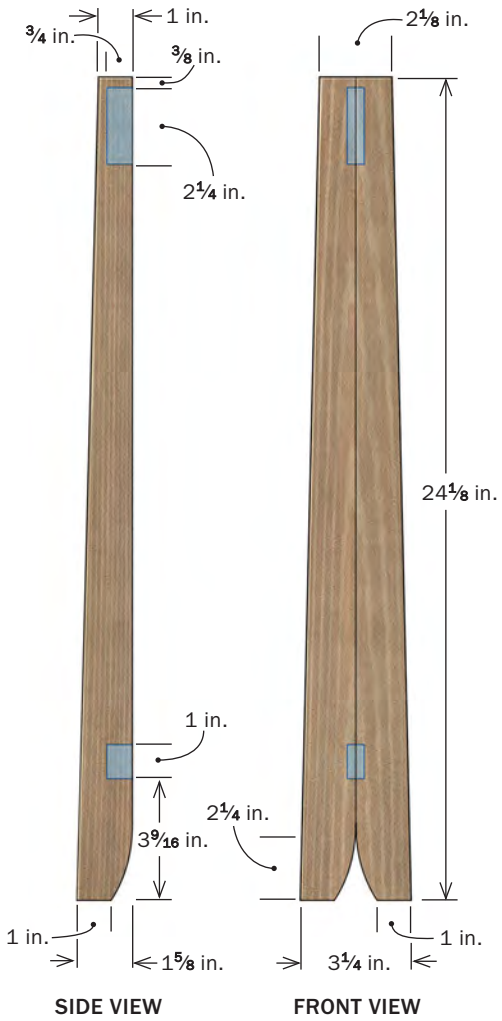
Oval Side Table

An elliptical top and crossed rails distinguish this contemporary piece

BY THOMAS THROOP

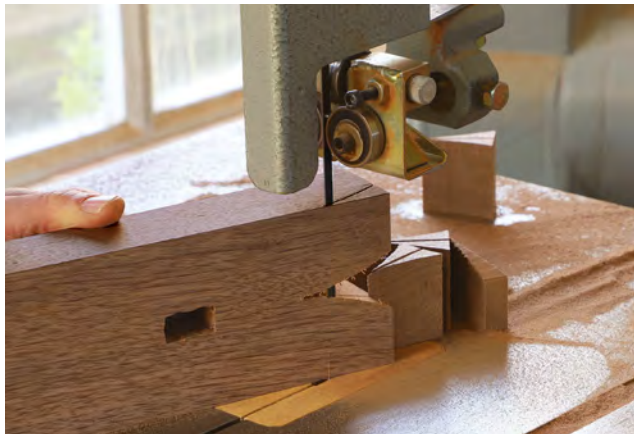
Photo: Thomas Throop

Legs



Mortises first. *Throop cuts the mortises for the rails and stretchers with the workpiece still square. Then he bandsaws the taper into the front face of the leg.*

Post-taper shaping. *After sawing and smoothing a taper on the front face of the leg, and then running a centered V-groove along its length at the tablesaw, Throop bandsaws the twin curves at the foot.*



Another curve. *A third bandsawn cut creates the curving inside face of the foot.*

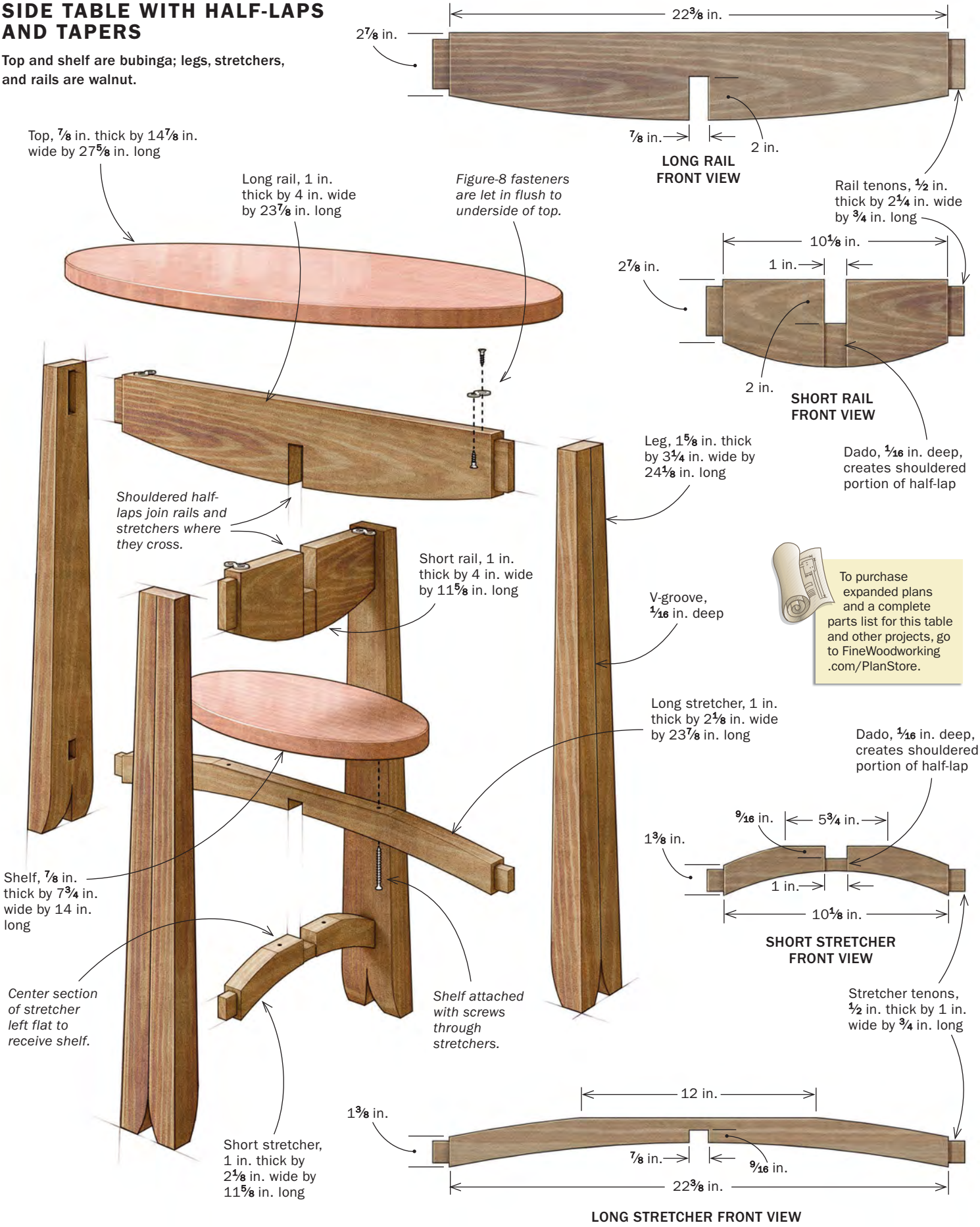
Two more tapers. *Throop next tapers both edges of the leg on the bandsaw before smoothing them with several light passes at the jointer.*

When I designed this side table, I was aiming for something straightforward yet still somewhat unexpected. I have always been fond of half-lap, or halving joints, and I decided to give the table's base X-shaped rails and stretchers that would be joined with half-laps where they crossed. A rectangular top might have been visually awkward with this configuration; going with an oval instead seemed like a natural solution. I often include tapered elements in my designs, which can control visual weight and movement in a piece. Here I designed a leg that is wider and thicker at the bottom to help ground the piece while still maintaining an overall sense of lightness. And to enhance the upward movement of the taper I added an incised vertical line at the center of the leg. At the foot I included some curves to reduce the visual weight down there and produce a more dynamic stance that ties in with the oval top and shelf. To complete the composition, the rails and stretchers needed to be curved too. The rails, bowing

Photos, except where noted: Jonathan Binzen; drawings: John Hartman

SIDE TABLE WITH HALF-LAPS AND TAPERS

Top and shelf are bubinga; legs, stretchers, and rails are walnut.



upward from center to ends, echo the oval top, while the stretchers, bowing the opposite way, create more lift in concert with the feet. I've made this table in a variety of woods; this time I made the base of walnut and the top and shelf of bubinga.

Legs first

The legs taper two ways—they are wider at the bottom, but also thicker there. With the leg blanks still square, I marked both tapers, then marked the mortises. After chopping the mortises on my hollow-chisel mortiser, I moved to the bandsaw to cut the taper in the leg's thickness. In order to keep the joinery simple where the rails and stretchers meet the leg, I tapered only the outside face of the leg. I smoothed the bandsawn surface with a few light passes over the jointer.

With the leg tapered in thickness but still full width, I detailed the front side with a centered V-groove running top to bottom. I did this at the tablesaw with the blade tilted at 45° and set to cut about 1/16 in. deep. The V-groove then became my reference line as I laid out the rest of the shaping of the leg—the taper in its width and the curves at the foot. I cut to those lines at the bandsaw, then cleaned up the tapers on the jointer and the curves at the bench with hand tools.

Half-lapped rails and stretchers

The next step was to cut and fit the tenons on the rail and stretcher blanks. I cut them at the tablesaw with a dado stack and a miter gauge. I set up the dado blade to cut less than the full length of the tenon; for a 1-in. tenon I use a dado stack 3/4 in. or less. This enabled me to cut each face of the tenon in two passes and use the rip fence as a stop.

After the tenons were complete, I cut the shouldered half-lap joints. I used the shouldered version because it helps keep the rails from twisting. I started by cutting the shallow dadoes for the shouldered section

Shouldered half-lap joints

Centering device. *The half laps begin with shallow dadoes for the shouldered portion of the joint. Throop cuts in two passes using a stop block on the miter gauge and turning the workpiece end for end between passes, ensuring the dado is perfectly centered.*

Slot-cutting. *With the stop block in the same location, Throop turns the rail on edge and raises the dado blade incrementally to cut the half-lap slot.*

The mating slot. *With the first rail's dadoes and slot cut, Throop can measure to find the correct width for the mating slot. He cuts it using the same centering technique.*

Well-fitted half laps. *Having cut the second slot slightly tight, Throop uses a few strokes of a shoulder plane to achieve a perfect fit.*

Shaping the aprons and stretchers

Taking care of the curves. *Having cut and fitted the tenons and half-laps, Throop bandsaws the rails' curves and then smooths them at his edge sander.*

of the joint. I used a dado stack and the miter gauge, and again the width of the dado stack was less than the full width of the dado. To be sure the dado was perfectly centered in the length of the rail, I set a stop block on the miter gauge and cut each dado in two passes, flipping the rail end for end between them.

Next, I cut a slot half the height of the rail. I used the same stop-block setting, but I turned the workpiece up on edge and began cranking up the dado blade, reaching the full height of the slot with a series of cuts. It is very important to use a sacrificial backer here to minimize blowout. Once these cuts were completed, I had the target size for the slot in the mating rail. I set the stop block to cut the slightly narrower slot, and again guaranteed it was perfectly centered by turning the workpiece end for end between each pair of passes. Once cut and fit, the joint should come together with just the slightest amount of friction.

At this point I took the stretchers to the drill press and cut clearance holes and counterbores for the screws I would use to attach the shelf. With that done, I cut the rails and stretchers to their curved shape at the bandsaw and cleaned up with hand tools. I could have made templates and flush-trimmed the parts to final shape with a router, but with just one table to make, I find it simpler and more efficient to work by hand and by eye. A few passes with a small block plane or the compass plane after bandsawing to the line and I was ready for sanding. After final fitting of the rail and stretcher half laps, I dry-assembled the entire base and set it aside.

Two ellipses

To lay out the elliptical top and shelf, I used a tried-and-true method with brads and a circle of string. With the top (and then the shelf) upside down, I set pins at the focal points of the ellipse, looped the circle of

Boring for screws. *After completing the stretchers' tenons and half laps, but before cutting their curves, Throop drills clearance holes and counterbores for the screws that will fasten the shelf.*

Curving the stretchers. *Bandsaw work achieves the curves. Edge sanding smooths the convex curves, but Throop uses a compass plane to fair the concave ones.*

Assemble the base

Join the half-laps first. *Throop glues up the rails and stretchers separately and lets them cure before moving on to the rest of the base assembly.*

Dry-fit the whole base. *With the rails and stretchers glued up, Throop adds all four legs dry, then stands the base upright.*

Then glue the legs one by one. *He removes one leg, applies glue, replaces and clamps it, then moves on to the next leg, working his way around the table. Tapered offcuts saved from the leg-making process serve as clamping cauls.*

string around them, and pulled it tight with a pencil. Keeping the string taut, I moved the pencil around the perimeter to draw the ellipse. It can take a few attempts to get a smooth shape. I cut to the line at the bandsaw, smoothed the curve at a disc sander, and did some hand sanding for final smoothing. Last, I routed a small 45° chamfer around the top and bottom edges.

The table comes together

The first step in assembly is gluing up the half-lap joints. Take care that the parts are glued up with their top edges flush and their inner faces square to each other. This should all happen naturally if the joint is cut properly. Just a bit of glue on the surfaces and a single clamp will close the joint. Too much glue and it will be difficult to close the joint, as the glue has nowhere to easily squeeze out.

Once the rails and stretchers were glued up, I dry-fit all the legs again. Then I removed one leg at a time

Topping off the table

Elliptical layout. *A loop of string, two brads, a pencil, and a steady hand produce the elliptical layout for the top.*

to glue it and clamp it in place. Tapered clamping cauls were necessary; I had saved offcuts from the leg-tapering process for just this reason. As the glue set on one leg, I would remove and glue up the next one, working my way around the table until all the legs were glued and clamped.

When the glue had cured, I moved on to attaching the top and shelf. Attaching the shelf was just a matter of driving screws through the holes I had drilled in the stretchers earlier. But I attached the top in a different manner. Because the rails are so deep, it would be unwieldy to drill through them for screws; and screws wouldn't permit as much movement as I wanted for

The oval emerges. *At the bandsaw, Throop cuts the bubinga top blank to within 1/16 in. of the layout line; then he fairs and smooths the edges at his disc sander.*

Mini profile. *Using a trim router and a 45° chamfer bit with a guide bearing, Throop cuts a small chamfer around the top and bottom edges of the top and shelf.*

Figuring out the figure 8s. *Wanting to recess the figure-8 fasteners into the underside of the top, Throop first screws them directly to the top of the rails.*

Inset ovals. *After inverting the base on the top and marking the locations of the figure 8s, Throop uses a template to rout shallow oval mortises for each of them.*

Neat mortises. *When set in their mortises and screwed down, the figure 8s sit flush with the underside of the top.*

the top anyway. So I chose figure-8 desktop fasteners. These allow plenty of movement and are easy to install. I did add one twist to the process—I mortised them into the underside of the top rather than into the top of the rails. I think this makes for a cleaner job and keeps the fasteners less visible.

First I screwed the fasteners directly to the top of the rails. Then I placed the top upside down on the bench and flipped the base upside down, locating it on the top. I marked the location of the holes through the fasteners and drilled pilot holes in those spots. Then, using a template and a trim router, I mortised out an oval for each fastener. The mortise was the same depth as the fastener and large enough to allow it to swivel as the top moves with seasonal humidity change.

To ebonize the walnut base, I used two coats of Osmo Wood Wax in ebony. I followed that with three coats of Osmo Polyx-Oil clear satin on the whole table. □

Tom Throop makes custom furniture in New Canaan, Conn.