

# The Bard

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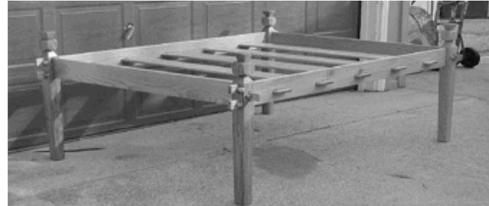
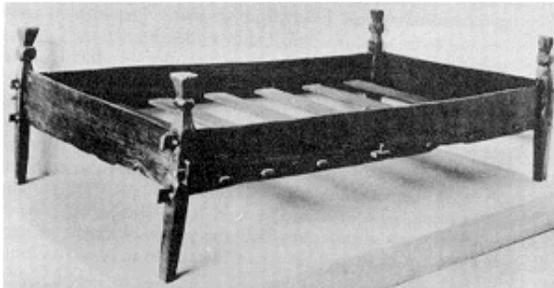
## Estrella has come and gone...

...and with it, we have a fresh slew of experiences, ideas, and plans. To which end, this edition of The Bard will offer some plans of our own—furniture and other things that can make a week-long camping event both more authentic and more enjoyable. As always, I welcome contributions made by the populace, whether they be articles or merely questions.



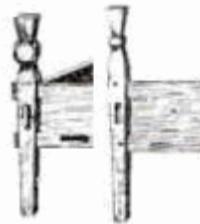
# A few notes on the design and making of a 10th century Viking bed

Lord Rhys, Capten, gen y Arian Lloer, Midrealm



In 1880 Antiquary Nicolay Nicolaysen of Norway began excavation of a Viking burial ship dated at approximately 890 A.D. It was buried approximately 900 A.D. These dates were recently determined by analysis of the annual rings in the oak material [1] Now known as the Gokstad Ship, this ship contained many artifacts including fragments of six oak bed frames all of similar style as this project. Antiquary Nicolaysen was able to fully restore two complete frames from the Gokstad ship. The only differences being size, some drilled holes that we can only speculate the reason for, and two slightly differing decorative cuts on the tops of the legs. The cuts can be seen in the illustration to the left drawn by Nicolaysen [2] All of these beds were of fairly rudimentary workmanship. Of the two fully restored, one was 27 1/2 inches high 42 3/4 inches wide and 89 1/2 inches long. The other was 29 1/2 inches high, 43 1/4 inches wide and 56 1/4 inches long. The endboards ranged from 11 to 11 3/4 inches wide, although the side rails were somewhat narrower than the end rails. The bedposts were about 3 inches square. The beds of this type in these two burials had two distinct leg patterns.

In all of the beds found, the side rails were cut with two tenons that passed completely through mortises in the legs.



These rails were secured with wooden wedges through mortised holes on the outside of the legs. And the end rails had one tenon each that also went through the legs, but between the tenons for the side rails. The end rails were also secured on the outside with wooden wedges. The only decorative details were a tapering of the legs and the above noted cuts on the upper part of the legs. The legs were mortised as mentioned above and had about a 1/4" mortise to allow the rails to set into the legs slightly. The slats also had tenons and passed through mortises on both side rails at regular intervals with only the center slat being wedged to keep the side rails from flexing out when weight is on the bed. The slats would have supported a cloth mattress with straw ticking.

[4]. A skeleton found at the site was over 6 feet tall, very strongly built, way above normal size for the time. The variations in bed size and the extremely large size of the skeleton suggest that beds were made specifically for individuals or at least with their needs in mind, rather than to a standard size.

Professor Gabriel Gustafson excavated a second ship, known now as the Oseberg ship, in 1904. Built approximately 815 – 820 A.D., it was buried in 834 A.D. An Arab, Ibn Fadlan, traveling in Russia during the 9th century happened upon a group of Vikings who were in the process of burying a chieftain in his ship, and made note of his observations.

His surviving journal has allowed us to date the Oseberg ship exactly.

[6]. The Oseberg ship contained the remains of five beds, all made from beech. Four of the beds were the same type of slat beds as those found with

in the Gokstad ship. The fifth bed had carved dragon heads on the bedposts of a completely different type at the head end. However the slats, side rails, and pair of legs at the foot of the bed are of much the same design as the other ten beds found in the Gokstad and Oseberg ships. Antiquary Nicolaisen believed that these beds were most likely reserved for the superior members of the crew<sup>5</sup>. Both of these ships are believed to have been private vessels for rich owners or nobles rather than longships for transportation of warriors<sup>6</sup>. Only the carved 'dragon' bed from the Oseberg ship has been restored from the fragments giving us three complete slat beds. Two from the Gokstad ship and one from the Oseberg ship, as well as fragments of eight partial frames, four from each ship. From these two ships it is apparent that this style of bed frame was used for three-quarters of a century or longer, changing little in style during that time frame. These ships and their contents are available for viewing in Oslo, Norway

### Let's build the bed!

When I went to build a bed for my own use, I came up with a number of requirements. It needed to be portable for transportation and be fairly compact. It needed to be documented, (it's the apprentice thing in me). It needed to offer a place to store items out of sight in my pavilion. After much research, I found a website that offered much of my needs. Master Charles Oakley has a very nice site with the basics for this bed. A great deal of my design is based on his. I then set forth on the research you see above. I made some changes to my basic design, the taper on the legs, the inset for the rails, the different decorative cuts based on my research on the beds I found. The added height was for storage under my bed. If you want a shorter bed, just cut the legs down a bit. This bed is designed to fit a full sized futon mattress, or a full sized air mattress. If you want something a bit larger, or smaller, just adjust the length of all four rails to meet our needs.

### Purchase List

The original beds of this type used Oak or Beech that was available in that part of the world. Unless you live in Norway, availability in your area will vary. I recommend White Oak over Red. Other hardwoods could be substituted. I personally would not recommend pine or other softwoods for this project. But, if you gotta use pine, use 2x4, 2x6 and 2x8 for more strength. The wedges will be cut from the scraps left over as you make the bed. The hardest to find is the posts. In my home area, Menards is one of the big home improvement stores. They sell 4x4 oak post 6 feet long. They are made from glued up boards. These will work just fine. Using a table saw they can be resawn to 3x3. I cut mine a little large and used a planer to fine-tune the cuts. To make this bed, you need to purchase the following standard length boards

1. (2) 4"x4"x6 ft
2. (2) 1"x6"x8 ft
3. (6) 1"x6"x6 ft
4. (1) 1"x8"x6 ft

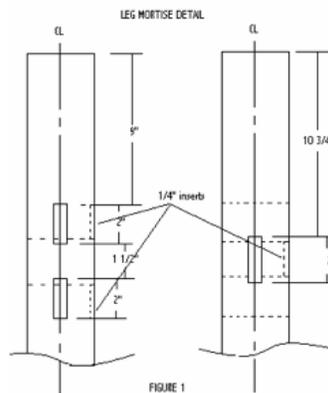
### Cutting List

1. (4) 3"x3"x36" posts.
2. (2) 1"x6"x80" side rails.
3. (2) 1"x6"x61" end rails (or headboard and footboard).
4. (1) 1"x8"x58" the middle slat.
5. (4) 1"x6"x58" remaining slats.
6. Hold on to the scraps, you will use some for wedges.

### Step One:

Let's start with the legs. The legs have 4 separate operations. They are the most difficult part of this project. But, with a little care, I am sure you can do a great job.

1. The square holes (mortises) for the rails (tenons) to slide through.
2. The decorative cuts at the top of the legs.
3. The taper down all 4 sides.
4. Sanding



1. To cut the square holes lay them out according to figure 1. Use a drill press and a 3/4" bit to top out most of the material, then a chisel to make them square. Don't forget to cut the little insert that allows the rails to set slightly into the legs.

This can be done with just a chisel, but do it now, before you taper the legs. One of the first things you are going to notice is that you are going to have three 2" tenons going into a 5 1/2" space. 1"x6" dimensional lumber is actually 3/4"x5 1/2". So in order to use standard lumber, your mortise holes will cross in the center. This actually makes the bed hold together stronger than before, as the rails all tie together. The sides cannot be removed without removing the ends.

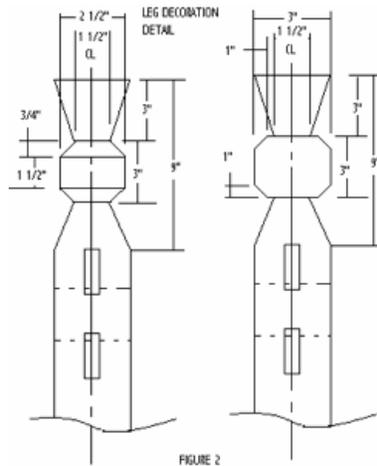


FIGURE 2

2. These cuts are easiest done with a bandsaw. A handsaw will do the job, but it's a pain.

Note: This is a good time to ask your wife if you can buy that bandsaw you wanted. Choose the design you like, figure 2. Both of these designs are period, or you can come up with your own. Draw the design right on the leg and use your saw to cut them out. I found it easiest to cut everything on one side, then turn the leg 90 deg. And draw that side and cut it there.

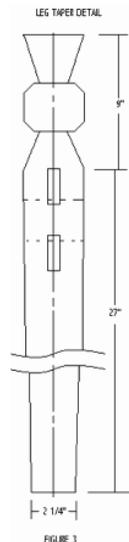


FIGURE 3

3. To cut the taper, no ifs, ands, or butts, you need a tapering jig.

You can make one, or buy one. Woodworking shops should know what you're talking about. Aluminum jigs should cost about \$10. Use the jig to taper the legs from the bottom of the decorative cuts down. See figure 4. Keep in mind; when you make the first cut, you have a straight edge against the rip fence. When you make the second cut, you have a tapered edge against the rip fence. So you must adjust the jig to cut twice as deep to get the same taper. You should remove a taper so that the bottom of the leg is 2 1/4" and the top of the highest mortise is 3". Therefore you have to remove 3/8" on each of the four sides. See figure 3.

4. A palm sander will do a decent job of cleaning up all of your cuts and blade marks. I used 60 grit paper first, then 150 grit, then 220 grit to finish the job. Do not put a finish on anything until all of the pieces are ready. You will need to adjust a little bit first.

**Step Two:**

The second step is to make the two end rails. There are easy 3 operations to make them.

1. The main cuts.
2. Sanding
3. Wedge holes

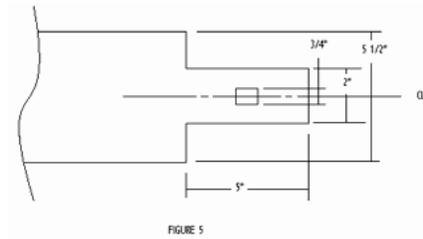


FIGURE 5

1. Take one 1"x6"x61" board and make the cuts in figure 4. This makes a tennon to fit into the single hole side of the legs. Do the same for both ends. The second board is done the same way.

2. Sand everything before cutting the mortise holes for the wedges.

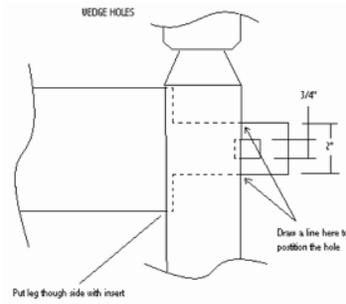


FIGURE 5

3. Put the tennon from the rail through one of the legs, you may need to adjust the hole in the leg with a chisel and/or a rasp so the rail fits easily, but not loosely.

Note: the rails go in through the side with the insert; the wedges will go on the clean side of the legs. With the rail through the leg, draw a line on the outside where the rail meets the leg as in figure 5. Put the same rail tennon through each and every leg.

Then repeat with each rail. This gives you 4 lines on each tennon

that should be very close together if not on top of each other. Your mortise holes need to overlap the innermost line by at least a 1/4 inch, centered on the tennon. Use a 3/4" spade or forstner bit to drill the hole. Then square it up with a chisel. After you cut the wedges, you will be putting an angle on the outside edge of the hole, but it's easier to do that later in step 6.

**Step Three:**

Third is the construction of the side-rails, which take 5 operations to complete.

1. The mortise holes for the slats.
2. The tennons for the legs.
3. Sanding.
4. The mortise holes for the wedges.
5. The notches for the end-rails.

To make the mortise holes for the rails, layout the centerlines for each, then layout the holes as in figure 6. Once your holes are drawn, take the board to your drill press and use that 3/4" bit once again to cut a series of holes to remove most of the material, then square them with a sharp chisel. Remember, the center rail is larger and the hole is 4 1/2" long while the others are only 4" long.

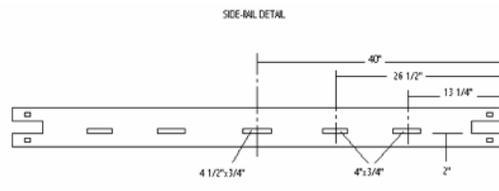


FIGURE 6

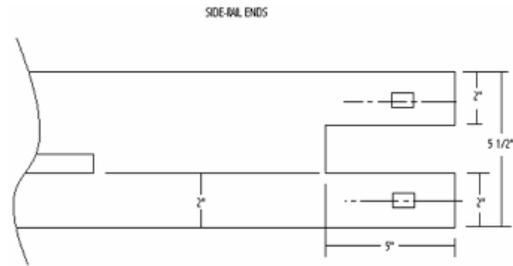


FIGURE 7

2. Take one of the two 1"x6"x80" boards and lay it out according to figure 7. Be sure to layout the 2" tennons from each side rather than measuring from one side. The 2" is more important than the center in this case. Like the rails in step two, the ends have tennons, only two at each end this time. Repeat for all four ends on the two boards.

3. Put the tennons from the rail through one of the legs, you may need to adjust the hole in the leg with a chisel and/or a rasp so the rail fits in easily, but not loosely. Note: the rails go in through the side with the insert; the wedges will go on the clean side of the legs. With the rail through the leg, draw a line on the outside where the rail meets the leg as in figure 5 on the end rails. Put the same rail tennon through each and every leg. Then repeat with each rail. This gives you 4 lines on each tennon that should be very close together if not on top of each other. Your mortise holes need to overlap the innermost line by at least a 1/4 inch, centered on the tennon. Use a 3/4" spade or forstner bit to drill the hole, then square it up with a chisel. After you cut the wedges, you will be putting an angle on the outside edge, but it's easier to do that later.

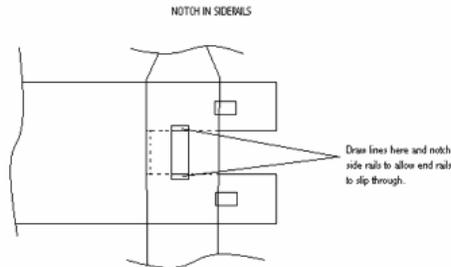


FIGURE 8

4. Put the tennons from the rail through the legs again. This time you need to use your pencil to mark where the head and foot boards go through the legs, Figure 8. A small amount of material has to be removed. Once again, use each of the rails in all four legs. Use a jig saw to remove the two notches on each end.

**Step Four:**

Okay, you have done all of the hard work. Lets make some slats.

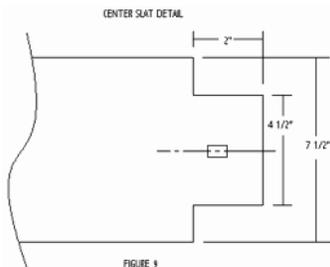
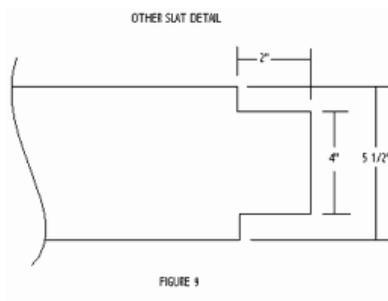
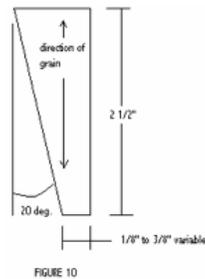


FIGURE 9

1. The center slat first because it's different from the rest. Take your 1"x8"x58" board and lay it out as in figure 8. Cut the shoulder with a jigsaw or a bandsaw.
2. Sand everything before cutting the mortise holes
3. Put the slat through the center tennon in each side rail and draw your line. You might need to adjust the mortise on the side-rail to fit. Use a 3/4" bit to cut your hole and square it up with a sharp chisel. Again, the angle on the wedge hole will be done later.



4. Cut the remaining four slats from the 1"x6"x58" boards, figure 9.
5. Sand everything.
6. There are no holes to cut for wedges on these boards, however, you still want to make sure the end of each slat fits easily into each of the eight mortise holes on the side-rails. Some adjustments to the side-rails with a rasp and chisel are inevitable.

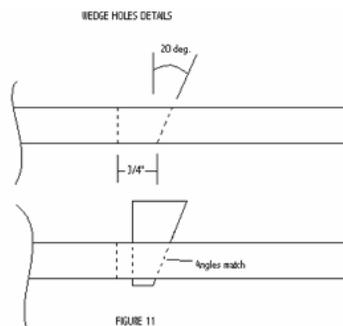


**Step Five:**

Okay, time to make some wedges. This is easy, but you have to remember a couple of things. First of all, wood is not a stable material. It warps, it swells, it shrinks, it bends. Also, your mortise holes are not going to be exactly the same everywhere. Therefore, you need a number of wedges, some thicker, some thinner so that on any given day you can find a wedge to fit any given mortise. So make more wedges than you need. Fourteen are needed to put the bed together, so you should have a minimum of 20-30 assorted wedges. They are not big, and a small bag will hold them all. I recommend a small wood or rawhide mallet to help with assembling and disassembling the bed. Keep one in the wedge bag. Here is a quick and easy way to make wedges. Take some of your scrap wood from cutting the boards to length and cut 2 1/2" strips out of it. Make sure the grain runs the short way across the 2 1/2" so it goes the correct direction on your wedges, figure 10. Using a table saw, set your miter gauge to about 20 degrees and cut a wedge so that the small tip of the wedge is anywhere from 1/8" to 3/8" thick.

Reset the miter to 0 degrees and make another wedge, the angle is already there from the last cut. Turn back to 20 degrees and repeat. Make a bunch of wedges, some thicker, some thinner. You can't really make too many. You might even need a couple really thick ones. It depends on your individual bed and how accurate your cuts were earlier.

**Step Six:**



Fear not, the end is in sight. Remember all those holes for the wedges? Well the outside edge needs to have a taper to match the wedge. The easiest way I have found to make the taper is with a nice sharp chisel and a wedge. Take the chisel and start removing material from the side of the wedge hole closest to the end of the board. On the center slat you want the taper on the same side of the board so both wedges go in from the top. On the others it doesn't matter. Keep your chisel at an angle. You are going to need to remove about 1/8" from the top of the mortise hole down to 0" at the bottom, figure 11.

Use the little wedge occasionally to check the angle. It should be straight in the hole when the two angles are against each other. The holes through the legs do not get a taper.

**Step Seven:**

Okay, let's see if we can't wrap this up. The bed should all go together. If something is too tight, adjust with a rasp and/or chisel. Make sure that each board will fit in each spot. Trust me, it is easier to spend the time now making them interchangeable than it is to try and find the right board for the right hole after setting up your pavilion in the rain, after dark....

Once you are happy with the fit, check your sanding. It is time to touch it up. You can sand, scrape, or whatever you want for a finish. I sand mine. Why? Because; my Lady doesn't want a splinter at 2 a.m. on the way to the privy. Sure sanding is not period. But, practical counts too, especially in something that is going to be used a lot.

There are a lot of ways to put a finish on the bed and you can decide what you wish to use. I used 2 coats of tung oil and 2 coats of beeswax on the beds I have made. Although, beeswax can make the boards extremely slippery and you should not lean them on end against the wall. Or they will crash to the floor. Other methods you might use are boiled linseed oil, shellac, stain, polyurethane, and wax. I recommend something to seal the wood and make it last.

**Step Eight:**

Wait a minute; there is no step eight. You're done! Clean up the shop. Toss a futon on your new bed and try it out. Enjoy the bed and feel free to look me up at Pennsic. I can usually be found around the Barony of Andelcrag area N-07

**Notes from a few years down the road:**

Well, here it is three or four years later. The bed has seen a lot of use, some local events, three Pennsics. One main comment, for a weekend event, it's fine, no problem, but after a week at Pennsic, the slats begin to hurt. To fix the issue I added a ledge under the slats on the side rails, and cut more slats to fill in the holes. To preserve the look, these fill ins go from side to side between the regular slats, so they are a little shorter. With a futon on it, you can't tell the difference. The other choice, was to put a piece of hardboard or plywood over the slats, but then you have to transport the larger piece of plywood. Individual slats are easier to transport.



I hope you enjoy making this as much as I did.

[1] Christensen, Arne Emil Professor. The Vikings. Ministry of Foreign Affairs, Norway. 1996. Pg. 4

[2] Nicolaysen, Nicolay. Langskibet Fra Gokstad Ved Sandefjord. The Viking-Ship Discovered at Gokstad in Norway. 1882. Reprint by Books on Demand. 2001. Pg. 42.

[3] Nicolaysen, Nicolay. Langskibet Fra Gokstad Ved Sandefjord. The Viking-Ship Discovered at Gokstad in Norway. 1882. Reprint by Books on Demand. 2001. Pg. 75.

[4] Christensen, Arne Emil, Professor. The Vikings. Ministry of Foreign Affairs, Norway. 1996. Pg. 5.

[5] Nicolaysen, Nicolay. Langskibet Fra Gokstad Ved Sandefjord. The Viking-Ship Discovered at Gokstad in Norway. 1882. Reprint by Books on Demand. 2001. Pg. 42.

[6] Christensen, Arne Emil, Professor. The Vikings. Ministry of Foreign Affairs, Norway. 1996. Pg. 5 & 6.

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# The Medieval Chest 800-1600

by Master Dafydd ap Gwystl

The chest is the most common and fundamental item of medieval furniture. Wealthy nobles would own hundreds upon hundreds of chests, as shown by wills and death-rolls.[1] Chests in the Middle Ages served simultaneously as both furniture and luggage. They were the most important furniture of the medieval noble household.

Chests are also the most useful items of medieval furniture we can make for use in the SCA. As the great nobles in the Middle Ages travelled from manor to manor, we travel from event to event and must store our SCA goods in the meantime. This article is a survey of chest construction and decoration techniques in the hope of inspiring woodworkers to build more medieval chests. It is a condensation of the class I taught at the University of Atlantia in Spring 1995.

## Types of Medieval Chests

This article examines the six general styles or classes of medieval chest: box, standard, Viking chest, six-board chest, hutch, and panel chest. The first two classes (box and standard) are legless designs; the other four (Viking, six-board, hutch, and panel chest) are designs with legs.

The designs of chests were heavily influenced by their intended use. Designs without feet or legs were easier for travelling, especially by cart or wagon. Designs with legs kept their contents much cleaner and were less subject to the filth and vermin of medieval floors. Extensive decoration is rare on chests designed for travelling, as it would easily become damaged and marred. Travelling chests often had hipped or curved lids to shed water. Chests intended for static storage purposes usually had flat lids, which would make them more useful as furniture for seating or other purposes. Travelling chests were often covered in waxed leather to improve their weather resistance.

As with many medieval artifacts, chests were often extensively decorated. The decoration of a chest might be a simple and standardized design, mass-produced by a single workshop. A chest dated to c. 1300 in the Victoria and Albert Museum is one of a closely related family of chests found largely in Sussex and Surrey, probably all created by the same guild or workshop, all decorated nearly identically.[4]

On the other hand, decoration unique to a particular chest also appears in surviving examples. The 'Fares' chest (in the Victoria and Albert Museum) shows a number of unique features. The back of the chest (where the hinges attach) is much more heavily decorated than the front (where the lock-plate was). One end of the chest is heavily carved, the other end is left rough. This chest was clearly designed for use in a specific place, probably a workshop or guildhall where it would be facing the customers, one end flush against a wall.[5]

Oak was the favorite material for medieval chests, as for most other medieval furniture. Walnut was another common wood for chests in France, but not in England.[6] Chests were sometimes made of poplar or pine, and several softwood chests survive from what is now Germany.

The changes in the types of chests used seems to have been driven by two major forces: improvements in joinery, and changes in society. Improvements in joinery led the simple six-board and Viking chest to be replaced by the hutch, and the hutch to be replaced by the panel chest. Changes in society led to a change in focus from the mobile, furniture-poor society of the early Middle Ages, to the more settled society of the Renaissance. This changed the focus of the chest from primarily a travelling container to primarily a storage container with a secondary display function. In keeping with this new role chests became heavily decorated with intricate carving, and most lids became flat instead of curved.

In addition to the six main designs this article will briefly touch on four less common forms: dugout chests, arks, dovetail-joint chests, and cassoni.

## Box

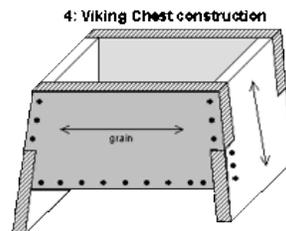
Boxes are simple flat-lidded travelling chests. The construction is very simple, with a single board for each side, bottom, and the lid (six boards total). The boards are simply butted against each other and nailed together. Since this is a very weak joint boxes often used simple iron straps as reinforcements. Because they are intended as travelling chests, boxes have no legs and are usually undecorated.

## Standard

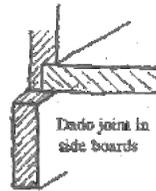
This is perhaps the most common, and universal, design of chest, and the best overall travelling chest. Like the box, the bottom of a standard is simple and legless. The top is smoothly curved, often overlapping the sides, front, and back. This curved overlapping top allows the standard to shed rain during travel. Like the box, the standard just has butted and nailed boards, and therefore it, too, almost always shows heavy use of metal strapping and reinforcements. As a travelling chest, it is usually undecorated. Standards were sometimes covered in leather for weatherproofing.

## Viking Chest

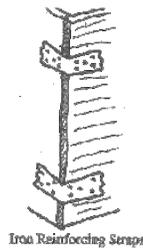
The Viking chest is very similar to the six-board chest. The two end pieces are extended down to form slab legs, raising the chest off the floor (or ship deck). Instead of the simple overlap design used in the six-board chest, where the front is nailed to the end-piece, Viking chests have both the front and end-piece overlapping each other, so nails reinforced the joint in both directions. Although this is a better joint than the simple lap of the six-board chest, the resulting joint is still not very durable, and Viking chests often show the use of metal reinforcing straps. The floor of the chest is seated in a dado joint cut in the end boards, as shown in Figure 5.



Viking chests are usually made to be a good height for seating, and may have been used as rowing benches in Viking warships.[8] Many Viking chests were travelling chests, and usually have lids that are hollowed out of thicker planks so they are curved to shed rain and weather.



The few surviving Viking chests I have found are undecorated, although sometimes the iron strapwork is decorated with tinned nails or incised designs. The Vikings carved many items of wood (ships, churches, sleds, beds, chairs), so it is reasonable that chests were also decorated with carving, but I have no evidence at this time. Without evidence to the contrary, low relief or incised carving seem likely to be appropriate decoration for a Viking chest.



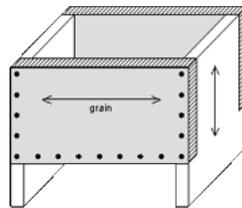
### Six-board Chest

This is perhaps the most common household chest design throughout the period examined. The construction is extremely simple: five flat boards make up the bottom, sides, and ends, and another flat board forms the lid. The two end boards are extended to raise the chest off the ground on a pair of slab legs. Six-board chests might be undecorated, or highly decorated with painting or carving. Some of them are extensively covered with metal strapping to reinforce their fairly simple and weak joinery, but others show little or no metalwork.

Six-board chests involved nailing the sides to the end pieces in a simple lap joint. The chest floor is attached to the end pieces with a dado joint, exactly as shown for the Viking chest in Figure 5. As with the Viking chest (and perhaps even more so), the corner joints are quite weak. Because of the weakness of the joinery six-board chests were often braced with metal straps at the corners, as illustrated in Figure 6.

Six-board chests are common from the 9th through the sixteenth centuries and later. The longevity of the design is probably related to its simplicity. More complex and durable joinery existed from the end of the Viking period, but these chests would have been much simpler to make, and therefore cheaper, which explains their survival throughout the period examined and into the seventeenth century.

7: Six-board chest construction



This most common and long-lasting chest design shows a number of decorative techniques. Few early chests survive, so decoration techniques before 1200 are merely supposition, but designs like those discussed above for Viking chests would probably be appropriate. For later chests, whatever decoration technique was most common in a given period was likely to be used upon six-board chests of that period. This was true even when the decoration technique was inappropriate for the medium; the front of one surviving six-board chest is wholly covered in low-relief carving typical of the fourteenth century.[9] Undecorated six-board chests seem to be rare, and limited to early period, but this could be because surviving chests are much more likely to be those that were richly decorated and carefully treasured through the ages, rather than utilitarian articles that were used until broken, then discarded.

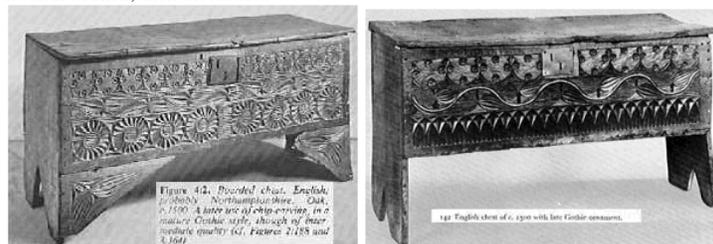
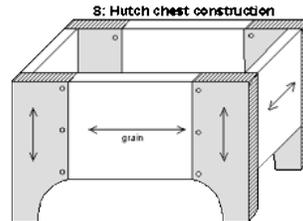


Figure 44. Rooded chest, English, probably Northamptonshire, Oak, c. 1500. A later use of chip-carving, in a manner Gothic style, though of later workmanship than the 14th-century work.

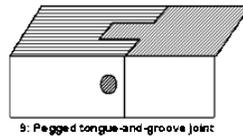
190 English chest of c. 1500 with late Gothic ornament.

### Hutch

The hutch was the first great advance of joinery from the simple nailed six-board and Viking chests. Instead of the slab legs of the six-board chest, made by extending the end pieces down to the floor, the hutch added extensions (*stiles*) to lengthen the front and back pieces, and extended the stiles down to the ground to make four legs. The end-pieces and front pieces are joined to the stiles with a pegged tongue-and-groove joint. Sometimes braces are used in the end pieces for additional strength. The lids are usually flat, but may be slightly angled. The hutch design of pegged tongue-and-groove joinery is far more durable than the nailed or pegged lap joints of the six-board chest. Although decorative strapping continues to appear on hutches, it is less prevalent and appears to take the form of a couple of long straps, fewer and more decorative than on six-board chests.



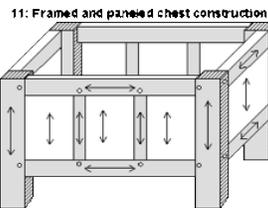
Hutches first appeared in the thirteenth century. They became the dominant form (at least for expensive, fashionable chests) in the fourteenth and fifteenth centuries. By the sixteenth century the panel chest, a design that is lighter than the hutch but just as durable, took over and replaced the hutch, which quickly disappeared.



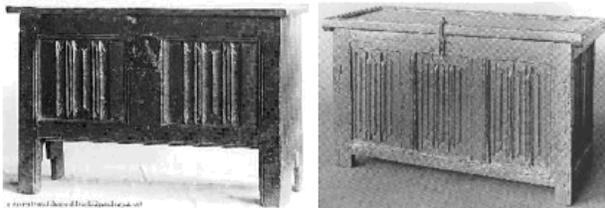
Because of the sturdiness of the hutch design little or no additional reinforcement is necessary, leaving the whole of the face available for decoration. Many surviving examples of the hutch are extensively carved. The feet of the chest are also common subjects for relief carving (arcading) or cutaway designs. The face of the hutch is commonly covered with carving appropriate to the period: chip-carved roundels in the thirteenth century, the relief-carved scenes of the fourteenth and fifteenth centuries, or the elaborate tracery of the late fifteenth century.

### Panel Chest

The panel chest is a sixteenth century evolution from the hutch. Instead of the hutch design where the sides and ends are constructed of single boards attached to stiles by pegged tongue-and-groove joints, the panel chest uses pegged tongue-and-groove to create a hollow grooved frame that holds a thinner, lighter panel. The stiles often evolve to be corner posts. Panel chests have flat lids. The panels are usually extensively carved, often with linenfold carving. Panel chests quickly become the dominant form in the sixteenth century, although (like the hutch) they fail to eliminate the much cheaper and simpler six-board chests.

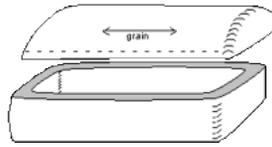


Decoration of panel chests is usually focused upon the panels themselves, with the frame undecorated or merely engraved with linear forms. The elaborate tracery of the later fifteenth century and the linenfold techniques of the early sixteenth both show up on panel chests.



### Dugout

Dugout chests may be the oldest design of all. No joinery is required--you just cut a log in two lengthwise, then hollow out both halves to make a chest. Chests constructed in this way are very heavy, and take a long time to make. Even so, a few surviving examples show that chests were still being made this way in the early Middle Ages and possibly even into the seventeenth century.[11]



12: Dugout Chest construction

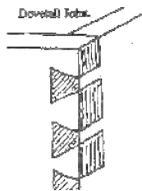
Very few examples of this type of chest survive, making it hard to generalize about their decoration (or lack thereof). Their heavy, legless design seems unsuitable for carving or other decoration, but this is mere supposition. Iron straps appear in both the surviving examples shown in Chinnery.[12]

### Ark

The ark is a variation of the hutch style of chest. Although few surviving examples survive, they seem to appear fairly early (in the thirteenth century). Unlike any other type of chest described here, the ark was constructed with riven (split) oak, rather than sawn boards. The design seems to have changed very little in the hundreds of years it was used (up until the seventeenth century). Arks were constructed with pegged tenons in through-mortises. Arks always show an angled lid with raised flanges at the ends, and extended stile legs similar to those of hutches. Arks seem to have been usually undecorated.[13] The ark design is quite sturdy, with its pegged tenons and riven planks. No metal strap reinforcements are necessary, and none of the surviving arks show any sign of metalwork. Figure 2. illustrates an ark style chest.

### Dovetail Chest

Dovetail joinery first appears in the fifteenth century as an alternative method of attaching the ends of a chest to the sides. Numerous examples exist, but this was not as common a technique as the hutch. Dovetail chests cannot use the extended-stile design of the hutch, and so dovetail chests never have legs. Probably because of its difficulty (and therefore cost), Dovetail joinery never became the dominant construction technique, and when the panel chest began appearing in the sixteenth century dovetail-joined chests largely disappear.



The dovetail-joined chests of the fifteenth century were very well suited to complex tracery carving over the whole face. Hutches also sometimes exhibit extraordinary carving, but the differing grain direction at the stiles complicates such carving. Many of the finest examples of fifteenth century carving are on dovetail-joined chests.

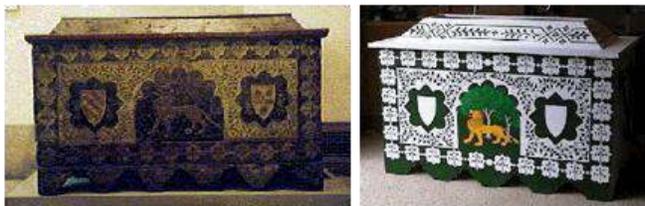
### Cassoni

Cassoni are painted Italian marriage caskets. They were beautifully painted over the whole surface, often very large, and had an architectural motif. Considering their size and extensive decoration cassoni were clearly not constructed for travel. Numerous examples exist from the fourteenth and fifteenth centuries.

The durability of the joinery in cassoni was much less important than in other types of chests because they were intended to be stationary furniture with the main purpose of ostentatious display. Cassoni were covered with glued-down leather or cloth, primed with several layers of gesso, and painted over their whole surface. This makes it very hard to determine the joinery underlying the paint on surviving examples.



Cassoni in the fourteenth and fifteenth centuries were wholly painted in great detail and subtlety, similar in style and content to frescoes. In the sixteenth century other decoration techniques replaced painting. Some of these techniques were metal embossed sheeting as illustrated in Figure [15], parquetry and inlay, and fantastic architectural motifs.



## **Timeline: Chests and Decoration by Century**

### **Pre 1200**

The six-board and Viking chests dominate. Carving is probably incised low-relief with the addition of paint, as shown in Figure 1, and may be infrequent. Reinforcing ironwork is common and often decorative.

### **Thirteenth Century**

Hutches appear and become ubiquitous. Decorative ironwork and reinforcing straps are relatively common, as illustrated in Figure 3. Carving techniques used are simple arcading and chip carving. Painting is fairly common, sometimes on chip-carved chests, sometimes heraldic designs and miniatures.

### **Fourteenth Century**

Hutches begin to have complex carved scenes on them, replacing the chip-carved roundels common in the thirteenth century. Reinforcing straps begin to disappear on chests and decorative ironwork is uncommon.

### **Fifteenth Century**

Hutches with relief-carved scenes reach their height (as shown in Figure 10), but they begin to see competition from complex ornamental tracery and dovetailed boxes (see Figure 14). Only travelling and utility chests seem to be without carved ornamentation. Decorative ironwork is rare. This period is the height of the chest-carver's art, with fantastic decorative ornamentation, whether gothic tracery or relief-carved scenes from famous stories from literature or religion.

### **Sixteenth Century**

Panel chests dominate; various carving techniques are used to decorate the panels. Linenfold panels and other relatively simple methods quickly replace the complex tracery of the fifteenth century.

### **Notes**

- 1: Eames, Penelope, *Furniture in England, France and the Netherlands from the Twelfth to the Fifteenth Century*, (London: Furniture History Society, 1977), page 109.
- 2: Viking Chest. Reproduction constructed by the author appropriate for the ninth or tenth century. Photograph 1995 by the author.
- 3: Ark. Sixteenth century reproduction. Bayleaf Hall, Weald and Downland Open Air Museum, Sussex. Photograph 1995 by the author.
- 4: Tracy, Charles, *English Medieval Furniture and Woodwork*, (London: Victoria and Albert Museum), pages 172 to 174. Chinnery, figure 4:1, and Mercer, figure 27, also show the chest currently in the Victoria and Albert Museum.
- 5: Tracy, page 178.
- 6: Eames, page 135.
- 7: Hutch. Tower of London. Reproduction of a hutch in the Musee des Arts Decoratifs, c. 1200-50. Photograph 1995 by the author.
- 8: *The Viking*, (New York: Crescent Books, 1975), page 186.
- 9: Mercer, Eric, *Furniture 700-1700*, (Des Moines and New York: Meredith Press, 1969), figure 91.
- 10: Relief-carved Chest Panel. Elm, c. 1400, in the London Museum. A scene from Chaucer, the Pardoner's Tale. Photograph 1995 by the author.
- 11: Chinnery, Victor, *Oak Furniture*, (Woodbridge, Suffolk: Antique Collectors' Club, 1979), pages 69-71, mentions and illustrates both chests, and discusses the later chest at length.
- 12: Chinnery, figures 2:35, 2:36, 2:35, and 2:37.
- 13: Chinnery, pp356-358; figures 3:359, 3:360. Another example is shown in Tracey, page 176. A 16th century example decorated with simple incised lines is shown in Wolsey, S. W., and Luff, R. W. P., *Furniture in England: The Age of the Joiner*, (New York and Washington: Frederick A. Praeger, 1968), figure 2.
- 14: Small Dovetail-joined Chest. French, c. 1500, Philadelphia Museum of Art. Photograph 1995 by the author.
- 15: Cassone. Italian, Sixteenth Century, Victoria and Albert Museum. Photograph 1991 by Peter Adams and Kitten Reames.

Note: Some figures referenced in this paper were missing from the copy that I recieved.

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# DIY Medieval-Looking Solar Lanterns

by HL Eulalia de Ravenfeld

I'm going to start this post off by saying that I am just *stupidly* proud of this project.

I need more light in my encampment, and while I don't want to sit around in the dark, I also have objections to a lot of my available options. My criteria for lighting are: historical (in appearance if not function), easy to transport (no heavy and breakable ceramic oil lamps), inexpensive, and moderately safe. That last one gets really tricky, and basically totally eliminates a lot of my more historical choices.

As I've been researching lighting options, I've pinned a lot of what I've found to my SCA encampment board on Pinterest (<http://www.pinterest.com/factorial/sca-encampment-inspiration/>) which I'd encourage you to take a look at.

A while ago I saw directions on Facebook for "lantern hack" where someone made a historical-looking housing based on the Mary Rose lamps for a modern LED light. I thought that was really clever, and decided to see if I could do one better by doing the same thing but making my lamp solar charged. With some inexpensive supplies from the craft store, a simple garden stake solar light, basic tools, and my functionally non-existent knowledge of woodworking, I was able to produce this:

## DIY medieval solar lantern



I promise you that if I can make this, you can make this. Here's how.

First, supplies: you'll need two wooden discs, a thin dowel, and a piece of translucent paper (aka vellum), the latter of which can be found in the scrapbooking section. If you can find a yellowish tinged piece of vellum, it will work better. In the photo below, my sheet of vellum has already been cut; for this project I simply cut it in half lengthwise (I actually got enough stuff to make two lanterns). You also need a lamp to work with. I got this one, which is a solar "pathway light," from Target for one whole dollar. You actually only need the very top portion that has the actual workings of the lamp and is easily removed from the rest of it.

Supplies. Note my super clean work station. Someday I'll be like a real blogger and take awesome tutorial photos, too!



Next, mark out where you want to drill holes for the dowels on each of your discs. I made a 90° angle in the center of one and marked out from that to get four close-enough-to-equally-spaced spots, then measured in from the edge a centimeter (um, sometimes I forget myself and go into science nerd mode). Using a drill bit that matches the diameter of your dowel (mine was 3/16"), drill your holes. Use the drilled disc as a template to mark where you want to drill on the second disc, then drill it.



One disc drilled, the other marked.

Next cut your dowel into segments for the side pieces. I made my segments 5" long arbitrarily, it just seemed like a good height for the lantern. But if I had made them 4" instead I think I could have gotten all my segments for two lanterns out of a single dowel, so that's something to think about. You need four segments per lamp. To section small dowels like this, I put the dowel on my cutting mat, rest a knife (sharp side down!) on top of the dowel at the place I want to cut it, and just roll the dowel until the knife makes it all the way through.



Now it looks like this one is longer than 5 inches. That's possible. I'm sloppy.

At this point I decided I wanted a more natural look to the vellum so I decided to do a wash of paint over it to stain it. I used acrylic paint in yellow and brown (there is dried on red on my lid-as-palette in the picture, ignore that) and deliberately tried to get it streaky as the original idea was to make it look sort of like horn. I also realized partway through this that making the vellum have a yellow tint would counteract the blueish cast of the LED (because <http://www.ontariosciencecentre.ca/ScienceNow/Games/MixingColours/>">science), so even if I can't make my lantern have the nice yellow-orange cast of natural flame I can at least make it less glaringly, weirdly modern.



Painting in progress

The next step is tricky if you don't have the right tools. I didn't have the right tools but I made it work. You have to cut a hole in one of the discs (henceforth the top disc) that's big enough for the actual solar part of the light to be exposed. If you have an actual woodworking set up you'll be able to do this no problem. Me? I drilled a hole in the center of the disc, took my coping saw blade out, threaded the disc onto the blade, put the blade back in the saw, and then, somehow, against all odds, managed to saw out a hole. Not a nice hole, but a hole.



I did clean this up a bit with a pocket knife and some sand paper

Next you'll glue the lamp part to this disc. I just used wood glue because I already had it out, but I don't trust that this will actually hold the plastic lamp in place over the long term so I'll look in my various weird craft supply assortment for an alternative. I'm sure there are many wonderful options.



See the pencil circle? That's how big the lamp is. You need to make the hole smaller than that so you have space to glue.

At this point you ought to let the glue dry according to its instructions. After that it's time to put the whole thing together. The dowel segments go in the pre-drilled holes of both discs.



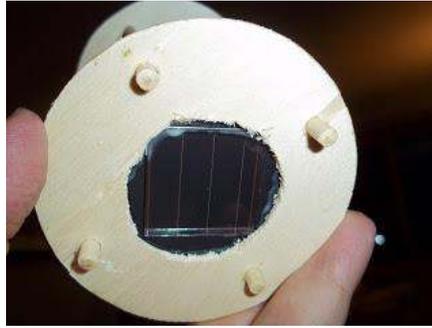
Then you glue the vellum, which should also be dry, to the dowels. I used a nice paper glue that I'm fond of, since I didn't really need this to hold in any sort of structural way. To start the gluing, I put a thin coat of glue around one of the dowels, gently folded the end of the paper around that and clipped it in place. I put a line of glue on each dowel, brought the vellum around, trimmed it to fit, and glued the end under my original fold (this was kind of tricky with the lamp part).



The lamp is upside down because I didn't wait for the glue to dry before starting this step.



Here's a shot of the solar part for good measure.



And here's another picture of the finished lamp:



I'm going to probably add something to the top to use to hang this, although I haven't decided what yet, and I'm also looking at making a slightly larger version. I'm also giving some thought to trying waxed linen instead of fake parchment on the larger lamp, but that's contingent on the weight of my linen and my ability to wax it to something approximating translucent.

By the way, the total materials cost for this project was under \$2 -- the light was the most expensive part, and it was cheap.

I'd love to see these all over at events -- the style (wood with parchment) is perfectly historical across a wide range of times and places, so this is a great compromise between a truly authentic lantern and an undisguised modern light. If you make a lamp like this, and I think you should, please tell me about it.

Happy reenacting!

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## Three Month Kingdom Event Calendar

- March 11-12, Crown Tournament
- March 25, Newcomers Collegium
- March 31-April 2, Siege of the City
- April 1, Carnival of Venice
- April 8, Kingdom A&S Collegium
- April 15, Blackwater Keep Collegium and Defender
- April 22, Sworded Affair
- April 29, Aarquelle Newcomers
- April 29, Albuquerque Renaissance Faire Demo
- April 30, MayDay
- May 6, Coronation
- May 26-29, Condottieri

## Regular Shire Meetings

- Archery on Saturday, 11 am behind Rio Grande Preparatory Institute (formerly San Andres High School) in Mesilla
- Fighter practice every Saturday at 2:00 pm, NMSU Intramural Field
- Light fighter practice every Saturday at 1:00 pm, Corbett Center at NMSU
- Combined practice every Tuesday at 6:30 pm, Corbett Center at NMSU
- Weekly armor workshop every Friday at 6:00 pm at Lord Patrick's shop
- A & S every Thursday 6:30-9 pm
- Populace meeting is held the first Thursday of the month, during A & S at 7:30 pm

## Officers

- Seneschal: Lord Tachibana Hideaki
- Chatelaine: Lord Gormr Ragnvaldsson
- Exchequer: Lord Eadric du Charbonnet
- Knight Marshal: Lady Gianina the Wanderer
- Archery Marshal: Lord Bryce MacManus
- Rapier Marshal: Lord Cathal Oken
- Siege Marshal: Lord Sigfrid von Bremen
- Arts & Sciences: Lady Iðunn Hallsdottir
- Herald: Lörinc Ötög
- Chronicler: Lady Caitilin inghean ui Thaidhg
- Webminister: Lord Warenus de Fulmere

## Cover Art

This month's cover art is Siege of Antioch, 1490. Source: Adam Bishop. 'photographic reproduction of an original two-dimensional work of art'. Public domain. See: <http://en.wikipedia.org/wiki/File:SiegeofAntioch.jpeg>. All woodcut clipart comes from [Medieval Woodcuts Clipart Collection](#).

## Chronicler Office

**All submissions welcome and considered!**

Deadline submissions for The Bard will be the fourth Tuesday of every month. All ideas, pages, pictures, artwork, articles for The Bard are welcomed and encouraged. Deliver in person, Facebook, mobile, email, or snail mail. Email preferred. Please include your name and/or title if you wish either to be known. Submissions can be sent to: [chronicler@sca-lascruces.org](mailto:chronicler@sca-lascruces.org)

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