

Selecting and setting up a Recurve Barebow using the String Walking technique.

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These notes are aimed at an archer with some experience of and having read my notes on "Recurve Freestyle" archery, who now wishes to try "***Recurve Barebow***" archery using the "***String Walking***" method of shooting.

The consideration of budget, safe and undamaged equipment, eye dominance and handedness would be similar to the consideration of choosing a Recurve bow for shooting within the Freestyle Class.

However there are other aspects to consider that may affect the choices to be made. Before any explanation it is sensible to read and understand the GNAS rules as applied to Recurve Barebow archery.

The 2004 GNAS rule book

GNAS rules for Recurve Barebow are:-

"Rule 204:

a. **Bow**

- (i) The bow must be bare, except for items mentioned below, and free from protrusions, marks, blemishes or laminated pieces which could be of use in aiming. Multi-coloured risers are permitted.
- (ii) Integrally fitted torque flight compensators are permitted provided that they are not fitted with stabilisers. Weights may be added to the lower part of the riser. All weights, regardless of shape, must mount directly to the riser without rods, extensions, angular mounting connections or shock absorbing devices.
- (iii) The unbraced bow complete with accessories must be capable of passing through a hole or ring of 12.2cms inside diameter = or – 0.5mm.

The above rule (iii) about the passing through a ring is printed in the Field section of the GNAS rule book- rule (502 (b) (i).

- b. **Bowstring.** There shall be no attachment on the string to serve as a lip or nose mark
 - c. **Arrowrest.** The arrowrest must be attached only to the window side of a bow. Any moveable pressure button, pressure point or arrow plate shall not allow any (adjustable) overdraw.
 - d. **Exclusions.** Recurve barebow archers may not use:
 - (i) Sights.
 - (ii) Draw check indicator.
 - (iii) Stabilisers."
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The following rules are from the GNAS Field web site:-

“Hand protection

- (i) Finger protection in the form of finger stalls or tips, gloves, or shooting tab or tape (plaster) to draw, hold back and release the string is permitted, provided that such protection does not incorporate any device to hold, draw and release the string.
- (ii) A separator between the fingers to prevent pinching the arrow and/or a platform tab may be used.
- (iii) On the bowhand an ordinary glove, mitten or similar item may be worn but shall not be attached to the grip. (1)

Bowstring.

There shall be no attachment on the string to serve as a lip or nose mark.
(The top end of the bowstrings’ centre serving must finish above the eye line so as not to be used as a sighting aid).”

Arrows.

The rules governing arrows are broadly similar to rules for Recurve Freestyle. This allows the Recurve Barebow archer a considerable selection to choose from.

Before continuing with the setting up of your equipment, remember that At each stage of assembly and tuning, ***measure and record your settings***. Also keep records of all the changes made and the results of those changes.

String walking set-up

Aiming and “string walking”.

Once having found the best position for the nocking point on the string, (through the tuning process), the nocking point must remain ***fixed*** throughout the competition. The targets used in a “Field” round will be set between ***5 and 50 metres***. To send an arrow to the targets at these different distances requires some adjustment in the angle of the arrow.

For the “***string walking***” method described below, most archers will use the picture of the point of the arrow appearing directly at the target. (***Point of aim***)

Whilst using the ***same reference point*** on the face and the ***same “point of aim”***, some barebow archers “***walk***” their draw hand fingers up and down the bowstring which raises or lowers the back end of the arrow. The change in distance between the fingers and the arrow attached at the nocking point can be up to several inches. This ***string walking*** technique changes the balance of pull between the top and the bottom limb. As the draw fingers come further down the string, ***more*** pull is imparted to the bottom limb.

Tuning for the best possible arrow flight at these differing distances is the challenge. Remember that there is usually an alternative solution to most problems.

(1) **n.b.** Tab: (There must be no marks **added** to the tab that aid sighting position)

Bow length / Draw length

The appropriate and most effective bow length and draw length should be chosen in a similar manner as to choosing a recurve for freestyle archery.

However if the archer is buying a bow specifically for shooting in the barebow class, there are some other possible variations in detail that may help the barebow archer to tune the bow much more forgivingly.

Alternative Bow length:

There are some slight changes to consider which *may* be beneficial in making the bow more suitable for use as a barebow.

Because of the way in which the archer moves his draw hand position on the string (in relation to the arrow) when *string walking*, more strain will be put onto the bottom limb than on the top limb.

If you choose a slightly *shorter* riser and *longer* limbs to make up the same overall bow length as for freestyle, then some of the extra strain will be spread more evenly along the longer bottom limb. It may even be worth considering a bow with an overall length slightly longer.

Tiller.

Some bows have a system of adjusting the angle at which the limbs are attached to the riser. This angle is referred to as *tiller*. (effectively this changes the angle of pull on each limb).

To measure a bows' tiller use a ruler to find the shortest distance at a right angle from the bowstring to the point at which the limb enters the limb pocket. Usually for a freestyle set-up the bottom tiller distance would be about ¼" less than the top limb tiller distance. This allows for the off centre position of the fingers.

Because of the way that the fingers are moved down the string as in *string walking*, even more pull will be exerted to the bottom limb as the fingers are moved lower down the string.

To make all distance arrow flight as good as possible may require a trade-off in the positioning of the nocking point, tiller and amount of string walking.

Start by setting your barebow to about *even tiller*.

Bowstring

The string must not have any extra fittings or marks that could be used as a sighting aid. The centre serving must be extra high at the top end and clearly above the eye level so that the end of the serving is too high to be seen and used by the archer as a sighting reference. Experiment with the number of strands in the string. Fewer strands would make the string faster whilst more strands will make the string a little more forgiving. A faster string would make a stiff arrow behave dynamically weaker, whilst a slow string would make a weak arrow behave dynamically stiffer. Experiment also with the different string materials that are available. *Always make sure that the arrow nock fits positively* Try all these attributes to find the best results.

Bracing Height

Starting with the manufacturers' recommended measurements, twist or untwist the string until the brace height (distance from the handle throat to the string) is about in the middle of the given range. If no information is available then you can measure the

length of the string and divide by seven to give you an approximate starting distance. *(Some manufacturers use a measurement to the back of the bow).*

The most effective brace height will impart most of the bows energy into putting the arrow into good flight and feel and sound the most comfortable to the archer.

Nocking point

To begin with try a nocking point that puts the nock of the arrow slightly higher than for a freestyle bow. Somewhere between ¼" to ½" above square should be about right. This may have to be altered as the tuning process progresses.

Arrow rest.

The arrow rest must be of the type that attaches to the inside of the window. It must not be mounted further back than the throat of the bow grip.

Position the rest arm so as to place the arrow diameter just below the height of the centre of the pressure button. In flight the arrow will lift slightly, putting the centre of the arrows' diameter level with the centre of the button. *(Left handed archers be aware that the button could unscrew over time if the arrow is positioned in such a way that the forward movement unscrews the button)*

The arm should just hold the arrow and not protrude so much that it interferes with the arrow flight.

Pressure Button

A button is allowed. Select and mount a suitable pressure button in such a way that the protruding button would position an arrow at about or just to the left of the **centre shot** position when the string is seen to be aligned down the centre of the limbs when viewed from the archers' eye. This is a temporary position until the tuning verifies the correct position. *(left handed archers reverse these actions)*

The basic tuning of the button will be done in a similar way as for the freestyle. But be aware that some compromises may have to be made to allow for the different behaviour of the arrow flight when shot using the string walking technique.

Sighting

No sights are allowed.

There are, however other ways of sighting. Use the point of the arrow to align as the front sight. Use the position of your fingers on the string, with your fixed facial reference point (corner of the mouth, arrow nock under the eye) as you rear sight, and use the string alignment picture of the string by the window for any lateral judgement. *(Due to string walking changing the arrows dynamic behaviour, the string picture may have to vary as the target distance varies.*

Test all the distances from 50 metres to 5 metres and **remember** where all the references are for each distance.

For example, shooting at a 50 metre target: At full draw, place three fingers of the drawing hand around the string with the index finger under but lightly touching the arrow nock. The index finger would also be touching the corner of the mouth, or perhaps a tooth. The tip of the arrow would be directly on line with the target.

Shooting at a 5 metre target: At full draw, place three fingers of the drawing hand around the string, but about 2 ½" down from the nocked arrow. The index finger would again be touching the corner of the mouth. The tip of the arrow would still be pointed directly at the target. However this time the back of the arrow (nock) is seen

to have come up closer to but directly under the eye. By lifting the nock end of the arrow it will leave the bow at a much lower trajectory and hit a closer target.

Some archers use their finger width as a measure down the string. Some archers perhaps use the manufacturers stitching on the tab to measure where to place the draw fingers. Some archers even count the serving wraps to precisely position their draw fingers. A *monofilament centre serving* could make it easier to count clicks with a finger nail.

A great deal of practise is needed shooting at 5 metre intervals from between 5 metres to 50 metres. Experiment with slight variations to the tiller, nock point and draw finger positions on the string until the optimum results are attained.

Alternative sighting

In order to keep to a much smaller *crawl* (total distance of string walk), some archers use the bows' arrow shelf as the point of aim on the longest target distances. This alternative could add as much as 20 metres to the flight of the arrow. Perhaps this would be more useful when using a lighter draw weight bow. The down side of using this method is in remembering to change the point of aim.

Arrows

To minimise the difference in finger position (crawl) on the string when string walking between the shortest and furthest target distances, many top barebow archers use light fast carbon arrows.

Added weight

The rules allow a weight to be added to the lower part of the riser. This helps to balance the bow and may help to improve performance. The weight must attach directly to the riser without any intermediate fitting.

Tab

A well fitting tab without a platform may be a little more adaptable. Trim if needed to give a good fit and aid a good loose. No extra marks must be made to aid with sighting.

Tuning

The most used tuning criteria would be to get the best bow and arrow tune (by using the nock point, button position and spring pressure) for the mid range of about 20 – 25 metres. The arrow flight then for the other distances would be only minimally affected.

Remember to test and check sight marks for both uphill and downhill shots.

Guide to reference material

A variety of sources