



Air Rifle/BB Gun Instructor Certification



**Circle 10 Council
Boy Scouts of America**



Air Rifle Instructor Training
Circle 10 Council
BSA

Morning	Afternoon	
8:00	1:00	Introductions Welcome, Introduce staff, purpose of the course
8:10	1:10	History of the Air Rifle
8:15	1:15	Air Rifles What is an Air Gun Air rifle components Types of Air Rifle
8:30	1:30	Projectiles Using proper projectile Types and Calibers of Air Gun Projectiles No reuse of projectiles
8:40	1:40	Break
8:45	1:45	Safety Introduction, run a safe range Three Fundamental Rules Other Safety Rules Cleaning Off range Safety
9:00	2:00	Shooting Fundamentals
9:10	2:10	Firing positions
9:15	2:15	Belt loops and Shooting Pins
9:25	2:25	Break
9:30	2:30	Range Operation at Rifle Range Range Setup Range commands
9:40	2:40	Hands on Operation
10:00	3:00	Range Practice
11:45	4:45	Course Review
11:55	4:55	Critique
12:00	5:00	Certificates



Introduction

This is the Circle 10 Air Rifle Instructor Certification Course. This course has been developed to train adult leaders on the setup and operation of a safe air rifle range. The Certification received from this course or the NRA (National Rifle Association) rifle course is required to open an air rifle range in Circle 10 Council.

The certification you receive is valid for two (2) years.

BB-gun shooting, is a camp program. Boys can earn BB-gun recognition items only at council/district day camp, resident camp, CUBE, or other council/district-managed family camping programs. Circle 10 does permit Pack level shooting programs at council activities such as Cub World at Camp Wisdom where activities are conducted by a council or NRA trained instructor.

Two of the main reasons for having a BB Gun range are to teach safety to the scouts and let them have fun. After completion of this course, you as will be qualified to open and operate a BB gun range in Circle 10 Council. Remember that parents entrust you with the safety of their children so while the scouts are learning and having fun, it is imperative that the range be a safe place and that YOU are THE person responsible for that safety.

Shooting programs also help leaders and parents understand the importance of training and encourages attendance of camps that offer the training. Leaders and parents as well as scouts, should understand that safety is as necessary with BB guns and air rifles as it is with any other fire arm. Training is essential in learning how to shoot well, and safe shooting habits developed early help provide the atmosphere for learning these skills.

For course review keep this document and the Range Manual. Copies of training material along with other shooting information can be found at:

<http://airrifles.pack1213.org>

Much Information contained in the document was obtained from the NRA publication *Air Guns, A guide to Air Pistols and Rifles*, 1991, the Boy Scout Rifle Shooting merit badge book, 1990 and *Shooting Sports for Cub Scouting*, 2002.

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A Brief History of Airguns

"The concept of using mechanically-compressed air to propel a projectile may date back to at least the third century B.C., when the Greek physicist and inventor, Ctesibius (also spelled Ktesibios) of Alexandria, is believed to have developed guns which utilized compressed air. Although none of his writings have survived, later inventors, including Hero of Alexandria and the Roman engineer Vitruvius, mentioned his accomplishments in their works." (*Air Guns, A guide to Air Pistols and Rifles, 1991*).

*The following history is reprinted from the Dynamit Nobel RWS Catalog #13
(http://www.airguns.net/general_airgun_history.php)*

The early history of airgunning is often shrouded in mystery and yet is as intriguing as any chronicle of centuries gone by. Although it is difficult to ascertain exactly when airguns were first produced in Europe, historians now believe the mid-1500's was the most likely period for their first appearance. Comparatively few specimens have survived the slow march of time, and most of those airguns which did now repose in arms museums throughout the world. We do know that since their earliest days, airguns were often shrouded in mystery and even reviled as tools of the Devil. Considering the fact that some airguns of bygone centuries were usually of very large caliber and almost as powerful as the firearms of the day - albeit without the deafening noise, flash and smoke - it is easy to understand why the airguns of the time were feared by many.

Most of the earliest airguns belonged to two different groups, those powered by spring loaded bellows and those utilizing precompressed air stored in a reservoir, which was either an integral part of the gun or attached to it. Bellows guns were generally intended for target shooting indoors. Although low powered, they were amazingly accurate at short ranges.

Pneumatic guns, on the other hand were relatively powerful. The technology of these guns gradually improved over the years and their use in hunting became fashionable among the European nobility. The fact that game as large as wild boar and stag was routinely taken by these early pneumatic guns demonstrates their amazing power. Their relatively quiet and efficient operation, coupled with their imperviousness to rain or snow, made them very desirable ~~weapons~~ (fire arms) indeed. For these reasons commoners were often forbidden from owning airguns.

In the late 1700's, powerful pneumatic guns even found their way into the ranks of the military. The Austrian Army had an entire regiment armed with .44 caliber repeating air rifles. All surviving accounts indicate that the Austrians used those airguns with deadly effectiveness against Napoleon's army. So feared, any Austrian soldier captured with an air rifle was summarily executed as an assassin!

On our own continent, the records of the Lewis and Clark expedition show that an airgun was taken along and the Indians called it "the smokeless thunder stick". Early airguns production in the United States centered around the "gallery gun", a relatively low powered gun utilizing a spring piston power plant. These guns flourished during the period immediately following our Civil War and were used mainly for shooting at paper targets indoors. As the 19th century came to a close, the calibers of airguns of both America and Europe had been scaled down considerably.

The 20th century witnessed tremendous strides in the field of adult airguns, especially since the end of WWII. Many German factories turned to airgun manufacturing after firearms production was prohibited by the occupying Allies. The rest has been the creation of a major new industry which claims a significant share of world-wide shooting sports today. The erroneous concept of airguns being mere toys has been fostered by years of exposure to the ubiquitous BB gun; however, word of mouth and the fact that airgunning is now an Olympic sport are rapidly causing this image to disappear. The ultra sophisticated recoilless match airguns, capable of single hole precision at 10 meters, can hardly be called "toys". The 1984 Olympic Games featured airgunning for the first time, a historic and dramatic indication of the importance of airguns in today's recreational shooting. Likewise, air rifles capable of shooting .177 caliber pellets at 1000+ feet per second have vaulted the airgun into the serious sporting arms class.

Adult airguns have finally become truly universal, a shooting sport that can be enjoyed by anyone, anywhere - a far cry from their murky, uncertain beginnings a few short centuries ago.

While it is often stated that "BB" stands for "ball bearing", this is not the case. The original BB guns used the BB-sized lead shot for shotguns, midway between B and BBB size.



AIRGUN PARTS AND OPERATION

The term *air gun* refers to a gun, which propels a projectile through its barrel by use of compressed air or carbon dioxide gas (CO₂). Gunpowder is not used in this type of gun; instead, the air gun operates on the principle of stored energy.

This stored energy can be in the form of a compressed spring, which will, upon its release, rapidly move a piston that compresses air. This compressed air then forces a projectile out of the barrel of the gun.

The stored energy can also be in the form of compressed carbon dioxide gas or air, which is contained in an internal reservoir of the gun, or in small cylinders that are inserted into the gun. Release of this compressed gas or air will also force a projectile out of the barrel.

TYPES OF AIR GUNS

The two major types of air guns available today are the *spring-piston* gun and the *pneumatic* gun. Pneumatic guns, in turn, can be divided into two sub-categories: *single-stroke* or *multi-pump pneumatics* and *compressed CO₂ air pneumatics*

SPRING-PISTON

Spring-piston air guns use a manually-operated lever, pivoting barrel, or other device to move a piston which in turn compresses a mainspring located in the frame or receiver portion of the gun.

When the piston is completely retracted, the mainspring is fully compressed. The piston will remain in this retracted position until the shooter releases it by pulling the trigger. The piston, under pressure from the compressed mainspring, moves rapidly forward when it is released, and compresses the air in front of it. The compressed air then forces the projectile out of the barrel.

In this type of air gun, the air that propels the projectile is *not* stored in a reservoir prior to firing; the movement of the piston compresses the air after the trigger is pulled.

In an unusual variation of the spring-piston design, a sealed cylinder of air or gas that is sometimes called an air spring or gas ram replaces the mainspring. When the **piston** is retracted the air or gas in the sealed cylinder is compressed so that it will force the piston rapidly forward when the trigger is pulled. This air or gas in the sealed cylinder serves only to drive the piston forward, and is not used to force the projectile out of the barrel.

PNEUMATIC

Pneumatic air guns utilize the principle of *stored* compressed air or gas, and can be divided into two sub-categories: *single-stroke* or *multi-pump pneumatics* and *compressed CO₂ air pneumatics*.

Single-stroke and *multi-pump pneumatic mechanisms* utilize a manually operated lever (or a pivoting barrel which acts as a lever) to force air through a *valve mechanism* in order to compress and store the air in an *air reservoir* or *chamber*.

In the *single-stroke* model, one stroke of the lever charges the air reservoir with enough compressed air for one shot. After the air reservoir has been charged, additional strokes of the lever are not required. In some models, additional strokes will have no effect; in other models, additional strokes may result in damage to the gun.

In the *multi-pump* model, a similar lever and valve mechanism is used to compress and store air; however, the lever must be pumped several times in order to build sufficient air pressure for one shot. The amount of air pressure in the reservoir is determined by the number of times that the lever is pumped. This adjustable air pressure feature allows the velocity of the projectile to be varied, thereby enabling the shooter to use this type of air gun for a variety of activities.



In both the single-stroke and multi-pump models, all of the air that has been compressed will remain in the reservoir until the shooter initiates its release by pulling the *trigger*. The movement of the trigger releases a spring-driven *hammer*, which strikes an *air exhaust valve*. This valve immediately releases the stored air, which then propels the projectile out of the barrel. Little or no compressed air remains in the reservoir; in order to obtain compressed air for the next shot, the shooter must again utilize the lever to compress and store air.

Compressed CO2 air pneumatic guns utilize carbon dioxide gas (CO2) or air that has been compressed and stored in a metal cylinder, or air that is compressed by an external air pump.

In some models, a small disposable *CO2 metal cylinder* is inserted into the gun. When the shooter pulls the trigger, a measured portion of the compressed gas stored in the cylinder is released to propel the projectile out of the barrel. Since not all of the gas is released at one time, additional shots may be fired without having to recharge the gun with more gas.

Some models of CO2 guns do not use a disposable cylinder, but instead use a refillable cylinder, which is filled from a separate, large-capacity CO2 tank. After the gun's cylinder has been filled with gas, the large tank is detached from the cylinder.

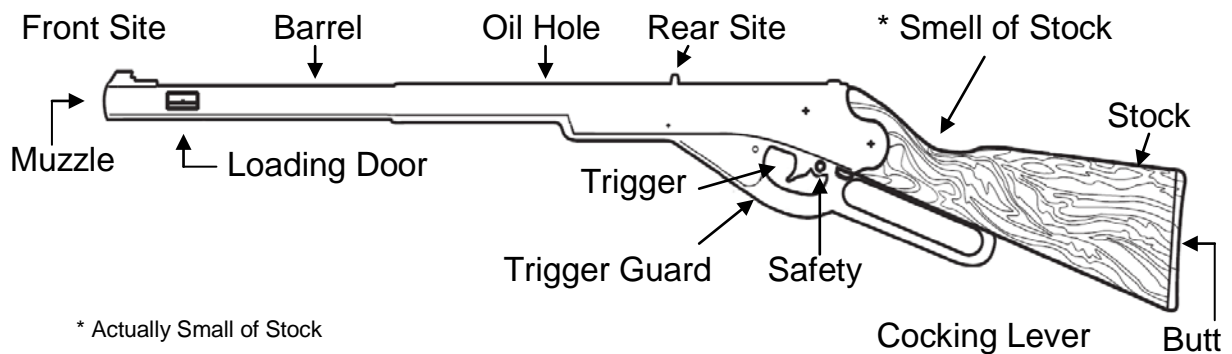
Other models in this category utilize an internal air reservoir, which is filled with compressed air from a separate, large-capacity scuba (self-contained underwater breathing apparatus) type of tank or from an external air pump. After the gun's reservoir has been filled with compressed air, the large tank or air pump is detached from the gun.

AIR GUN COMPONENTS

Air guns are available in pistol models and rifle models. Most of the components for both models have the same nomenclature and perform the same functions. Please note that pistols are not allowed for Cub Scouts.

An *air rifle* consists of four major components: the *receiver*, the *barrel*, the *action*, and the *stock*.

The frame of a pistol and the *receiver* of a rifle both serve as the backbone to which all other parts are attached.



The *trigger guard* is located on the underside of the frame or receiver, and is designed to protect the trigger in order to reduce the possibility of an unintentional firing. On some rifles, the trigger guard may be attached to the stock, fit into the receiver, or is part of a lever mechanism.

The *rear sight* is located on the top rear area of the frame, receiver, or barrel, and is used in conjunction with the front sight to aim the air gun.



The safety, when provided, is usually located on the frame, receiver, or trigger guard of the air gun. (Some air guns are not equipped with safeties.) The safety is a mechanical device designed to reduce the chance of an unintentional discharge and/or prevent the unintentional closure of the cocking mechanism. Remember that **a safety is a mechanical device, which can and will fail**. The prevention of an accident is ultimately the responsibility of the individual who is handling the air gun.

The *barrel* is the metal tube through which a projectile passes on its way to a target. The barrel is attached to the frame or the *receiver* of an air gun.

The inside of the barrel is called the *bore*. The bore usually has spiral *grooves* cut into it. The ridges of metal between these grooves are called *lands*. Together, the grooves and lands make up what is *known as rifling*. Barrels, which do not have rifling, are known as *smoothbores*. Most BB guns used in Cub Scouts are smoothbores.

Rifling makes *the projectile spin* as it leaves the barrel so that it will be more stable in flight and therefore travel more accurately. Smoothbore barrels are therefore inherently less accurate than rifled barrels.

The caliber of an air gun with a rifled barrel is the distance between the lands in the barrel. In smoothbore air guns, the *caliber is the diameter* of the bore. Caliber in both types of barrels is measured in inches or in millimeters (such as .177 inches or 4.5mm, .20 inches or 5.0mm, .22 inches or 5.5mm, and .25 inches or 6.35mm). **Note that .177 is the only ammunition approved for Cub Scouts.**

The front end of the barrel where the projectile exits is called the *muzzle*.

The *front sight* is located on top of the barrel near the muzzle, and is used in conjunction with the rear sight to aim the air gun,

The action is a group of moving parts used to cock, compress air (in some models), load, fire, and unload the air pistol or rifle. The parts of the action are attached to the frame or receiver.

The trigger is located on the underside of the frame or receiver. When the trigger is pulled, it initiates a series of mechanical actions, which result in compressed air or gas forcing the projectile out of the barrel.

The stock on an air rifle supports and fits around the receivers. Stocks are usually made of wood or synthetic materials such as nylon, fiberglass, and plastic.

The *butt* of a rifle stock is the rear portion of the stock, and is positioned against the shooter's shoulder when firing.

The *comb* of a rifle stock is the upper rear portion of the stock where the shooter's cheek rests when firing.

The *grip* of a rifle stock is the small part of the stock located in the area immediately behind the trigger guard, and is grasped by the shooter's firing hand.

The fore-end (also commonly known as the *forearm*) is the front portion of the stock, which extends under the barrel, and is used by the shooter to help support the rifle when firing. Depending upon the design of the rifle, the fore-end may be an integral part of the stock or may be a separate piece.

Velocity is not actually a part of a gun, but a property of it. Velocity is how fast the BB is traveling when it leaves the gun. **The maximum velocity for cub scouts is 350 fps (feet per second) and 540 fps for Webelos.**



AIR GUN PROJECTILES

An air gun projectile does not contain gunpowder, and depends entirely on compressed air or gas to propel it out of the barrel of the air gun.

USING THE PROPER PROJECTILE

It is essential to always use the proper projectile in an air gun. **Only projectiles that have been designed for a particular gun can be fired safely in that gun.** Projectiles can be identified by the information printed on the original container.

Always be sure to use the proper *caliber* projectile in the air gun. Most air guns have the projectile caliber stamped on the barrel, receiver, or frame.

Also be sure to use the proper *type* of projectile in the gun.

Information and precautions regarding the proper caliber and type of projectile to use are contained in the instruction manual for the gun. **Don't shoot the gun unless the proper projectile is used.**

TYPES AND CALIBERS OF AIR GUN PROJECTILES

Air gun projectiles are usually made in the following calibers: **.177** inches or 4.5mm, **.20** inches or 5.0mm, **.22** inches or 5.5mm, and **.25** inches or 6.35mm. **The only airguns guns with a caliber of .177 can be used for Cub Scouts: This applies to both BB guns for cub and Webelos, and pellet guns for Webelos.**

There are five basic types of air gun projectiles: *pellets*, *BBs*, *lead balls*, *darts*, and *bolts*. Generally, air guns with rifled barrels can use only pellets, lead BBs or balls, and bolts, while many smoothbore air guns can use all five types of projectiles. Some projectiles are not available in all of the calibers mentioned above. The primary types are pellets and BBs.

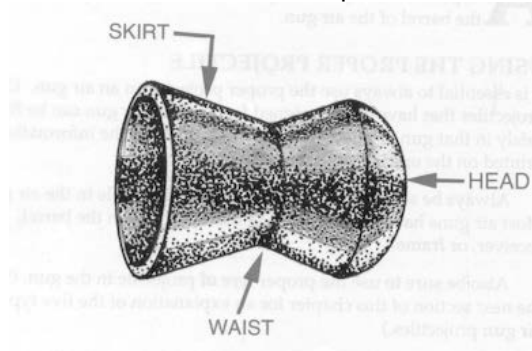
PELLETS

Pellets are usually pressed from lead, and are available in two basic styles: the *hourglass* or *diabolo* style, and the *cylindrical* style.

Hourglass or Diabolo Pellets

The *hourglass* style is so named because it is shaped like an hourglass. This design is also known as a *diabolo* style, named after the similarly shaped object used in the ancient game of Diabolo.

The nose portion of the pellet is called the *head*, the nipped-in, constricted middle portion is known as the *waist*, and the base portion is known as the *skirt*.





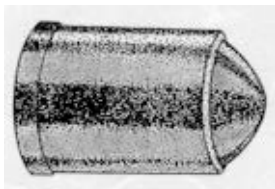
The pellet is positioned in the air gun with the head of the pellet pointing toward the muzzle. The thin, flared skirt of the pellet is designed to conform tightly to the grooves and lands of a rifled air gun barrel as the pellet is propelled through the barrel. The primary purpose of this skirt is to act as a seal so that no air or gas can escape to the front of the pellet, thereby reducing its velocity.

The hourglass shape of the pellet also helps to stabilize it in flight.

Hourglass or diabolo pellets are available in a variety of head shapes designed for specific types of targets.

Cylindrical Pellets

Some styles of pellets may have a *cylindrical* shape, rather than an hourglass or diabolo shape. The cylindrical pellet will usually have a raised band encircling its base; this band acts as a seal in the same way as the skirt of the hourglass or diabolo pellet.



BBs

The term BB is used to describe spherical steel or lead projectile, which is .177 inches (4.5mm) in diameter. However, steel BBs actually have a maximum diameter of .175 inches; lead BBs have a .177 inch diameter. Both types of BBs are used in target shooting and informal plinking.



Steel BBs are coated with another metal, such as copper or zinc, to protect the BBs from corrosion. Steel BBs are not suitable for shooting in some rifled barrels because the hard steel of the BB may damage the rifling. To avoid damage, be sure to check the air gun instruction manual to determine if the use of steel BBs is recommended.

BB projectiles for air guns should not be confused with the .181 inch diameter BB pellets used in shotgun shells.

REUSE OF PROJECTILES

Never reuse air gun pellets, BBs, or lead balls. These types of projectiles are easily deformed upon impact with a target, and can cause damage to the air gun if reused.

STORAGE OF PROJECTILES

For safety reasons, air gun projectiles should always be stored separately from the air gun. Be certain that all projectiles are stored so that they are not accessible to unauthorized persons.

Always keep air gun projectiles in the original factory box or carton. The labeling on the original container will help to identify the projectiles so that they can be safely used in the air gun for which they are intended. When using any air gun, always be certain to use only those projectiles, which are specifically designed for it.



Using an Airgun Safely

Airguns Are Not Toys-They are Real Guns

Whether you are a novice airgunner or an expert, a youngster learning to shoot, or a concerned parent, safety is the most important thing.

Guns are NOT dangerous. People are.

A tool is simply a tool. Its usage can be dangerous or not. Similarly with guns, if one handles his gun in the proper way, the gun is as safe as any other tool. If you neglect safety rules, a gun can kill. After all, that is the role it was initially designed to play, go bang when someone pulls the trigger. It is therefore very important to learn safe gun handling and master it.

What Causes Gun Accidents?

Most air gun accidents are caused by **ignorance and/or carelessness**, and can be attributed to a person's failure to treat an air gun as a real gun.

Ignorance is a lack of knowledge. This lack can be dangerous if a person does not know the gun safety rules or does not know the gun safety rules or does not know how to properly use an air gun.

Carelessness is also dangerous. If a person knows the gun safety rules and how to operate an air gun, but becomes careless by failing to properly apply this knowledge, as equally dangerous situation can occur.

Don't allow an accident to happen. Always practice responsible and safe use of all guns.

THREE FUNDAMENTAL RULES FOR SAFE GUN HANDLING

1. Always keep the gun pointed in a safe direction.

This is the primary rule of gun safety. "Safe Direction" means that the gun is pointed so that even if it was to go off, it would not cause an injury or damage. Whether you are shooting or simply handling a gun, never point it at yourself or others. Common sense will tell you which direction is the safest. Outdoors, it is generally safe to point the gun toward the ground, or, **if you are on a shooting range, toward the target.** Indoors, be mindful of the fact that a bullet can penetrate ceilings, floors, walls, windows, and doors.

2. Always keep your finger off the trigger until ready to shoot.

When holding a gun, people have a natural tendency to place their finger on the trigger. **Don't do it!** Rest your finger on the trigger guard or along the side of the gun. Until you are actually ready to fire, do not touch the trigger.

3. Always keep the gun unloaded until ready to use.

If you do not know how to check to see if a gun is unloaded, leave it alone. Carefully secure it, being certain to point it safely and to keep your finger off the trigger, and seek competent assistance.



Other Safety Rules

Know your target and what is beyond. Be absolutely sure you have identified your target beyond any doubt. Equally important, be aware of the area beyond your target. This means observing your prospective area of fire before you shoot. Never fire in a direction in which there are people or any other potential for mishap. *Think first. Shoot second.*

Be sure the gun is safe to operate. Just like other tools, guns need regular maintenance to remain operable. Regular cleaning and proper storage are a part of the gun's general upkeep. If there is any question concerning a gun's ability to function, a knowledgeable gunsmith should look at it.

Know how to use the gun safely. Before handling a gun, learn how it operates. Know its basic parts, how to safely open and close the action, and how to remove any ammunition from the gun or magazine. Remember that a gun's mechanical safety device is never foolproof. Nothing can ever replace safe gun handling. One of the best places to learn about how a gun works is the owners manual. If you do not have one, most can be found on line.

Use only the correct ammunition for your gun. Only BBs, pellets, cartridges or shells designed for a particular gun can be fired safely in that gun. Most guns have the ammunition type stamped on the barrel. Ammunition can be identified by information printed on the box and sometimes stamped on the cartridge. Do not shoot the gun unless you know you have the proper ammunition.

Wear eye and ear protection as appropriate. Guns are loud and the noise can cause hearing damage. They can also emit debris and hot gas that could cause eye injury. For these reasons, shooters and spectators should wear shooting glasses and hearing protectors.

Never use alcohol or drugs before or while shooting. Alcohol, as well as any other substance likely to impair normal mental or physical bodily functions, must not be used before or while handling or shooting guns. Remember that over the counter and prescription drugs are still drugs and can have undesirable physical side effects.

Store guns so they are not accessible to unauthorized persons. Remember that safe and secure storage requires that unauthorized individuals be denied access to the guns. Never leave guns unattended.

Be aware that certain types of guns and many shooting activities require additional safety precautions.

Cleaning

Regular cleaning is important in order for your gun to operate correctly and safely. Taking proper care of it will also maintain its value and extend its life. Your gun should be cleaned every time that it is used. A gun brought out of prolonged storage should also be cleaned before shooting. Accumulated moisture and dirt, or solidified grease and oil, can prevent the gun from operating properly.

Before cleaning your gun, make absolutely sure that it is unloaded. The gun's action should be open during the cleaning process. Also be sure that no ammunition is present.

Off Range Safety:

Contact with guns at Cub Scout camps is very controlled and supervised, however, there are many other times when scouts could come in contact with a fire arm. Along with the range safety, we want to insure they also know what to do if they come in contact with a gun outside our controlled environment.

From their earliest awareness, children are exposed to guns through cartoons, television shows and movies. Their curiosity is aroused. Whether or not the scout's families own guns, there is a good chance that children will come in contact with a gun at some time during their young lives.



According to NRA, about half of American households have one or more guns so if a scout visits another scout or friend, there is about a 50% chance there is a gun in their houses. Relatives, friends and neighbors may own guns. The guns are often hidden, but the possibility exists that children will find them.

Eddie Eagle Gun Safety Program

The Eddie Eagle Gun Safety Program is sponsored by the National Rifle Association and used by schools, law enforcement agencies and other organizations concerned with the safety of children. This program teaches children what to do if they find or come in contact with a gun. It's easy.

- 1. STOP.**
- 2. DON'T TOUCH.**
- 3. LEAVE THE AREA.**
- 4. TELL AN ADULT.**

The initial steps of "Stop" and "Don't Touch" are the most important. To counter the natural impulse to touch a gun, it is imperative that you impress these steps of the safety message upon a child.

In today's society, where adult supervision is not always possible, the direction to "Leave the Area" is also essential. Under some circumstances, "area" may be understood to be a room if the child cannot physically leave the apartment or house.

"Tell an Adult" emphasizes that children should seek a trustworthy adult -- neighbor, relative or teacher -- if a parent or guardian is not available.

Dominant Eye

Before a shooter can begin the fundamentals of shooting, an important decision must be made. Is the shooter right or left eye dominant? Everyone has a dominant eye: It is the stronger eye and does more work than the other. In most cases the right-handed shooters are right eye dominant and left-handed shooter are left eye dominant, however this is not always the case. If a shooter is using the wrong eye to site, that shooter will have great difficulty sighting the gun. There are several ways to determine the dominant eye. The following steps are a way to determine the dominant eye.

1. Extend both arms in front of your body.
2. Place your hands together, forming a small opening between them.



3. Keep both eyes open; look through the opening at a distant object.
4. While continuing to look at the object, move both hands back toward your body until they touch your face.
5. The opening will be over one eye, the dominant eye.

Shoot Hand and shoulder are the same side of the body as the dominant eye.



Fundamentals of Rifle Shooting

1. **Position** - Prone, standing (off-hand), kneeling, and sitting. The basic elements require bone support, muscle relaxation, and natural point-of-aim.
2. **Sight Alignment** - Center the front sight in the rear sight. The top of the front sight should be level with the top of the rear sight. Make sure that you place the butt of the rifle into your shoulder so you can align the sights without tilting your head to the side. While facing the target, drop your head forward onto the cheek piece until the front sight is properly aligned with the rear sight.
3. **Sight Picture** - For a six o'clock hold, the bulls-eye should sit on top of the front sight like a pumpkin on a post. For a point-of-aim hold, the desired point of impact should be aligned with the top of the front sight. Adjust the gun so that the bulls-eye is in proper relationship to sight alignment, bringing about a natural point-of-aim.
4. **Breath Control** - Stop breathing long enough to release the shot (5-10 seconds). Note: If you hold your breath more than 10 seconds, your vision may blur.
5. **Hold** - Allow the position to settle down until movement is minimized. If the position takes too long to settle, return to your normal breathing and repeat step four.
6. **Trigger Control** - Smoothly apply rearward pressure on the trigger. You should not know when the shot is going to break because anticipation will cause a miss. You should be concentrating on the front sight, not the trigger.
7. **Follow through** - Remain perfectly still for a few seconds after the shot breaks. While you are still, focus on the front sight and call the shot. That is, evaluate the hold and predict the result in terms of value and proximity.
8. **Strive for consistency** - Repeating the process exactly the same way over and over is the key to ultimate shooting success.

Firing Positions

Prone

The shooter lies on stomach, facing the target and angled about 30 to 45 degrees left or right, depending on the dominant eye. The gun should rest in the weak-side hand (opposite of the dominant eye). The shooter should be able to take the dominant hand completely off the grip, and the gun stay perfectly in place against your shoulder. Both elbows should be planted firmly, and the dominant side knee should be slightly bent. The natural point of aim when the shooter is in this position and completely relaxed should be exactly on target.



Sitting

In most cases, the shooter should sit cross-legged, with ankle bones directly under the knee joint and elbows placed directly onto or just inside of the knee. The gun should rest in the weak-side hand (opposite of the dominant eye). The body should be angled about 30 to 45 degrees to the left or right, depending on the dominant eye. As with the prone position, the natural point of aim when the shooter is in this position and completely relaxed should be exactly on target.



Some people with long legs or arms cannot fit in this position, so the alternate position is to cross your ankles out in front of the knees or spread the feet enough achieve a more comfortable sitting position.



Kneeling

The shooter sits on the heel of the dominant side foot, with the elbow of the non-dominant side resting on the knee. The gun should rest in the non-dominant sided hand. There is no support for the dominant side elbow. As with the other positions the body should be angled slightly left or right, depending on the dominant eye and the natural point of aim should be exactly on target

Standing

The shooter stands feet apart with body weight distributed equally. The body should be angled about 90 degrees to the left or right, depending on the dominant eye. The gun should rest in the non-dominant sided hand and the shooter should lean back enough to place the non-dominant side elbow against the body.

The standing position should be used only in areas where none of the other positions can be used

Normally only the Prone and Sitting positions are used at Cub Scout activities. These positions restrict the movement of the muzzle of the gun, helping to keep it pointed down range. Exceptions include Cub World where shooters must stand and activities requiring multiple positions for qualification for awards.



Other Opportunities

Belt Loops and Shooting Pins

During training and shooting activities, scouts may have an opportunity to take part programs where awards, including the BB-Gun Shooting belt loop and Sports Pin, may be earned. These awards can only be earned at an approved BSA activity, conducted by a certified instructor.

Belt Loop Requirements*

Cub Scouts and Webelos Scouts can earn the BB-Gun Shooting belt loop by participating in the BB gun safety program at Cub Scout camp.

Complete these three requirements:

1. Explain the rules for safe BB-Gun Shooting that you have learned in the district/council camp or activity you are attending with your leader or adult partner.
2. Demonstrate to your leader or adult partner good BB-Gun Shooting techniques, including eye dominance, shooting shoulder, breathing, sight alignment, trigger squeeze, follow through.
3. Practice shooting at your district or council camp for the time allowed.

Sports Pin Requirements*

1. Explain the parts of a BB gun and demonstrate how to properly load the gun.
2. Demonstrate the shooting positions.
3. Develop proficient shooting techniques by practicing for three hours.
4. Learn the correct scoring techniques for target BB gun shooting.
5. Make a poster that emphasizes the proper range commands.
6. Draw to scale or set up a BB gun shooting range.
7. Show improvement in your shooting ability with an increase in scoring points.
8. Help make a type of target for the camp BB gun shooting range.
9. Show how to put away and properly store BB gun shooting equipment after use.
10. Explain how to use the safety mechanism on a BB gun.
11. Tell five facts about the history of BB guns.

* These requirements are base on the Boy Scouts of America National Shooting Sports Manual.



Circle 10 Council Policy on Firearms

The Circle Ten Council adheres to the long-standing policy of the B.S.A. for teaching its youth and adult members the safe, responsible, and intelligent handling, care and use of firearms, airguns and BB guns in planned, professionally managed and supervised programs. The Circle Ten Council welcomes and encourages the participation, support and direction of national associations and organizations that promote the safe and responsible use of firearms and airguns.

Firearms and airguns are a part of early training for many boys in The Circle Ten Council. Each year firearm related accidents cause needless death and injuries, The B.S.A. has a duty to it's members, their families and friends to instill in youth the absolute necessity of learning how to use, handle, clean and store firearms and airguns safely. This obligation is to be discharged through intelligent supervised use of firearms in a safety engineered program. The Council will provide the opportunities for youth to become familiar with rifles and shotguns by earning the Rifle and Shotgun Merit Badge. Supervised target shooting may also be used in this vital training. We emphasize the responsible use of firearms in sporting events. We stress game management, wildlife conservation, hunting and safety laws.

Handguns are not permitted in the programs for Cub Scouts or Boy Scouts. Handguns are permitted in the Exploring program subject to state, federal and local law. A shooting program for BB guns is permitted in Cub Scout day camps. Fully automatic firearms are prohibited on all Scout property. Semi-automatic rifles and handguns larger than .22 cal. are prohibited from use by all scouts. These firearms may be used for demonstration purposes by an instructor or during an instructor training class. Semi-automatic handguns of .22 cal. may be used by Explorers on Scout ranges. Auto-Loading shotguns may be used in the skeet and trap programs for scouts and explorers.

All shooting programs are to be conducted by currently certified N.R.A. firearms instructors This certification is available through the B.S.A. National Camp School, the Councils Instructor training school, and other sources. The Council office will keep a current list of available instructors on file. This list is not an open file, for security reasons. Units or special activity organizers wanting a shooting program should contact the Council for the phone number of a certified instructor in the closest district, for the purpose conduction such a program.

In the event of a breach of safety, a non-standing Investigation Committee shall be formed to investigate and report recommendations of action to the Council. This committee shall be made up of eight members. The composition of the committee shall include The Camping Director, The Ranger from the camp involved two camping committee members and two Unit leaders or Unit Committee Members who are not certified instructors, and two Certified Instructors.

No privately owned firearms are to be taken on Circle Ten Council property. A Training Counselor or Certified Instructor with written permission from The Council may bring private firearms on Council property, for training purposes only. The Camp Ranger must be notified of this activity and supplied with the serial numbers of all firearms used in this training. Dummies, replicas and cutaways are exempted from this rule.

Parental release forms are not required for boys participating in Council or District level activities. It is recommended that such permission be obtained from the parents for unit level activities.

All firearms competitions and record shooting held by The Circle Ten Council shall be governed by the current rules of the N. R.A and or The International Shooters Union and the governing bodies for the shooting sport.



The Job of the Shooting Sports Director

1. Check inventory of all sports equipment
2. Check minimum equipment needed (see Range Equipment sheet) to make sure there is enough equipment.
3. Obtain additional equipment as needed.
4. Know all safety regulations related to your shooting sport.
5. Set up areas in practical and inviting manner.
6. Make sure equipment is properly stored and locked when not in use. If you leave the range for any reason equipment must be made inaccessible to youth.
7. Train staff and helpers on safety.
8. Regulate and schedule staff in daily routine.
9. Provide qualified supervision of each area at all times while range is in use.
10. Check performance of equipment and safety aspects of the area. Is your range as safe as it is intended to be.
11. Report any and all operational and personnel problems to the camp director.
12. Train all campers and leaders in safety fundamentals.
13. Restrict anyone who does not follow safety instructions or rules.
14. Keep an adequate supply of equipment for your sport.
15. Set an example of Scout-like conduct.
16. Be responsible for all of the equipment entrusted to you, file a closing inventory, and a report, including recommendations, if necessary.



Suggested Range Layout

(ACCOMODATES 16)

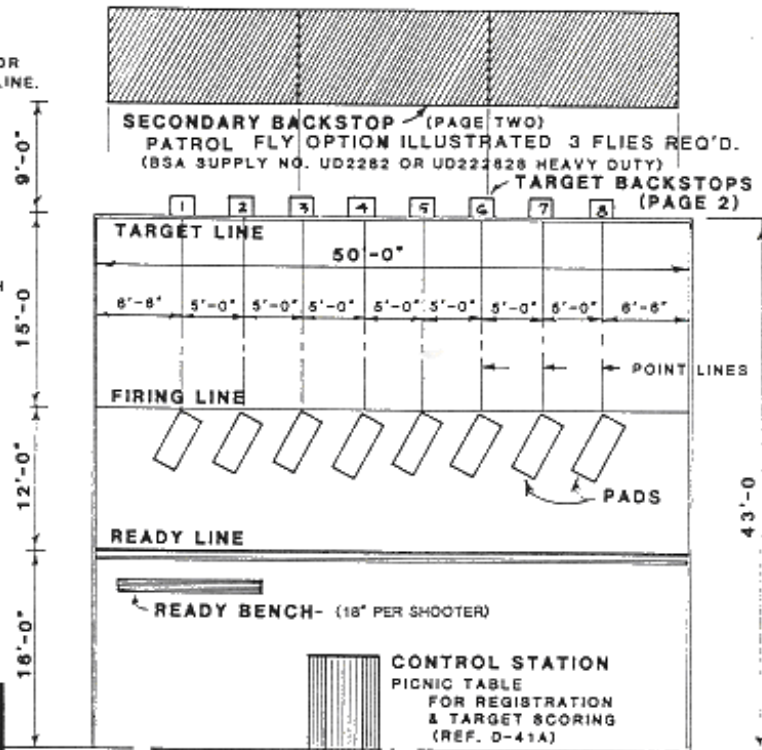
NOTE:

1. 8 POINTS MAXIMUM PER CERTIFIED INSTRUCTOR PRESENT ON THE FIRING LINE.
2. POINTS SPACED 5' APART WILL ACCOMODATE ONE SHOOTER AND ONE COACH PER POINT, WHO WILL ALTERNATE POSITIONS ON COMMAND.
3. MARK ALL LINES WITH ATHLETIC FIELD CHALK (LOGS, CURBS, ETC. CAUSE RICOCHETS.)
4. POINT LINES ARE OPTIONAL, BUT WILL HELP TO MINIMIZE CROSS FIRING.

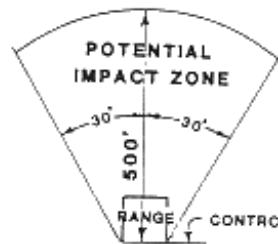


NORTHERLY ORIENTATION WILL MINIMIZE ADVERSE SUNLIGHT CONDITIONS

CAUTION
 A SPRING TYPE AIR RIFLE CAN FIRE A BB OVER 500 FEET.
 A BB CAN REBOUND/RICOCHET OFF ALMOST ANYTHING.
THINK SAFETY

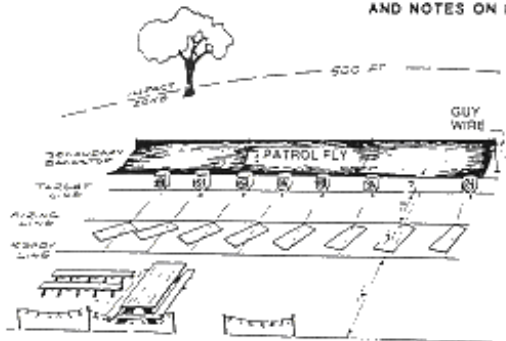


CONTROL LINE
NO UNAUTHORIZED PERSON BEYOND SEE DIAGRAM BELOW AND NOTES ON PAGE 2.



SITE CONDITIONS WILL DETERMINE ACTUAL IMPACT ZONE. ZONE SHOULD BE FLAGGED.

THIS STANDARD IS SPECIFICALLY FOR
 SPRING TYPE AIR RIFLES ONLY (MAX. VEL. 350 F.P.S.)
 4.5 MM STEEL AIR GUN SHOT (BB CAL.) ONLY
 PRONE FIRING POSITION ONLY



ENGINEERING SERVICE
801 SOUTH OF V-ROAD
1231 West Hobbs Hill Lane
Irving, Texas 75015-1874

CUB SCOUT BB RANGE

6/90
DESIGN STANDARD
67A



Air Rifle/BB Instructor Course Review

- | | True | False | |
|-----|------|-------|--|
| 1. | [] | [] | The concept of using mechanically compressed air to propel a projectile may date back to the third century B.C. |
| 2. | [] | [] | Unlike other rifles, air guns are smokeless because they do not use gunpowder. |
| 3. | [] | [] | An air rifle can propel a projectile at a high velocity therefore it must be treated with the same respect as other firearms. |
| 4. | [] | [] | The muzzle of the gun is the part that rest against the shoulder. |
| 5. | [] | [] | The release of compressed air forces the projectile through the barrel. |
| 6. | [] | [] | An air rifle is not a real gun, because it does not use gunpowder. |
| 7. | [] | [] | The concept of “Stop, Don’t Touch, Leave the area, Call an adult” was part of an NRA program. |
| 8. | [] | [] | Range guards do not need to wear safety glasses. |
| 9. | [] | [] | According to NRA, about half of American households have one or more guns |
| 10. | [] | [] | Of all the activities at a cub scout day camp, shooting is the least favorite. |
| 11. | | | The only approved ammunition for Cub Scouts is _____ caliber and the maximum velocity for Cub Scouts is _____ feet per second. |
| 12. | | | Before shooting begins, it is necessary to determine the shoulder from which a person will shoot by determining the _____. |
| 13. | | | Shooting accidents are caused by _____ and _____. |
| 14. | | | The three fundamental rules for gun safety are:
1. _____
2. _____
3. _____ |
| 15. | | | Before using any gun, it is necessary to learn _____. |
| 16. | | | The two purposes of Cub Scout and Webelos shooting are _____ and _____. |
| 17. | | | Before cleaning a gun, always make sure that it is _____. |
| 18. | | | A safety on a gun is a mechanical device that _____. |
| 19. | | | The maximum range of an air rifle is how far the projectile will _____. |
| 20. | | | One of the best places to learn about a gun is the _____. |



**Circle 10 Council
Boy Scouts of America**

Air Rifle/Bb Gun Instructor

Survey Sheet

Date Attended _____/_____/_____

Name _____

Email _____

Current Positions _____

Firearm Experience _____

Reason for Attending _____

Did this course meet your needs? [] Yes [] No

Would you like to help train? Adults [] Yes [] No Scouts [] Yes [] No

Are you interested in NRA
Certification? [] Yes [] No

Critic

- Registration [] Needs Improvement [] Adequate [] Good [] Very Good
- Introduction of Staff [] Needs Improvement [] Adequate [] Good [] Very Good
- Air Gun Parts and Operation [] Needs Improvement [] Adequate [] Good [] Very Good
- Types of Projectiles [] Needs Improvement [] Adequate [] Good [] Very Good
- Safety [] Needs Improvement [] Adequate [] Good [] Very Good
- Shooting Fundamentals [] Needs Improvement [] Adequate [] Good [] Very Good
- Range Activity [] Needs Improvement [] Adequate [] Good [] Very Good

Comments and Suggestions

