

Making your own arrows.

(By Rob McNeur.)

The English didn't tend to use Cedar for war arrow shafts as much as things like oak etc, as they needed a very heavy and strong timber that would stand the strains of being fired from 100+ lb warbows and impacting steel plate without shattering. Of course, this wasn't a problem with hunting bows/arrows, which could be made of lighter timbers.

Basically, I choose a 4x2 stick with as straight a grain following the cut of the wood as possible. Saw the length of timber to about 3" longer than the arrows you want ie if you are making 28" shafts, saw the wood to about 31". This allows a little free wood on both ends. Because I want the grain running exactly the length of the arrow blanks, rather than across it at an angle, I use a sharp, heavy knife, axe etc, and split the length down one side, following the grain, until you have that side exactly following the grain and hopefully straight. If you are lucky enough to get a length of wood where the grain exactly follows the line of the sawn timber, then this is unnecessary, but usually the saw cut will run off at some slight angle from the grain. Plane out any mounds or hollows on that edge. This doesn't have to be exact, just fairly close. Then I use that as my straight edge to mark the batch of arrows from.

My first batch of arrows was made to be 7/16 diameter, but they were badly overspined for a 40# bow, my current batch is 5/16. I am currently still experimenting to find the exact required diameter to get the spining close to what I need. This will be dependent on the individual timber stock used. Over here, our timber grows faster than the same species in the US or UK (or so I've been reliably told) and hence the grain is slightly coarser and slightly weaker, therefore I started out a bit thicker shafts than normally recommended. \par To cut the blanks, I prefer to saw them. Some books and fletchers recommend just splitting them, I found sawing to be easier and more accurate although probably slower. Mark the length of timber in slices of 1/2" (for 5/16 arrows) or about 5/8" (for 7/16 arrows):

length of 4x2

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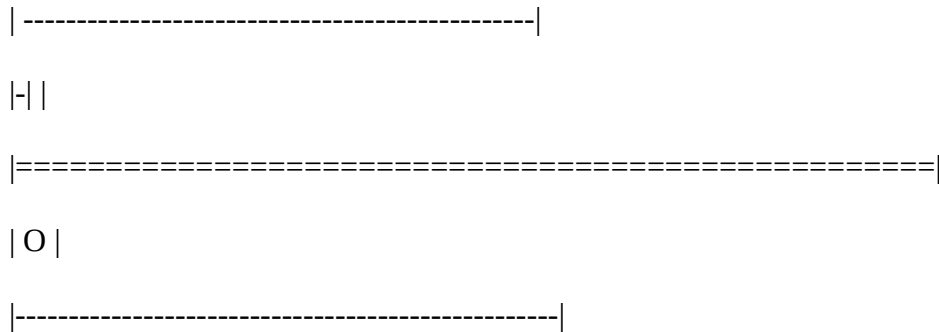
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|-----| 4"

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Each line will give multiple arrow blanks. I saw each line, giving multiple slices, each 1/2" x 2" wide (or 5/8" x 2" for 7/16 shafts). Again, mark the 2" width to the same size and again saw the lengths. This should produce multiple 1/2" x 1/2" square blanks, all with the grain running completely along in line with the cut blanks. \par For measuring the shafts as I work them down I have a 3' length of 3x1 wood to act as a shaft 'template' which has a corner cut out, a hole in one side, and a groove chiselled down the length of it.



The corner cut out is 11/32" x 11/32" (ie fractionally larger than the required size of 5/16") and is used to measure the width of the blank as it is planed down to the required size. The drilled hole is 5/16" and is used to slide the shaft through as it is sanded to size and shape, allowing you to locate areas which are fractionally larger than the rest, to get a uniform diameter. The groove is straight and cut in a 'V' shape, (just chiselled out) used to rest the arrow blank in while planing off it's edges and stop it turning or rolling.

Once I have all the sawn blanks, I work on one at a time until each one is down to smooth dowels. Basically, one edge is planed straight and smooth, pausing regularly to sight along it and ensure that there are no mounds or hollows. I use a 4" long, about 3/4" wide, plane which fits in the palm of one hand, allowing the other to grip the wood. Once one side is dead straight, turn the blank and repeat the process on the other 3 sides, pausing periodically to slide the planed blank along the cut out corner in the template to ensure that it's dimensions have not got too thin. Continue planing until you have a smooth square cross-section which exactly fits the template all the way along it's length, ie it is now exactly 11/32 square. At this point, lay the blank with one edge in the groove and carefully plane off the opposite edge \par Rotate the blank 180 degrees and repeat the process . Then rotate the blank 90 degrees and again take off one edge, rotate 180 degrees and take off the last corner. You should now have the blank planed down to a cross section which is an octagon in shape with 8 equal sides.

At this point, start again turning and planing off the remaining edges until you have effectively 16 sides, although at this point the shaft is getting very close to round.

Using medium/fine sandpaper, wrap the sandpaper around the shaft and slide it up and down to smooth off the remaining edges and tidy up the last of the shaft. Try and slide it through the hole drilled in the template. (If it doesn't fit, don't force it, otherwise you can scour, break, bend, etc. your shaft.) Anywhere that jams should be marked, the shaft

removed and the sanding continued around that area and then tried again. Slowly the shaft will be sanded down, testing for size and sanded again until it slides smoothly through the template hole, just touching on all sides along it's full length giving a smooth shaft of a constant diameter.

I find that what usually happens (with my shafts) is that the 1/2" of wood at either end finishes up slightly narrower than I require (from the planing/sanding process), which is why I allow for an extra 2-3" of length on the shafts for adjustment.

I cut back one end a fraction to the even diameter shaft and cut mynock in. If I really mess the nock up, I still have just enough spare shaft to allow me to saw the nock off and recut it. Once the completed nock is cut in, I saw the other end of the shaft off to fit my required length.

Cutting in nocks.

Size of these is dependent on your string thickness. I start by marking the centre of the end of the shaft and marking at right angles to the line of the grain or growth rings across the end of the shaft. This MUST be at right angles, otherwise the strain of firing the arrow will all come down in line with a single growth ring and the shaft is likely to split along the grain down this growth ring.

Then, using a fine saw or hacksaw (or 2 hacksaw blades taped together), saw the slot down for about 3/8" - 1/2". Carefully sand the inside of the slot and using a fine rats-tail file or fine sandpaper wrapped around a small nail etc, widen the base of the nock so that the bowstring just slides down the slot but sits comfortably in the wider hollow at the base.

This is exactly the same principle as modern snap-on nocks, and several of the races of early archers used this technique. If you want, you can reinforce the nock by cutting a narrow slice in the end of the shaft at right angles to this slot and gluing a sliver of horn, ivory etc in this such that the nock is cut through this as well, and the harder material of the horn helps to spread the impact of the bowstring against the inside of the nock on firing. Many of the English fletchers used this, as they needed to use everything they could to make shafts that could take the stresses of war use.

Finishing

Once the arrows are completed to having nocks cut in and being cut to length, a suitable finish can be applied in the form of a polyurethane, varnish etc. (Polyurethane is not 'period', many of the varnishes are more appropriate if this is required.) If these arrows are to be used for hunting a matt finish is recommended so that they will not reflect at all.

To ensure an even coating, they can be sprayed or just dipped into a narrow tube of whatever you want to use i.e take a 3' length of 3/4" pipe, cap one end, fill with varnish

etc, lower arrow in until it has been completely covered, then hang somewhere to dry such that it has the air circulating but is not likely to be covered in dust etc before drying.

And extra rings of colour applied (usually just below the fletchings) to indicate ownership, and (if you want to get technical) the intended drawweight of the shafts using some form of colour code.

Fletching

Fletching is up to the individual.

I am currently using turkey feathers to fletch with, after spending half a day on a commercial turkey farm plucking wing feathers as the birds went into the slaughter house. Admittedly the other workers thought I was nuts but hey, thats life :-). And I've now got a sack of feathers in the garage which should last me several years. Although some of them need to be dyed to cover up the bloodstains. :-(The turkeys were **not** happy with the situation.

Arrowheads

Arrowheads are up to the individual.

Although I have handmade the shafts, I have fitted modern target points over the tips and glued these in place. This is not authentic as far as traditional styles of arrows goes, but target shooting with authentic hunting broadheads or bodkin points will rapidly destroy your targets and annoy everyone else who wants to use the targets.

If fitting 'traditional' arrowheads, either steel, flint, obsidian, etc, saw a slot in the head of the shaft, again sawing at right angles to the growth rings so that the stresses are spread across them all, rather than concentrated on a single ring. Then fill the slot with glue and slide the shaft of the arrowhead down the slot, binding it tightly into position and onto the main shaft with thread or sinew, well glued into place, and wipe off the excess glue.