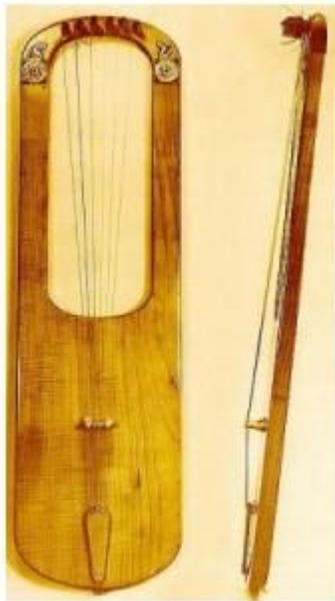


The Anglo Saxon *Hearpe*:

Instrument of the Original Bards

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Introduction

*"They sang then and played to please the hero,
Words and music for their warrior prince,
Harp tunes and tales of adventure..."*
("Beowulf")

The *Hearpe*, in traditional Anglo Saxon lore, is the original instrument of the bardic class. It is an ancient harp design typically called a *lyre* -- akin to the Greek and Roman instrument of the same name -- strung with anywhere from five to eight strings. It is a flat, oblong or rectangular instrument; a thin, almost veneer-like soundboard tacked and glued to a hollowed out body. The strings run from pegs on the top, crossing a hollowed out section where the player would place their hand, then over a narrow bridge on the soundboard where they are attached to some type of tailpiece or peg on the butt of the instrument.

The two most commonly known examples of *hearpes* from this period are the Sutton Hoo lyre (England) and the Trossingen lyre (Germany), though remains of others have been found in burial sites at Taplow, Bergh Apton, Morningthorpe, and Abingdon. While scholars are not entirely certain how they were played, they do know they were used to accompany recitation of epic poetry (such as "Beowulf"), in addition to the likely performance of early songs and other musical entertainment in the mead-halls. Scholars have theorized the most likely methods of playing are "block and strum" and "fingerpicking," which work equally well

with other theories suggesting the *hearpe* was tuned pentatonically (to a five-note scale; this theory is supported by the prevalence of pentatonic structure in surviving early music of Britain and elsewhere).



King David composing the Psalms. From Folio 30V of The Vespasian Psalter, English circa 750

Goals

Being a musician, it was my goal to recreate the *hearpe* as closely to historical accuracy as possible while keeping it a **playable** instrument. Meaning, I made certain adaptations to the design in the interests of my personal musical experience. I shortened the length for my own comfort while playing. I elected to use modern tuning machines for ease of tuning. I decided to use modern Nylgut strings. I also made other considerations in building materials for my own ease of assembly as a novice woodworker.

In the end, I feel my "modern" *hearpe* maintains the flavor and atmosphere of the original Anglo Saxon instrument, while satisfying the modern musician's demands.

Materials



1 five foot section of 10.5" x 1" Hemlock board

1 quart of Tung Oil

1 router bit

1 package of panel board nails (1 5/8" long)

Miscellaneous types of sand paper (80, 100, 150 grit)

1 set of brass entry cover plates

1 bottle of waterproof Titebond wood glue

2 sets of Grover Champion banjo friction tuning machines

1 set of 8-string Aquila Nylgut tenor ukulele strings

1 patient husband possessing woodworking skills :-)

The Project Journal

Day One



My husband helped me draft the basic design onto the wood. I selected a Hemlock board (a coniferous softwood native to North America and Eastern Asia, that becomes more of a hardwood as it ages) on the basis of cost and the fact it was the most responsive of the boards I looked at. When I placed my ear next to it and tapped, the board easily carried the sound and vibration along its length. By contrast, the oak and maple boards (traditional instrument making hardwoods) seemed sluggish, in addition to being more expensive and smaller in size. Not having much experience in lutherie, I'll admit I'm kind of

swagging it. I had the opportunity once to play on a three thousand dollar guitar and I remember how it *sang* along its entire length when strummed or tapped, like the whole instrument vibrated. I figure by picking a board that "sings" when tapped, I'll have a better chance of the final product turning out with those properties than if I have to force it to "sing" through the process.

That evening my husband helped me cut out the basic shape with a band saw and a chop saw, and I took up initial sanding with a Dremel. Being a novice woodworker, I elected to go ahead and use modern tools to help make the process easier. However, I also wanted to do as much of the crafting by hand as possible,



to preserve the "spirit" of the project.



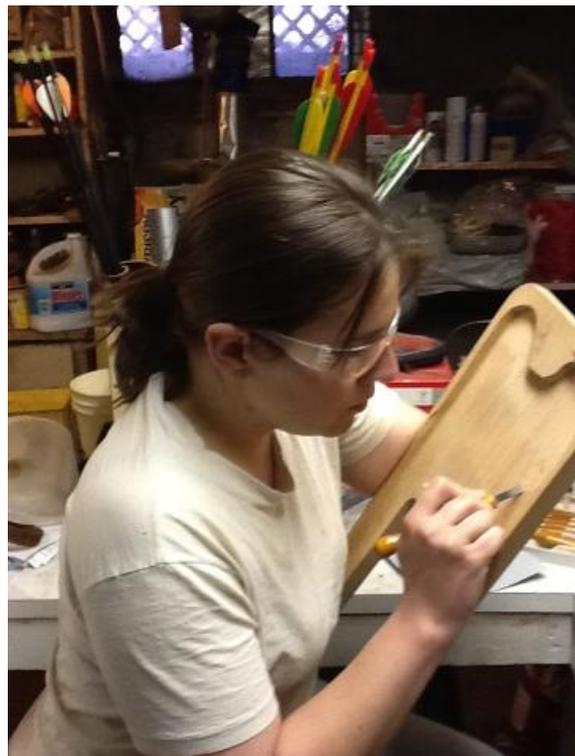
At this point, I made the decision to not do the traditional body + soundboard veneer design due to availability of materials. While I could get thin plywood to use for the soundboard, I refuse to use basic grade plywood on the grounds it doesn't sound as good. This instrument is already challenged enough by my lack of knowledge; why challenge it any further by using sub-par materials? Therefore, I made the call to sandwich a front and back together, using a router bit to help carve out the resonating chamber. Should this work, it will create more space in the body cavity for resonance and sound production. On the plus

side, solid wood has better resonance properties which get better with age (it's why "solid top" instruments often fetch three times the price of even the best laminate instruments; a solid will sound better over the years, whereas what you hear with a laminate will not change from the day you pick it up to the day you die).

Day Two

I spent about an hour sanding with both sandpaper and the Dremel, smoothing out the soundboard sections and we smoothed out the inside walls with a woodworking chisel. LOTS of sanding and hand work to do!

I settled on a set of Grover banjo tuners; they have a straight design more like traditional pegs and sport dark tuning knobs. Plus, Grover tuners have the



quality without breaking the bank. This is important, especially since I will have to buy two sets to get enough for the six-string design I'm planning on.

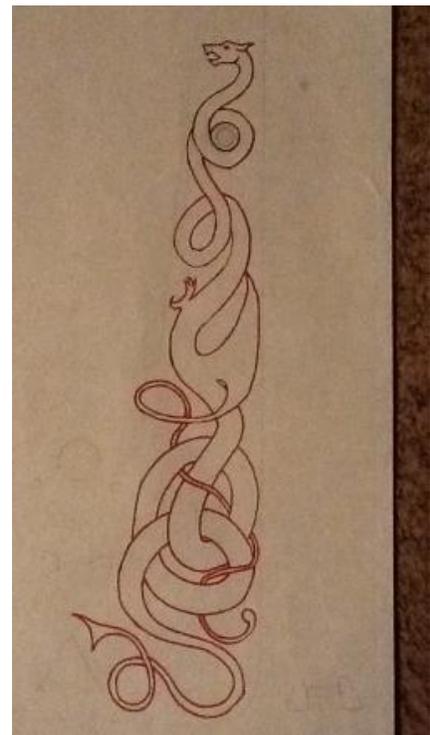
At this time, I still had no idea how to do the tailpiece. I saw a design on ancientmusic.co.uk that simply uses heavy cord for the tailpiece -- no special, carved wood piece -- which I like for the fact the less parts you have, the less things can go wrong. Plus, I can retrofit it to the carved tailpiece if I need to.

I purchased Tung Oil at the local lumber store for the finish. After researching various methods of finish for instruments, I opted for this because an oil finish is period-correct and while not necessarily available in Anglo Saxon Europe (it comes from the Tung Tree native to China), it was on the shelf. The truly authentic Walnut Oil was not. Another reason for an oil finish is that as durable as polyurethane finishes are, they're real iffy in a musical application. Some of them are okay, but some can decrease resonance properties, and trying to figure out which one is which is terribly difficult. Plus, I have an abhorrence for super-shiny instruments. They show too many fingerprints! An oil finish tends to give wood an appealing "soft" look.

Day Three, and I spent time looking at Celtic knot designs for the soundboard.

Though the project is Anglo Saxon in nature and not Celtic, there are remarkable similarities between the art. Also, the Trossingen Lyre was found to have carved art -- strikingly similar to traditional Celtic knot designs -- covering its entire face.

I sketched a basic template on a piece of butcher paper, and I made another decision: sound holes. In my research it is ambiguous whether either of the period lyres had sound holes, but looking at sound technology today, almost all string instruments have them. I elected to do two in the arm cavities and one rosette-style collection of holes in the main body. I designed my own knotted dragon design, incorporating the sound holes in the arms.



I plan to carve it in, but I have questions about the best method for making it stand out on the finished wood. Unfortunately, Hemlock bleeds really bad, which eliminates any type of stain, paint, or inking. I would consider wood burning, but I'm uncertain if it is a period technique, and also, it could potentially harm the wood's inherent musical properties.

We begin the assembly process!

At this point in my research, I learned both the historical lyres used brass nails or tacks to affix the soundboard to the back. While I fully intended to glue it together, I also knew glue could not be the only method of holding it together. Having a historical example of nails being used meant I had leeway (and I don't have to struggle to pin it with wood dowels). In the end, I settled for panel board nails because they are designed to stay put through vibration. Knowing sound IS vibration of the air, and even normal guitars are subject to massive amounts of vibratory stress (in addition to string tension weights!), I figured nails with a resistance to vibration-related movement were a good choice.



Day Four

Assembly went a lot quicker than I thought.

We oiled the inside surfaces of the sound cavities and drilled the sound holes in the morning. We also drilled tiny holes around the outer surfaces to prevent creakage when we installed the finishing nails. Gluing was a snap.

The whole rest of my day was spent transferring the dragon design to the face... carving it, and *lots* of sanding. Husband took turns with me, and almost three hours later, I deemed it finished. It took another thirty minutes to thoroughly coat all surfaces with

the Tung Oil. We rigged up a hook to hang it from so air could access all sides. I let it dry overnight.

I also solved the tailpiece issue that plagued me: I simply lack the skill to craft my own tailpiece to hold the strings and I do not particularly want a dowel on the bottom to dig into my leg while playing (the commonly accepted playing position is seated, with the base resting on your leg). During our latest Home Depot trip, we came across a set of brass entry cover plates. They are intended to sandwich over an old doorknob hole, but I think them a perfect, comfortable solution for attaching the tail rope. Brass was a known metal at the time of the Anglo Saxons, and the Sutton Hoo lyre was known to have metal



embellishments affixed to it. I plan to engrave more knot work designs on the brass to help them look less modern. We drilled one hole entirely through the *hearpe* base, looped the tail rope around the top plate, and sandwiched them together.

Day Five

I ordered the tuning machines and strings. Nylgut (made by Aquila) is a synthetic substitute for authentic gut strings. They have been engineered to retain the resonance and sound qualities of gut, without the extreme sensitivity to humidity and temperature and without the short life span. Nylgut is also readily available and significantly less expensive. I have used them on my ukuleles and have been very pleased with their performance.

These final materials should arrive within a week.

In the meantime, Husband has helped me by carving the bridge from oak (a bona fide hardwood, I wasn't strong enough to hand carve it on my own). We have also applied the mandatory second coat of Tung Oil finish to the instrument. My

concerns about the carved design standing out have proved to be unfounded: as the oil finish dried, the carved sections turned darker in comparison to the rest of the wood.



While waiting on tuning machines and strings, I began sanding on the 'headstock.' Specs for the tuning machines say it will fit a headstock 11/16ths of an inch thick, so my slightly-less-than an inch thick board must be skinnified. When I finished, I re-applied the Tung Oil coat.

Day Six

The tuners arrived and the headstock promptly needed more sanding (it wasn't thin enough). The good news was, our design allowed enough space on the headstock to put all eight tuning machines, so I will have more options for tuning it instead of just the pentatonic five strings plus octave design I originally planned on.

The strings were, unfortunately, back ordered, but I had a spare set of four uke strings laying around that I tested the design with. Come to find my tail piece design needed more work. It simply was not efficient. I couldn't tie a proper knot on the rope, and consequently, the strings pulled loose as soon as they were put under tension. Back to the drawing board...



Day Seven

We redesigned the tailpiece to use a heavy piece of copper wire, threaded through the entry plate and squared off into a nice flat area for the strings to tie around. It seemed to work well. A ball pin hammer expertly applied gave the brass a nice "distressed," "hand-hammered" look.

The new strings arrived ahead of schedule. I settled on tuning it to an Aeolian (natural minor) mode beginning on a D, given the prevalence of minor keys and harmonies in medieval music, however, it doesn't take much to re-tune the

instrument. The strings are very sensitive to minor shifts in the friction pegs, so re-tuning for the sake of one song or two (so long as it isn't too far off from the original note) will not be difficult. After letting the strings settle overnight, I tuned it again and the sound really opened up. I anticipate after a few days, it will really come into its own.

Now comes the fun part – learning to play!

The Final Product





SUCCESS!

You can view my short video about my *hearpe* on YouTube:

<http://youtube.com/watch?v=VxyFwwIMI4A>

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