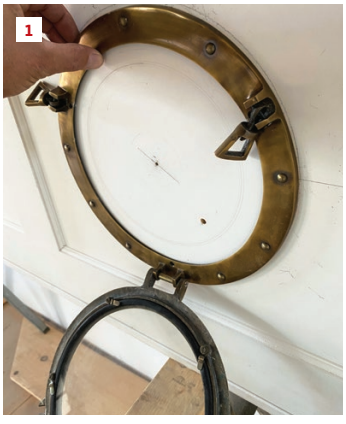
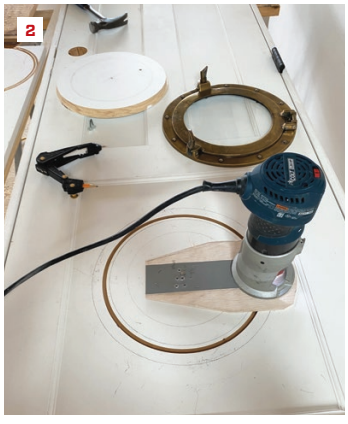
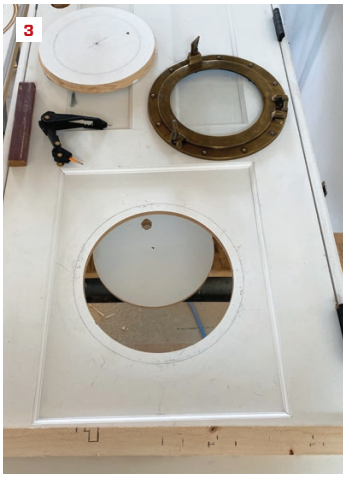
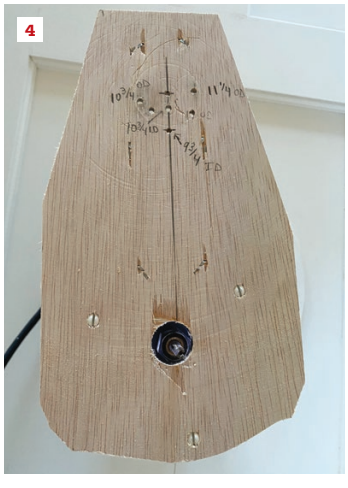
Ahoy Mateys! Installing a Porthole in an Interior Door

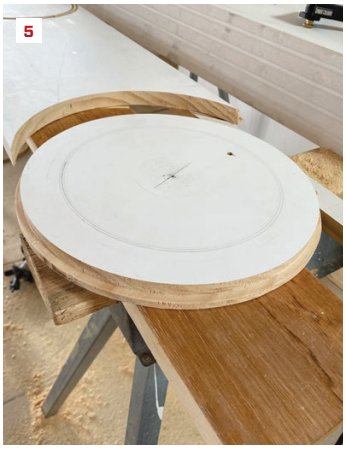
BY RYAN LABRENZ

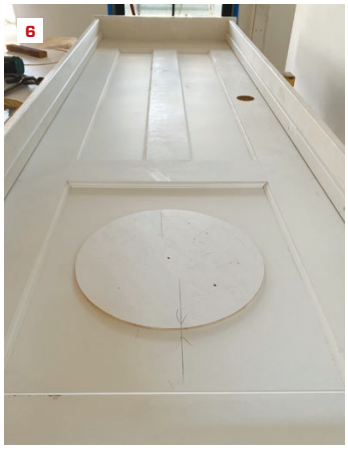












While we were hustling to wrap up a long-running project last fall, the homeowner hit us with an unusual request: "I was at an antique store over the weekend and found this porthole; do you think we can install it in the door leading to the basement?" He was holding a large brass porthole, about a foot in diameter, which was still operable. With the painters queuing up behind us, I told him I wasn't sure I had the tools I'd need to do it, but I'd think of something—fast.

The homeowner was an architect and he had designed the new four-building compound we were trying finish up. The compound consisted of a main house, where the porthole was going to be installed; a piano barn, which housed a grand piano; a pool barn with an Endless pool; and a pool house with a changing room for an in-ground pool. It was an interesting project and the client was imaginative with a good, albeit somewhat eclectic, design sense.

Quickly noodling through the situation, I saw that the porthole's outer brass ring would overlay the hole cut in the door, while an integral, smaller-diameter rim would need to "collar" into the door about 1/4 inch. After a few minutes, I determined the real novelty of the homeowner's whimsical, last-minute request would be making a perfectly round trim-out piece to cover the raw wood hole on the basement-stair side of the door.

The door. I'm not sure if it was serendipity or planned, but the interior door was a Craftsman-style, three-panel shaker design that had a large enough square top panel to accommodate the antique window. The 32-by-80-inch door was constructed of MDF panels with pine stiles.

After removing the door from its hinges, I worked from a pair of sawhorses. I found the center of the panel and marked the porthole's inner opening and outer flange, then marked its focal point **(1)**.

An improvised router base. Starting out, I planned to make practice cuts on some 1-by stock; I wasn't sure I'd be able to rout out the tight, circular trim-out piece without blowing it up. Working on the fly, I took the 1/4-inch plexiglass base plate off my laminate router and fashioned a jig out of 1/4-inch lauan and screwed it on the router (I didn't have time to buy a proper jig attachment). I stapled a strip of aluminum to the top of the lauan to help prevent the router from wobbling and to keep the hole from enlarging or deforming at the pinned focal point during multiple router passes.

For the door cut-out, I halved the 10 3/4-inch inside

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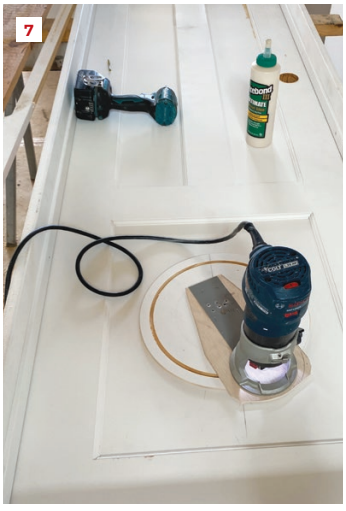
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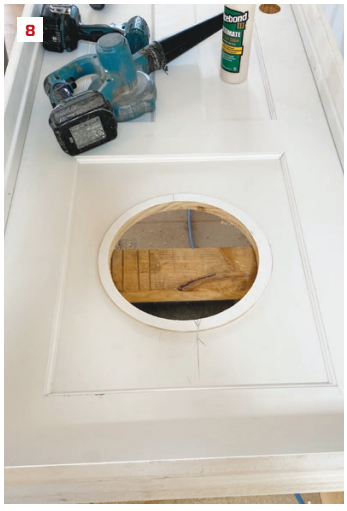
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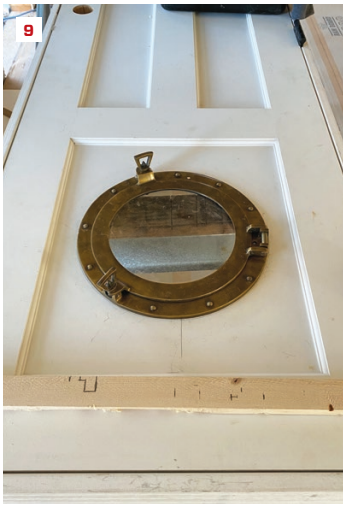
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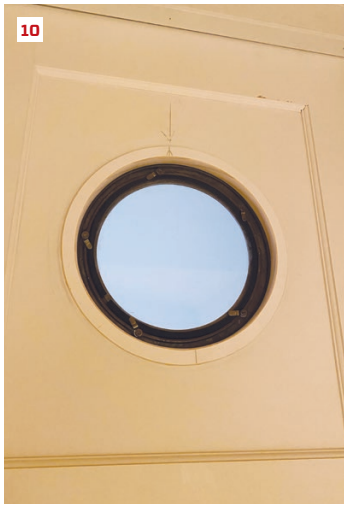
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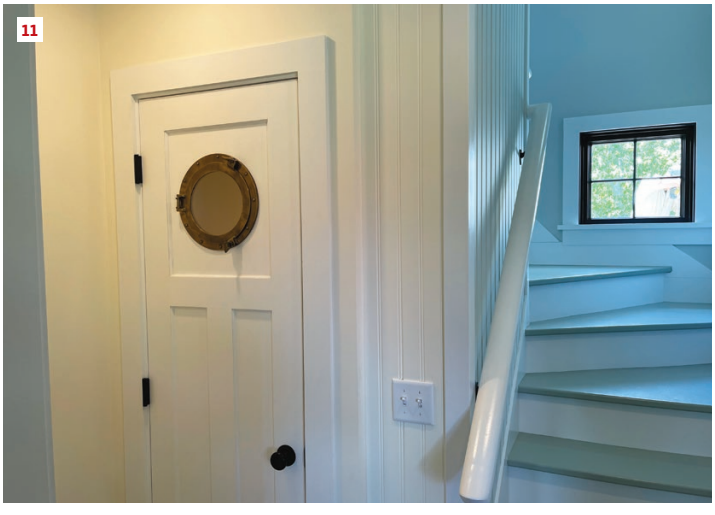
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diameter (ID) size I needed and drilled out a focal-point hole in the lauan jig 5 3/8 inches from the outside edge of the router bit. I pinned the jig to some 1x12 test stock, then made my test cuts, which worked out satisfactorily, so I was good to go.

Moving on to the door, I pinned the jig to the marked focal point and cut the opening in a few passes **(2)**, plunging about 3/16 inch into the MDF panel with each pass until I cut through **(3)**.

Circular trim-out piece. To cover the raw wood edge of the basement-stair side of the door, I had to make a round trim-out piece. I drilled new focal points in the lauan jig: one representing a radius equal to that of the hole in the door, measured 5 3/8 inches from the inside edge of the router bit; and the other representing a larger radius to account for a 1/4-inch lip that would overlay the interior face of door's MDF panel, measuring 5 5/8 inches from the bit's inside edge. I marked these points on the bottom of the lauan jig as "10 3/4 inches OD" and "11 1/4 inches OD," respectively.

It took a bit of trial and error to locate the focal points on the jig. I would measure, then test the distance, and if was off by the tiniest bit, I would try again. Hence, holes for the focal points were drilled to the right and the left of the site-built jig's centerline **(4)**. (This is where using an manufactured jig would've come in handy.)

In another stroke of serendipity, I was able to make the circular trim-out from an 11 1/4-inch piece of wood (had the diameter of the porthole been slightly wider, I would have needed to glue up a couple of pieces, side by side, adding time to this ad hoc project). I cut the "trim disk," plunging 3/8 inch deep on each side of the disk for my two different diameters, 10 3/4 inches and 11 1/4 inches.

I then used an AccuScribe Pro woodworking compass (fastcap.com) to mark a 9 3/4-inch diameter representing the hole I needed to cut out of the trim disk **(5)**. Because I didn't think that I'd be able to then rout out this tight circular trim without it blowing up, I first glued the trim disk into the hole in the basement-stair side of the door with Titebond III **(6)**, then routed out a 9 3/4-inch-diameter hole to create the finish trim-out piece **(7, 8)**.

I mounted the porthole with some brass screws I happened to find on my mobile-hardware-store of a truck **(9)**, then reinstalled the door **(10)**.

After the painters came through—hot on my trail—and did their thing, the result looked pretty good **(11)**. Not bad for an improvised solution to a curveball request at the end of a long project.

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