



INTRODUCTION TO ARCHERY

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Introduction To Archery

Archery has long been recognized as a good physical exercise and an excellent mental control project. In recent years it has become increasingly popular as a group sport for all ages. Effective shooting can be experienced by the six (6) to ten (10) year group while those in their seventies (70) still find it an absorbing sport well within their physical limits. Many schools and colleges have now included this sport in their programs and it is hoped that, by making available sound basic instruction on shooting and safety, those taking part in this sport will be able to participate effectively and safely.

Archery is not a test of strength, although physical fitness plays a very important part when a competitor reaches the National or International level. Archery is a test of skill, and to enjoy shooting the bow, skill must be acquired through practice. As with any other sport skill can be acquired through practicing good form at all times. There is no magic formula that will produce high scores, no shortcut to eliminate the need for personal effort. In archery, you compete against yourself and high scores are in relationship to the intelligent effort and practice put forth by the individual. Generally speaking archery is not a spectator sport. Satisfaction comes from the skill developed by the individual in hitting the mark whether it is the target or some type of game.

Success in archery lies in the ability to do the same thing the same way every time. It does not necessarily follow that success lies in doing the same thing or using the same technique as "Joe Blow" who won the tournament or took the big buck last year. Archery is a very personal sport and every archer is different in physical build, bone structure, nervous system, reflexes, etc., any one of which might require him or her to adopt a slightly different style to get the best results and to develop his/her potential to the greatest degree.

There are however, certain basic steps which when followed, makes it easier for the archer to do the same thing the same way and to develop a shooting rhythm. These steps have not changed since Roger Ascham wrote "toxophilus on the art of shooting the bowe" in 1545.

These steps are:

- Stance
- Nocking the arrow
- Drawing and anchoring
- Holding and aiming
- Releasing the arrow
- Follow through

Whether you prefer hunting, field archery, target archery, or any of the other forms of archery, it will aid you in improving your skill if you break the act down to these six steps.

More recently, some archers have adopted a similar 10 step scheme to hit the 10 ring:

- Stance
- Nocking the arrow
- String hand (finger position hooked in)
- Bow hand
- PreDraw and drawing the bow
- Anchor
- Aim
- Release
- Follow through
- Relax

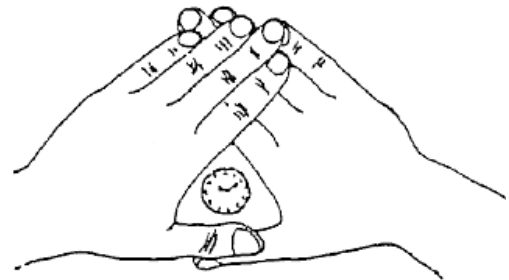
Establishing eye dominance

Before you even pick your equipment, however, it is necessary for the new archer to determine which eye he/she will use in aiming. Every individual is either "right eyed" or "left eyed" and the dominant or master eye will determine which way the archer will shoot, right handed or left handed. It does not automatically follow that a right handed person will shoot right handed. It may be that the person is left eye dominant and so will learn to shoot left handed.

Eye dominance may be determined very simply as follows:

With both eyes open, stretch your arms out in front of you, bringing your hands together as shown in the illustration. Look through the opening created by your hands at an object some distance away (a clock, target face, light fixture, etc.).

Now close your right eye. If the object in the opening remains there, your left eye is dominant. The object should shift out of view when your left eye is closed. If however, the object shifts out of view when the right eye is closed, you have a dominant right eye.



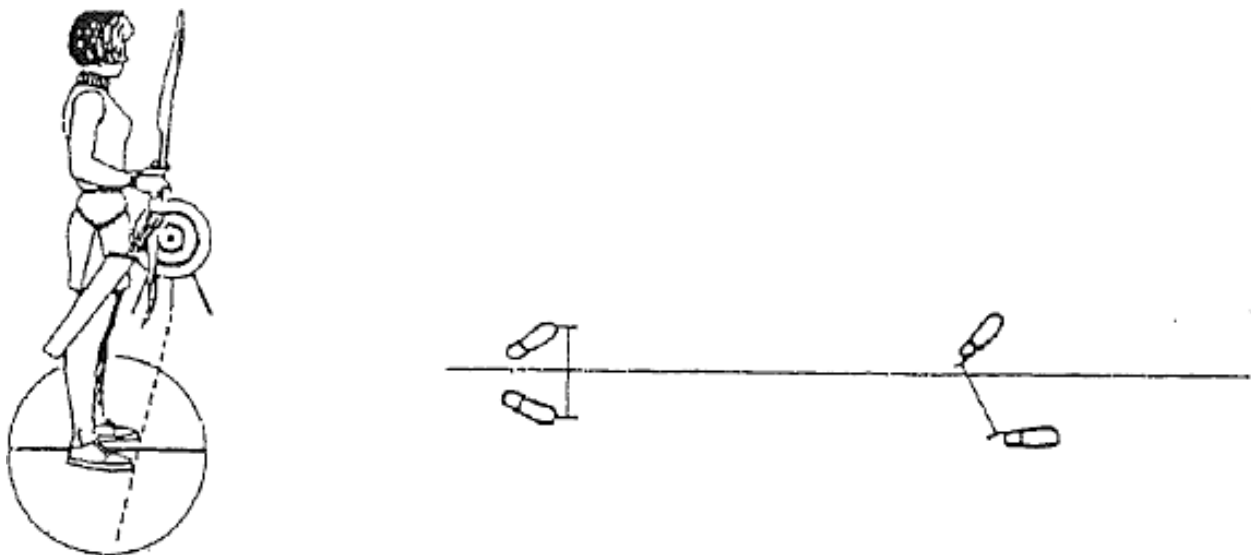
If it is determined that your left eye is your dominant eye, chose left handed equipment for the next lesson. If your right eye is your master eye select right handed equipment. Your coach or instructor will help you make the selection.

Stance

Having determined your eye dominance, take a position on the shooting line with your left side facing the target if you are right handed. Left handed persons should substitute "right" for "left". The feet should be spaced comfortably about shoulder-width apart, and the body should line up with an imaginary line drawn from the center of the target to the archer.

At the beginning of your training your coach will most probably have you line up your feet and shoulders with the target. As you progress, however you might find that another positioning of the feet with regard to the target may be more effective for your own style of shooting. Experiment a bit with the two stances shown in the diagram. The important point is - that the feet should be in the same position for each shot. Look along the left shoulder at the target, and always stand erect.

The stance is very important in any type of archery. If you hunt you should practice shooting from all types of positions such as kneeling, crouching, sitting because many hunters use tree stands or any such position you might feel necessary while out hunting.

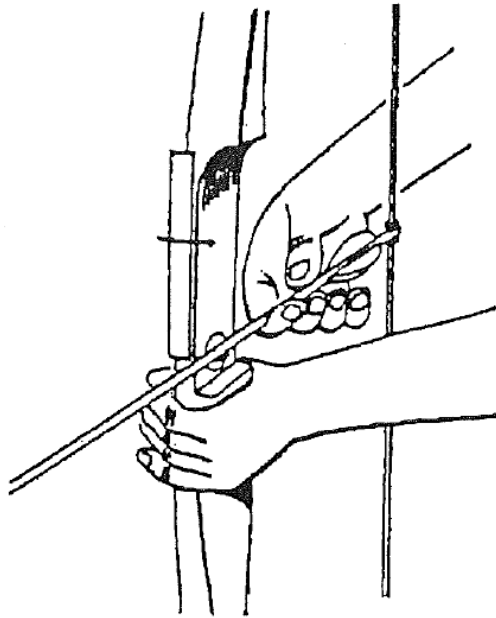


Nocking The Arrow

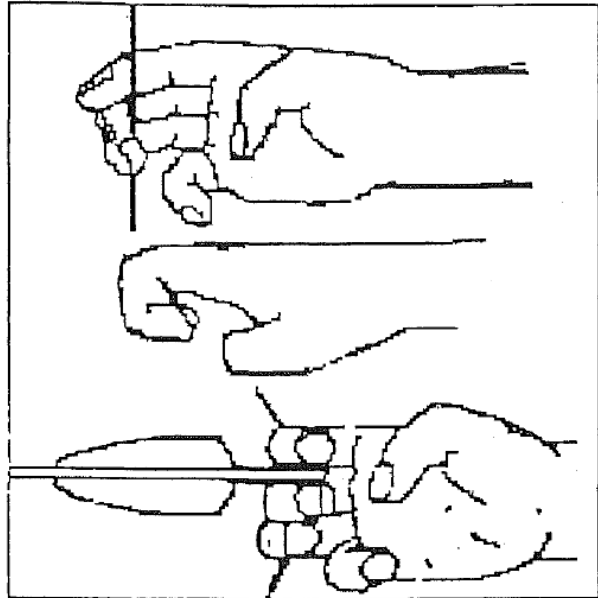
Holding the bow in an upright position remove an arrow from the quiver. Place the shaft on the arrow rest, turn the shaft until the index feather (usually an odd colour) which is at right angles or horizontal to the string. Push the arrow forward until it is clear of the string, then draw the arrow back towards the string so that the bow string enters the nock at the nocking point on the string. The arrow goes under the nocking point when placed on the string to help keep it from sliding up the string when drawing the bow. When the arrow goes on the string it should snap on so that when you pull the string back to full draw the arrow will not fall off the string.

The nocking point is located 1/8' to 3/8' inches above square with the arrow rest. This may vary with the type of equipment and the archer's style of shooting. You have to experiment by shooting arrows to find which location gives you the best arrow flight.

Nocking The Arrow



Correct Hand And Finger Position On String



Drawing And Anchoring

The string is drawn with the first three fingers of the drawing hand or a mechanical release. When using your fingers to draw back the string, hook the first three fingers around the string. The first finger should be above the arrow, the other two below. The string should cut across the fingers about the first joint. Keep the fingers together, all three fingers should work evenly in drawing the bow.

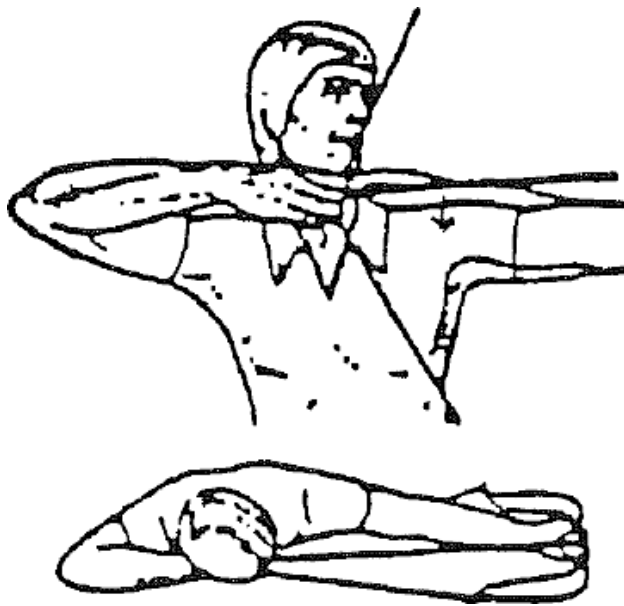
In the event the archer does not feel that the anchor is important, it should be remembered that the trajectory (flight) of the arrow is dependent upon the number of pounds pressure behind the arrow at the moment of release, roughly 2 pounds for every inch of draw, depending on the draw weight of the bow. Therefore, if you draw 28" inches when shooting the first arrow and only 27" when shooting the second arrow, there would be two pounds less pressure behind the second arrow. This would have the effect of dropping the second arrow as much as six inches lower on the target than the first arrow when shooting from a distance of about thirty meters. It is therefore, very important to develop a style of shooting that makes it possible to be absolutely sure that the nock end of the arrow is at exactly the same spot for every shot.

Bow Hand

The hand that holds the bow is called the bow hand. It is generally conceded that the bow should be placed in the hand so that when an arrow is released, the bow has complete freedom of movement. In other words, the archer should not grip the bow, but rather the bow should be held lightly with the thumb and first finger touching just to keep the bow from jumping out of your hand. It is recommended that a bow sling be used after an archer has mastered the initial stages of instruction.

Regardless of what hand position you use to hold the bow, it is the utmost importance that the bow be placed in the exactly the same position for every shot. The weight should be on the palm of the hand not on the thumb. It may take a little practice to get the wrist around behind the bow at the beginning.

To draw the bow, extend the bow hand toward the target, making sure the bow is in a vertical position (straight up and down). Using the muscles of the upper back (those used in pinching the shoulder blades together), draw the string back. Keep the elbow of the

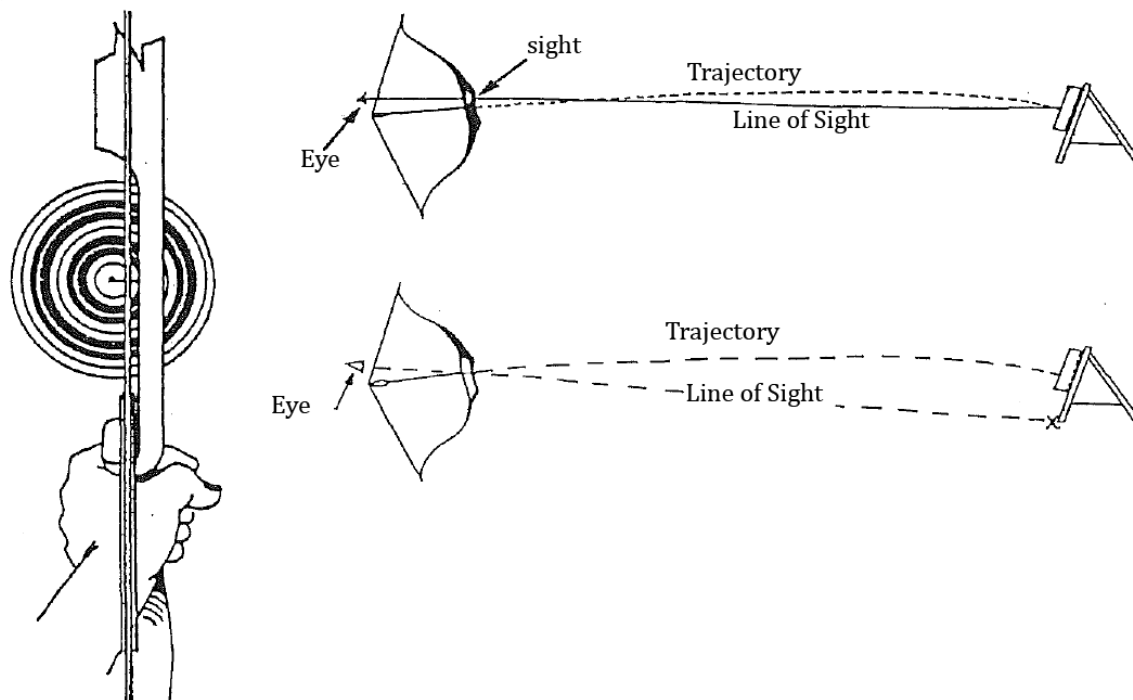


drawing arm level with the shoulder and parallel with the arrow. Draw straight back until the index finger touches the corner of the mouth. This is your anchor point so you will draw the bow back the same distance every time. Keep the bow arm slightly bent to permit the elbow to turn down. This leaves clearance for the bow string which might otherwise strike the inner side of the arm as the arrow is released. The shoulder of the bow arm should be kept low and level, and care should be taken that the shoulder does not creep up under the ear.

Whether you anchor under the chin or at the corner of your mouth (which most bare bow shooter do), it is important that you use the same anchor point every time and that your draw length is the same, so that the amount of energy imparted to the arrow remains the same with every shot you make.

Holding And Aiming

After the archer is at full draw, the string, sight, and the center of the target are lined up. This position should be held to ensure there is no movement in the bow at the moment of release. The sight must be held in the center of the target and all movement stopped before the release action takes place. This is just as important for the target shooter as well as the hunter the slightest movement will cause the arrow to not hit where you were aiming or should we say where you wanted the arrow to hit, because the arrow will always hit where you were aiming at the time of release but it was not where you wanted it to hit.



Considerable effort is required to maintain full draw and to keep the arrow from creeping forward before release action takes place. However, it is imperative that each arrow be released from the same position each time to attain any degree of consistency. By consciously applying tension in the shoulders and back muscles, the possibility of creeping is lessened.

Release And Follow-through

There are two main schools of thought. The "live" release is used by most archers who use the "nose-and chin-" freestyle anchor, or the more recent "side" anchor. At full draw, with the string resting against the face, the arrow is released by relaxing the fingers while continuing the backward movement of drawing arm. The back muscles remain in tension and the fingers are pulled smoothly off the string. Because of the tension in the back, the string hand continues to move back until the fingers are beneath the ear and touching the side of the neck. This release affords maximum cast as the string is free to go forward from the release without any restraint from the fingers.

The "static" or quiet release is used by very few archers. In this method the arrow is released by relaxing the tension of the first joints of the pulling fingers. The string then pulls off the fingers. The drawing hand does not move backwards, but remains almost stationary after release. The drawback to this type of release is that the archer cannot always keep from flinging out to the side (plucking) and away from the face at the moment of release.

Follow-through

The follow-through is as important in archery as it is in any other sport (golf, curling, baseball, etc.). Considerable effort is necessary to hold full draw for any length of time, and it is natural that after the release action, the archer relaxes. The danger in relaxing too soon after the shot is that the bow hand drops before the arrow leaves the bow, with the result that the archer does not obtain a consistent pattern on the target. Care must be taken to ensure that the bow hand remains at the same elevation and that the string hand stays where it was after release **until the arrow hits the target!!!** Only then should you check the position of your hands to be sure the correct follow-through has indeed been carried out.

Dropping the bow arm on release is one of the most common faults by both new and advanced archers. Correcting this error will go a long way towards achieving consistency and grouping on the target.

Attitude Towards Shooting

After all the foregoing details have been considered, we must now look to the repetition of this cycle or rhythm in order to maintain the consistency of our shooting form. The mind must have control of the muscles and has to be conditioned to adhere strictly to the pattern of shooting the archer decides upon, or the cycle is rejected before the release is made. The ability of the archer to "let down" is a very important part of learning to shoot, and becomes even more important as the score gets higher.

To this end the "one arrow attitude" is a must in order to overcome the problem of past faults and allow the archer to continue making an effort to do better. This is done by allowing yourself to consider that you only have one arrow to shoot and this one arrow has your whole attention. All the arrows you have already shot, and all the arrows yet to be shot, are put out of your thoughts entirely. With this system, you can cope with almost anything that happens on the shooting line. Distractions are only a problem if you let them become problems.

In summing up this system, one could say that all shooting is done between periods of relaxation, with short, concentrated efforts made for each shot. The mind is the judge of the muscle co-ordination and must terminate the cycle prior to release of the arrow if everything does not check out 100%.

We recommend to all archers interested in competitive shooting that they read all the material available on the subject, and then get themselves a good coach or instructor.

This booklet is intended only to give basic instruction on shooting the bow

Selection of Equipment

The Bow

Lack of knowledge of archery equipment, resulting in the wrong choice, is archery's worst enemy. As high as 50% of new archers drop out of the sport because of an inability to hit the target which, in turn is due to poor or inappropriate equipment. The fact that archery continues to grow is indeed a tribute to the sport.

Before one can advise an individual on the type of archery equipment to buy, it is necessary to know what the archer intends to do with his equipment.

Bow hunting, indoor shooting, field shooting, shooting with a sight, shooting without a sight, etc., all require different variations of equipment to get the best results. However, for the purpose of this section, we will concern ourselves with the selection of equipment for a new archer with minimal experience.

The muscles used to draw a bow are muscles that are seldom used in any other activity and are frequently found to be underdeveloped. Therefore, care must be taken to ensure that the weight of the bow (pull required to draw the bow to full draw) is not so heavy that the beginner's attention is occupied with the problem of simply drawing the bow. The new archer must be free to concentrate on learning the proper form. The bow used to teach the beginner must be light enough so that it can be drawn to the proper length without undue effort. All too often we see new archers who have bought their own equipment without talking to someone who is knowledgeable about the sport. And you see them trying to pull a bow that is too heavy in draw weight. They are discouraged from the outset and soon drop out of the sport.

After the beginner learns the proper form and has developed the muscles used in the sport, he or she can then graduate to a bow of the proper weight for the type of shooting to be done. Although each individual case will require its own assessment, the following table will assist you in selecting equipment for use by most beginners.

Age of Archer	DrawWeight of Bow
9 to 14 years	15 to 20 pounds
15 to 17 years	18 to 24 pounds
Adult women	20 to 25 pounds
Adult men	25 to 30 pounds

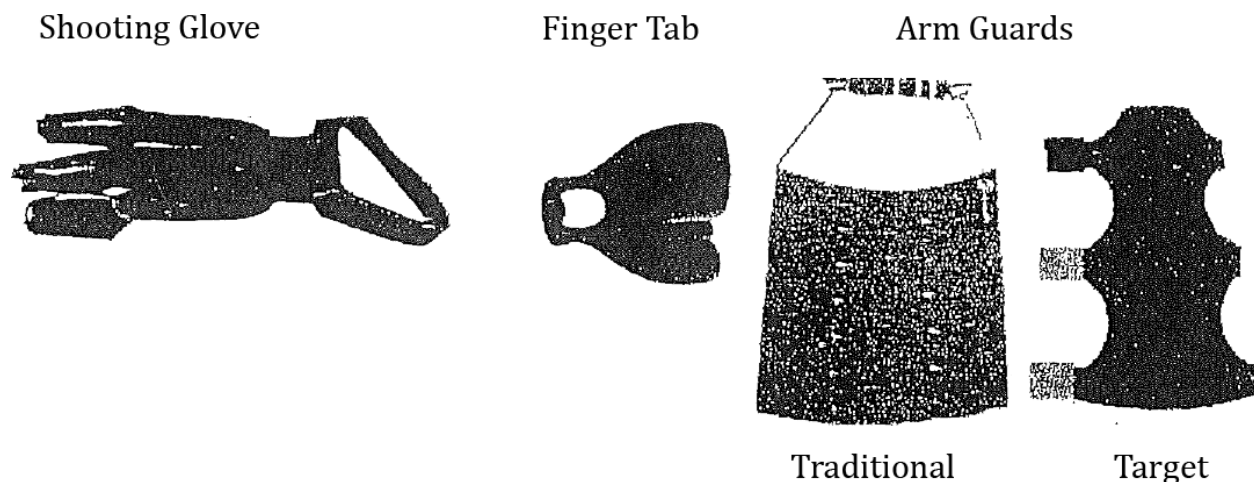
This is just a general starting weight and may vary with the person's build and muscle strength. The important thing is not to overburden the archer (do not give them a bow which they can not comfortably pull to full draw) the archer will not be able to practice good form if they are straining to draw the bow.

Selection of Arrows

Arrows must be matched to the bow. You can not shoot 22 bullets out of a 308 gun, so bows can only shoot arrows that are spined to the draw weight of the bow.

One of the methods for determining correct arrow length is to place the nock end of the arrow against your chest and pointing out straight. Then put both of your hand out along the arrow. if the arrow sticks out past the end of your finger tips then it should be long enough so that when you draw it on the bow the arrow will not pull off the rest.

Finger protection in the form of Tabs or Shooting Gloves are necessary for a smooth release and serve to prevent wear and tear on the fingers.

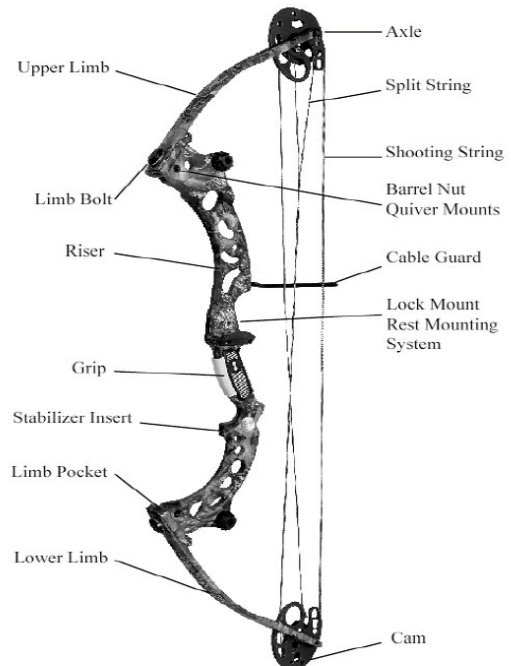
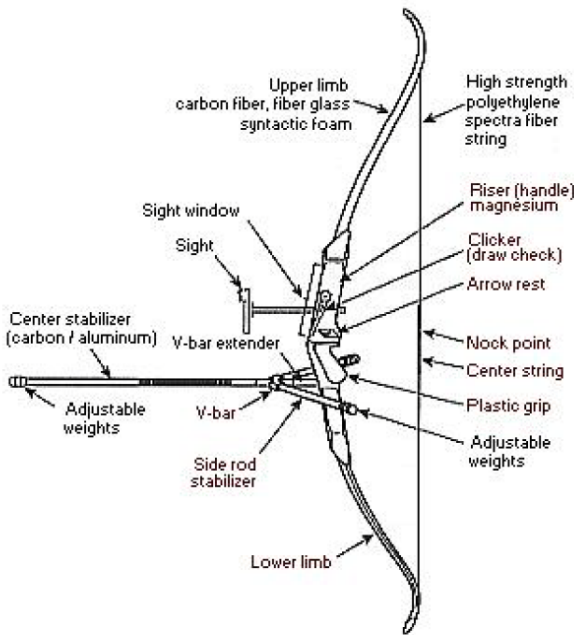


The Bow

The selection is wide as to the type of equipment you might want to purchase and use so one should go to an archery club or dealer in your area. They will tell you what equipment would be suitable for the type of shooting you wish to do. The archers in Nova Scotia are as varied as the types of equipment available. All you have to do is attend one of the many shoots to get a good look at what you might want to buy. If you ask an archer one simple question he will talk on the subject for quite some time.

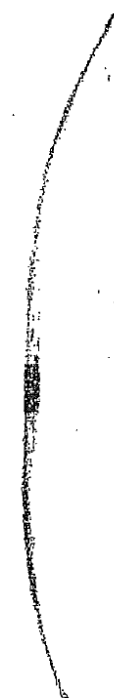
There are over a dozen clubs in the province all the way from Cape Breton to Digby, if you want any information on archery or the clubs in your area contact Sport Nova Scotia and they will put you on the right track. The Archers Association of Nova Scotia can give you any information you might like also.

Here are three types of bows. The compound bow is used for target, 3-D and hunting. The recurve bow is used mostly for target shooting in the form you see in the drawing and it is also used for hunting but not with all of the attachments you see here.



Slayr™ with Tru-Arc Cam System

Then there is the long bow this bow is usually shot without any attachments.



SAFETY PROCEDURES AND RANGE ETIQUETTE

In order for any club or group to carry out a shooting program, there must be considerable thought given to the problem of safety. This can be divided into two sections.

1. Group safety
2. Individual safety

Group safety - All archery activities should be undertaken with the direct supervision of a director of shooting or other individual who controls the shooting, either by whistle signals, or in the case of practice sessions, merely oversees that all activities are taking place in a safe manner.

All spectators should be kept back from the shooting line so that the archers can see what is going on, and also to protect the spectators themselves.

An archer may not draw his or her bow unless on the shooting line and while aiming in the direction of the target!!!

This provision includes any drawing of the bow without an arrow for the purpose of practice!!!

Target butts should be firmly anchored to prevent archers from pulling the butt over on top of themselves when drawing arrows, and to prevent the wind from blowing them over in the case of outdoor shooting.

Care must be taken when drawing arrows from the butt. Check to make sure that no one is standing where they could be struck by an arrow being pulled from the target, as they are some times very hard to pull and the force needed to remove an arrow from the target can cause your hand to travel backward and a person standing too close to the target could be stabbed with the arrow.

Under no circumstances should an arrow be shot if anyone (person or animal) is on the range near the targets, or anywhere in front of the shooting line. Arrows may bounce off a target, or in the case of a poor release, may be shot where they were not intended to be shot.

The shooting line should be straight, not staggered. If different groups are shooting different distances at the same time, the butts should be staggered, not the archers.

Never distract an archer who is in the process of shooting.

INDIVIDUAL SAFETY

Archers should be concerned with their own safety as well as other archers when handling archery equipment. Some of the things that can and do cause injury are listed here.

Stringing a bow using an incorrect method can cause injury to the archer or to the bow.
Always use a bow stringer when stringing a bow.

Never use a bow with cracked, twisted or damaged limbs. Badly fitted or worn strings (broken strands loose serving). Any arrow with loose or damaged fletch and most importantly **never shot an arrow that is cracked**. The arrow could break when it is released and pieces of the arrow could injure the shooter.

Never use an arrow that is too short for your draw length, an arrow that is too short could be overdrawn, causing it to fall off the arrow rest and it could be shot into the hand or wrist.

When approaching any target indoors or out keep your eyes on the ground to avoid stepping on arrows that might have landed short of the target or rebounded to land in front of the target.

Be careful of loose clothing, or flyaway hair. They should be firmly tied out of the way to prevent them from being caught in the string. Remove all pendants, medallions or chains from around the neck; remove all items from any breast pockets. The string has been known to remove the pocket of the person who forgot to take that cigarette package out before they shoot.

RANGE ETIQUETTE

Do not remove another archer's arrows unless they have asked you to and do not touch their arrows while pulling yours.

Pay attention and co-operate with the club officials carrying out their duties.

Offer to help out. They will appreciate this a great deal.

Attend club meetings and air your views there. Don't gripe on the range.

Never touch another archer's equipment with out their permission.

Above all, be a good sport and remember, it is not the winning that counts, but the participation!!!

GLOSSARY OF ARCHERY TERMS

Anchor Point	A certain point on the face to which the string hand is brought on the draw to maintain consistency.
Arm Guard	A device of leather or some other material, worn on the forearm of the bow arm to protect the forearm and to prevent contact with the string.
Arrow Rest	A device installed in the bow sight window upon which the arrow rests while being shot.
Back (of the bow)	Side of the bow away from the archer.
Belly (of the bow)	Side of the bow facing the archer.
Bow arm	The arm which holds the bow.
Bowman	Another name for an archer.
Bow Sight	Mechanical device attached to the bow that enables the archer to sight directly on the target.
Bow String	String of the bow usually made from a synthetic material (dacron, fastflight).
Bowyer	A person who makes bows.
Butt	Backstop that holds the target faces during shooting.
Cast	The distance a bow can propel an arrow.
Composite Bow	A bow made out of two or more materials. i.e., Wood, Fiberglass or Carbon.
Compound Bow	A modern innovation in bows employing two or three stages of pulleys and using a cam to assist in drawing a very-heavy limb with greater ease than the conventional bow.
Draw	To pull the string into the shooting position.
Drawing Arm	The arm that draws the bow string.
Finger Tab	A leather device worn on the fingers of the string hand to protect the fingers and to permit a smooth release.
Fletching	Feathers or Vanes used to help stabilize the arrow in flight.

Grip	The handle of the bow where it is held with the hand.
Hunting Bow	A bow used for hunting usually shorter and heavier in draw weight than a target bow.
Index Feather	The feather on the arrow that is set at right angles to the nock grove. It is usually a different colour from the other two.
Longbow	A bow with no recurves, high arched limb cross section, usually six feet or longer.
Shaft	The part of the arrow between the nock and point.
Stringer	Device made of heavy cord used to string a recurve or longbow.
Target	Object at which an archer aims.
Tuning	Making adjustments to one's personal equipment in order to achieve optimum arrow flight and position in the target.
Vane	A material (feathers, plastic, mylar) glued onto the shaft at the rear to help control the flight of the arrow.
Weight	The amount of pull, measured in pounds, required to draw a given bow to full draw.