

A No-Fuss Newel Post

A frame-and-panel box, dressed up with molding, creates an elegant anchor for a stairway

BY GARY STRIEGLER

On most of the stairways that I trim out, the newel post is the only component that I still build myself. Millwork shops have heavy-duty shapers and lathes to turn out contoured railings and shapely balusters. Using basic materials and tools, I can build a newel post to complement these factory-made elements.

The post shown here is done in stain-grade oak; it's made from oak plywood, $\frac{3}{4}$ -in.-thick oak boards, and several oak moldings. The molding that is used most is actually a stock profile seen frequently as a panel molding and a cap for baseboard trim. I make the other two moldings (for the newel's cap and waist) on a router table.

If you've done trim-carpentry work, you already have the tools required to build a newel post like this one. I cut the plywood on a tablesaw and the molding on a miter saw. To join the post's frame-and-panel assemblies, I rely on pocket screws because I've found that pocket-joinery tools are quick and easy to use (sidebar, p. 77). You also could do most of the post's joinery work with a biscuit joiner and a finish nailer. □

Gary Striegler lives and works in Fayetteville, Ark. Photos by Brian Pontolilo.



THE NEWEL POST STARTS OUT AS A

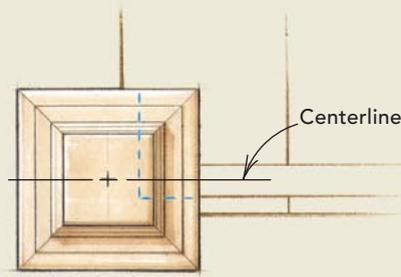
Layout establishes post position and the railing's plumb cut

I notch the bottom of the newel to fit partially over the stairway's first step. To my eye, this looks nicer than having the newel rest fully on the floor, and it's less of an obstacle to folks turning the corner to go up the stairs. Strength is another benefit: The notched configuration offers multiple anchoring points when it comes time to install the post.

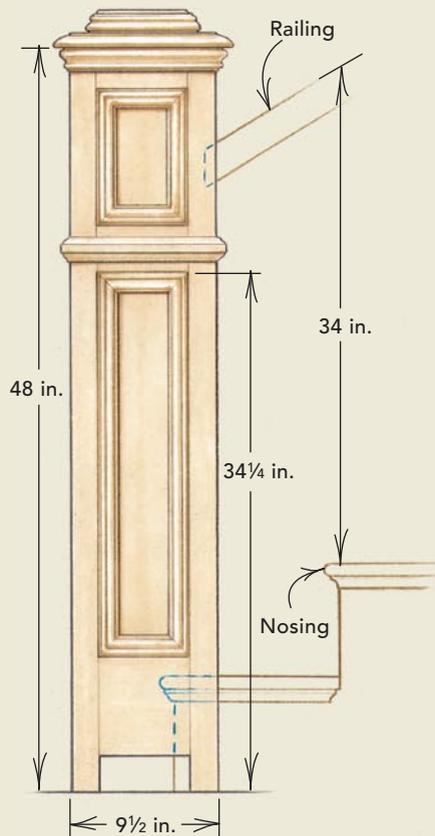
When laying out the newel's position, take baluster spacing into account and make sure that the centerline of the post is aligned with the centerline of the railing.

To meet code in my area, the stair handrail should be between 32 in. and 34 in. from the tread, measured at the nosing (most codes now require 34 in. to 38 in.). Taking into account the $7\frac{3}{8}$ -in. rise of the stairway, I designed this newel post to create a top panel where the handrail could land and be fastened.

You can mark the railing's plumb cut by extending a vertical line from the notch position on the tread (photo below).



Plan view

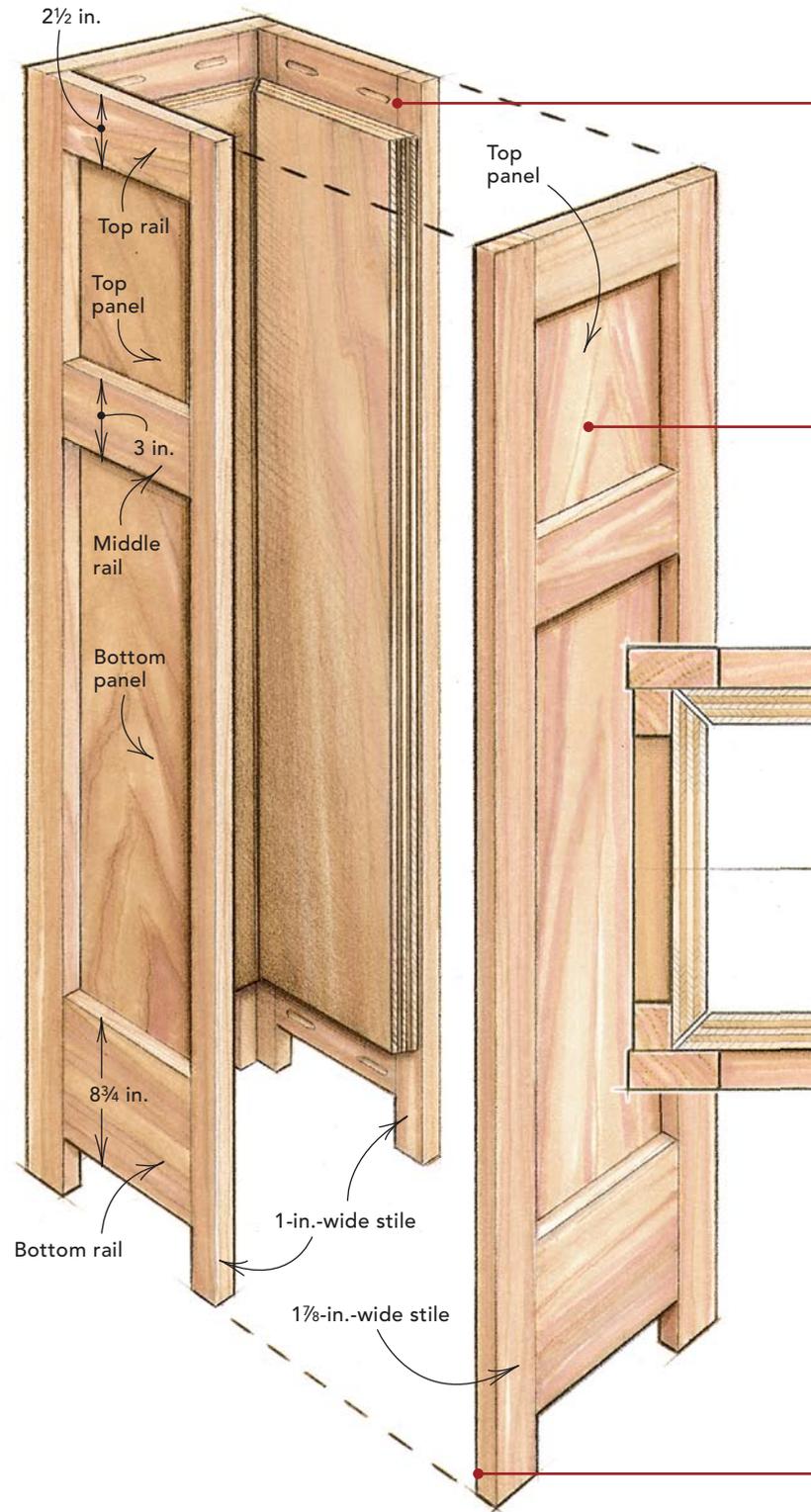


Elevation



Mark the handrail's plumb cut. Once the newel location is marked on the tread, you can mark the handrail's plumb cut. Lay the railing on the treads to get its final installation angle. Place the square where the notched newel will fit, allowing for the $\frac{3}{4}$ -in. panel recess where the newel will be fastened. Then mark the cut.

The post is a hollow box made by joining four frame-and-panel sides together. Each side consists of a pair of 48-in.-long stiles and three rails. The bottom rail doesn't need to extend all the way to the bottom of the box because this open area will be covered later by base molding. Stiles need to show the same finished width ($1\frac{3}{4}$ in.) on all sides



FRAME-AND-PANEL BOX

of the post, so two different stile widths are used. The 1 7/8-in.-wide stiles allow for a 1/8-in. overlap when I glue up the box. Routing away this excess material after the glue has dried gives me an almost invisible joint that makes two joining stiles look like a solid corner post.



Join stiles and rails with pocket screws. This locking-clamp setup is part of my pocket-joinery system (sidebar right). I use 1 1/4-in. pan-head screws with self-drilling points to fasten rails to stiles.



POCKET SCREWS CAN'T BE BEAT

I use pocket screws primarily to assemble face frames, mitered trim, and cabinet cases, but they have many other uses as well. Pocket screws offer some significant advantages over other joinery methods:

- Joints can be made quickly. It doesn't take long to clamp the workpiece to a drilling guide, bore pocket holes, then screw the joint together. Unlike biscuit joinery, only half of the joint needs to be machined.
- Pocket screws have plenty of holding power. Even in a narrow joint, there's room for at least a pair of screws; additional screws increase strength.
- Glue is optional, and clamping isn't necessary. Because screws provide the clamping power, your project can proceed without waiting for glue to dry.
- Perfect alignment is easy. The special locking clamps available with most kits do an excellent job of locking parts together prior to assembly.
- Pocket joinery is affordable and portable. The only tool you need is a drill. Shown above, Kreg's Rocket Jig Pocket Hole System (\$50) has the necessary parts for getting started: a two-hole guide, clamp, and drilling and driving bits and screws. The K3 Master System is also worth checking out (p. 38). My favorite accessory is the Bench Klamp (\$35), which essentially turns a piece of 3/4-in. plywood into a drilling and assembly workstation with uses that go beyond pocket joinery. For more information, contact the Kreg Tool Company (800-447-8638; www.kregtool.com).



Fill the frames with plywood panels. Each side's stile-and-rail assembly gets a plywood panel glued against its inside face. I drive a few brads along each side to hold the panel in place while the glue dries.

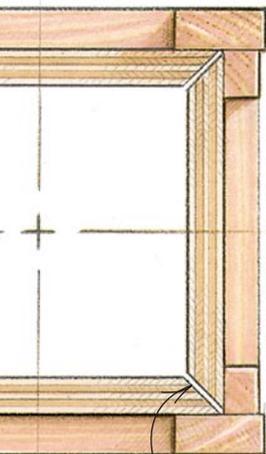


Glue and clamp up the box. Several 1 1/4-in. brads keep each corner joint aligned while clamps are applied. The MDF block near the center of the box prevents clamp pressure from bending the stiles.

Route corners with a flush-trim bit. A planned corner overhang when assembling the box allows me to rout flush corners after the glue dries.



1/8-in. overhang



Miter-cut panel edges

Plan view of glued-up box

ADD MOLDINGS FOR

The box is together, but it looks plain. Moldings will change that. Trimming out the post adds contours, shadowlines, and the sharply defined detail of mitered joints. Strength, delicacy, and good craftsmanship all are expressed in the final result.

The railing and balusters will depend on the newel for strength and stability, so it's critical to anchor the post solidly. I start the installation by cutting away the tread nosing in the notch area to make way for solid blocking. With this material glued and screwed to the floor and to the stair framing, I can notch the newel, lift it into position, and set about making it plumb in all directions as I drive installation screws.



Cut the nosing. Removing the overhanging tread where the newel will fit makes way for blocking, which needs to be positioned precisely.



Notch for a snug fit. The inner surfaces of the post need to fit against the blocking, and the notch shouldn't show gaps where it butts against finished-stair surfaces.



Mitered moldings dress up the box

Of the three moldings used to finish off the newel, the panel molding is really the star player. **A** With flat edges on top and bottom, it can butt cleanly against other surfaces. Narrow shoulders along the belly and the bead create delicate shadowlines and make it possible to use the molding in different orientations. It's surprising how the same profile can create different visual effects depending on how it's used. The panel molding is mitered to fit inside the oak frames on each side of the post. It's also used under and over the post cap and on top of the baseboard.

The cap molding is assembled as a mitered frame that extends beyond the top of the post, also providing a base for the top. **B** This molding starts out as an oak 1x4. I create the profile on a router table, using a thumbnail bit.

I wait until the post is installed to attach the waist molding. **C** This profile also was made on a router table, using a wavy-edge bit. Similar stock profiles are available from lumber suppliers.

The last trim to go on is the baseboard. **D** Mitered to fit around the post, this 1x6 board is topped off with the panel molding.



Cap molding

The cap molding is created using a thumbnail router bit.



Panel molding



Panel molding is a stock profile also used as a base cap.



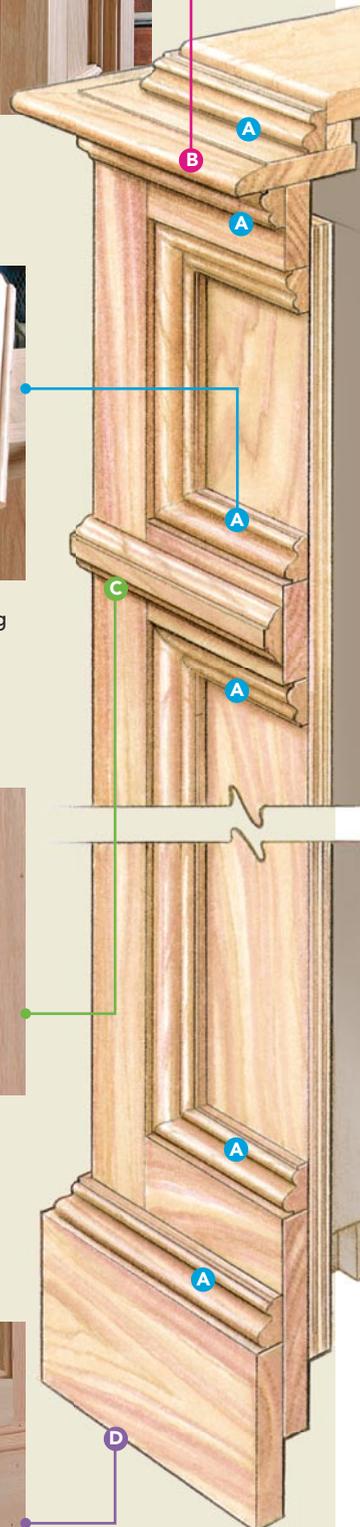
Waist molding



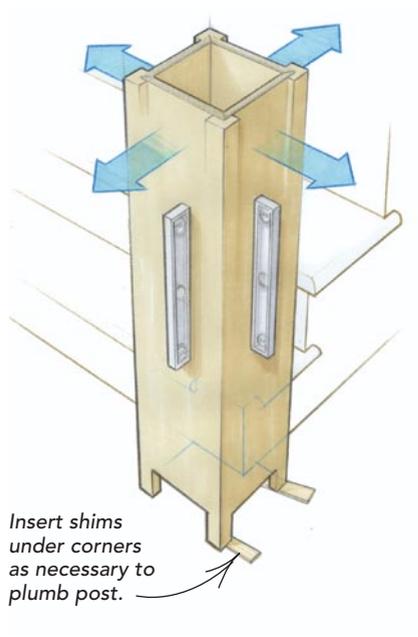
Waist molding has symmetrical contours cut with a wavy-edge bit.



Base molding



ORNAMENTATION AND BLOCKING FOR INSTALLATION



Make it plumb and solid. The post slips into position from above. Once it's in place, I check for plumb on two adjacent sides. If minor adjustments are needed, I tap a shim beneath one of the post corners. To secure the post to its blocking, I drive 3-in. wood screws through the newel's stiles and rails. Drill pilot holes for these screws to avoid splitting the wood. The screw heads later will be hidden by the base-board trim.

