On making a Coffer's ChairSpiffing up your Campsite...

On the making of a
Coffer Chair
(Or.. More stuff to make your Pennsic load way too heavy...)
By
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What could be really cooler than your own period director's chair. Now there are some "spiffier" chairs around and some that are easier to make, but for just basic comfort and relative simplicity and the fact that the chair is period (within the context of the 10-foot-pole-rule anyway), I think that this is a design that is both relatively simple to make and spiffy at the same time.

THE PROJECT: The next few pages will be given over to a discussion and plan for the making of what was called a "Coffer's chair".

THE PARTS:

You will need to get one 2" x 10" board 2 feet long and four 2" x 12" boards 4 feet long to make your chair. I have made chairs from fir and from pine. I have had my best luck with fir... the quality of the pine I've been getting lateley has been questionable. In period, they would have been made from oak or walnut or some other native hardwood.

You will also need:

4 pieces of 2" x 12" pine 4 feet long
1 piece of 3/4" plywood (approx 2' x 3')
1 yard of upholstery fabric (HEAVY FABRIC); or
the equivalent amount of heavy leather &
upholstery tacks (lots of them)
upholsterer's foam
staples
2 bolts (1/4 by 3.5) w/washers and nylon insert lock nuts
carpenter's glue
stain and finish of your choice

TOOLS REQUIRED:

If you are really serious about making the chair in a period fashion, all you will need to make the chair is a mallet, a set of chisels, the appropriate saws, a rasp or file, a tack hammer and a drill .... I, on the other hand, included the following:

Router (with 3/4" straight sided bit and a ½" rounding over bit)
Bandsaw
Scroll saw
Stapler
Pipe Clamps
Drill Press w/mortising attachment
Rubber mallet

THE CONSTRUCTION:
Legs: The chair is basically composed of four legs... all of which can be cut from a single leg pattern. Each leg can be cut from one of the 3' pieces of 2 x 12. Below is a scale drawing of the leg pattern I use. Note: the only difference between the back two legs and the front two legs is the additional 4 inches at the top of the back legs. This extra height is for the back support.... other than that, all the legs are made identically
. (Cut 4 legs)

Construction tip:
Before beginning this project, transfer the leg pattern in Figure 1 to a heavy mat board or cardboard material and scaling it to the actual size you want to use to make your chair. This way all you have to do is trace the pattern out 4 times AND you will be sure that the mortises will all be placed in exactly the same place. Use a compass to lay out the center circle on the leg. The place where the needle goes will mark the exact center of the circle. This is important later.

Use the router with the 3/4" straight sided bit to remove ½ the width of the thickness of the board that lies within the circle area of the leg. (See Figure 1A). The material should be removed from the same side of each leg.

Lay out and cut the mortises where the small squares are shown on each leg. The mortises are 1" square and 3/4" to 1" deep. Figure 1 shows mortise locations. Drill a hole 1/4" in diameter in the exact center of the circle on each leg. Place the legs so that the routed faces are against each other and insert the 1/4" bolt with a washer on each side and secure with a nylon insert lock nut. DO NOT OVER TIGHTEN. The legs should be able to move with some resistance but should not be rigidly tight.

Rungs: In addition, from the larger pieces of scrap left over, cut the chair rungs... there will be six of these. As the actual width of 2" dimensional lumber is 1½ inches, I made my rungs 1½" x 1½". Each rung should be 24 inches in length. (Cut 6 rungs) At the end of each rung, cut a shouldered tenon. If you are using 1" mortises, your shoulders will be 1/4" on a side and the tenon will be 1" square by 3/4" deep (or the depth of your mortise)... See Figure 2.

Note: as mortise and tenon cutting is a learned art and the ability to cut accurately matching mortise and tenon joints is only learned by making numberable sloppy joints, I have generally found that it helps to cut your tenons a bit over sized at first and then trim them with a chisel to fit their respective mortises. This is more time consuming but makes a tighter fit and a better looking project.

THE CONSTRUCTION:
After all of the routing, mortising and tenoning is done, take some time to sand

all the pieces and smooth the edges where necessary. Don’t sand the tenons on the rungs!!! It is easier to take care of this process before all the pieces have been assembled rather than after.

To begin the construction, lay the back legs on the floor with the mortise holes facing up. Begin by fitting the tenons of the rungs into the mortises... DO NOT GLUE UP ANYTHING YET!!! The fit should be snug and should require a tap or two from a rubber mallet to set the rung. If the rung is too loose, you should consider cutting a new rung. If the rung is too tight, use a rasp or chisel to remove just enough excess material so that the mortise and tenon joint is snug. Repeat this process until all of the rungs have been set into the back legs. Repeat the fitting process on the other end of the rung for the front legs. The purpose of all of this is to make sure that everything fits tight, so remember which tenons go to which mortises.... you’ll need to pull everything apart and glue it up in a minute.....

O.k.... everything now fits together like a hand in a glove.... time to glue everything together. Pull the whole thing apart and brush glue (don’t just drizzle it around... use a small disposable brush to actually coat the tenon with a nice layer of glue....) on each tenon and insert it back into the hole it came from.... You should work fairly quickly as you will want to put pipe clamps on to help ensure a good tight joint.

Once all of the rungs have been glued into place and the pipe clamps are secured (use about 4 of them... two each top and bottom of the chair...) you should let the glue dry for about 24 hours before performing any other operations on the chair.

THE CONSTRUCTION (The next day...):

By now the glue should have setup and you can remove the pipe clamps. With any luck the chair will begin to look like a chair.

Although there are a number of ways to make a seat for this type of chair, I like the padded "hard" seat. Figure 4 shows how the seat sets over the middle set of rungs.

To make this seat, measure the distance between the front legs and the back legs at the middle rung. Measure the distance between from the outside of the left middle rung to the outside of the right middle rung. Add two inches to this measurement. Now... cut the plywood sheet to these measurements. On the BOTTOM of the plywood sheet, use the router to make two groves the width of the middle rungs. Leave one inch between the grove and the side of the seat board. These groves should be approximately 1/4" deep. When you are finished the seat should fit over the middle set of rungs on the chair when it is in its open position.

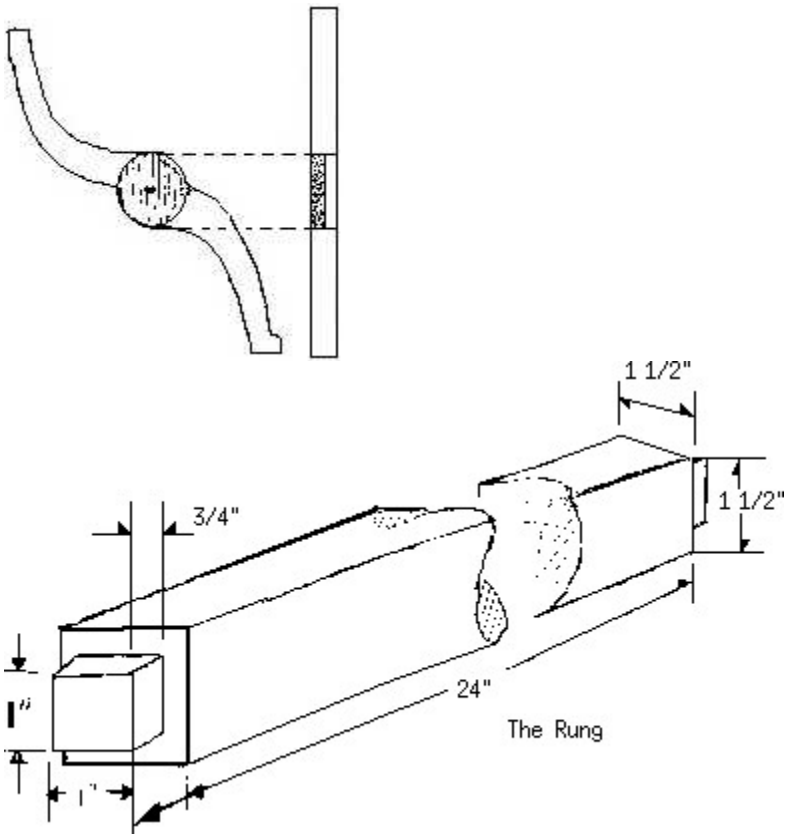
FINISHING UP...

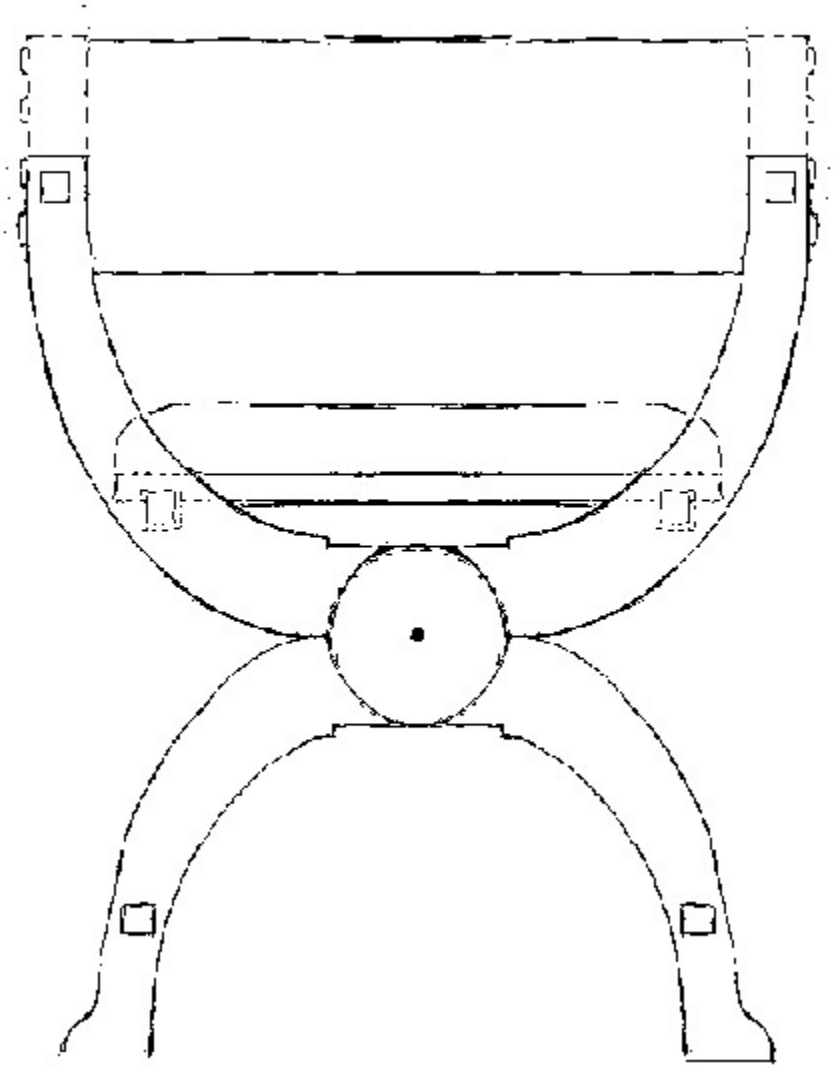
ALRIGHT.... by now you should have the basic chair constructed. There are only two steps to go. First... sand, finish and seal the wood. This is best done

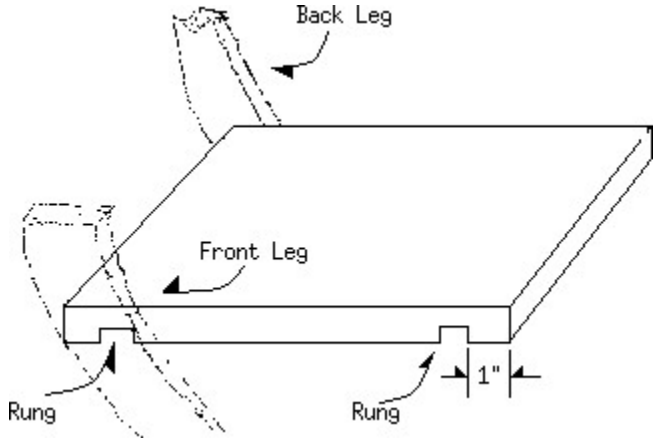
before you begin upholstering the chair although if you are really careful you could finish and seal later... not recommended though.

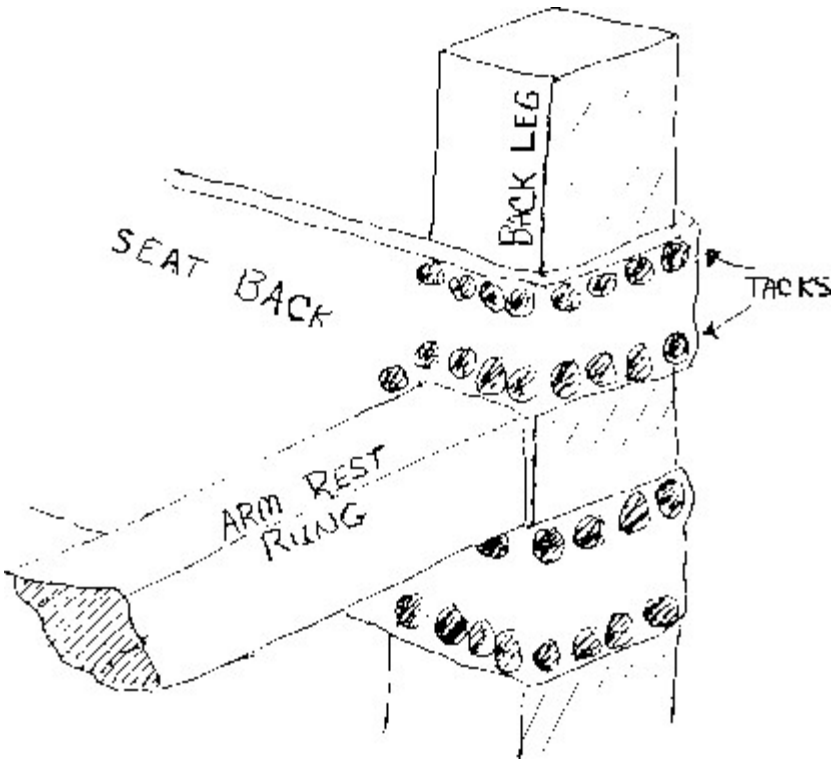
Final step... upholstery. Upholstering the seat is the easiest part. Cut a piece of 2" thick upholsterer's foam (available a places like JoAnn's Fabric or So-Fro), that will fit the seat board. Glue the foam to the board... spray adhesive works well. Next, take a piece of upholstering fabric... (see previously mentioned source....) that is large enough to wrap all the way around the foam and the plywood and extend onto the bottom about an inch or two. Now, simply wrap the seat!!! Putting staples in the center of a side, stretching the material and then putting a staple on the opposing side will help to keep the fabric tight and smooth. Use plenty of staples!!!! If you have cut your fabric correctly, the groves that sit over the rungs should not have fabric in them. Trim the excess leaving about ½" of waste.
Now... take another piece of fabric and sew it into a tube about 6" wide and about 6" longer than the width of the back of the seat. Cut slots that will fit around the rung that serves as the arm rest. Now... fasten it to the chair like the example shown at the right....
Have fun and make stuff -

You are customer 4 since I reset the counter






Back Leg
Front Leg
Rung
Rung
1"


BACK LEG
SEAT BACK
TACKS
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