A Simple Approach to
Raised-Panel

Wainscot

BY GARY STRIEGLER

Stock molding and MDF panels transform a room

Raised-panel wainscot speaks of a time when craftsmen had an abundance of skill and the time to display their talents. But building traditional raised-panel wainscot is a complex, time-consuming process that few people can afford. I've simplified the process. I can build good-looking raised-panel wainscot in place using basic carpentry tools and a router table. The 12-ft. by 18-ft. room pictured here took me three days to complete.

All the materials I use to make raised-panel wainscot are readily available. The bolection molding that bridges the gap between the wainscot frame and the raised panel is a stock molding from White River Hardwoods/Woodworks Inc. (www.mouldings.com; 800-558-0119). Because the wainscot will be painted, I can use medium-density fiberboard (MDF) for the raised panels. MDF profiles well and is stabler and less expensive than solid wood.

Start with a detailed layout

Before I cut any wood, I snap horizontal chalklines to represent the top and bottom rails to see if the wainscot height is appropriate for the room. Next, I determine how many panels I need. They should be wider than they are tall, and to my eye, an odd number of panels looks best. For this project, five panels fit perfectly on the longest wall.

I determine the panel width by subtracting the total width of the stiles (vertical pieces) from the length of the

The writing is on the wall. A full-size layout on the wall lets the author see the wainscot's proportions and serves as a guide for assembly.

PLEASING PROPORTIONS FROM TOP TO BOTTOM

Although small in section, the moldings in this wainscot have a big impact on its overall appearance.

1 Bolection-molding cap **2** Top rail **3** Bolection molding

4 MDF raised panel **5** Bottom rail **6** Panel molding

7 MDF baseboard **8** Cleat **9** Shoe molding

Drawings: Bob La Pointe

Top rail

1¼-in. pan-head screw

Pocket hole

Stile

QUICK, EASY POCKET-SCREW JOINERY CREATES A STRONG FRAME THAT IS SET IN PLACE AS A SINGLE UNIT
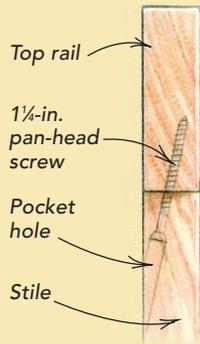
Assemble the frame next to the wall

Use a pocket-hole jig to drill the stiles for assembly. Lay out the rails and stiles along the wall, then glue and screw them together. Get some help lifting the frame into place because butt joints along the rails could flex. Cleats support the frame for nailing and serve as nailers for the baseboard.

wall. I take into account that one panel will overlap another in corners and that the lapped stile should be ¾ in. (the thickness of the stile) wider. Then I divide the result by the number of panels. Once I have the panel width figured out, I use a level to lay out the stiles on the wall. If any electrical boxes fall on a stile or panel edge, I have my electrician move them.

Build the longest frame first

Because it's easier to make fitting adjustments to the smaller frame of the shorter wall, I assemble and install the longer frame first. The frame stiles and rails must be the same thickness, so my first frame-making step is to run all frame stock through a portable planer. I also use this machine to plane all rails to width by running them through the machine on edge.

Finding clean, straight lumber in 18-ft. lengths is nearly impossible, so I use pocket screws to assemble the top and bottom rails from two shorter pieces. I make certain that the top rail's butt joint breaks on a stud and is not in the same panel as the bottom rail joint. I make the overall rail

lengths ⅛ in. shorter than the wall to ensure that the rails fit easily. Any gap will be covered by the adjoining wall's overlapping stile.

I cut all the stiles on a miter saw using a stop block for accurate repetitive cuts. Next, I lay out the lumber for the top and bottom rails against the long wall. I transfer the layout from the wall to the rails using a speed square. Then I lay the stiles along the rails' layout lines (photo p. 83). (Remember, the lapped corner stiles are ¾ in. wider than the others.) To assemble the rails and stiles, I use a pocket-hole jig and connect the pieces with yellow glue and pocket screws (photos above). Glue should seep out around the joint and will be sanded smooth once it sets up.

Cleats support the frame

I nail a series of cleats along the wall to support the frame and raise it to the height of the chalkline I snapped earlier. The cleats are the same depth as the frame and also act as nailers for the baseboard that is installed later.

I need help to tip the 18-ft.-long frame into place. The frame isn't that heavy, but it's awkward for one person to

lift into place. And although the pocket-screw joinery is extremely strong, the butt joints along the rails are the weakest point of the assembly and could flex if not supported properly.

Once the frame is up, I set it on the cleats so that I can nail it to the studs using a 15-ga. finish nailer. I then smooth the rail-and-stile joints with a 120-grit sanding disk in a random-orbit sander.

Raised panels are shaped at the router table

The bolection molding that I chose for this wainscot projects 1½ in. into the frame's opening. To keep the raised-panel profile from being concealed, I size the panel to fit inside the frame and molding.

Because I knew the profile of the raised panel to be made, I determined that the bolection molding should overlap the raised panel by ⅜ in. This amount of overlap covers the thin, flat edge of the panel without hitting the raised profile, gives me enough wiggle room to adjust the bolection molding, and covers the brads used to fasten the raised panels to the wall.

I cut a 1⅛-in. gauge block (the 1½-in. molding projection minus the ⅜-in. overlap) from scrap lumber and use it to lay out the raised panel in the frame. I mark only the corners because they determine both the placement and the size of the MDF raised panels.

I make the panels out of ¾-in. MDF on a tablesaw. Because of the fine dust that is created when cutting MDF, it's necessary to wear a respirator, even in a well-ventilated area. After the rectangular panels are cut to size, I bring them to the router table to shape them into raised panels (inset photo, center).

I don't rout the MDF in one pass; instead, I make three passes for each side. This process can be a bit time-consuming, but by setting the router depth once and increasing the cut by moving the fence to reveal more of the router bit with each pass, I get a smoother profile, keep the router from overheating, and reduce the chances that the panel will kick back. Plus, I don't have to duck under the table to readjust the router.

I work this phase like a production line. I rout four sides of every panel, increase the depth of cut, run every panel through again, and repeat the process. This approach ensures uniform panels cut to the same depth.

To install the panels, I simply rest the panel on a 1⅛-in.-thick gauge block along the bottom rail and position the panel along the layout lines I made earlier. Along the panel edges, I drive 2-in. brads into the studs. I can nail the MDF panels to the wall because they are extremely stable and won't move with swings in humidity.

Molding bridges the gap between the raised panel and frame

The bolection molding has a rabbet on its back, allowing it to seat itself in the framed opening while covering any joints. To cut a piece of bolection molding properly, the rabbet is elevated by a sacrificial block the same depth


Top rail

1⅛-in. gap
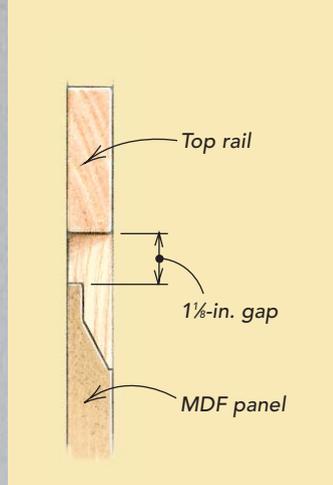
MDF panel

MDF PANELS ARE FLAT, SMOOTH, AND STABLE
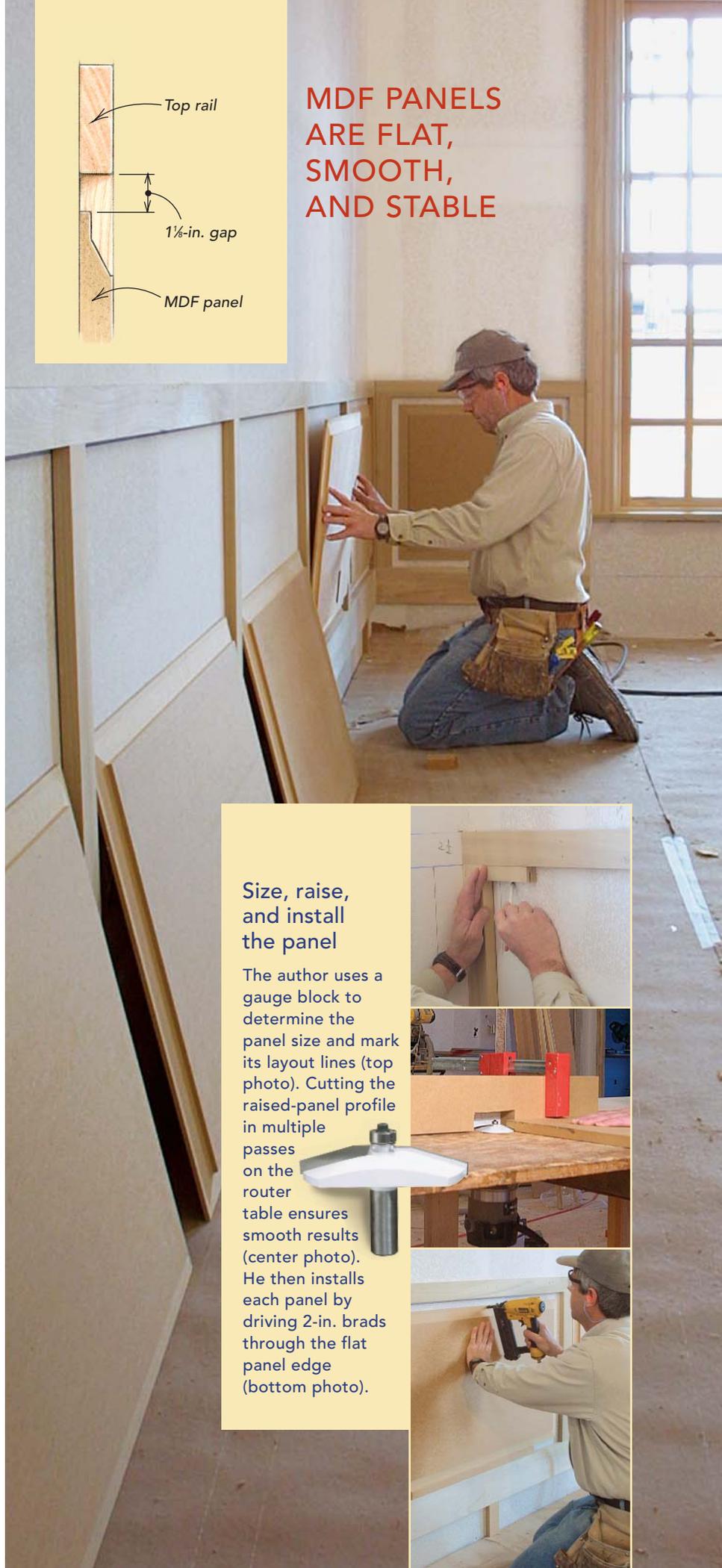
Size, raise, and install the panel

The author uses a gauge block to determine the panel size and mark its layout lines (top photo). Cutting the raised-panel profile in multiple passes on the router table ensures smooth results (center photo). He then installs each panel by driving 2-in. brads through the flat panel edge (bottom photo).
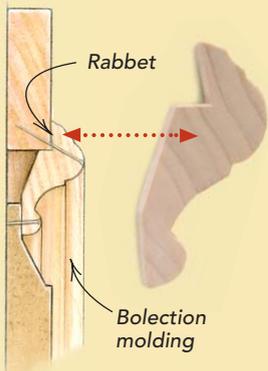
MITERED MOLDING SURROUNDS THE PANELS

as the rails and stiles; then it's just a matter of making 45° miters and fitting the molding to the opening.

After cutting the molding, I use a 23-ga. headless pinner to install each mitered frame by nailing the molding to the stiles, rails, and panels. I reinforce the miter joints with glue and cross-nail them to hold the joints tight.

Finish up with bolections and baseboards

Once I've finished mitering the frames around the panels, I'm in the home stretch. To cap the wainscot, I use a rabbeted bolection molding that contains a chair-rail profile (inset photo, facing page). Brads that are driven into the top rail attach the molding, and the rabbet hides the joint between the cap and the wainscot. Because I use a backband on window and door casings that is thicker than the bolection molding, a simple butt joint is all that is necessary to terminate the molding at the windows and doors.

I make the baseboard detail out of 6-in.-wide MDF topped with a 2-in. panel molding. The baseboard is nailed to the cleats and bottom rail, and the molding is fastened to the bottom rail. At the doorways, I clip the portion of the baseboard that stands proud of the casing with a 45° bevel to ease the transition between the two details. □

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A FLAT PANEL AVOIDS BUSY WINDOWS

Instead of crowding a raised panel under the window, this area gets a simple step-out treatment. I use a 3½-in.-wide window stool to accommodate the extra depth for this detail. **1** After two MDF nailing strips the thickness of the wainscot frame are installed, a single, flat MDF panel is built out 1½ in. under the window. I size the MDF panel to cover the adjoining wainscot frame by ¼ in. on each side. **2** Next, I install the MDF baseboard on top of the flat panel. At the step back, I use a mitered return that is fastened with yellow carpenter's glue and 23-ga. headless pins. **3** The 2-in. panel molding that caps the baseboard is nailed every 16 in. with 1½-in. brads.

Large photo, facing page: Brian Pontolilo

Brad
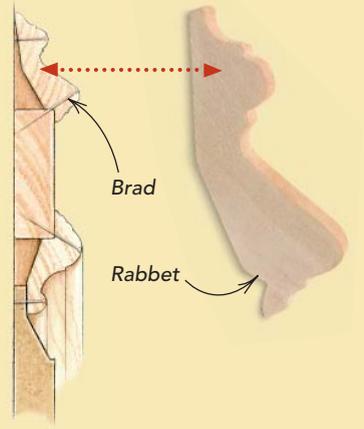
Rabbet

Keep installation simple with a one-piece molding

A bolection molding with a rabbeted bottom edge caps the wainscot and contains a chair-rail profile. The molding is a simple alternative to the traditional two-piece chair rail. The author completes the wainscot with a 6-in.-wide MDF baseboard topped with a panel molding.