FILE AND MEDIA STORAGE

HIDDEN KEYBOARD TRAY

PULL-OUT WORK SURFACE

Build a Computer Desk

With plenty of work surface and efficient storage, this desk is not only functional but also enhances the home office

BY CHARLES DURFEE

In my study at home stands a lovely, tall secretary desk with bookcase, glowing beautifully in its 20-year-old patina. For the past several years it's been piled high with papers, notes, photos, stuff and more stuff. I make periodic assaults on the piles, but the fact of the matter is that I don't work at the desk anymore. I now work—doing letters, bills, e-mail—about 8 ft. away at a small table that holds the computer, with storage in a cabinet below. On some K-Mart-bought shelves lie a printer, scanner, files and books.

Whether you have made the plunge into working from a home office or just find yourself using the computer more often, maybe it's time to give the computer a real place in your home on a piece of furniture that works well, is built to last and is a pleasure to live with.

My original plan was for a cabinet similar to an entertainment center that could house the whole system and be closed up when not in use. But I suspect that many people work with their computer in short bursts throughout the day and week and want it out and accessible. Also, today's computers look much more stylish than the gray boxes of a few years ago.

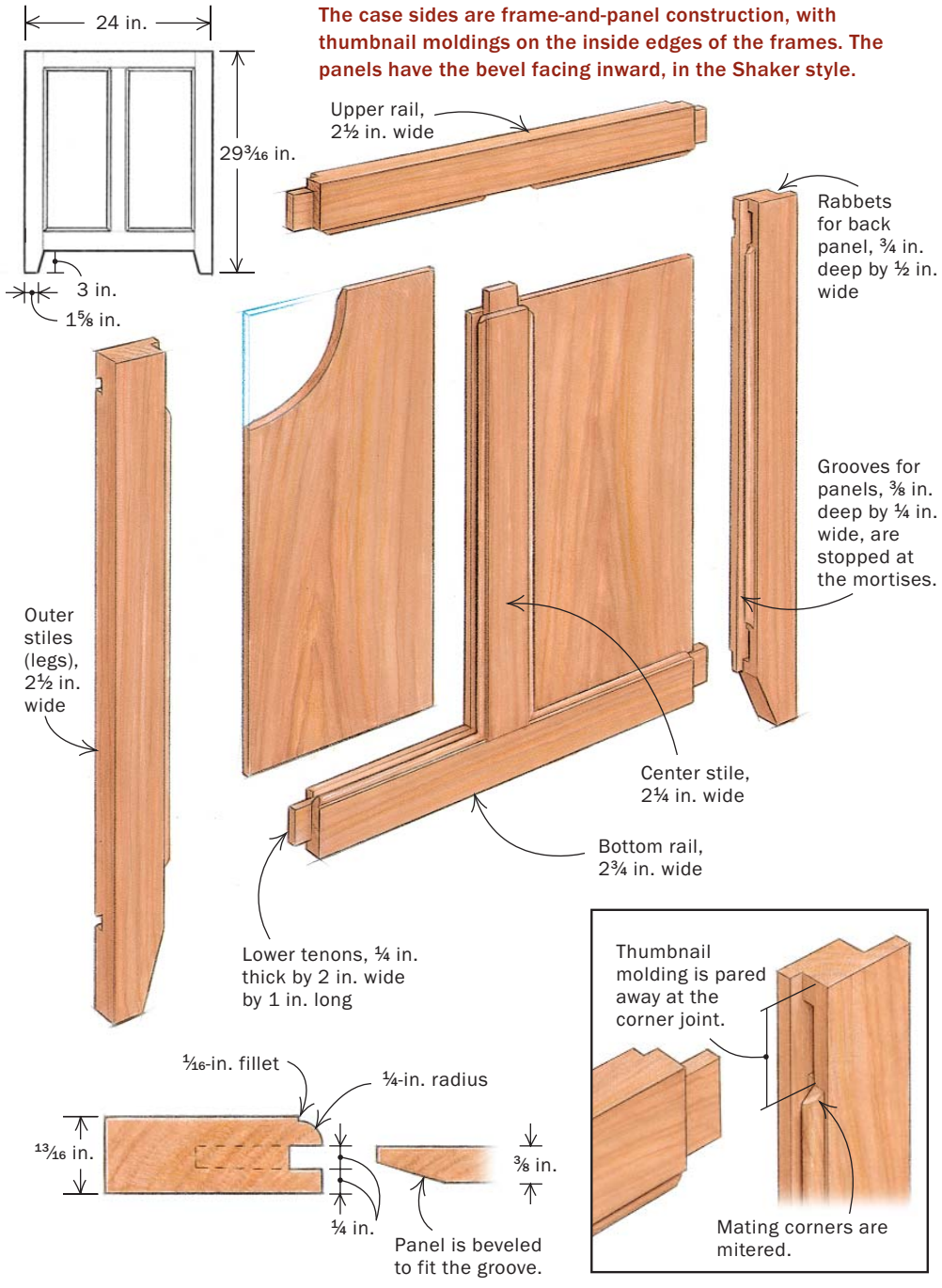
Another problem with a cabinet design that closes everything away is that by necessity it becomes quite large and rather awkward-looking, especially if your computer has a large monitor.

That's how I arrived at an unobstructed tabletop, with enough room for equipment and workspace. An additional pull-out work surface is handy. Add an adaptable storage cabinet below and a keyboard tray behind a traditional drawer front, and presto, I had my solution.

Major components—monitor, processor and printer—go on top. The processor could also go on the floor, either in the

CASE-SIDE ASSEMBLY

The case sides are frame-and-panel construction, with thumbnail moldings on the inside edges of the frames. The panels have the bevel facing inward, in the Shaker style.



Drawings: Bob La Pointe; photos, facing page: Michael Pekovich

Dovetails and dadoes with one jig. *A router outfitted with a guide collar rides in a long jig placed squarely across the cabinet side.*

First, rout in from the front and back to cut the dovetail sockets. *Clamp a square of plywood to the jig to act as a stop.*

footwell or up on brackets. Wires are bundled and routed out of the way.

When it comes to computer desks, think function first

This is a classic case of inside-out design: Begin with the function and work from there. The height is 30 in., though tall people may want to add an inch or two. The keyboard pulls out at approximately 26 in., a comfortable height. The length of the desk is 60 in. but could be extended. Stretchers support the legs at the open end and tie the design together by continuing the lower line of the cabinet.

In keeping with a Shaker aesthetic, the cabinet and doors are of frame-and-panel construction with thumbnail molding (also called sticking) on the inside edge of the frame. Classic Shaker style almost always left door panels flat (with the beveled side facing inward). The desktop edge gets a slight bullnose profile. In a departure from the Shaker style, I used brass knobs.

An additional work surface pulls out to the right, closer at hand than the desktop when you are using the keyboard (lefties might want to reverse the entire desk). The pencil drawer, not covered by the doors, is easily accessible.

I chose bifold doors over single or double doors. A single door would stick out too far when open, which it often will be when you are working at the desk. And double doors would block access to the cabinet from a sitting position.

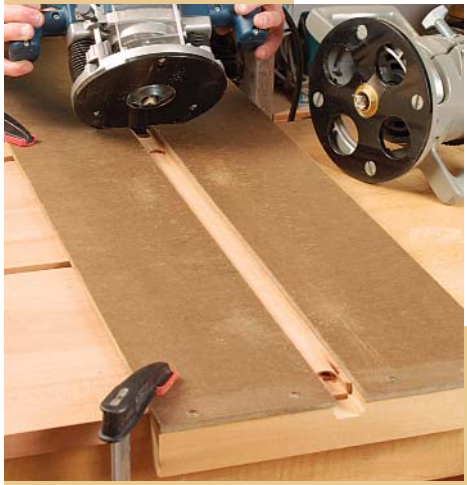
Behind the doors are two small drawers above a file drawer. The top drawer holds paper, print cartridges and the like, or even a flatbed scanner. The middle drawer can hold CDs and other supplies. The file drawer is the lateral type, easier to access while seated at the desk. Closing the doors covers up all of this neatly. The drawers are hung on full-extension slides. These screw-mounted commercial slides allow the components to be moved easily in the future. I used finger joints in the drawers, which are easier to make than dovetails and are in keeping with the utilitarian nature of this desk.

A wood keyboard tray is mounted on special pull-out hardware that's attached to the underside of the desktop. The tray is hidden behind a drawer front that folds down.

Construction starts with the cabinet

The basic structure is a table, with a cabinet for one end instead of legs. Because the cabinet is the most complex part, it is a good place to begin construction.

The two side assemblies are joined together by internal frames, top and bottom. The bottom one has dust panels, while the



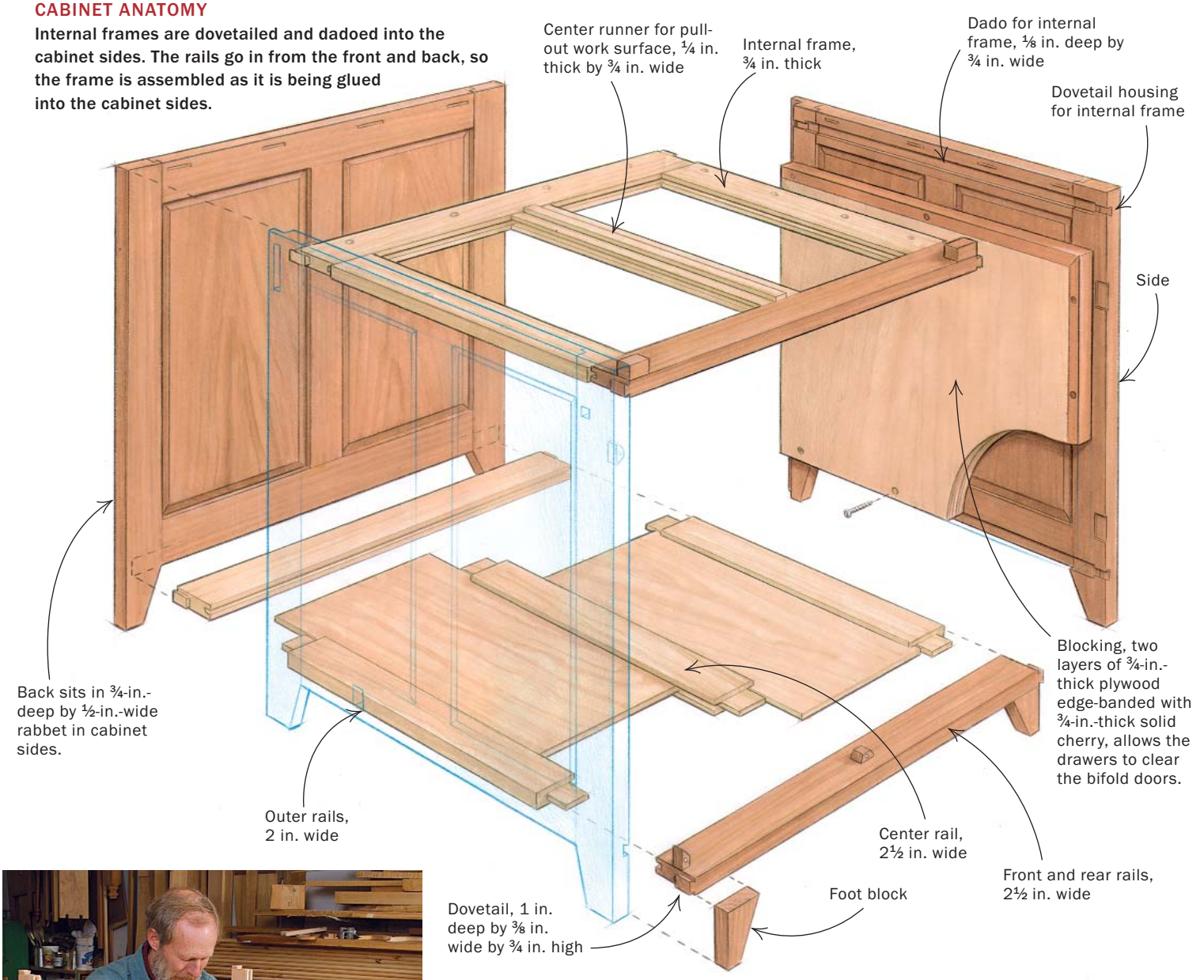
Rout the long dado next. *Use a straight bit to rout a shallow dado that stops at each dovetail socket.*

Dovetail the front and rear rails on the router table. *Set the depth first, then move the fence gradually to creep up on a perfect fit.*

Photos, except where noted: Asa Christiana

CABINET ANATOMY

Internal frames are dovetailed and dadoed into the cabinet sides. The rails go in from the front and back, so the frame is assembled as it is being glued into the cabinet sides.



Order of assembly. *Insert the front rails into one side (left), then the other (center). Press the front-to-back members into their dadoes, add the dust panels to the lower internal frame, and tap in the rear rails (right). Make sure the cabinet is square, then glue in the back.*

upper one serves as support for the pull-out work surface.

While you are making the frame-and-panel sides, make one for the back as well. I left the back frame unmolded to keep the joinery simple. As an alternative, you can use high-quality plywood for the back.

All of the drawers are side hung, as previously mentioned, using full-extension, ball-bearing slides. The finger joints are neat, strong and can be cut quickly. Of course, you can dovetail the drawer boxes if you want. The pencil drawer has an applied front, which covers the slides and is easier to align in the opening.

The pull-out surface is sandwiched between the desktop and the upper internal frame and is guided by a groove on its underside, which rides on a runner applied to the internal frame. The surface is less than full width (with small filler blocks at the front edge) to allow access to the fasteners that will attach the desktop to the case.

Order of construction—First assemble the two frame-and-panel sides. The panel grooves in the stiles are stopped at the mortises so they don't show when you cut the leg taper. The thumbnail molding is mitered where the rail and stile join, and the tenon shoulders are offset as shown.

Next, cut the dovetail sockets and dadoes in the cabinet sides to receive the internal frames (see the photos on p. 44). For this I set up two routers with guide collars—one with a straight bit for the dado and the other with a dovetail bit—both guided by the same jig. This job can be handled with one router, though; just leave the jig in place and go back and forth between bits.

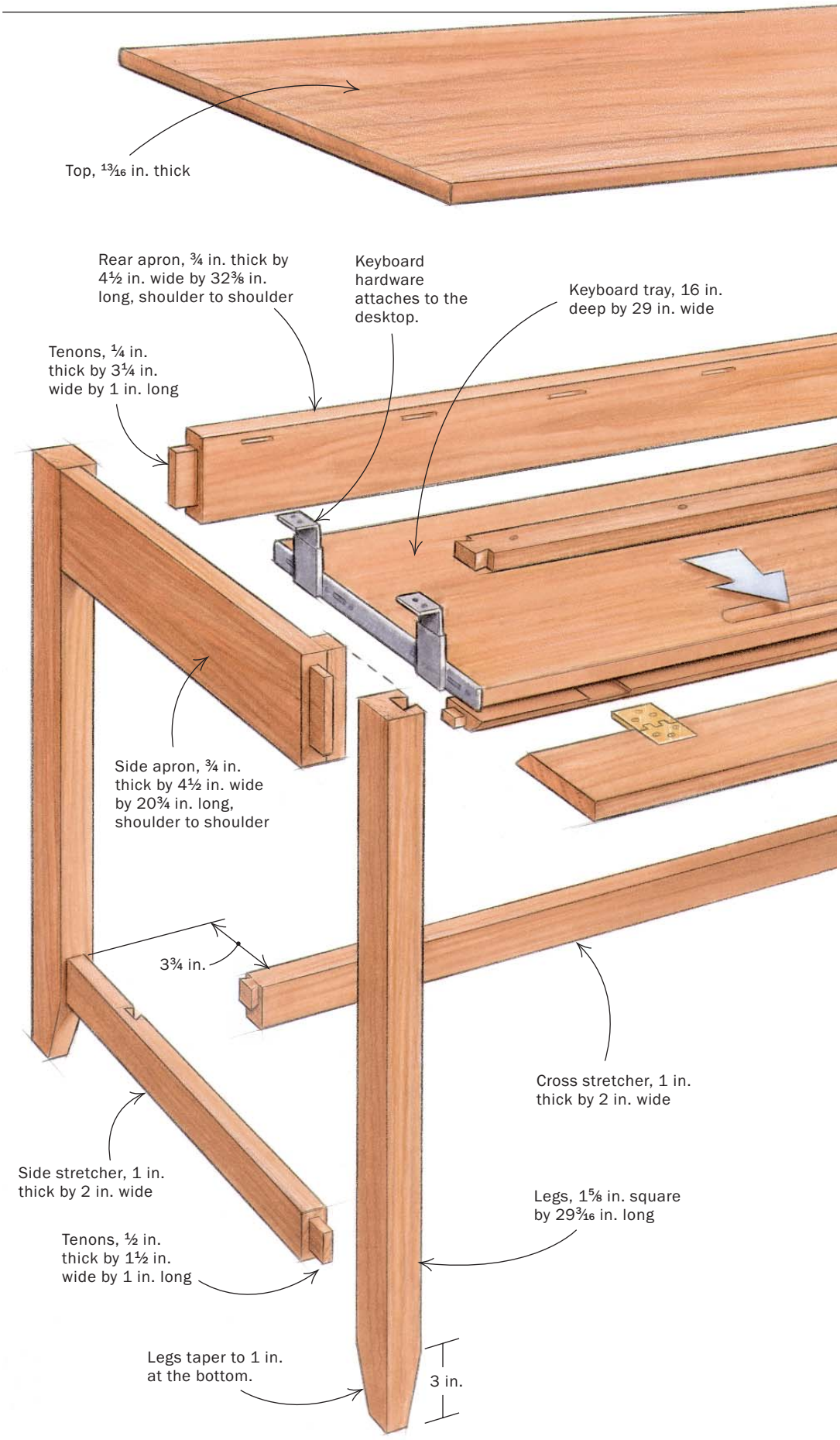
Next, make the internal frames the same thickness as the dadoes—try for a press fit.

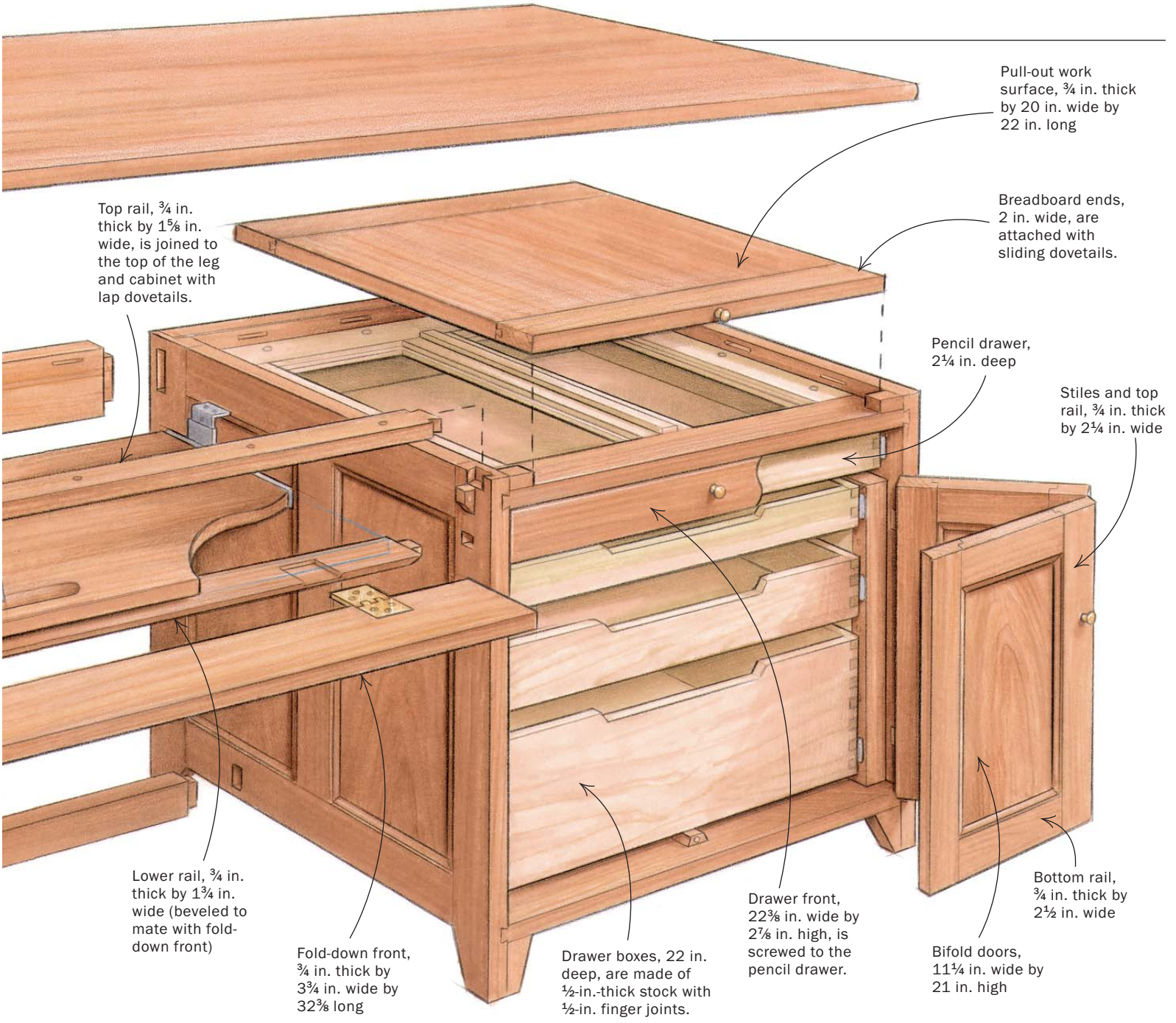
Before assembly, cut slots in the cabinet sides to accept the desktop fasteners (buttons or clips), and drill access holes in the upper internal frame so that you can get at the fasteners with a screwdriver.

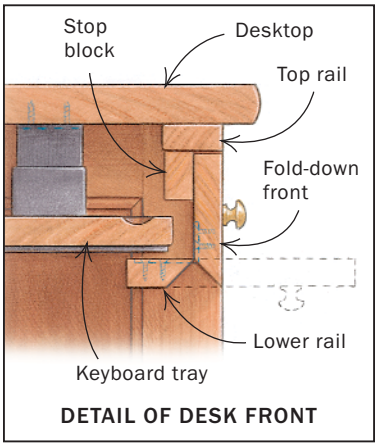
Build the rest of the base

With the back installed, you are ready to begin building and attaching the open side of the base. Cut the mortises in the cabinet for the cross stretcher and rear apron. The stretcher tenon will be wedged inside the cabinet, so the bottom rail of the cabinet side needs a through-mortise. Moving to the far left side of the base, make up the legs with the necessary joinery. Glue up

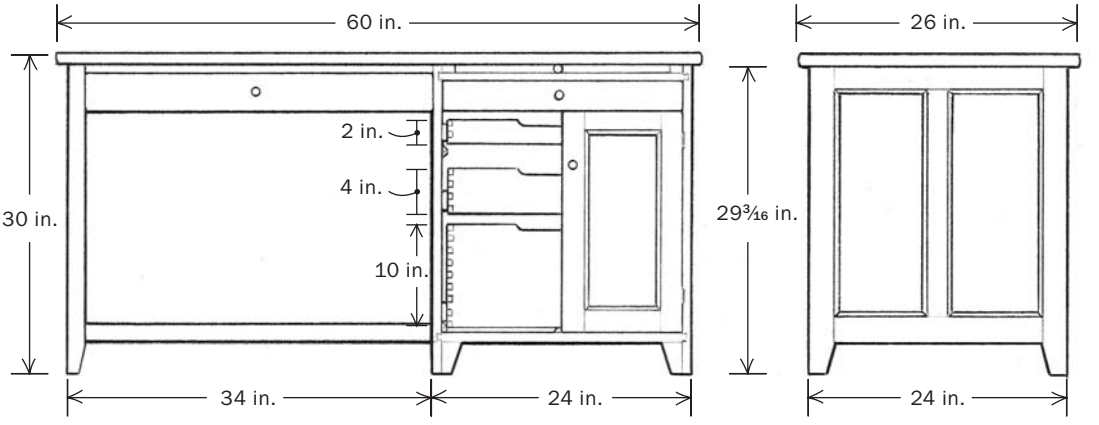
OPEN BASE AND CABINET INTERIOR







DETAIL OF DESK FRONT



OPEN-BASE ASSEMBLY

Before assembly, install the drop-leaf hinges in the lower rail. *Extra clearance is needed for the hinge barrel. Detach the fold-down front before installing the rail.*

the two legs with their shared stretcher and apron.

Cut the joinery in the open-base assembly for the various cross members. Because the lower rail—the one that will hold the keyboard front—must be set back and beveled, you will need to glue a block to the front of the side apron to accommodate its mortise. This rail is through-tenoned and wedged into the cabinet, like the cross stretcher.

Before assembling the base, mortise and fit the drop-leaf hinges on the fold-down drawer front and the lower rail. Now you are ready to put this whole piece together. You should work on a surface that is large enough yet flat. I sometimes put a sheet of medium-density fiberboard (MDF) on the bench or floor for such a task. Before beginning, I also recommend unplugging the phone, turning off the radio and invoking the appropriate spirits.

Lay the cabinet on its side. Insert the rear apron, the cross stretcher and the lower front rail into their mortises in the open-base assembly and then into their mortises in the cabinet. Flip the entire base onto its feet, draw the joints home with clamps and square it all up. Use a straightedge to check that the cabinet front and the front rail are in the same plane. Wedge the two through-tenons from inside the cabinet.

Attach the lower rail, stretcher and rear apron to the leg assembly first. *The top rail goes in afterward.*

Now attach the open-base assembly to the cabinet. *This is easiest to do with the cabinet on its side.*

Last, scribe the joinery for the top rail. *It has lap dovetails on both ends, which are let into the top of the cabinet and the front leg.*

There still is one rail to be attached. The top rail is joined to the legs and cabinet with lap dovetails. Make the rail, and then use it to scribe its dovetail sockets in the cabinet and legs. Chop out these sockets. Before gluing in the top rail, drill and countersink holes in it for attaching the desktop.

I chose two methods to attach the top. I used screws through the top rail, as just mentioned. I also used wood buttons or metal S-clips inside the cabinet and the back and side table aprons. These are accessed in the cabinet area through holes in the upper internal frame.

Apply a finish and add final touches

Handplane surfaces, if possible, to clean them up. That, combined with a cabinet scraper, removes the machine marks. As the project progresses and parts are ready for assembly, knock off edges with a block plane, though not where that would leave a gap at a flush joint. After assembly, finish knocking off edges and do a final sanding with 220-grit paper.

For this cherry piece, I chose an oil finish, which is excellent for bringing out cherry's rich, mellow tone. I prefer an oil-varnish mix, which gives a bit more surface durability and is easy to wipe on and repair. You can mix your own, though for years I have used Minwax Antique Oil with satisfaction. If you want a more durable work surface, use varnish. I have read that lacquer and plastic will stick together over time, making lacquer a poor choice for a computer desk.

Wire management deserves attention. The wires that come out the back of components can go through a hole in the desktop, or you can route them over the back. There are many gizmos on the market today to accomplish this: pop-up outlets, grommets and the like (Rockler Woodworking and Hardware is a good source for this stuff). Then you can mount a power strip/surge protector in the footwell, high on the cabinet wall. Harness clips or wire channels can keep the wires bundled and out of the way. If you keep a scanner or other component inside the cabinet, drill a hole in the cabinet side or bottom to run wires. Leave enough slack so that the tray can be pulled out easily. Bear in mind that the age of wireless connections is coming quickly, and we may soon outgrow these bundles of wires.

I encourage you to think through this design for yourself and adapt it to your ideas and needs. The aim here is to build a piece of furniture that will serve your work habits and adapt to changing technology while being a pleasure to live with. □

Charles Durfee is a furniture maker in Woolwich, Maine.

SOURCES FOR HARDWARE

DRAWER SLIDES
Full extension, 22 in., ebony color,
Model KV 8400
Woodworker's Supply (800-645-9292;
www.woodworker.com)

KEYBOARD SLIDE
Variable height, 16 in., black color,
Model KV 8150
Woodworker's Supply

BUTT HINGES
2 in. by 1½ in., "standard" finish,
Part No. 142H5
Whitechapel Ltd. (800-468-5534;
www.whitechapel-ltd.com)

DROP-LEAF TABLE HINGES
3 in. by 1½ in., "standard" finish,
Part No. 166H17
Whitechapel Ltd.

KNOBS
Sold as desk interior knobs, ¾ in. (except ⅝-in. size on pull-out surface), semibright
Horton Brasses (800-754-9127;
www.horton-brasses.com)

HOME-OFFICE HARDWARE
File-drawer fittings, wrist rest, media storage, wire managers, grommets
Rockler Woodworking and Hardware
(800-279-4441; www.rockler.com)

TABLETOP FASTENERS
Rockler Woodworking and Hardware

Install the drawer-slide hardware. *Rest a piece of plywood or MDF inside the cabinet to locate each pair of slides. Start with the highest slides and then trim the plywood to locate each set below.*

Attach the desktop and the keyboard tray. *It is easiest to do this with everything turned upside down. Mount the hardware on the keyboard tray before attaching it to the underside of the desktop.*