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## LONGBOWS

Page 1 of 5

As I have had a forced rest period placed upon me I thought I might as well write another article for the Essex Guild and County web pages; this time on Longbows, which is a subject I am occasionally asked about. If you are an archer who has decided to shoot a longbow for the first time I am sure you will find the experience really interesting and I hope my article will be of some help to you.

### PURCHASING A LONGBOW - Selecting your first Longbow:

During the years I have been involved with the practice of shooting a longbow I have noted the experience of others as they went through the selection process. There are several things to consider and, obviously, price is one of the main ones, and also the manufacturer. Then, what type of manufacture? There are self-bows (made from one piece of solid wood), bi-laminations, tri-laminations or multi-laminations. The type of woods that are used for the various laminations (some are bamboo backed)?

Normally the price of the bow will be the first guiding factor and prices can range between £160 to £500, and more. A bow priced at around £150 will normally be a self-re-enactment type with string grooves cut into the timber. As the price range increases horn nocks are common and, dearer still, the bows will have an arrow pass plate of either bone/mother of pearl/rarely silver/even more rarely gold, let in on one side or the other and sometimes on both sides. The type of binding on the handle can affect cost.

My advice is that you do your research first. Ask around the archers who shoot the longbow. They will tell you of their own experiences and with this information you should get some idea of the manufacturers who are in favour for price, reliability and aftercare service.

As a matter of interest, I saw one of the best examples of longbow production I have seen over all the years I have been involved in archery. It must have cost between £500 and £600 and there it was propped up in a corner waiting to be returned to the maker. Anyone would be proud to have owned such a bow. What a disappointment it must have been when the top belly lamination cracked. I was seen looking at the bow, and was asked "What do you think happened?" Was it a miss nocked string (not in bow groove), dry loose, or a broken string? I said that I did not think it could have been a broken string because the bow had not shot many arrows due to the clean arrow plate but, yes, it could have been either of the other two, which would have put the blame on the archer. Later, while sitting at home, I thought more about this bow's condition and remembered my days in the joiners shop when we used certain hardwoods and occasionally saw what was known as a "storm fracture" within the growth rings of the timber. These were caused by the tree or branch bending in a storm damaging the growth cells. This then made me wonder whether it could have been that the belly lamination timber was so hard that under stress the cells had nowhere to go but slide passed each other causing this fracture. This is something the bowyer would not have been able to predict after putting in so much pride and workmanship in the production of this bow. This illustrates that it does not matter how much a bow costs, and with the bowyer trying to produce the best possible, sometimes the unpredictable will happen and it is not always the archers fault or indeed the bowyers. So when selecting a longbow I recommend that you look at its side to check for the following: In the case of a self-bow, check that there is no cross grain (grain at an angle to the limb) because this is a weak area.

/continued on page 2

### PURCHASING A LONGBOW – Selecting your first Longbow/continued...

In the case of laminated bows, check to see the laminations have straight grain running parallel to the glue line and that the glue line is not too thick or uneven. If any of the lamination's grain is at an angle called "short grain" this could be a weakness and lead to bow failure in the future. Then look at the back and belly of the bow to see that the grain is, as far as possible, symmetrical to the centre line of the bow limbs. If you do not know which is which, I remember this by "if I bend forward my BELLY is the inside curve and my BACK is the outside curve". Look at each nock for any defects and check that the string grooves are finished well with no sharp edges and are even about the bows centre line. Have the bow strung using a stringer, but do not do it yourself. Hold the bow out at arms length to see that the string lines up with the centre line of the bow from top to bottom and that the bow has a nice even curve. Then ask for it to be weighed at your draw length. If all these elements are OK, lastly, ask if you can draw the bow up to feel the bow's stack. These are the benefits of going to a retailer because you can try before you purchase.

### Why not second hand?

Normally it is not favoured, but if you know the archer you are buying it from you can enquire how long the bow has been shot. You can also see by examination. For instance, look at the area where the arrow passes the bow to see how much wear there is. Another consideration is the length of arrow compared to the length of the bow it has previously been shot. Another area to look is on the belly of the bow to see if there are any signs of horizontal cracks (Chrysalis) caused by the collapse of the internal wood cells.

Most Longbow archers do not allow others to draw their longbows because it is so easy for the other person to draw to a longer length than the bow has been tillered for. However, some archers will let you draw their longbow if they know you and your form.

Initially, I would recommend keeping to the lighter weights; Ladies 26 to 30 lbs and gentlemen to 34 to 40 lbs. A longbow should last a good number of years and I am sure you will buy more than one longbow as you progress. In my experience, archers who buy longbows with heavy draw weights will, in time, suffer from shoulder pain and, in some cases, have had to change to lighter weights in the best case or, at worst, give up archery. When Iris and I first started shooting (on 7<sup>th</sup> June, 1961) we were taught on a Slazenger flat bow (longbow) and an old experienced archer said "*it is better to get a slow gold than a fast red!*" In other words, do not shoot too heavy poundage too soon.

Another question I am frequently asked is "how long should my longbow be?" It was common for the determining factor to be "the height of the archer" but I have never been one to accept information without giving it some serious consideration. My own view is to have the bow 4" to 6" longer than the archers' height. Why, you may ask? I always err on the safe side and, in my experience shorter bows shot at higher poundage invariably suffer the most breakages. Of course, draw length must also be a consideration. The string will be supplied by the manufacturer and it will probably be made from a Dacron material with two loops or one with a "bowyers knot". The bowyers knot does allow a certain amount of "give" but can slip due to vibration, which means that you have to check the bracing height more often.

### ARROWS:

Arrows are commonly made from Pine, Spruce, Cedar and others. I prefer Port Orford cedar. Normally they are sold in bow weights. You can find the spine and weights of individual arrows by buying the appropriate apparatus, or you can buy sets from various manufacturers, or even make your own. What do I do? I buy 24 shafts, piles, nocks and the appropriate number of fletchings. I prefer the screw on type of pile. I have converted one as a "tap" by cutting through the length from the back then I bore a hole in the front at right angles to the pile. I use the drill bit as a turning bar so that I can cut the thread on the arrow which avoids any problems when I am gluing the piles on.

## ARROWS/continued...

**Feather fletchings** "archers' choice" but do not have them too long unless you are only shooting at shorter distances. I keep to 3" shield type. If you are hand cresting your arrows make one of the rings more distinctive at your bows bracing height when the arrow is nocked on the string so that you can check the bracing height when nocking the arrow.

I must be mad because I am giving away all my experience and one day we will meet at a competition and you will thrash me! Still, I feel it is the individual's skill which makes the final difference.

Here we go again...even if you have bought your arrows from the best manufacturer, I would still set the target up at 30 yards and, with a target face or aiming spot, shoot all arrows at least 3 times and, at each end, mark the arrows which group together (I use various coloured marker pens – just a dab near the nock end. You will then have established the best grouping arrows and can decide which are best for your requirements.

## SIGHTING

Another learning curve is how does a longbow archer sight? Most longbow archers use a rubber band or a black ring. These are called "O" rings and can be bought from most builders merchants (they are used as joint seals). The GNAS Rules state that they must not be more than 1/8" in depth and thickness. This ring is moved to various positions above the bow grip for each distance. For right handed archers, because the arrow lays off to the left you will probably have to aim the ring on the right hand side of the target and, obviously, the opposite for left handed archers. With longbows it is very important that you have your bow hand in the same position for each shot as 1/8" variation can make quite a difference at 80 yards.

Another method used is to have no ring but instead to aim the pile of the arrow at the target or some other location away from the target. This location could be a bright ball or some other marker which must be no more than 6" high and 3" in diameter set at a known distance for each distance being shot. (In the "Rules" you are not allowed to use both an aiming spot and a ring together). Just as you did when shooting your recurve/compound bow, always take notes of your sights so that you do not have to find your sights at various venues. Also, do use foot markers if you have to aim off the target or you are using a ball or marker.

A third method is "instinctive" and this would be very hard to explain because, as the word "instinctive" implies, it is up to a particular individual's body awareness. For instance, if you gave a bow and arrow, a stone or a ball to a novice and asked them to aim at an object, they would not be far from their chosen target. As we all know, that is the true meaning of "instinctive" aiming.

I could keep rumbling on but my main reason for this article is to offer some help and advice to those archers who are thinking of trying the longbow. In my experience there is a really friendly comradery between the archers shooting the longbow just as there is in the other disciplines.

One of the reasons I was prompted to write this article was to share some tables I had calculated over the years. These are outlined on my spreadsheet on page 4. However, if you do not agree with my findings then at least they are something to think about. We all have our own thoughts and opinions, which is just as it should be.

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SIGHTING/continued...

Measuring bow and arrow length combinations over the years I have arrived at a string angle (at the nocking spot) of 135 degrees. Before including my tables and findings over the years in this article (see below), I went to my archery book cabinet and picked out one of my oldest books on archery, which is a second edition of Horace A. Ford's "ARCHERY its THEORY and PRACTICE" 1859. In one of the front pages, opposite page 14 (plate two) there is a drawing of a bow at full draw, and out came my protractor! By checking the string angle it showed 134 degrees. Obviously, these engravings are only drawings and may not be to scale, but it would be a lucky coincidence that they agree with my findings. As you may know, Horace Ford was Champion of England for ten years and his scores for the YORK round are amazing and would win many of the YORK Championships of today.

Thinking about that one degree of difference, it could be that in those days bows were inclined to be to the archer's height, which is shorter than my recommendations. However, he was an established archer looking for speed of arrow whereas this article has the new exponent to the longbow in mind for safety, economy and the learning process in shooting a new discipline. If, as an established archer, you feel you need a shorter and more powerful bow for scores, that is the individual's choice and I have never been a follower of the cloning fraternity. We are all individuals, and that's a fact!

After years of taking notes of archers' longbows and arrow lengths, the following is my suggested aid to find a length of longbow for various arrow lengths and a method to find a starting bracing height.

The ratio of arrow length to bow length is found by dividing the arrow length into the bow length.

EXAMPLE: Divide 29" arrow length into a 70" bow = 2.4137 ratio – say 2.41  
 EXAMPLE: Divide 2.4 into a bow length of 66" = 27.5" arrow length  
 If your arrow length is longer than this by more than 1" I suggest you select a longer bow

|     | 54"  | 60"  | 64"  | 66"  | 68"  | 70"  | 72"  | 74"  |
|-----|------|------|------|------|------|------|------|------|
| 16" | 3.37 |      |      |      |      |      |      |      |
| 17" | 3.17 |      |      |      |      |      |      |      |
| 18" | 3.00 | 3.33 |      |      |      |      |      |      |
| 19" | 2.84 | 3.15 |      |      |      |      |      |      |
| 20" | 2.7  | 3.00 |      |      |      |      |      |      |
| 21" | 2.57 | 2.85 | 3.04 |      |      |      |      |      |
| 22" | 2.45 | 2.72 | 2.9  |      |      |      |      |      |
| 23" | 2.34 | 2.6  | 2.78 | 2.86 |      |      |      |      |
| 24" | 2.25 | 2.5  | 2.66 | 2.75 |      |      |      |      |
| 25" | 2.16 | 2.4  | 2.56 | 2.64 | 2.72 |      |      |      |
| 26" |      | 2.3  | 2.46 | 2.53 | 2.61 | 2.69 |      |      |
| 27" |      | 2.22 | 2.37 | 2.44 | 2.51 | 2.59 | 2.66 |      |
| 28" |      | 2.14 | 2.28 | 2.35 | 2.42 | 2.5  | 2.57 | 2.64 |
| 29" |      |      | 2.2  | 2.27 | 2.34 | 2.41 | 2.48 | 2.55 |
| 30" |      |      |      | 2.2  | 2.26 | 2.33 | 2.4  | 2.46 |
| 31" |      |      |      |      |      | 2.25 | 2.32 | 2.38 |
| 32" |      |      |      |      |      | 2.18 | 2.25 | 2.31 |
| 33" |      |      |      |      |      |      |      | 2.24 |

EXAMPLE: 2.45 + 2.5 + 2.46 + 2.44 + 2.42 + 2.41 + 2.4 + 2.38 = 19.46 divided by 8 = 2.43  
 Average x arrow length

EXAMPLE: An arrow length of 29.5" x 2.43 = 71.68" say a 72" bow

Bracing height ratio to bow length - normally there is 1.1/4" of adjustment

|                    | 64"         | 66"         | 68"             | 70"             |
|--------------------|-------------|-------------|-----------------|-----------------|
| Bracing Height     | 7.3/4" – 9" | 8" – 9.1/4" | 8.1/4" – 9.1/2" | 8.1/2" – 9.3/4" |
| Mid-Bracing Height | 8.3/8"      | 8.5/8"      | 8.7/8"          | 9.1/8"          |
| % of length        | 13.08       | 13.07       | 13.05           | 13.04           |
| Average %          | 13.06       |             |                 |                 |

A "mid-height" bracing height would be the starting point for tuning. Then try various bracing heights or change the pile weight, fletching size or arrow spine.

OK – it's time I finished and made Iris a cup of coffee, but not before I express my appreciation for her input in typing this article for me. Then I will start again and put my thoughts down on BAREBOW SHOOTING!

If you see me on the archery circuit in future, do say "hello", because I am always happy to talk to people who are new to me – that is archery! Good shooting.

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