

An Evolution in Laying Out Stair Stringers

BY BRIAN CAMPBELL

Most carpenters are familiar with laying out stair stringers by stepping them out with a framing square equipped with stair gauges. (For those who are not, or who want a refresher, see “Stair Stringers: Calculation and Layout,” Apr/17.) A common source of errors with this method is failing to accurately line up the framing square at the edge of the board as you move from one step to the next. The rounded edges of most boards make it hard to align the layout lines from one step to the next. Minor shifts can compound errors. Savvy carpenters will make a tick mark when laying out each step to accurately define the exact points where the gauges meet the board edge, but it’s still easy to wander off, and the result is a set of stringers that don’t perfectly match. Sometimes, boards with waney edges throw off the square and you end up having to guess at the position—an issue that seems increasingly common with some pressure-treated lumber.

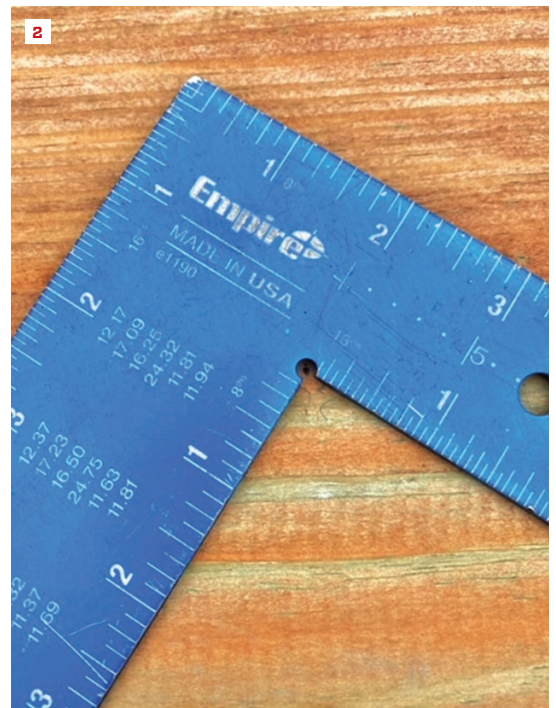
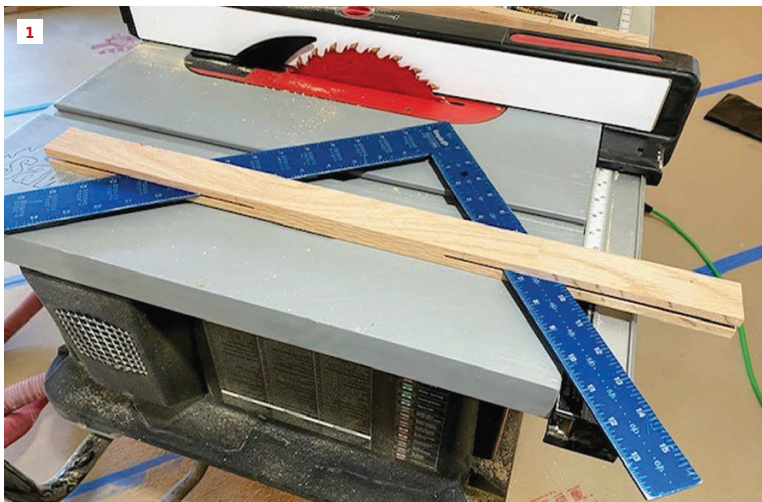
To avoid these problems, I stopped using stair gauges and made a sliding jig that I use with the framing square instead (see photo, below). It’s simple to make on a table saw. The square slides in a kerf cut on each end of a 1x2, and I clamp the sides together with small C-clamps when stepping off a stringer. (Eventually, I’d like to add threaded inserts and small knobs.)

To improve accuracy, I moved to stepping off the stringer with trammel points. I set up my trammel points on a board the length of the hypotenuse of the stair’s rise and run, and at first used this trammel set to step off the distance along the edge of the board.

I eventually evolved this process further by avoiding the edge of the board entirely. Instead, I work along a chalk line I snap down the length of the stringer. This line passes through the inside corner of each stair step. The step distance is exactly the same as the step distance at the edge, but using a straight line down the middle of the stringer helps to keep things more consistent.

Empire’s framing square has a cut-out milled at the inside corner that makes it easy to line up a trammel point at the exact inside corner of the square. I use this point to define where to snap my line, and after stepping off the inside corners of the stair with the trammel set, I line the square up on the points I have inscribed with the trammel points to draw cut lines for each step. This method adds a few movements, but it eliminates minor errors, allowing for a perfect set of stringers, even when the lumber is a little rough.

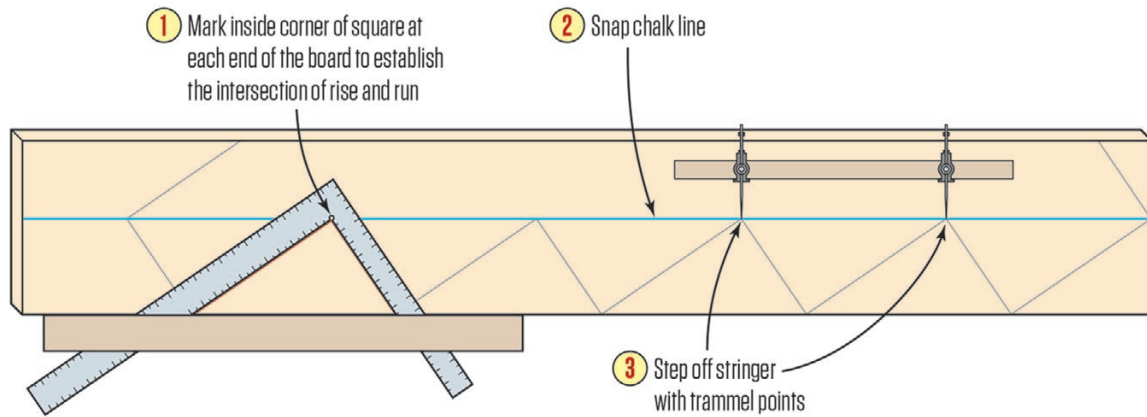
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Instead of using stair gauges, the author makes a jig (1) by ripping a kerf from each end of a 1x2. This can be lined up with the rise and run distances on the square, and the sides of the jig clamped with small C-clamps to hold the square in position while he steps off the stringer. Empire’s framing square includes a cut-out at the intersection of the tongue and blade, which allows precise placement of a trammel point (2).

Photos by Brian Campbell

Stepping Off With Trammel Points



Instead of working from the edge of a board, which can lead to errors, the author steps off a stair stringer with a trammel set, working off a chalk line snapped near the middle of the board.



Illustration by Tim Healey

The trammel set is two trammel points spaced the distance of the hypotenuse of the rise and run of the stair (3). The result of working to precision is a perfectly matched set of stringers (4).