

10th Century Scandinavian Ankle Boot: A Brief History and Method for Turnshoe Construction

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Introduction:

Within our organization, we often overlook appropriate footwear as part of our attire. This is unfortunate since there is a wealth of information available about shoes throughout medieval Europe. It is my hope that by introducing individuals to this research they will be encouraged to make their own medieval appropriate footwear.

A turnshoe is a style of footwear constructed from a leather upper and sole. These are stitched together and then flipped inside out, or turned, to create the finished shoe with seams on the inside. The turnshoe made its first appearances in Europe in the 5th century (Carlson, “Footwear”). It grew in popularity in Europe and was in widespread use from the early 9th century until the 15th century; with significant archaeological finds in York, England as just one example (Mould, Carlisle, and Camerons 3256). This generally makes it the ideal base shoe type for use within the Society for Creative Anachronism (SCA) and medieval re-enactors and hobbyists alike.

Turnshoe styles varied widely over time and place, ranging from simple slip on shoes to tall elaborate boots. They were often secured with leather or sinew lacing and toggles that consisted of leather, bone, or wood materials. In later periods, various buttons, buckles, and latches became very popular as well (Grew and de Neergard 32-33). Shoes, particularly in the 14th and 15th centuries were often highly decorative, using embroidery, openwork, incising and engraving techniques to enhance their appearance (Grew and de Neergard 75-85).

For this project we will attempt to recreate a pair of shoes based off of archaeological finds from 10th century York, England; specifically a toggle shoe type 4a1 (Mould, Carlisle, and Camerons 3302-3303) (*Figure 1*).

Materials:

Medieval cordwainers (shoe makers) had a number of specialized tools they used for working leather. These included, but were not limited to, specialized knives, needles, awls, and shears. While often very similar, I largely used modern tools for the construction of shoes (*Figure 2*).

Sometimes a cordwainer would create a last, which is a basic mold of a foot, usually wooden, to aid in shoe construction. Lasts incorporated appropriate comfort space for how a shoe should fit, rather than just creating an outline of the foot itself (Carlson, "Footwear"). I will not cover the use of lasts for shoe construction at this time.

Leather

Research shows that cattle, goats, and sheep were used in the production of leather products in medieval Europe (Mould, Carlisle, and Camerons 3265). Natural dyes were sometimes applied to leather, usually during the tanning process, producing colors such as blue, red, brown, black, and green (Charlotte). Tanning is the process of converting animal skins into leather and evidence shows that bark tanning may have been a process used in York during this period (Mould, Carlisle, and Camerons 3230).

For the uppers of this shoe type I use light weight vegetable tanned cow leather and for the soles I use moderately thicker cow leather. What you can use varies based on shoe style, but thicker leather will make it difficult to turn the shoe and will be less flexible in wear. I recommend no heavier than 6 ounce leather (3/32nd of an inch thickness) for the upper and 6 ounce leather or heavier for the sole of this shoe style. I find that un-dyed vegetable tanned cow leather works well and is the most readily available product that approximates medieval leather. As a general rule I use side leather for the sole, and belly leather for the upper.

Sinew/waxed thread

Archaeological evidence from York shows that leather thongs, as well as waxed animal and plant based fibers were used for stitching shoes (Mould, Carlisle, and Camerons 3256). I use modern commercially available waxed thread.

2 heavy duty needles

There are modern needles made specifically for leather work (wider eyes, rounded tips, curved, etc.) but you can manage without them if needed. Among other materials, boar bristles were a popular item used for needles in the 10th century (Mould, Carlisle, and Camerons 3257).

Leather punch or awl

An awl is a pointed metal tool with a wooden handle used for puncturing small holes in the leather. Modern awls are very similar to their medieval counterparts (*Figure 3*). A small block of soft wood will be useful as a base if you are using an awl. I often use a leather punch for this task instead.

Scissors or shears

These must be capable of cutting your leather. Medieval leather workers used a half moon knife to cut out or “click” their leather (Carlson, “Leatherworking”) (*Figure 4*).

Non-stretchy fabric

Sufficient in size for making a basic pattern. Cotton muslin is a good choice.

Pencil/dark magic marker

Tailor’s tape measure

Other optional materials:

Leather strap cutter, decorative thread or leather lacing

Process:

The most difficult part of this whole process is choosing a design and creating a pattern (*Figure 5*). I highly recommend Marc Carlson’s web site listed in the bibliography for referencing specific styles of shoes and alternative methodologies for shoe construction. It is the single greatest one stop shop for medieval shoe information available on the internet that I have found.

In my process I do a little measuring, a little imagining, and a little trial and error in creating a pattern. For me, the key is using inexpensive fabric for designing a good pattern that will keep you from wasting your leather.

For measurements, I like to make sure to get the following:

Traced outline of foot ‘print’

Length and width of foot

Arc over toes

Arc over the middle of foot

Arc over point where the foot connects to leg (should be largest measurement over)

Ankle circumference

When measuring, I add a small allowance for seams and comfort but keep in mind that the shoe leather will stretch some with wear over time. I add a ½” for seam allowance and anywhere between 1 and 2 inches for comfort space on the arc and length of foot measurements. For example, if you measured from the floor over the middle of your foot back to the floor and get 5 inches, your final adjusted measurement should be between 6 ½ and 7 ½ inches. Wool or straw was often used as an insulator for the feet, so shoes usually incorporated additional space for this.

Next I sketch an approximation of my selected pattern onto the fabric using the adjusted foot measurements. I then adjust the sketch by draping the pattern around the foot. Once I feel I have something that will definitely be big enough, I cut out the pattern outline (*Figure 6*). From there, I make final adjustments to the pattern and trim to fit.

Early period shoes were often designed without a specific right or left in mind. Contrary to expectations however, evidence in York shows that this style of shoe was made with the side seam and fastener on the inside of the foot ((Mould, Carlisle, and Camerons 3302). So with this in mind, I simply reverse the upper pattern to get the mirror image pattern for the opposite foot; trace the pattern onto the leather and cut it out (*Figure 7*).

Next I cut stitching holes into the leather. This can be done a number of ways. Traditionally, a leather awl is used to puncture a hole in the leather. I generally find that I prefer to use a rotary leather punch instead; using the smallest gage punch to make the holes. Evidence shows that holes were generally 2 mm in diameter and spaced approximately 8 mm apart (Carlson, "Footwear"). I make sure to allow enough space for a small seam edge so that the stitching will not easily rip through the leather. I punch all the holes in the sole leather at this time (*Figure 8*). To keep things lined up nice, I punch the holes for the upper a few at a time while doing my stitching.

Threading and stitching come next. I thread the sewing needles on to each end of an arm length section of waxed thread or sinew. I find that if I go longer with the stitching material it becomes a bit unwieldy to work with. To sew the upper to the sole leather I use a basic shoemaker's stitch; also referred to as a double running stitch or a saddle stitch (Carlson, "Footwear"). There are several other stitches that were used in shoemaking, but this single basic structural stitch suffices for simple turnshoes of this period (*Figure 9*).

I line up the upper and sole, starting with the heel, making sure that the surface of the leather that will be the outside of the shoe is facing inside (grain side), with the rough (flesh) surface of the leather out. I bend the upper around the sole to make sure that I line up the pieces correctly for the perimeter seam. Many times in the past I have started stitching a shoe together only to realize I was sewing the wrong edges together! I tie off the thread when it runs out, rethread and continue stitching until the perimeter is completed. I hold off on the side seam at this point to help facilitate the turning to come (*Figure 10*).

The next step is to saturate the shoe with water and turn it inside out. This requires a little work because you have to take care not to put too much strain on the seams (*Figures 11-12*). Once I have turned the shoe, I put it onto my foot for several minutes to help give it a basic shape as it started to dry (*Figure 13*).

When the shoe is dry, I stitch up the side seam and prepare the shoe fasteners. The toggles and fasteners are made out of strips of leather that have 'tails' (*Figure 14*). I cut two parallel notches into the wider end of the toggle and roll this end up onto itself until I get to the notches. I then insert the tail back into the rolled wide end through the two notches and pull it through. Finally, I cut three parallel lines into the upper flap and feed the tail in, tying it off on the inside. This process is repeated on the side of the shoe, toward the heel, for the two fastener tails.

Finally, I often punch holes along the top portion of the upper, as well as along the toggle flap and use leather lacing to create a decorative spiral stitch on these areas of the shoe (*Figure 15*). In some archaeological finds of this shoe type, a decorative and reinforcing layer of leather was stitched around the ankle perimeter of the upper (Carlson, "Footwear").

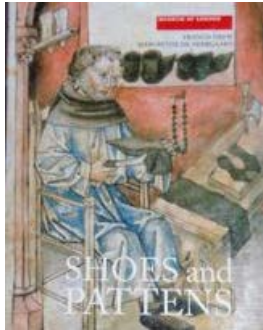
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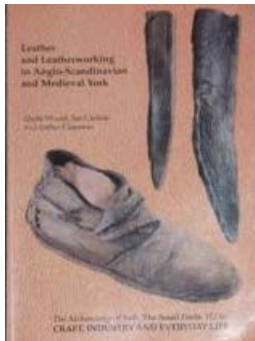
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Mould, Quita, and Carlisle, Ian, and Cameron, Esther. Leather and Leatherworking in Anglo-Scandinavian and Medieval York: The Archaeology of the Small Finds 17/16. Craft Industry and Everyday Life. York: Council for British Archaeology, 2003.



Appendix

Figure 1: Shoe find from Scandinavian era York, England



Source: http://www.historyofyork.org.uk/zoom-image.php?img=6yorym_1974_8_11.jpg

Figure 2: Materials used in construction

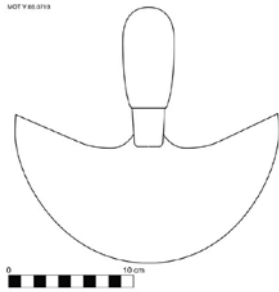


Figure 3: Leather awl



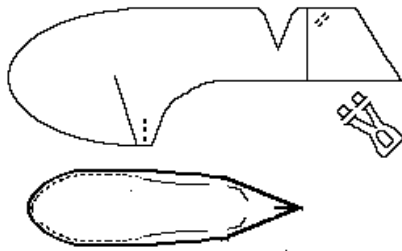
Source: http://www.amazingpaper.com.au/persistent/catalogue_images/products/Awl.jpg

Figure 4: Half moon knife



Source: <http://www.mot.be/w/1/files/images/collections/IDDOC/880718.jpg>

Figure 5: 10th Century Scandinavian Shoe Pattern



Source: <http://www.personal.utulsa.edu/~marc-carlson/shoe/IMAGE3/SHOE4A1.GIF>

Figure 6: Fabric upper and sole pattern



Figure 7: Cut out leather upper and sole



Figure 8: Stitching holes cut into leather



Figure 9: Stitching the upper and sole together



Figure 10: Nearly completed perimeter stitching



Figure 11: Wetting



Figure 12: Turning



Figure 13: Shaping wet



Figure 14: Toggle and fastener patterns

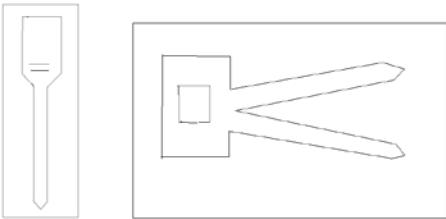


Figure 15: Completed turnshoe

