


Elegant Table Comes Together at the Corner

Where veneered aprons meet
a gunstock-miter leg

BY MIKE KORSAK



Boring furniture makes for a bored furniture maker.

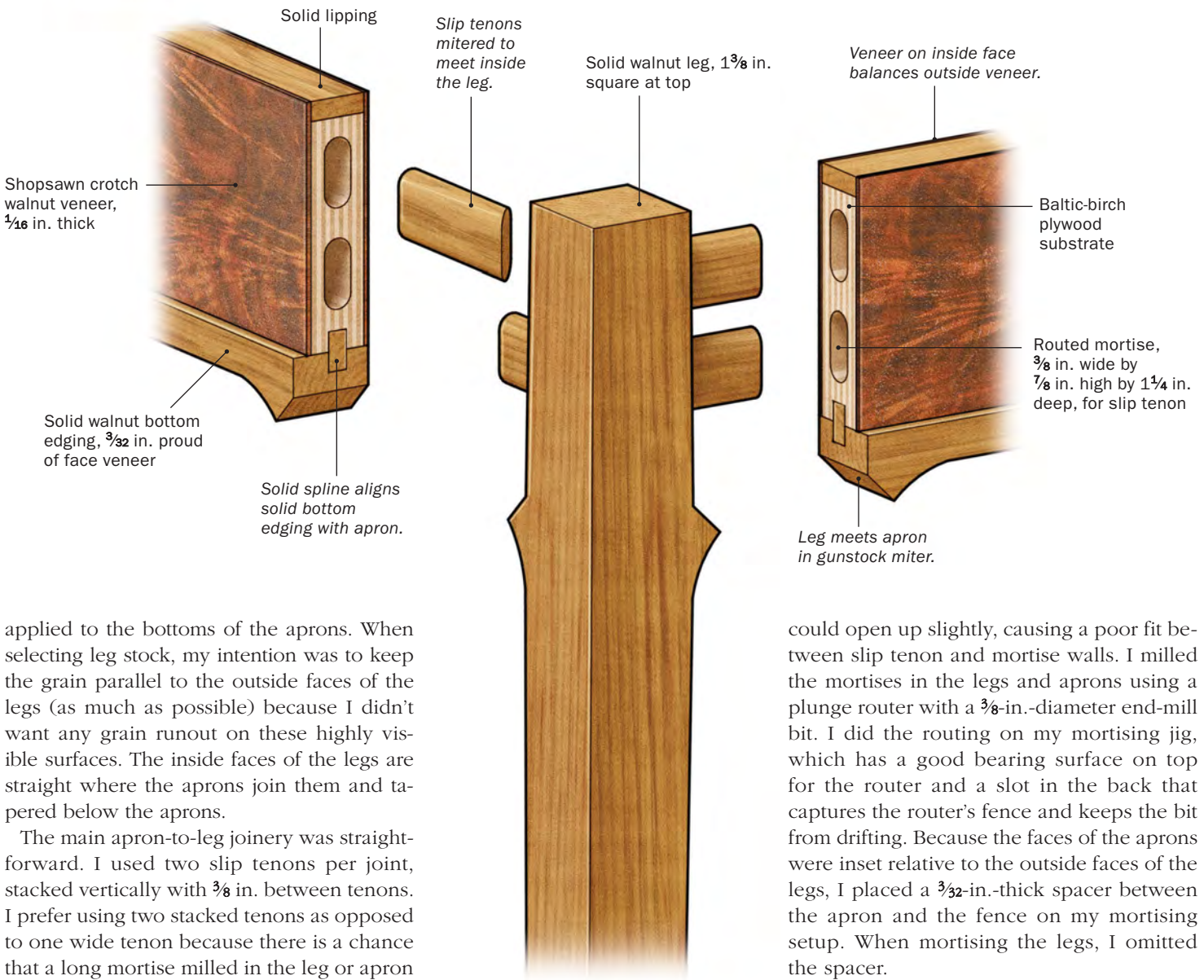
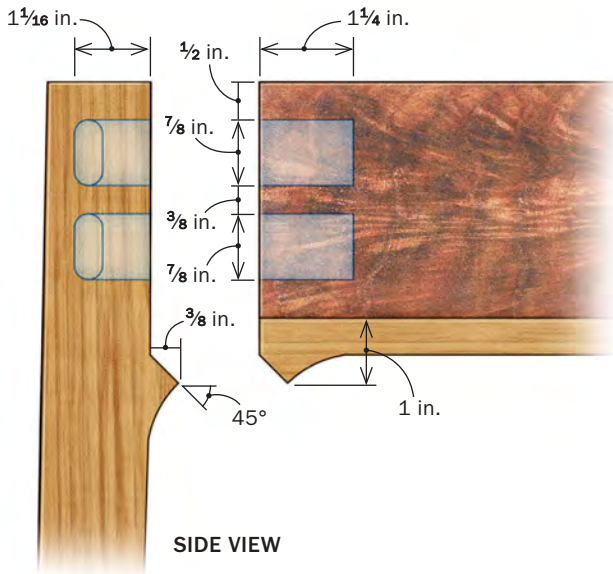
One of my pleasures in making furniture is figuring out how to detail a piece in such a way that a common form is translated into something that dazzles me, that takes on a life of its own. I delight in developing the details that serve this purpose, and in the technical challenges that often accompany those details.

When I was approached to build a dining table for two, I jumped at the opportunity to design a simple table that would stand out, with just the right amount of dazzle. I chose solid walnut with a rippled figure for the top and straight-grained walnut for the legs. I put the real pizzazz in the aprons, gluing shop-sawn crotch-walnut veneers over Baltic-birch plywood. To help frame the crotch veneer, I gave the apron a bottom edging that is proud of the veneer but flush with the face of the leg. And I used a gunstock miter joint so the inner line of the leg would flow right into that bottom edging of the apron. Twin slip tenons provide the muscle connecting the aprons and legs. I'll focus in this article on the cluster of technical and aesthetic details involved where the aprons meet the legs.

Taking stock and cutting leg joints

My first step was to select and rough out stock for the legs and for the edging that would be

GUNSTOCK MITERED LEG AND APRONS

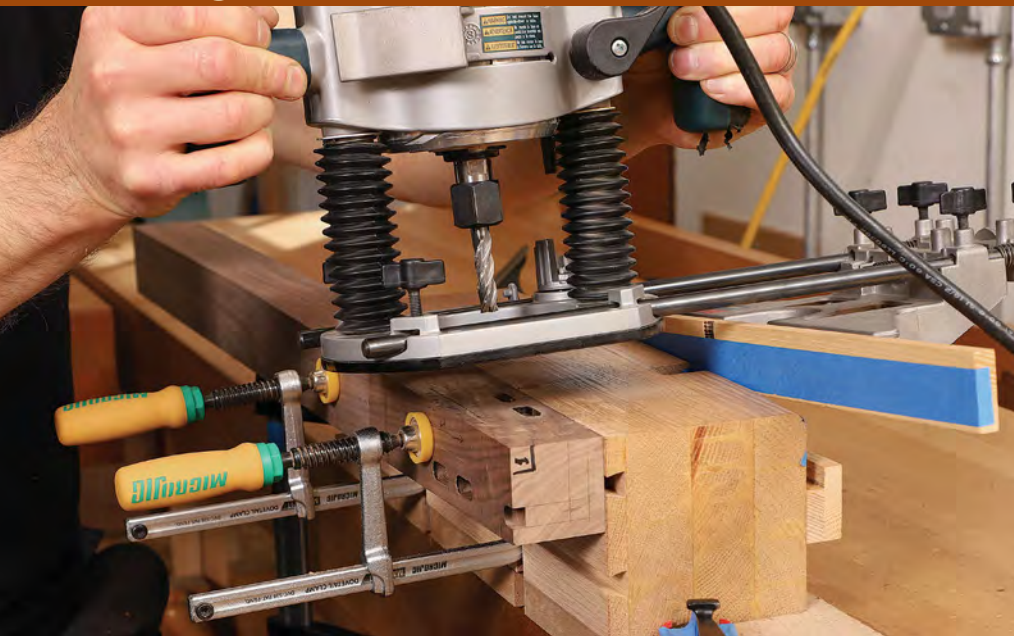


applied to the bottoms of the aprons. When selecting leg stock, my intention was to keep the grain parallel to the outside faces of the legs (as much as possible) because I didn't want any grain runout on these highly visible surfaces. The inside faces of the legs are straight where the aprons join them and tapered below the aprons.

The main apron-to-leg joinery was straightforward. I used two slip tenons per joint, stacked vertically with 3/8 in. between tenons. I prefer using two stacked tenons as opposed to one wide tenon because there is a chance that a long mortise milled in the leg or apron

could open up slightly, causing a poor fit between slip tenon and mortise walls. I milled the mortises in the legs and aprons using a plunge router with a 3/8-in.-diameter end-mill bit. I did the routing on my mortising jig, which has a good bearing surface on top for the router and a slot in the back that captures the router's fence and keeps the bit from drifting. Because the faces of the aprons were inset relative to the outside faces of the legs, I placed a 3/32-in.-thick spacer between the apron and the fence on my mortising setup. When mortising the legs, I omitted the spacer.

Legwork



Double dip. Using a plunge router and a shopmade mortising fixture with a slot at the back to capture the router fence, Korsak cuts twin mortises in the leg for slip tenons. The two pairs of mortises intersect inside the leg, so Korsak will miter one end of each slip tenon.

Beginning the gunstock. Before cutting the 45° portion of the leg's gunstock, Korsak nibbles away waste above it, making a series of passes with the leg against the miter gauge. He leaves some waste at the top end uncut; it will provide support before being removed later at the bandsaw.



Gunstock miters on legs and aprons

Next, it was time for the gunstock miters. The first step in forming the gunstock joint on the legs was to remove the material between the miter cut and the top end of the leg. You can use a router and end mill for this, or multiple passes on the table saw. I used the saw. I left some stock at the top end to remove later; it would help support the legs during mitering.

To make the miter cuts on the legs, I used a dedicated zero-clearance mitering sled clamped to the miter gauge on my table saw. With the sawblade tilted to 45°, I made the two miter cuts on each leg, rotating the leg 90° after making the first cut. A stop block clamped to the sled allowed for registration of the top end of the leg, ensuring consistent placement of the miters.

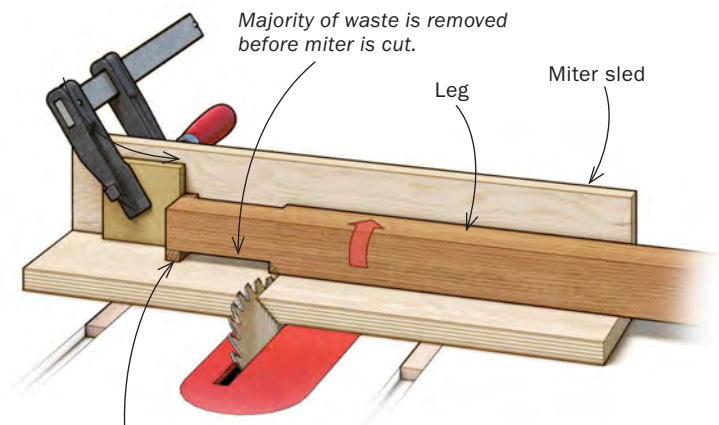


Clever crosscut. Having left the leg overlong at the top end to make the mortising easier, Korsak now cuts it to final length.

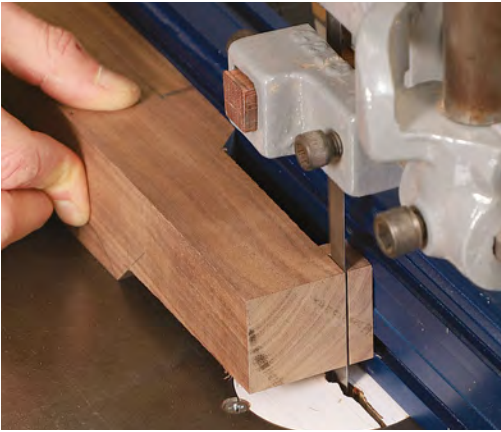
TABLE SAW MITER SLED



Clean cut miter sled. Korsak's zero-clearance miter sled with fences front and rear works like a one-fence sled, as in the drawing at right. But, when needed, the workpiece can be referenced off the front fence.



Last section of waste, which helps support leg properly on sled, is sawn away after miter is cut.



Nip the last waste. With the leg's gunstock miters cut, Korsak now bandsaws off the bit of waste at the top end.



Safe tapers. A wedge-shaped piece of MDF with a stop attached at the trailing end serves as a simple taper jig. Afterward, a couple of passes with a hand plane will smooth the sawn surface.

With the miters cut, I used the bandsaw to remove the last bit of waste at the top of the leg. Final cleanup was done with chisels, rabbit plane, and files.

I shaped the inside faces of the legs next. These needed to be tapered, and that taper then also curved up and flowed into the edging on the aprons. At the bandsaw, I used a simple taper jig made from a wedge-shaped piece of MDF with a stop at the back end. With the taper cuts made, I bandsawed, chiseled, and spindle-sanded the curved portion of the gunstock. I followed up with hand tools to smooth all the sawn surfaces.

Before moving on to mitering the aprons, I



Creating the curve below the miter. After laying out the curves, Korsak kerfs nearly to the line with the bandsaw.



Chiseling the fins. The thin wafers of wood left between the kerfs are quickly removed with a narrow chisel.



Clean the curves. After chiseling the curves to shape, Korsak smooths and fairs them in a minute or two at a spindle sander.

Assembling the apron



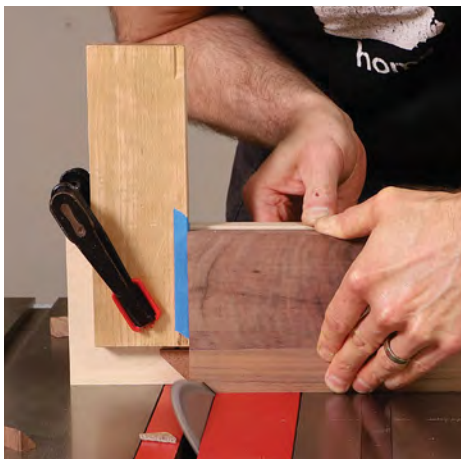
Lamination. With cauls top and bottom to spread the clamping pressure, Korsak glues sheets of shopsawn veneer to both faces of the apron's Baltic-birch substrate. Blue tape keeps the veneer from shifting before the glue tacks.



Spline story. Korsak cuts a groove in the wide walnut edging and a mating groove in the bottom edge of the apron.



On with the edging. Korsak glues the spline and edging to the apron. The edging is flush to the inside of the apron and proud of the outside.



Apron gets angled. After trimming the edging and spline to length, Korsak cuts the gunstock miter in the edging.



Relieving the edging. Once the miters at both ends of the apron edging are cut, Korsak bandsaws away the waste between them.

glued the slip tenons into the leg mortises; this would let me do some partial dry-fitting of the apron as I dialed in its miters. I like to miter the slip tenons to each other where they meet inside the leg. I glue them in one leg at a time, applying glue to the mortise and half of the tenon and ensuring that the mitered ends of the slip tenons make solid contact inside the leg. Once the glue cures, I clean up any foam that works its way out of the joint.

Next, to miter the bottom edging on the aprons, I used the miter gauge on the table saw, with the blade tilted to 45°. I left a slight amount of extra material at this step, which allowed for some fine-tuning of the fit of each apron's miter with a block plane.

With the miters complete, I could fully assemble each joint, mark the aprons where they would be ripped flush with the tops of the legs, and finish shaping the bottom edging on the aprons. In order to bandsaw away the long center section of the edging, I first made relief

The corners come together



Securing the slip tenons. After spreading glue in the mortises and on the mitered end of the slip tenons, Korsak glues them in place, making sure he gets contact between the miters.



Leg meets apron. Korsak prefers to glue one joint at a time for maximum control of the process.

cuts a couple of inches from the ends of the edging. I made them with crosscuts on the tablesaw, using a flat-bottom rip blade. The relief cuts defined the finished depth of the apron and provided starting and stopping spaces for the bandsaw. After making the bandsaw cuts, including the curves behind the miters, I cleaned up with block plane, spokeshave, scraper, and files.

On to assembly and the end

I attacked the assembly one joint at a time, gluing one leg to one short apron, then gluing the second leg to the same short apron, etc., until the very last step, when I needed to glue two joints at once. For all the glue-ups I used scraps of leather beneath the clamps to protect the legs. After final assembly, I used a block plane to flush the top edges of the aprons to the tops of the legs.

With the table base fully assembled, I tackled the final shaping of the leg-to-apron joints, using files, spokeshave, scraper, and sandpaper to create smooth, fair transitions from the leg to the apron edging. At this time I also did all other cleanup, hand planing the apron edging and legs, and finally sanding all surfaces with 320- and then 400-grit sandpaper.

I then applied finish to all table parts. For this piece, I used Osmo Poly-x oil, applied with a white abrasive pad. After two coats on the base and three coats on the tabletop, I installed the top. □

Mike Korsak, after a decade in Pittsburgh, is setting up a new shop in New Hampshire.

www.finewoodworking.com



Clamping at the corners. With one apron already glued to the leg, Korsak glues up the second apron.

A clean sweep. The curve below the gunstock miter needs to look continuous from the leg to the apron. Korsak fairs it with a curved file and later finishes it with sandpaper.

