After a meeting of the board, the Flanders Bay & Schoodic Railroad ended operations in Stamford, Connecticut and relocated to Phippsburg, Maine. One of the first things I looked at when selecting my new home was where to put the trains. Yes, the house was great and the schools good, but where would the trains go? The lot is large and wooded, ranging from rocky and steep to rolling woodland.

A seasonal stream runs in a gully below the house. It would have been interesting for the train to run over bridges and along the stream. The area had problems though: it was far too steep for my steamers to handle, even with crazy switchbacks and loops. It was also a difficult

A wood trestle you can build

Simple techniques result in an impressive structure

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A work train crosses the new trestle on the author’s FB&S Railroad.
location to get to, with a steep climb down rocky banks.

A better site was along the driveway, where there are some nice mossy areas with small, natural trees in among those of a full-size forest. The most interesting place is along a stretch of the driveway that extends from a spot next to the workshop to one near the road, about 150 feet or so. It is a rough section with mossy-ledge cliffs, large trees, and jumbles of rocks. But, with clever layout of the right-of-way and some bridges, fills, trestles, and cuts, an interesting and scenic garden railway could result. In this article, I will discuss the trestle built alongside the mossy cliff.

Planning
I had made some dry-stone-wall fills over one rough area but did not want it to continue farther, as it would hide a scenic moss-covered rock outcropping. Near the trestle’s proposed location, a tree root needed to be bridged so that tree growth would not harm the track. The northern abutment for the bridge is the stone fill mentioned above. I made a pier for the southern end of the bridge from natural stone, next to the proposed trestle. The trestle would be built between that pier and the high ground beyond the cliff.

I started by planning the size of the trestle and determining the number of bents that would be needed. It seemed that with a total span of about six feet, eight bents, spaced about 8” apart, would bridge the gap. The track is supported by the bridge pier on the northern end, while the southern end lands on terra firma with some overlap. The actual bents were ultimately spaced between 7½” and 8” apart. The spacing at the ends of the trestle looks fine.

The bents
Bents are the pre-assembled bundles of posts that support a section of track. They are fabricated with diagonal bracing and cross pieces. I made the bents in my shop and then installed them in place to make up the trestle. I made a full-size drawing

Figure 1—Trestle bent
of the bents (figure 1), which were all the same size. I then assembled the bents right on the drawings using waterproof Titebond II carpenter’s glue.

I started construction by ripping some pressure-treated planks to suitable sizes for my 1:20.3-scale trestle parts (photo 1). I cut the upright posts ½” square and the cross pieces and diagonals ½” x ⅛”. I cut the posts 15” long so they would be buried 6-8” into the ground. The top cross pieces were cut long enough to tie the tops of the five posts of each bent together, with some extra length to hang out the sides. The lower cross piece needed to be longer to brace the five posts where they spread out near the ground. Diagonals fit between the top and bottom cross pieces on both sides of each bent. I drew the bent full size to figure out the size of the diagonals. The ends of the diagonals had to be cut at an angle to match the cross pieces. For each of my eight bents I determined I needed five posts, two top cross pieces, two bottom cross pieces, and two diagonal braces.

Trestle bents on my old railway were nailed together with brass or steel nails. Neither worked very well by themselves in the long run. The steel nails rusted away and the brass nails worked loose. Small galvanized-steel nails do not have enough zinc on them to last long outdoors in my area. Titebond II carpenter’s glue worked best. Nails can be added but should be considered temporary or for decoration.

I live in a humid-to-downright-wet area; those in more arid parts of the country will have better luck than I with steel nails.

With all the parts pre-cut, I printed out several copies of my bent drawings and laid out the parts for assembly right on the drawings. First, I placed the bottom cross pieces and diagonals in their proper position on the drawing (photo 2). I then put a drop of carpenter’s glue where each piece would meet the posts (photo 3). Next, I placed the posts onto the drops of glue on the cross pieces, using the drawing as a guide. Another drop of glue on each post under where each top cross piece would contact them readied the bent for the addition of the final pieces (photo 4). Weight placed on top of the assembly helped to clamp the pieces together as the glue dried overnight. I was able to make a batch of several bents each evening until I had all I needed (photo 5).

**Installation**

I did not want to unduly disturb the existing ground, with its moss and wild flowers, so I intended to just use a spade to slice a slot in the soil into which each bent could be inserted. My plan was to simply place the bents in the soil and tap them to their proper depth to get the tops to the correct height, then tamp the soil firmly back around the base. This method worked well on my previous railways. However, as is typical in New England, with my first spade cut, I hit stone about one or two inches down. I then carefully trimmed the posts so that they would rest on the rock, with the top of each bent at the correct height. This was a bit tricky, but it worked out well in the end and
made for a very sturdy base for the trestle.

I temporarily braced the track-supporting beams in their proper position. This helped to locate the bents as I added them. I used one bent at each end to support the beams so I could remove the beams to work, then drop them back into place to check the height of the bents I was adding (photo 6).

In order to get the top of the trestle level, I temporarily braced a pair of wood planks, which would become the deck beams, in their proper locations, and checked their grade using a carpenter’s level (photo 7). I wanted the trestle to be dead level. I then worked the bents to fit snugly against the bottom of the beams while being supported by the underground rocks (photo 8). If the ground was not so rocky, I would have just set the bents a bit high and tapped them into place with a hammer.

I added each bent, spaced as evenly as I could get it (photo 9). I used my “calibrated eyeball,” as I felt exact precision was neither required nor in keeping with the style of my railway. Eight inches looked good for this narrow-gauge trestle. When the last bent was in place, the longitudinal deck beams were supported entirely by the bents. I had a trestle.

The deck beams I sawed were two planks, sized properly to support the track. Mine are about 3/4" wide x 1" tall. I did not use pressure-treated wood here, as it would not touch the ground and I had used up my stock of the good stuff. They should last for 10 years or more. The beams were positioned under the track so that they supported the rails and the ends of the ties.

This trestle is straight. On my old line, the trestle supported a curve. For that, I sawed out curved pieces on my bandsaw, although a hand-held jigsaw or sabresaw would work just as well.

I used flat-headed deck screws to attach the beams to the top of the bents. The screws went into the top of the posts, which did a lot to solidify the trestle.

**Track laying**

I was then ready to lay track over the new trestle. I used some small brass nails (screws would probably have been better) through the ends of some of the ties to secure the track to the deck beams. I added some guide timbers outside the rails to help hold the track in place. These were 3/8" wide x 3/4" thick. I have had good luck gluing timbers to the plastic ties using silicone sealant. I also used some aluminum nails. I had pre-drilled the timbers so the nails would not split the wood.

Between the bents, I added horizontal and diagonals braces to add stiffness to the trestle (photo 10). I attached these using glue, with small copper tacks to hold the pieces in place until the glue dried. I used more of the 3/8" x 3/8" strips as braces. I used long strips as horizontal braces running between several bents. I located them below the lower horizontals on the bents. The diagonals ran from bent to bent, from below the top horizontals to above the bottom horizontals. I installed the diagonals running to the right first; the diagonals running to the left were attached over the first set. I drove a tack through both and into the bent posts to secure them while the glue dried.

**Finishing**

The structure at this point was still the bright greenish-yellow color of newly sawn, pressure-treated wood. I thought it would look better to treat the entire thing with dark walnut-colored stain mixed with linseed oil as an additional preservative (photo 11). This darker color made the trestle fit better visually with the natural landscaping of the area, and it resembled the creosote treatment applied to prototype trestles.

If you have a deeper ravine to bridge, you may need taller bents. Just make the posts longer. You can add other sets of crosspieces below the first, along with the associated diagonals, as needed. Very tall trestles have more posts in their lower sections. These seem to be added between the outside posts (which angle out) and the middle ones, where the outermost post has angled far away from the middle posts. Building a trestle is a fairly easy project that adds a great deal to the look of any garden railway.

My new trestle works well and gives the trains a nice, smooth passage across this scenic area. My little Ruby Forney runs over it beautifully, rolling safely down the grade at a scale 50 miles per hour or so. I would be terrified going that fast on two-foot-gauge track, but they did it here in Maine a hundred years ago, through some very rugged and scenic country.