



GUIDE TO ARCHERY BOWMANSHIP

Warren County Farmer's Fair

Abstract

Archery bowmanship allows Warren County 4-H shooting sports members to demonstrate their knowledge of archery equipment, range safety, and proper shooting form.

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About the Event

The archery bowmanship event allows Warren County 4-H Shooting Sports members to demonstrate their knowledge of bow equipment and shooting with proper form. A 4-H or USA Archery certified instructor will examine your equipment, evaluate your conduct and safety on the archery range, and judge your ability to use proper form while shooting at 10 ring targets.

Your Appearance Matters

As with many organized sports, rules are established that describe the attire and appearance expected for all participants. In general, no denim, jeans or camouflage clothes may be worn. Due to weather conditions, protective clothing such as sweaters, track suits, raingear, etc. may be worn following approval by the event supervisor and/or judge. Headwear is optional. Archer should not wear dangling jewelry, earrings, or necklaces. Long hair should be tied back in a ponytail or braided. If tied into a ponytail that is longer than shoulder length, an additional tie should be used towards the bottom of the ponytail.

Shoes

Archers must wear sport shoes that completely cover the foot and heel. This is primarily a safety issue on the range. With loose shoes, archers can more easily trip. If any part of the shoe is open, there is a risk of archers walking into arrows stuck in the ground. Sneakers or hiking boots are common. Do not wear flip-flops, sandals, or slip on shoes like Crocs™. Because of the safety concern, the Judge will not allow you to enter the range with improper footwear.

Any footwear used by an athlete who determines the selected footwear is best suited to facilitate their comfort and provide maximum performance is acceptable with the few restrictions noted previously. This interpretation takes into account the comfort and personal preference of the athlete regardless of the sporting activity. These can be running shoes, walking shoes, hiking boots, work boots or any suitable footwear as determined by the athlete under the guidelines noted.



Pants\Shorts\Skirts

Boys shall wear trousers or shorts. Girls shall wear dresses, skirts, divided skirts, shorts or trousers. For shorts and skirts, these may not be shorter than the athlete's fingertips when the arms and fingers are extended at the athlete's side. No oversize or baggy type pants or shorts are allowed.

Shirts

Archers can wear long or short sleeve shirts (tee shirts are ok). Clubs do not need to have matching shirts. Shirts must completely cover the front and back of the body and be fixed over each shoulder. When at full draw, the shirt should not rise to expose the midriff.

Equipment

For the bowmanship competition, you will be allowed to use your own equipment. It must comply with 4-H guidelines (see Appendix 1: 4-H Shooting Sports Archery Equipment Requirements) and will be inspected prior to use on the range. If you do not have your own equipment, your club is responsible for providing you with a bow and arrows. Whether you use your own bow or a club bow, you should be familiar with your equipment and it should be in good working condition. Archers should also know their draw length and the bows draw weight.

Prepare your equipment in advance

Bows should be clean and have a properly set nocking point. Strings should be waxed and servings should be clean and without significant separation. Arrows should be clean with no fletching issues (tears or separation from shaft). Nocks and tips should not have any obvious defects such as gouges or cracks. All arrows should match in size, weight, and appearance. Hip quivers can be used. Bow mounted quivers are generally not used in target archery, but there is no rule preventing it. Back quivers may not be used. Ground quivers will be provided on the range.

Inspect your equipment

The judge will inspect your equipment prior to shooting to make sure it is safe to shoot. In general, the judge will inspect the string, end loops, cables, wheels\cams, limbs, riser, and rest, and one or two arrows from your quiver. The judge will ask you some questions during this process.

Transport your equipment safely

All archery equipment should be transported in a hard or soft case. This not only protects your equipment during transport, it also ensures that fair attendees do not become alarmed by seeing your archery equipment carried through the fairgrounds. Equipment should only be uncased on the archery range. The archer is responsible for transporting their own equipment to and from the range. The equipment cannot be held in storage at the range after the competition- you must remove it immediately after you are finished.

Wear Proper Safety Equipment

Armguards are required on the range. Archers can optionally wear chest protectors, shooting gloves, shooting tabs or use mechanical releases (compounds only). However, make sure this equipment is properly fitted. Loose armguards, oversized shooting gloves, or improperly adjusted releases are common deductions.



Range Rules and Commands

The archery range at the Warren County Fairgrounds enforces range rules that are common to all archery ranges.

1. Know and obey all range commands.
2. Keep your arrows in your quiver until you are told to shoot.
3. Always keep your arrows pointed down or towards the target.
4. If you drop an arrow, leave it on the ground. Continue shooting arrows from your quiver. Raise your hand and wait for permission to pick up and shoot the dropped arrow.
5. Always walk at the archery range.
6. Only release the bow string at full draw when there is an arrow on the string.
7. Secure all loose clothing and wear proper footwear.
8. Always treat your archery equipment with respect.
9. Always treat your fellow archers with respect.

The commands used on the archery range are standard 4-H commands:

Verbal Command	Whistle Command	Action
Archers to the shooting line	Two blast	Shooters come to the shooting line and straddle it
Make ready.		Shooters prepare to shoot
Is the line ready!		“Ready” or “not ready”
Commence firing.	One blast	Shooters begin firing
End is complete.		Shooting is complete
Retrieve (or score) your arrows	Three blasts	Follow line commander to target butts; wait for scoring or pull arrows from target
Cease fire!	Four or more blasts in rapid succession	Immediately STOP shooting – unsafe condition; wait for commence firing command or one whistle blast to resume shooting
NOTE: The line captain ensures that all shooters have returned to the ready area before returning from the butts. *In tournament shooting the archer must remain at least arm’s length away from his or her arrows until they have been told to pull them by the scorer.		

In addition, the judge or range master will use the command “prepare to shoot”. On this command, you will ensure that your arm guard is secure, walk arrows to the ground quiver (if not using a side quiver), retrieve your bow from the bow rack, and proceed to the waiting line.

Proper Shooting Form

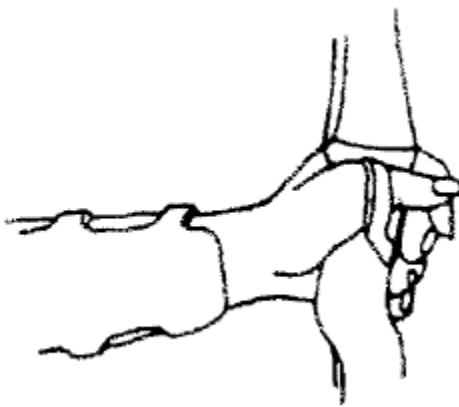
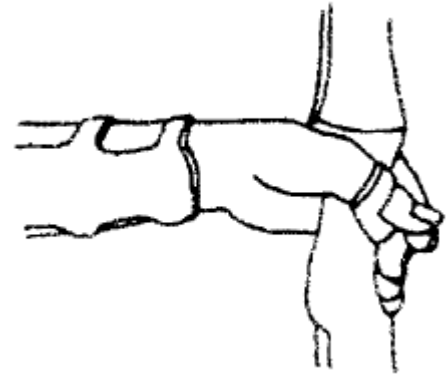
During the bowmanship competition, archers are evaluated for proper shooting form. Even though instructors may teach a different number of steps to the shot process, there are several steps in common that form the foundation of an observable shot sequence. You must take a proper stance, grip the bow properly, nock an arrow, grip the string properly, raise the bow arm to shooting position, draw, anchor, aim, release and follow through. The steps outlined in this section conform to the National 4-H Shooting Sports Archery Curriculum and provides variations and tips to help you prepare for the bowmanship event. Much of the text and diagrams are taken from the curriculum verbatim.

Stance and Posture

A good shooting stance involves a relaxed, erect posture. The feet should be straddling the shooting line, shoulder-width apart. A line drawn across the tips of the toes should point to the center of the target. Some people find that moving the bow-hand foot back a few centimeters (up to about 6 inches) is more comfortable, but that may cause some problems in keeping the rest of the body in line. It forces muscles to work, increasing the potential for fatigue and inconsistency. Once in your stance, the classic "T" position should result in your bow pointing directly towards the target. The head should be erect, relaxed and rotated toward the bow-hand side.

Bow-hand Grip

Two types of grips are used by the majority of archers. Both of them are relaxed, allowing the bow to move freely on the release. For those of you who are afraid of dropping the bow, either use a sling or lightly touch the tip of the thumb to the tip of your index finger. The grips share several common elements. Both are begun as if extending the hand in a handshake. The hand is held vertically, and the bow fits into the U-shaped opening between the thumb and the fingers. The wrist remains in direct alignment with the forearm. The elbow is rotated out, so that the forearm can move readily toward the center of the chest when the elbow is flexed.



A high-wrist grip allows the bow's handle to seat only in the web between the thumb and the forefinger. In this grip the wrist remains straight, aligned with the forearm both horizontally and vertically. The low-wrist grip allows the muscles controlling the hand to relax. This causes the hand to rise above the forearm and the bow handle to seat against the palm of the hand. This grip is similar to having a completely bedded rifle barrel. Like that situation, perfect and consistent bedding of the bow's grip gives very consistent shooting performance. Slight changes from shot to shot, however, produce changes in the point of impact. On the other hand, the high-wrist grip is similar to using a free-floated rifle barrel. The only point of contact is well established, and the

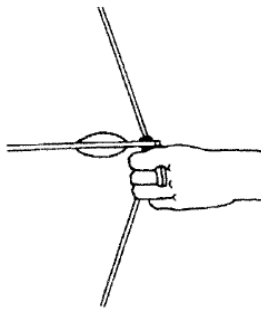
bow does its own seating in the hand. Most target archers use a low wrist because they get better performance with it. Many hunting archers use a high wrist because it is less sensitive to slight differences in hand position or pressure.

Nocking an Arrow

The arrow can be nocked with the bow in a horizontal (table-top) or vertical position. The arrow is nocked below the nocking point indicator. If you purposely nock your bow differently, be sure that you are prepared to respond to the judge's questions concerning it. Be sure the index vane is positioned correctly for the arrow rest used on the bow. The tip of the arrow should be pointed down range and/or toward the ground during the entire nocking process.

Setting a Hook

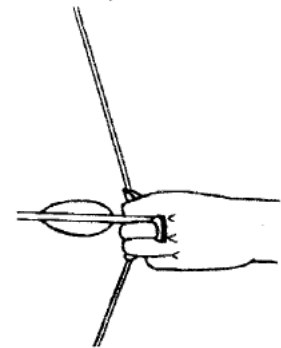
The string hand uses hooked fingertips to draw the string and the arrow into position for a shot. The back of the hand should remain flat throughout the drawing and shooting sequence. An easy way to ensure that is to use a three-fingered salute. Hold the hand upright, palm forward. Bring the little finger of the drawing hand toward the center of the palm and hold in place with the tip of the thumb. That keeps the hand flat. Next, bend the remaining three fingers into a hook. This approach is used with either a tab or a shooting glove.



The fingers may be placed on the string several ways. The most commonly used approach is to place the index finger above the arrow and the nocking point indicator and the remaining two fingers below it (split-finger or Turkish draw). Another common approach is to place all three fingers under the nock (Apache draw). It is very effective for short range shooting, but carries some risk because the nock is placed very close to the dominant eye. In either case, the fingers are placed on the string at about the last joint of the fingers. A slightly deeper grip, almost to the second joint, is quite acceptable when using a tab. Tabs give more

consistent results than gloves with most shooters.

The problem known as "finger pinch," where the arrow lifts away from the rest, is commonly caused by curling the hand during the draw. It can be cured by taking a slightly deeper grip on the string (almost to the second joint) and/or by folding the little finger and the thumb into the palm of the drawing hand.



Raise and Extend bow

Once the stance and hand positions are established with a nocked arrow, the entire unit is brought into shooting position at the same time. Start with the bow arm extended about 15 degrees from the body and on a line toward the target. The forearm of the string hand should be set on the string. Moving the arms from the shoulders, fully extended and pointing at the target. The forearm of the string should be extended forward. Many instinctive archers will extend and draw in the same motion, coming to their anchor point as the bow arm settles at full extension. Use two steps here to avoid developing form faults.

Draw

Pull the string back toward the anchor point. At beginning of draw, the upper arm muscles flex the elbow. Then the elbow is drawn back using muscles of the shoulder and back. The draw should be a smooth motion, keeping the forearm in line with the arrow shaft.

Anchor

Most archers anchor the tip of the index finger against the corner of the mouth or the canine (eye) tooth on the dominant side. Often a secondary anchor point is used. The thumb may be placed along the angle of the jaw or behind the ear, or it may be nestled against the back of the jaw bone. Since the anchor point establishes the location of the "rear sight" even for instinctive shooters, it is essential that the anchor point be consistent.

Aiming

In instinctive archery, aiming is simply an intense concentration on the target. Pick a tiny spot and concentrate all your attention on it. As in rifle shooting, releasing before you are satisfied with the hold or waiting too long during the aiming phase will lead to large groups and inaccurate shooting. Experienced instinctive archers pause briefly, perhaps a second or two, to be sure of their hold before releasing the string. Although this is not a true sight picture, the archer does form a mental image of the proper relationship between the bow and the target. Throughout the aiming sequence, the string hand should remain firmly locked to the anchor point. Try coming to an anchor point without equipment right now.



Release

A proper release is achieved by simply relaxing the fingers of the drawing hand while pulling the string-hand elbow back slightly. To feel a live release, hook the fingers of one hand into the hooked fingers of the other hand. Holding the hands across the center of your chest, pull with both hands. Note that this requires you to use your back muscles, just as in drawing a bow. Relax the fingers of the drawing hand. The elbows rotate back quickly for a few centimeters (inches). This is exactly what should happen in a live release. The fingers of the shooting hand should flow along the side of the face. The bow should rock forward at the same time.

Follow Through

A proper follow through is essential to consistent, accurate shooting with all types of equipment. Archers must pay particular attention to follow through. The bow arm and string arm should maintain their positions until the arrow is in the target. Fatigue is the prime factor in improper follow through.

Relax and Evaluate

After your shot is complete, take the time to lower your bow and relax before you draw another arrow from your quiver. Mentally evaluate your shot sequence, especially if your arrow did not fly well or hit the target where you expected, to see if corrections in your form are necessary.

Tips for Achieving High Shooting Form Scores

While each step in the shooting process can be slightly different from shooter to shooter, judges also look for consistency between shots and a controlled, steady, rhythmic shooting approach. Consider the following tips:

- Your stance should not change once you begin your shot process
- Your bow grip should not change once the bow is raised
- Your string fingers should not curl around the string
- The arrow should not be drawn while the bow is being raised into the pre-draw position
- The arrow should be level and pointing towards the target during the draw
- The back of your string hand should remain flat
- If using a mechanical release, the finger should be positioned behind the trigger to avoid a misfire
- The archer should draw to the anchor point and hold. Avoid overdrawing.
- There should be at least a 3 second pause after reaching the anchor to allow for aiming
- The release should be a short movement across the cheek and straight back
- The follow-through position should not break down until after the arrow hits the target
- Shoulders and chest should remain low during the entire shot process
- If your shot doesn't feel right, let down the bow and start over. You are not penalized for doing this. In fact, it is common for archers to let down during competitions for an unexpected gust of wind or crowd noise.
- Remember to follow all range commands and rules

The Day of the Bowmanship Event

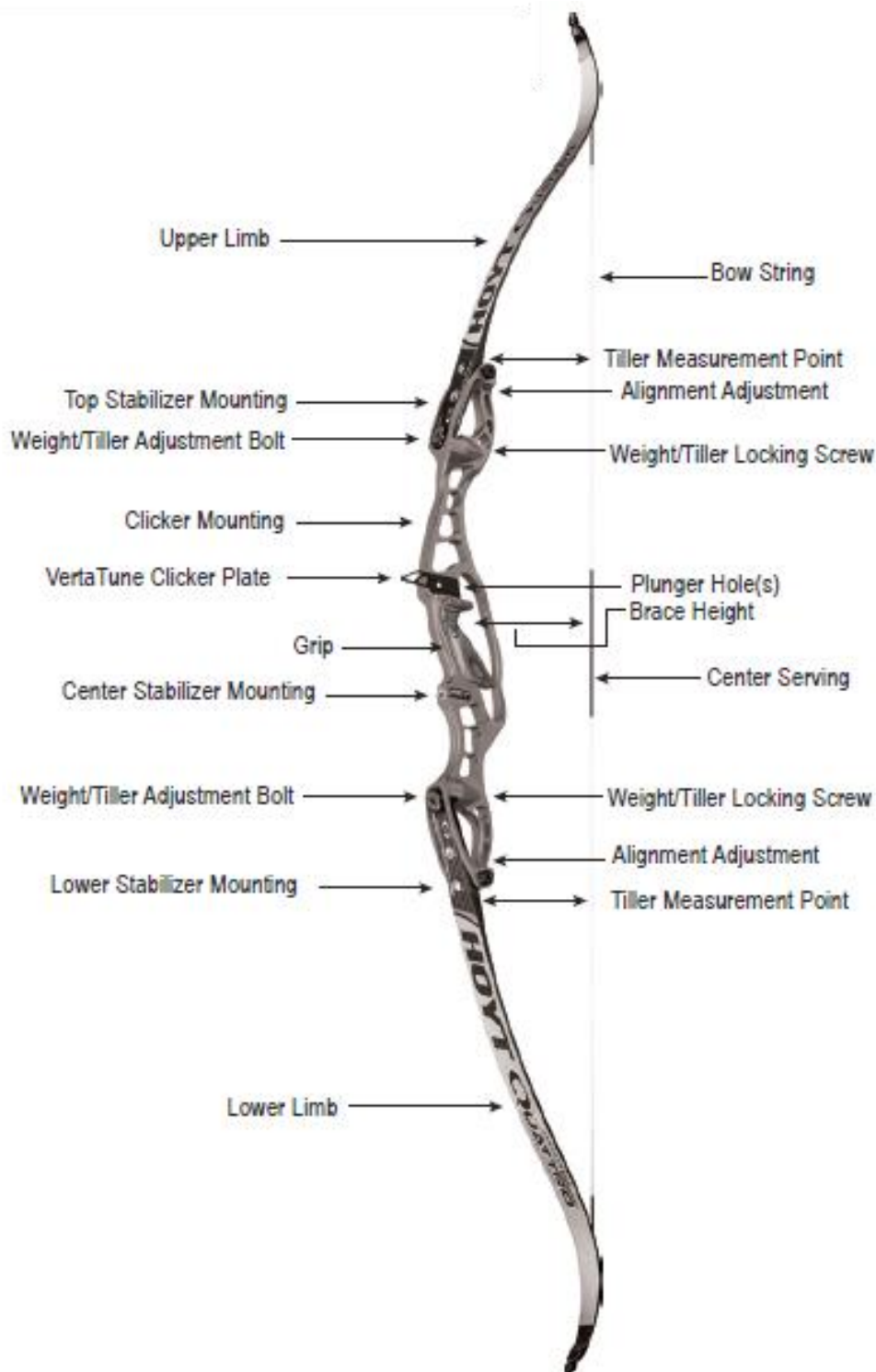
- Arrive at the fairgrounds and proceed to the 4-H building to check-in with the event superintendent. If you bring your own equipment, it must be immediately brought to the range equipment area, unpacked, and placed on the bow rack. Arrows can remain with your case until you are called onto the range.
- Remain close to the range area with your club leader.
- An archer will be called onto the range. The next archer will also be announced so that you can proceed onto the range expeditiously when it is your turn. No coaching is allowed once the archer steps onto the range.
- **Your evaluation begins** when you are greeted by the range officer and judge.
- The Judge will perform an equipment inspection while asking you questions about your equipment. In addition to parts of the bow and arrow, the judge may ask you about your draw weight or draw length setting, or size of arrows that you use. Be prepared- regardless of whether you use your own equipment or club equipment, every archer should know the details about the equipment.
- When the equipment inspection is completed, the range officer will tell you to return your equipment to the bow rack, then proceed to the waiting line.
- The range officer will initiate the shooting portion of the evaluation- "Archer, prepare to shoot"
- Place your arrows in the ground quiver on the shooting line, then retrieve your bow and stand on the waiting line.
- The judge will position himself around you as you receive commands from the range officer to shoot your end and retrieve arrows.
- When shooting is complete, you will be asked to stow your equipment.
- The judge will complete his score sheet and award you your ribbon.
- You will be excused from the range. Pick up your equipment and leave the range.

Congratulations! You have completed your bowmanship!

Appendix 1: 4-H Shooting Sports Archery Equipment Requirements

	Permitted	Not Permitted
RECURVE	One adjustable sight pin or multiple hunting style sight pins may be used; clicker and kisser buttons permitted; Participants may have as many sight pins as deemed necessary; Torque compensators are permitted.	String peeps and mechanical release aids.
COMPOUND (freestyle)	Release aids, String peeps, optical sights, spirit levels; 60 lb. maximum draw weight.	Overdraws may not place the arrow rest further than 6 cm from the pivot point of the bow.
ARROWS	Must meet AMO minimum weight standard; 6 grains arrow weight per pound bow peak draw weight.	No arrows larger than 23/64ths in diameter are permitted.

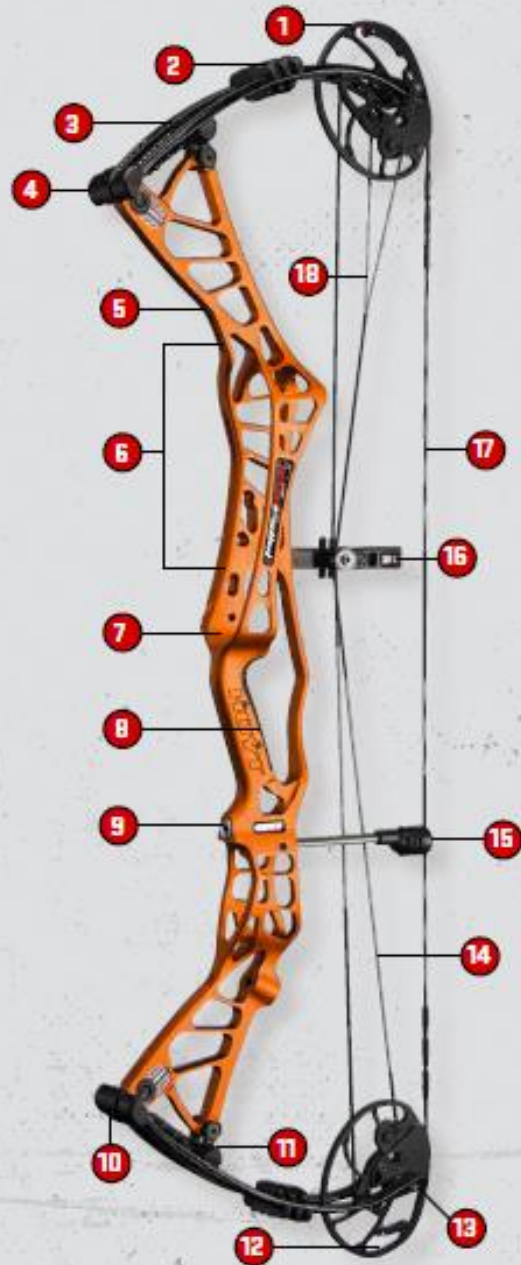
Appendix 2: Recurve Bow Parts



Appendix 3: Compound Bow Parts

COMPOUND BOW TERMINOLOGY

- 1 Top Cam
- 2 LimbShox
- 3 Limbs
- 4 Limb Pocket
- 5 Riser
- 6 Sight Window
- 7 Shelf
- 8 Grip
- 9 Stabilizer Bushing
- 10 Limb Weight Adjustment Bolt
- 11 Rockers
- 12 Bottom Cam
- 13 Axle
- 14 Control Cable
- 15 Stealth Shot
- 16 ZT Cable Guard, Adjustable Cable Guard or Cable Guard with Cable Slide*
(*depends on model of bow)
- 17 Shooting String
- 18 Split Yoke Buss Cable



Appendix 4: Arrow Parts

