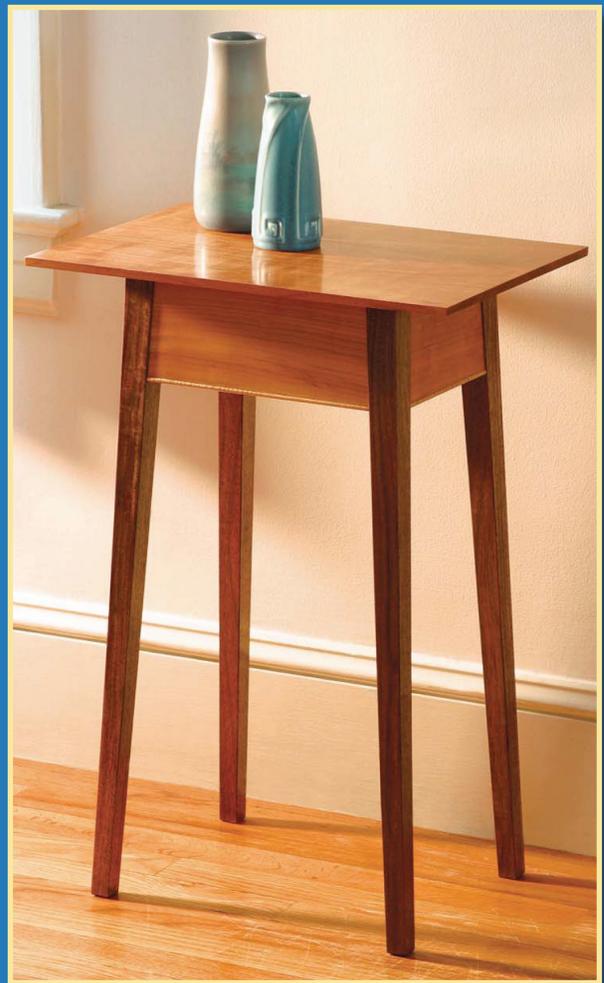


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# Splay-Legged Table

A project plan for building a simple splay-legged table with refined flair



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# Splay-Legged Table

Straightforward design  
with a refined flair

BY GARRETT HACK

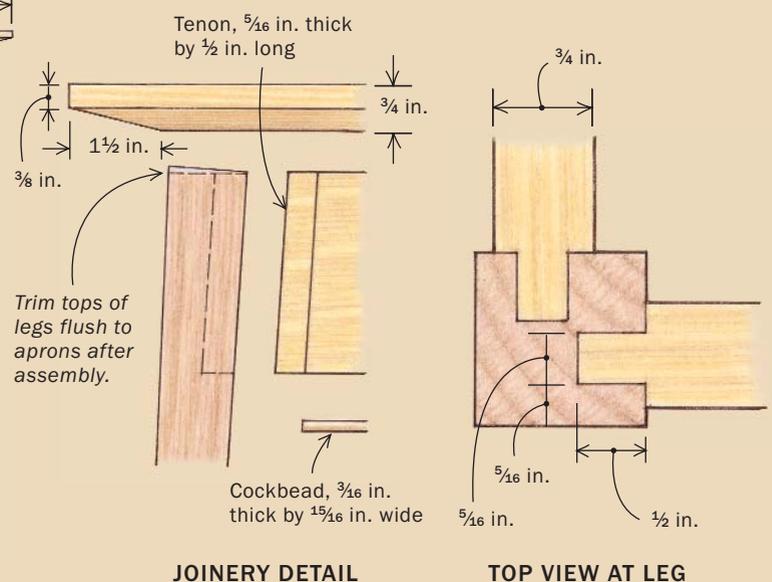
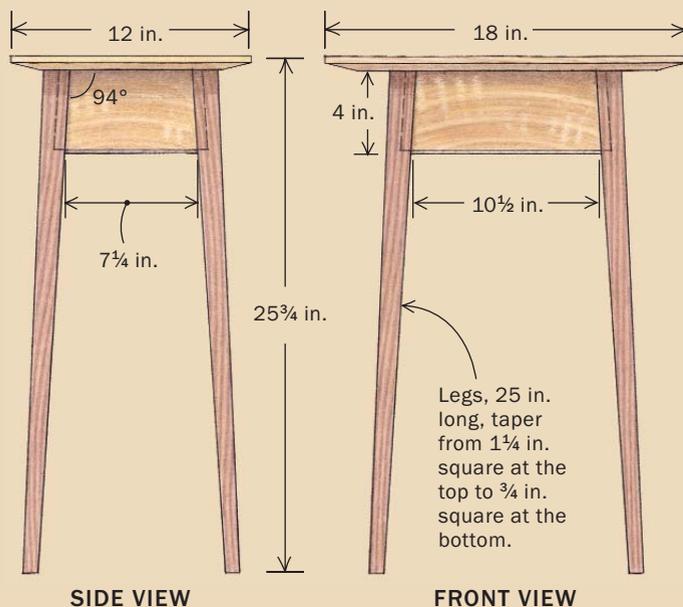
Few furniture legs are as elegant as square, tapered ones. Splay those same legs, and your table will have a personality quite out of the ordinary. This small table is a perfect project for you to demystify tapered and splayed legs and add them to your skills as a designer and craftsperson.

I took a simplified approach to both hand and machine work. I used a pattern to lay out and build the table legs, which taper from top to bottom on all sides, creating an elegant profile.

The table is constructed using machine-cut joinery. I've even designed in cockbeads to hide any discrepancy of the mortise at the bottoms of the aprons. Finally, the tabletop features an elegant, underside bevel.

## Make a pattern to lay out all four legs

Because of the taper and splay of the legs, a three-dimensional leg pattern will prove useful and will ensure uniformity. To make the



## A pattern makes layout and tapering easy



1

### LAY OUT THE LEGS ON ROUGH STOCK

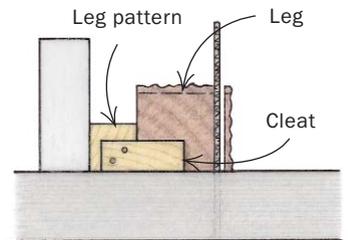
Use a three-dimensional pattern to lay out the table legs. Cut each leg oversize on the bandsaw and joint two adjacent faces.



2

### TAPER THE LEGS

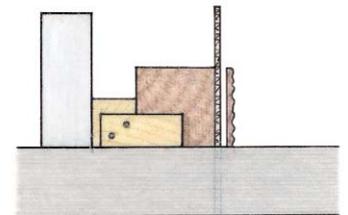
Nail a small wood cleat to the bottom of the leg pattern and use it as a guide to rip the leg tapers.



1. Place the jointed faces of the leg against the leg pattern and the bandsaw table to cut the first taper.



2. Rotate the leg clockwise so that the freshly sawn face is on the bandsaw table. Then cut the second taper.



pattern, lay out pleasing tapers on all four faces of your stock with a straightedge, cut to the lines on the bandsaw, and then refine the shape with a bench plane.

Use the leg pattern to lay out the entire set of legs. Rather than cutting square legs and then tapering them—which wastes material and time—use the bandsaw to cut out each tapered leg from the rough plank. The advantages are that you can lay out the cuts with the taper of one leg nested opposite the next (for the least waste), and find the most pleasing grain pattern for each finished leg. This method probably will save you enough material for an extra leg, worth having in case of mishaps. Allow about  $\frac{1}{8}$  in. to  $\frac{3}{16}$  in. of extra width in each rough leg blank, and 1 in. to 2 in. of extra length.

Next, joint two adjacent faces of each leg square to one another. Look for the best two faces, keeping in mind that minor defects can be removed when cutting to the final tapers. While you're at it, mill up an extra piece of scrap, squared to match the tops of the legs and as long as the legs. This scrap will be ripped to exactly double the taper angle of the legs. It will be a long, tapering wedge that will be used to help you cut the outside mortises.

### Now use the leg pattern as a tapering jig

Because the legs taper top to bottom, you can use the leg pattern as a tapering jig to cut the two remaining faces of each leg. The pattern ensures that the legs are tapered equally on all four sides and are identical. Don't cut the legs to length just yet. Instead, tack a

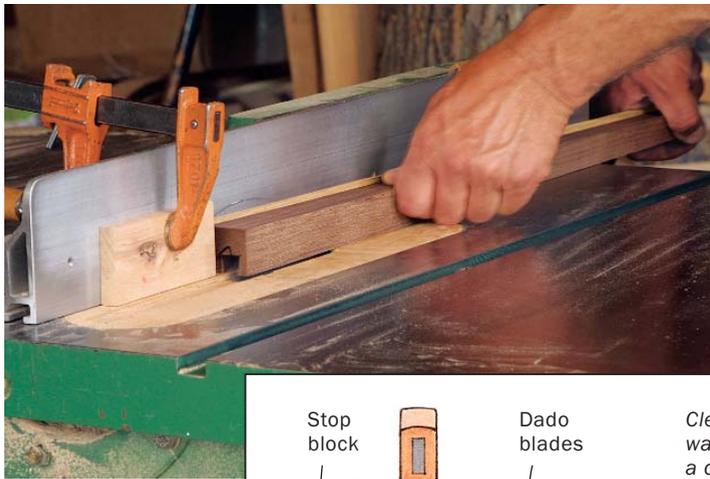


3

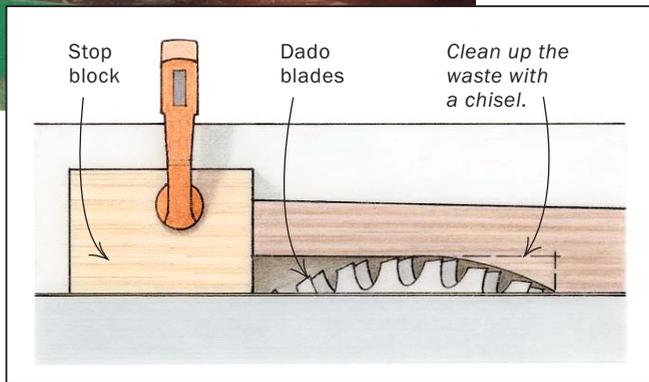
### CROSSCUT THE LEGS

Tape two spacers at a 90° angle, then secure them to the fence to hold the leg at a 94° angle during crosscutting.

## Use a dado set to cut mortises



**Stop block ensures consistent results.** Place a stop block a few inches behind the dado blades. After the cut, turn off the saw and wait for the blade to stop before removing the leg.



small wood cleat to the bottom of the leg pattern to act as a stop for the leg blank. One of the jointed surfaces should be against the leg pattern, and the other against the bandsaw table. Set up a rip fence on the bandsaw so that the resulting cut on the leg is close to the dimensions of the leg pattern.

After the first pass through the saw, rotate the leg clockwise so that the freshly sawn surface rides along the bandsaw table, and one of the jointed faces rides against the leg pattern. Cut all four legs, as well as the extra leg, using the same rip-fence setting.

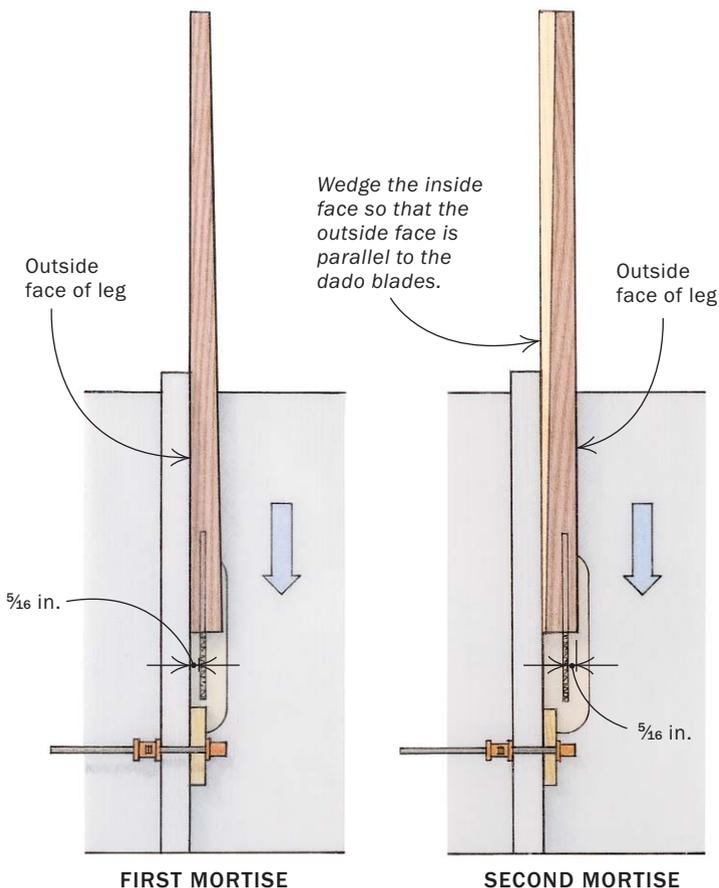
Clean up each sawn surface with a long bench plane (a No. 5 works well), checking that adjacent surfaces remain square. With the legs slightly long, small variations in width can be accounted for by cutting off more or less from the top of the leg. Make tick marks at this point to denote the top of each one.

To crosscut the leg tops to that rough length, make a guide using two small tapered spacers, taping them in an L-shape and then taping that to the table saw's miter fence. The sticks provide enough fill behind and beneath the legs to hold them square to the blade during the cuts. Each of these four cuts demarks the top of a leg but is not intended to be a finished cut. So after the table base has been assembled, the tops of the splayed legs will not align with the tops of the aprons and will have to be leveled with a handplane.

An advantage of legs that are tapered top to bottom is that, at this stage, any leg can be placed in any position in the table. Rotate and shift the legs around to get harmonious figure on the outside faces. Mark these faces with a bright crayon, and mark the position of the leg with a 1 (front left), 2 (front right), 3 (rear right), and 4 (rear left).

### Determine the splay angle

Now that all of the leg tapers have been cut, it's time to decide on a pleasing angle of splay—the angle of the legs in relation to the aprons (for this table the splay angle is 94°). The easiest way to do



### TABLESAW SETUP FOR MORTISING

One mortise on each leg is cut with the outside face against the fence. The second mortise is cut with the outside face away from the fence. A wedge is used for alignment.



**Chisel out the mortises.** The dado blades can't cut a square mortise. You'll need to square up the bottom edge of each mortise with a chisel and mallet.

## Angle the apron ends to create the splay



**Determine the leg-to-apron taper angle.** Set a bevel gauge to match the angle at which the legs will meet the aprons.



**Set the miter-gauge fence angle.** Place the tongue of the bevel gauge against the blade. Then adjust the miter-gauge fence until it sits flat against the bevel-gauge fence.



**Cut the aprons to length.** When determining the lengths of the front, rear, and side aprons, be sure to account for the  $\frac{1}{2}$ -in. tenons on the ends.



## Table saw makes fast work of angled tenon shoulders

**Cut the tenons with the help of a tenoning jig.** To ensure accuracy, cut tenons on scrap stock until you get a perfect fit in the mortise.



**Clean up the shoulders.** First backsaw the waste, then hold the end of each apron against the fence to cut the shoulders.



**Carve screw pockets.** Cut triangular screw pockets near the top of each side apron. The pockets make for quick and neat tabletop attachment.

## Glue up the base first



**Assemble two sides first.** If the splay angle is minimal, as in this case, there is no need to add wedges under the clamps.

this is to create a quick mock-up on the benchtop of two legs and one apron. The splay angle should be the same on all sides of the leg. From this same setup you can mark out the cut at the tops of the legs.

### Mortises can be cut quickly on the tablesaw

The  $\frac{5}{16}$ -in.-wide mortises are cut on the tablesaw with a dado set raised to make a  $\frac{1}{2}$ -in.-deep cut. For the first mortise in each leg, set the fence  $\frac{5}{16}$  in. from the inside face of the blade. Clamp a stop block against the fence as far from the leading edge of the blade as the aprons are wide—in this case,  $3\frac{3}{4}$  in. The first mortise is cut with the outside face of the leg against the fence (see the bottom left drawing on p. 64). The safest way to do this is to pass each leg through the saw until it hits the stop, turn off the saw, and then lift the leg off the blade once it stops spinning.

The second mortise in each leg is made with the outside face of the leg away from the fence (see the bottom right drawing on p. 64). Place the long wedge (cut earlier) between the leg and the fence, with the thin edge forward, so that the cut will be made parallel to the leg face away from the rip fence and identical to the first set of mortises. Move the fence so that the cut is made  $\frac{5}{16}$  in. from the outside face. Again, cut up to the stop and lift off the leg.

Chop out the wood remaining at the bottom of each mortise where the blade could not cut full depth. If you want to be very precise, the lower end of the mortise should be cut at the taper angle, or undercut somewhat. But the more important point is to make sure that the mortises all are the same length relative to the top.

### Tenons follow the angle of splay

Mill up the table aprons and rip them to width. Set the tablesaw's miter gauge to the splay angle, and cut each apron to length at this angle, accounting for the length of both tenons (see the photos



**Glue in the front and rear aprons.** Tap the aprons into their mortises with a hammer and block.

on p. 65). Be sure to mark the outside face of each apron and the top edge, which is shorter than the lower edge.

Using a tenoning jig on the tablesaw, cut one of the cheeks on each apron. The apron will tip slightly forward or backward because it is resting on an angled end. Cut a little less than full tenon height. Once this first cheek has been sawn, reset the saw for the second cheek cut. The most accurate way to reset for the remaining cheek cut and perfectly sized tenons is to begin by cutting some scrap pieces. By initially measuring and then by trial and error, make the second cheek cut on scrap until the tenon just fits the mortise. Then you can make the remaining cheek cuts on the remaining aprons with confidence.

Cut away the waste with a backsaw, keeping well away from the shoulder line. This removes wood that can drop onto the tablesaw blade in the next step and come flying out.

Using a miter gauge on the tablesaw to cut angled shoulders can be tricky but is possible if you mark carefully and stay focused. Far simpler is to guide the angled end of each apron against the fence and cut identical shoulders. Lightly wax the table and fence and set the blade height to less than the shoulder depth (you don't want to

## Plane the legs flush, then add the bead and top



**Plane the top edges flat.** A low-angle plane is the best tool for planing the tops of the legs flush with the aprons.



**Install the cockbeading.** After cutting the beading stock to length, secure it in place with glue and a few brads.

cut into the cheek and weaken the tenon). Guide each apron against the fence to cut all 16 shoulders. If necessary, trim the tenons with a shoulder plane.

### Assembly is straightforward and fast

Before assembly, chop small, triangular pockets on the inside faces of the two side aprons. These pockets will house screws to attach the top. Finish planing each leg and apron, and chamfer all edges except the top outside edge of the aprons.

Glue up the two side assemblies first, seating each apron against the bottom end of its mortise. With such an easy glue-up, you can add the front and back aprons right away. If all has gone well, the tops of the legs and aprons will nearly align, needing only a small amount of leveling with a plane once the glue has set. Take extra care planing across the tops of the legs to avoid chipout.

### Cockbeads and beveled top add elegance

The cockbeads add a decorative touch, plus they eliminate the need for a shoulder on the bottom edge of the aprons. They are a



**Screw the tabletop onto its base.** Chamfer the underside of the tabletop to give it an appearance of lightness, and attach it to the base with screws.

little wider than the apron thickness and cover any small gaps in the leg-to-apron joint. Cut the cockbead profile with a scratch stock or router, using stock that is wider than the thickness of the aprons. Rip off the bead, bevel, and fit the ends against the legs. Glue them in place and clamp or secure them with a few brads. I projected the bead about equal to the radius of its edge profile. Plane or sand the inside surface of the apron and cockbead flush with each other.

Cut out a top and bevel the undersides of the edges. I made the major bevel cuts on the tablesaw and refined them with a plane. Chamfer all edges. Attach with screws and finish the table. □

*Garrett Hack is a contributing editor.*