

The Navy League of Canada



Marksmanship Training Module

This handbook was developed to assist in the instruction of the Officers and Cadets of Navy League of Canada, Ontario Division in the safe handling of firearms, and also as a guide to earning a Navy League Cadet Marksmanship Qualification Badge.

While we are only permitted to train the Cadets in the use of .177 caliber Air Rifles, it is felt that it is in the best interests of the Cadets safety to include as much additional safety and safe handling material as possible.

This manual, as well as the exams the Cadets must pass prior to actual range work, has been compiled from the following sources:

NL8 Cadet Regulations;

Canadian Firearms Safety Course Handbook J2-126/1993E;

Canadian Forces, Special Service Force, Petawawa, Range Safety Officers Course material;

Canadian Forces, Small Arms Coach material;

The Warrior (1994): Canadian Forces, Combat Readiness Standards Booklet;

Canadian Cadet Movement Air Rifle Training Aide-Memoire A-CR-CCP-177/PT-001; and

The Complete Idiots Guide to Shooting Ninety by Steve Baker

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What is Firearms Safety?

1. A firearm should always be considered loaded until it is proven safe, by you!

A large number of people are wounded or killed each year by the accidental firing of a firearm. You must remember that a firearm is capable at any time of wounding or killing you or anyone near you. A firearm is to be treated with the utmost respect at all times.

2. Always check your firearm!

Every time you pick up a firearm, consider it loaded. Before you do anything with a firearm you must take the following steps:

- Make sure the safety is on;
- Remove the magazine/clip, if used, and check for any ammunition;
- Open the breach and check for a pellet in the chamber.
- Keep the breach open.

When someone hands you a firearm, you must follow the same procedure. It is not a matter of trusting the other person to check the firearm, but to ensure that you are safe from any accidents.

3. Never point a firearm at another person!

A person who ignores this rule is a very dangerous person.

- Never point a firearm at another person even if the safety is on.
- Your firearm should only point in the direction of the targets.
- If moving always point the muzzle of the firearm to the deck head (ceiling).
- Always watch where the muzzle of the firearm is pointed.

4. Keep your fingers away from the trigger until you are ready to fire!

- Never touch or play with the trigger, this could cause the accidental firing of the firearm.
- A good rule to remember: Never put anything inside the trigger guard until you are ready to fire the firearm.

5. Keep the firearm on safe until you are ready to fire!

- The safety stops the firearm from firing accidentally;
- Always keep the safety on until you are ready to fire;

- Only remove the safety when you are ready to fire.

6. **Never hand over or accept a loaded firearm!**

- When giving a firearm to another person, or accepting one, always make sure the firearm is unloaded and the safety is on.

Accidental Misuse of firearms

Common Firearm Accidents

Most firearm accidents happen because of one or more of the following reasons:

- Unauthorized access or improper storage;
- Lack of control of muzzle direction;
- Careless or ignorant use;
- Accidental firing;
- Users who are not competent;
- Aiming or firing at the wrong target;
- Using the ammunition.

Insecure storage of firearms also leads to many tragedies due to use by unqualified or unauthorized persons.

Examples of Accidents

1. A child was playing with a rifle that had been left loaded and within easy reach. A parent grabbed the barrel of the rifle and pulled it away from the child, but was wounded when the rifle fired.
2. Two young children playing in their home found a loaded handgun in a bedside table. One was killed when the firearm fired.

Causes:

- insecure storage of a firearm;
- unsafe muzzle direction

Most accidents involve a muzzle being pointed at the holder of the firearm or someone else. They occur when people have their finger on the trigger before they are absolutely ready to shoot, or quite often when other objects accidentally release the trigger.

Examples of Accidents

1. A boy was carrying his rifle cocked, loaded and ready to fire with the trigger portion under his armpit. The rifle fired when he moved his arm, wounding another hunter.

2. A hunter and his brother were crawling through dense bush with a loaded and cocked rifle. The rifle caught on a bush and accidentally fired wounding the brother.
3. A shooter at a range had his finger on the trigger of his pistol while it was pointed at a 45 degree angle in front of him at his firing point. He prematurely applied pressure to the trigger causing it to accidentally discharge into the table. Bullet fragments caused a leg wound.

Causes:

- Unsafe muzzle direction or control;
- Carrying a loaded and cocked firearm; and,
- Finger on the trigger before the sights are aligned on the target.

Many firearms accidents occur while getting in or out of cars or a boat with a loaded firearm.

Examples of Accidents

1. One case involved a man who propped his loaded firearm against a car. It fell and fired, and the bullet ricocheted from the roof of the car to hit the victim sitting inside.
2. A woman was killed when she pulled a shotgun towards herself by the barrel as she was getting out of a pick-up truck. The trigger caught on the seat and the shotgun fired.

Causes:

- Unsafe muzzle direction;
- Loading a firearm before being ready to fire; and
- Careless handling of a firearm around vehicles.

Many accidents happen when loading and unloading firearms.

Examples of Accidents

1. In one case, a man was loading his rifle with the muzzle pointing to his left, where another person was standing. The other person was wounded when the rifle accidentally fired.
2. Another young man wounded himself when he rushed to load a cartridge into his rifle while his finger was on the trigger.

3. An accident occurred when a boy began to pump the action of his rifle to see if it was loaded. The rifle fired and the bullet struck a young girl.

Causes:

- Unsafe muzzle direction;
- Unsafe loading/unloading procedure.

Accidents can occur when the wrong ammunition is used.

Examples of Accidents

1. A hunter was carrying a mix of different shotgun shells in his pockets. He accidentally loaded a 20 gauge shell into his 12 gauge shotgun. When this did not fire, he then inserted a 12 gauge shell behind the first shell. When this shell was fired, the barrel burst and injured the shooters face.
2. A box of ammunition purchased at a store contained a similar but incorrect cartridge that had probably been switched accidentally by a previous customer. When fired, the barrel of the firearm burst and injured the shooters hands.

Causes:

- Using wrong ammunition;
- Not checking if a firearm barrel is clear before loading.

The Vital Four

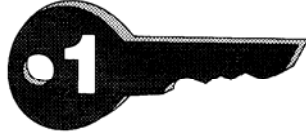


As you will have noticed from the previous examples, almost all firearms accidents could be prevented if certain basic safety rules are followed. The most crucial of these are called the “Virtual Four” rules. These are shown and explained in chart 1-1.

The “Vital Four “Rules of Firearms Safety

- **Regard every firearm as loaded**
 - Always assume that a firearm is loaded until you have personally checked it.
 - Regard any firearm as a potential hazard even though you see a person handling it safely.
- **Control the muzzle direction at all times**
 - Continually identify the safest muzzle direction and keep you gun pointed that way.
 - Only point a firearm at a practice target that you intend to shoot.

- The muzzle of a firearm should not be pointed towards yourself or any other person.
- **Keep your finger off the trigger except when firing**
 - Resist the temptation to put your finger on the trigger when you pick up or hold a firearm.
 - Accidental discharges will far more likely occur if your finger is on the trigger.
- **Open the action and check that there is no ammunition in the firearm**
 - Every time you handle a firearm, for any reason, check to see that both the chamber and magazine are empty.
 - Pass or accept only open, unloaded firearms. This is an important habit to develop.(Chart 1-1) The Vital Four Rules of Firearms Safety (Chart 1-2) 3 Keys to firearms safety

Firearms Hazards & Precautions

3 KEYS TO FIREARMS SAFETY	
<ul style="list-style-type: none"> • LOCK TRIGGER OR ACTION BEFORE FIREARM TRANSPORT OR STORAGE • KEEP FIREARMS & AMMUNITION OUT OF SIGHT DURING TRANSPORT & STORAGE • TRANSPORT & STORE FIREARMS IN LOCKED CONTAINERS OR SPACES • STORE FIREARM & AMMUNITION SEPARATELY & SECURELY 	 <p>KEEP FIREARMS AND AMMUNITION SEPARATE AND SECURE WHEN NOT IN USE</p>
<ul style="list-style-type: none"> • LOAD ONLY AT THE SHOOTING AREA • UNLOAD BEFORE - <ul style="list-style-type: none"> (a) LEAVING THE SHOOTING AREA (b) PASSING A FIREARM TO SOMEONE ELSE (c) CLIMBING OR CROSSING AN OBSTACLE (d) ENTERING A VEHICLE OR BUILDING (e) TRANSPORT OR STORAGE 	 <p>LOAD A FIREARM ONLY FOR ACTUAL USE</p>
<ul style="list-style-type: none"> • CHECK THE BARREL IS CLEAR BEFORE LOADING • USE THE CORRECT AMMUNITION • USE THE SAFETY, BUT DON'T RELY ON IT • NEVER AIM A FIREARM AT ANYTHING YOU DON'T INTEND TO SHOOT • CHECK AROUND AND BEYOND YOUR TARGET BEFORE SHOOTING • A BULLET CAN BOUNCE OFF WATER OR HARD SURFACES, CONSIDER WHERE ELSE IT MIGHT GO 	 <p>BE SURE BEFORE YOU SHOOT</p>

HAZARD	PRECAUTIONS
ACCESS BY UNQUALIFIED OR UNAUTHORIZED USERS	<ul style="list-style-type: none"> • Neutralize action before storage or transport (or use trigger or cable lock) • Store firearms safely - locked cabinet or container, out of view • Store ammunition separately - locked container, out of view • Supervise unqualified users
ACCIDENTAL FIRING	<ul style="list-style-type: none"> • Muzzle always under control • Unload firearm when not in immediate use • Open action - when handling, climbing obstacles or during transport • Keep finger off trigger except when firing • Safety ON • No horseplay
WRONG AMMUNITION	<ul style="list-style-type: none"> • Carry only correct ammunition • Check ammunition against firearm data stamp • Use proper ammunition for target & conditions • If re-loading, follow correct procedures
RICOCHETS	<ul style="list-style-type: none"> • Do not fire at flat or hard surfaces or water • Check area near or behind target before firing
WRONG TARGET	<ul style="list-style-type: none"> • Identify target before firing • Do not fire over hills or upwards • Know what is behind target • Make sure backstop is adequate

(Chart 1-3) Firearm hazards & Precautions

Introduction

To understand the safe use of air rifles, you must learn how to identify what action the air rifle uses, how that action works and how to know when it is unloaded.

Action categories & types

Air rifles come in three different categories. They are defined as:

Single shot

Do not have a magazine. Each round is loaded manually into the chamber.

Manual Repeating

Has a magazine. Each round is inserted into the chamber through some kind of manual mechanism.

Self-Loading Repeating

Also has a magazine. Each round is automatically inserted into the chamber after the previous round has fired. This is operated by compressed gas.

Firearms are also generally classified by their type of action. (figure 2-1) The four types are:

Bolt Action

Similar to a door bolt and can be single shot and manually repeating.

Lever Action

Has a metal handle just behind the trigger. Commonly is manually repeating.

Break or Hinge Action

Opens near the breech.

Semi-Automatic Action

Fires the pellet and reloads another pellet in the chamber automatically.

Safety and Release Mechanisms

A mechanical device known as a “safety” is included in most firearms to reduce the chances of accidental firing. However, mechanical devices can fail, therefore, safe handling of a firearm by the person holding it will always be the most important safety device.

The safety prevents the firearm from firing by interrupting the firing sequence. The safety blocks one or more of the **trigger, sear, hammer or firing pin**.

Never rely on the safety to prevent accidental firing. A safety can fail.

There are several types of safeties. These are **half cock notch on a hammer, the cross bolt, the wing, and the slide**. (Figure 2-1)

Hammer on half cock notch

This type is common on lever action firearms, single action revolvers and muzzle-loaders. The hammer has three positions- full forward, half cock and full cock. When the hammer is fully forward resting on the firing pin, a sudden blow on the hammer can cause the firearm to discharge prematurely. When the hammer is part way back or in half cock position, the safety is considered to be **ON**. When the hammer is all the way back, it is in full-cock position and the safety is considered to be **OFF**.

Be very careful when placing the hammer in any of the three positions as it could slip from beneath your thumb and fire the cartridge.

Cross-bolt

Push button type. Common on pump-action and semi-automatics. Blocks trigger mechanism or hammer.

Wing or Lever type

Frequently used on the cocking piece of a bolt action. Often located above the trigger area on the left or right side of the bolt. (figure 2-2)

Slide

Common on shotguns and rifles; usually on the right side of the receiver on rifles and top of the stock on shotguns. It blocks the firing mechanism.

The safety position can be indicated in several ways; for example

- “ Fire “ & “ Safe “
- “ ON “ & “ OFF “
- “Red “& “Black “Red means safety is **OFF** and the firearm can be fired; Black means the safety is **ON** and the firearm should not be able to be fired.

(Think of it as: “Red = Fire “)

However there is no standard rule for indicating the safety position, and sometimes none of the above positions can be found on the firearm. If so, check to be certain the firearm is unloaded and pointing in a safe direction **BEFORE** checking the safety operation.

Before loading any firearm, determine the SAFE position of the safety.

Action releases

Most firearms have some type of mechanism to allow an action to be opened or closed. The location of the action release mechanism depends on the **make** and **model** of the firearm.

Before handling any firearm, find out where its action release is located from the owner's manual or a firearms expert.

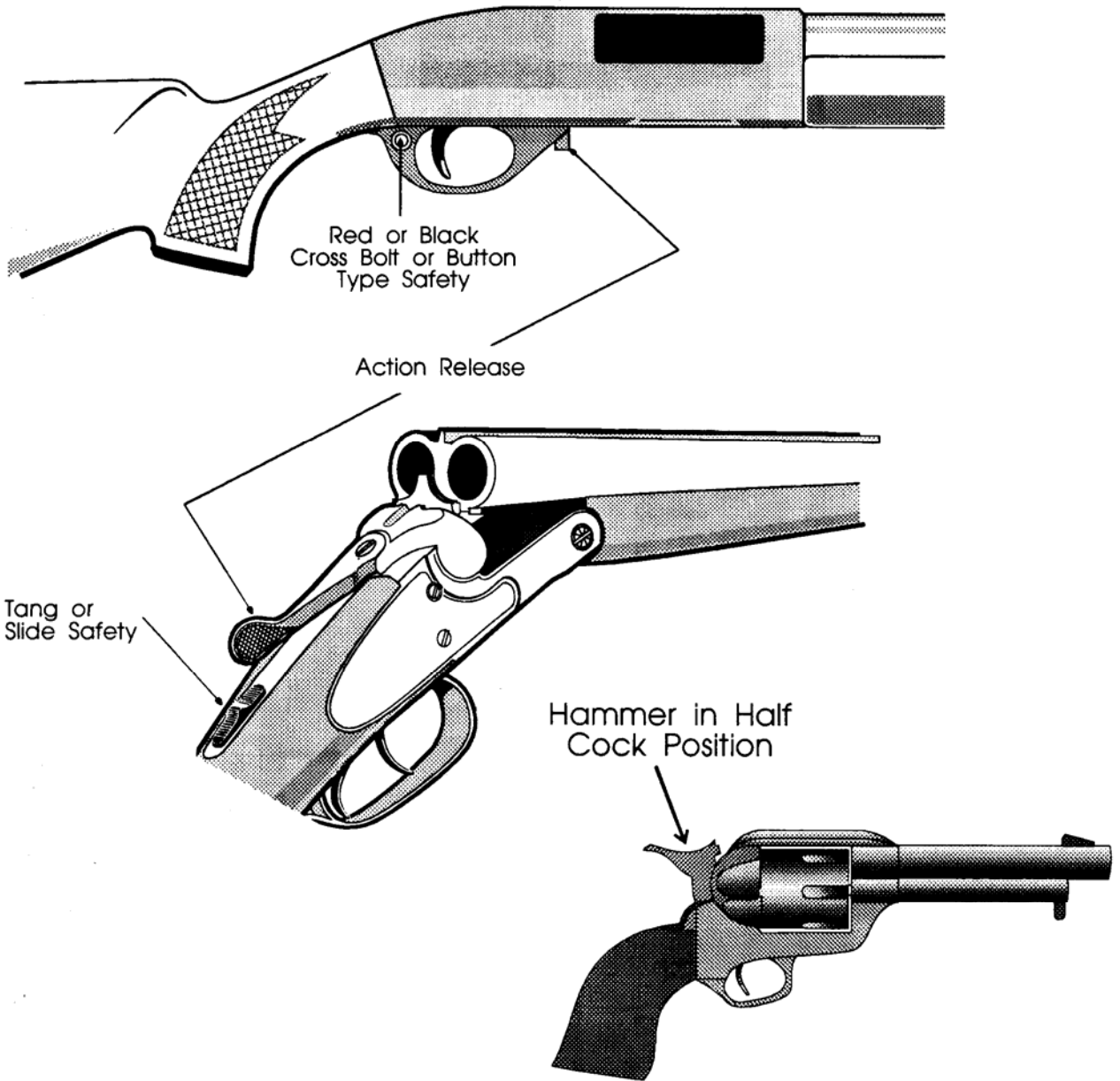


Figure 2-1
Various types of safeties and action releases

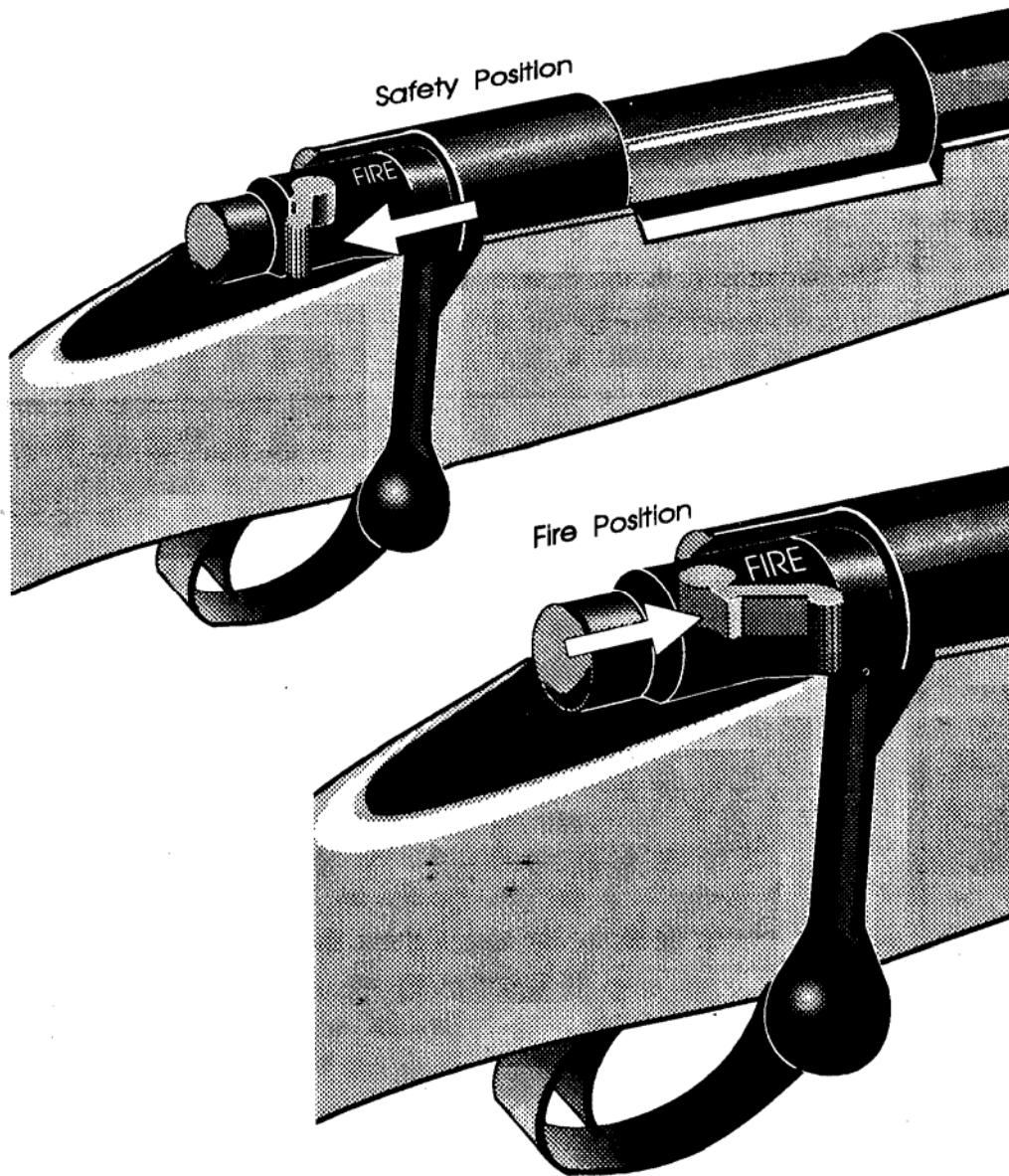


Figure 2--2
Wing or Lever-Type Safety

Introduction

This chapter shows you how to safely handle a firearm. Particular attention is given to “Range Safety Procedures”.

Remember the second rule or “KEY “-
Load the firearm only for actual use.

A safe practice is

- not to chamber a cartridge until you are ready to fire;
- Control the muzzle of the rifle;
- Keep the safety on at all times;
- Protect the trigger of your firearms at all times.

Other special rules to follow are:

- Always be sure of your target and the area beyond your target. Don't shoot at targets near the top of a hill since people or livestock may be in line of fire over the hill. Never shoot near a building; some person may be using it as a shelter.
- Don't fire in the direction of water, rocks, or flat surfaces that may cause the bullet to break up or ricochet.
- When you cross a fence or an area that is slippery, rocky or uneven, unload your firearm and **leave the action open**. If you are crossing a fence alone, place the firearm under the fence with the muzzle on the ground and pointed away from where you are crossing.

Carrying Positions

Muzzle direction is always important when carrying a firearm. You can control the muzzle direction safely only if you use proper carrying positions. There is only one carrying position used on Cadet ranges. This is the barrel pointed towards the deck head or ceiling.

Never carry an air rifle in a manner that will allow the muzzle to be pointed at another person.

Safety Procedures at the Range

Range Safety Rules

Every range has rules of safe behavior. These may vary but will include the standard ones as shown below.

1. Muzzle direction is always down range only.

2. The action of any firearm must be open at all times except when actually being used on the range.
3. Firearms must be handled **ONLY** at the firing line.
4. No firearm is to be loaded until the command is given by the **Range Safety Officer**.
5. Fingers must be kept out of the trigger guard and off the trigger until the shooter is in position to fire.
6. Upon the command " Cease Fire " all firing stops **AT ONCE**, firearms are unloaded, actions are opened and firearms laid on the mat or on the table, muzzle pointing in a safe direction down range.
7. During a cease fire, no-one will handle firearms, ammunition, or equipment. Persons not involved in changing targets should stand well behind the cease- fire line. (Figure 3-1)
8. All ammunition should be under the control of the club when dealing with minors.
9. Firearms should be checked by the Range Safety Officer on the cease-fire to be sure all actions are opened and no shells are in the breech.
10. At no time will horseplay, careless handling of firearms or any other distracting activity be permitted while shooting is in progress.
11. Make sure you are using the correct ammunition for your firearm.
12. Never shoot intentionally at target holders or other range gear.

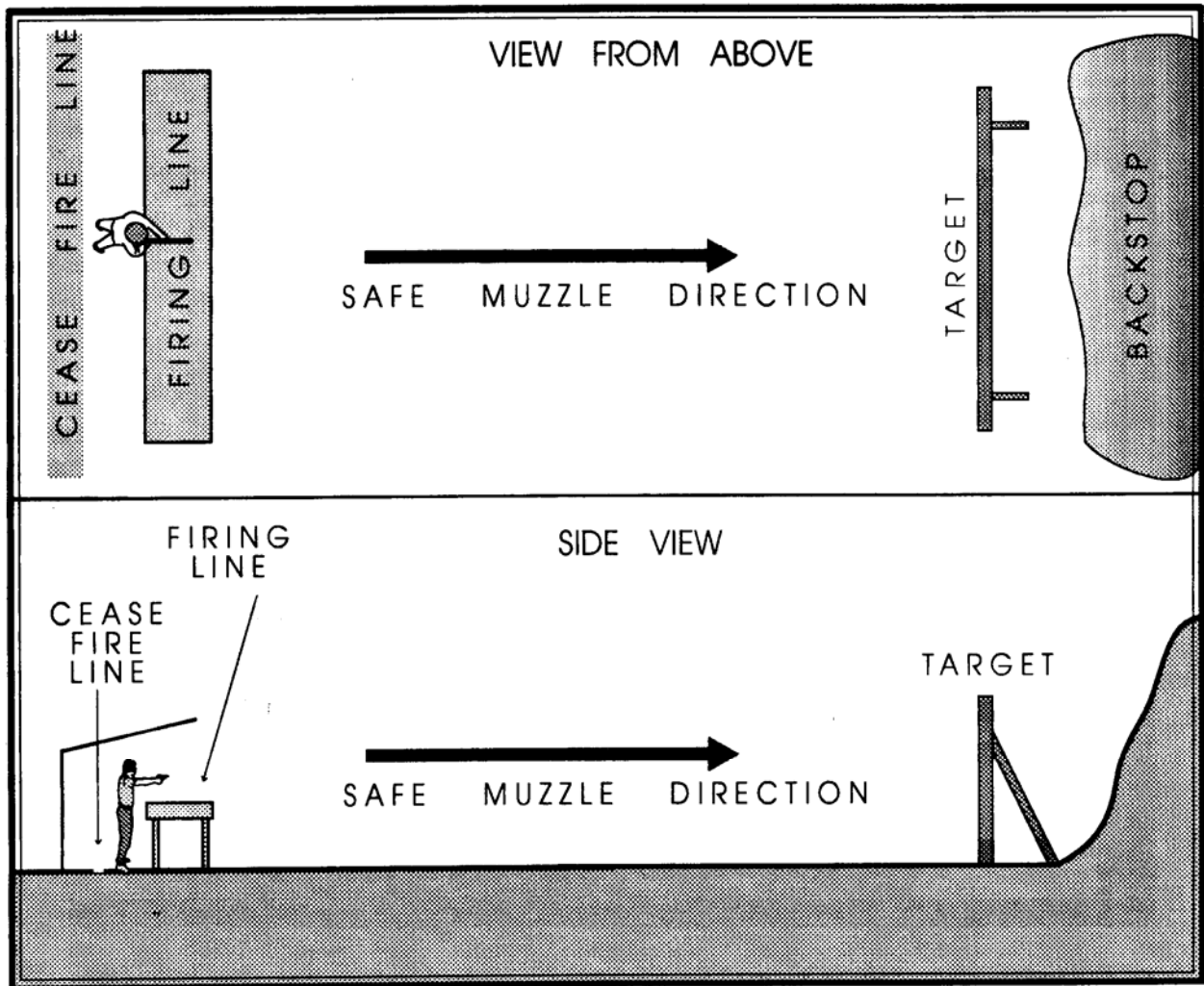


Figure 3-1
Typical Range layout

Range Etiquette

As well as the range safety rules, there are certain standards of range etiquette followed by shooters who are considerate of others. Some of these standards are listed below.

1. Rules and procedures vary between ranges. Check local rules before beginning and obey those rules. There should be a safety briefing before every range practice. This is usually given by the Range Safety Officer or delegate.
2. Sign in to the firing range upon arrival.
3. Avoid interrupting or distracting others when they are shooting.
4. Leave safe space between yourself and other shooters.
5. Clean up after shooting.
6. Put away any range gear you have used.

Course Range Commands

The following are the commands you will hear during the practical portion of this course on the range. These commands are to be listened to and obeyed immediately.

- Firers assume your firing positions.

Firers move behind their rifle and assume the prone position. No one is to touch the firearms at this time.

- With a five round magazine, Load.

Firers pick up their rifles, load a five round magazine and await further instructions.

- At the target to your front, in your own time, fire.

Firers are able to engage their own target. First they must cock the weapon, pump the action once to charge the air cylinder, align their sights on their target, remove the safety and fire. This procedure is to be carried out for all shots.

- Cease Fire

On the command “ Cease Fire “, all firers are to immediately stop firing, unload their firearms and prove clear, and once checked by the Range safety Officer or delegate, step back to the cease fire line.

- Unload and prove clear.

Upon completion of firing all five rounds, each firer will lay their rifle down and raise their right hand until given this command. When given this command they will:

1. Pick up their rifle, cock it and pump the action once;
2. Aim at their target and fire;
3. Cock their rifle again, pump the action and fire at their target again;
4. Open the action of their rifle, safety on and wait until checked by the Range Safety Officer or delegate.

Marksmanship

Marksmanship is the ability to hit your mark or target. Good marksmanship is important for safe shooting. When you can shoot accurately, you will not need to spend time thinking about how to aim and shoot. Instead you will have time to think: Is this shot safe? Is the path to and beyond the target clear?

Marksmanship depends on **breath control, aiming, trigger control, follow through and shooting position**. These are discussed below.

Breath control

You need to control your breathing in order to shoot accurately. Your gun barrel will waver unless you control your breathing at the exact moment of firing.

When you are in a shooting position, take a few deep breaths, exhale a portion of the last one, and hold your breath while you aim and squeeze the trigger. This will help you to hold your barrel and sights on the target.

If you hold your breath too long (more than about 8 seconds), you may lose your breath control and miss the target.

Aiming

Use your “master eye” for sighting. It is the stronger of your two eyes and will judge range and focus more accurately.

To find out which is your master eye, point your finger at a distant object with both eyes open. First close one eye and then the other. Your finger will remain lined up with the object when your master eye is open.

You must also learn to use your gun sights if your aim is to be accurate. When you aim any sight at a target, this creates a “sight picture” Open sights require you to physically line both the rear and front sights with the target. This process is called “Sight Alignment”. (Figure 3a-1)

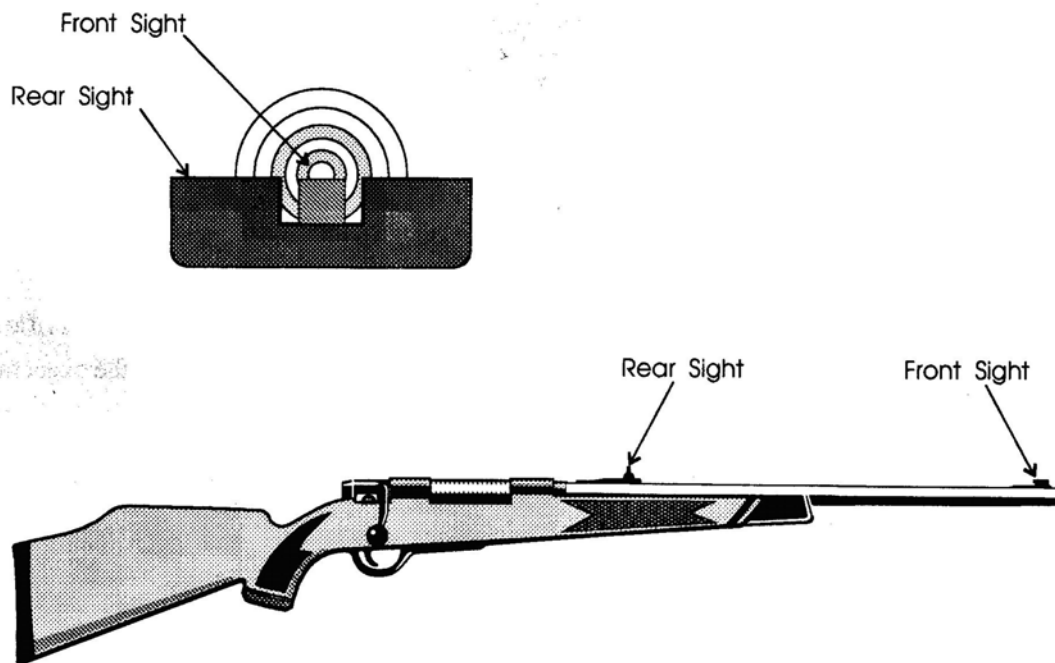


Figure 3a-1
Open sights aligned on a target

Trigger Operation

Correct trigger control is essential for accurate shooting. When sights are aligned on the target, squeeze the trigger slowly and steadily rearward. Avoid yanking or pulling. Anything other than a smooth squeeze will cause the firearm to waver and send the shot off target.

Relax before the gun fires to allow each shot to happen almost as a “surprise”. One way to ensure a smooth squeeze is to use the pad of your trigger finger rather than the joint.

Follow-through

Follow through simply means holding your firing position after the gun has been fired. If you do not, it is more likely that your aim will be off target. Follow-through helps make sure that the bullet leaves the barrel before the gun moves.

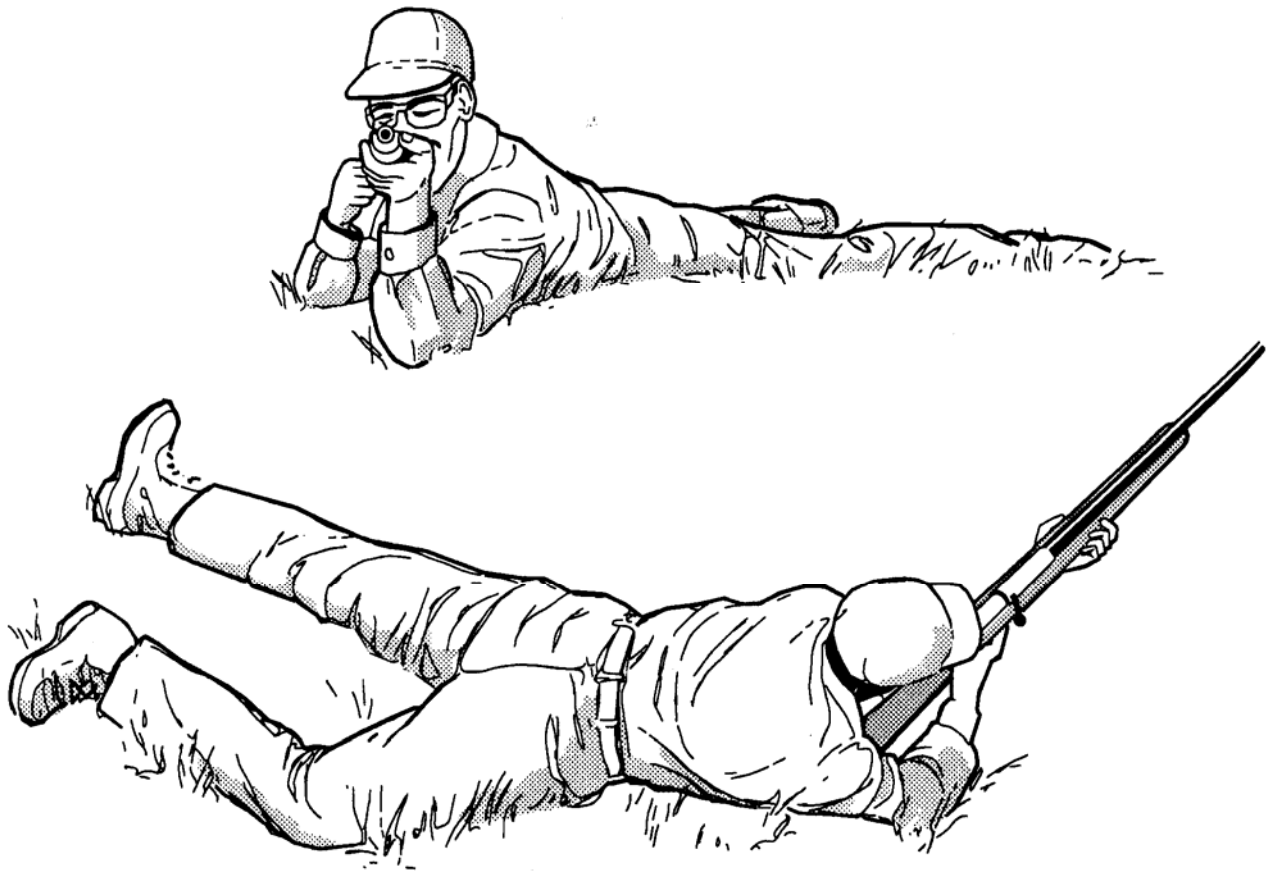
Shooting Positions

During all practices, the Cadets will fire from the prone position.

Prone Position (Figure 3a-2)

The prone position is the steadiest of the shooting positions. It is good for firing accurate, long distance shots.

If right handed, lie on your stomach with your body angled to the left of the line of aim. If you are left handed, reverse the position. Keep your back straight and legs in a relaxed position. The right leg should be bent slightly. Both elbows should be bent and your shoulders curved slightly forward to form a solid upper body position. The upper body and the arms support the rifle.



When shooting you can use a rifle sling for extra support. Hold the rifle grip with the trigger hand. Place the opposite arm through the sling as far as it will go. Swing your arm in an outward motion, ending with your hand under the fore end of the rifle and the sling across the back of your hand.

Targets

Targets are broken into two categories; **safe and unacceptable**.

Safe Targets

Before firing at any target, verify the target by asking yourself the following:

- “Am I sure of the identity of my target?” i.e. can I see it absolutely clearly? Am I positive it is exactly the target I want?
- “Is it a permitted target?” i.e. is it legal game, the proper target at a range, not on a hilltop or across a road.
- “Is anything else in the line of fire, either in front or beside or behind the target?” i.e. could anything else be or suddenly come into the line of fire?

Unacceptable Targets

An unacceptable target is:

- Any target which, when fired upon, will damage or litter private or public property; for example, signs, wire insulators, bottles, old buildings, parked equipment and abandoned cars.
- Illegal game: i.e. incorrect sex or under age, out of season or endangered species.
- Any target which, when fired upon, might endanger the safety of others: for example, shooting near inhabited areas, across or along roads, over hills, at water or hard surfaces and at possibly explosive objects.
- Any target which, when fired upon, may disturb others; for example, discharging firearms in the early morning or near farmhouses.
- Any target of a material or shape that can cause ricochets.

Zeroing and Grouping

Zeroing

When shooting your own firearms they should be zeroed. This means aligning the barrel and the sights onto the same point on a target by firing single shots and adjusting the sights for windage (left & right) and elevation (up & down). Once you have the sights zeroed, you can then proceed to grouping.

Grouping

A grouping is a cluster of rounds on a target. To be a good marksman, by following the principals of shooting, you will be able to get a tight grouping. Only once you have a tight grouping can you accurately fire your firearm. (See figure 3a-3 & 3a-4)

SHOOTING FEDERATION OF CANADA
AIRGUN SHOOTING PROGRAM

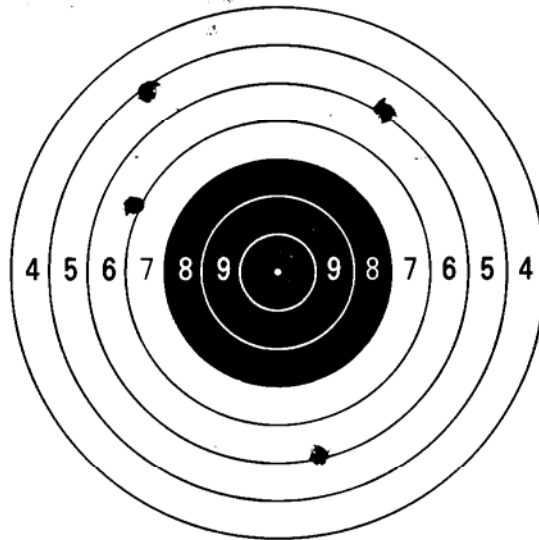
FÉDÉRATION DE TIR DU CANADA
PROGRAMME DE TIR À AIR

Name/Nom: Joe Citizen

Score/Pointage: 22

Date: 02/02/02

CARABINE À AIR RIFLE
10 MÈTRES/ METERS



Witnesses/Témoins:

F. Tiger



Stock # 99C
Printed in Canada / Imprimé au Canada

45 Shirley Blvd.
Nepean, ON, K2K 2W6
Tel: (613) 727-7483 Fax: (613) 727-7487

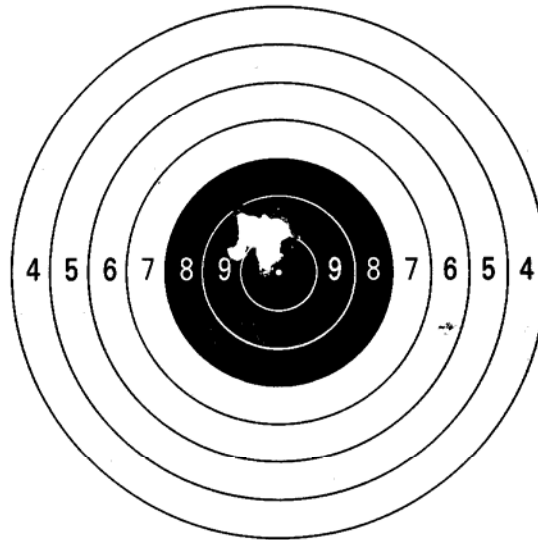
Figure 3a-3
Poor grouping (shooter cannot be zeroed onto target)

Name/Nom: Timma Goodshot

Score/Pointage: 47/50

Date: 02/02/02

CARABINE À AIR RIFLE
10 MÈTRES/ METERS



Witnesses/Témoins:

Mark Smar



Stock # 99C
Printed in Canada / Imprimé au Canada

45 Shirley Blvd.
Nepean, ON, K2K 2W6
Tel: (613) 727-7483 Fax: (613) 727-7487

Figure 3a-4
Good Grouping & Zeroing

Proper Eye Usage

The master eye must be determined before individuals begin firing. It should be noted that the master eye is not always on the same side of the body as the writing hand.

Selecting the Master Eye

Everyone has a master (or dominant) eye, which is stronger than the other one. This is the eye to be used when aiming. If the master eye is on the opposite side of the body than the writing hand, it is advisable to change shoulders and fire with the opposite hand and use the master eye. This should not be done at the expense of comfort.

NOTE

If changing shoulders in order to accommodate the master eye proves to be uncomfortable, Cadets should fire the way they feel most comfortable.

To determine the master eye, the steps listed below should be followed:

1. Select a small object (i.e., the corner of a wall) at least five meters away;
2. Face the object and extend both arms in front of the body towards the object;
3. With both eyes open, form a small, tight opening around the object with the thumbs and index fingers;
4. Look at the object with both eyes open and draw both hands back towards the face. Ensure that the object remains centered through the opening of the thumbs and index fingers; and
5. The person should now be looking through the opening at the object with one single eye-the stronger of the two. This is the master eye that should always be used for aiming.

Am I Actually Pointing Where I Want To Shoot?

During the Vietnam War, the U.S. Army developed a technique of extending the index finger of the left hand along the stock of the rifle, so that the soldier merely had to point his finger at his target, and then squeeze the trigger. With a little practice, this probably worked well in the jungle with an M16 on automatic, but those of us on a range have to work a little harder!

It's called automatic alignment. It entails shifting your body so that your point of aim is the target you select, and not some point off the paper.

Why bother doing automatic alignment? Consider the shot without it: Target upper left corner...your left hand muscles the rifle over until the target is in your sights...precious seconds tick by as you strain to hold for that perfect shot...heart pounding, lungs gasping, you snap off one that was "pretty close"...sorry, but you missed.

What happened after you squeeze the trigger and hear the round fire? Your body quickly relaxes, you exhale, and your arms release their muscular tension...unfortunately, faster than a speeding bullet. Your left arm no longer holds the rifle on target...no surprise you missed.

Automatic alignment is easy to learn, easy to do, fun and environmentally friendly. Check your alignment at each target. Being aligned properly means you don't have to "muscle" the rifle to the target. You will actually be pointing where you want to shoot! Here's how:

Let's assume you've got your body structure all settled. You're comfortable, and ready to shoot. Now follow these steps:

1. Aim as if to fire, but don't! Hold that shot;
2. Close your eyes – relax your body, exhale;
3. Open your eyes – immediately look through the sights and see where the rifle is aimed (don't move, just look);
4. If you are not still aimed at the centre of your intended target, it's time to adjust your position;
5. Repeat steps a-d until your point of aim after relaxing is the same as where you aimed – then feel free to commence your sequence to fire.

Remember: Perform automatic alignment for each target you aim at.

Adjusting your position is accomplished in a simple manner using left elbow as the pivot (it does not move, ever). Push your body forward, or pull your body back, using your toes, for vertical adjustments. Pivot your entire body left or right for horizontal adjustments, simple.

It takes practice to master this technique, but persevere at each target. Soon you will do it without thinking. A new reflex is born!

Remedial Breathing Lessons

Normal people do not exert any real effort to breathe. We breathe in, we breathe out. In. Out. In. Out. If we wanted to, we could breathe in deeper, or we could breathe out deeper. In between breaths, we take a short pause of one or two seconds normally.

Find your pulse (carotid pulse on either side of your airway). Notice that your heart rate increases as you breathe in, and decreases as you breathe out.

Let's do some physiology. When we breathe in, we inhale oxygen-rich, carbon dioxide-poor air. In the lungs, oxygen is transferred into the blood while carbon dioxide is transferred out of the blood. It is the high level of carbon dioxide in the blood which stimulates us to breathe. When we breathe out, we exhale oxygen-poor, carbon dioxide-rich air. Each time we exhale, we blow off carbon dioxide, lowering the carbon dioxide level in the blood, and thereby decreasing the stimulus to breathe. A big breathe out would naturally blow off more carbon dioxide than a small breath.

You may well ask, "Is this leading somewhere?".... Yes, it is. We can take a few deeper breathes in and out before we make the shot. This does several things:

1. Fills our blood with oxygen to supply brain and muscles;
2. Blows off carbon dioxide to reduce the stimulation to breathe, enabling us to lengthen that natural pause between breathes to five to eight seconds; and
3. Lower our heart rate as low as it can go.

The normal breathing cycle to shoot consists of four segments

1. Normal breathing while you are loading, doing automatic alignment, and settle on target;
2. When you are ready to fire, take two or three deeper breathes in and out, to oxygenate the blood and remove carbon dioxide. Be careful not to hyperventilate!!
3. From a deep inhalation, exhale to a normal, relaxed chest volume, like a sigh. Squeeze up the first pressure on the trigger. You should now be in the lengthened natural pause, with your heart rate beating slowly. Through the sights, you should see the oscillations produced by each heart beat, and your picture perfect after each beat. This is where you may squeeze off the shot. Follow through.
4. Return to normal breathing after follow through is complete. Reload and do it all again.

Practice this breathing cycle and make it part of each and every shot.

Introduction

This chapter shows you how to correctly identify and resolve problems when firing a firearm.

Types of Stoppages

Stoppages in an air rifle can be caused by several things. These include, but are not limited to:

- Dirty or clogged barrel or action;
- Not enough air in the cylinder;
- Safety being left in the “on” or “safe” position; and
- Jammed Pellet.

Each of these stoppages requires an immediate action being completed and firing resumed.

Immediate Actions

The first step to carrying out the immediate action is to recognize that you have a problem with the firearm. Once you have done this, the first IA can be carried out immediately.

- Safety left in the “Safe Position:
- Stop firing and place the firearm on safe;
- As you discovered the safety was on, switch to “fire” and resume firing.
- Not enough air in the cylinder:
- Stop firing and put the firearm on safe;
- Check to ensure there is a pellet in the chamber;
- Pump the firearm (maximum of eight times);
- Switch the safety to “fire”;
- Continue firing.

Jammed Pellet:

- Stop firing and put the firearm on safe;
- Check to ensure that the pellet was fired;
- If the pellet was fired, reload, charge the air cylinder and continue firing;
- If the pellet is jammed, use the cleaning rod to carefully remove the pellet from the barrel, taking care not to scratch or gouge the barrel lining;
- Reload with a new pellet, charge the air cylinder and continue firing.

Dirty or clogged barrel or action:

- Cease firing and put the firearm on safe;
- Carry out the immediate actions for a jammed pellet;

If the firearm still will not fire, cease firing, place the firearm on safe, unload, and wait for the RSO to instruct you to remove the firearm from the firing line for cleaning.

In the event that the stoppage cannot be rectified, or the jammed pellet is too tightly jammed, the firearm will be removed from the range, tagged and sent to a qualified gunsmith for repairs.

NOTE: Under no circumstances should any one other than a qualified gunsmith attempt to modify or repair a firearm.

Firearm Care

An improperly functioning firearm is an unsafe firearm. Always be sure your firearm is functioning safely.

Firearm Cleaning

In order to ensure that your firearm is operating safely, you must ensure that it is cleaned on a regular basis.

Information on cleaning firearms safely should be obtained from your firearm owner's manual. Accidents can occur if the cleaning procedure is not performed correctly.

Some of the major threats to firearm safety are the rust caused by moisture and condensation, and excessive build up of residue in the firearms. This is why regular cleaning is recommended.

The barrel of the firearm should be cleaned after every use. This will protect its finish and help keep it in good working order. Any firearm which has been stored for a long time, or has been exposed to moisture or dirt must also be cleaned thoroughly **BEFORE use**. As a safety precaution remember the barrel should be cleaned before and after each use.

If excess oil or moisture is present in a firearm, safeties and other parts of the firing mechanism may freeze in the cold weather or attract dirt.

Before cleaning a firearm, remember the rules for home safety with firearms:

1. Never pick up a firearm without immediately pointing the muzzle in a safe direction;
2. Keep your finger off the trigger;
3. Always check to see that both the chamber and the magazine are empty;
4. Never allow a loaded firearm in any building or living area; and
5. Always give cleaning your firearm your full attention. Never clean a firearm while doing something else, like watching television

Cleaning materials

In order to clean a firearm properly, you must have a good cleaning kit. Listed below are the items in a basic cleaning kit and some additional items for more detailed cleaning.

Basic cleaning kit:

- Cleaning rod & attachments such as a bore brush and tips to hold cloth patches; (be sure to use the right size for the firearm);
- 1"x4" cloth patches;

- Cleaning solvent;
- Light gun oil; and
- A soft cloth.

Recommended items:

- Tooth brush;
- Shaving brush or 2" paint brush;
- Small jewelers files and screwdrivers;
- Emery cloth; and
- Sight adjusting tools.

The barrel should be cleaned from the breech to the muzzle, rather than from the muzzle towards the breech. (Figure 5-1)

Before cleaning a firearm, be sure it is unloaded and the action is open. Make sure there is no ammunition nearby during cleaning.

Cleaning Procedure

- Cleaning should be supervised by the course instructor or a delegated Officer/C.I;
- Attach the bore brush to the cleaning rod and apply bore cleaner to the brush;
- Run the brush through the bore of the firearm 8 to 10 times. Be sure that the brush sticks out from the barrel completely before drawing it back through.
- Remove the bore brush from the cleaning rod and attach a patch-holder tip and a 1"x4" cloth patch. Apply bore cleaner to the patch and run it through the bore several times. Remove the patch from the cleaning rod;
- Next, run a clean, dry patch through the bore several times;
- If the patch comes out dirty, repeat steps 1 through 4 above;
- Next, run a lightly oiled patch through the bore. Use only light gun oil or CLP;
- Wipe the outside of the firearm with a clean cloth and a light coat of oil.

Before the next firing of the firearm, run a dry patch through the barrel to remove any excess oil.

After any firearm has been cleaned for storage, avoid any skin contact with the metal parts. Acids in perspiration can cause rust.

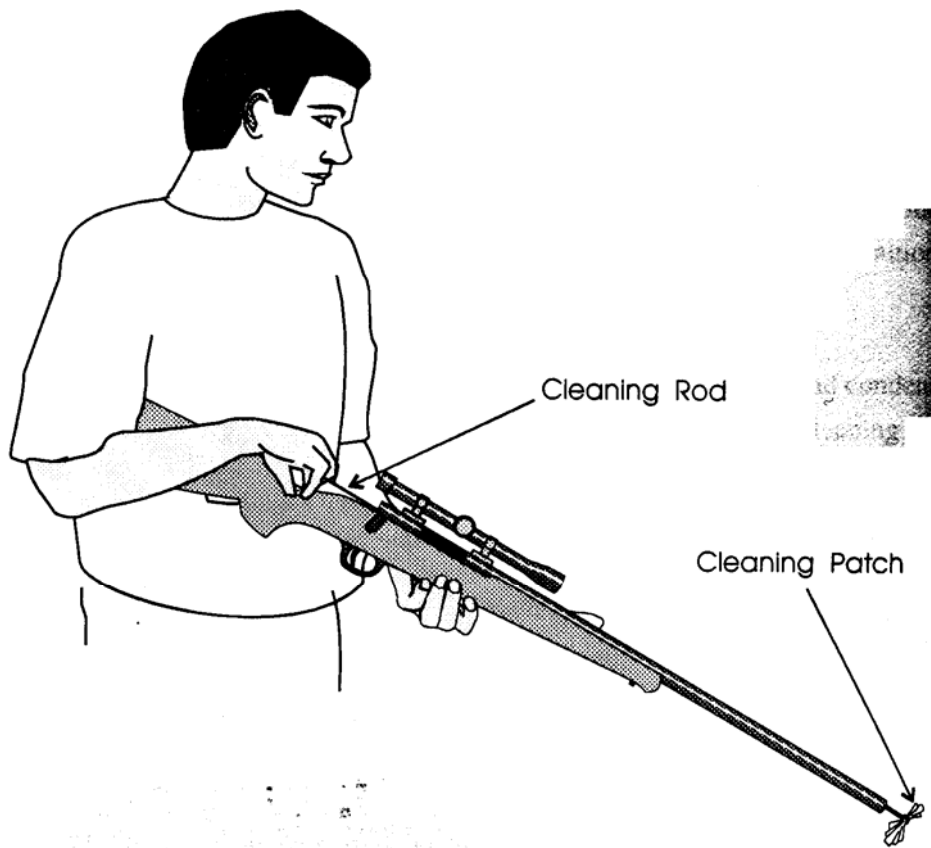


Figure 5-1
Properly cleaning a rifle barrel
From the breech to the muzzle

Note: anytime you fire, clean or handle an air rifle, you must wash your hands with a mild soap immediately to remove oil and/or lead contamination.