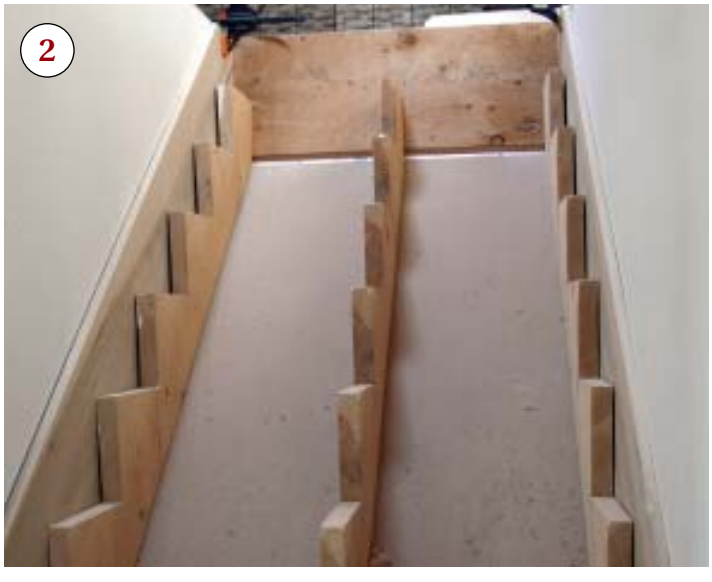
On the Job

Squeak-Free Stairs With Pocket-Hole Screws

by Mark O'Neil

Here's a method I use to keep nails — and squeaks — out of staircases I build on site **(1)**. On a new-construction job, like the one shown here, it's a good idea to give the drywallers a heads up; they can cut the pieces that go on the bottom of the stringers and set them aside for installation after the stairs are finished.



I start by preparing the skirtboards, first fitting them in place **(2)**. When transferring the locations of the treads and risers, I don't automatically copy the stringer's actual shape. Because the tips of a dimension-lumber rough stringer will naturally shrink, I make the marks on the skirt reflect the stringer's original shape, being careful to make the intersections of the treads and risers exactly 90 degrees. I also take care not to mark too low, so the parts don't bind and bow when I assemble them.

Next I use a Forstner bit and drill guide (www.rockler pro.com) to drill a flat-bottomed hole where the tread noses will land **(3)**, then rout the dadoes for treads and risers **(4, page 2)**. I make the holes and dadoes 1/4 to 5/16 inch deep, and about 1/16 inch wider than the tread and riser stock so that everything fits together easily.

Using my basic router, I have to take two passes with a 1/2-inch straight bit to get the desired depth, and two more passes to get the right width. On an enclosed stair, one of the skirtboards has to be "gutted" — that is, the material behind the dadoes has to be removed all the way to the bottom edge. This allows that skirtboard to slide along the wall and into the finish treads and risers that have already been loosely installed into the dadoes on the other skirtboard.

With one of the skirtboards nailed to the wall (preferably the longer one) and the other clamped into posi-

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tion, I take measurements for the treads and risers. I cut them 1/8 inch short, then dry-assemble the whole stair **(5)**.

Next I use a Kreg jig to drill pocket holes in the rough stringers — usually two holes at every tread and riser location **(6, 7)**. Having already done a dry fit, I'm ready to use glue; PL urethane has a long working time and fills gaps of up to 3/8 inch wide.

Armed with a bunch of shims and 1 1/4-inch screws, I work from the top down, gluing and screwing the staircase together. Anywhere I have a gap greater than 1/4 inch, I'll run in a 1 1/2-inch screw. The shims wedge the parts tight against the front edge of the dadoes, and the urethane glue expands to fill the voids **(8)**. I also use 1 5/8-inch trim-head screws to secure the backs of the treads to the bottoms of the risers. Once everything is put together, I pack PL into any remaining voids.

By the way, it's a good idea to drill pocket-screw holes in the back of the bottom riser. This allows you to pocket-screw it to the wood floor before it gets covered with the tread.

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