Arts and Crafts on Display

Versatile cabinet is a lesson on building in the Stickley style

BY MICHAEL PEKOVICH

Simple is not always easy. Take Arts and Crafts furniture. Woodworkers fond of the style—with its beefy parts, rectilinear lines, and exposed mortise-and-tenon joinery—may think the furniture is easy to make. But this simple form is unforgiving of mistakes. Make one slip-up in proportions, hardware choice, or finish, and the design falls down. I've been building Arts and Crafts furniture for a long time, and I've worked through the challenges in making a piece that's true to the style.

This case piece is an original design, yet it would not be out of place in an antique Stickley catalog. With its quartersawn white oak, exposed joinery, fumed finish, and hand-hammered hardware, it breathes Arts and Crafts. The leaded-glass doors are typical, too, and add to the handcrafted look. You can have panels made by a local artist or you can make them yourself (to learn how, see Master Class, p. 88). If you are interested in building in this style, I hope you'll find a few valuable lessons here. Also, this piece is a versatile one: I designed it to hold books and cherished items, but it could work as a sideboard, too.

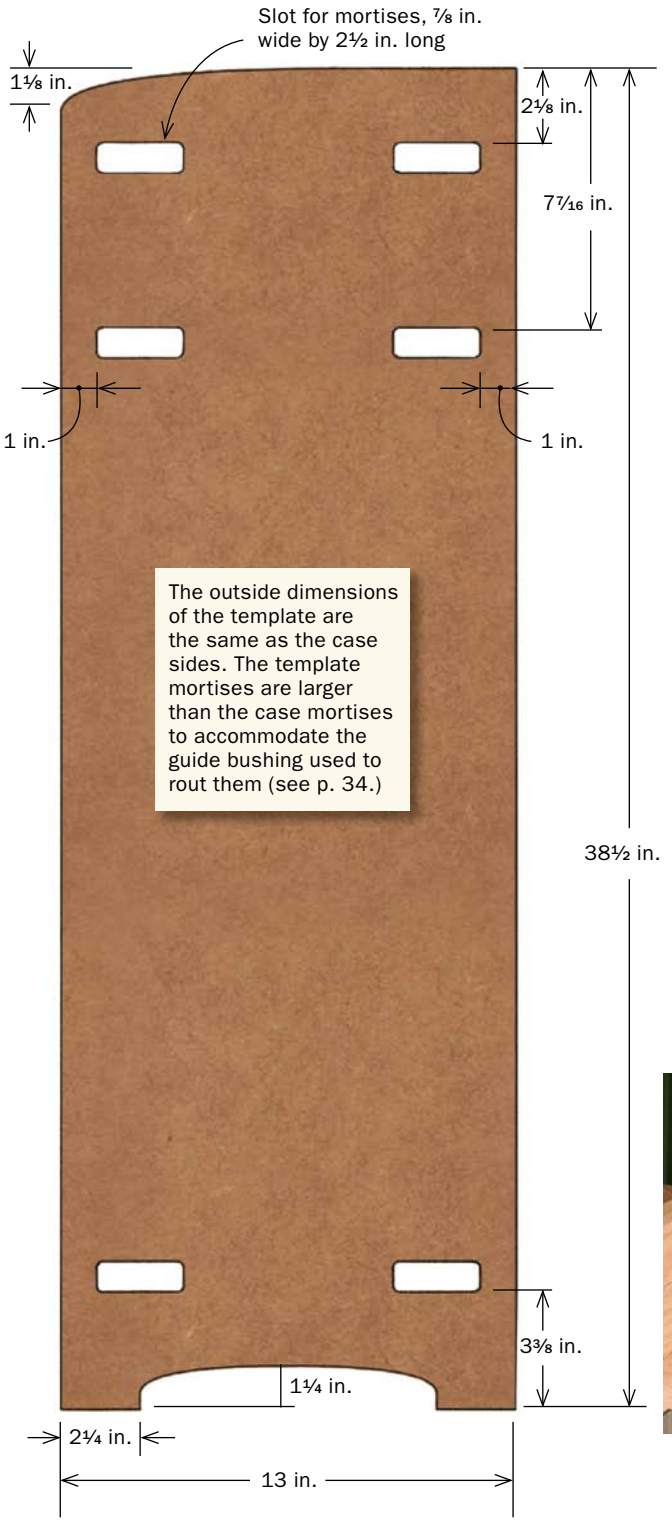
When building an Arts and Crafts piece, the most important step is to choose good wood. The tight grain and magnificent ray fleck of quartersawn oak is the primary ornamentation, so don't skimp on the lumber. I found some great boards online that I supplemented with lumber from a local yard (see "10 Tips for Mail-Order Lumber," p. 66).

With a large project like this, I start from the outside and work my way in because it's easier to build the case first and fit the

Photos: Thomas McKenna

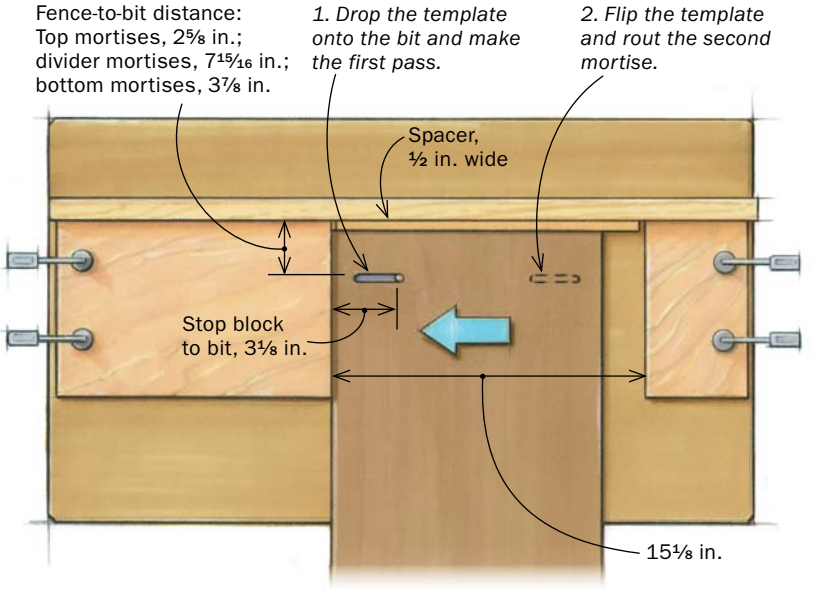
Full-size template simplifies the sides

To cut matching mortises that align perfectly, make a full-size template from ¼-in.-thick MDF. The template is quick to make using a ⅜-in. straight bit on the router table.



STOP BLOCKS AND A SPACER ENSURE AN ACCURATE TEMPLATE

First cuts. *Clamp stop blocks on both sides of the bit for the stopped cuts. With the spacer in place (see drawing below), plunge through the template and make one pass in the first mortise slot. Just flip the template to do the opposite slot.*



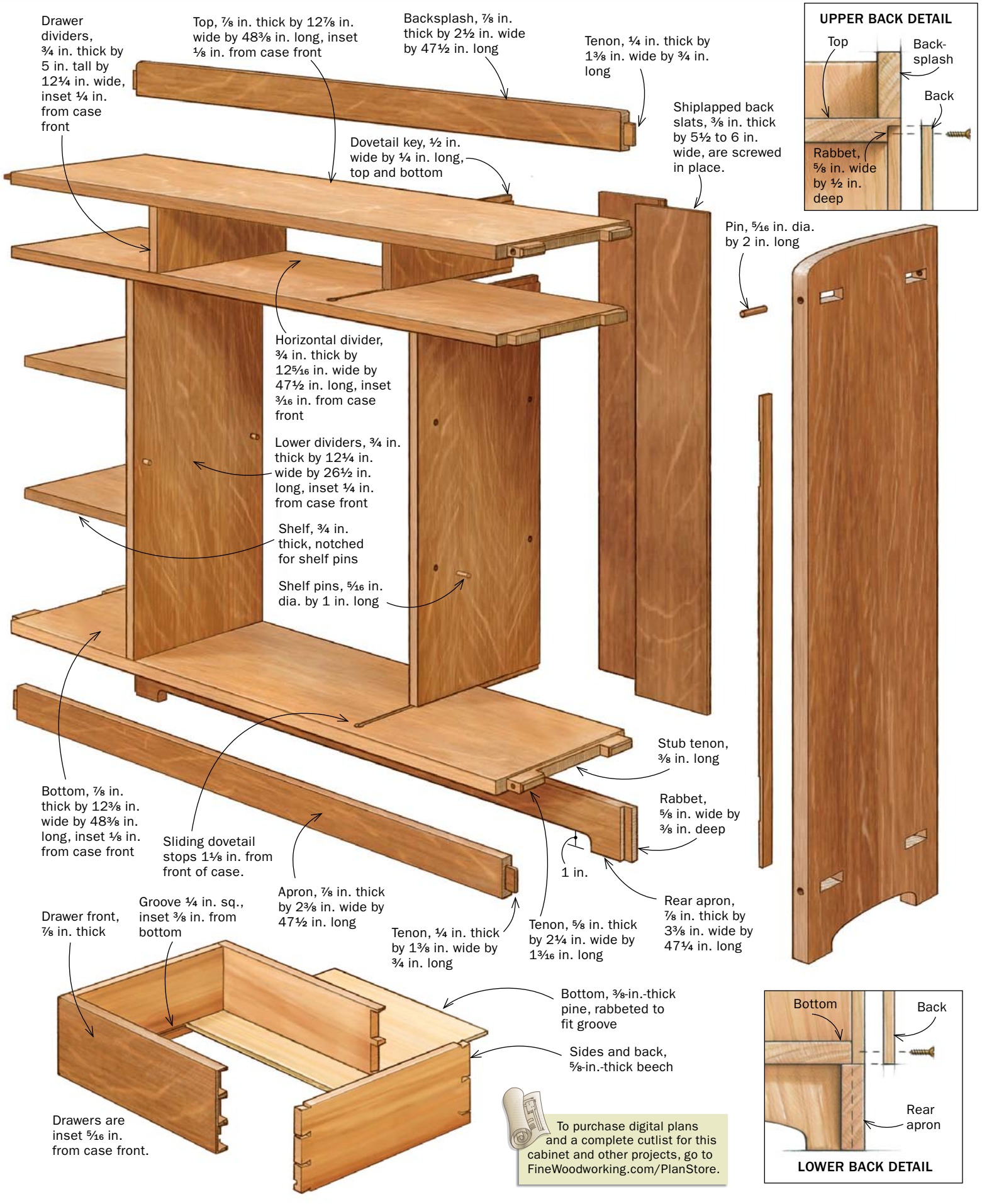
Second cuts. *After the first passes, remove the spacer between the fence and template and finish routing the mortise slots. Adjust the fence and repeat the process for each set of mortise slots.*

Drawings, this page: Dave Richards (left); Bob La Pointe (right)

ORIGINAL PIECE, TRADITIONAL DESIGN

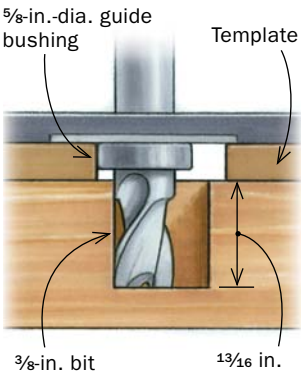
In Arts and Crafts furniture, it's all about the wood and small details. The tight grain and magnificent ray fleck of quartersawn oak is the primary ornamentation. To give the piece a solid feel without being clunky, Pekovich varied the thickness of the parts. The sides are a full inch thick, the top and bottom are ⅞ in. thick, and the remaining interior dividers are ¾ in. thick. Also, each piece is slightly inset from the other, creating subtle shadow lines.

Drawings: Dave Richards; detail drawings (facing page): Bob La Pointe

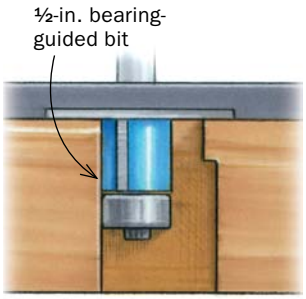


To purchase digital plans and a complete cutlist for this cabinet and other projects, go to FineWoodworking.com/PlanStore.

THROUGH-MORTISES WITHOUT MESS-UPS



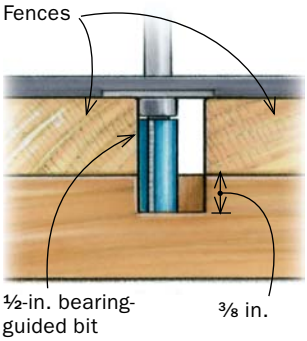
Start on the inside face. *To make it easier to hold the workpiece and template, Pekovich uses an elevated clamping table. A bushing guides a spiral upcut bit.*



The Paolini trick. *To complete the through-mortises with no tearout, Pekovich uses a trick he learned from Greg Paolini. Drill a hole through each mortise (right), flip over the piece, insert a bearing-guided bit in the hole, and rout out the remaining waste (far right).*

TIP

Place tape over the divider mortises so you don't drill through them accidentally.



Connect the slots. *To rout the shallow dadoes that connect the through-mortises, clamp fences on both sides of the mortises, and use a top-bearing-guided bit.*

interior dividers after. The top and bottom of the case attach to the sides with through-tenons. To help keep the case square and the wide boards flat, I added a stub tenon between the through-tenons.

The through-tenons are prominent features of the design, so you must get them right. For clean cuts and no gaps, I fitted the router with a guide bushing and straight bit and cut the mortises using a full-size template (see drawing and photos, p. 31). Then I cut the dadoes between mortises for the stub tenons. Finally, I squared up the mortises with a chisel.

To cut the remaining mortises for the backsplash and the lower apron, attach a fence to the router and use a spiral upcut bit. Then square them with a chisel.

Drawings, this spread: Bob La Pointe

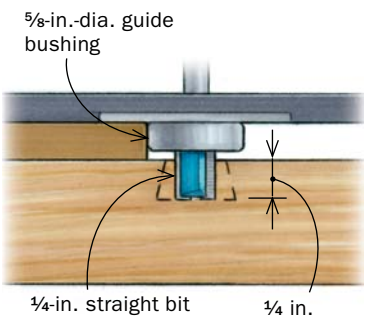
Dado blade does most of the work. *After cutting the tenon cheeks and shoulders with a dado set, cut the through-tenons to width, using a tall fence to support the board. The scrapwood behind the tenons backs up the cut and reduces tearout.*

TWO-PART TENONS

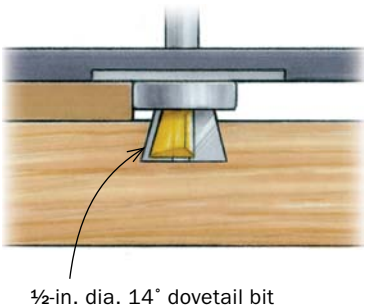
Saw off the stub tenon. *Use the bandsaw to cut the stub tenons to length. The fence ensures a parallel cut.*

SLIDING DOVETAILS MADE EASY

Use a fence to guide the slot cuts. *To ensure that the dovetail slots are parallel, clamp an MDF fence to the workpiece to steer the router's guide bushing.*



Remove the waste. *Drill a ½-in.-dia. hole at the stopped end, then rough out the slot using a ¼-in. straight bit. The ¼-in. piece of MDF opposite the fence prevents the router from tipping.*



Final cut. *Use a ½-in. dovetail bit to finish the slot. The hole at the end of the slot lets you drop the bit into the cut before turning on the router. The hole will be hidden by the divider.*

Once the mortises have been cut, cut out the foot recess and profile the tops of the sides. Clean up the cuts with a block plane, a spokeshave, and files. The last task is to drill holes for the tenon pins. For this, I used a doweling jig to help keep the bit aligned.

Crosspieces must line up shoulder to shoulder

Now it's time to cut the tenons on the top, the bottom, the horizontal divider, the back splash, and the apron. These parts have three different tenon lengths among them, but they all have the same shoulder-to-shoulder length. To ensure the case remains square, it is critical to get this dimension exactly right.

To help, I use a trick I learned from contributing editor Steve Latta. Cut the parts all the same length,

Glue-up without screw-ups

The case glue-up involves eight pieces. That many solid parts can be a pain to assemble and align during a single glue-up. So assemble the piece in stages.

Backsplash and apron first. *Dry-fit the case to ensure proper alignment when gluing the backsplash and apron to the case top and bottom. These parts will help keep the case square in the later stages.*

Top, bottom, and sides. *Use grooved clamping cauls over the through-tenons to get pressure where it's needed (above). Place the case on T-supports to make clamping easier (right). Be sure to keep glue off the ends of the through-tenons.*

VERTICAL DIVIDERS

Rout the dovetail keys. *After cutting the dividers to length, use the dovetail bit to cut the keys. A tall fence supports the long boards and a featherboard keeps the piece snug against the fence.*

Long sliding dovetails with no binding. *The trick is to slide in the dividers from the back almost all the way without glue, leaving about 2 in. exposed, and then apply glue to that exposed end and into the slot at the front. Now you can drive the divider home with a mallet.*

and then cut the tenon shoulders using the same setting on the tablesaw. Test the fit, and then trim the through-tenons to width. Next, cut the stub tenons to length using a bandsaw. Once you're sure everything is fitting well, trim the through-tenons to their final length and chamfer their ends.

Now rout the slots for the stopped sliding dovetails that connect the vertical dividers to the top, the bottom, and the horizontal divider. Then cut the rabbets in the sides and top for the back panel.

Assembly: Keep it square

It's critical that the case remains square as you assemble it. Otherwise, you'll be fighting to fit the doors and drawers. To simplify the glue-up and to help keep the case square, I first glued the backsplash and apron to the case top and bottom, respectively. Then I glued up the sides, top, and bottom.

After the glue is dry, drill holes though the tenons and dry-fit the pins. Cut the pins to length and chamfer the exposed end of the pins before gluing them in.

Once the case is assembled, cut the vertical dividers to length and rout the dovetail keys on the ends, using the same dovetail bit used to rout the slots. After installing

the dividers, cut and fit the shiplapped back panels.

Build the drawers and doors

With the case glued up, it's time to build and fit the drawers and doors. All three drawer fronts are cut from one board for continuous grain and color. Original Stickley pieces typically use white oak for the drawer sides as well, but I chose beech because of its dense, fine grain.

The doors are rabbeted for simple leaded-glass panels (see Master Class, p. 88). I wanted them to be inset 5⁄16 in. from the front of the case, which means I couldn't hinge them directly to the case sides. So I added ¼-in.-thick hinge strips to the inside of the case, inset ¼ in. from the front edge. The strips provide clearance for the doors to open, and it's easy to cut the hinge mortises prior to installing them.

Details that would make Stickley proud

No matter how true you are to the Arts and Crafts ideals when you build a piece, you can kill the design if you choose the wrong hardware or mess up the finish. For this piece, I chose traditional hand-hammered hardware (see Sources, below) and fumed the wood before applying a topcoat. Fuming may intimidate people, but I've developed a low-tech method (for details, see the story at right).

After fuming, I warm up the wood with a coat of garnet shellac. Then I switch to Waterlox, a wipe-on tung oil varnish. The last step is to rub out the finish with steel wool and apply a dark wax. This fills the open pores of the oak and pops the rays.

Now screw on the back slats, add the glass panels to the doors, install the traditional hardware, and the piece is ready for your living room. □

Michael Pekovich, Fine Woodworking's *art director, is also a professional furniture maker.*

SOURCES OF SUPPLY

ARTSNCRAFTSHARDWARE.COM
Gustav Stickley large O-Drawer Pull
Gustav Stickley large O-Door Pull

HORTON-BRASSES.COM
1½ x 2½ ball-tip hinges with dark antique finish
Part No. PB-409B

Fumed finish made easy

Respirator not required. *Drape plastic sheeting over the piece as a tent. Then put the ammonia in a covered container and slide it under the tent. Wear gloves when you reach under the cover to remove the lid.*

Fuming wood involves exposing it to ammonia fumes, which react with tannins in the oak to darken its color. The longer the wood is exposed, the darker it becomes.

Most people build a complicated tent to house the workpiece and contain the ammonia fumes. But I just drape plastic sheeting over the piece. It works as well as the tent and makes it easier to take the cover off the ammonia once it's safely inside. The sheeting also makes it easy to remove sample blocks to check the finish.

Though my method is low-tech, I still treat the ammonia carefully because it's a toxic chemical that can damage your lungs, skin, and eyes. Be sure to set up the fuming area in a low-traffic, well-ventilated area. Wear goggles and gloves when you're pouring it, and be sure to wear gloves when you take the lid off the container once it's under the plastic. Also, when you remove the sheeting, it's a good idea to run a fan in the space to help ventilate the area. The good news is that the fumes dissipate quickly.

How to dial in the color. *The effect won't be apparent until finish is applied, so it's a good idea to throw in a few sample blocks, remove them at hour intervals, and wipe on some finish to preview the final effect.*

Warm it up. *Fuming imparts a greenish-gray cast to the wood. Pekovich warmed up the look with a coat of garnet shellac prior to applying Waterlox. He rubbed out the finish with steel wool and brown wax made from melting Kiwi brown shoe polish into paste wax using a double-boiler setup.*