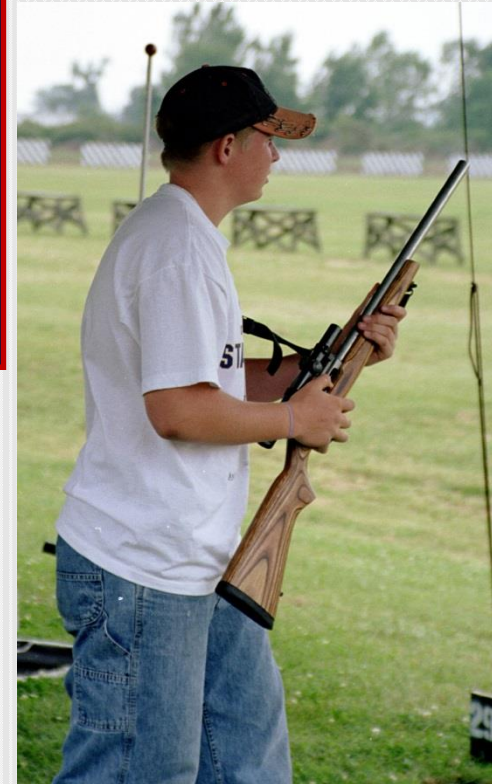
**Safe Gun Handling Rules Apply to
all guns in all circumstances**



Open Action



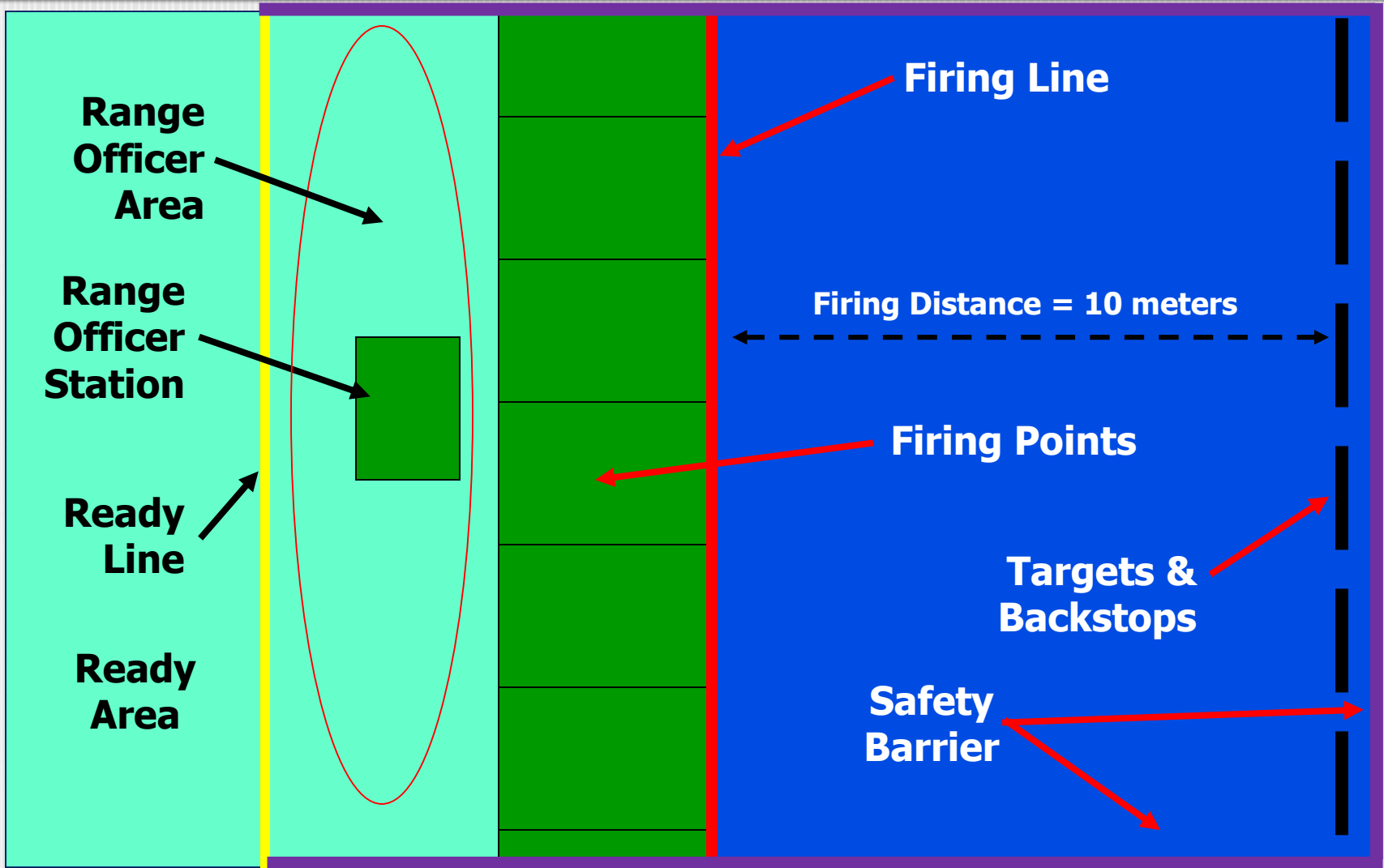
CBI Inserted



Muzzle Control



Air Rifle Range Layout





Range Rules

- Range Officer: In charge of range, RO must be an adult, adult RO must be present
- Firing Point: One for each shooter
- Target Holder/Backstop: One for each firing point
- Firing Line: **No part of the body may touch the firing line or the floor ahead of line**
- Ready Line: Persons waiting to fire & spectators must remain behind line



Range Safety

- Range Officer: Always obey commands!
- Primary Range Commands:
 - **START**
 - **STOP** – *if your rifle still loaded, raise your hand*
- **Before Anyone Goes Downrange**: Action open, CBI inserted, rifle grounded.



Basic Range Commands

■ Preparation Time

- Actions open, Keep CBIs in, begin aiming exercises
- Loading is **NOT** authorized

■ **LOAD**

- OK to insert pellet
- OK to close action
- Not OK to shoot

■ **START**

- OK to begin firing
- OK to continue firing
- When last shot is fired—open action, insert CBI, ground rifle

■ **STOP**

- Immediately stop attempting to fire shot (finger off trigger!)
- Firing no longer authorized

■ **GO DOWN RANGE.**

- Whenever it is necessary for someone to go down range to place or retrieve a target or for any other purpose, all rifle actions must be opened and rifles placed on the floor or shooting bench. **No one should go down range until authorized to do so by the range officer.**



Range Safety Conditions

- **Line is "Hot":**
 - No one is forward of firing line
 - Line is ready for firing
- **Call to Firing Line:**
 - OK to move rifle and equipment to firing line
 - Handling rifles may be permitted, CBIs remain in
- **Preparation Period**
 - Actions open, Keep CBIs in, begin aiming exercises
 - Loading is **NOT** authorized
- **Unloaded Rifle:**
 - Action open
 - No pellet in barrel
 - CBI inserted
- **Grounded Rifle:**
 - On floor or bench
 - Unloaded w/CBI inserted
- **Line is Clear:**
 - Rifles are unloaded, grounded and checked
 - No one handles rifles



What are the five commands you will hear on the firing range?

- A. Go down range, Preparation time, Load, begin, stop
- B. Halt, Start, Preparation time, Go down range, unload
- ✓ C. Go down range, Preparation time, Load, Start, Stop
- D. Unload, Clear, Start, Stop, Preparation time

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When I am on the firing line and the Range Officer begins a PREPARATION period, I may:

- A. Load my air rifle for the first shot.
- B. Remove the CBI, close the action and dry fire.
- C. Go downrange to see if my target is hung correctly.
- ✓ D. Get into my firing position, but I may not remove my CBI.

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The command STOP means:

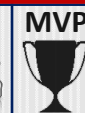
- A. Complete the shot I am attempting to fire.
- B. Quickly complete the shot I am attempting to fire.
- ✓ C. Immediately take my finger off the trigger and do not fire anymore shots.
- D. Tell the range officer I am not done.

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Safety

Safety Rules for Air Rifle Shooting Ranges

The most important rules to follow in any range or target shooting activity are safety rules. This applies equally for air rifles as well as for any type of firearm. Here are basic safety rules that must be followed at all shooting ranges by all shooters. Instructors and range officers will strictly enforce these rules.

1. **MUZZLE**. Always keep rifle muzzles pointed in a safe direction. Rifle muzzles should never be pointed at other persons under any circumstances. On a range, the **safest** directions to point a rifle muzzle are usually **up** or **downrange** towards the target.
2. **RIFLE ACTION**. Always keep rifle actions open except when the rifle is on the firing line and the command to LOAD has been given. When shooting is finished or the rifle is placed down for a break, the action must be open and unloaded, with a CBI inserted, even when the rifle is on the firing line. The rifle action may be closed when it is placed in a gun case or arms room, but the action must be opened with a CBI inserted when it is removed from the case or storage .



Safety

3. **TRIGGER.** Keep your finger off of the trigger until after placing the rifle in the shooting position and preparing to fire a shot. It is especially important to keep the finger outside of the trigger guard when loading the rifle and placing it in the shooting position.
4. **TARGET.** Shoot only at the target designated for you. Be sure the target is properly placed in front of a safe backstop. Shooting at any object on a range besides your own target is strictly forbidden.
5. **RANGE OFFICER.** A range officer or designated person is in charge of firing at every range. The commands and instructions of the range officer or person in charge of firing must be obeyed. Range officers must check rifles brought to the range to be sure actions are open and unloaded. When shooting is finished, range officers must check rifles to be sure actions are open and unloaded.



Safety

6. **RANGE COMMANDS.** Be sure you know the range commands that are used on the range where you fire. No shooter may load a rifle until the command **LOAD** is given. No shooting may begin until the command **START** is given. Whenever the command **STOP** is given, no further attempt to fire a shot may be made; the rifle must be immediately taken down, and the **action opened**. If a pellet remains in the rifle, ask the instructor or range officer for instructions.
7. **LOADING.** Rifle muzzles must remain pointed down range or up whenever the rifle is loaded. Special care must be taken to assure that a rifle muzzle is never allowed to point at a neighboring shooter or to any area behind the firing line during loading.



Safety

8. **GOING DOWN RANGE.** Whenever it is necessary for someone to go down range to place or retrieve a target or for any other purpose, all rifle actions must be opened and rifles placed on the floor or shooting bench. **No one should go down range until authorized to do so by the range officer.**

9. **EYE AND HEARING PROTECTION.** Wearing eye protection is strongly recommended for all air rifle shooting. Some shooters also wear hearing protection even while shooting air rifles.

10. **TREAT EVERY RIFLE AS IF IT WERE LOADED.** Even if you are sure your rifle is unloaded and even if a range officer has checked it, **treat the rifle as if it were loaded. Be sure it is never pointed at another person.**



Safety

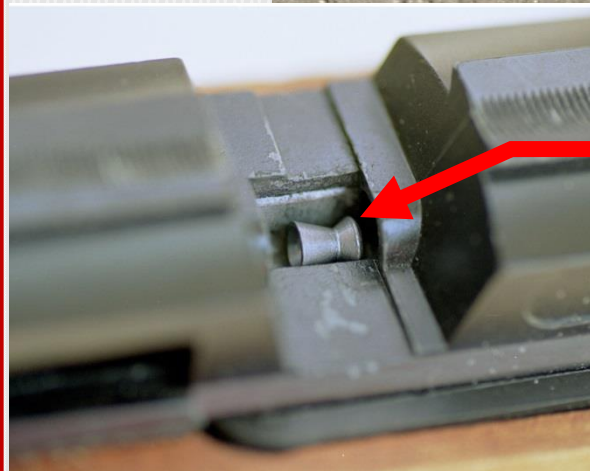
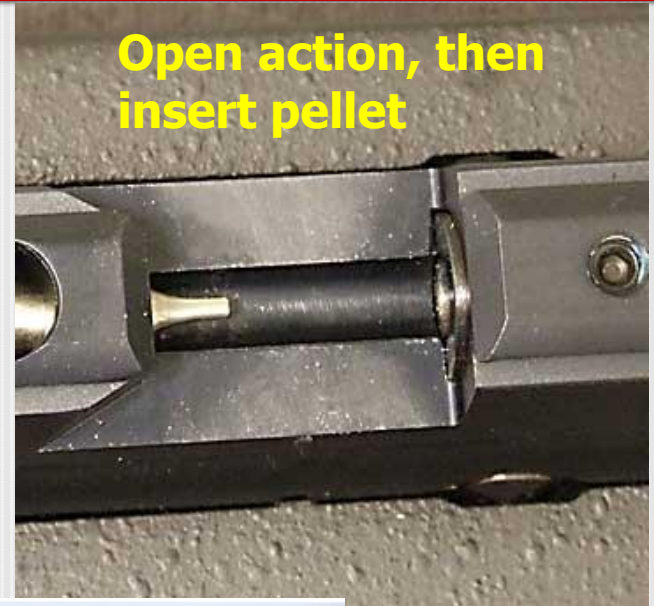




Safe Loading Procedure

1. Open Action
2. Insert Pellet (skirt to rear!)
3. Close Action
4. Place rifle in position and fire shot
5. Open action--repeat

**Open action, then
insert pellet**



**Insert
pellet
here, then
close bolt**



Dry Firing

- **Dry Firing:** Cocking and releasing trigger mechanism, without charging gas system, to simulate firing
 - Will not damage air rifles
 - **Some air rifles cannot be dry fired (Challenger); aiming exercises can be done in lieu of dry firing**
 - An especially effective way to practice
- **Where:** Only on designated firing point
- **When:** When authorized by RO (e.g. practice or preparation periods)
 - Do not charge air during dry firing--just open and close action to cock trigger mechanism



Range Safety Procedures

■ Malfunctions

- Stay in position
- Keep rifle pointed downrange
- Raise Hand
- *Wait for RO to inspect rifle and give instructions*





When my air rifle malfunctions (*fails to fire*), I must:

- A. Keep the muzzle pointed downrange.
- B. Raise my hand so the Range Officer can see it.
- C. Wait for instructions from the Range Officer.
- ✓ D. All of the above.

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Range Safety Procedures

- Firing Completed
 - **Immediately open action**
 - Get out of firing position
 - Ground rifle
 - **Insert CBI**
 - Wait for instructions



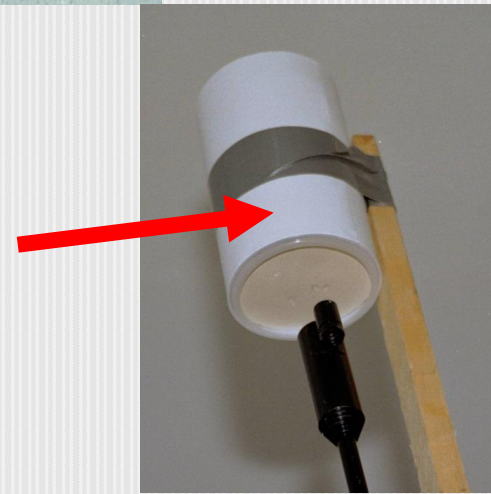


Range Safety Procedures

- Loaded Rifle after **STOP-UNLOAD**
 - Remain in position
 - Keep rifle pointed downrange
 - Raise Hand
 - Wait for RO to give instructions to fire rifle in PDC (Pellet Discharge Container) or backstop



Discharging
loaded rifle
into PDC





If I still have a loaded rifle (pellet in barrel) after the Range Officer gives the command STOP, I must:

- A. Remain in position and keep my air rifle muzzle pointed downrange.**
- B. Raise my hand so the Range Officer can see it.**
- C. Follow the Range Officer instructions.**
- ✓ D. All of the above.**

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Personal Safety & Hygiene



■ Pellet Handling Hygiene

- Lead is toxic
- No food on range
- No open beverage containers
- **WASH HANDS AFTER HANDLING PELLETS**

■ Safety Glasses

- Wearing safety or eyeglasses during air rifle firing is recommended (required in **NJROTC**)

■ Personal Clothing

- Sweatshirt or work shirt
- Glove (for hand that holds or supports rifle)
- *Note: Hearing protection is not required for air rifle*



Special Conditions

■ Safeties

- Mechanical devices to facilitate carrying loaded guns
- On target ranges, the safety is the open action and CBI
- Most target air rifles do not have mechanical safeties
- The use of the mechanical safety is not required in air rifle target shooting

■ Safe Air Rifles for Target Ranges

- Use only 4.5mm/.177 cal. air rifles
- Use only air rifles with pellet velocities of 600 fps or less

■ Taking a Break

- **Never lay a loaded rifle down**
- **Rifle must be cleared with a CBI inserted before laying it down**

- **Some ranges may have special safety rules**—they must be followed too



Achieving a Perfect Safety Record

- Safety requires self-discipline and focus--you are the **most important component** of safety
- Everyone is a **Safety Officer**
 - Never tolerate unsafe gun handling by others
 - Act immediately to correct unsafe situations
 - Anyone can call **STOP** in a safety emergency
- Remember the **Goal—Eliminate All Gun Accidents!**



Who can call a STOP when there is an unsafe condition?

- A. My Grandma who is at home sick.
- B. Only the Range Officer
- ✓ C. Anyone
- D. No one

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Becoming Marksmanship Qualified

- Cadets must attend safety training class
- Cadets must pass a standard safety exam
 - Exam based on safety training class and ***Cadets Guide to Air Rifle Safety***
- Cadets must sign ***Cadet Safety Pledge***
- Enjoy your rifle marksmanship experience!



Think Safety First

**Keep shooting a safe
&
enjoyable sport!**



Before You Start: Which Eye/Shoulder to Use?

Answer: Shoot from the same shoulder as your dominant eye.

Do an eye dominance test to determine which eye and shoulder you should use.

Step 1: Use a card with a dime-sized hole. Hold it away from you and look at a distant object with both eyes open.



Step 2: Bring the card back to your eyes while continuing to focus on the distant object. The hole will be drawn to your dominant eye. Shoot from that same shoulder.





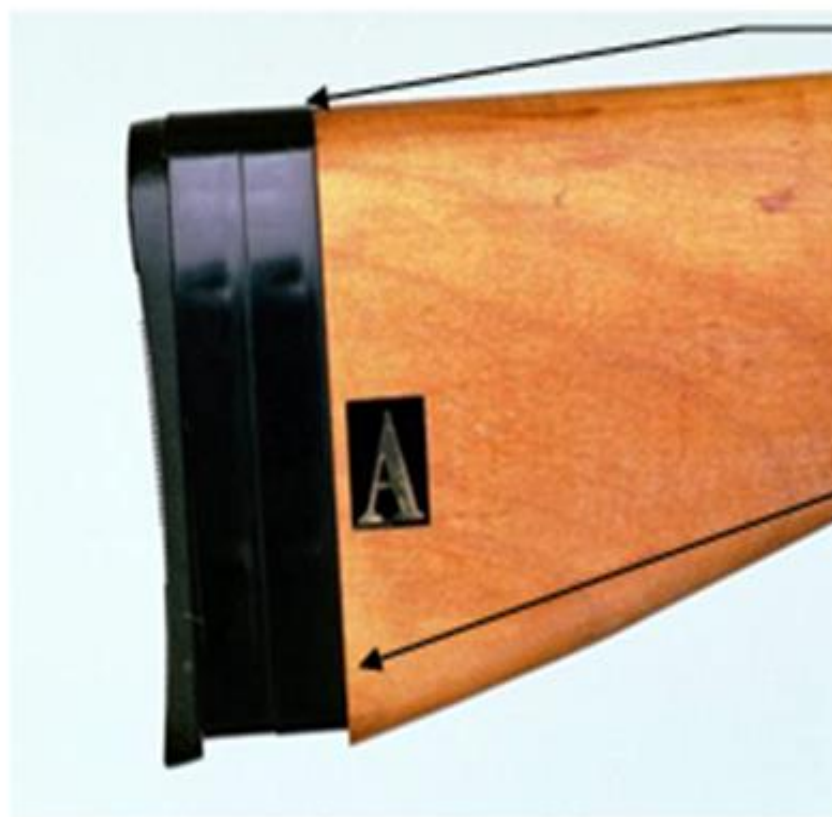
For Cross-Dominant Shooters

Cross-dominance: Aiming with non-dominant eye

Solution: Attach a 30x100mm blinder to the rear sight



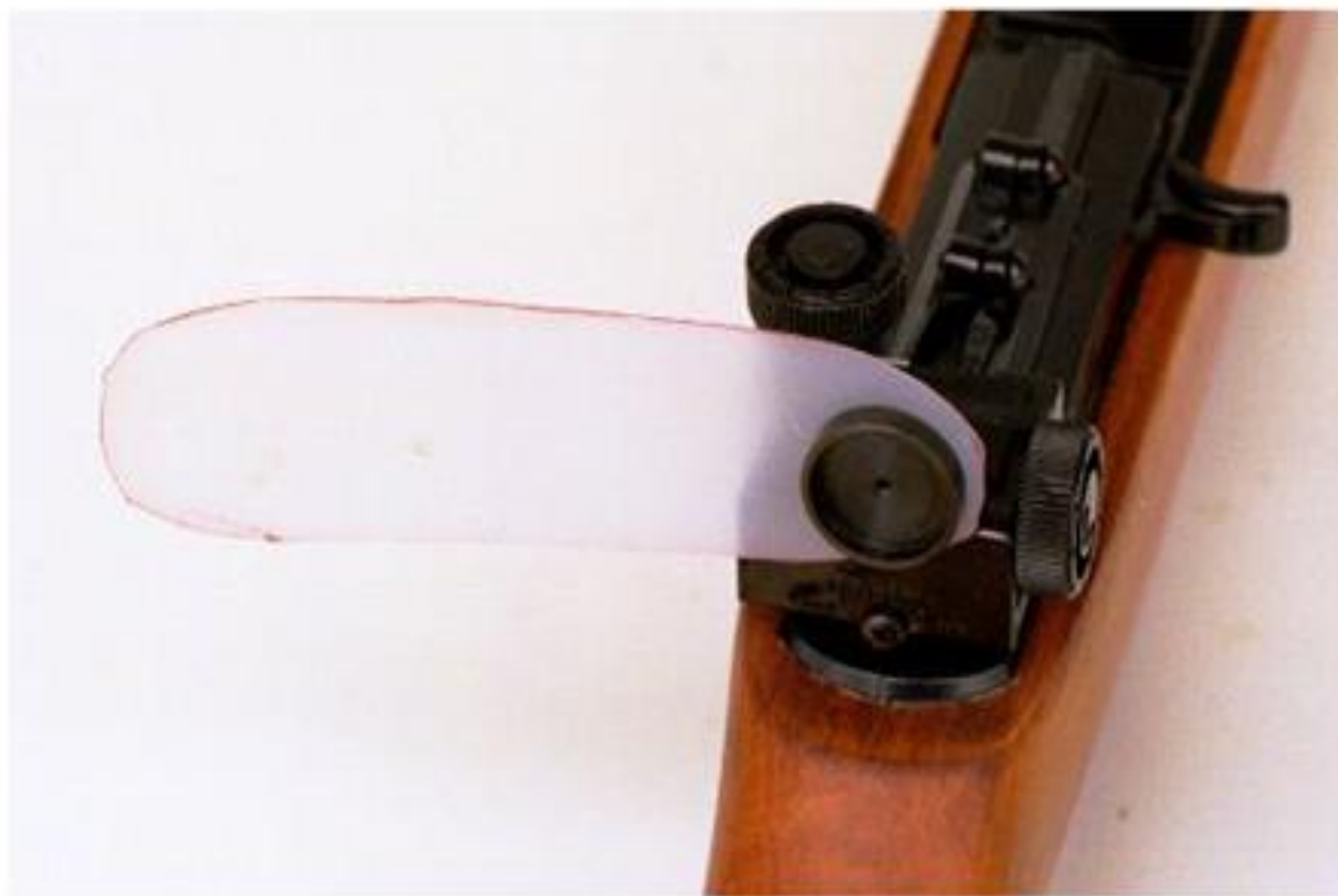
Correct Stock Length



Buttstock spacers

Add spacers to lengthen,
take out spacers to shorten

Rear Sight with Blinder



Support Hand Positions

These illustrations show different standing position support hand positions from the lowest (open hand on left) to the highest on the right (thumb and split fingers). Note that the wrist is allowed to bend only in the open hand position on the left. The wrist must be held straight in all other hand positions.



Shooting Glove

Wearing a shooting glove or even a leather work glove is permitted and makes holding the rifle in the standing position much more comfortable.



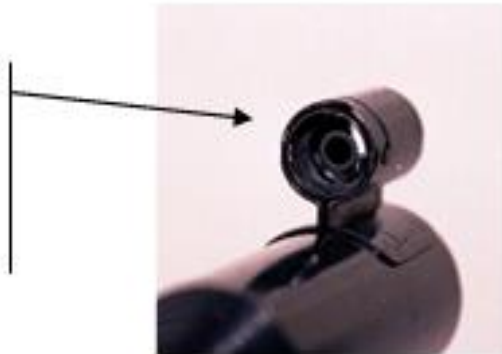
Sight Alignment

Correct sight alignment includes:

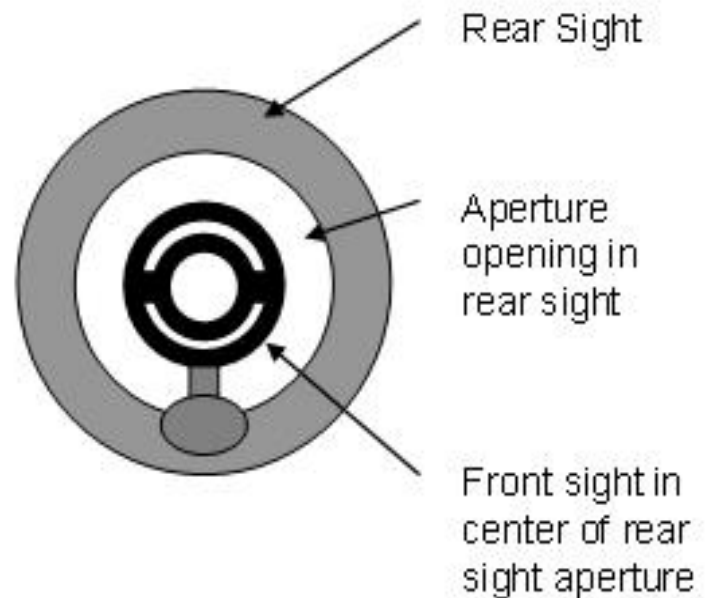
**Look through
rear sight
aperture.**



**See the front
sight and
position it in
the center of
the rear
aperture.**



Correct sight alignment looks like this.



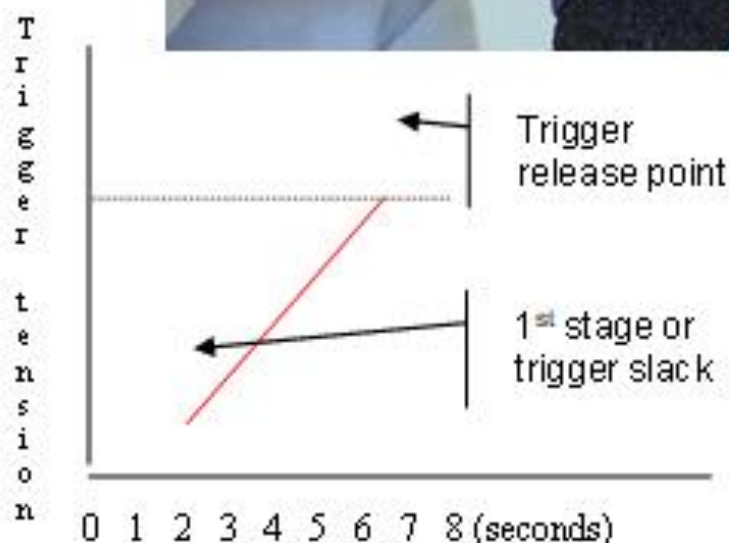
Basic Trigger Release

Get into position with the finger outside of the trigger guard.



When the sights are aligned, release the trigger by smoothly, gradually adding pressure to the trigger until the shot is released. The graphic (right) shows how pressure is added to the trigger over a period of 3 or 4 seconds. The trigger release must not disturb or move the rifle in the slightest way.

After aligning the sights place the finger on the trigger.



Front Sight Aperture Sizes



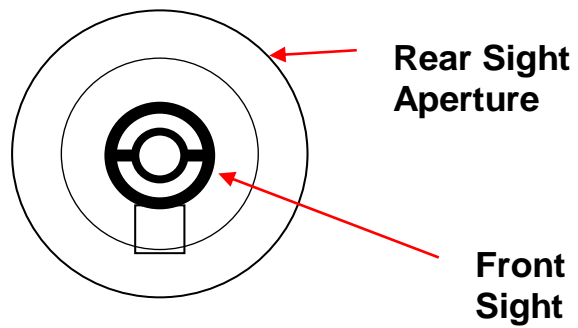
Correct front sight ring size — large



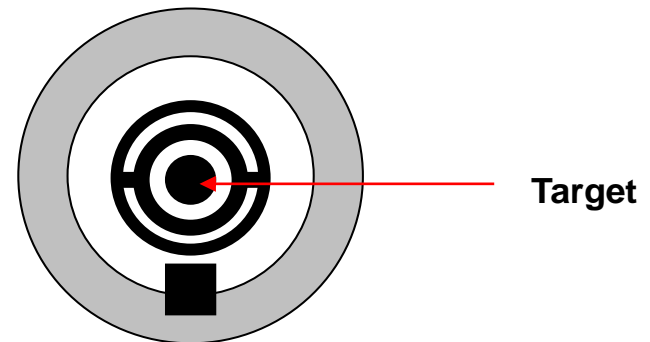
Incorrect front sight ring size — too tight

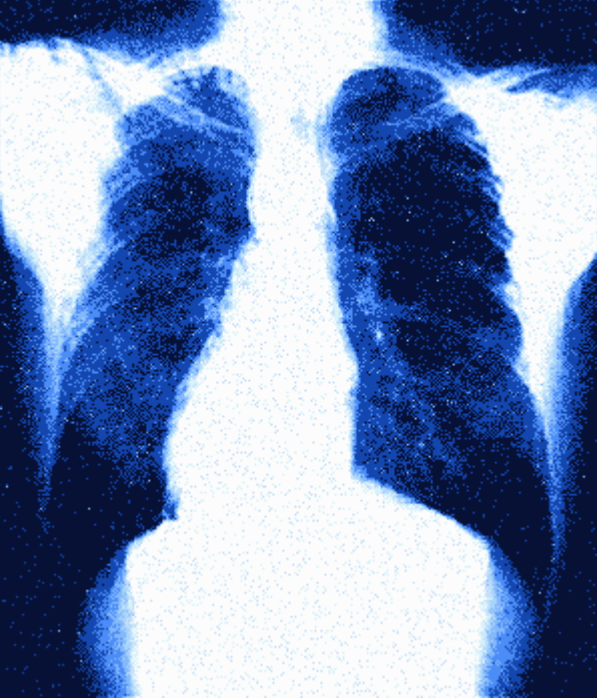
Aiming

Step 1 – Align the Sights



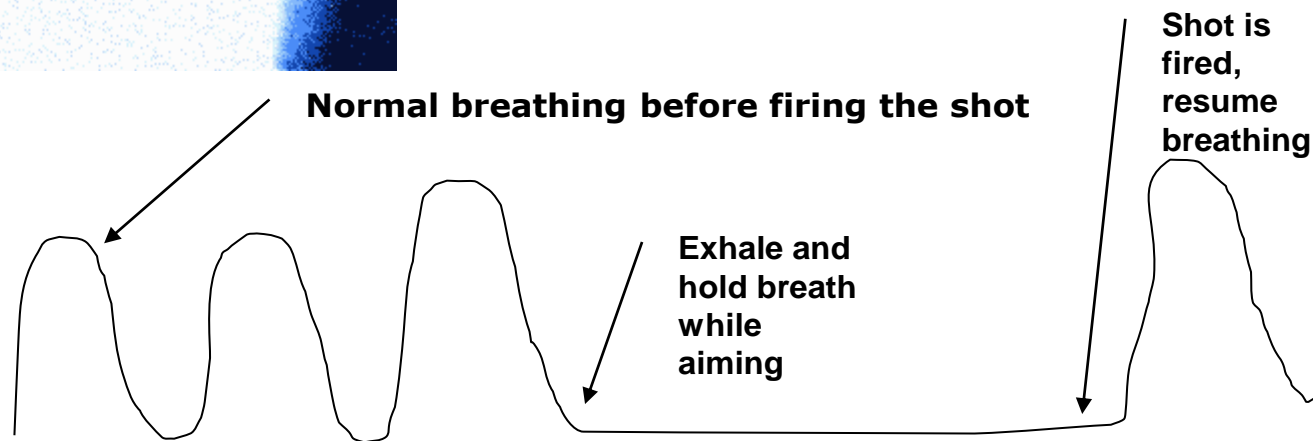
Step 2 – Center the Target in the Front Sight Ring



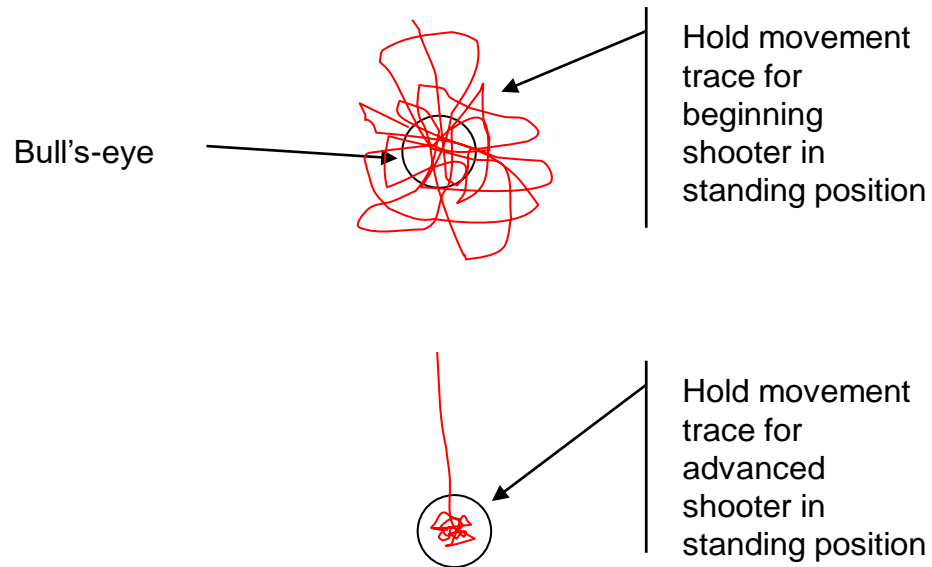


Category **5**

Breath Control



Holding Steady

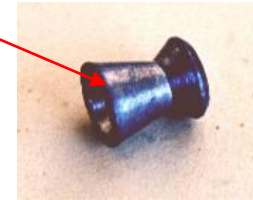


Pellet Loading

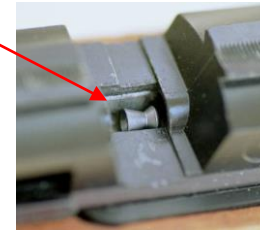


To cock the pneumatic air rifle (Daisy M853/753), extend the cocking lever as far as it will open, pause for a second and then close the lever.

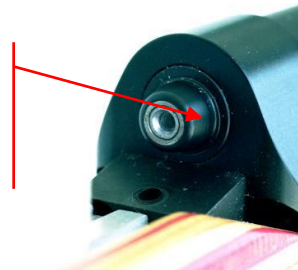
Load the pellet with the skirt (open) end to the rear.



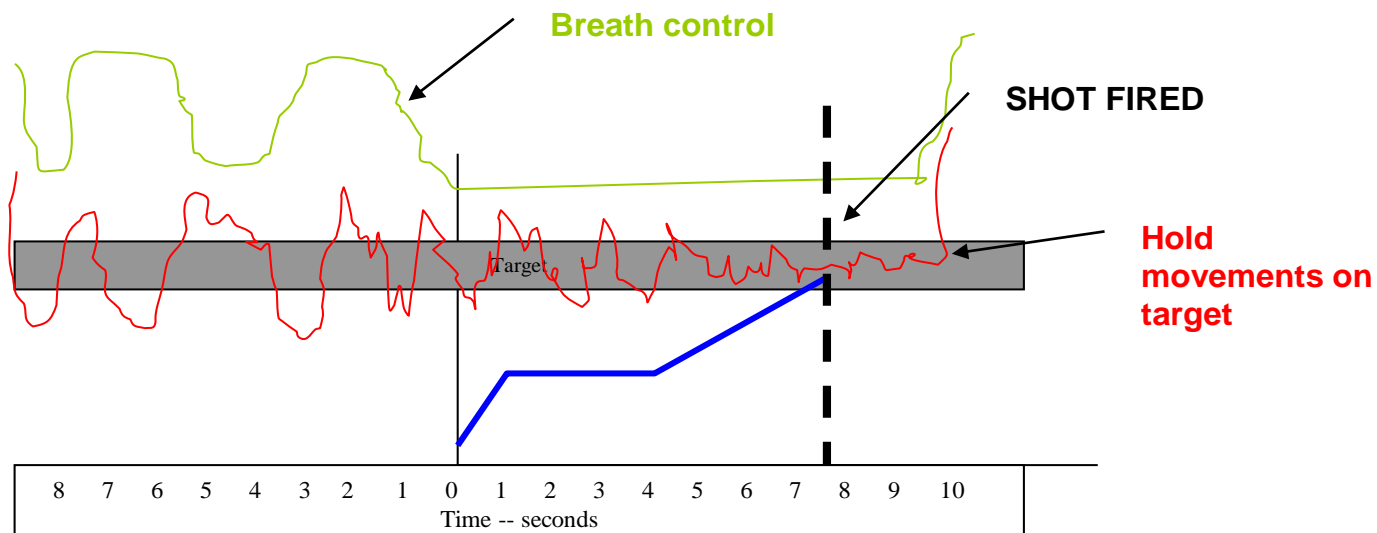
Load the Daisy air rifle by placing the pellet in the open loading port and closing the bolt.



Use thumb or finger to seat pellets flush with end of barrel in precision air rifles.

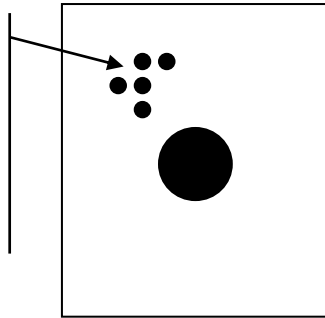


Firing the Shot

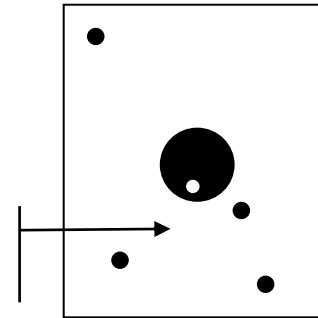


Evaluating Shot Groups

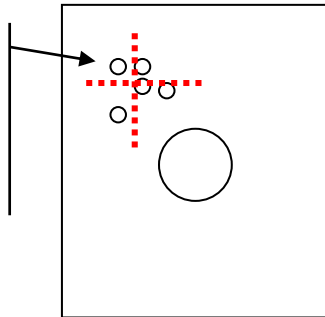
Excellent shot group, indicates excellent shooter performance



Large shot group

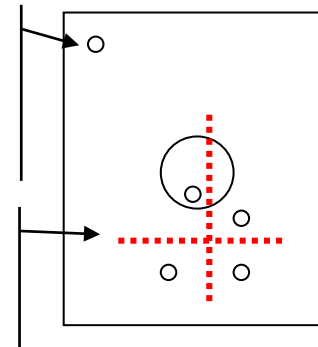


Draw vertical and horizontal line through center of group



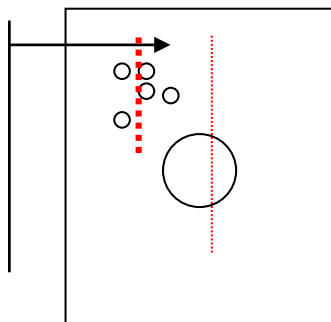
Disregard fliers in determining center of group

Draw lines through center of main part of group

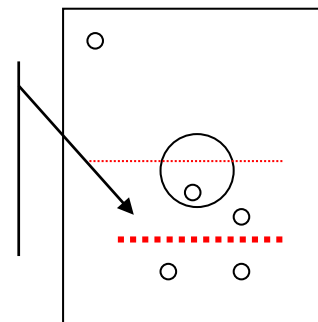


Calculating Sight Adjustments

Windage
change = 2.5
scoring rings
distance X 12
= 30 clicks R
(right)



Elevation change = 3
scoring rings X 12 clicks
= 36 clicks UP



Category **5**

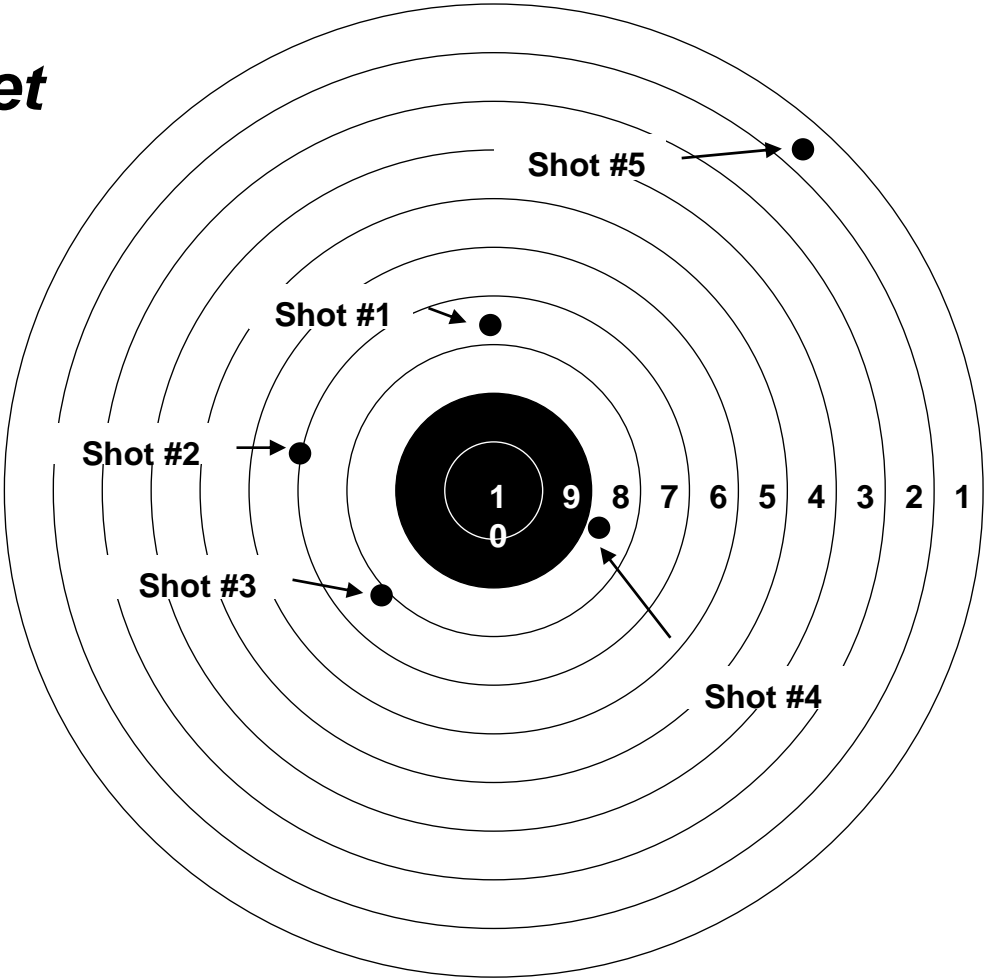
Basic Marksmanship Course Target (BMC)

Target for three-position air rifle shooting. This target is for new shooters.



Scoring Target

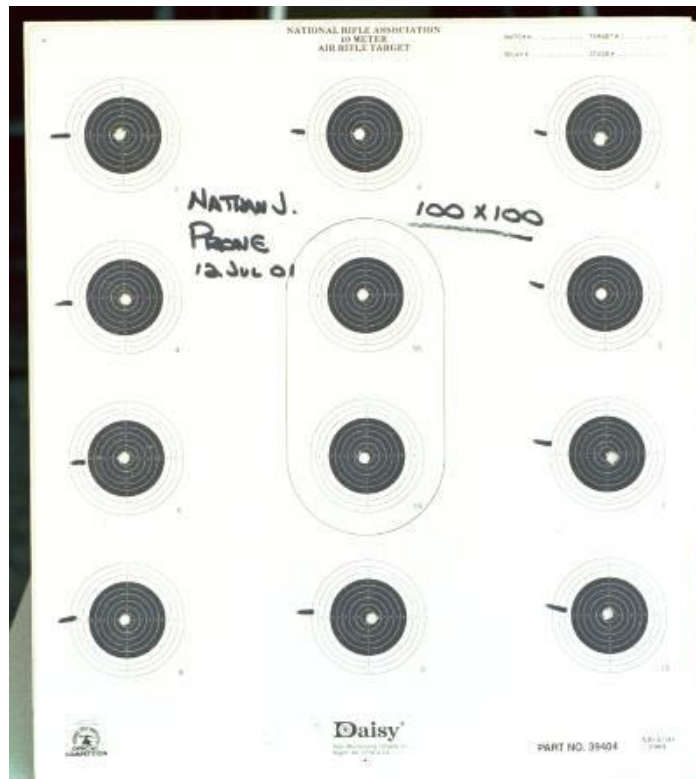
Category **5**



Category *5*

Outstanding Target

Target for three-position air rifle shooting. This target is an outstanding target fired by an experienced junior shooter.



Prone Position Without Rifle



Prone Position With Rifle, Without Sling



Move left hand forward and backward on fore end to locate hand position that raises the rifle to the level of the target.



Mark the point where the V between the thumb and hand is located. This is where the sling swivel should be placed. A coaching assistant should aid the shooter in doing this.

Attach Sling and Align Position



When getting into position with the sling, extend the arm and rotate it around the sling and into position against the sling swivel.



Finally, tighten up the sling until it takes over the work of supporting the weight of the rifle.



Prone Position Features

Sergei Martinov BLR #1 rank in world-2001



Prone positions, 3 Olympic medallists, Sydney 2000



Body angle to rifle varies from 5° to 15°.
Right leg is straight or bent.

Feet are turned to right—body lies mostly on left side.

Head is nearly erect, tipped towards target, not to side.

Sling supports weight of rifle.

Left elbow supports upper body—elbow is under line from hand to shoulder.



Butt plate high in shoulder and close to neck.

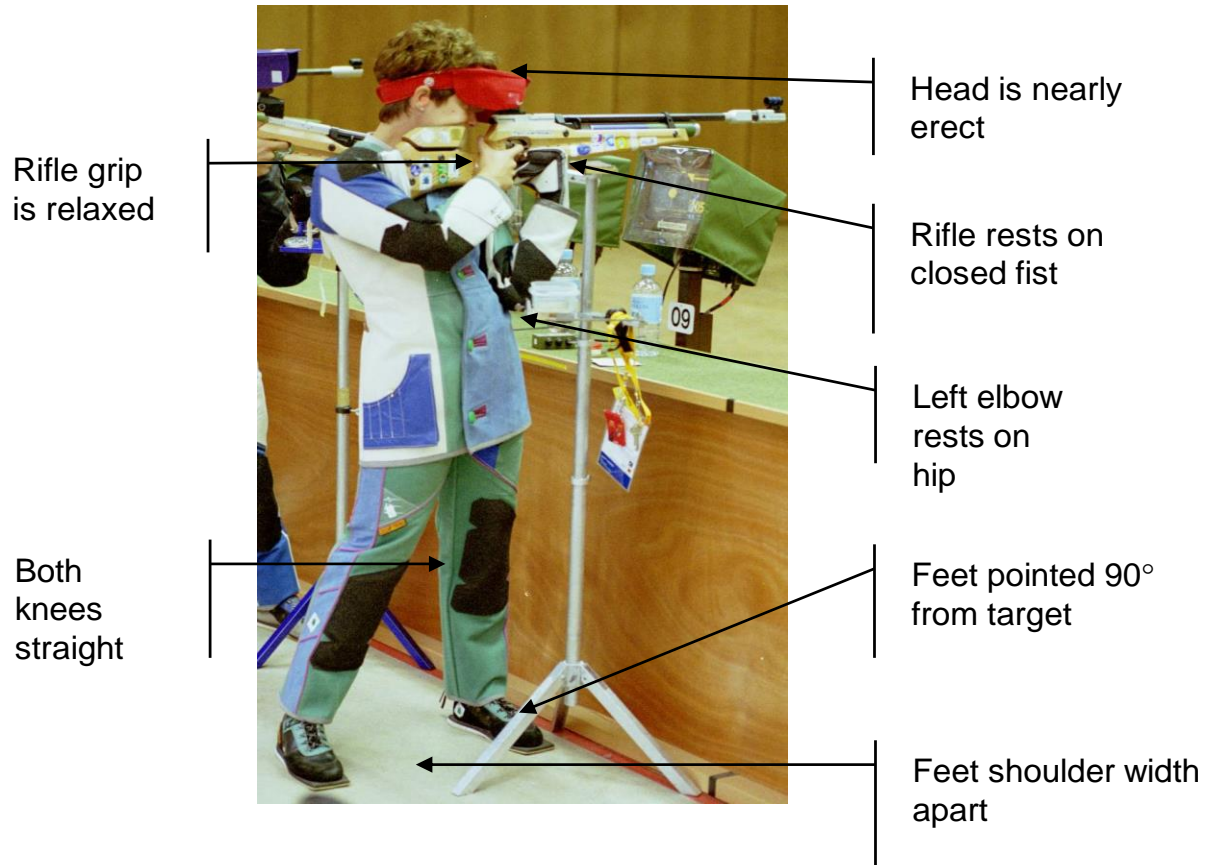
Head is nearly erect, tipped towards target, not to side.





Prone Position

Category **5**



Standing Position Without Rifle

In the standing position without the rifle, the body should be turned 90° away from the target and the left arm should be resting on the hip or side.

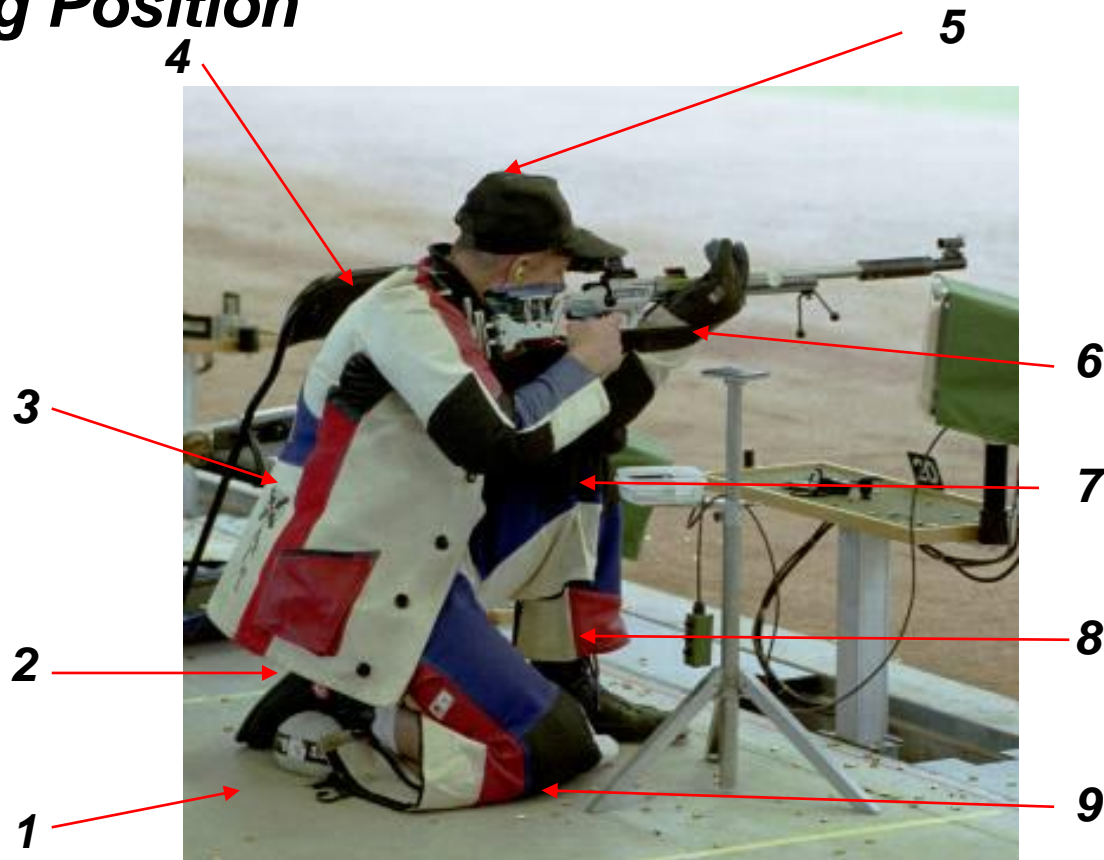
Be sure your support arm elbow is down on your side directly over your hip.





Standing Position

The Kneeling Position



Kneeling Roll



Homemade Kneeling Roll

Very satisfactory kneeling rolls can be made by cutting strips of carpet that are 8-10 inches wide. Roll the strips until they form a roll that is approximately five inches in diameter. Use duct tape to wrap the outside of the roll so that it retains its round shape.



Commercial Kneeling Roll

Kneeling Position Without Rifle

Be sure body weight is resting back on heel and kneeling roll.



Kneeling Position With Rifle

Move support hand forward and rearward to raise rifle to the level of the target with the head up.



Mark hand position, then adjust sling swivel to that point and attach sling.

Pre-Shot Routine

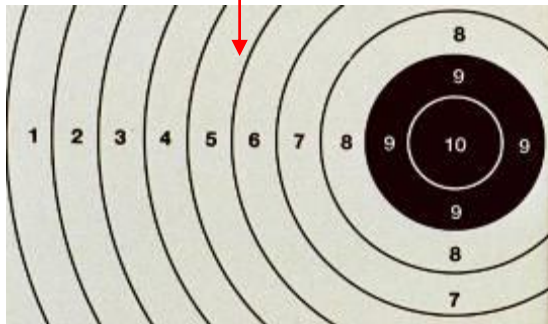
Category *5*



Category **5**

Official Air Rifle Targets

BMC Target
31.5mm 10 ring

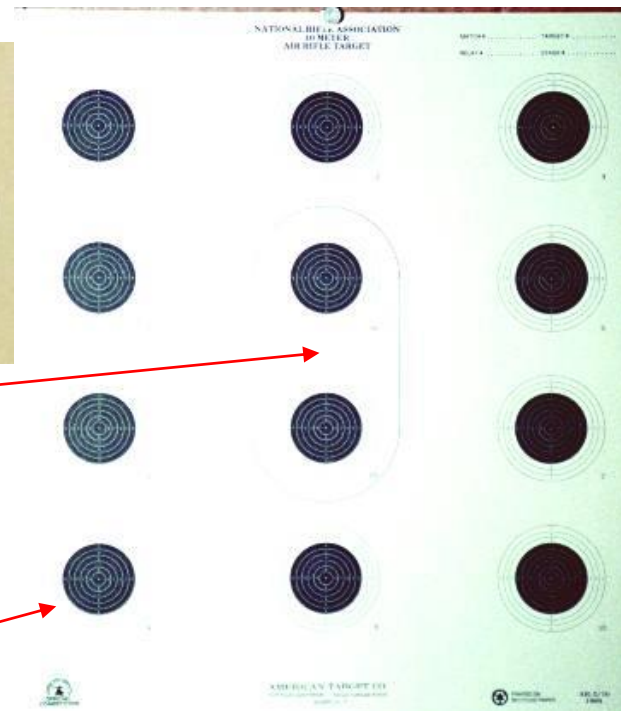


ISSF Target
0.5 mm 10 dot



Sighting
Targets

Official 10-bull
target



Finals

Category 5

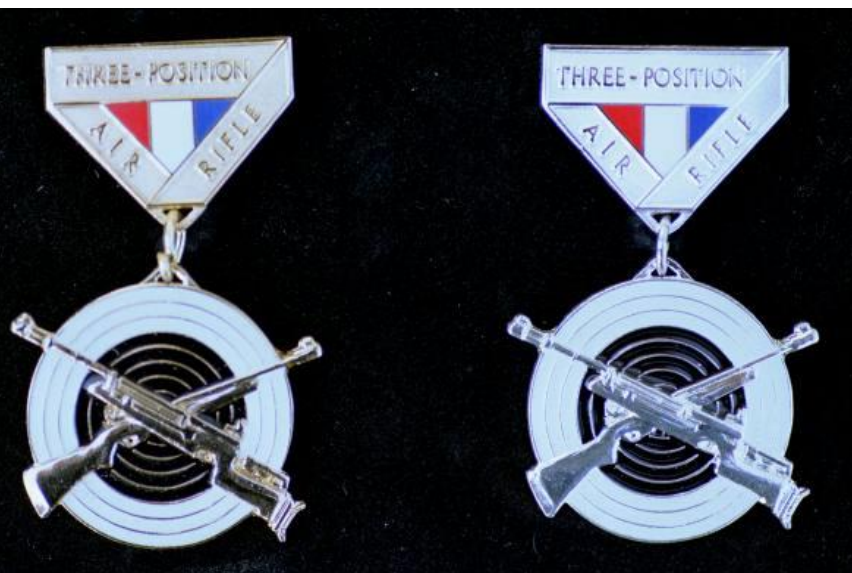
Finalists in Sporter class Junior Olympic National Championship prepare to fire one of their final round shots.

Men's air rifle finalists at a Pre-Olympic test competition in 2000 in Sydney. The targets here are electronic. Note the scoreboards and monitors above each shooter and the electronic scoreboard on the left.



Category 5

Competition Opportunities



Junior Bronze and Silver EIC Badges



Junior
Distinguished
Badge



Before anyone can go downrange to change targets or for any other purpose:

- A. Everyone must open their rifle actions and point their rifle muzzles up.
- B. No one can go downrange until guns are placed in safe storage.
- ✓ C. All air rifles must be unloaded, with CBI's inserted, checked and placed in rifle rack or grounded.
- D. All firers must finish firing.

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The proper time to place the index finger on the trigger is:

- ✓ A. After I start to aim at my target.
- B. After loading the rifle.
- C. When I start to put the rifle in position on my shoulder.
- D. Whenever it feels right.

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If I am with someone else who is handling a gun behind the firing line with the action closed, I may:

- A. Wait for an adult to show up.
- B. Mind my own business and hope nothing bad happens.
- C. Tell that person to put the gun away.
- ✓ D. Ask that person to open the action of the gun immediately.

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What are the safe loading Procedures?

- A. Open action, charge air, insert paper, close action, place rifle in position.
- ✓ B. Open action, charge air, insert pellet, close action, place rifle in position.
- C. Close action, discharge air, insert pellet, close bolt, place rifle on ground.
- D. Close action, charge air, insert pellet, close action, place rifle in position.

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The Command START means you can:

- A. Go to sleep.
- B. You can go down range.
- ✓ C. It is ok to begin firing and fire until I have completed the shots, or I have been instructed to shoot is completed or I hear STOP.
- D. Look at the other shooters on the range.

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On target ranges, the safest direction to point a gun muzzle is downrange or up towards the ceiling.



A. True

B. False

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When I finish firing my shots on a target, I should lay my rifle down, but I don't have to open the action or insert a CBI until the Range Officer tells me to do that.

A. True

✓ B. False

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No one is authorized to fire a shot until the command START is given, even if the command LOAD has already been given.
Doing what you're told

✓ A. True

B. False

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During the preparation period I can get into position, remove my CBIs, load my weapon and close my bolt.

- A. True
- ✓ B. False

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The “Rules for Safe Gun Handling”
apply only to air rifle shooting and
not to other types of guns.

- A. True
- ✓ B. False

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