

Pedestal Dining Table

I have long admired Alan Peters's graceful pedestal dining table, and the work of Sidney and Edward Barnsley that inspired it. So when I was asked to make a dining table for an exhibition sponsored by *Maine Home and Design* magazine, I jumped at the chance to follow in the footsteps of some of my woodworking heroes.

What is great about pedestal tables is the absence of legs. Without the usual four posts getting in the way, a chair can be slid into any position under the tabletop. However, like most things in life, there are trade-offs. The trouble with the single pedestal design is that all the forces are focused through the central column. Those forces include not only downward leverage when someone leans on the edge, but also twisting forces, especially with a large tabletop like this one. So you need a thick, rigid central column connected to the top with rock-solid joinery.

This pedestal design has a good balance between stiffness and elegance. It has been tested in the hostile environment of my own home. My three boys can smell weakness, and this table has been a worthy adversary for a few years now. At nearly 40 in. by 62 in., there is ample space for six people, eight in a pinch.

Although the anatomy looks complex, all of the joints are easily executed with basic woodworking tools, making this a manageable project.

The base has three components: the feet, the column, and the arms under the top. The arms and column segments are the same thickness while the feet are thicker. Because this table is rectangular in shape, not square, the base has a long and short axis to echo that fact. I gently curved the sides of the top, primarily because I like the way it feels to sit around that shape.

Base starts with arms and feet

When milling the base components, make some test parts for setting up machines. They can be made from a different wood, but they must have the same dimensions as the table stock.

The general rule in furniture making is mortises first, tenons second. That's why you'll start with the feet and arms, and do the column last. You'll also want to cut the mortises and half-laps in

the arms and feet before shaping them, while the pieces still have square edges for reference.

The joinery on the feet and arms looks complex, but when you do the mortises first, the half-laps then cut across them and magically generate that sophisticated-looking joint.

Start by marking centerlines on the arms and feet in both directions, length and width. Then, after cutting the mortises, you'll be able to align the pieces accurately, one atop the other, and use a



VIDEO WORKSHOP

Watch Rousseau build this table from start to finish in a members-only video at FineWoodworking.com/extras.

Smart anatomy builds strength into a user-friendly design

BY TIMOTHY
ROUSSEAU



sharp 2H pencil to trace the edges of each piece onto the other, carrying the lines down the sides to lay out the half-laps.

Pay very close attention to which face of a part gets the notch. If it's on the wrong side, the base will not go together. With the waste areas clearly marked, use a dado set in the tablesaw to notch out the material between the layout lines, nibbling the edges until the notch just starts to slip onto the mating part. Then take light passes with a handplane, a shaving at a time until the pieces

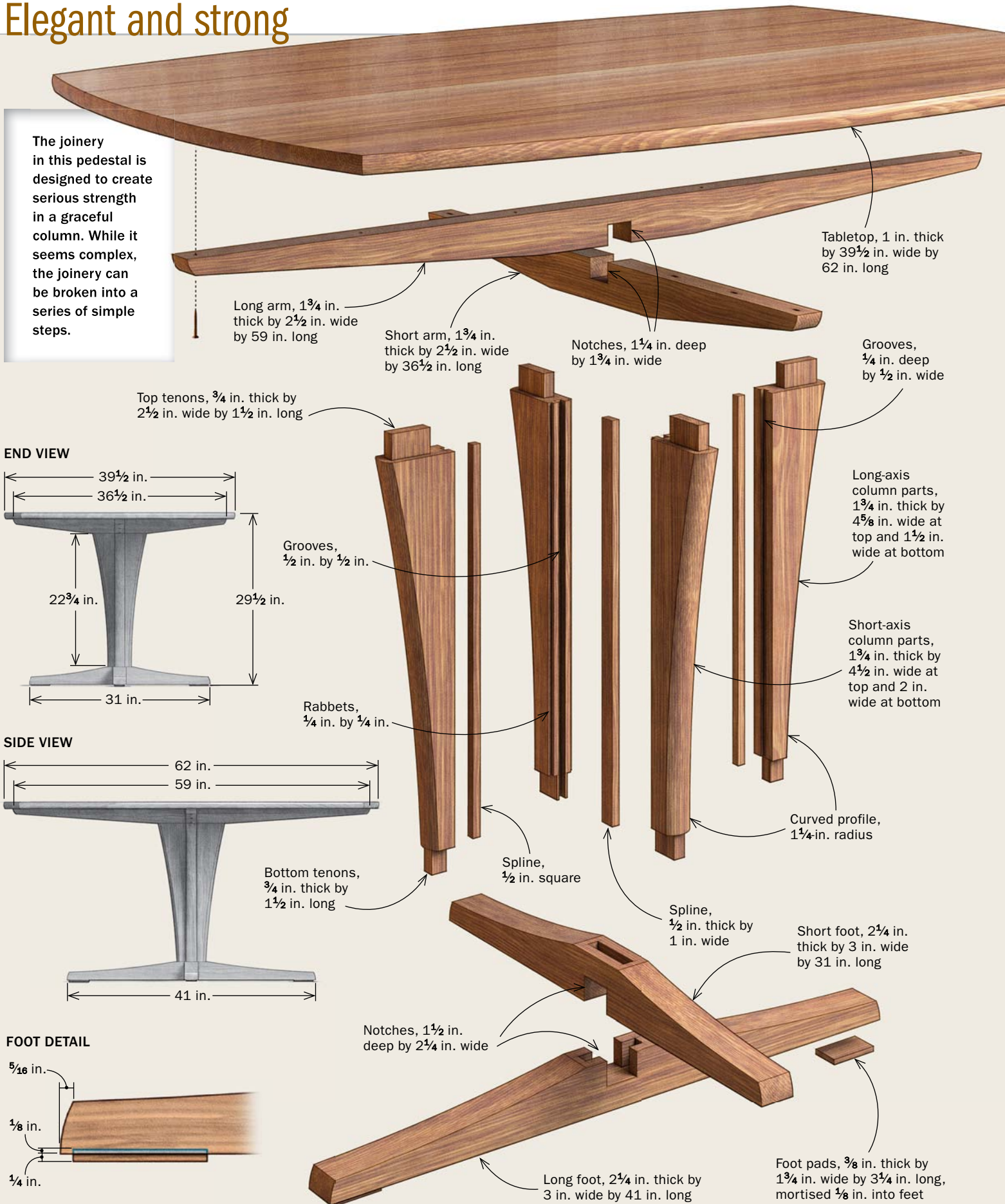
come together half to three-quarters of the way. At that point, they should go the rest of the way under clamp pressure.

Tapers and curves complete the arms and feet

With the half-laps complete, you can shape the feet and arms. The arms, which can't be seen without stooping down, get a simple bandsawn taper that I smooth with a handplane. I smooth the small curves on the ends with a rasp, files, and a sanding block.

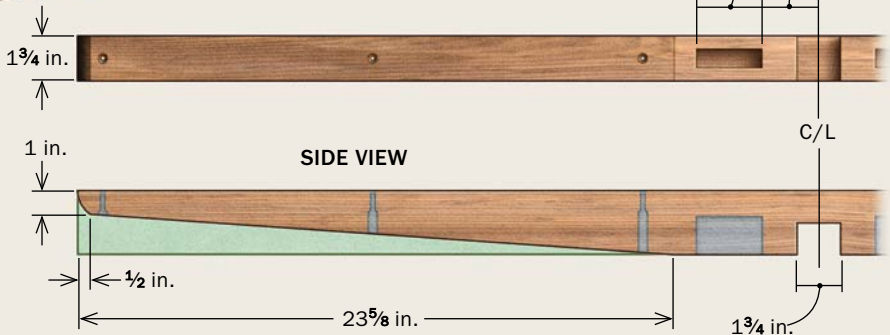
Elegant and strong

The joinery in this pedestal is designed to create serious strength in a graceful column. While it seems complex, the joinery can be broken into a series of simple steps.



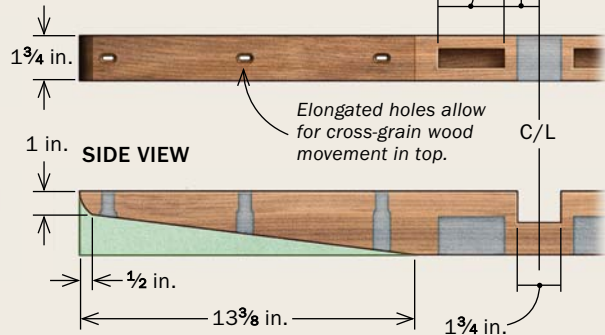


LONG ARM BOTTOM VIEW



SIDE VIEW

SHORT ARM BOTTOM VIEW

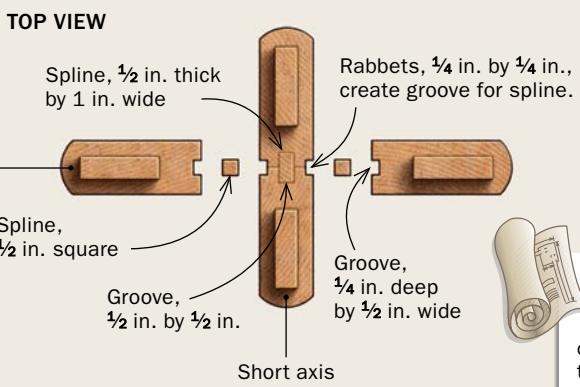


SIDE VIEW

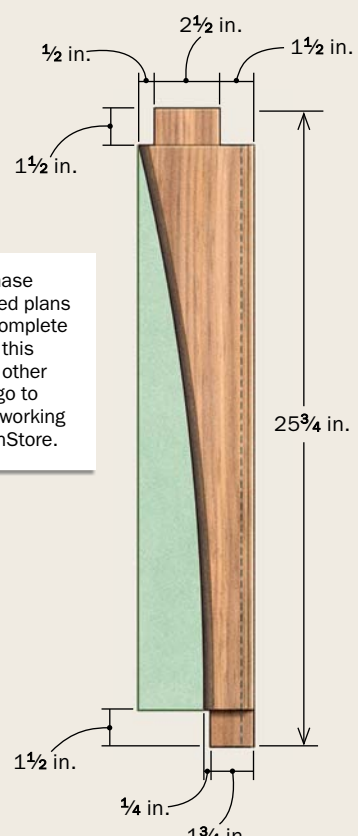
LONG AXIS COLUMN



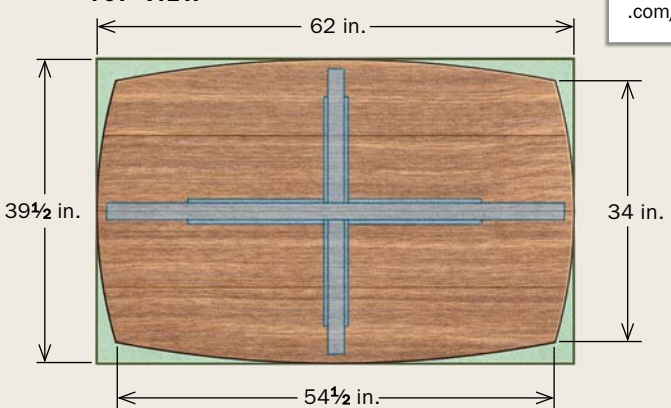
COLUMN JOINERY



SHORT-AXIS COLUMN

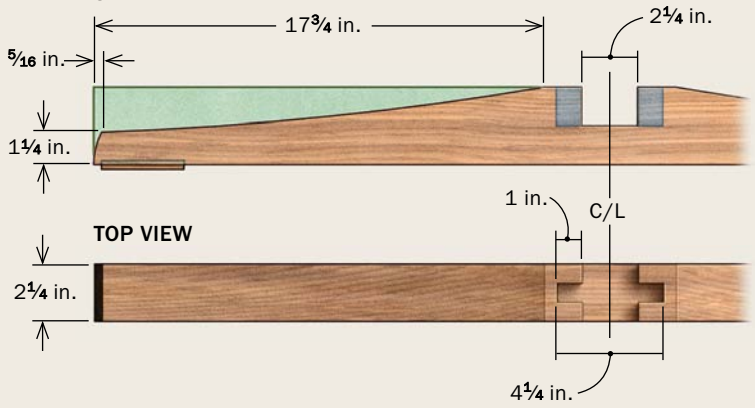


TOP VIEW



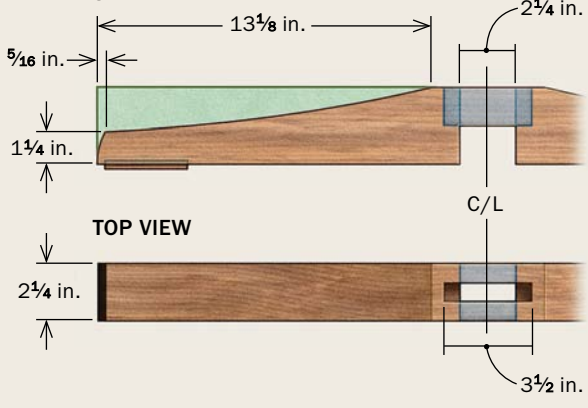
To purchase expanded plans and a complete cutlist for this table and other projects, go to FineWoodworking.com/PlanStore.

LONG FOOT SIDE VIEW



TOP VIEW

SHORT FOOT SIDE VIEW



TOP VIEW

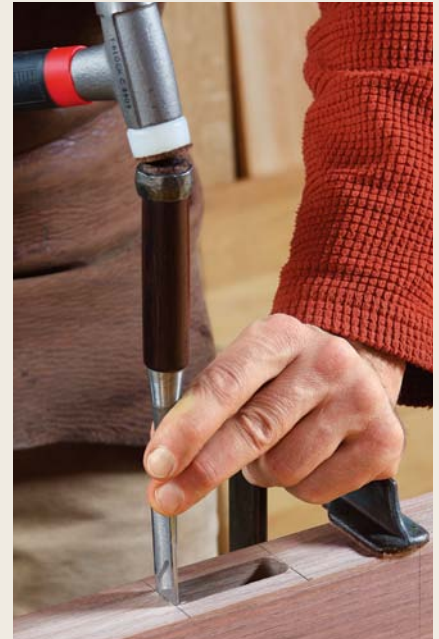
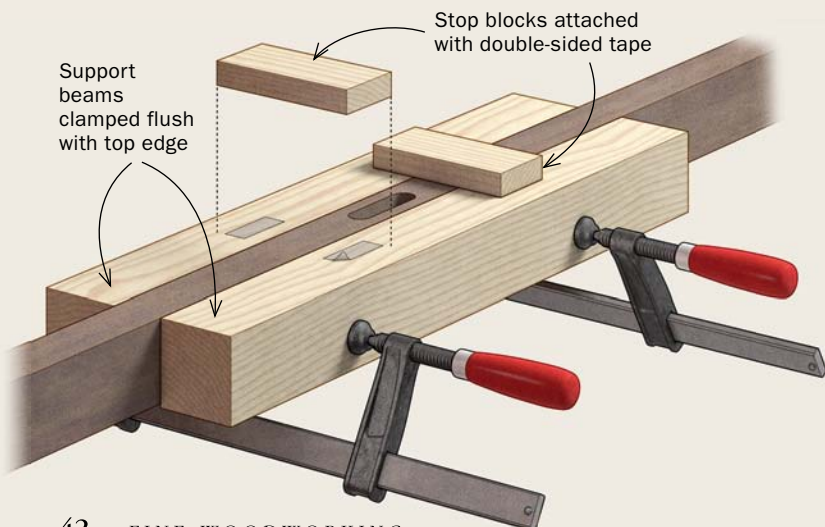
Arms and feet first

CENTER THE MORTISES

Rousseau makes these 3/4-in.-wide mortises in two passes with a 1/2-in.-dia. spiral upcut bit, reversing the router setup between passes to center the mortise.



Solid setup. Rousseau places the workpiece upside down on the bench and clamps two beams alongside it, flush with the top edge. These provide extra support for a router, which is equipped with two edge guides that hug the beams. Both guides are factory-made, but Rousseau bought longer steel rods to accommodate the beams.



Square the ends with a chisel. To guide the chisel, knife a line at each end of each mortise.

The feet get long, graceful curves. To make them uniform, I use tracing templates made from 1/8-in. plywood. I cut the parts using a bandsaw and smooth them with a spokeshave. I follow the spokeshave with a card scraper on the long curves. I smooth the short curve on the ends with a rasp and files. Then I sand everything by hand using a rubber sanding block.

Do the column joinery before routing the curves

The column has splines that connect the parts, and tenons that connect the assembly to the arms and feet. The first step for this joinery is to cut tenons on the ends of the four individual workpieces while they are still separate components and before any curves are cut. Start by cutting the cheeks on the ends of all of the column parts.

To mark and cut the various end shoulders, I find it more accurate to work directly from the mortises in the feet and arms. But there is a specific order you must follow. Start with the shoulders on top of the short-axis pieces, lining up each piece with the centerline of the shorter arm. Make the shoulder cuts at the tablesaw, and complete the ends of the tenon with ripcuts on the bandsaw. Now do the same thing to the tenons on the bottom of the short-axis pieces (these tenons are shouldered on the outside only).

Only when these tenons are cut and fitted into the shorter arm and foot can you dry-fit the longer arms and foot and mark the tenons on the last two column pieces.

CUT AND FIT THE LAP JOINTS

After handplaning their sides to get the mating arms and legs close to final width, Rousseau uses centerlines to align them in both directions, tracing pencil lines along the edges and then carrying those onto the sides of the pieces.



Nibble to the line. Using a dado set and an accurate crosscut fence on the tablesaw, sneak up to the pencil line without quite touching it.



Handplane to fit. There should be just a bit of handplaning left to get the pieces to enter their notches fully. The goal here is to get them to go about three-quarters of the way. Clamps will do the rest later, and you don't want to scar the pieces now by driving them all the way home.

After all of the tenons are trimmed to size, the last step is to make grooves for the splines that run between the column parts. Then mill up some hardwood spline stock to fit the grooves, leaving them a little narrow so there is a gap at the bottom of the grooves for excess glue to squeeze into.

With the joinery done on the column parts, you can shape the curves. There is a partial bullnose profile on their outside edges, which is a good reason to choose template routing over hand shaping. I usually rout this curve on the shaper with a tall cutter, but I'll show you how to do it with a router bit. The tallest bit I could find with the right profile cuts only a 1½-in.-tall bullnose—leaving a flat shoulder on the top and bottom of these 1¾-in.-thick pieces—but a spokeshave and a curved sanding block finish the curve nicely.

The bit is from Whiteside, and I added a Whiteside bearing and lock collar to turn it into a template bit. It's worth doing since you'll use the same bit setup later to trim and mold the edges of the tabletop.

Use the dimensions on pp. 40-41 to make two more templates from ½-in.-thick MDF or plywood. Make the curves extralong so you have a safe place to start and stop the bearing, and make the templates extrawide to make

SHAPE THE ARMS AND FEET LAST

With the joinery done, you can shape the parts. The arms get a simple taper while the feet get a curve. Be aware that these shapes are different for the long- and short-axis parts.



Bandsaw to the line. After laying out the tapers, long curves and rounded tips, bandsaw close to the line. Rousseau smooths the parts with hand tools.

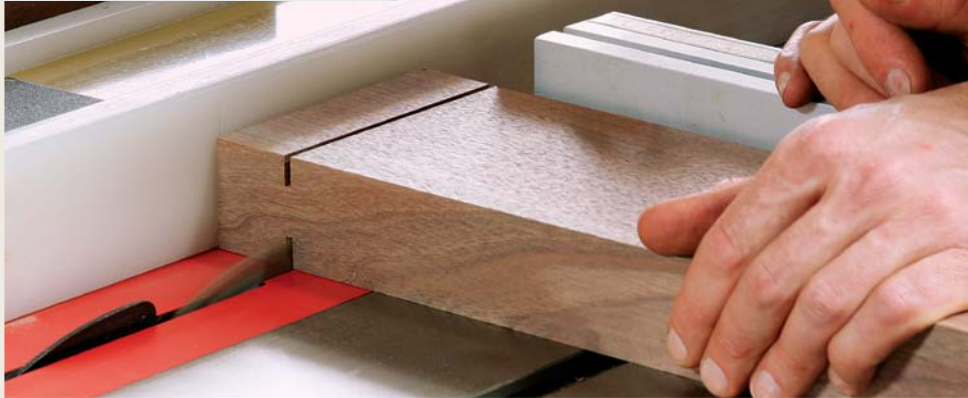


Drill for attaching the tabletop. The screw holes and counterbores in the shorter arm need to be slotted to allow for wood movement in the top. Do that by overlapping holes and clearing the waste between them with a chisel.

Make and shape the column parts

TENONS FIRST

Start by cutting the cheeks on each part, and then partially dry-fit the parts of the base to see where to cut the end shoulders.



Start with the cheeks. Make shoulder cuts first (above), before finishing the tenons on a tenoning jig (below). This sequence allows the waste piece to fall away safely.



room for the locator blocks that also hold the toggle clamps.

I locate the workpieces on the jigs so the edge of the template represents the outermost part of the profile. That means you can put the part in the jig and use it to trace a line for band-sawing the waste away. Then when you put the pieces back in the jig for routing, you can just put $\frac{1}{8}$ -in.-thick spacers behind the workpiece to push it outward for multiple passes and a smooth result (see photos, opposite).

Base glue-up needs a game plan

The base joinery is a puzzle of sorts, and must be assembled in a certain order. All of the parts along the short axis—feet, column, and arms—are as-

sembled first. Once that glue-up has cured, the long axis parts are added.

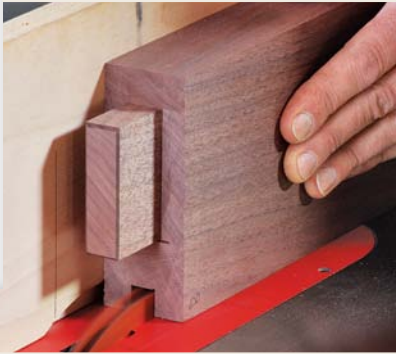
The first glue-up is the short axis column parts, which are connected by a spline. I can get good pressure at the top and bottom by clamping across the tenons, but curved cauls are needed to help apply pressure squarely across the central, curved areas. The trouble is that the angle of the curve is ever-changing as it moves along. To match it at a few key points, I use a hole saw to make big angled holes in pine blocks, cutting the blocks in half to make matching clamping cauls.



Trim on the bandsaw. Hold the column parts against the arms and feet to mark where to trim each tenon. Make the shoulder cuts at the tablesaw and then use the bandsaw to trim away the waste.

GROOVES AND SPLINES

These align the column pieces for an easier glue-up. Make all the grooves and then mill hardwood splines to fit.



Center the grooves. Use a test piece and dial calipers to center the grooves before working on the real workpieces.



Rabbets form grooves, too. The edges of the short-axis pieces get rabbets, which form grooves when these pieces are joined. Bury the dado set in a sacrificial fence to cut these.

SHAPE CURVES IN TWO STEPS

The long- and short-axis pieces get slightly different curves, so you need two templates, which serve as router-table sleds. They are extralong to give a lead-in and take-off surface for the router bearing. Locator blocks also serve as attachment points for toggle clamps.



Route in stages. This is a deep cut, so after roughing away the waste, Rousseau inserts $\frac{1}{8}$ -in. spacers for a first pass on the router table, and then another set to create the full $\frac{1}{4}$ -in.-wide profile.

MULTIPURPOSE ROUTER BIT

Rousseau uses this router-bit setup to shape the profile on both the column parts and the tabletop edges. It comes up a little short on the thick column parts, leaving a bit of handwork to do on the edges.

Whiteside Oval-Edge Bit
No. 1480
\$53

Whiteside Bearing
No. B16
\$13.82

Whiteside Lock Collar
LC $\frac{1}{2}$ in.
\$2.81



During this first assembly it is critical that the shoulders of the two parts line up and stay that way as the glue dries. I align these shoulders by putting a long bar clamp on the ends of the tenons.

Stop for surface prep—After gluing the two narrow column parts together to form one big flat part, plane and sand all of the column components. I handplane the flat surfaces and sand the curves, being careful not to round over the crisp edges. Then you are ready to glue on the shorter arm and foot. You might be tempted to put glue on sparingly, to prevent a lot of squeeze-out. Instead, butter up both the mortises and tenons generously, as well as the half-laps. You need full strength in these joints, and



Standard spokeshave finishes the job. Watch the facet you are making to gauge your progress. Sand with a block afterward.

Assembly's like a puzzle

Put the sections together in stages. Clean up the squeeze-out and let the glue dry before moving from one stage to the next.



1

Two column pieces first. Start by gluing the two short-axis column pieces together, using a spline to align them. Use a long bar clamp to ensure that the ends of the tenons and their shoulders end up dead even.

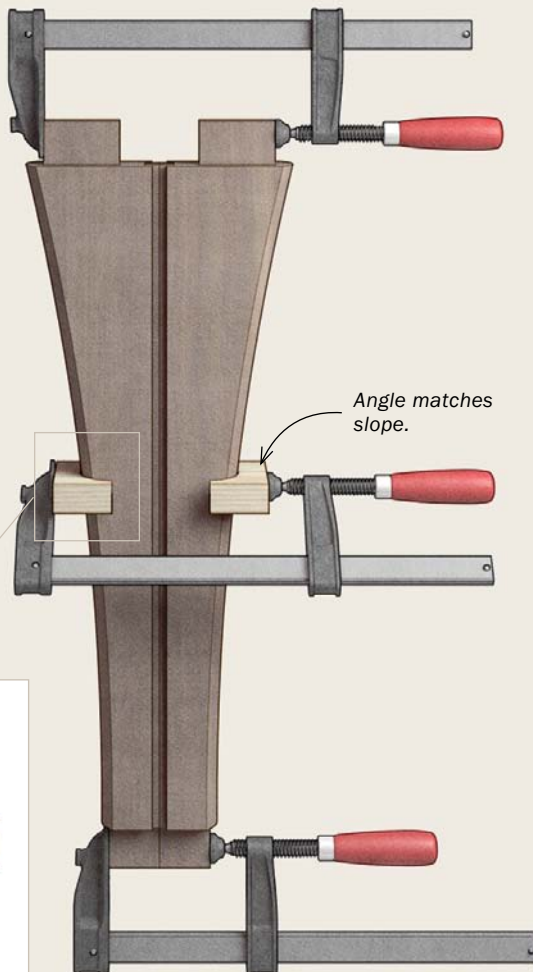


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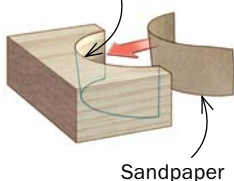
Add the short arm and leg. Apply plenty of glue to these joints. It's better to deal with squeeze-out than to have a glue-starved joint.

CURVED CAULS TO THE RESCUE

To get pressure directly across the middle of the joint, you'll need clamping cauls that match both the curve of these pieces and the slope at the point where they are placed. Rousseau makes them by using a hole saw to drill through a pine block at an angle, cutting the block in half, and then attaching sandpaper to the inside face with yellow glue to keep the cauls from slipping.



Radius is roughly 1¼ in. to hug curved profile.



the cleanup is worth it. With all of the short-axis parts assembled, and the squeeze-out removed, you can add the rest of the pieces to the puzzle. Dry-fit everything to check it as you go. You may have to trim the tenons a bit more or handplane the back edge of the last two column pieces for a clean joint with the others. Again, you'll need curved, angled cauls to get pressure along the entire glue line.

The last bit of work on the feet is adding thin hardwood pads underneath. The table will be steadier on just four points, and easier to move around. You could just glue on thin pads, but I think those are likely to be knocked off over time. So I glue the pads into shallow pockets.

Finish off the top

The base is now ready for its first coat of Watco Danish Oil. I used the natural color for this walnut. While that first coat dries, turn your attention back to the tabletop.

The square top has pillowed edges, with long curves and a partial-bullnose profile, echoing the edges of the column. I rout these edges using the same curved bit as before. After roughing out the shape with a jigsaw, I guide the router bit with two long templates, one for the short edge and one for the long one. To complete the table, sand the base and top up to 320 grit, and then apply four to five more coats of Watco. Before one last thin coat, I buff the surface with a Festool 500 pad on my random-orbit sander. It works beautifully. □

Timothy Rousseau is a furniture maker in Appleton, Maine, and a regular instructor at the nearby Center for Furniture Craftsmanship.



3

Last two column parts. Add the two final splines, and glue on the last two column parts, using curved cauls again. Dry-fit the last foot and arm to be sure to be sure all of the tenons line up with their mortises.



4

The last arm and foot. To pull the half-laps all the way home, you'll probably need to use bar clamps and a mallet. Rousseau uses epoxy here to buy some extra time.

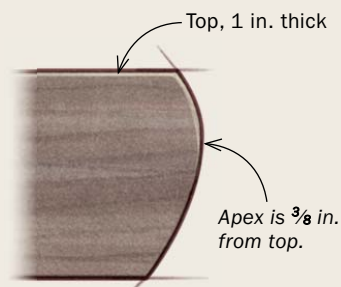


PROFILE THE TOP

Rousseau uses long templates to rout the side and end curves, and the same bullnose router bit to form the curved profile on the edge at the same time. He does the end-grain first, and then the long edges to remove any chipout at the ends.



Take it in two passes. After cutting away most of the waste with a jigsaw, make a first pass to remove some of the remaining waste (above), and then reposition the template for a last pass and a smooth final surface (left).



PROFILE IS OFF CENTER

Set the bit height slightly high of center for a more interesting profile.