

Exhibition, Apartment, or Office: Build a Small Portable Layout

By Brian Scace



There has been a lot of discussion about "evangelizing" O Scale; by O Scale in this context, we mean scale modeling (including the number of rails) as O relates to the other scales such as N, HO, and S, and the presentation of O to the masses as a viable choice of scale modeling medium.

I have always held that the practice of taking tables at multi-scale shows and staffing them with people dressed in matching polos handing out literature and banging on figurative tambourines doesn't really get the message across in an inviting manner, and indeed, such fervor might actually put people off.

So, what alternative would be suggested? Importantly, one attracts more voluntary attention by actually having something to show, a lesson we can learn from such organizations as the Gauge 0 Guild. A small exhibition-style layout, several models and pieces of product on display, even a member of staff actually building something, a plastic car kit, hand-laying a turnout, whilst pleasantly answering questions during the process, all are extremely attractive and effective. One sees this approach at the shows in other countries, such as in the UK, and other venues, such as IPMS, and perhaps we'd do better by doing likewise.

A word of caution, though. Nothing shows the scale to disadvantage more than a couple tracks nailed to some bare planks populated by rough-looking stock that doesn't run well, or poorly finished, beat-up, ancient models on display, especially to young potentials who can look across the aisle at the N-track display or an attractive well-lit rack showing off the latest HO from the likes of Tangent or BLI, rather than look at what the stereotype of old guys with anvils are blacksmithing in the gloom. We can do so much better, can't we?

In looking at the pages of *O Scale Resource*, it's obvious we don't need another article about building a gorgeous contest-level boxcar, Geep, or Berkshire to display to the masses, and showing a nicely built turnout built of ROW castings, some current electronics, even a couple sticks of decent flex to show you don't have to hand-lay if you are more interested in modern control systems than pliers, none of this needs further mention other than the suggestion to actually show it live and in person.

A small display layout, though, might be fun to look at in these pages and, yes, easy to build. Not only are such things excellent platforms (when neatly presented and reliable in operation) to exhibit, the portable single-scene layout is an ideal first project to explore the scale and puts paid the notion that "O is too big for my space". Indeed, the specific project we are about to show was not meant for exhibition (though certainly designed for that purpose), but built for a good friend whose situation suddenly found him living in very constrained circumstances.

The Givens and Druthers of the design between exhibition and apartment living are very closely related, so this is very applicable to those for whom space is at a premium (why the design follows UK practice more so than the linear design that is the "go-to" in America) for whatever reason; easily transported, and easily assembled. The assembled dimensions are eight feet by 20 inches, easily accommodated on the usual six-foot rented show table with a foot overhang on each end and leaving enough table along the long edge for a small power supply. It breaks down easily into two four-foot-nominal sections for transport in a normal size SUV or station wagon such as a Subaru Outback with room to spare for locos and stock and other stuff you want people to see.

For those who envision this sort of thing for home use, each chunk is easily carried into something as small as an apartment and assembled with a minimum of tools. Even in the construction phase, there is nothing really



Photo 1



Photo 2



Photo 3

sloppy going on here. I built this one in my workshop between a couple old British sports cars without fear of bashing or spattering them, so your security deposit will be pretty safe with a little care.

Photos 1-3 show the basic construction technique I used for the two sections. Rigidity is a good thing so that the two halves assemble and disassemble very repeatably keeping both track alignment and the surfaces in plane with each other even on the crappiest church rental table. I built these using leftover bits from my home layout, hence the mismatched depth of the vertical plates, something that will be tidied up when we skin it all for appearance. Everything is glued and screwed (in my case using the concrete floor of the workshop as a surface plate) with attention paid to squareness in all three axes (x, y and z). Neurosis here pays off in the final product, as no layout large or small is better than its foundation.

That joint between the two sections is one of the keys to reliability, “reliability” being a word I cannot harp on enough. There are many methods to use, but my favorite is the use of finished and mated hardwood plates held together by a coffin latch, a very positive and repeatable mechanism operated with a hex-key. The assembly used here is made by a company called Kam-Konnect. The plates are screwed and glued to the underside of the plywood surfaces, and each come with either alignment pegs or matching holes to mate. A best practice is to lock the two together, then install on the two pieces of ply butted together. Photo 4 shows the installation as well as a couple of wooden runners



Photo 4

I added outboard of the plates for coarse alignment.

Photo 5 shows the initial assembly, in this case on a little four-foot plastic table. Even on that little surface, the assembly is surprisingly rigid, which is a good thing.

On to the trackplan. Again, the material came from my own stores, stuff I had accumulated for years combined with leftover material from the layout. I had quite a bit of Atlas/Roco flex to hand and a “mystery box” yielded six new left-handed Atlas/Roco switches. These things are really sharp in frog angle, but are cheap to buy and dead reliable. Because we are



Photo 5



Photo 6



Photo 7

building O in the same tiny area as the smaller scales, an area defined by the back of the car you haul it in, we'll accept the almost ludicrous sharpness of these turnouts and limit the switching trackage to end-cab switchers and forty-foot cars.

Our purpose, as defined in our Givens and Druthers, is well served with a separate eight-foot test/programming track in addition to a classic single-scene switching layout design, a run-around in the center with various spurs on either side.

A chunk of 1/2" Homasote roadbed handles the test track and some leftover 1/2" Homasote sheet does the same for the switching tracks. While the test track didn't take too much thought and was pounded in straightaway, the trackform of the switching section was laid out in situ, making sure none of the turnouts fall across the joint between the two sections. After the turnouts were brought into proper relationship (Photos 6 and 7) using a decent straightedge, the flex was laid in between. A straightedge was used to enhance the reliability of the result (there's that word again). Bear in mind, if this is going to shows, you are competing for attention with the smaller scales, scales admittedly better suited to the space constraints, so neatness counts as much as our natural reliability.

Photos 8 and 9 show the completed track-form. The run-around will easily accommodate a four-motor diesel or a forty-foot freight car and, because it is set on a diagonal, it's very space efficient. The design also avoids the reverse-curves of mating two turnouts in the manner of a crossover, enhancing your chances of reliable operation in this space, especially with these little turnouts. It's a really good track-form to have in your bag of tricks.



Photo 8



Photo 9

Time to pull some wire, then. Electrical reliability is the key, so the first thing I like to do is solder all the rail-joints which is not only the first step in a belt-and-braces approach to the wiring, but also enhances the robustness of the track alignments. Only then do I cut across the joint between the sections, paying particular attention to the security of the resulting ends as they match up over the disassembly joint.

Then, it's up on their sides as we string copper bus wires under the sections, stripped Romex I had sitting around, secured at each end of the sections with screw-eyes. Then, feeders were dropped from each section of rail, a section defined as bordered either by the end of a rail or at a frog. Don't rely on any internal current paths in the turnouts, just drop another feeder. I make notes with a marker underneath; it makes troubleshooting much

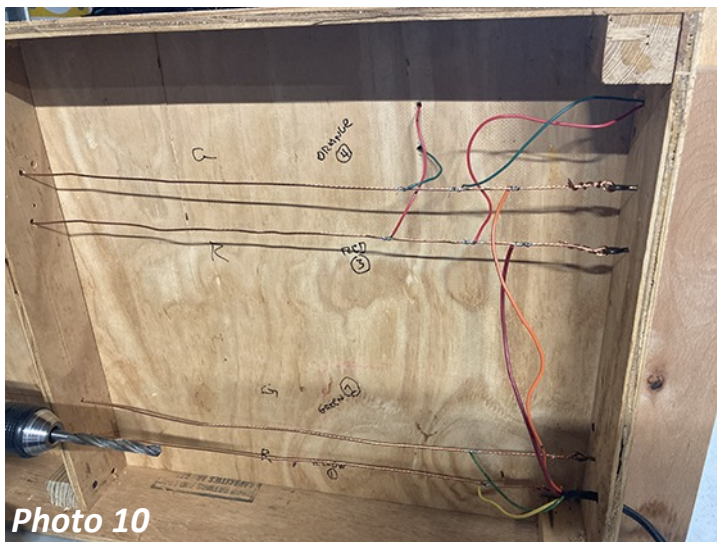


Photo 10

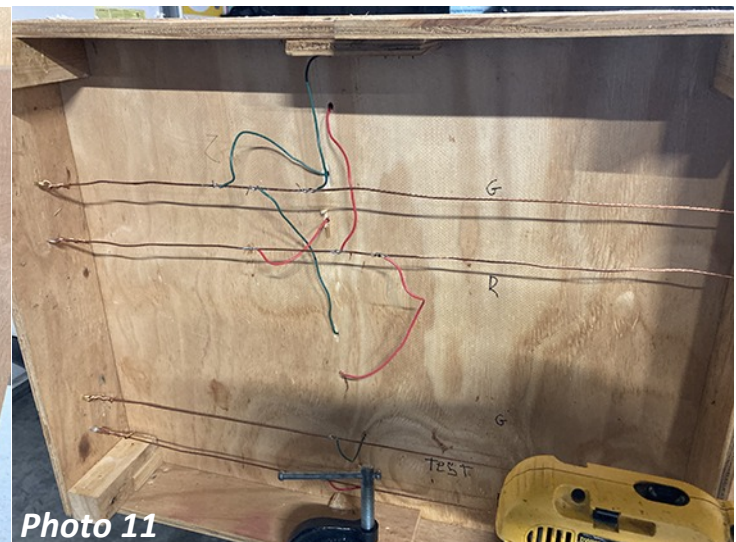


Photo 11

easier. Photos 10 and 11 (previous page) show the underside of one section; pretty simple, not really pretty, and extremely robust. I soldered everything underneath for (you guessed it) reliability.

Photos 12 and 13 show the four-conductor plug used to jumper the two sections; two conductors for the test-track bus and two for the switching trackage bus. Make it simple and robust; some shrink-tube adds neatness to the job. The wire colors as they correlate to the numbers on each plug-pin are noted underneath.



Now is a good time to test everything with a power supply, first the test track then the switching trackage, using clip-leads to the rails. Be merciless in your testing now, for everything you find is easier dealt with before scenery. A piece of 1" stock c-clamped across the ends of the trackage is good insurance rather than watching things fly off into space during a testing failure of some sort. We'll go back and finish off the wiring with power taps and routing switches in a few more steps.

As I said earlier, neatness counts. It's time to skin the exterior with a smooth and painted fascia. Again, we dip into the layout leftovers for material, this time a very thick and stiff cardstock used in theater scenery. Photo 14 shows some of it being applied after having been cut to size and shape with a fresh box-cutter. Masonite or the like also works well for this, but remember the goal is neatness.



There is a practical purpose to this as well. The edges down the sides protrude above the top by a half-inch and are sealed with a carefully applied bead of hot-glue. That will serve to protect the outside edge of the ground-cover after it is applied, keep it from flowing over the side in a great mess while being applied, and give the whole transition from structure to scenery a nice crisp edge. The fascia stands proud by three inches all the way across the ends to provide a stop, keeping expensive things from rocketing off the ends in case of a loss of control during tests or operation, especially with DCC. You'll also see the outline of a single track engine house, one of those ubiquitous kits

(marketed by Lionel, amongst others) pulled from the kitbashing stores and sawn in half to better fit the paltry space provided. The last feature of note is the “tunnel” at the edge of the joint between the two sections. It’s purpose is to let a hand in to draw up the coffin clamp after the sections are positioned. Again, the seams between the top and the fascia are carefully sealed to provide a dam, keeping all the glue and water up top where it belongs in the upcoming scenery phase.

Now is a good time to paint the sections, throw a sheet over the table, and crack out the brushes and rollers. I used a semi-gloss grey applied to the fascia with one of those little foam “hotdog” rollers. I brush-painted as much as reachable up top with the same paint, sealing up the lion’s share of the surface area of the Homasote. Photos 15 and 16 show the two sections after the grey was applied and before the track itself was painted with some Scalecoat I had on hand. The area covered by the engine house was painted black so the eye isn’t attracted to the inside after installation. You, of course, will detail that area in a most neurotic fashion so as to invite attention, I’m sure.

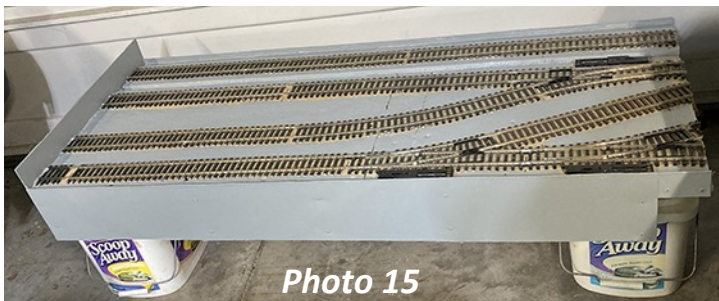


Photo 15



Photo 16

After painting the rail, I cleaned the tops (best done when the paint is dry, but before being fully cured). Power leads from both bus pairs were pulled through the fascia to the outside taps of a double-pole double-throw switch. The power supply leads were then brought through from the center taps of the switch out through the fascia and finished off with solder-lug spade connectors to screw to whatever power supply is to be used. The switch is a great huge knife-switch on a ceramic base I had lying around. Just looks very cool and ludicrous; I had to use it. The result is the ability to power either the test track or the switching trackage, but never both at the same time to avoid unwanted surprises.

Lastly, the structures were set and sealed with hot-glue. They become very solidly placed with this method, a nod to the fact this railroad is intended to be portable. The half-an-engine-house is also sealed to the fascia in the same manner, giving stiffness to both. Now is a good time to walk away for a week and let the paint cure.

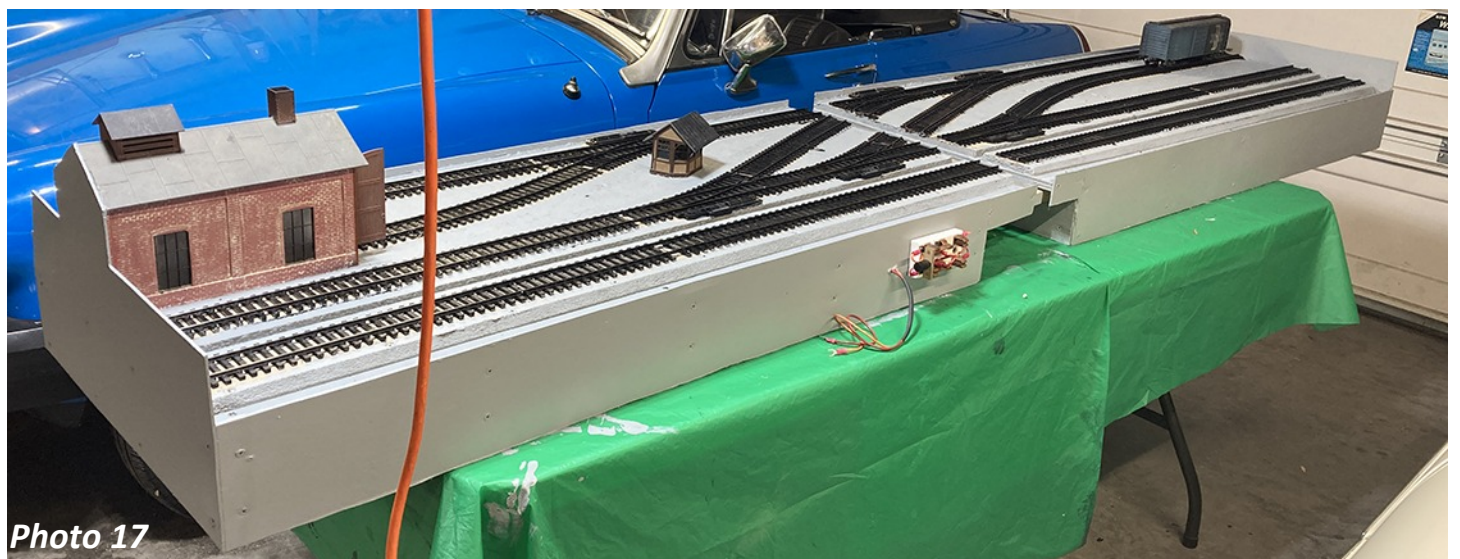


Photo 17



Photo 18

You'll need that mental re-adjustment period because the annoying task of troubleshooting the turnout mechanisms is at hand, mechanisms that really don't tolerate that rail-painting exercise with any feelings of mercy. It's your last opportunity to test track without ballast, so be thorough. Fastidiousness now is reliability later (Oh, that word again!) Photo 17 (previous page) shows where we are, ready for ground cover and ballast.

It's the home stretch as we give some thought to that pesky joint between sections again. Photo 18 shows the result after the application of basic ground covers, foams from Woodland and Scenic Express, and ballast. It's all applied in the usual manner, spread to suit, then wetted with a plant sprayer filled with water and a drop of washing-up liquid to break the surface tension, then well-soaked with 50/50 water and white glue/PVA. The issue is that joint and how we protect the innards of the latching mechanism, the mating faces, in short keep from gluing the sections together and keeping the scenic slop up top where it belongs. I sandwiched a length of styrene strip in the joint and ran the clamp tight against it. As you can see in Photo 19, it worked quite well. The sections parted quite easily and cleanly.



Photo 19

In the same photo, you get a good view of that obnoxious knife-switch. I make no apologies; O Scale overkill at its best!

That brings us to the state of affairs in Photo 20. At this point, the basics are done, some coarser ground covers added especially around the structures, and all the trackage is cleaned and tested yet again. Time to add some stock, which you will have to ensure are tolerant of those frog angles with good wheels in gauge and enough truck- and coupler-swing clearances.

A word about weight and handle-ability is warranted. I really made no efforts to reduce weight to a minimum as a design requirement, but used leftover materials anyone might have to hand. The deck is 1/2" five-ply, 1/2" Homasote for the track surface, the structure underneath 3/8" three- and four-ply as was lying around. I also erred on the side of stiffness, neatness, and robustness rather than lightness. The resulting sections in the state you see them are light enough for one person to handle. If anything, they might be a bit clumsy though, so I added crate-handles, staggering the opposing ones on the sides so each section is easy to balance by the person handling it. The handles on the end are convenient for pushing the sections together and taking them apart. You naturally gravitate to them, rather than reaching underneath only to catch fingers between section and table or snag a fingertip on a protruding screw. Those handles are time and treasure well-spent.

Here is where I shall leave you to detail, add trees, figures, and all those little gubbins and gubitzes we love. Perhaps you'll clamp a back scene to it, everything that makes this a personal expression and certainly not what I can tell you to do at this point. Meanwhile, should you be one of those guys in matching polos at the next multi-scale show, you'll find such a thing a real magnet. People will be back if only to test prospective purchases on the test-track you and your organization are so thoughtfully providing and staring again at all the other models you have on display.

Hand 'em a throttle because, not only it presents well, it's (All together, now!) reliable.





Here is the layout loaded up to go to its new home.

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