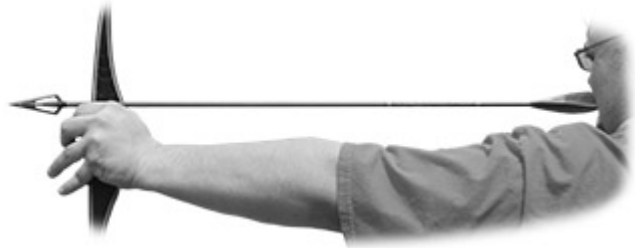


TRADITIONAL BOW GUIDE

Once upon a time, traditional archery was just called archery. Through years of innovation and development, bow technology has evolved, not just into a more advanced form, but into a whole new species. That being said, during the past few years many shooters have found themselves craving the challenge of the stick and the string. As such, traditional shooting has grown tremendously over the last decade and continues to become more popular year after year. Are you ready for the challenge?



The first decision you need to make is simply, "What kind of bow do I wish to shoot?".

There are two primary classes of traditional bow:

- The Longbow
- The Recurve Bow

The longbow is where the history of archery begins. Originally, archery wasn't only a sport, it was a way of life and a means by which to provide for one's family. Though today's designs have many improvements to provide better arrow speed, durability, and comfort, the design basics of the longbow are pretty much the same as they were 11,000 years ago: the stick and the string. Historically, a fine bow was among a person's most treasured possessions. Many kings were entombed with their bows.



The Martin "Savannah" Longbow is an excellent example of a simple yet functional longbow design.

The modern longbow comes in three basic variations:

- The basic "Stick Bow" made of a single piece of wood with round or triangular cross-section limbs, which are thick and fairly narrow.
- The rectangular cross-section laminate bow, composed of many layers of different materials each chosen and positioned based the material's specific properties. These bows are often much faster and lighter than a stick bow of the same weight, as well as being more durable.
- The "Reflex/Deflex longbow", arguably a hybrid between a longbow and recurve, is kind of the middle ground between longbows and recurves. Such bows exhibit qualities that are very desirable to the traditional archer. Reflex/Deflex bows are very fast and durable, with very little "hand shock" or vibration.

The recurve bow marks the second generation of bow technology. The origin of the recurve bow design traces back to Asia around 2,000 BC. This design allowed archers to achieve the arrow speeds of a much longer bow with a significantly smaller package. For mounted archers, this was the answer to many problems. Traditionally, recurve bows are a composite of materials. It is difficult to achieve the desired shape out of a single piece of material. Laminates and composite construction were often utilized. Modern recurves are universally of laminate construction. They feature limbs that are relatively wide and quite thin, with the limb tips jutting far forward of the grip when the bow is unstrung.

One of the defining characteristics of the recurve bow, is the way the string and limbs interact. With the longbow there are only two points of contact between the end loops of the string and the limb. In a recurve design, the string will often contact the limb for a few inches at each end, with the end loops being pulled far ahead of the string. The force of the limbs is exerted more vertically in recurve designs, reducing hand shock and increasing arrow speeds.



Fred Bear's Takedown can be disassembled into a very small package for transport and storage.

Recurve bows also come in three general variations:

- The "Basic" recurve bow, which comprises of laminates of wood, sometimes with opposing grains, glued together to achieve the shape and curvature of the bow.
- The "Takedown" recurve bow, probably one of the most popular variations, which can be disassembled into a small package for transport or storage. Several variations on limb attachment method exist, the most common being a limb pocket and bolts. Other attachment methods such as the pocket and locking system used on the Fred Bear Takedown have gained popularity over the years.
- The "Composite" bow, which describes the most ancient of recurve bow designs, made from horn, wood, and sinew laminated together, and will not be discussed further in this guide.

There is no scientific solution to the choice of whether to shoot a recurve or longbow. Both designs have their merits and drawbacks. Typically longbows can be more forgiving and much easier to shoot. Recurve bows can be shorter, faster, and more manoeuvrable in the woods. Some models can be taken down for easy storage and transport. The choice is yours.

DRAW WEIGHT

The draw weight of the bow is usually written on the face of the lower limb. The weight is noted in pounds (lbs.) at a draw length of 28 inches (710mm), e.g. #20 @ 28. Means at a full draw of 28 inches the force required to hold the bowstring will be 20 pounds (approx. 9 kilograms).

The next question is, "How much draw weight do I need?" The answer is as complex as the human body itself. The truth of the matter is, the best way to find out is to actually draw a few friends' bows, club bows, etc. However, the following section can be used as a guideline if no bows are available to try out.

A recommended draw weight for beginners would be between 15-20 lbs. for children and between 20-25 lbs. for adults. At competitive level, women can average a draw weight from about 28 lbs. to 38 lbs, men can average from 35 lbs. to 45 lbs, typically. Draw weights have actually decreased over the years as the performance of materials used in the manufacture of bows, arrows and strings have improved.

Generally, it is recommended to err toward the lower side on draw weights. Archery is supposed to be fun and exciting, not tiring and painful. If your bow is too heavy to draw back, and you can only shoot a few times before you're fatigued, then you'll be reluctant to practice and improve your game. But you also want your bow to shoot with as much speed and power as possible, so you shouldn't choose too little weight either. You will have to find the right balance between comfort and performance.

If you are already shooting with modern equipment, it would be wise to consider choosing a traditional bow with a draw weight 10-15 pounds lighter than your compound bow. And remember as a traditional bow doesn't have a 'let-off', at full draw all those pounds will be hanging on your fingertips...

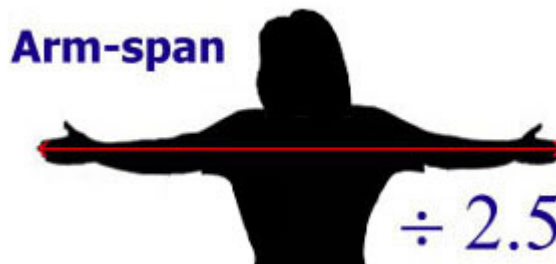
RECOMMENDED TRADITIONAL DRAW WEIGHT TABLE:

Small Child (70-100 lbs.)	10-15 lbs.
Larger Child (100-130 lbs.)	15-25 lbs.
Small Frame Women (100-130 lbs.)	15-25 lbs.
Medium Frame Women (130-160 lbs.)	25-35 lbs.
Athletic Older Child (Boys 130-150 lbs.)	25-35 lbs.
Small Frame Men (120-150 lbs.)	30-45 lbs.
Large Frame Women (160+ lbs.)	30-45 lbs.
Medium Frame Men (150-180 lbs.)	40-55 lbs.
Large Frame Men (180+ lbs.)	45-60 lbs.

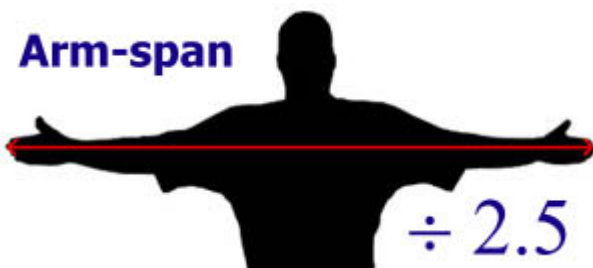
As mentioned before, the draw weight of standard traditional bows is as measured at 28" draw. Unlike modern compound bows, which are designed to be shot only from the full-draw position (whatever that mechanical setting may be), a traditional bow can be shot using any given draw length. This will however also affect the actual draw weight produced by the bow, at the given draw length. A good rule of thumb is to add or subtract 2 lbs. for respectively each inch over or under the standard of 28" (for bows with a standard draw weight of more than 40 lbs. add or subtract 3 lbs).

TRADITIONAL BOW DRAW LENGTH

To measure your draw length, determine the length of your arm span in inches. Stand with your arms out and palms facing forward. Don't stretch when measuring. Just stand naturally. Have someone else help you, and measure from the tip of one middle finger to the other. Then divide that number by 2.5. The result is the correct draw length in inches for your body size.

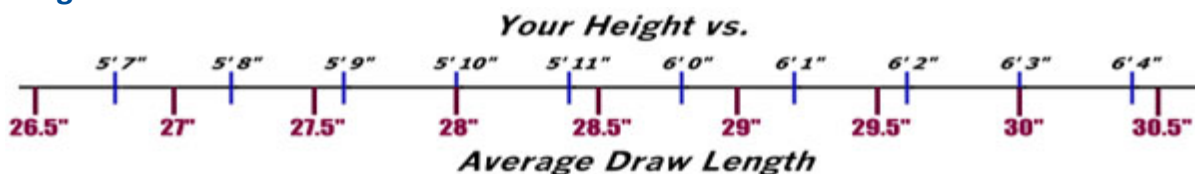


The majority of new shooters set their bows for too much draw length, which can result in poor shooting form, inaccuracy, and painful string slap on the forearm. You will better enjoy, and be more successful with your new bow when it is fitted properly to your body. Fortunately, recurve bows can be drawn to any draw length within a reasonable range. However, draw length must be established so that arrows can be trimmed to the correct length for your shooting system. Unlike compound bows, with traditional equipment, if in doubt, go a little long. Arrows that are an inch longer than absolutely necessary won't hurt your shooting. Arrows that are an inch too short will force you to use shooting form which is less than ideal, resulting in inconsistency.

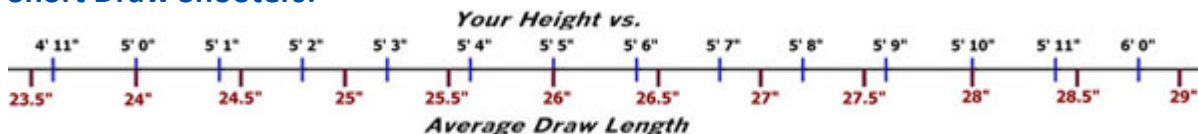


If you are a person of average proportions, your arm span will be roughly equal to your height in inches. So there is often a direct correlation between a person's height and their draw length as well. Once you have computed your draw length using the method above, you can double-check yourself by using the scale below to see if your number is within the expected range.

Long Draw Shooters:



Short Draw Shooters:



SELECTING THE CORRECT BOW LENGTH

Traditional bows range in length from 48 inches to 72 inches. Most target bows will average 66 or 68 inches in length. While shorter lengths of around 60 inch are more common for hunting bows, as they tend to be more manoeuvrable in the woods.

A longer bow is normally slower, but more stable and with a lesser tendency to stack. When a bow stacks, the increase in draw weight per inch of draw length becomes cumulative, rather than a gentle ramp up to peak weight; the weight curve shoots up quickly at the end of the draw stroke. Stacking is the bitter enemy of efficiency and comfortable shooting.

As a rough guide, used for target bows, use your draw length to determine the bow length:

Draw Length	Bow Length
Up to 27"	64"
24-29"	66"
27-31"	68"
29" or over	70"

BUYING A BOW

The next likely consideration is, "How much do I wish to spend?". This is the point where things become a bit more complex. Unlike compound bows, which use basically the same materials throughout the industry, traditional bows are manufactured from a tremendous variety of materials. The choice of materials and construction will directly affect the shooting experience. An indisputable factor in price is choice of materials and cosmetics, e.g. exotic African hardwoods cost more than good old American walnut. They however are more temperature stable, and there is no denying their beauty. You can go absolutely wild with the exotic woods or keep it simple. The sky is the limit on how far you can go with a custom traditional bow.

THE RISER

The riser is the "heart" of the bow. Until approximately 30 years ago, most risers were made out of wood, often combinations of different types of wood, but the advent of modern materials has meant that wooden risers could no longer cope with the strain placed upon them and the development of the metal-handled riser has been on-going ever since. Wooden risers are still fine for the beginner or "leisure" archer and many good scores have been shot using them, indoors and outdoors, but the competitive target archer must look at the metal alternatives in order stay competitive. For target shooting at the top levels, you need enough arrow speed to give good sight marks, and little or no string creep, since many arrows are shot each day. This usually means using lightweight carbon arrows and strings made from Fast Flight or other modern materials, which impose large loads on the limbs and riser. Most wooden riser bows and most one-piece bows cannot take the load from this equipment, and will almost certainly eventually break. The majority of today's modern (Olympic) recurve bows use CNC machined metal risers, but the future lies in "Advanced Composites". The principle is the same as the old composite bows (made from materials such as wood, horn, sinew, fish glue, etc.), but now using the modern equivalents e.g. Carbon Fibre, Spectra, Kevlar, and so on.



THE LIMBS

The limbs are arguably THE most critical parts of the traditional bow. Ultimately it is the movement of the limbs which imparts movement to the arrow. Any twisting, or variation between limbs during that process and it will be very difficult to put the arrows in the 10-ring. Good limbs are very forgiving of a poor release and feel smooth to draw.



Limbs are commonly made from a combination of laminated wood and fibreglass. Some (higher end) limbs have added carbon fibre layers to help strengthen the limb and reduce the tendency to twisting. Another option is limbs created from carbon fibres and a core made out of some hard foam. Modern carbon/foam limbs are highly impervious to climatic changes, and are therefore the most consistent. You will find that in most circumstances, within limits, as the quality of materials and cost increase, the draw becomes more smooth, stacking disappears, and velocity ramps up quickly.

STRINGS

String materials have been a hotly discussed topic in recent years. The biggest battle being Dacron vs. Fast Flight. Dacron is a polyester material, which is long-lasting but slow. The slow speed is due to the excessive stretch on each shot. The stretching process removes energy which would otherwise be used to propel the arrow. The stretching does have the advantage that it is kinder to the bow limbs and riser and therefore is ideal for bows with wooden risers or limbs, or even some of the older cast risers. Fast Flight is made from 'Spectra' a polyethylene fibre. Spectra fibre is very long-lasting, it is not susceptible to moisture and can be twisted as much as required. It is also the lightest and fastest of the materials available. It will however put more strain onto the bow's riser and limbs.

To make a long story short, Fast Flight strings will damage limb tips if they are not reinforced for the use of that type material. Dacron is the old standby; however, it stretches more than Fast Flight resulting in more required maintenance. Generally, if your bow has limb tips that can support the use of Fast Flight, use it. Otherwise, stick to Dacron.



There are two string making techniques commonly encountered in traditional bows "endless loop" and "Flemish twist". The "endless loop" string is made of one continuous loop of string material, which is then served at both ends to bind the strands together and protect them, with a centre serving in the middle to draw the bow and to support a nocking point. The "endless loop" type string is the strongest of string designs and is the type utilized on modern compound bow equipment.

Flemish Twist strings are based on a very old design that allows a single string to fit many bows. Historically, no two bows were alike, so the end user was required to fit the length of his bowstring to the particular bow he was shooting. One end of a Flemish twist bowstring is looped, while the other end is loose and woven into itself to create a final length. In the past, it was up to the end user to decide how long the bowstring was to be, and finish the weave to fit his particular bow. Today, however, Flemish twist bowstrings may be purchased finished and made to a final length correct for the AMO length of your particular bow. The Flemish twist string is not quite as strong as the endless loop design strand for strand, therefore it must be made with more strands and is heavier as such. For some traditional bows, this is an ideal situation as it slows the bow down just a bit and reduces stresses on the limbs during shooting. Typically, you will see more Flemish twist strings on longbows, and more "endless loop" strings on recurves.

ARROW REST

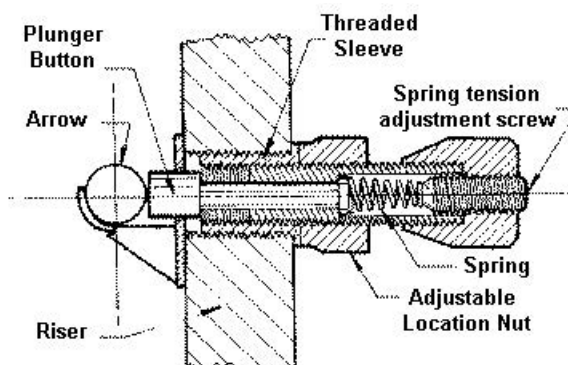
The style of rest you shoot with is one part the bow, one part shooter preference. Some traditional archers prefer shooting directly off the shelf. Shooting off the shelf has many merits: it is simple; the flipper will never break off since there isn't one present, and though not the easiest technique to master, it is great fun to really be shooting with nothing more than the stick and the string.



Flipper rests, the most common type of arrow rest in the traditional community, can range from a simple plastic self-adhesive pad with a "flipper" that sticks out to put the arrow on, up to more technical rests formed from metal with the movement of the "flipper-arm" controlled by springs or magnets. One benefit of flipper style rests is they will allow you to use vanes if you wish, as well as providing the shooter a very simple means of adjusting the arrow's position horizontally to tune for spine deflection.



Some archers combine their flipper rest with a pressure button to provide additional tuning by adjusting the pressure of the reaction which acts against the arrow forces pushing towards the bow. The button consists of a spring-loaded plunger mounted inside a threaded metal housing. On the housing are two locking collars, the collar closest to the plunger (location nut) is used to set the position of the tip of the button relative to the side of the riser. The rear collar is used to hold the spring tension adjustment screw. Turning the spring tension adjustment screw compresses or expands the spring, causing the button to become stiffer or weaker respectively.



(For information more about arrow rests, see our 'Arrow Rest Guide').

ARROWS



Arrow selection was once a difficult task. Wood arrows had to be hand spined to suit the bow. Aluminium arrows have an extremely narrow spine band for each shaft size and with variations from shooter to shooter, finding the right aluminium arrow for your traditional bow was a genuine nightmare. Enter carbon arrow shafts. Spine is an extremely critical aspect of traditional archery as very rarely does a traditional bow feature a centre shot riser. Because the arrow starts at an angle off the axis of travel, it is forced to flex a bit more on launch compared to the spine deflection with a modern centre shot riser equipped bow. The self-damping nature of carbon fibre arrows,

fortunately, makes them very forgiving. A single spine stiffness can accommodate many different bows and shooting styles, making arrow selection a simple matter of consultation of the manufacturer's spine charts and a little tweaking with point weights.

On the matter of fletching, for indoor shoots, archers typically use the largest vane. This has the advantage of ensuring that the arrow straightens up very quickly – important for the short distances shot indoors. Outdoors, the large fletchings have the effect of slowing the arrow down too much, and therefore a small vane is the vane of choice. Helical vanes impart a spinning motion to the arrow which provides greater stability, but are typically much more fragile than straight vanes. Besides a helical fletch may not be appropriate or necessary for your particular bow setup. For example, some arrow rests will not provide enough clearance to allow a helical fletch to pass thru without contact.

Some traditional archers prefer the use of the original arrow fletching material 'feathers'. Although they are not as durable as the plastic fletches, and perform poorly when wet, studies by Easton have shown that feathers not only start the arrow spinning earlier, but also provide better grouping.

(For information more about arrows, see our 'Arrow Guide').

Traditional archery can be one of the most fun, relaxing, and entertaining outdoor activities you will ever experience. There is no feeling quite like that first tight group with no reference beyond your own eyes and instincts. Not to say we can all become Byron Ferguson, but with little practice and dedication, anyone, young or old, big or strong, can reach a fair level of proficiency using traditional equipment. Give it a shot, you're only a few clicks away from joining the ranks of one of the oldest hobbies and pastimes in the world.

