# TURKISH ARROW WHISTLE

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Whistling arrows and arrow whistles were constructed for many centuries by several Asian and Middle Eastern cultures for the purpose of sending messages, signaling troops, wounding foes, marking targets during ceremonies, and distracting prey during hunting excursions. In fact the technology of arrow whistles and whistling arrows migrated across the Atlantic/Pacific Ocean and can be found in South America.[1] These arrows are now relegated to the annals of time, rare written primary and secondary documents and museums exhibits. It is my goal to continue to document their place in history, construction methods/techniques, and test their reliability for sound and distance. I have a particular interest with arrows from Turkey. I have excellent success in creating a Turkish, Chinese, and Japanese arrow whistles.

Prior to construction of any arrow a clear definition of the differences between a whistling arrow and arrow whistle and their usage is essential. The author Liao describes the differences between an arrow whistle and a whistling arrow thusly:

> [A] whistling arrow has a sharp point and can be a lethal projectile. An arrow whistle has a whistle but no sharp point. The whistle element of a whistling arrow can have three, four, or even five apertures and, constrained by the presence of a sharp point, the whistle sounding box is often small. An arrow whistle, on the other hand, is often larger with more holes and a broader profile head-on. They can be made of bronze, iron, wood, bone, horn and with a louder sound, their signalling power is clearer than that of whistling arrows.[2]

By way of this definition, the history, historical uses, and its construction of arrow whistles will be examined.

While the bulk of material written has been in regards to the exploits of the whistling arrow, arrow whistles held an honored position in many societies. Typically used as a signaling method, between friendly troops or allies or for frightening animals, these arrows were designed to be shot over long distances at a high trajectory. These arrows were not designed to injure

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[1] Grayson Archery Collection in the Museum of Anthropology at University of Missouri-Columbia. (2005) MAC1992-0241B-D.

[2] Liao Wanzhen, "Whistling arrows and arrow whistles," trans. Stephen Selby, Asian Traditional Archery Research Network, (1999), 2.

anyone or any animal. In fact some of the whistles had an extremely high pitch that only animals could hear. For example, one theory for dog whistlers from the Japanese culture is to signal the hunting dogs where the game had fallen or to retrieve fallen arrows. Another possible use for Japanese dog whistlers is for the *Inouomono* or dog shooting ceremony.[3] Since arrow whistles did not have an arrowhead attached, after it was shot it had the distinct possibility of becoming damaged upon impact or simply lost.[4] Buryats and Mongols, as well as other cultures, used arrow whistles to distract game during hunting. Once the arrow was released, the intended prey would stop to listen, giving the hunter an opportunity to use another arrow to kill the animal.[5] Arrow whistles have been given many names by each culture: drum arrows by the Chinese, the Japanese *Hika-ya* from the *Yabusame* ceremony, *myoungjuk* (screaming arrow) by the Koreans and the Turks called their arrows *chavush* (messenger) or *cavus oku* (*sergeant arrow*) being but a few examples.[6]

Turkish arrow whistles are unique of all the cultures. Contrary to Liao's definition of an arrow whistle, the Turkish whistles happen to be the smallest and their primary function was for hunting, ceremonial archery events and archery competitions. Found arrow whistles are either constructed of black horn or ivory. The earliest arrow whistle discovered is dated 209 B.C.E.[7] In McEwen's groundbreaking article on the history and construction of arrow whistles, he provides an actual image of a medieval Turkish archer holding

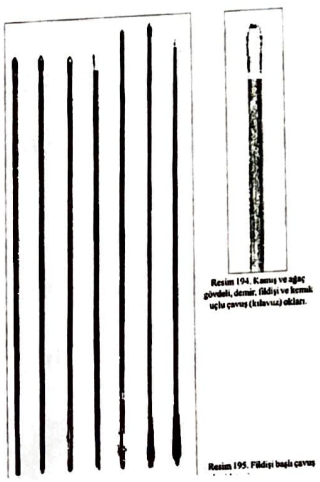


**Figure 1 : Turkish arrow whistles**

[3] Edward McEwen, "Inouomono (Dog shooting)," Journal of Society of the Archer-Antiquaries, 42 (2000) : 4.

[4] Edward McEwen, "Whistling arrows," Journal of Society of the Archer-Antiquaries. 36 (1970) : 2.

[5] Taras Vladimirovich Plakhotnichenko, "The Buryat Bow," trans. Zogit Davidov and Jack Farrell, Asian Traditional Archery Research Network, (1999), 4.

[6] History of Military Museum, Bows and arrows of Korea. Available from http://www.sac.or.kr/eng/bows.index_1.html.

[7] Salim Koca, Tükler. Ankara: Yeni-Türkiye, (2002).

one of the larger arrow whistles, a *chavush*, constructed of what appears to be black horn. This archer is from Selim I's (16th century) reign in Turkey

**Research process for primary artifacts**

One of the problems I encountered during the onset of this research endeavor with all whistles was finding actual archaeological evidence, primary and secondary resources, or physical access to the Simon Archery Collection located in Manchester, England and the Grayson Archery Collection located in Columbia, Missouri. Upon discussing this project with Stephen Selby, Thomas Duverney, Dr. Charles Grayson, Curator Mary French, and Curator Wendy Hodgekinson, I was given remote access to the cataloging records and pictures of arrow whistles in the Grayson collection. Based on these records and pictures I could determine culture, length, diameter, sound hole placement, shape and materials used for the arrow whistle as well as the arrow, arrow nock, and its fletchings.

**Figure 2 : Archer holding arrow whistle**

Upon further discussion with Curator Mary French I discovered that the arrows in the Simon Archery Collection could not be dated nor did they have a record of their provenance. In fact, they have since been misplaced during the reconstruction/remodel of the Manchester Museum. Dr. Grayson's arrows housed in the Grayson Archery Collection were replicas of the arrows in the Simon Archery Collection. Dr. Grayson expressed dismay that his arrows only hissed and did not whistle (see Figure 3). It later came to light that the arrows in the Simon Archery Collection are replicas of arrows found in Turkey. Authors Edward McEwen and Cdr. Paterson created

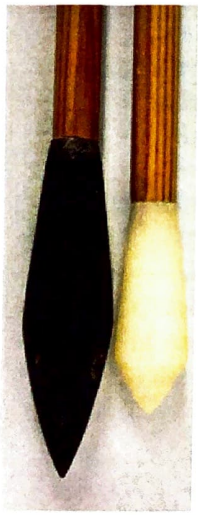

**Figure 3 : Dr. Grayson's replicas**

these replicas. They had no success with getting their replicas to whistle.[8] In a book entitled Türk okçulugu by Üncal Yücel there are images of *chavush* and *cavus oku* arrows dating back to the 16th century (see Figure 1). Unfortunately any information contained in the book is limited to those who can read Turkish.

Still I ran into the problem of how medieval master fletchers made these items. What is known is that all of these cultures had the technology to create cylindrical objects from wood. They were also well versed in arrow shaft construction, fletch cutting and binding or gluing fletches to the arrow shaft, making self-nocks or constructing nocks out of hard wood or horn for the arrow shafts. We also know that the glues they used were quite excellent such as fish glue. It is unknown how the sound chamber was hollowed out after the turning process was completed (if they used a turning process at all) and what tools were used. McEwen suggested in his article that the "...earlier method of making the head in one piece was later improved upon by making it of flat rings of horn, bone, or ivory interspaced with wood."[9] Based on my research and review of archery collections housing arrow whistles/whistling arrows, the concentric ring construction did not originate until the late 17th century.

**Construction process**

A plan was constructed for the whistle and included a listing of potential problems. Please refer to Appendix A for directions in constructing a Turkish arrow whistle. Materials were chosen based on primary and secondary materials regarding the Turkish culture. Some items were also chosen based on cost, legal issues, and time limitations.

**Turkish arrow whistle**

- Candle shaped cedar arrow shaft, 9/32 to 5/16
- Black horn for the nock (obtained from Three Rivers Archery)
- Goose feathers for fletchings (5 inch shield cut)
- Black horn for the arrow whistle (block format obtained from Three Rivers Archery)
- Sinew

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[8] Charles E. Grayson, "Whistling arrows." (photocopy), Grayson Archery Collection, Museum of Anthropology, University of Missouri-Columbia.

[9] Edward McEwen, "Whistling arrows," Journal of Society of the Archer-Antiquaries. 36 (1970) : 3.

After choosing the size (length and diameter) and shape of the whistle, I began the next step of shaping the whistle.

After completing the turning process, a hole was needed for the whistles to act as a guide for mounting on the arrow shafts. A hole was drilled only at the base of the Turkish whistle since no metal tang was used to mount it on the arrow shaft. The Asian cultures had a hole drilled through the whistle in which the metal tang was inserted. By doing so, Asian archers were given the option of converting their arrow whistle into a whistling arrow by switching out the metal tang with a tanged arrow point. This metal tang inserted into the arrow shaft also added some durability/stability to the Asian whistles.

A Dremel tool with drill bits was used to carve out the sound chambers after it had been cut lengthwise. Prior to the final shaping of the slot in the whistle for the arrow shafts, the arrow shafts was tanged/tiered with two tiers using hand files. The shaft was measured against the whistle and marked accordingly with a pencil. The two tiers allow more air to enter the sound chamber and a closer fit to the arrow shaft. Once the shaft was ready the slots for the whistles was finished. The pieces were then glued together with the aid of Satellite City Hot Stuff Special 'T' instant glue Cyanoacrylate adhesive. The sound holes were drilled out on the Turkish whistle at an angle using a power drill after the two pieces were assembled. Mounting the whistle was the final stage of construction.

The Turkish whistle was applied to the arrow shaft with Fletch-tite. With Asian arrow whistles they are sealed off at their base with silk cording, birch bark or sinew. This was done to prevent air entering the sound chamber except through the sound holes. Any air allowed into to the sound chamber other than through the sound holes would make the whistle unserviceable. This is not done for the Turkish arrow whistle because there is no evidence that they sealed the base of the arrow whistle with silk, sinew or birch bark.

**Conclusions**

With limited research materials and actual artifacts available to me I feel that these types of arrows have earned a respected place in history. Ancient and medieval writers, and even modern authors, are solely preoccupied with writing the annals of archery; feats of excellence; how archery played a role in warfare; bow technology; and instruction manuals little attention is given to the importance of the arrow. A bow without an arrow is useless and the same can be said of the arrow. McEwen's groundbreaking research on this topic gives a glimpse on the variety of shapes and sizes. For example whistles in Japan could measure 8 ¼ inches in length and 3 ¾ inches in diameter, whereas the Turkish whistles are the smallest and appear to be merely an extension of the arrow shaft.[10] Originally when I embarked on this research endeavor I felt that Western Europeans did not embrace arrow whistles or whistling arrows as part of their warfare, hunting expeditions, or competitions. I have since found this to be untrue. In England archers shot over 1,000 whistling arrows in 1681 to entertain King Charles II at an archery competition.[11] Medieval hunters were also aware that a noise made in close proximity of game could distract the animals long enough for the archer to shoot the animal. They accomplished this by driving a camouflaged cart with squeaky wheels near the animals.[12] I also found that the Fenno-Ugrian's of Finland and Russia used arrow whistles as part of their hunting practices. With that piece of knowledge regarding the Fenno-Ugrians, I found that they utilized bouncing arrows as well. Bouncing arrows' sole purpose was to act like a skipping stone on the water so a bird would take flight.[13]

Archers have been long fascinated with whistling arrows/arrow whistles. The earliest modern research articles I have on the topic are dated from the early 1920s. After World War II,

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[10] Edward McEwen, "Whistling arrows," Journal of Society of the Archer-Antiquaries. 36 (1970) : 2-3.

[11] Hugh D.H. Soar, The crooked stick : a history of the longbow, (Yardley : Westholme Publishing, 2004), 139-140.

[12] Ibid, 19.

[13] Ragnar Insulander, "Whistling arrows and bouncing arrows," Journal of the Society of Archer-Antiquaires. 40 (1997) : ?.

archery magazines began publishing articles on the history of the whistles and how to make them using modern materials. Modern archers in the process of replicating arrow whistles have noted, "...it is to be regretted that they are so difficult to make"[14] and with no guarantee that they will whistle. Arrow whistle makers (ancient, medieval and modern) run an enormous risk of having whistles that don't perform properly, breakage of materials, unsatisfactory materials, time and patience. Even after all the time and effort to make a superior product, the fate of the arrow rests in the hands of the archer. Many of these arrows are lost or damaged due to striking a hard surface, being stepped on, or lost in the under brush.

**Lessons learned**

Many lessons are to be learned while constructing arrow whistles. The most important was not to slice the horn blocks prior to turning on the lathe. Horn pieces are difficult to turn due their hardness compared to a wood whistle. Any type of right angle has the potentiality of ruining the whistle so sanding out the angles is imperative. Soak the horn for at least 24 hours to soften it before turning it on the lathe! Patience is also critical to this type of project. I cracked an arrow shaft because I was impatient and tried to rush my work. At this juncture, I have constructed several arrow whistles with a two-piece construction (pieces were sliced lengthwise) process. This method will be abandoned and I will be embarking on a more traditional method of making a whistle out of a solid piece of wood, horn, bone, or antler. This method will be more true to the medieval craftsmen for this medium.

One thing I feel that I wasn't given or had taken enough time on was researching the cultures, history and technology for those that utilized arrow whistles. A clearer understanding of the history, its peoples, and technology is very important in what role archery played in their society. I will also be making contact with other curators such as the curator of the Leeds Armoury Museum and Turkish museums to view their special collection. Despite all the mishaps, wrong turns, lack of time, and patience constructing arrow whistles is truly a rewarding project.

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[14] W.B. Wescott, "Whistling arrows," Archery. (July 1947) : 11.

## Appendix A

Construction process for Turkish arrow whistle

**Arrow whistle [5.7 cm approx. in length and 1.57 cm in diameter]**

1. Soak the horn block for at least 24 hours to soften it. To turn an unsoaked piece will allow pieces of horn to shear off thereby eliminating a good piece of horn.
2. Sand any sharp edges/right angles before turning on lathe. This will prevent the piece from catching on the gouges and chisels and allow ease of turning.
3. Turn the piece of horn on a lathe (achieve approx diameter of 1.57 – being mindful of polishing and sanding the horn for a smooth finish will also make it smaller)
4. Drill the guide hole for the arrow shaft on the lathe so it will be centered
5. Slice the horn lengthwise. DO NOT slice the horn lengthwise before turning on the lathe!
6. Carve out the center on both section for the sound chamber using chisels or gouges. I used a dremel tool.
    a. Use the tapered arrow shaft as a guide to get a snug fit
    b. When carving out the sound chamber a good indicator that you have carved out enough is to hold the piece up to a bright light. If you can see a pinkish cast (this is for black horn) to the horn then you have taken enough material out for the sound chamber.
7. Score the interior edges in order to allow the glue to adhere properly
8. Glue the two pieces together
    a. Use a vice or a clamp so that there will be no gaps
    b. After the glue has dried blow into the piece. If you can feel air escaping along the seam line you must seal the hole by applying glue to the inside of the whistle.
9. Check to see if the arrow whistle fits snug on the arrow shaft.
    a. DO NOT force it!!! If you force it onto the shaft you will crack the piece.
10. Drill out sound holes/vents at an angle in the arrow whistle.
    a. Four evenly spaced vents
    b. When drilling holes start with a small drill bit. Use that small bit to angle into the whistle. If you feel confident enough migrate to a slightly larger bit to increase the size of the sound hole/vents. I must warn you to migrate to a larger drill bit could result in the piece cracking.
11. Mount the arrow whistle on the arrow shaft with glue
    a. I have used both Fletch-tite and Ferr-l-tite (a hot melt glue) on several type of arrows. Both work well but a warning is necessary when using Ferr-l-tite do not allow the arrow to dry tip down. To do so will allow the glue to block the sound holes.

**Arrow shaft [total length of arrow 69 cm]**

1. Choose arrow shaft
    a. Cedar shaft – candle shaped (5/16 to 9/32)
2. Form nock out of two piece of horn
    a. Shape the shaft into an angle. On each of the angles the horn pieces will be glued
    b. Once the horn pieces are glued to the shaft secure them with sinew and continue shaping the nock.
3. Create a tang on the arrow shaft where the arrow whistle will be mounted
    a. For snug fit
    b. The tip of the tanged portion should meet the tip of the arrow whistle. This prevents the whistle from being mounted crooked.

**Fletching the arrow**

1. Use gray goose feather since period feather would be illegal to use
    a. Traditionally Turkish fletchers would have utilized eagle or vulture feathes. To do so now could result in possible criminal charges.
2. Use fletch jig for quick fletching.

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