Taking Wainscot Up Stairs

Raised MDF panels and stock moldings bring this elegant trim detail to the rest of the house

BY GARY STRIEGLER

I credit a lot of the success of my business to the trimwork we do in our houses. In fact, I have been told more than once that we got a job solely because of our woodwork. Perhaps that's why I shouldn't be so surprised that my article "A Simple Approach to Raised-Panel Wainscot" was received so well. It has been more than seven years since that article was published (*FHB* #165), but I still get a call or an email at least once a month from a reader who wants to know more. Many times, they want to know how wainscot should run up a stairway.

Here, I'll show how to continue raised-panel wainscot up a set of stairs. Many of the techniques in the original article apply here, but with a few subtle differences. You'll learn how to achieve an accurate layout on the wall, how to assemble and apply the frames and trim pieces in proper sequence, and how to create a simple jig that makes cutting angled, raised MDF panels a cinch.
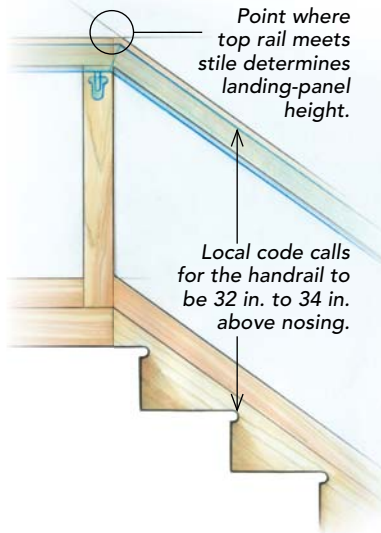
Establish the landing, then work up and down

I start a wainscot project for a stairway just as I would for an ordinary room—with a full-size layout on the wall. Although you typically don't have to worry about trimming around windows and electrical boxes in a stairway, you have to plan for handrail details. The code in my area demands that the handrail be between 32 in. and 34 in. above the front edge of each stair tread. On this project, the top rail of the wainscot runs about ¾ in. above the top of the handrail.

I start the layout by marking plumb lines for the end stiles of each run of wainscot. I then snap lines for the top and bottom rails. The point where the top rail intersects the landing panel's plumb line
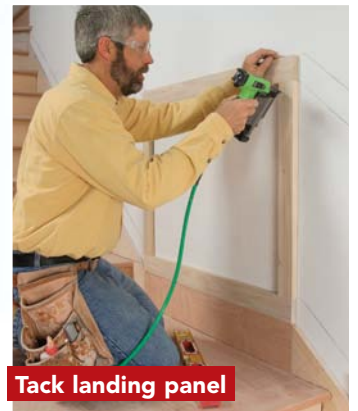
Photo this page: Bryan Striegler. Drawings: Bob La Pointe.

LAY OUT FRAMES ON THE WALL

2¼-in. bolection cap

3-in. top rail

2-in. bolection

¾-in.-thick MDF panel

Point where top rail meets stile determines landing-panel height.

Local code calls for the handrail to be 32 in. to 34 in. above nosing.

3-in. bottom rail

¾-in. astragal

Stringer

Tack frame components against layout lines

Create a full-scale layout on the wall by marking rail and stile locations. Install the landing panel against the layout, and find the angles for the top- and bottom-rail miters by making a plumb mark with a pencil and level. Then, with the bottom rail tacked to the wall with 23-ga. headless pins, lay out and cut the stiles that separate the panels. Tack all the parts in place, and mark their location within the layout before pulling the pieces to assemble.

Snap chalklines

Tack landing panel

Mark miters

Tack stiles

ASSEMBLE THE FRAMES, AND TEST THE FIT
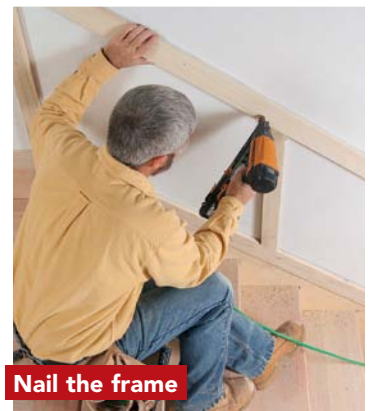
Connect the frames with biscuits and glue

Pocket-screw the rails and stiles together to make individual frames for each run of stairs and each landing. Join the frames together with biscuits and glue. The slots on the landing frame can be cut with a biscuit joiner while the frame is in place.

Glue the biscuit

Pin the joint

Nail the frame

determines the height of the landing panel. I could forgo the bottom rail and integrate the skirtboard into the wainscot, but that would make it much harder to let the stair treads into the skirtboard, and a lot tougher to fit the skirtboards behind the rough staircase (see "Finish Stairs With Finesse," *FHB* #221).

I draw layout lines for the stiles after the landing panel is assembled. It's more accurate to butt your tape up to a landing stile when marking stile locations along the stair.

Odd numbers of panels are more pleasing to the eye, but the proportions of the pan-

els are more important than the amount. I always want a panel to be at least 4 in. longer than its height, but the length should be no more than 1.75 times the height. The height of all the panels is constant. The length of each panel within a run of stairs will be the same, but it may differ from run to run based on the number of panels. Slight variations in panel length are OK.

Finally, when laying out a stair-wainscot project, you'll encounter some difficult transitions, and you'll have to decide what's acceptable and what's not. On this project,

the bottom corner of the last panel in the first run of wainscot doesn't exactly match up with the bottom right corner of the landing panel. While not ideal, I can live with the slight misalignment.

Tack the frame in place

Small errors in frame miters can yield large errors when trying to fit parts at the end of a long run of wainscot. To keep everything lined up with the layout on the wall, I test-fit all the pieces by temporarily tacking them in place with headless pins. This process is a lit-

MAKE A JIG FOR THE RAISED PANELS

Make a jig

Mark the cut

Cut the angle

Rout the panel

Use scraps to find the angle

To find the correct angle of a panel, place one piece of scrap on the top edge of the top rail. Place another piece of scrap perpendicular to the first, and plumb it with a level. Once plumb, tack the pieces together with finish nails. Use the jig to lay out the cutlines on the strips of MDF, and make the cuts with a straightedge and a circular saw. With a raised-panel bit mounted in a router table, profile the edges of the panel. Don't cut the profile in one pass. Make three to four successively deeper cuts for crisp, clean edges. Set the panel on a gauge block when fastening.

tle like the way a furniture maker assembles a chair before breaking out glue and clamps.

I start at the landing panel and work my way up or down the staircase. The landing's frame is the easiest to assemble, so I install it first and fit the other frames to it. I determine the angle of the top- and bottom-rail miters by placing them on the skirtboard, plumbing a level up against them, and marking the angle with a pencil. No math is involved. I mark the opposite ends of the rails the same way. Finally, I find the miters for the middle stiles by holding the stock

against the layout, marking and cutting the bottom miters first.

Attach the frame

Before removing all the frame parts from the wall, I mark their orientation. I then pocket-screw them together. On this staircase, which has a landing in its middle, I broke the wainscot frames into three parts. Pocket-screwing three sections together and applying them to the wall as one unit is an option, but not one that I'd recommend. Instead, I nail the landing's frame to the wall with 2½-in. fin-

ish nails. Then I join the upper and lower frames to the landing's frame with biscuits. I can cut slots for the biscuits with the landing's frame in place. It's more manageable to work this way, and the biscuits help to align the faces of the frames so that they're dead flush. With the frames positioned properly, I nail them to the wall's studs with finish nails.

Make and install the raised panels

I determine the size of each panel by marking its location within the frame using a gauge block, taking into account the way the
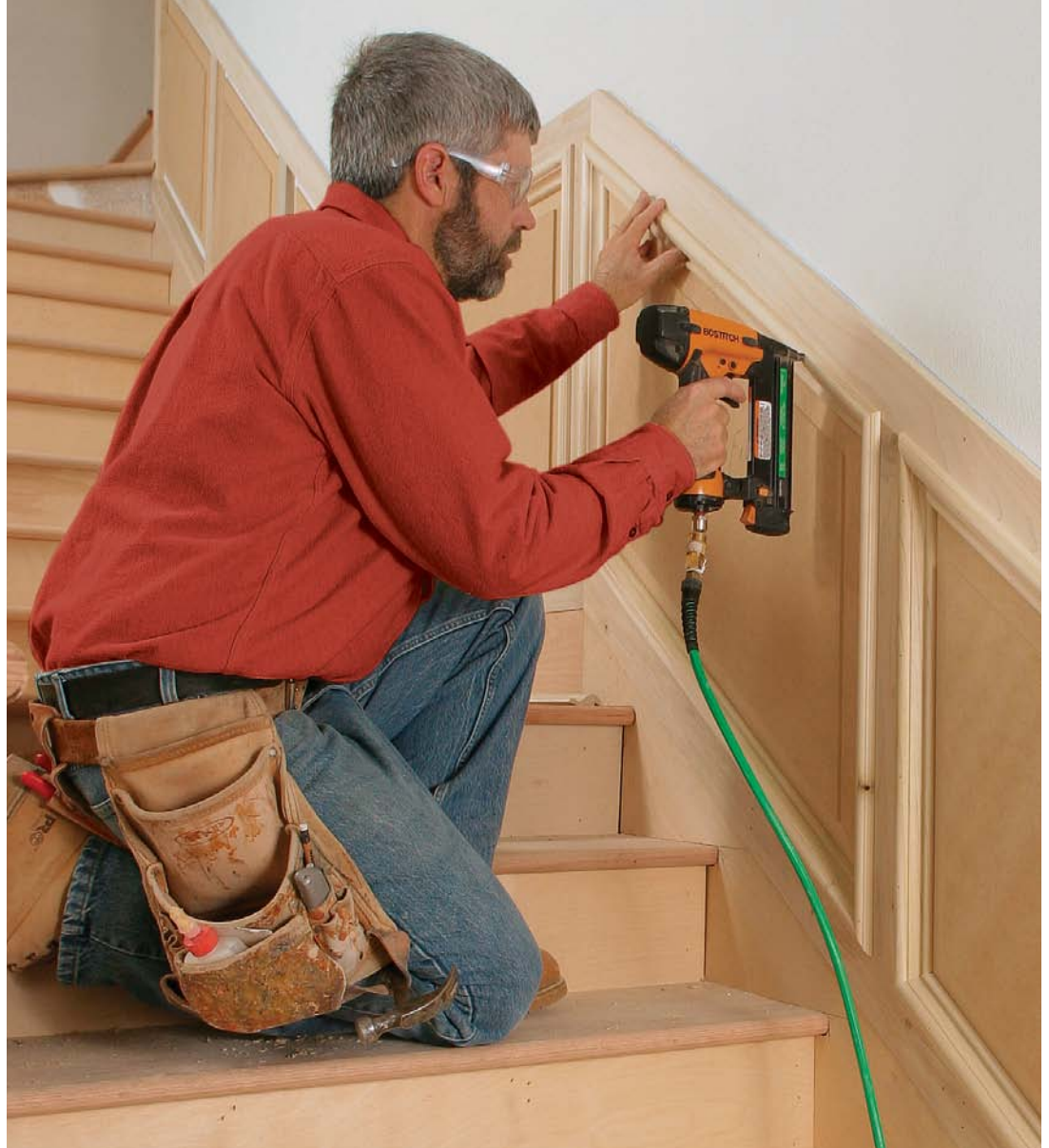
TRIM THE FRAME AND PANELS

Mark the cut

Cut the miter

Tweak the fit

Find miter angles the old-fashioned way: trial and error

Find the angles to make miters in the cap-, astragal-, and bolection-molding pieces with the same technique. Hold a scrap piece of trim material in place, and make a pencil mark along both its edges, being sure to make marks for both pieces of trim that make up the miter. The intersection of the top and bottom layout lines marks the long and short point of each miter. Hold the stock in position, and make tick marks on the trim at each intersection. Connect the points and cut. The high-angle miters on the bolection molding are tough. Because the author does not have a saw that can cut beyond a 50° miter, he makes a jig that lets him safely cut the extreme, long miters.

other trim pieces will lap over the edge of the panel. I want the panel to be spaced 1⅛ in. from the frame on all sides. This ensures that the bolection molding will cover the thin, flat edge of the panel and won't butt against the raised profile of the panel.

Making the ¾-in.-thick MDF raised panels takes little time with a proper setup. Essentially, I make a big, site-built bevel gauge to lay out the angled cutlines on the MDF stock, which I have cut to the correct panel width. Then I profile the panel edges with a raised-panel bit in a router table.

Dress up the frames and panels

The final steps are applying the bolection-molding cap, the bolection molding that bridges the gap between frame and panel, and an astragal that covers the transition between the bottom rail and the skirtboard (White River Hardwoods; www.whiteriver .com). I've got a relatively easy way of marking the angles, but I still have to sneak up on making an accurate miter, which is just a carpenter's way of describing a healthy amount of trial and error. □

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