My name's Mike Broome, I joined Windwhistle earlier in 2014, and I've been making a few bows in the pursuit of this ancient pastime of ours. I thought I'd share a little of the process' with you. I hope you find it of interest.

I've crafted a couple of self bows (hewn from single pieces of ash, in my case). The latest was a loose copy of the Holmgaard bow, reckoned to be 9000 years old. I bought a length of ash, and began chasing the back of the bow down to a single growth ring. This is done for strength, and any knots etc are carefully worked around

rather than planed away. The profile of the bow can then be roughly shaped on the saw before the careful work of tillering (with the attendant scraping & re-checking) can commence.

The end result is dependant to a fair degree on the quality of the timber, something that is not always obvious until work is well under way. The cast is a little slow compared to that of a laminated bow.

Ash Holmgaard. 30lbs @ 28”

I’ve also been making laminated recurve bows. I drew up a shape I liked (similar to the old American Martin & Fred Bear style bows) and transferred it to plywood. Some careful sawing and shaping later and a two part form emerged. The upper and lower elements of the form get bolted together; there’s a gap between them to allow a length of fire hose to be employed as a clamp.

The riser is built up from a number of pieces of timber, to ensure strength and rigidity in use. Timbers I’ve used thus far include Sapele, Bubinga, American Cherry, Black Walnut and Maple. The limbs feature tapered Maple core laminates, which are ground with a taper so they’re thinner at the tips, then reinforced with ‘glass back and belly laminates. The timbers are selected for their suitability and strength as well as their looks.

It’s crucial that the fit of the riser to the limb laminates (and the bow form) is as tight as possible, otherwise the reliability of the bow may be compromised, and the aesthetics marred by unsightly glue lines.

Once all of the pieces are ready, the glue up commences. Limbs and riser laid out.

Clear ‘glass, decorative sapele then tapered maple core laminates followed by more sapele and ‘glass. Masking tape protects the outside of the ‘glass, which is why it looks opaque.

The whole sticky mess is carefully contained in cling film as it’s positioned on the form.

The two parts of the form are then bolted together. Air pressure in the fire hose forces the laminates onto the lower part of the form.

The epoxies used to glue up the bow require ‘cooking’ to cure them properly. A ‘hot box’ at 70 degrees C for 6 hours is used to achieve this.

The hot box.

Once cooled, the bow can be removed, and cleaned up ready for shaping. Tip reinforcements are added too.

A bow is born!

The limbs are shaped and the bow is strung using blocks to ensure there is no twist. The riser is then cut and shaped to form the arrow pass and grip.

Initial shaping.

String grooves are cut into the tips to allow the bow to be strung before final checking on the tillering jig ahead of sanding and finishing.

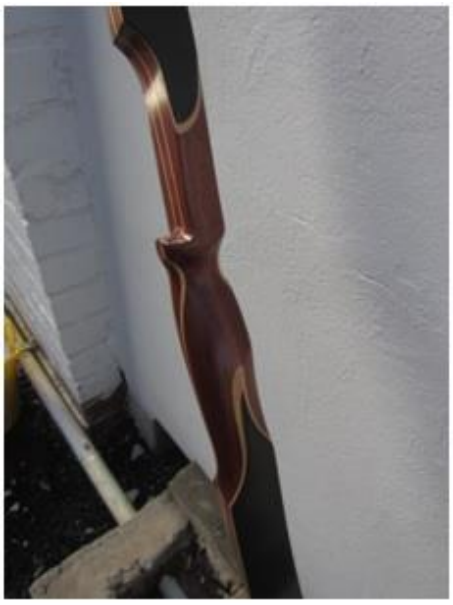
Checking the tiller, and measuring the draw weight.

Finish sanding and oiling brings the process toward completion.

This bow is 60” long, and draws 55lbs at 28”. Riser woods are American Cherry and Black Walnut with maple accents. The design has a very smooth, stack-free draw.

Tip reinforcements compliment the riser woods, and allow the use of fast flite strings.

Needless to say, the cast of these laminated recurves is very swift. I've been testing a bow with a layer of carbon fibre added behind the back 'glass. The results so far indicate a further significant increase in arrow speed.



I initially made some continuous loop strings, but recently have been making Flemish loop strings as they seem quieter on the bow. They're a little more akin to the rope splicing I teach my boatbuilding students at work too!

This summer I built some laminated timber flatbows for my kids. A mixture of tapered Ash laminates with decorative Cherry face veneers and Cherry riser, Ellas little bow draws 11lbs at 16" (well, she's only four!). Ella wanted something pink, so the riser and tip reinforcements feature some Purpleheart.

Son Joe's is a little more austere. Start 'em young eh?

Laminated 'glass & carbon flatbows are in the pipeline, and if anything here has wetted your appetite for a bespoke bow, email me on broomebows@gmail.com

All the best, I look forward to seeing you up the woods soon.