

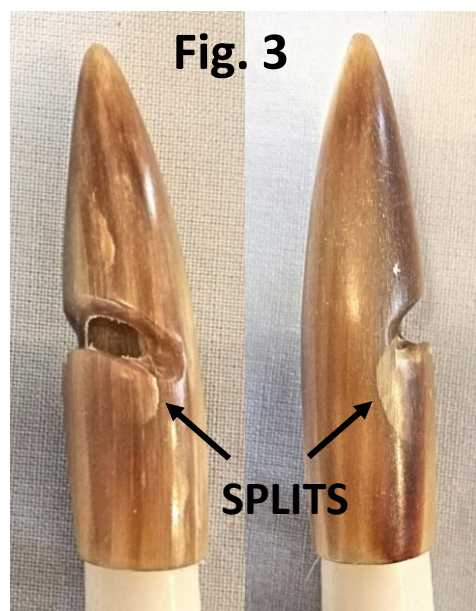
Horn nocks on Tudor military longbows – What was their purpose?

Recently I have been informed of a seminar on ancient archery practices in which it was claimed that the horn nocks on the bows found aboard the Mary Rose were fixed temporarily in place, in order to allow the nocks, with string attached, to be transferred from one bow to another in case of breakage – an occurrence that must have been fairly common, considering the number of bows requisitioned by the crown over the centuries. I remember this theory being proposed by a bowyer friend and colleague some years ago, partially to explain the lack of horn nocks attached to the bows found aboard and partially to formulate a potential system of ‘industrialization’ of mass bow production in this period. That one horn nock might fit any bow of the period, possibly using some kind of paste made from beeswax or other material inside the horn, to allow fitting to bows with slimmer tips, seemed worth a look by experimentation.

To discover whether or not this idea could be put into practice, I fitted horn nocks closely to the piked tips of a 120lb longbow (Figure 1.), cutting sidenocks through into the wood beneath, but without gluing them in place (Figure 2.) and checked whether or not the bow could be shot in this condition. Unsurprisingly I found the bow shot perfectly well, even though there was a clear and unusual sound generated by movement of the horn against the wood. Furthermore after only a dozen or so arrows, I noticed cracks appearing in the horn of both nocks, around where the loop of the bowstring on the top nock and the bowyer’s knot on the bottom nock bowstring pulled at either end of the ‘lip’ cut into in the horn; something that would have inevitably led to breakage in a fairly short time. Figure 3. Shows one of the horn nocks and the cracks that appeared after shooting.



Horn is not a rigid substance and compresses and bends under pressure, especially that pressure produced by the bowstring. This distortion allows the horn to move against the wood of the bow-tip and it rapidly starts to split. In contrast, horn that is glued into place against the wood of the bow-tip is stabilized against such distortion and will hold even for heavy draw-weight bows.



Beyond experimentation, the problems with this theory are twofold. First, horn, made of keratin, a proteinaceous material, was poorly preserved aboard the wreck of the Mary Rose, being eventually degraded by marine microorganisms even in the anaerobic conditions under the mud. It may have taken centuries to occur, but almost all horn items aboard have vanished; finding a very few horn items in sealed conditions was extremely fortunate. Consequently it is not surprising that no horn nocks were found mounted on longbows. The difference in colour of the wood between the tips covered by the horn and the rest of bow is likely due to the difference in how long the wood was exposed to the surrounding environment, considering that both the glue used for mounting the nocks and the horn itself, might have protected the tips for a couple of centuries before being degraded.

The second problem is that there is a great deal of variability in the dimensions of the bow-tips, even amongst the few bows that I have personally examined. The diameter of the wood at the bow-tip, where it enters the horn nock (clearly visible on most of the Mary-Rose longbows) is variable, as is the distance between the base of where the horn was attached and where the side-nock was cut, through the horn and into the wood underneath; an observation that immediately tells us that one horn nock could not be easily removed and mounted on another bow. Additionally, a few bows show that wood was removed below the base of the horn (bow MR 79A0812 for example) in order to obtain slightly more bend at the tips and to adjust the final tiller; something that would only be required if the horn nock had already been glued into place.

If the horn nocks of these bows were not transposable, what were their purpose? The answer is simply due to the technological change that occurred between the bows of the earlier medieval period and those of the late medieval/Tudor period. These earlier bows, whose design was based on the Scandinavian archery tradition had relatively thick tips with a notch in the side of the bow for the string loop and a handle above that to allow rapid bracing and unbracing. By the time of the Tudors, all across Europe, these self-bows had slim, tapered tips, allowing all of the wood to bend, enabling the bowstring to be attached to the bow as close to the tip as possible. This arrangement made for a more efficient bow but the slimming of the tips required their reinforcement at the point where the string was attached, to prevent damage.

In conclusion, although the theory that horn nocks were transferable from one bow to another was worth examining, evidence from experimentation and from analysis of the original bows themselves strongly suggest that this would be impossible. As is so often the case, the simplest explanation, that horn nocks were constructed by each individual workshop and glued into place on the bow tips, is the correct one.