



Side Table With a Twist

Classic English table is a shape-shifter

BY CHRIS GOCHNOUR

Cricket tables were common in England during the 18th century. Typically distinguished by round tops and three-legged bases, many cricket tables, like the one featured here, also included drop leaves, adding an extra measure of charm and utility. Although this piece is based

on an early English table, I made a few changes to give it a look that's distinctly American Arts and Crafts.

Make the diamond-shaped legs

Rip blanks for the legs out of two boards, each 1¾ in. thick by 3¼ in. wide by 28 in. long. Go to p. 46 to see the right sequence of tablesaw cuts. I

found that using two boards simplifies the leg-making process even though it produces one more blank than needed.

The extra blank comes in handy as a test piece. My sawblade tilts to the right, but the procedure is the same for a left-tilt saw as long as the fence is oriented correctly.

Now cut the legs to length—Because the legs splay out under the table, the crosscuts must be made at an angle. Begin by labeling, on a side surface, the top and bottom ends.

On both ends of each leg, draw a reference line from the 120° corner to the 60° corner. This line must always

be horizontal when you trim the ends.

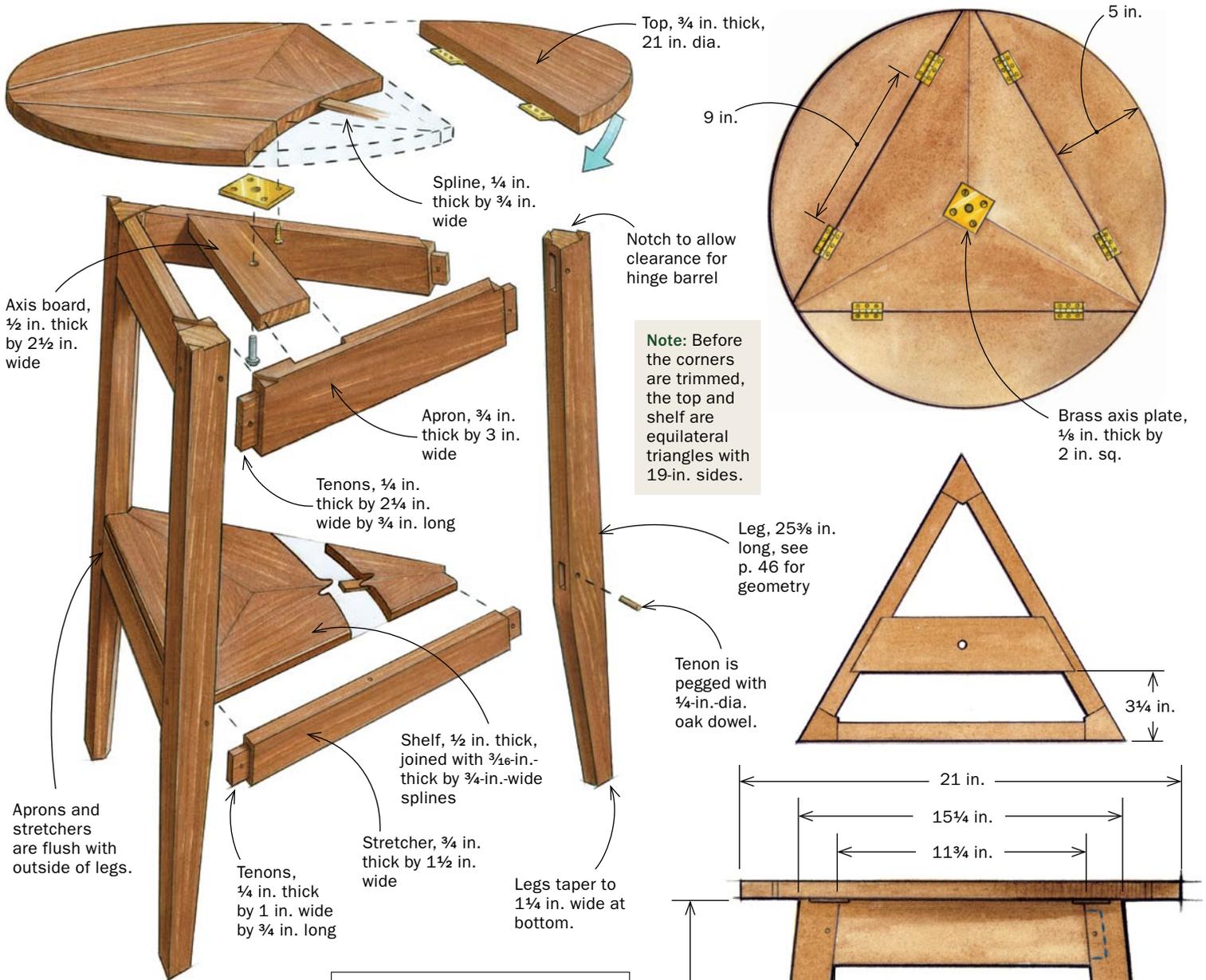
Now, set your miter-saw blade 7° to the left. Clamp a support cradle (see p. 47)



GIVE IT A SPIN

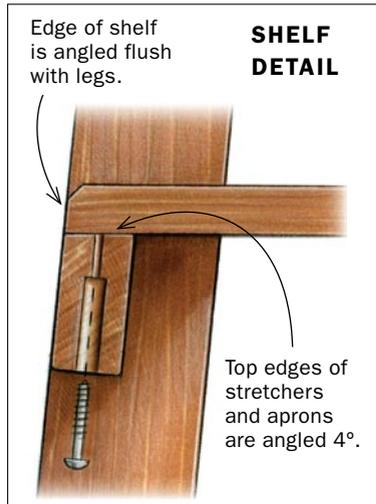
With the leaves lowered, the table has an eye-catching triangular top. To expand the top and change the look, raise all three leaves at once and rotate the top until the leaves are over the legs.



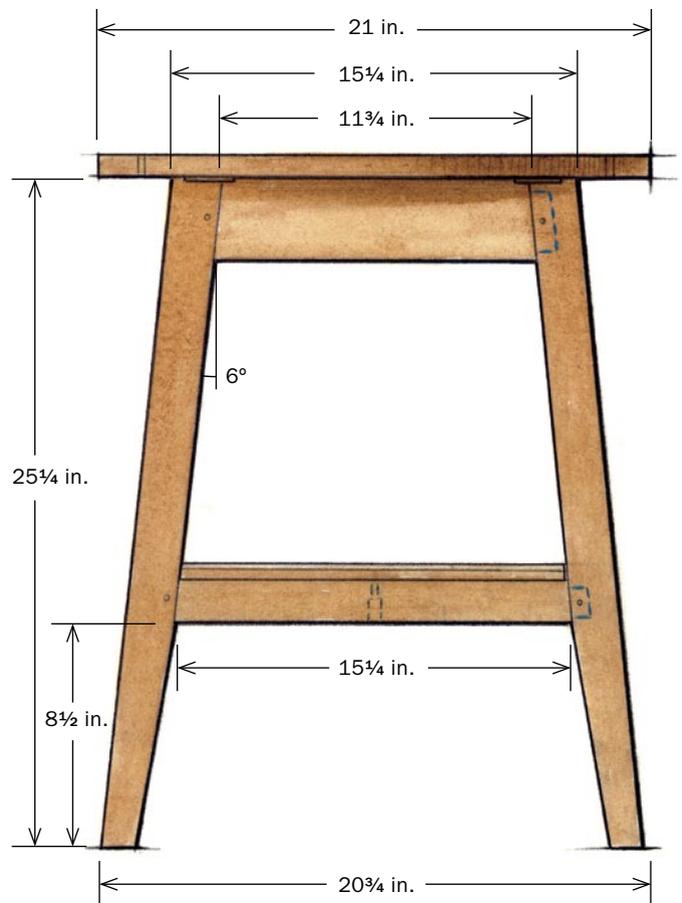


DROP-LEAF TABLE

Early cricket tables were made from a variety of woods, among them elm, oak, pine, sycamore, and walnut. Gochnour chose quartersawn white oak because it is in keeping with the Arts and Crafts style. Quartersawn white oak is also stable, so changes in humidity are less likely to warp the leaves or put stress on the spline joints that connect the three-piece triangular top.



Full-size plans for this table and other projects are available at FineWoodworking.com/PlanStore.

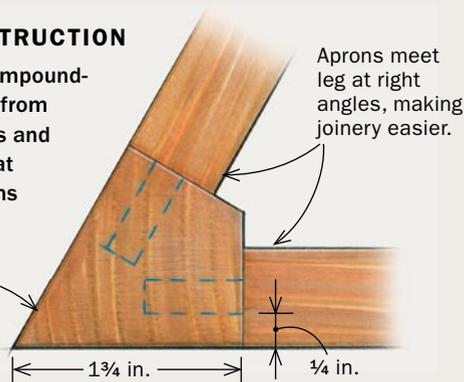


Cut the leg blanks

LEG GEOMETRY SIMPLIFIES CONSTRUCTION

Splayed legs usually require fussy-to-cut compound-angle joinery, but not on this table. Viewed from above with the table assembled, the aprons and stretchers meet the diamond-shaped legs at right angles. So, to splay the legs, the aprons and stretchers need only be angled in one direction.

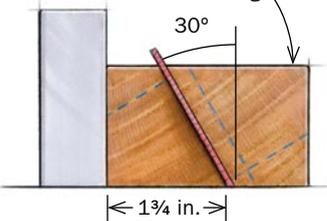
Outside corner of leg is 60°.



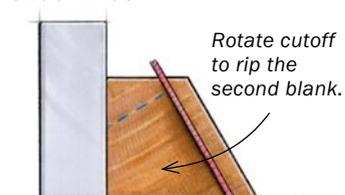
Rip the stick into two blanks.

Angle the blade and set the rip fence as shown. Cut the first blank, rotate the offcut piece, and cut the second blank. Rip the other stick to get four blanks total. For all cuts, use a push stick near the blade.

FIRST CUT Stick, 1 3/4 in. thick by 3 3/4 in. wide by 28 in. long



SECOND CUT

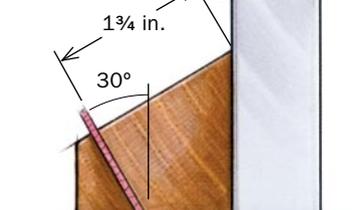


A final cut completes the shape.

Move the rip fence to the other side of the blade. Use the spare blank to make test cuts until the top face is 1 3/4 in. Rip the remaining three blanks at the same setting.

THIRD CUT

Move rip fence to opposite side of blade.



slightly to the left of the blade, and place the leg in cradle A with the top end at the blade and the reference line horizontal. Now, while holding the leg in place on the jig, trim the top end at 7°. Do the same for the top ends of the other two legs.

Next, shift the cradle to the right side of the blade. Mark the leg's total length at 25 3/8 in. and cut the bottom end of each leg parallel to the top end.

Cut the angled mortises—Each leg has four mortises—two for the aprons and two for the stretchers—all cut on the narrow sides of the legs and inset 1/4 in. from the wide side of the leg. With a dozen to work, I put my hollow-chisel mortiser to work, along with the leg jig. After the machine work, I used a chisel to shave the ends of the mortises to 6°. Taper the legs as shown (bottom photo, facing page).

Tenon the aprons and stretchers

You are ready to make the three aprons and three stretchers. Rip the parts to width, then use the tablesaw miter gauge set at 6° to crosscut them to length.

Cut the outside cheeks—The tenons are next, starting with the aprons. Decide which side of the parts you want on the outside of the table.

Set up the tablesaw with a 5/8-in.-wide dado blade raised slightly less than 1/4 in. above the table. Position the rip fence 3/4 in. from the outside of the blade. Use a miter gauge, angled away from the blade at 6°, to reference the end of the apron so it's parallel to the fence.

Then, with the outside face of the apron against the saw table and the end butting against the rip fence, cut one of the outside tenon cheeks. You'll need two overlapping passes to remove all the waste. Because the outside faces of the aprons, stretchers, and legs are flush to each other, the tenon location is important (see p. 48 for a tip). Repeat on all the parts, making the cuts only on the same outside cheeks.

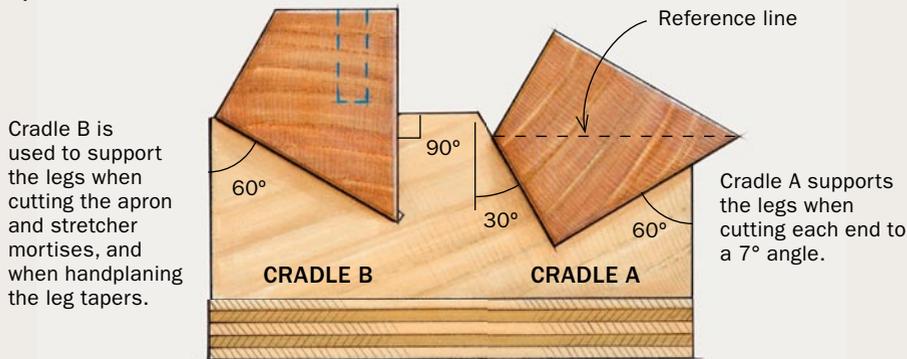
Now, readjust the miter gauge to angle toward the blade at 6°. Make the outside cheek cut on the other end of each part. After the last cut, you'll have all the outside tenon cheeks cut to align flush with the outsides of the legs.

Cut the inside cheeks—At this point, it's just a matter of cutting the inside cheeks to fit snugly in the mortises. That's done by making several cuts to "sneak up" on a perfect fit. Start by placing the inside

A cradle makes joinery easier

A JIG HOLDS THE LEG IN TWO POSITIONS

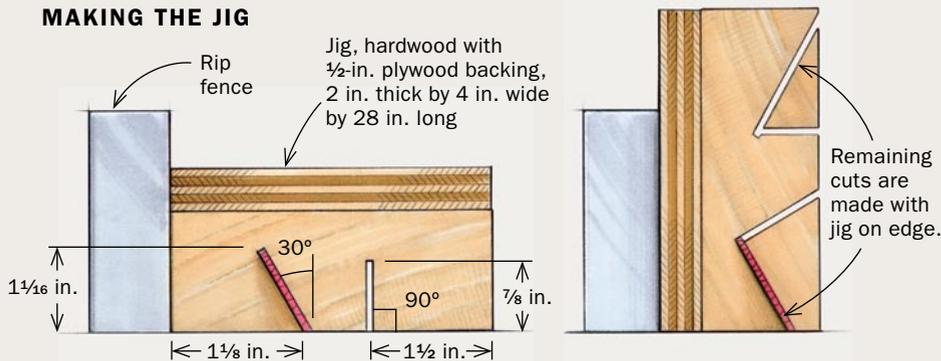
The odd shape of the legs makes them difficult to clamp in place for cutting to length, cutting mortises, or planing the tapered bottoms. This support jig simplifies all three operations.



Cradle B is used to support the legs when cutting the apron and stretcher mortises, and when handplaning the leg tapers.

Cradle A supports the legs when cutting each end to a 7° angle.

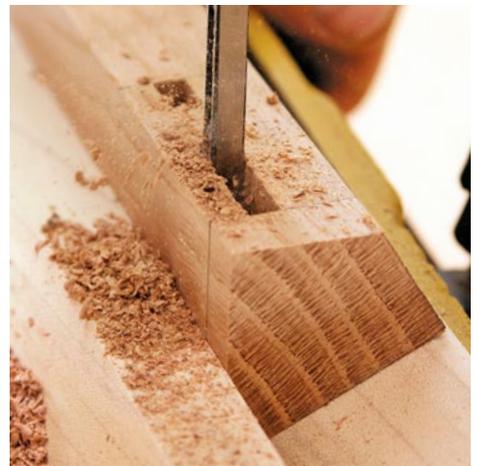
MAKING THE JIG



The blade is at 90° for the first cut, 30° for the remaining three. You end up with two channels, each cut at different angles and used for different purposes as the legs are made.



Trim to length. With the jig clamped to the left side of a miter saw set to 7°, trim one end of each leg. Then slide the leg to the right side of the saw and cut to length at the same 7°.



Cut mortises. Gochmour uses a mortiser to remove most of the waste. Then he angles the ends of the mortises to 6° with a bench chisel.

face of an apron against the saw table and butting the end against the rip fence. Also, butt the edge of the apron against the miter gauge, which is still facing toward the blade at 6°. Then, make a shallow (about $\frac{3}{16}$ in.) cut. As before, you'll need to make two passes.

Check the tenon fit; you can expect the tenon to be too big because the dado blade cut was shallow. Raise the dado blade slightly, then recut and recheck the fit. Continue increasing the depth of cut until the tenon fits just right. Now, make inside cheek cuts on all the aprons and stretchers with the miter gauge angled toward the blade.

Readjust the miter gauge to angle away from the blade at 6°. Then make the inside cheek cut on the other end of each part. After the last cut, you'll have all the cheek cuts done.

Last, lay out and mark the location of the top and bottom cheeks and shoulders. Cut to the lines with a backsaw.

Bevel the aprons and stretchers—The upper edges on all the aprons and stretchers must be beveled so they end up parallel with the tabletop and bottom shelf. Cut the bevels on the table saw with the blade tilted to 4°.

Now you can go ahead and smooth all of the surfaces with a handplane to remove any mill marks.

Band clamps ease assembly

Assemble the legs, aprons, and stretchers. The joints are angled and the base is triangular, but band clamps work wonderfully. You'll need just one for the aprons and one for the stretchers.

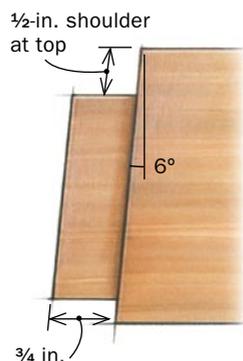
The glue-up is a five-minute operation. Use a small brush to apply glue to all the



Taper the legs. After using a bandsaw to remove most of the waste, use the cradle jig to hold the legs in place so a handplane can clean up the surfaces.

Aprons have angled tenons

Cut to length. Cut the aprons (shown) and stretchers to length with the tablesaw miter gauge at a 6° angle.



mortises and tenons. Assemble each one, and then add the band clamps.

Install the axis board—The axis board runs parallel with one apron and is notched into the other two. A slightly oversized hole through the center of the axis board accepts a machine screw that secures the top to the base and serves as a pivot point.

Notch the base for the hinge barrels—When the top of the table is rotated 60° to open or close the leaves, the hinges pass over the top end of the legs and aprons. So, at each of the three corners of the base, you'll need to cut a 1/8-in.-deep notch to allow clearance for the hinge barrels.

Mark the notch locations with a trammel, then use a router to remove the waste between scribe marks. Finish with a chisel.

The top is fun

The top is an interesting geometric array made up of six boards. Three are isosceles triangles joined with splines to create a central equilateral triangle. The other three are circular segments, and attach (with hinges) to the central triangle to form the drop leaves and create a full circle. From the drawing on p. 50, make a full-size template of the triangle and the drop leaf.

Use the two templates to lay out the isosceles triangles and leaves in a row on a single board. Cut all six parts on the band-saw, making sure all are slightly oversize. Then, use the tablesaw with a cutoff table and protractor fence to trim the two inside edges on each triangular piece so they're



TIP



Check the shoulder depth. When the outside cheek is butted against a leg, the tenon shoulder should be flush with the outside face of the mortise.

Outside cheeks are first. With a dado blade in the tablesaw, the miter gauge facing 6° away from the fence, and the rip fence positioned to establish the tenon length, cut all the outside cheeks on the left end of each apron and stretcher (above). Then, reset the miter gauge to face 6° toward the fence and cut all the outside cheeks on the right end of each apron and stretcher. Then flip the workpieces and cut the inside faces (right).



Cut the top and bottom. With a tenon saw, make a pair of parallel cuts to establish the top and bottom of the tenon. Then cut across the grain (above) to form the shoulders.

Band clamps aid glue-up



Glue and clamp. Add glue to all the mortises and tenons, then assemble the parts. A pair of band clamps—one around the aprons, one around the stretchers—provides all the pressure needed.



Plane the outside surfaces perfectly flush. With a piece of plywood clamped to the workbench to serve as a planing platform, Gochnour uses a smoothing plane to make sure the outside faces of the legs, aprons, and stretchers are perfectly flush.

straight and meet at exactly 120°. Later, after the sections are glued, handplane the three outer edges to exact size.

The splines keep the triangles aligned during assembly and add glue area, which means a stronger joint, important because wood movement will stress these areas. You can cut the stopped grooves on a router table with a 1/4-in. slot-cutter buried in the router fence. Elevate the slot-cutter so the cut will be centered on the 3/4-in.-thick stock. Then, set the fence to make a 3/8-in.-deep cut.

Note that each triangular piece has one long edge, and two shorter edges of identical length. Each of the two shorter edges gets the stopped groove for the splines. On one of the edges, you begin the groove at the stopped end by plunging the slot-cutter into the stock and then feeding the entire edge of the triangle through the cutter. When making the plunge cut, it's important to make sure the triangle corner nearest the plunge is kept firmly against the router fence to serve as a pivot point. Don't use the opposite corner as you'll likely run into some kickback as the stock is plunged.

To cut the remaining edge, place it against the fence, then feed the stock into



Add the axis board. An axis board spans two of the stretchers to provide a centerpoint for mounting the top. Cut the board to size, then mark the location of the apron notches that accept the ends of the board. Cut the notches and glue in the board.

the slot-cutter. Stop the cut just short of the triangle corner before using the opposite corner as a pivot point to swing the edge away from the cutter.

To clamp the three triangles, I make a clamping table out of melamine and hardwood braces (see p. 50). It uses a system of wedges to apply even clamp pressure to the triangles. When the glue has set, remove the excess glue with a scraper and handplane. If handplaning isn't your forte, you can simply sand the top and bottom

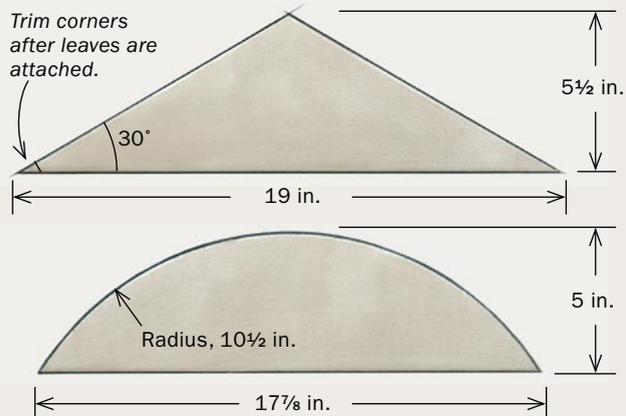
surfaces smooth. Complete the triangular top by planing the outer edges to their final dimensions.

With the triangular portion completed, use a trammel set to a 10 1/2-in. radius to make reference marks where the circular leaves will be attached. The points of the triangle will be trimmed later to align with the leaves.

The shelf is like the top—The triangular shelf is a thinner version of the one on top, but the construction is essentially the

Make the top and leaves

For consistent color and grain, cut the top pieces from a single 7-ft. board. Make a template of both shapes, and then arrange and trace them on the board.



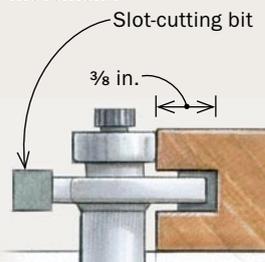
Rough-cut the parts. Cut the circular parts (shown) and triangular parts with a bandsaw. Stay just outside the marked lines so the parts end up slightly oversize.



Trim the triangles to exact size. Gochnour uses a shopmade cutoff table with a protractor fence to trim the two inside edges of each triangular part. He handplanes the outside edges after assembly.

SPLINES STRENGTHEN THE TOP AND SHELF

Cut the spline grooves. Cut a stopped groove on the inside edges of the triangles. The grooves accept splines that restrain wood movement.



Assemble the triangles. A clamping table, made from melamine so glue won't stick, has three wood cleats screwed to it, two of them angled to accept wedges. Assemble the three triangular parts using glue and splines, then add the assembly to the clamping table and drive wedges between the cleats and the triangle.

Add the leaves and attach the top



Set the hinges. Lay out and scribe the location of the hinges on the leaves (left), then mortise them in. Then use a clamp to hold each leaf to the triangular top, and transfer the hinge locations (above).

same. Make a full-size template of the isosceles triangle from the drawing on p. 50.

Mount the leaves and attach the top

Now you can attach the drop leaves. First, use a spokeshave to smooth the curved edge of each leaf to the line traced earlier.

The hinges are $\frac{7}{8}$ -in. by $1\frac{1}{2}$ -in. butt hinges from White Chapel Ltd. (www.whitechapel-ltd.com). To mount them, mortise the hinges into the leaves at a point 3 in. from each end. With the hinges installed on the leaves, align them with the triangular top and transfer the hinge locations. Then mortise the top and screw the hinges in place. Now use a bandsaw, file, and sander to shape the points of the tabletop to align with the drop-leaf curves.

The top is fastened to the base with a machine screw that slips through a slightly oversized hole in the axis board and into

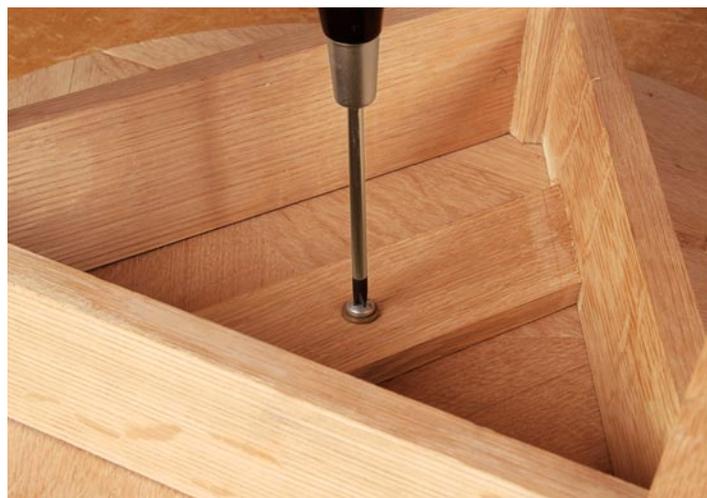
a threaded brass plate mortised into the underside of the top. Drill and tap for a $1/4$ -20 thread in the center of the plate. Then, bore and countersink for four $1/8$ -in.-dia. holes near the corners of the plate. Cut a mortise to accept the plate, and secure it with #6 by $1/2$ -in.-long brass wood screws. Now, attach the top and enjoy this unique side table. □



Make the axis plate. Use a hacksaw to cut a brass plate to size, then drill four mounting holes and a center hole. Tap the center hole for a $1/4$ -20 thread.



Mount the plate. After mortising in the axis plate, attach it with four brass wood screws.



Mount the top. To attach the top to the base, add a washer to a single round-head machine screw, then slip the screw through a slightly oversized hole in the axis board. Tighten the screw until it's slightly snug.

Online Extra

For the finish recipe used on this table, go to FineWoodworking.com/extras.

Chris Gochnour builds custom furniture in Murray, Utah.