# "Tools & Tips"

*By Dennis Ivison*

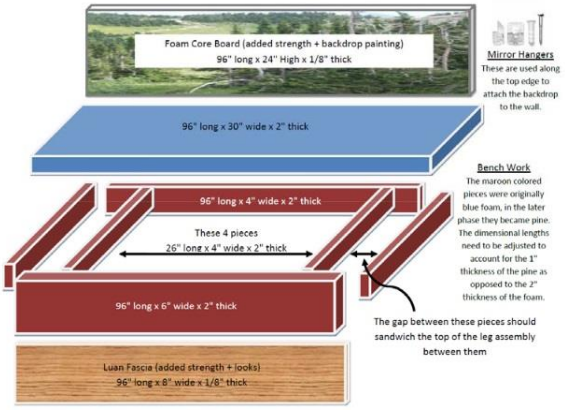
## Modular Layout Building

Most people who have visited my model railroad for operations sessions or on a tour don't realize that the South Pacific Coast Lines is built in modular sections. When I started the new railroad I needed to use materials that were light weight and easy to handle due to my back injury. After taking apart my N-scale layout I realized that, if I used traditional building techniques, I would lose my entire layout if we ever moved. Sure, you can salvage the trees, structures, and other sundry items, but the track and scenery is nearly nonreusable. When I moved into On30, I wanted to have the ability to take the entire layout with me if we ever changed homes; plus, it needed to be light weight and easy to handle. I had heard and read about using pink or blue foam for layout construction and decided to give it a try.

The SPCL was designed and built in two phases. The first half, including the bench work, was built entirely out of 2" thick blue foam. I wanted to test this method first, before I got in too deep. It worked extremely well with one exception: everything that I hung onto the fascia was attached to a 1/8" thick piece of wood however the foam provided no backing strength to hold screws. This was fine as long as I didn't hang anything too heavy on the fascia, but when it came to cup holders, I had serious doubts, and backed the Luan fascia with pine wood blocks. When it came time to build phase two, I replaced the foam bench work with 1"x 4" and 1"x 6" pine. This change is highlighted in the drawings. The maroon colored supports were originally cut from blue foam but, in the second phase from pine. Surprisingly, switching to the 1" pine did not add all that much weight to the modules. My largest module is 30"x 96", the smallest is 12"x 48", with the majority of them being 24"x 72". In order for the foam modules to resist sagging I found it is necessary to firmly attach a 1/8" foamcore backdrop to the module. This not only added strength, it also provided a canvas for painting a backdrop. Unfortunately with weather changes, the foam core tended to bow at the edges and top; my wife came up with the idea to use mirror hangers to prevent this from happening and that solved the problem. In phase two construction, the foam core was framed using 1"x 2" pine furring strips. My suggestion would be to use 1/8" thick Masonite in place of the foam core if you can tolerate the extra weight. We did this on two subsequent layouts that were built for friends, and we are extremely happy with the results. The legs are made from 1½" ABS pipe and fittings. The legs are not attached to the bench work but are instead sandwiched between two of its end pieces (see the drawing) and rely on gravity to hold it all together.

The mountains on the layout are also made of foam, some blue or pink leftovers, but most are made from white beaded Styrofoam. I'll be presenting a clinic and writing a separate articleon how I've constructed the mountains and rocks on my layout. Now that I've used these materials to build three layouts (the SPCL plus two owned by friends), I'll never go back to plywood, homasote, and plaster cloth mountains again. Follow along with the diagrams below to see how I built the South Pacific Coast Lines.

Basic Module




**Mirror Hangers**
These are used along the top edge to attach the backdrop to the wall.

**Bench Work**
The maroon colored pieces were originally blue foam, in the later phase they became pine. The dimensional lengths need to be adjusted to account for the 1" thickness of the pine as opposed to the 2" thickness of the foam.

The gap between these pieces should sandwich the top of the leg assembly between them