



## From Rough Frame to

# Finished Stairs

A foolproof method for installing skirtboards, treads, and risers

BY BRUCE ABERNATHY


**F**inishing a set of stairs can seem like a daunting task, and frankly, it's never as straightforward as it ought to be. Platforms, walls, corners, and different framing carpenters all affect how easily the finish details will go together. While each staircase has its own particular challenges, there are some situations common to many staircases. The one featured here illustrates several of them, including open and closed skirtboards, open and closed treads, treads that will be carpeted, and stain-grade treads.

My job as a finish carpenter is to convert a roughly framed stair (photo top left) into a safe, squeak-free, good-looking piece of furniture. While the framing awaiting me at a job site is rarely plumb, level, or square, the stairway that I leave behind is (or at least looks it). To do this as efficiently as possible, I've learned where to use wiggle room, when to sweat the small stuff, and when to move on. □

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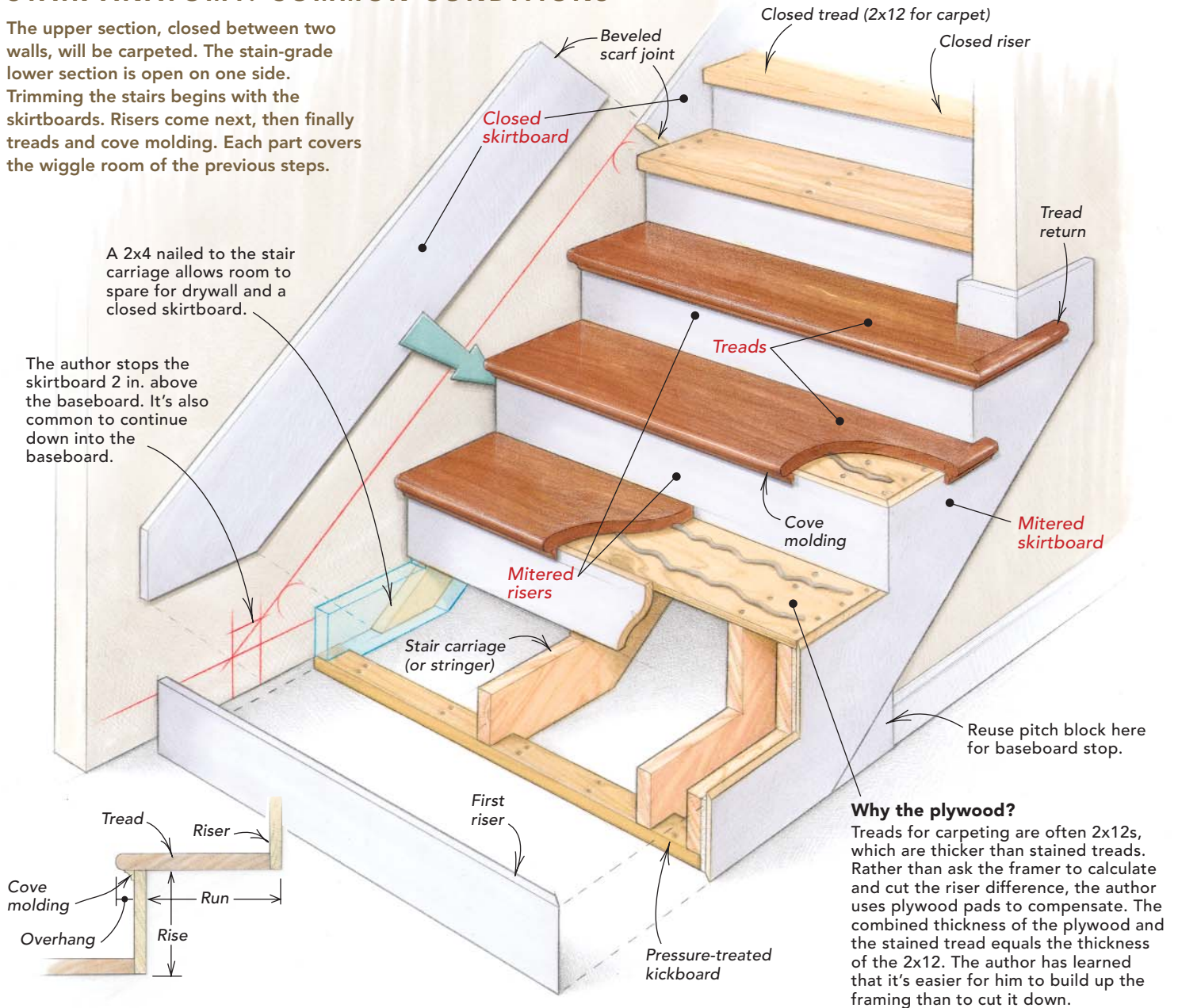
**One of the hard parts just got easier**



These patented treads are made by Young Manufacturing (270-274-3306) and have preinstalled returns, which speeds the process tremendously.

## STAIR ANATOMY: COMMON CONDITIONS

The upper section, closed between two walls, will be carpeted. The stain-grade lower section is open on one side. Trimming the stairs begins with the skirtboards. Risers come next, then finally treads and cove molding. Each part covers the wiggle room of the previous steps.



A 2x4 nailed to the stair carriage allows room to spare for drywall and a closed skirtboard.

The author stops the skirtboard 2 in. above the baseboard. It's also common to continue down into the baseboard.

### Why the plywood?

Treads for carpeting are often 2x12s, which are thicker than stained treads. Rather than ask the framer to calculate and cut the riser difference, the author uses plywood pads to compensate. The combined thickness of the plywood and the stained tread equals the thickness of the 2x12. The author has learned that it's easier for him to build up the framing than to cut it down.

## FIRST, DRAW THE CLOSED SKIRTBOARD ON THE WALL

Begin by deciding where the closed skirt will sit. About 2 in. above the nosing (tangentially) ensures that the bottom of the 1x12 skirt will be tucked neatly behind the finished risers and treads.



**With the scribes set at 2 in., draw arcs from the nose of the bottom and top treads. Use a temporary tread to position the arcs.**



**Trace through the arc with a pitch block. When laying out the skirt, plan for how it will intersect with the baseboard.**



**Measure the length.** Because most stairs are more than 16 ft., they require a two-piece skirt. Place the scarf joint toward the tread's nose for easy sanding.





**1. Clamp the skirt in place.** Cut the skirt's bottom using the pitch block as a pattern. Set the skirt on a floor spacer, and clamp it in place for scribing. Keep the top of the skirt a consistent height above the stair framing.



**2. Straighten uneven cuts with a framing square.** The extra thickness of the blade gives some wiggle room for setting miters.



**3. This cut matters.** The tread cuts are square, but the riser cuts need to be mitered. If your saw tilts the wrong way, you can use a jigsaw with a tilting base or a handsaw.

## CLAMP, SCRIBE, AND CUT THE OPEN SKIRT

Run both ends of the skirtboard long, and mark the tread and riser cuts. Framing is usually rough, and it's nice to have wiggle room. Tight miters are important, but so is being plumb and level.



**4. Nail the skirt to the framing.** Use long scraps, mitered on one end, to test the riser cuts as you position the skirt. The tread cuts should be level and slightly below the framing. This will reduce stress on the miter joint caused by people walking on the stairs.

### TIP

#### A good excuse to buy another tool

The author has two circular saws: a left-tilting and a right-tilting saw. If the stringer is on the left side (from the bottom, looking up), he uses the left-tilting saw (photo bottom left). If the stringer is on the right, he uses the right-tilting saw.





**1. Marking is better than measuring.** Butt the mitered end of the riser against the closed skirt, and mark the finished length on the opposite end.



## MITER THE RISERS

Cut 45° bevels at the ends of all the risers at the same time, and mark cutoff lengths all at once. This reduces the number of trips to the saw station. Number or letter the risers to keep them in order.

### TIP

#### Use a straightedge

Sometimes you can't drive a nail through the back of the riser into the tread. To guarantee a good glue joint, use a straightedge and an air nailer, which won't bend the riser into uneven framing as a hammer will.



**2. Use two types of glue, and don't sweat the small stuff.** Glue each riser to the stair stringers with gap-filling construction adhesive, but use wood glue on the miter joint. As with the skirt, risers can be slightly below the level of the framing. Cove molding will cover the gaps.



**3. Secure the risers.** After gluing and pinning the miter joint with brads, nail the riser into each stair carriage.



## FINISH THE JOB FROM THE TOP DOWN

Stain and finish the treads and cove molding before installation, and then work from the top down, toward the door. This keeps you off freshly placed work.

### 1. Measure tread length with a compass.

The author buys treads with returns installed. With the opposite end of the tread butted against the skirt, adjust the compass to reflect extra tread length.



2. It's easier to see a pencil line drawn on tape. After setting the compass, scribe onto the tread using the wall as a guide. This will account for a stairway that's not exactly square to the wall. Use a sliding compound-miter saw to match the wall angle.

### 3. Use shims to level the tread.

Find the dips with a torpedo level, then use shims and construction adhesive to fill the gaps and prevent squeaks.



### 4. Brads are like little clamps.

While the adhesive sets up, brads will hold the tread secure. The author uses oil-base putty to fill the holes.

### 5. Miter, mark, and cut the cove molding.

As with the risers, cut the cove molding a bit long, and miter the proper end. Mark the cutoff against the opposing miter and trim to length.



### 6. A mitered cove completes each tread.

Hiding the final gap of wiggle room, cove molding provides an attractive transition from tread to skirt. To end the cove molding, the author cuts 45° back from horizontal.

## TIP

### Tight-fitting closed treads

The author uses a homemade stair gauge that adjusts to define the tread length and wall angle. Then he cuts the treads on a sliding compound-miter saw.

