

Arts and Crafts Side Table

Versatile design is
quick to build,
but rewards
precise joinery

BY KELLY J. DUNTON

The inspiration for this table dates back a century to designs by Gustav Stickley. He defined his furniture philosophy as being “where the beauty lies in simplicity of the wood and of the joints themselves.” To be faithful to the original designs, I built my table from white oak with pegged through-tenons joining the lower stretchers to the legs.

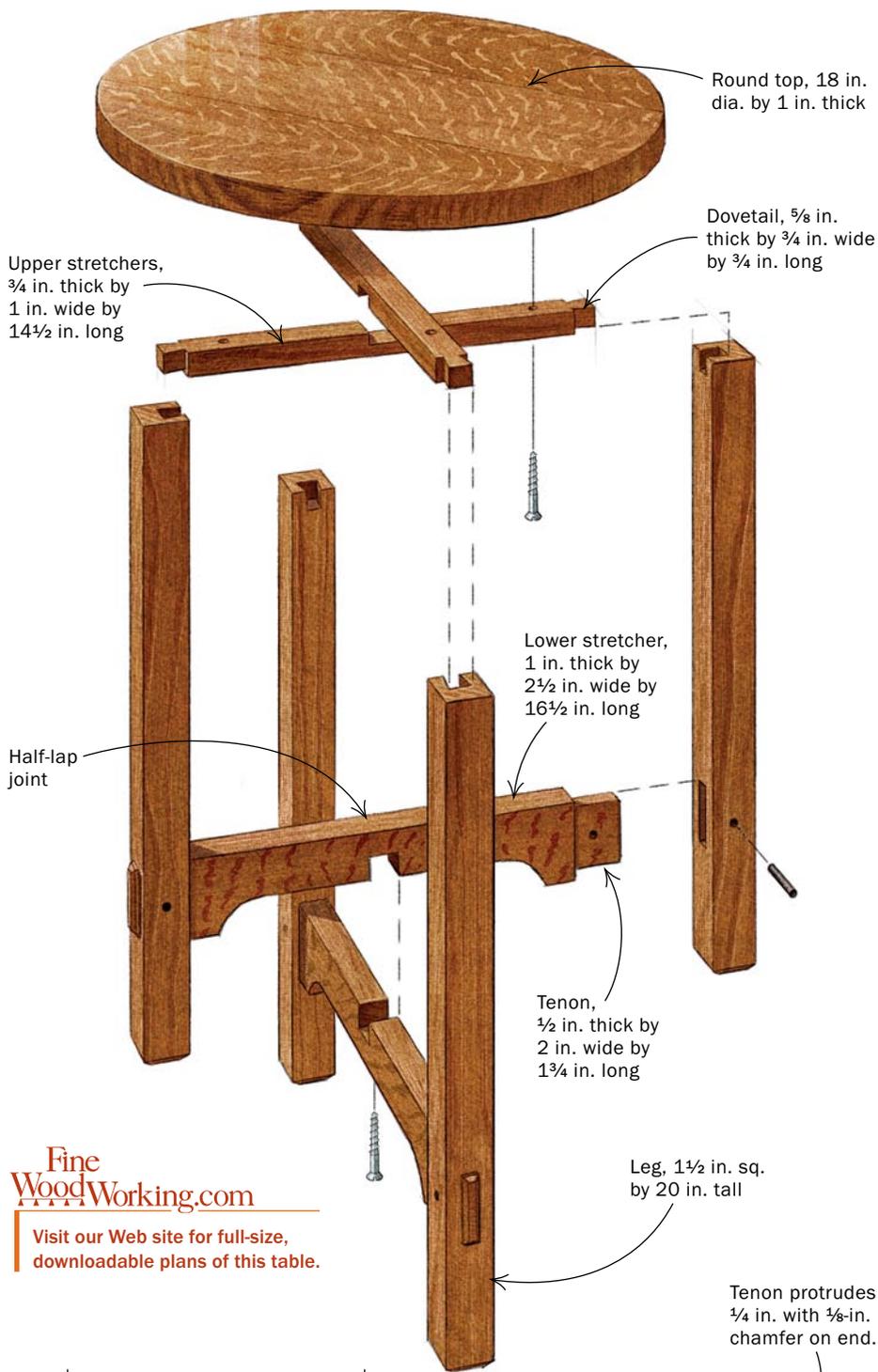
There are many uses for a small table: With slight changes in size, it can sit next to a chair in the family room, serve as a bedside table, or be used as a plant stand. Made from cherry or maple, this design would fit nicely into more modern décor.

This is a relatively simple project that uses little material and can be built with common hand tools and machines. So sharpen your chisels and planes and let’s get started.

Lay out the legs and cut the mortises

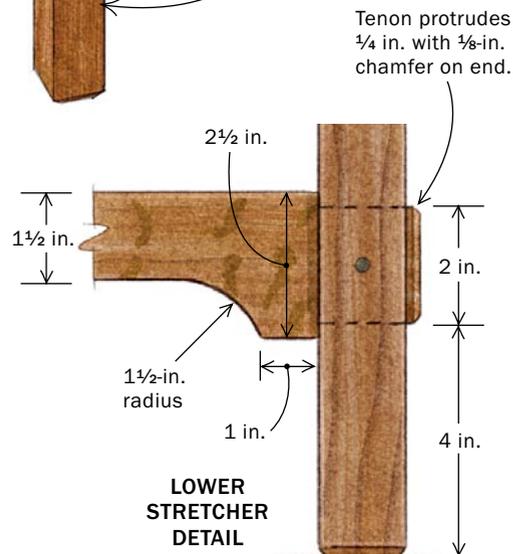
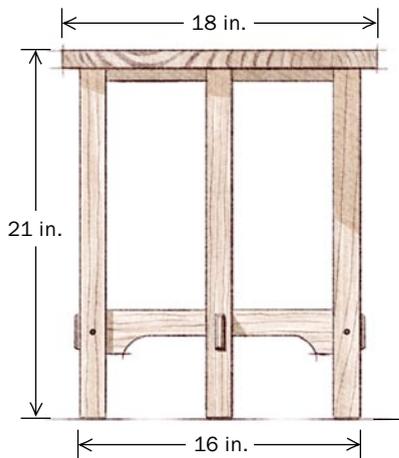
Much but not all furniture in this style was made from quartersawn white oak with its characteristic ray flecks running across the grain on opposite sides of the board. I chose this type of wood for the prominent top of the table, but for the rest of the

Photo, this page: Michael Pekovich; drawings: John Hartman



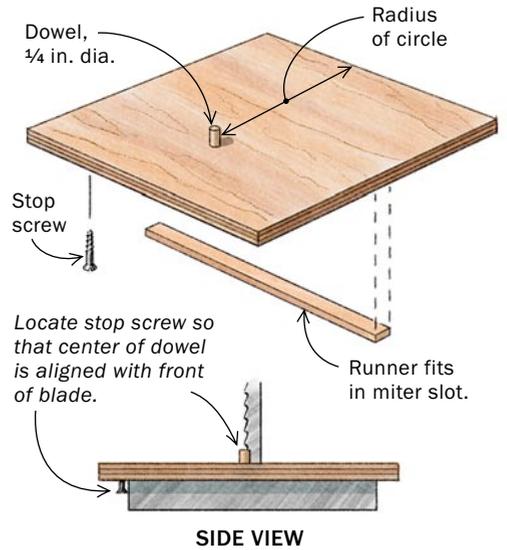
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BUILD A SIMPLE CIRCLE JIG

To cut the circular top, Dunton uses a jig that sits in the miter-gauge slot and has a dowel that fits into a hole drilled in the underside of the tabletop. The distance from the side of the jig that touches the bandsaw blade to the dowel equals the tabletop radius. Slide the jig until the front edge of the blade is aligned with the center of the dowel, and insert the stop screw.

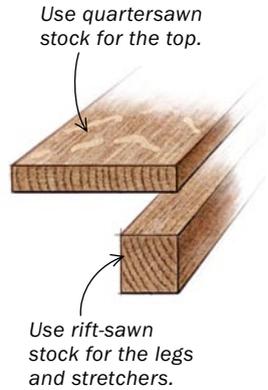


Use the circle jig. Place the tabletop on the jig and slide it forward until the stop screw hits the saw table (top). Then rotate the top to cut the circle (above).



piece I used more readily available rift-sawn boards (see drawing, below).

Because three sides of each leg will have near equal exposure to the viewer, I cut and surfaced the legs to size, and then selected the least attractive side of each leg to face inward. When laying out the mortises, make sure to place them accurately on all the legs and make sure the leg dimensions are identical; this will keep the table square and stable. Because the lower stretchers end in through-tenons instead of the more common



blind tenons, remember to mark both sides of the legs using the same side as a reference edge. I lay out the mortises using a marking gauge, a square, and a knife. I prefer a knife to a pencil because it gives greater precision and allows you to set the chisel in the knife cut later for the final paring cuts. These joints will be exposed, so take the time to lay out and cut them precisely.

There are several ways to cut the mortises. A hollow-chisel mortiser is the quickest method, but lacking this tool I chose to remove most of the waste at the drill press and then clean up the sides and ends with a sharp chisel. (Drilling by hand is an option, but it is important to drill straight and true.) To hold the workpiece securely and to prevent tearout on the bottom side

DRILL AND CHOP THE MORTISES

Drill-press jig. To keep the mortises straight and square and to prevent tearout where the bit exits, a jig consisting of a backer board and a right-angle fence (above) is clamped to the drill-press table. With a Forstner bit (inset), you can overlap each hole and remove more waste.



Clean up the mortises. Use a chisel the same width as the mortises to clean up the ends (right), and then a wider chisel on the sides (far right). Creep up to the line. Don't place the tip of the chisel in the line left by the marking knife until you have only a thin slice of wood to remove.





Tenons on the tablesaw. Use a dado set for quick tenons. For accuracy and clean cuts, outfit the miter gauge with an auxiliary fence and a stop block. Through-tenons must look good and fit right, so clean them up with a shoulder plane, a block plane, and/or a chisel.

of each leg, make a small fence consisting of two pieces of plywood or MDF glued and screwed at a 90° angle, which gets clamped to the drill-press table.

Install a bit that is slightly smaller than the width of the mortise, center the mortise on the bit, and then drill out the waste, starting at each end. It's best to use a Forstner bit because you can overlap the holes without causing the bit to wander off course. A second choice is a brad-point bit—cut the holes as close to each other as possible without overlapping.

With the leg clamped to the workbench, clean up each end of the mortise using a chisel that matches the mortise width as closely as possible. Keep the chisel off the layout line until the final cut, which should remove only a sliver of wood. Work into the center from both sides, but try to get the cleanest cuts on the visible outside of the leg. With the mortise ends established, use the widest chisel that will fit the length of the mortise to pare the sides. Work-

ing with white oak will probably require a mallet and a few trips to your sharpening stones. With patience and determination, you'll soon have clean mortises.

Create the upper and lower stretchers

With the legs nearly complete, turn to the upper and lower stretchers. Both pairs are connected with half-lap joints, but the lower stretchers have a curved profile on the bottom edges and terminate in through-tenons. I used a marking gauge, a try square, and a marking knife to lay out the tenons.

I cut the tenons using a dado blade on the tablesaw. It is helpful to make test cuts on a piece of scrap the same thickness as the stretchers. Check the fit until it is still a bit fat, and then pare the tenons with a block plane, a shoulder plane, or a chisel. In this way you will get a precise fit and nice clean cuts on the exposed tenon ends. Number each joint when you are done.

Now mark and cut the half-lap joints in both pairs of stretchers. Work from the

CUT THE TENONS AND HALF-LAP JOINERY ON THE TABLESAW



Cut the half laps. With the same miter gauge and auxiliary fence used to cut the tenons, cut the half-lap joint on each stretcher.



Profile the stretchers. Join the lower stretchers with double-sided tape and then bandsaw the profile.



Chamfer the tenons and legs. A 1/8-in. bevel gives the exposed through-tenons and leg bottoms a softer look and creates interesting shadow lines.



center points of each pair and mark the widths of each at the crossing point. Mark for the depth from the top of each stretcher and label which side is to be removed. Using a miter gauge, make multiple passes on the tablesaw to remove most of the waste. Then pare with a chisel to a perfect fit.

To bandsaw the profile on both lower stretchers at once, join them with double-sided tape. The curve also can be cut with a jigsaw—but clamp or tape a piece of scrap to the upper side of the stretcher to keep the cut as clean as possible.

When the upper stretchers are cut to size, saw a dovetail on each end. A handsaw and/or tablesaw can make these cuts, leaving just a bit of chisel work. Cut a 1/8-in. shoulder on the lower side. This shoulder can be registered against the side of the leg to transfer the shape of the dovetail to the top of the leg. After laying out the mortises in the legs, remove some of the waste on the drill press, and then clamp the leg in a vise and chop away the rest with a chisel.

The final work on the top stretchers is to drill and countersink screw holes through which to attach the tabletop. To allow for seasonal movement of the top, elongate the holes in one of the stretchers.

Make the round tabletop

It is worth spending time at the wood supplier searching for a quartersawn board with a decent amount of ray fleck in it to form the tabletop. Making the top from

DOVETAIL THE UPPER STRETCHERS

Saw a dovetail onto the ends of the upper stretchers. Dry-fit the table and scribe the location of the dovetail on the top of each leg (above). Saw on the scribe mark (right) and remove most of the waste on the drill press. Clean up the joint with a chisel (far right).



ASSEMBLE THE BASE IN TWO STAGES



Begin base assembly. Glue and clamp the first pair of legs to their upper and lower stretchers. On the second pair of legs, glue only the lower stretcher in place.



Peg the joints. The pegs are inserted from both sides of the leg to avoid blowing out the wood when they exit.



Finish base assembly. Because you need to overlap the two halves of the base, only attach the second upper stretcher after the lower stretchers are together.

three well-matched pieces from a single board is better than using two wider but conflicting pieces from different boards. Prepare, glue up, and clamp the pieces.

There are many ways to cut the circular top. The simplest is freehand, using either a bandsaw or a jigsaw and cleaning up the edge with hand tools and sandpaper. I used the bandsaw, but with a jig that sits in the miter-gauge slot and has a center point that fits into the underside of the tabletop (see drawing, p. 57). Slide the jig until the front edge of the blade is aligned with the center of the tabletop, and rotate the top until the circle is complete. Clean up the edge with a block plane, file, and sandpaper.

Assembly sequence and finishing

To be historically accurate I decided on a fumed finish, which uses ammonia fumes to darken the oak chemically and is best done with the piece dry-fitted (see *Finish Line*, pp. 116-117). As for a topcoat, whether you fume the oak or prefer a natural look, it is beneficial to prefinish pieces before assembling them.

Sand all surfaces to P220-grit and then carefully wipe a clear finish on all the surfaces that will not be glued, including the ends of each tenon that will protrude from the legs.

Begin assembly by preparing the mortises for pinning. I marked the center points of the mortise sides and drilled all the way

through using a sharp brad-point bit with a piece of scrap under the leg to minimize breakout. After the stretchers are glued to the legs, you'll drill into the existing hole and through the tenon before inserting ebony pins.

Glue the first pair of legs and stretchers and clamp until dry. Apply glue just to the tenons after they have been partially inserted into the mortises to reduce squeeze-out. The second pair overlaps the first, so don't glue in the second top stretcher until after the two pairs of legs are connected. I drove a screw into the bottom of the lower intersecting stretchers. □

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