Collapsible Rapier Stand

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This guide will walk you through how to build a rapier stand - that handy accessory and mark of hospitality for many an event in the SCA. It holds up swords - looking better, taking better care of them, and freeing up ground space under the day shade. But most importantly, it breaks down to a small flat pack that fits in the trunk or backseat of any car, truck, or van.

The construction is not particularly complicated. Construction and sanding took the two of us an evening and a half – or about 9 person hours total. Basic staining and finishing took another couple of hours work plus drying time. Of course, this will vary depending on the complexity of your decoration – and this project could easily accommodate complex decorations – so have fun with it!

What are we building?



This rapier stand is (dimensions) and holds 13 swords that are as much as 45 inches long. Critical features are:

- Keyhole slots for each spot on the rapier stand which makes it easy to insert or remove a sword or dagger.
- Wide feet which help with stability and when one side is more loaded with swords than the other
- Slightly raised lower cross-bar which helps when it is placed on uneven ground.
- Held together with wooden pins that make assembly and disassembly easy
- Packs flat and short – this rack will fit into many vehicles – either in the trunk or the passenger seat. (sorry motorcycles)
- BONUS – Plenty of room for decoration / heraldry

What Tools Do You Need

We built this rapier stand in a well-equipped shop. However, we know that many folks have access to a more limited set of tools or may even need to buy additional tools for this project. As a result, we have divided this into two lists – Required and Recommended

Required:

- Safety goggles and work gloves (I know people scoff, but splinters in the fingers or eyes are really unpleasant)
- Tape Measure and Ruler
- Hand saw
- Chisels and hammer
- Drill
- Drill bit – ¾ inch and 1 ½ inch spade bits
- Sand paper (something gritty like 80 or 150 and something smoother like 300 or 400)
- Rasp
- Paint brush

Recommended / Optional:

- Speed Square / Quick Square
- Miter saw / sliding miter saw
- Drill press
- Forstner bits
- Jigsaw
- Palm sander

Materials

The materials for this project are pretty simple – just some wood of various dimensions and some stain/polyurethane. For a simple pine, it cost us around $35-40 in materials. Fancier woods and finishing will obviously be more expensive.

- For the top and vertical supports
  - 12 feet of 1x12 – Pieces at least 4 feet long
- For the feet
  - 6 feet of 1x8 – Pieces at least 3 feet long
- For the horizontal braces
  - 8 feet of 1x6 – Pieces at least 4 feet long
- Some kind of finishing (Stain and a protectant)

Step by Step Instructions

The order of operations is quite important since this is a handcrafted rapier stand and we don't pretend to have a perfect level of accuracy. As a result, you should start with the top piece, then the risers and feet, before moving onto the horizontal braces. Save the pins for last. Test fit often along the way, especially for the braces and pins. When you test fit, make sure to mark the pieces that go together (Hole A with tenon A; Hole B with tenon B, etc.) so that you put them back together the same way each time. A good fit is critical to ensure that the rapier stand is sturdy and will provide you with years of use.

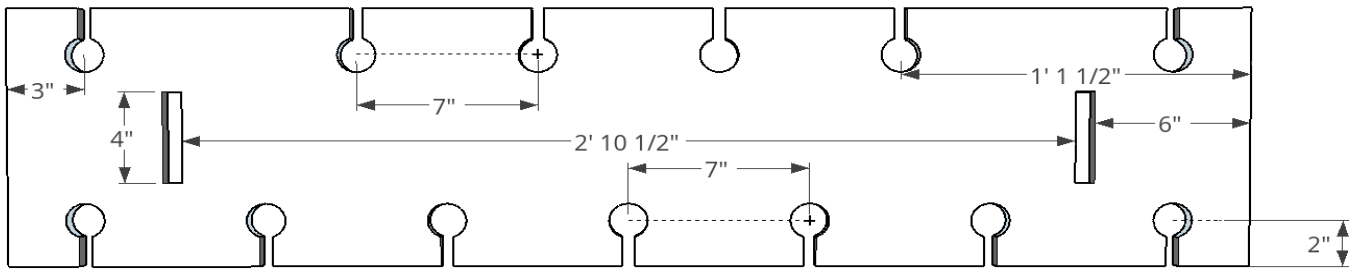
Just a note on the instructions – we know that some more experienced builders will just need to look at the diagrams and then will take up their own order of work. However, we also have included more detailed step-by-step instructions for folks who are building up their skills. This is a great project for early builders because the difficulty is not high and the result is very practical. Let us know if something is unclear (or wrong) and we can improve these instructions.

Initial Board Cuts

The first step is getting all of the boards cut to the necessary overall lengths. Your pieces should be cut as follows:

- Top platform: One 1x12 board, cut to 48”
- Vertical supports: Two 1x12 boards, cut to 49”
  - This length is due to the decorative point on the tenons that protrude vertically, so this can be adjusted if you want a different shape. The board should still be at least 46” long at minimum or there will be stability issues later.
- Horizontal supports: Two 1x6 boards, cut to 42 ½”
- Feet: Two 1x8 boards, cut to 36”

Top Platform



This section requires the most cuts and drilling of any part, and so careful marking beforehand is key.

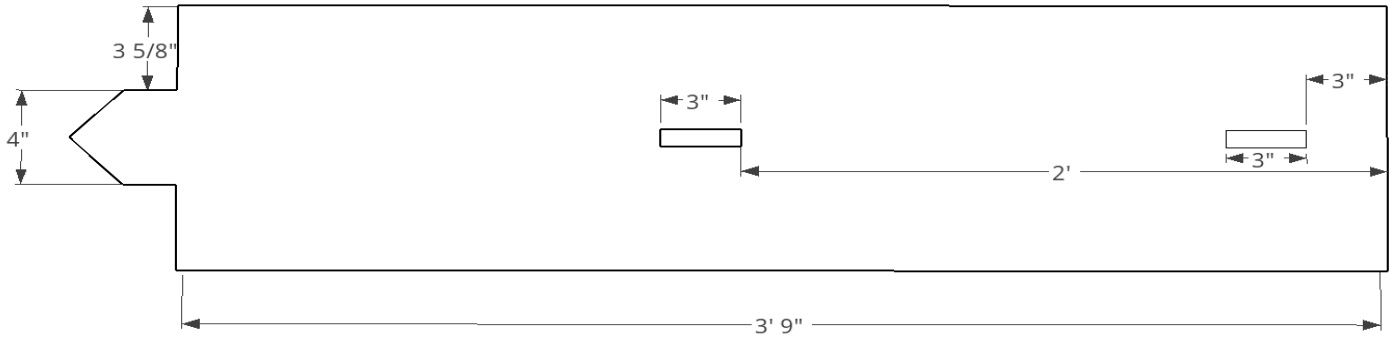
1. Mark lines 2 inches in from the long edges. These lines will pass through the center of the holes seen in the illustration above from left to right.
2. Along one of these lines, make a mark at 3” from the edge, then another at 10”, then at 17”, 24”, 31”, 38”, and finally at 45”. These marks are the center points of the holes along the lower edge of the illustration above.
3. Along the other line, make marks at 3”, 16 ½”, 23 ½”, 30 ½”, 37 ½”, and 48”. These are the center points of the holes along the upper edge in the illustration. Design Note: The holes are staggered this way so the sword guards don’t interfere with each other.
4. Draw a line from the center of each of these marks to the edge. Then, draw lines ¼” to the left and right of this line. These marks are for the “keyhole” slots, which end up being ½” wide. This process is especially easy if you use a speed square.
5. For the mortise slots for the vertical supports, make two parallel lines at 6” and 6 ¾” in from each short edge. This gives you the edges for the ¾” wide slot that you will cut.
6. Find the center of your board (which is 5 ⅝” from the edge) and make marks 2” before the center and 2” after the center (these marks will be at 3 ⅝” and 7 ⅝” from one edge). This should form the two rectangles for the mortises.

Now is a good time to double check your marks against the diagram. It’s much easier to fix now then once you make a lot of holes.

Drilling and Cutting

1. Using a drill (or ideally, a drill press) and 1 ½” bit to drill the sword holes, using the center points marked earlier.
2. With a hand saw or jigsaw, cut along the marked “keyhole” lines from the outside to the sword holes.
3. For the rectangular mortise slots, use a ¾” drill bit to carefully drill out a portion of each slot. Remove the remaining wood within the rectangular marking with a jigsaw, chisel, or both. This process is probably the most difficult part of the build and requires patience. You will more than likely need to make additional adjustments to these slots later with a chisel and file to ensure the tenon fits properly.

Vertical Supports



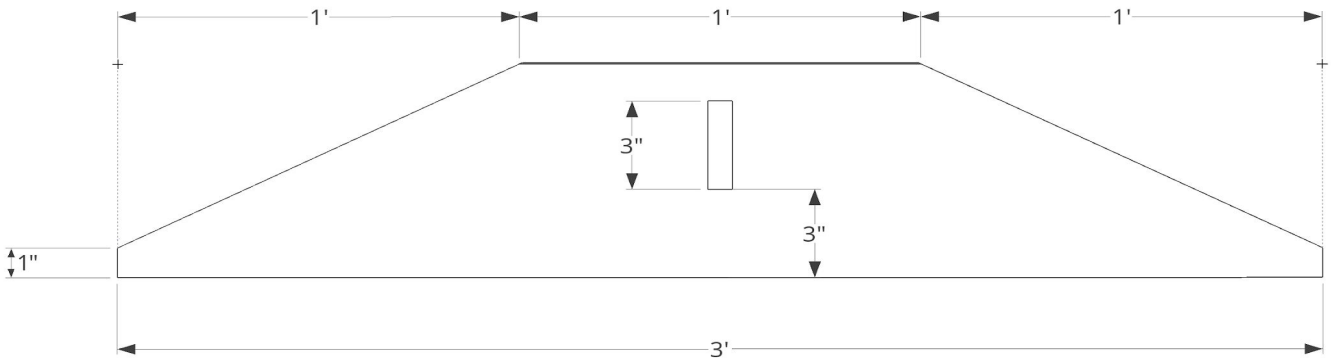
Next, we mark up the vertical supports.

1. First, mark the long center line of the board.
2. From the bottom, mark along this center line at 3”, 6”, 24”, and 27”. This is for the holes for the horizontal supports.
3. At each of those marks, make a perpendicular line that is ¾” long that is centered on the centerline (i.e., 3/8” above the center and 3/8” below). Now connect these lines into 3” boxes.
4. Make a line across the board at 3’9” from the bottom. Use your centerline and make marks 2” above the center and 2” below the center (these marks will be at 3 ⅝” and 7 ⅝” from one edge). Then draw a line from these marks to the top edge of the board.
5. Mark out your decorative point leaving at least 1” of vertical section to hold the top board. For this one, we made the vertical section 2” and then drew lines at 45 degrees towards the centerline.

Now it’s time to cut and drill

1. Use the same process as above to cut out the mortices for the horizontal supports.
2. Then using a saw or jigsaw, cut out the square corners for the top. Then cut out the decorative point.
3. Do a test fit to make sure that the vertical supports fit correctly into the top platform and make adjustments as needed.

Feet



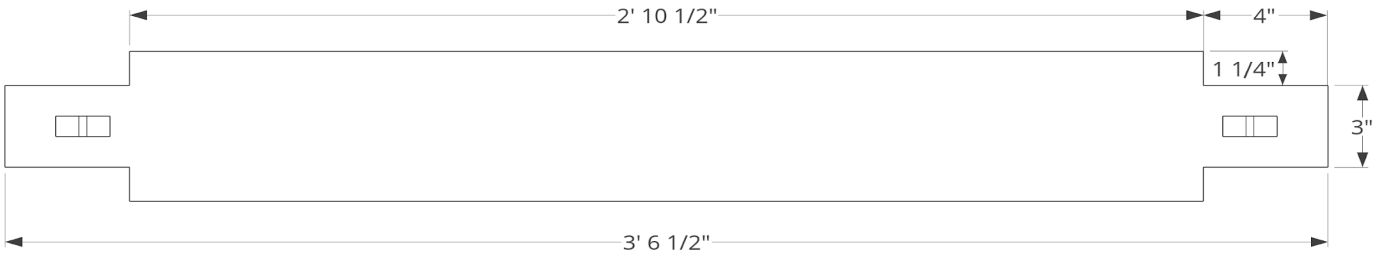
Next, let's work on the feet. We cut down the feet on the diagonal to reduce tripping hazards as people walk around the rapier stand. However, you could also do decorative stuff in this space too. Marking is relatively easy, especially now that you've made a few mortice holes.

1. On each of the short edges of your boards, mark 1" up from the bottom. On the top long side, mark 12" from each edge. Connect these lines.
2. Then mark the center width of the board (i.e., the line will be parallel to the short edges). From the bottom, mark along this center line at 3" and 6". This is for the holes for the horizontal supports.
3. At each of those marks, make a perpendicular line that is ¾" long that is centered on the centerline (i.e., 3/8" above the center and 3/8" below). Now connect these lines into 3" boxes.

Cutting and Drilling

1. Same as before, cut out the mortise holes.
2. Use a saw or jigsaw to cut down feet.
3. Make sure that the holes on the on the fit are the same size as the bottom holes on the vertical supports.

Horizontal Supports



We are almost there! Now we are making the horizontal supports. You will need to make two of these. The outside shape is the same, but THEY ARE DIFFERENT from each other because of where the mortise holes are.

Marking the outside shape

1. For each corner, mark a point 4 inches along the long edge. Then make a line 1 ¼" long that is perpendicular to the edge. Then draw a line back to the short edge.

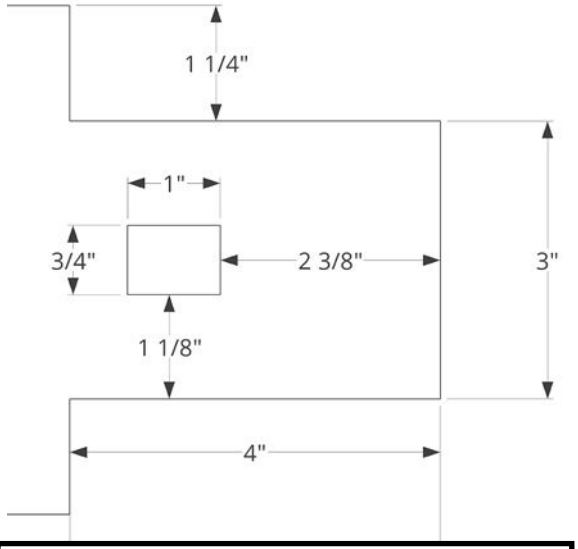
Cutting the outside shape:

1. Remove the portions at the four corners of each as shown with a hand saw or jig saw.

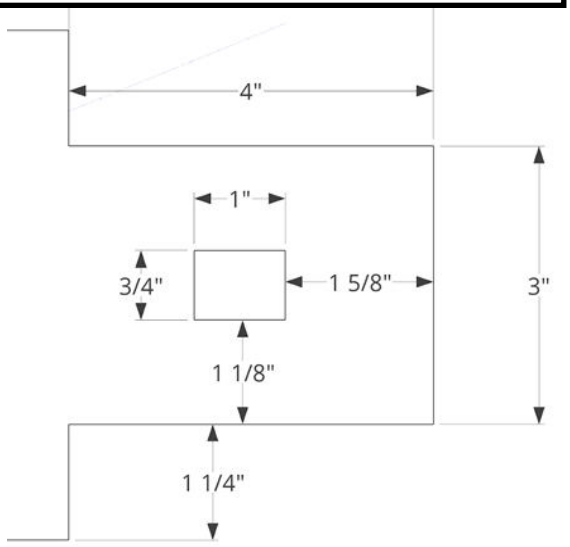
Cutting the Mortices – BE EXTRA CAREFUL HERE

1. The mortices for the top horizontal support are different from the bottom horizontal support because the bottom support also has to go through both the vertical support and the feet. This means the mortices are the same internal dimensions (¾" x 1"), but they are positioned differently. Another important note is that the mortice holes are deliberately positioned just slightly (⅛") inside the foot or the vertical support. This is how we ensure that there is tension that is key to the rapier stand's strength. (See the picture below)
2. First mark the centerline (just of the short extensions).
3. For the bottom horizontal support, mark along the center line 1 ⅝"from the outside edge and another at 2 ⅝".
4. For the top horizontal support, mark along the center line 2 ⅜" from the outside edge and another at 3 ⅜".
5. At each of those marks, make a perpendicular line that is ¾" long that is centered on the centerline (i.e., 3/8" above the center and 3/8" below). Now connect these lines into 1" boxes.

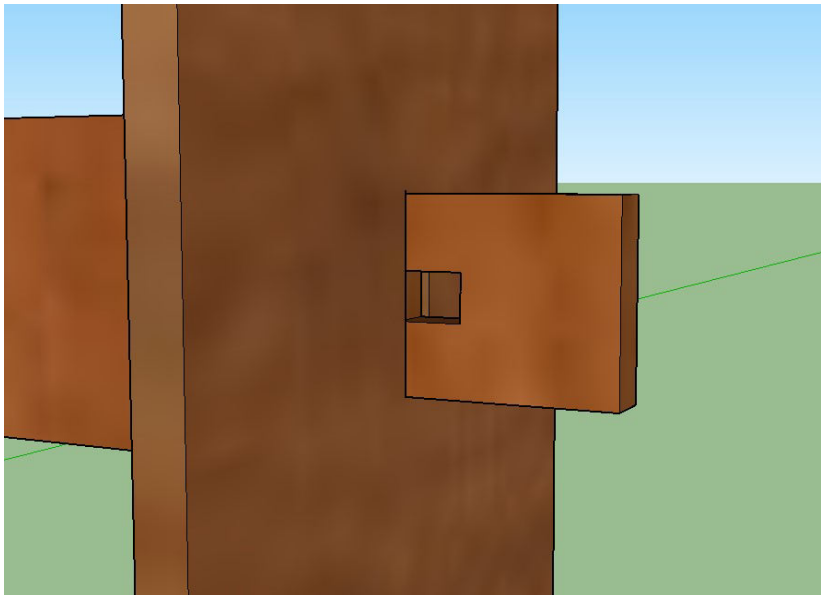
Top Horizonal Support



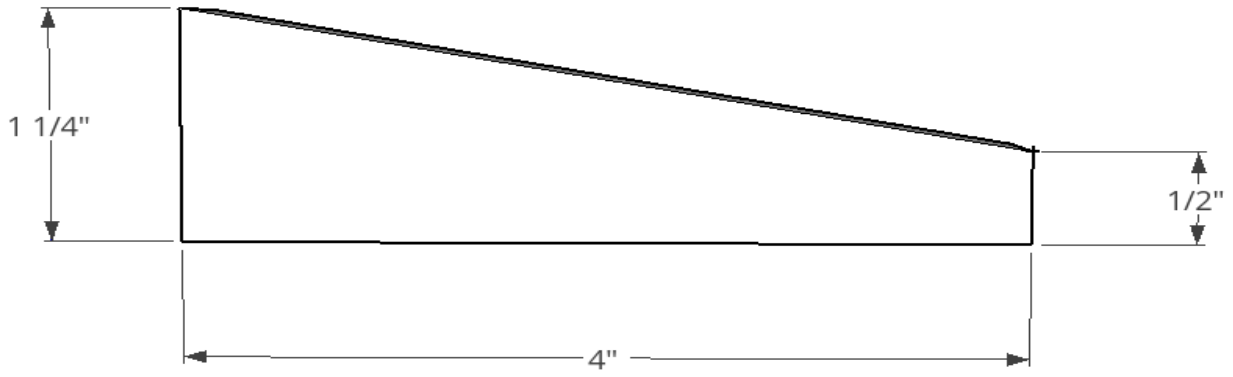
Bottom Horizontal Support



Final view of the mortices with slight inset



Pegs



The small rectangular scraps left over from cutting off the corners of the brace pieces are just about perfect for pegs. Mark ½" from a corner and draw a line from that mark to the opposite corner. Saw this portion off, sand smooth and the peg is done.

Fitting and adjusting

Hopefully you have been test fitting and making minor adjustments along the way to make sure that everything fits. Now is the time to finish making all of those little adjustments. A little sanding or chiseling will do wonders now. Expect this process to take some time – maybe about an hour or so across the whole project – because each time you do a test fit, identify the problem, and then make the adjustments before doing another test fit.

Decorating and Finishing

Now is the time to let your creativity run free! Maybe you want to use different symbols to mark each of the pieces that go together (e.g., sword with sword, parts of your heraldry). You might want to do wood carving on it, wood burning. Then you can stain or paint it. Be careful with paint because it can adjust the fit of the pieces, so you may not want to paint those areas.

Congratulations!!!

You built a rapier stand that you can use at home and take out to the field. If you want to – please feel welcome to send us a picture of your creation or any clever new ideas or modifications.