

# Period Arrows – Self Nocks/Footed Shafts

*Wilim Penbras ap Gurgeneu*

## Introduction

Before I get to the actual Construction of Period Style arrows let me expound a few theories.

We find few fletchings from period so the evidence is sketchy. I personally don't tie my Fletching along the length. I don't need the extra weight and if they had good glue in period they wouldn't have done it either. They say they used thread to hold the fletchings on while the glue dried. I do believe though that they didn't have particularly great glue back then so leaving that sinew, linen, silk thread, whatever, on there seems like a good idea to me. I mean you try putting all that work into getting your fletchings lined up just so and then having them fall off in the rain. I think not.

Nocks, well, I can't believe they would sit and carve bone nocks for every arrow. Nope. No slip-ons for these folks. Nocks were carved right out of the end of the wood. Am I the only one who after he first tied the ends of a branch together to make a bow decided to carve a little V in the end of my other sticks so they'd stay on that kite string a little better? The nocks were grooves anywhere from  $\frac{1}{4}$  of an inch to  $\frac{3}{4}$  of an inch deep or more. They were cut against the grain to avoid splitting the arrow.

Let's talk about that for a second. If you've made modern arrows you've probably spent some time making sure the indexer was in line with the grain lines. On the surface this is because we measure the flex (Spine) of an arrow on this axis and deviating from means we make an arrow slightly heavier than we spined it. Underneath that is an older reason.

Picture a deck of cards. If you take a card of the top and line it up with the direction of the cards (Horizontal on the table presumably) you can smack that card into the deck and have it either disappear into it or push a card out the other side. Either way it's not what we want. If you hold that card Vertical and hit that horizontal deck of cards then the whole pack moves when you hit it. Now, The arrow has growth rings. When you cut it those growth rings become the grain of the wood. If you were to line up the line of the grain with the angle of the string you will send that string right into the middle of the arrow just like the card moving into the middle of the deck. If we rotate it so they are at 90deg angles to each other than the entire force from the string goes into moving that arrow. I never thought about it but theoretically having the nock out of alignment with the grain might just cause you a half foot per second or more in arrow speed.

Enough on Nocks... I want to take second to talk about War Arrows. I can't site documentation off hand but one of the tricks I've heard being used is the footed shaft. Let's think about that for a second.

You've got an arrow you want to send as far down range as you can. I say you find the lightest shaft you can and let that puppy sail. It's flying...100 yards... 200 yards... it's at 250 yards... it's found it's target... it hits their breast plate... it splinters into a thousand pieces. What did you expect? You pretty much sent a piece of balsa wood down range. Hmmm... How do we get around that... hmmm... I want a nice hefty piece of wood to split armor but I want range. Hey... what if I could find a way to combine the best qualities of two pieces of wood. Okay... I take a piece of good ole Oak and splice it onto the end of a piece of pine. A nice hardwood being carried down range by a light piece of softwood. Welcome to the land of the footed shaft.

# Self Knocks

## Materials

Shafts

## Optional Materials

Linen thread or Artificial Sinew  
Bone, Horn, or Hardwood

## Equipment

two hacksaw blades  
1/8 inch drill bit  
drill  
sandpaper  
glue that dries clear

### Self nocks

For just regular old self nocks there are only a few steps. Find the Grain. (That'll be the side of the shaft that has all those lines running next to each other). Avoid the grain. You want to drill a hole  $\frac{1}{2}$  inch from the end of the shaft on the side of the arrow perpendicular to the grain. Take the two hack saw blades together and cut a grove down to the hole. Use the Sandpaper to sand away any rough edges and to widen the hole to fit your string. The 1/8 hole we drilled should make it a bit of a snap nock. (Watch for straightness. You can do some minor corrections with the sanding but we kind of want that grove straight so the arrow might have a chance of flying straight.)

### Wrapped Self Nocks

Follow the same procedure you did for the self nocks but in this case wrap some linen thread around the base of the nock just below the bottom of the grove. You definitely want to coat all of this in glue. You can buff it up to a smooth shine later. (If you ask me nice I might teach you how to avoid needing the glue. Look up Boy Scouts and "Whipping" the end of a rope on the Internet.)

### Reinforced Self Nocks

I'll confess here that I've only ever done horn reinforced nocks never the hardwood but I've seen some with purple heart wood that were just gorgeous. Anyway, this is similar to self nocks but there's a few pre stages. Remember that grain I told you to ignore. You want to pay attention to it for a minute. I want you to take a hacksaw blade and cut a grove straight down the grain to a depth of about 1 inch. Take your piece of horn sized to fit this width and coat it in glue and slide it into place. Once the glue has set treat the horn like another grain line and start cutting as you would for a self nock.

I'll give you a few minor tricks/words of caution. Sizing horn is a pain. First: Boil the life out of it. You can't boil it too long. That will soften it up to the point where it can be worked with a good sharp knife. Second: horn has a grain too. Everything that grows has a grain. (How else could people rub against yours?) If you have a good, strong, thin bladed knife you can if you're lucky, split the horn with its grains and get tons of horn slivers just about thin enough to fit that slot you just cut. It'll eliminate a lot of work trying to get it to size. The horn will come out Wedge shaped so you just have to shave that wedge into something a little more rectangular.

# Footed Shafts

## Introduction

So, you want to know how to do a footed shaft. That my friends, is a whole other article and I've never actually done one. I'll cover the basic theory only. As a disclaimer, these are modern methods that yield a period look.

## Rough Procedure

First you need a piece of good shaft wood. Usually pine works well. Next a piece of hardwood like Oak. Both of these pieces should be about 1x1 with the pine being about 30 inches long and the oak being about 8 inches. On the piece of pine mark it at five or six inches and mark the top center parallel to the grain. Draw lines from the 5 inch mark on either side to the top center mark. Plane away this area so you end up with a nice point. On the oak, cut it down to 5.5 to 6.5 inches depending on the length of the taper you put in the pine. Clamp the oak at the bottom of the split. Glue the life out of the pine taper and force it down the split in the oak. Pry the oak apart as you go to help keep it from splitting more. Clamp the side of the oak to the pine and let the glue dry. You can't use too many clamps in this procedure. Once the glue dries you know have a footed 1x1x33 piece of "poak". After that go look up on the web the best way to turn that 1x1 into an arrow because you're now just at the point of turning a piece of wood into an arrow.

Now, actually use a commercially available narrow your shaft

lathe or one of the arrow planes to down into an arrow.

