



STAKED HIGH STOOL

Chapter X

They cost \$8 to make. Wait, am I a liar? No.

High stools – 22" to 30" off the floor – were uncommon in the United States until we repealed Prohibition in 1933. Pre-Prohibition saloons eschewed barstools – you just stood at the bar and did your drinking like you were in an episode of “Gunsmoke.”

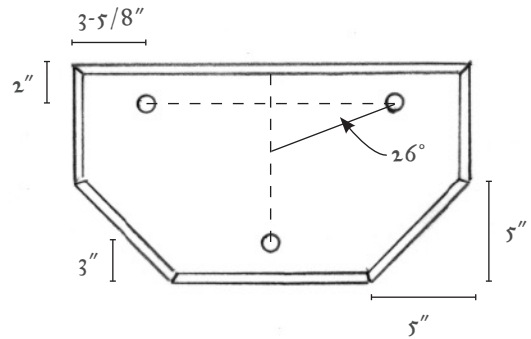
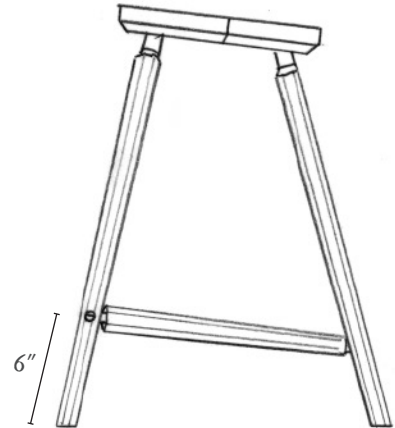
After the repeal of Prohibition, state governments tried to make the now-legal saloons less saloon-like. And requiring barstools was one of their tactics.

Somehow, I became enamored with barstools as a kid in the 1970s. Many of my friends had modern homes with high countertops and barstools. Sitting at these high countertops made me feel bigger and somehow more dangerous. Like Chip Paris might break a Coke bottle on the Formica bar and try to stab me because I was hogging the aerosol margarine.

Stab wounds notwithstanding, I’ve always had a soft spot for high stools such as these. Because of their height, you can do dramatic things with the rake and splay of the legs and the position of the stretchers. And because of the expansive buttocks of the American public, you have a wide array of things you can do with the seat, too.

Before we build one, let’s talk about their design in general.

Staked High Stool



Stools by the Numbers

Unlike chairs, barstools can be at a wide variety of heights – I’ve climbed into 36"-high stools and ones that were 12" lower. How can this crazy variance in height possibly work? By the creation of an artificial floor. Good, solid stools have stretchers (or a place to put your feet) that’s located about 17" below the seat. This stretcher or footrest prevents your legs from dangling down and severing the blood pumping to your feet.

You can raise this “floor” to bring the knees up a bit and make the stool ideal for supporting a guitar, for example. Raise the artificial floor too high, however, and your knees will ram into a typical bar.

The second thing to consider is the depth and width of the seat. If you wish to torture the sitter, make it small – like a 12"-diameter circle. People will not linger on your stools, and a new crop of drunks will churn through the bar within the hour.

I’m not that cruel. This stool is 11" deep x 20" wide. The shallow seat depth keeps your thighs from becoming petrified by cutting off the blood to your legs. The generous width is for a couple reasons. One, as a but-tless man, I envy the larger cabooses of the world. Two, the additional width allows you grab the seat, adjust your position and jump off.

Finally, a bit on the pitch of the seat. Many stools have seats that are parallel to the floor. This is fine. You can even tilt it forward a bit if you like the look. I pitch mine back a wee bit because it looks better to my eye and doesn’t seem to hurt the comfort of the stool.

But I encourage you to experiment with these stools. It’s easy to do because they cost about \$8 to make and you can knock out one in a day. Wait, am I a liar? No.

Raw Materials

Use Southern yellow pine to make these stools. I can fabricate two stools from a clear 8’-long 2x12. These 2x12s cost about \$10 each at the home center. Add some glue, wedges and finish and you get to the hefty \$8 price tag.

Note: Don’t have Southern yellow pine in your area? I offer two suggestions. One: Use whatever construction lumber is available – hemlock, hem-fir, fir, Scots pine or the like. Ask for the stuff they use for joists or rafters in house construction. Two: Move your household. Cheap yellow pine is the best.



To the line. Tapering legs with a sharp jack plane is simple. Work to the lines marked on the feet and try to keep the facets consistent around the leg.

Processing the Stock

Rip the legs and stretchers from the straightest material you can find. If you are using dimensional stock, you'll probably end up with 1-3/8"-square stock. After ripping the legs and stretchers to size, use your band saw, table saw or jack plane to make these parts octagonal.

Then taper the legs. The top of the legs should be 1-3/8" x 1-3/8". The feet should be 1-1/8" x 1-1/8". I create this taper using a jack plane at the bench. First, I mark the desired shape on the feet. Then I use a cradle to hold the leg as I plane down to those lines.

The top of the legs needs to be a tapered tenon that is about 3-1/8" long and is 5/8" diameter at the tip. You can make this tenon in a variety of ways. I rough out the shape on the lathe (though a drawknife is equally effective). Then I use a 5/8" Veritas Tapered Tenon Cutter to finish the job. It's like sharpening a big pencil.

The seat can be any shape you or your bottom pleases. The seat shown here is six-sided. For this seat, begin with the size indicated in the cut-



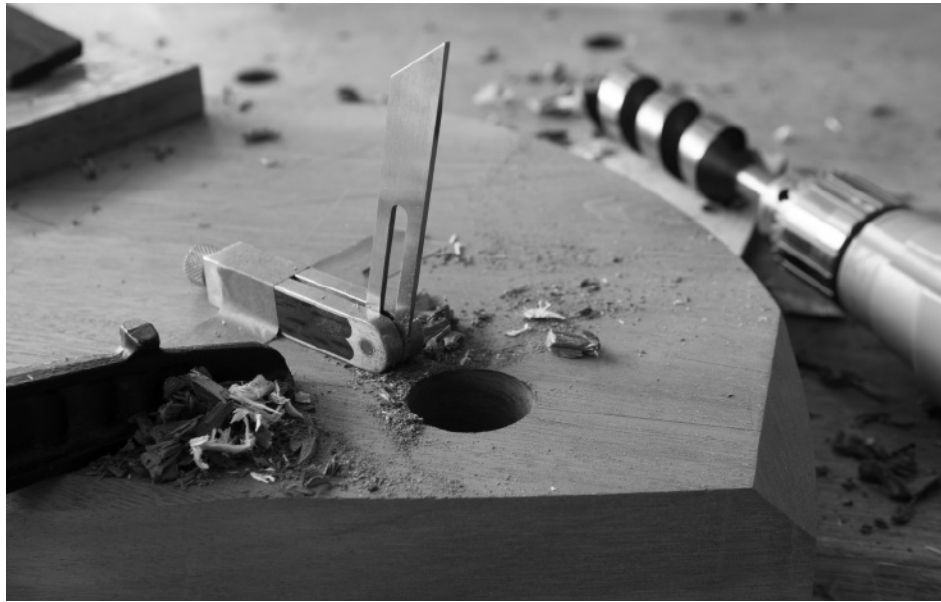
Pointed. The tenons are tapered using this commercial tenon cutter. You can make your own, but these tools are so reasonably priced that I don't see the point.

ting list. Then clip the rear corners at 45° starting 5" from each end of the seat. Then bevel the underside of the seat with a jack plane. The bevel is 1/2" x 1/2".

Lay Out & Cut the Mortises

Use the construction drawings to lay out the location of the three mortises on the underside of the seat. Then draw in the baseline, the centerline and the sightlines. Set your sliding bevel to 13° (the resultant angle) and tape the tool on a sightline for the front mortises. Drill a 5/8" hole through the seat. Keep the bit in line with the sightline and tilted to match the blade of your sliding bevel. Do the same operation for the other front mortise.

Then ream the front mortises with the matching Veritas tapered reamer (I use the company's large standard reamer). Check your angle by inserting a dowel into the joint that you have pointed with the tapered



Quick joinery. Tapered mortises and tenons are not tricky to make as long as you have tools, a tenon cutter and a reamer, with matching angles.

tenon cutter. Adjust your reaming if need be. After reaming both front mortises, work on the rear mortise.

Set the sliding bevel to 22° , your resultant angle for the rear leg. Tape the bevel down to the centerline (which is also your sightline in this case). Drill and then ream the rear mortise.

Drive the legs into their mortises. Now is a good time to designate which leg goes where. Mark the legs so you can get them back into position. Now turn the stool over and mark where the wedges should go in tops of the tapered tenons. Remember to orient the wedge so it is 90° to the grain of the seat so the wedge doesn't split the seat.

Remove the legs. Use a tenon saw to cut kerfs in the tops of the tenons for the wedges. Reassemble the stool.

Stretchers, the Easy Way

I avoid complex setups whenever possible. And I'll always choose learning a skill over a making a jig. In this case, I'm going to show you how to drill the joints for the stretchers without any angle calculations.



Mark the mortise. Use an awl to prick the location where the centerpoint of your mortise should go. The rubber band here is merely to show you where the stretcher will go.

It requires a little confidence with a cordless drill, but most woodworkers pick up this skill in a flash because they already have a ton of experience with a cordless drill.

Before we get to the fun part (drilling), we need to make the stretchers. The stretchers are 6" up from the floor. Use a ruler or block of wood to mark the locations of the mortises on the three legs. Now measure the length of the front stretcher inside the two front legs, then add 1-3/4" at either end for the tenons that will pass through the legs. For example: If you have 16" between the legs, the final stretcher will be 19-1/2" long.

Cut your front stretcher to length and plane it to an octagon. Then turn the 5/8" x 1-3/4" tenons on the ends of the front stretcher. You can instead use a straight tenon cutter, but you'll need to taper the ends of the stretcher first for the tenon cutter to work.

After you finish the tenons, compress them just a bit with some non-scratch pliers (an alternative is to wrap tape around the jaws of your regular pliers to prevent the teeth from marring the wood).

Now comes the fun part. Get a 5/8" spade bit with a long shaft. These are available at any hardware store. Reduce its diameter by about .007"

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Hot dogging. Keeping the drill level and in line isn't as hard as you might suspect. Note that I have rotated the leg a bit so the inner flat face of the leg faces me.



The backup plug. The 5/8" dowel prevents the spade bit from wrecking the mortise as it drills from the outside of the leg.



A crutch. If you aren't confident in your drilling you can cut a block of wood to the exact height required to keep your drill level. This works as long as you can clamp the block firmly in place.

to .01" by filing or grinding its edges at the grinder. This will make an undersized mortise and a tighter joint in the end.

Drilling the mortises in the legs is straightforward. Rotate the leg a bit toward you so can drill straight through the leg. Drill through the inside face of the leg. Keep the drill level and aligned with the mortise location in the other leg (you can have a friend sight you during this until you gain confidence). When the centerpoint of the spade pokes through the other side, stop drilling.

Now finish the hole from the outside face of the leg. To make this operation more accurate, place a 5/8" dowel into the mortise to prevent the spade bit from shattering its way into the mortise. (This is a method I learned from Welsh chairmaker Christopher Williams.)

Disassemble the stool and insert the stretcher into its mortises. You might need to compress the tenons a bit more. (Don't worry, they'll expand when the hot glue hits them.)

Mark the centerpoint of the front stretcher and drill the 5/8" mortise



The joint. Here's the through-tenon after drilling. Not bad for freehand work.

through the front stretcher using the same methods listed above.

Remove the front legs and front stretcher. Put the back leg in place. Drill its mortise with the 5/8" spade.

Now assemble the stool and measure the distance between the inside face of the back leg and the inside face of the front stretcher. Add 1-3/4" to both end for the tenons. Cut the tenons. Compress them with your pliers. And assemble your stool.

Mark the ends of all the tenons for wedges. Then disassemble the stool and cut kerfs for the wedges in the ends of all the tenons.

Shape the Stretchers

You can leave the stretchers the full 1-3/8" thickness if you like. They look a little clunky, but they will be strong. I prefer to taper the stretchers. For the front stretcher I taper both ends, leaving the middle at full thickness. For the back stretcher I taper it from front to back. The front is full thickness and the back is tapered.



Worth the work. The tapered stretchers look much better than straight ones. I've also turned them, which looks pretty good, too.

I do this with a jack plane and a cradle – the same one I used to taper the legs.

Assembly

I use liquid hide glue that I've heated up to make it easy to apply. Assemble the undercarriage first. Paint glue on the mortises and tenons and pull everything together. Then paint glue on the mortises and tenons for the seat.

Drive the legs into the seat with a heavy mallet (I prefer a small sledge here). Keep striking the leg until it stops moving. Pull the legs toward each other to ensure they are butted up against the tenon shoulders of the stretchers. Clean up the gluey mess with a wet toothbrush.

Now wedge all the joints with stout oak wedges. If the joints have closed up during assembly, use a 5/8" chisel to open them up and deform the top of the tenon. This will allow the wedge to get into the tenon. Paint glue on the wedges and knock them in with a hammer. Keep strik-



Wedge. Here you can see how the wedge is 90° to the grain of the stretcher. Had I oriented it parallel to the grain, the stretcher would have been a goner.

ing the wedges until they stop moving. The sound will also change when the wedges are seated.

Let the glue dry overnight. Then trim the tenons flush with a saw, chisel and plane.

Finishing

These stools look great with a wiping varnish (equal parts boiled linseed oil, satin varnish and paint thinner). Wipe on thin coats and stop when it looks good.

You also can use “shou sugi ban,” a charred finish popular in Japanese architecture for making building materials fire- and bug-resistant. You char the wood with a propane torch, brush off the soot and then apply a finish of linseed oil and beeswax.

If you are going to burn your stool, char the parts before assembly and protect the tenons with tape and the mortises with wet rags. Then, after assembly, touch up the unburned places with a handheld torch.

Propane weed burners are cheap tools – about \$35 to \$50 is typical. They attach to a propane tank such as one that fuels your gas grill. And they work like a flamethrower. The wood doesn't stand a chance.

I rested my project parts on cinderblocks and blasted them with the propane-fueled flame. Keep a squirt bottle of water (and a fire extinguisher) on hand to douse any flare-ups.

After charring the parts, use a stiff-bristled brush to scour the wood. This removes the excess soot so it won't end up on your hands and clothes when you use the stool. Add any topcoat finish over the wood – I used Allbäck Linseed Oil Wax.

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| NO. | PART | SIZES (INCHES) | | |
|-----|-----------------|----------------|-------|----|
| | | T | W | L |
| 1 | Seat | 1-3/8 | 11 | 20 |
| 3 | Legs | 1-3/8 | 1-3/8 | 25 |
| 1 | Front stretcher | 1-3/8 | 1-3/8 | 21 |
| 1 | Rear stretcher | 1-3/8 | 1-3/8 | 16 |