Target Arrow Making

A Step by Step Breakdown

As taught by Dauid Morgant
at the “Arrow Making Workshop”

Sponsored by Caer Darth
2007

Scribed and Photography done by Lady Zinaida Or’Shinaia!
Revision 1.1
Last Revised 06/25/07

When considering making your own arrows there are a few pieces of equipment you will need. Most of this equipment can be purchased from Three Rivers Archery. You can also purchase them from your local archery store, or another online merchant.

To put together your arrows you will need at the minimum this equipment:

- Scale (we recommend a Digital one)
- Fletching Jig
- Taper Tool
- Dipping Tubes

For the arrows you will need the following parts:

- Arrow Shafts
- Fletching
- Field Points for Target Archery
- Nocks
- Nock & Point Glue
- Fletch Glue
- Fletch Tape
- Small Scissors
- Garden Nippers
- Marking Pen
- Arrow Stand to hold them after fletching is applied or Cresting is completed.

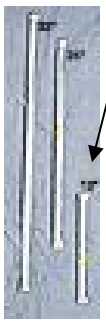
To seal and crest your arrows:

- Linseed Oil, Varnish, Oil Based Stain or Water Based Stain
- Paint (of various colors)

In order to make your arrows you will need to determine what type of style of fletching you are interested in and the type of wood for your shafts.


Digital Scale


Fletching Jig


Dipping Tubes

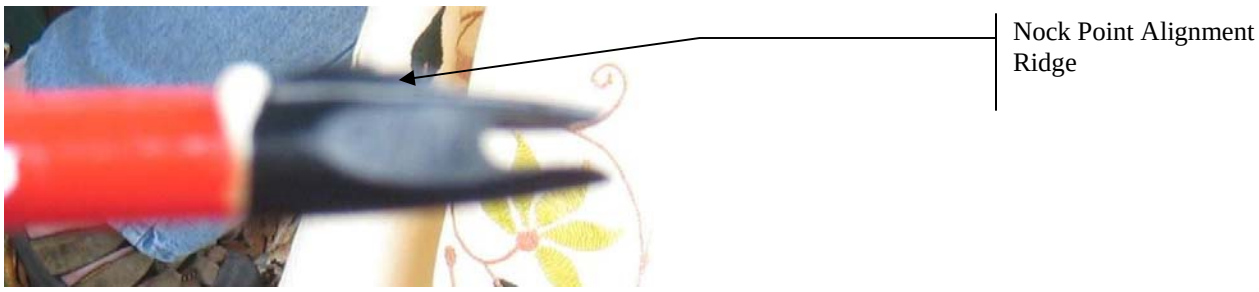
Shafts

Depending on the type of archery you will do (target or hunting) and the type of bow poundage you have this will influence the type of shafts you buy. Typically the heavier the bow, the thicker the shafts. The lighter the bow, the smaller the shafts. You can buy shafts in pine, spruce, cedar or birch. The hardness of the shaft is determined by the type of wood you use. Pine is the softest and birch is the hardest type of shafting. You can find more exotic woods like purple heart but the cost is high. For most applications, cedar is the recommended wood for shafts. Pine is useful to make practice arrows at a lower cost. Shafting also comes in spines. Spine is based on the stiffness of the arrows. An arrows spine should match the poundage of your bow. The diameter of the shaft is important too. You can pick from 5/16, 11/32, or 23/64 diameter arrow shafts. Most target arrows are made of 5/16ths.

Note : If my bow is a 35lb bow at a draw of 28 inches and I actually draw 28 inches, I would pick cedar shafts of 5/16ths diamter with a spine within the 30-35lb range. Yet if my bow is a 45lb bow, I may pick cedar or birch shafts of 11/32 (thicker) and if my draw length is 28 inches, but my bow is measured at 24 inches for 45lb, I might pick a spine of 50-55lb since I am drawing further down the shaft which will increase the poundage on the arrows I fire.

Nocks

Pick a nock that is the kind you can glue onto the shaft. There are several different types to pick from. The recommendation is to pick a nock that has an alignment feature on the edge. This will allow you to pick the arrows from your quiver and feel where the alignment point is so you can nock them without looking at the actual arrow. This will improve the speed at which you can reload your bow and is helpful in speed rounds and in Mounted Archery.



Field Points and Blunts

Pick the field points that work best with your arrows. I would recommend using Blunts for Mounted Archery due to the safety factor. Again as with the type of shafting you pick, the weight of your field points will determine how heavy which = how far + how straight your arrows will go. If you put on heavy field points on a light arrow shaft and a light poundage bow you may not get the same distance and accuracy as if you tried a lighter mix of field point to arrow ratio. You can purchases these field points in 70, 100 or 120 grain. Most target arrows use 120 grain. Also for this workshop you will use field points that you can glue on which are much different then the screw or crimp type.

Recommended for Horseback Archery

Field Points for Target Archery

Period type from Historic Enterprise

Fletchings

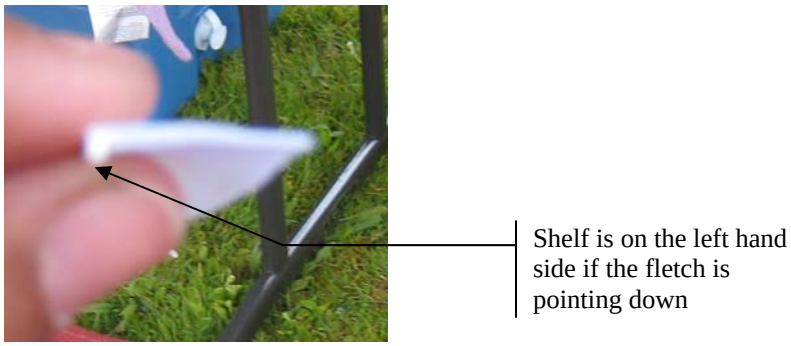
Fletching come in a variety of styles, colors and lengths. The mix and match is up to you and what works best for your bow / arrow combination. There are full-length fletching, parabolic, shield and Flu-Flu. Our recommendation is for the shield style but the choice can be as varied as the selection. Just remember to pick the same style for the same batch of arrows. For fletchings you can pick left or right fletching (left is our choice). You can then select the size (use smaller (shorter) fletching for lighter arrows for longer flight). You can then pick the color. Remember that your cock feather should e one color, and the alignment feathers should be another. We recommended 3 fletching per arrow, but try different configurations! You could be surprised!.

Shield Type

Parabolic Type

Flu-Flu
Used for Bird Hunting

Left or Right fletching are determined by which side the shelf is set to the the feather. The cockfeather is the first fletch you put on and is the alignment nock fletch.



Shaft Preparation

The first part of arrow assembly is the preparation of your shafts. Most shafts will come in the length of 31 inches. It is from here that you will be required to cut them down to match the draw length of your bow. In order to do this place a blank shaft on your bow and draw. Have a friend or somehow mark where your bow string touches the shaft at your full draw. You will want to add 1 inch to your draw length. This will be the length that you are going to cut your shafts. You can use a pair of clippers, shears to do this (garden shears work well).

After you have cut them to length you can chose to apply the wood sealer now. I would recommend placing it on now if you are using a varnish type sealer. If you are using any type of oil only I would seal them up to the point where the fletching adheres.

If you stain and then seal them you can use the dipping tube. You can purchase dipping tubes or make your own from PVC and place a gasket at the top. Remember moisture is a danger to shafts as it will not only cause them to bend but the water has weight! This will change the precision of your arrows. Just remember as you go about this process to be consistent in the way you apply the varnish. This will keep the arrows about the same in weight and balance. Allow your arrows to dry at least two days prior to going on to the next step. Most people will first stain and then varnish the arrows.

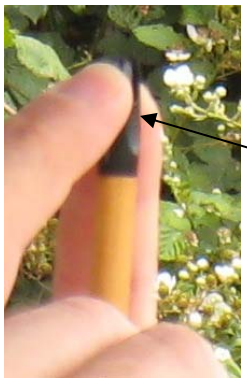
Now after you have cut and sealed your shafts you are ready to weigh them. Remember it is the weight range that your arrows are that will determine how precise your arrows shoot as a batch. The more weight differences between them, the more different the shooting pattern. Try to keep the arrows in batches where the weight is no more then 5-10 grains different. If the shafts weight more then this difference they should be separated into a different group. You can also write on the shaft to know which grouping the arrows go in. You can also use buckets to keep the shafts of various weights together until you collect enough to make a dozen as you go along.

Cresting

Cresting can be done pre or post fletching. Some people make a jig so they can turn the arrow and apply the cresting colors. Remember color coding is a way you can tell your arrows from another person. Cresting can be very elaborate or simple. It is really just up to you.

Nocks and Field Point Assembly

Now that your arrows are prepared you are ready to prepare your shaft for the nocks and points. Do this using your handy nock tool which looks like a large pencil sharpener. Be sure to apply even pressure or your points will be tilted one way or the other. Apply the nock tool to the end of your shaft and turn it until you have a clean mating part for your point or nock. Now you are ready to glue your pieces on.



Keep the pressure even as you use the tool to keep the nock and point straight on the shaft.

Nocks

To apply the nock place enough glue on the wood to ensure a good fit and press firmly down. The nock should be seated.

Field Points

Flip the arrow around and place on a smooth surface nock down. Place enough glue on the tip of the wood and secure the field point. Tap the arrow on the surface at the nock, and then flip the arrow around and tap with the point. Ensure proper seating. Visually verify that the nock and point are not cantered off to one side. If they are you will need to remove the point or nock and clean the wood and re-taper. Remember this is going to change the weight and length of the arrow.

<u>Fletchings</u>

Applying the fletchings is a bit more fiddly then any other part of the process. It requires measurement, patience and a place that is cat free. The first part of the process is going to be preparing the equipment for use. You will need your fletching jig with the proper fletch attachment. The fletch attachment comes in either left or right to match the type of fletching you are using. You can check to see which attachment you have by checking it.

Fletch Jig Attachment

On the back it indicates it is a left jig

You will then need to get your fletching tape, marking pen, sisccors and fletch glue. It is also recommended that you have some type of stand or holder for your arrows after you have applied the fletchings. Also use the jig on a solid level surface.

Place your arrow into the fletching jig (parent jig). Make sure the alignment nock feature is facing the edge where your cockfeather will go if you are using alignment nocks. The nock faces down and your target point faces up.

You will notice that the fletch jig attachment has a scale of measure along the side. This measurement will allow you to place your fletchings inside the tool at the right location to be placed on your arrow. Read the instructions that come with your fletching jig, they may differ between manufactures and arrow/fletch types.

If you notice on the fletch jig to the right you can see the attachment in place. Notice the nock at the bottom. If you look at the jig attachment it has an allocation for this nock. What you need to do is determine how much space you want from the end of the nock to the start of your fletching.

The recommendation is ½ – ¾ of an inch from the nock. You would mark this distance on the fletch jig attachment so that when you put your fletching into it, they would align on the same point.

Measurement markings to align your fletching.

Nock Spacing

Notice on this arrow the spacing from the nock to the start of the fletching. This is the space that you will need to mark on your jig attachment.

Once you have your distance measured on the fletching jig attachment and you have your fletchings, tape, glue and jig arranged you are ready to start putting your fletches on the arrow. In order to do this place the cock feather fletch in the fletch attachment jig. Once the fletch is in the jig you will need to apply the fletch tape. Cut the tape at least 1/8th of inch over on one side. This will provide you with a lip so you can pull the double sided part of the tape away prior to putting it on the arrow.

Fletch Tape

When the tape has been removed cut the 1/8th inch of tape off. Now you are ready to set the fletching attachment jig into the fletch jig. Take a deep breath, set the fletching jig attachment onto the jig first. Do not worry about alignment yet. Just have the magenets interact and prepare to align. Once the jig attachment is on the jig you are ready to align it. Press it all the way down until the end of the attachment jig touches the base of the "parent" jig. Once this is done make sure everything is aligned

See how the fletching jig attachment is flush with the base of the jib. From here you are ready to place the fletch onto the shaft. Push the fletching jib attachment onto the shaft of your arrow

Press down hard onto the jib attachment while holding the jig. Do this a few times up and down the fletching jig attachment. Once you are sure it has attached open the clamp on the fletching jig attachment and remove.

Turn the fletch jig knob at the bottom and do the same process with your next two fletches. These fletches will be the ones that match each other and align to your bowstring.

Should look like this

After all your fletchings have been attached you are now ready to apply the fletching glue. To do this first make a small "blob" of it at the bottom of the fletch (near the nock) and at the top of the fletch (closest to the point). Then make a thread of glue down each side of the fletch. Do this to all fletching on the arrow.

Next steps

You are now offically done! Place your arrows in a safe place to dry perferably in a arrow rig or stand. You can now crest your arrows if you have not already done so. You can also "re-weigh" your arrows to be more specific about the weight ranges.

Any questions contact the following :

Key Contacts are :

West Archer:	Dauid Morgant	royalarcher@westkingdom.org
Mist Archer :	Achmere ib' Tamim	mistarcher@westkingdom.org
Cynagua Archer:		misslemarshal@cynagua.org

Or Try Yahoo Groups

SCA-Archery	@	http://groups.yahoo.com/group/SCA-Archery
SCA-West Archery	@	http://groups.yahoo.com/group/SCA-West-Archery
Hunt Guild	@	http://groups.yahoo.com/group/HUNT_GUILD

Equipment Suppliers

Predator Archery	Gilroy	(408) 842-7733
Pacifica Archery Supply	Daly City	(650) 756-4868
Bow Rack	San Pablo	(510) 236-8303
Sportsman Supply	Campbell	(408) 377-0647
Three Rivers Archery Supply	www.3riversarchery.com	

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