

INTRODUCTION TO ARROW BUILDING, PT. 1: MATERIALS

PRESENTED BY LORD MUNGO NAPIER ©2019

THOUGHTS ON WOODEN SHAFTS

Arrows with 1/4" shafts are sometimes used with light children's bows for youngsters up to about eight years old. The most common size used for arrow shafts in the SCA is 5/16". This is suitable for bows drawing 35# and below that many youths and smaller ladies use. Slightly larger 11/32" shafts are recommended for bows 40# and above, though 5/16" shafts stiff enough for those larger bows are also available. The largest size is 23/64", most frequently used by experienced archers with heavy bows.

There are about 15 woods used to make arrow shafts, but most are unsuitable for light bows and the style of shooting we do. I recommend German spruce from Kustom King Archery or Lancaster Archery Supply. I rate this wood as B+, but pushed it to the top of my list for its modest price at \$28.50/dozen. Port Orford cedar [POC], was formerly the gold standard for arrows. POC has declined in quality, with many shafts crooked and bleeding excessive amounts of pitch. With extra effort POC still can make excellent arrows, but at \$38.50/dozen this C-class wood is overpriced.

Spine weight measures the stiffness of an arrow or shaft. The higher the spine weight, the stiffer the arrow. Shafts and finished arrows are usually sold by spine weight in six-pound groups: 30-35#, 35-40, 40-45, and so on. Arrows or shafts will be random picks within the group you specify. Spine weight is expressed in pounds so it can be matched to the draw weight of the archer's bow. Bows drawing 30# or less should use 5/16" shafts with a 30-35# spine weight. Bows drawing 35# should use 5/16" shafts with a 35-40# spine weight. Archers using 40# bows should shoot 40-45# spine weight arrows, which can be either 5/16 or 11/32" diameter. Never shoot arrows with a spine weight below the draw weight of a bow. This is very dangerous. Too much force can crack an arrow on release, and a broken shaft could go right through the archer's hand.

Please remember that aluminum or carbon-fiber shafts are NOT allowed in the SCA.

ARROW POINTS

For first-time fletchers, the best choice is usually the glue-on blackened steel field point made by PDP Archery (at right), though there are other brands of equal quality. These points are made for 5/16" shafts in a 70-grain weight for 24-26" arrows, 100 grains for 27-28" arrows and 125 grains for arrows 29" and above. For 11/32" shafts the points are available at 100 grains for 27-28" arrows, or 125 grains for 28" and above.



Although costly, brass bullet points look very impressive. They are available from 3Rivers at 125 grains in 5/16" as glue-ons, and in 11/32" as glue-ons or screw-ons. The Longbow Shop in England also offers these points in several sizes and weights. A special tool is needed to mount screw-on points.

Other choices include brass field points, screw-on blackened steel bullets, and Top Hat's so-called "medieval bodkin" screw-on points (which look nothing like medieval bodkins). The best are Bearpaw's "modern bodkins", or other brands sold as "modkins" or other "med-heads" from the Longbow Shop.

I suggest avoiding most other replica medieval points such as the Ace Classic Medieval Points, 3Rivers Medieval Round Bodkins, and 3Rivers Bodkin Short Medieval points. All these have a high angle on the rear side of the head that makes them hard to pull from a target, and they often pop off the shaft. Large medieval bodkins and similar points cause excessive target damage. While SCA-legal, they are NOT welcome on my range. Broadhead points are prohibited under SCA rules.

All points, including screw-on types, should be glued on with a strong epoxy. JB Weld is rated for 3,980 pounds, the highest strength home-use epoxy for home use I have found.

PLASTIC NOCKS



There are many choices for nocks. Some have an

"index" tab which helps align your arrow to the string. Others offer a "pinch point" nock throat that holds the string to prevent arrows from falling off (in some brands this is too tight and retards the shot). Some have both features, and others neither.

The best-quality nock currently available is the Bohning Classic Nock (at left). These nocks have a mild "pinch point" feature, and a generous-sized index tab. Recently 3Rivers added several new color choices in their catalog. Note that Bohning makes several types of nocks. Be sure to order Classic nocks.


3Rivers also sells Flex Parallel Nocks both shaft sizes. These slide right onto an untapered shaft. Flex nocks have a very tight throat and will need some filing for a clean release. They are great for repairing broken arrows.

FEATHERS

Feathers (aka "fletches" or "flights") are offered in right-wing and left-wing. Once processed, they are mirror twins. The only real difference is that right-wing feathers will make an arrow spin clockwise, while left-wing feathers make the arrow spin anti-clockwise. Which way the arrows spin makes no practical difference, and arrows with both types may be mixed in a quiver. That said, right-wing and left-wing feathers should NEVER be mixed on the same arrow. That would make the arrow fly very poorly indeed.

If you decide to buy the AAE Fletch III fletching tool (recommended below), you must buy only right wing feathers. It is not designed to work with left wing feathers.

Most feathers are sold in two shapes: parabolic (left) or shield back (right). Either will fly equally well.



Feather lengths are usually 3" for youth arrows 24-26" (but hard to find, so 4" is o.k.), 4" for arrows 27-28, and 5" for arrows 29" or longer. For all 11/32" arrows, 5" feathers are strongly suggested.

There are at least five major feather brands available: TrueFlight, Gateway, Bearpaw, Ozark, and AMG. I have used TrueFlight feathers extensively, and like them very much, though they are among the most expensive. TrueFlight offers the largest pallet of colors and stripe combinations. I consider AMG to be very low quality. Their feathers have thick bases and often vary in length. I have no experience with Gateway or Ozark. I have used Bearpaw's excellent full-length feathers for custom-cut shapes, but have never used their factory-cut feathers.

Plastic vanes are not allowed in the SCA.

ARROW TOOLS AND SUPPLIES

Taper tools come in several varieties. The cheapest are these pocket-sized plastic tools. They are similar to grade school pencil sharpeners. Each has two blades, one for the nock end and one for the point. These simple tools only fit one size of arrow shaft, so you must order the tool that matches your chosen shaft size. The 3Rivers tool (below left) does not have replaceable blades. It is good for 6-9 dozen arrows. When the blades gouge out chunks of wood instead of a long strip of shavings, you throw it away. The Bearpaw tool (below right) does have replaceable blades available.



The Tru-Center Taper Tool is a more professional solution. It is made from milled aluminum, and should last a lifetime. Its blades are replaceable and easily changed out. The tool includes end guides for 5/16", 11/32" and 23/64" shafts. A separate 1/4" guide is also available for tapering shafts on small children's arrows, and is well worth the extra few dollars if you plan to work in that size.

There are several fletching tools available, and often they can be converted between left and right-wing feathers by just buying an extra feather clamp. However, the simplest and among the cheapest fletching tools is the aforementioned AAE Fletch III (at right). This is a great tool for beginners. It is only made for right-wing feathers. The Fletch III will need to be mounted on a small board.



The Fletch III works very well with Bohning fletching tape. The tape lays down a thin layer of rubbery cement on the feather base. There is no drying time required, and with a bit of practice, a fletcher can apply all three feathers in about six minutes.

SOURCES

3Rivers Archery: <http://www.3riversarchery.com> (shafts, points, feathers, fletching tape, nocks, etc.)

FS Discount Archery: <http://www.fsdiscountarchery.com> (shafts, points, feathers, nocks, etc.)

Kustom King Archery: <http://www.kustomkingarchery.com> (spruce shafts, feathers, points, nocks, etc.)

Lancaster Archery Supply: <http://www.lancasterarchery.com> (shafts, points, feathers, etc.)

The Longbow Shop: <https://www.thelongbowshop.com> (special points)

Lowes, Home Depot, local hardware stores: stains, sealers, glues, sanding blocks

NEED HELP?

If you get stuck, or need advice, contact me at sarahsan@embarqmail.com.

©2019 by Garth G. Groff (aka Lord Mungo Napier). With attribution to the author, this text may be reproduced in its entirety and distributed internally within the SCA for instructional purposes without permission. Re-publication in SCA media, including web pages, or in any external media, is strictly forbidden unless approved in advance by the author.