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Water scoops were used on larger Northeastern roads. There is a good write-up, along with a photo and diagram, in Kalmbach’s Steam Locomotive Cyclopedia Vol. 1 (Page 21). Page 230 shows a good photograph of an NYC-style scoop. It has been documented that NYC Hudsons and Niagaras could scoop water at 80 mph (up to 4000 gallons at a time) using the PT-4 and PT-5 pedestal tenders. The scoop actuator must have lowered and retracted very quickly, as the fireboy had 17 seconds to drop the scoop, scoop the water, then raise it again. Most railroads using trackpans had either blue or lunar-white lights at the beginning and end of the pans. I can’t imagine the damage that could be caused by lowering the scoop too quickly or raising the scoop too late. (A ramp was usually built at each end to minimize fouling; they are an interesting detail to add to your trackage-ed).

There were at least two different types of scoops used. The PRR, Reading, and CNJ used one type, most closely represented by a Precision Scale part (#4166). The NYC used the type closely represented by a different Precision casting (#40419). Precision Scale also makes a water scoop control (Part #4766), which is normally located on the forward edge of the water leg of the tender on the engineer’s side, usually protected by a shield.

Although the Precision Scale part layout shows an NYC PT-type tender, actual NYC prints show a much different piping arrangement. I would assume the water scoop system had its own reservoir, tapped into the engine air and located in the tender. Scoops usually had an air cylinder, located next to the scoop assembly itself, which controlled the scoop through a series of levers and reversing rods located inside the tender.

For the purpose of this article, I’m going to start with the PSC #4166. A much simpler assembly than the NYC-style scoop, it lends itself more readily to kitbashing. The most difficult part of this assembly is not the scoop modification or the cylinder modification, but the actual linkage, fulcrum rod, bellcrank and reversing rod assembly.

Photo 1 shows a #4166 as it comes from PSC. There are two main pieces, the scoop assembly and the control rod assembly. The photo also shows the cylinder assemblies we’ll be using (Precision Scale #1276 or Back Shop #BC 324, basically a 9” to 12” cylinder which can be floor mounted).

Photos 2 and 3 shows the completed mechanisms installed in a PRR S2 long-distance tender. You can see the actuator mechanism inside the tender, and the scoop and cylinder on the tender bottom. The first step is to actually (and carefully) “dis-articulate” the scoop and control arm mechanisms from their cast-in-place position into the various components.

Photo 4 shows the various tools required to cut the side
bearing hinges from the scoop assembly, namely a Dremel (or similar) tool with a thin cutoff wheel or circular saw blade. A fixed model saw, or circular-type saw with a two inch Gyros blade attached works, too. The idea here is to preserve the maximum thickness on the side bearing hinge assembly, because it will be used in the future. It is also necessary to get an precise parallel cut along the long axis on the scoop. The Gyros blades are approximately 0.007” thick, whereas Dremel’s small cutoff wheel, in its virgin state, is 0.022” thick. I like to save my old Dremel cutoff wheels that have been “pre thinned” by side cutting in a polishing mode. These can be thinned down to 0.018”, which is sufficient for this project. For better control while cutting the scoop assembly, solder it to a brass plate. This, in turn, is used to fixture the assembly for cutting, whether using a Dremel tool or a fixed circular saw. The idea here is to have as many fingers after the cut as you had before the cut. Figure 1 shows both the scoop assembly and the bottom plate control rod assembly before and after cutting.

Now, we need to drill a whole bunch of holes to serve as bearings for the various hinge pins. Figure 2 shows the location and size of these holes. It is important that your bearing joints have no “slop”; the amount of motion is so slight and freeplay in each successive joint is additive. If your joints have too much play, by the time the motion gets from the scoop down to the cylinder piston there will be no apparent motion in the cylinder. I encountered this problem and I reversed it by making the hinges as tight as possible. To keep things as slop-free as possible, I used 0.024” diameter piano wire for all of the hinge pins, and use clearance drill #70 for the holes.

Now, drill the forward control yoke and the plate itself for the insertion of the control rods. These are larger holes, and probably a #58 or #56 drill should be used for these. The clearance here is actually not critical and should be fairly loose to provide for smooth motion. I used 0.042” brass round stock here, which is available from K&S at most hobby shops. I use Radio Shack silver bearing solder (0.015” diameter, part number 64035e) and Oatey liquid soldering flux to prep surfaces.

Figure 3 shows the assembled and fabricated control rod/yoke assemblies, as well as the completed working scoop. It is important not to wick any solder down the hinge pin into the main scoop body. To prevent this, I coat the holes in the body with oil. You can also just use a little bit of solder and control your heat. For this job I used a Link LPT200 micro-torch which I purchased from Home Depot for about $20.00. This is a sturdy instrument, takes a great deal of abuse, has a controllable flame,
and a piezo lighter allowing for one-handed operation.

The next step is to center-bore a cylinder to accept the 0.042” rod. I would drill all the way through the cylinder initially. This should also have plenty of freeplay and probably a #56 drill or larger would be necessary for this. Figure 4 shows the drilled out cylinder, the push rod, and fabricated clevis assembly. Now, it’s time to drill a hole on the floor of the tender. This should be approximately 1/16” by 3/8” in size. The hole should fit directly over the clevis of the cylinder. In my case, I gave the cylinder a little over a 1/8” of motion. Anything less than this is not visible and more non-realistic.

Figure 5 shows a drawing of the remaining parts on the inside of the tender. Before you panic, there are only three parts to be made and there is one fixed part. Here again, all of the holes should be #70. The pins used are all 0.024” diameter piano wire and the tubes to bear the pins are all 0.045” inside diameter (Special Shapes #TT-61). I used two truck springs to provide return pressure for the scoop, as shown. By the way, this mechanism can be radio controlled, controlled by DCC, or with a solenoid if desired. A pitfall to be careful of here is getting solder
inside the brass tube. A way to avoid this is simply to pre-tin the tube and then cut off the ends to provide a fresh brass end rather than a solder-coated end. I used this technique throughout the construction of the clevises and the hinge bearing pins.

To suit the individual application, the degree of motion can be varied by changing the lever arms of the various rods. This particular scoop has a maximum scoop motion that is a downward throw of 5/16", and the actual cylinder shaft moves approximately 1/8".

Good luck and have fun playing with your working water scoop. You’ll have tremendous bragging rights over your colleagues, and most certainly be the first kid in the neighborhood to have one (unless, of course, your neighbor is my customer). If you dare to attempt this project, feel free to contact me if you run into problems. As always, happy modeling.

Illustrations by Carey Hinch

Parts List
PSC# 4166 Scoop Assembly
PCSD 1276 Cylinder Assembly
Special Shapes TT61X Tube
Special Shapes 1/16" x 1/32" Bar (flat)
Special Shapes 1/16" x 1/8 Bar" (flat)
Special Shapes 0.022" Piano Wire
K&S 0.045" Round Bar
Springs (2) 1/16" x 1/4"

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The Control Thing

Things have changed quickly in the control system world, since our last issue. Atlas O has dropped the 2-Rail TMCC option and is (as this is written) going with a pre-installed QSI sound/DCC system, instead. There’s been a lot of snarling, wailing, and gnashing of teeth going on, so here’s a couple thoughts from a clear (been on the Wagon for, oh, three hours now!) head. There are a couple of options for you guys and gals who feel left holding the bag with a lot of TMCC two-rail Diesel power, and no ball to go to anymore. I’m not getting into the dogfight about changing systems again, so realize that these are just options for the confirmed or committed TMCC types.

I’ll throw in a bit of a review, here, for Option 1. I got a couple of RS-1s back from Mike Reagan at Train-America Studios the other week. They did a pretty frisky turn-around on them, and they ran very nicely with the rest of my Diesel fleet, which is all TMCC equipped. (You see, I’m in the same boat you are.) This is certainly a viable option, as these guys know the system and can install the stuff you need in the tightest of quarters. Mike says that these installations are not limited to just Atlas Diesels, but can be made in just about anything you have. Anyhow, the installations were neatly done, without banging anything up, and they fired up flawlessly. Mike now has my GP-35 to upgrade with EOB, and an SD-40 for a complete installation job. I’m quite pleased with the work and workmanship.

Option 2 came up during a talk with Jim Weaver (from Atlas) at the York show this spring. Since Atlas is continuing with TMCC for our 3-Rail brethren (and sistren), you have the option of ordering a 3-Rail TMCC locomotive, then ordering up a pair of two-rail trucks, spacer blocks for the pilots, and scale couplers. Jim told me that these can be had, available from Atlas. Unscrew the threerail trucks, unsolder the pickup wires (mark ‘em, so you don’t mix them up and fry anything!), re-attach the pilots with the spacer blocks, add your couplers, and screw the trucks on. Check with Atlas first, but I believe it can be done pretty simply. I’ll try this stunt myself and see if it’s as simple as I make it sound.

Option 3 is more of a reminder than an option, but Weaver still (as of this writing) offers two-rail Diesel power with TMCC. We’ll all just have to watch this and see where it goes. Meanwhile, as benchwork goes together at Scace’s New Digs, it’s still in the plan to block the railroad and have plug-in/plug-out power sources and control systems. Like the previous iteration, I’ll be able to run my main emphasis of 1940s steam power with Loco-link (filtered DC source), steam power on good ol’ cab-control (variable DC source), or lock the doors for some Diesel-era memories using the TMCC system I’d committed many a unit to (AC source). Just jack ‘em out and jack ‘em in. Who knows, maybe I’ll have a small roster with DCC someday.

The Car Thing

This one comes up quite often, so I’ll throw in my $0.02 worth one more time. There’s lots of angst about the fact that all these neat diecast vehicles are 1/43 scale, and our trains are 1/48 scale. Once again, I say, “Measure ‘em!” I can’t vouch for the modern-era stuff, but I can throw my dog in the ‘30s – ‘50s era fight with some thoughts and some facts.

I believe that the mid-1930s through mid 1950s stuff was bigger than many folks think. I have a 12”/1’ scale 1940 Chevy in my garage. I can’t see over the fool thing, so your little plastic guys shouldn’t be able to see over theirs. I’ve measured out a few of the diecast offerings, and they’re just not consistently in scale. You neurotics can get out on the Web and find the wheelbases for just about anything ever made. Then, holster up a scale rule for the hunt, and you should be good to go. For the rest of us, a couple figures in your pocket makes a dandy perspective check. Just put a standing Arttista figure next to your prospective purchase, and you’ll get a feel. Just remember, after a couple decades of little cars in your garage it’s easy to forget how big a Chevy sedan really was. You might want to go to a car show or two and re-acquaint yourself with the cars from your chosen era. You might be a bit surprised.

You will find some that are just too big. I’ve found a perfectly huge collection of vehicles that feel right, and are actually undersized for 1/43 (It would appear that the car collectors aren’t quite as anal as we tend to be.) I surely wouldn’t want to stuff an Arttista man, especially wearing the obligatory period headgear, in one of those 1/50 Greyhounds that are widely available. That scale disparity between the figures and that bus is an incredible visual jar for me. My unsolicited advice? Don’t believe the box when it says 1/43, or 1/50, or whatever. Measure the fool thing, either with a scale rule or with an eye and a figure. There’s more useful stuff out there than you would otherwise think if you actually trusted these folks to make ‘em to the scale printed on the box.

Stop the Wagon; I’m getting’ off!
Let’s go Exploring!
Bridge Crane

Overhead bridge cranes were located at various places including the team track, engine house, large industries, and the freight house. It was used to move heavy loads from flats and gons.

The model is a brass import. The hoist trolley is positionable on the bridge. The model is painted and ready for you to simply hang the hook and chain on the hoist. Approx. Size - scale 20' wide with 16' clearance from ground to the bottom of the bridge. This is a limited run project that is sold direct only from B.T.S.

#18505 $119.95

Junior’s Shiner

Down by the tracks is the location for this early mobile home fit for any time from the 1930’s to the present. The nickname “shiner” came from the unpainted aluminum siding used on many of the early models.

It is a laser-cut kit featuring styrene sides and a wood core. Included are venetian blinds, color awning, and oil tank. Footprint, without awning, is a scale 29' x 10'.

#17405 $49.95

McCabe Drying Kiln and Tramway & Storage Yard

The McCabe Lumber Co. Series Tramway (above right) connects the Slatyfork Sawmill to the storage yard, drying kiln, and planing shed. It is a key feature of the complex. In this kit are the eight drying platforms, cart turntable, single and double track tramways, and the loading docks. Also now available is the Drying Kiln, shown at the left above.

This kit consists of laser-cut basswood, plywood, detail castings, and a very complex appearance. However, the well-engineered construction provides fast and easy assembly. Weathered code 70 rail and spikes are part of this kit, as are the laser-cut spike holes! And in the box are hundreds of pieces of pre-cut lumber for stacking in the yard. If the Drying Kiln (#18230) is to be included in your complex, it will be easier to build the kiln and the tramway at the same time.

The footprint is of the Tramway and Storage Yard is about 100' x 110'. The footprint of the Drying Kiln is about 33' x 50' including 13' of deck on the front. And because of our engineering, it can be assembled in one of several different positions to better fit your layout. HO model shown; some details may vary between scales. It is a limited edition kit.

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I like smallish structures. They fit nicely on my modest O Scale layout, and don’t overpower my locos and rolling stock. I spotted this CPR icehouse while searching through an old stack of Model Railroader magazines. The icehouse ran as a one-page article titled “CPR Standard No. 2 Icehouse” in the March, 1978 issue. The article had a prototype drawing by Harold W. Russell and a few paragraphs of text ostensibly by the Model Railroader staff. What caught my eye was the outside staircase and louvered cupola details. It was a simple structure with details that wouldn’t challenge my scratchbuilding skills. I also had a string of wood-sided reefers and no icehouse to service them.

The icing on the cake was its size. The structure was 40’ long and 32’ deep. In O Scale that’s an 8” x 10” footprint. I had no idea icehouses were ever built that small. All the icehouses I’ve ever seen, in prototype or kit form, were much longer with elevated platforms that could ice several cars at a time. Apparently, the Canadian Pacific saw a need for a single car icehouse. In any case, this beauty was perfectly suited for an unoccupied siding at a bend in my layout.

According to the MR article text, Mr. Russell drew the structure from 1914 Canadian Pacific drawings. The structure has four bays, with a total ice capacity of 318 tons; small as icehouses go. Additional bays could be added in 12’ increments to increase icing capacity. MR says an average reefer needs about five tons of ice in chunk form. With its 318 ton capacity, this icehouse is not likely to run out of ice while servicing the handful of reefers I operate on my branch line.

Interested? Let’s get started. I like to gather all of the basswood stock I need ahead of time. That way, when I’m in the middle of a sub-assembly at 9:00 at night, I don’t find myself running out of critical material before I finish whatever it is I’m working on. I began construction with the cupola, as I thought those louvers might be a bit pesky. I like to get the pesky stuff out of the way first.

**Cupola Construction**

I began by breaking out my Northwest Short Line Chopper and jigging it to cut 32 louvers for the four sides of the cupola. The louvers are cut from Evergreen 0.020” x 0.125” styrene strip. The cupola end louvers are cut 27/32” long. The cupola side louvers are cut 15/16” long. As shown in Photos 1 and 2, and in Figure 1 (see page 17), the louvers slide into grooves notched into the 1/16” x 1/8” louver frames. The whole process of cutting the grooves, pinning down the louver frames over the drawing, and then sliding each louver into its set of grooves is kind of tedious. A pair of tweezers helped me set the louvers in place. Bear with it. It’s what we scratchbuilders do, and you’ll end up with a respectable looking louvered cupola. Visitors to your layout might even take a second close look at your cupola and mutter, “How’d you do that?”

My inclination when doing this sort of thing is to throw away a piece if it doesn’t quite fit and just re-do it. I believe that’s part of what makes great modelers great. They aren’t necessarily more talented than us peons but they are persistent and willing to toss-and-repeat until they get it right. A tiny dot of slow-setting CA glue at the end of each louver will secure the louvers to the louver frame.

When the louver sub-assemblies were done, I cut out the cupola sides and ends from 1/32” basswood sheet. The louver frames were carefully positioned, and then glued to the inside faces of the cupola ends and sides. Before you assem-
To laminate the four sides into a finished cupola, you'll have to taper the outside faces of the louver frames. Without the taper, there won't be room for the corners to come together. Note that the cupola end walls fit between the sidewalls. I made up a right-angle jig to ensure my cupola was square when I glued it up.

This cupola has a hipped roof. The soffits that extend beyond the four cupola sides are cut from 1/32" and 1/16" basswood sheet. This sandwiched construction replicates the stepped soffit of the prototype. Soffit construction should be clear in my drawings. To facilitate attachment of the four roof hips, I cut triangular internal supports from 1/16" basswood sheet and glued them to the sub-roof. The four triangular roof panels were cut from 1/32" basswood and glued to the internal roof supports. This completes the cupola.

Walls Construction

The side- and end walls of the icehouse (see Figures 2 & 3, Page 18) are covered with 6" drop siding, which I replicated with Northeastern Scale Lumber 1/16" thick x 1/8" scribed basswood. I used 6" wide sheets to minimize butt-joints. There are no windows in this structure and only two doors (see Photo 3). I cut in and framed the upper and lower door openings while the walls were still in the flat. To simulate the trim around the sides and tops of the door openings, I glued in strips of 1/16" x 1/8" strip. The door trim is set flush with the siding. The doors are cut from the same siding stock as the walls. Note that the door grooves run vertically. When the doors were glued in place, I added Grandt Line hinges. As it turns out, these hinges are dead ringers for the riveted strap-iron hinges used by the CPR. Sometimes you get lucky and don't have to scratchbuild these things. The two sidewalls, at their ends, received 1/8" square corner trim strips. These trim strips are glued flush with the outside faces of the sides. The end wall peaks received 1/16" x 1/8" trim strips. The 1/16" faces should face the outsides of the end walls.

I made up a floor from two 3" widths of 1/4" basswood sheet. You could also laminate 1/8" sheet or just use 3/16" sheet if that's what you have on hand. The floor sits between the side- and end walls. You’ll have to lightly notch the corners to clear the four 1/8" square corner trim strips. When the floor was cut to the correct width and length, I drew a lengthwise center line. This center line ensured the end walls were centered to the floor when I glued them to the floor. The end walls are attached before the sidewalls. Make sure the end walls are vertical and at right angles to the floor. I taped a square to the floor to make sure my walls were plumb.

The sidewalls were next. First I glued the sidewalls to the edges of the floor before I glued the corners. I taped the outside corners of the four walls together to hold the corners in alignment. When I was satisfied with the fit-up of the corner trim strips, I ran a bead of slow-setting CA glue along each inside corner. The glue wicked its way into the corner joints. I reinforced the corner glue joints with another application of CA glue and baking soda sprinkled onto the still-wet glue.

The four walls and floor were finished up with a pair of 1/8" x 1/4" ridgepoles tapered to meet at the ridge (see Photo 4). Another pair of these strips was glued between the end walls just above the tops of the sidewalls. These strips provide a generous gluing surface for the roof. I block-sanded the strips so that the roof panels fit snugly over the end peaks and sidewalls. The tops of the sidewalls were angled and block-sanded to match the angle of the roof.

I added 3/16" thick foundation strips under the floor. The foundation strips are recessed 1/32" from the face of the siding. The foundation height should be adjusted to suit your roadbed and rail height. I use Code 100 rail, and 5/32" thick ties that lie right on the benchwork. Consequently, a 3/16" foundation height sets my icing platform at the prototype height. If you use roadbed beneath your ties and/or a taller rail height, you'll need to increase the foundation height. The CP drawing specifies the height from railhead to icing platform deck as 12' 2-1/2" (3" to 3-3/4" in O Scale).

Upper and Lower Platform Construction

Photos 5 – 7 show how I built up my platforms and then attached them to the front wall. My drawings (Figure 4, Page 19) depict the scale prototype structure. The upper icing platform consists of two 6" x 9" stringers which support 2 x 6 joists on 24" centers. The upper decking is 1-1/2" x 6" planks that run the length of the deck. Note where the joists are doubled or “sistered”. The lower platform has 1-1/2" x 3" planks over large beams which rest directly on the layout. These lower platform planks run at right angles to the upper deck planking.

I began with the upper deck. I used a copy of the drawing as my plan. To ensure the joists were on center, I built the deck upside down. First, I cut and then pinned down on edge all the joists and then I added the two 1/8" x 3/16" stringers. Like the joists, the stringers were set on edge. When everything was aligned, I wicked slow-setting CA glue into every joint. Since the upper platform decking was to be left unpainted and aged with AIM Products Quick-Age solution, I didn’t add the decking. The deck-
ing would go on after the platform was attached to the front wall and the structure had been painted.

The lower platform was built right side up over a copy of the plan. After the four support beams were pinned down over the plan, I cut the decking from 1/32” thick 1/16” scribed basswood sheet. You’ll need to edge-glue several pieces to complete the lower platform decking. I would have left off the decking until after the structure was painted, but the lower decking had to be in place before I could add the 6” square (1/8” square) platform support posts.

I built the two platforms into a single unit before I attached them to the front wall. See Photos 5 – 7 for details. First, I cut the eight 1/8” square posts that support the upper platform. Then, I pinned down the rear edges of both platforms over the decking plan. I made sure the two platforms were perfectly vertical before the eight posts were slid into place and glued to the upper platform stringers and the lower platform decking. At this time, I should have added the 1/16” x 3/16” diagonal sway braces to the front of the platform assembly. For no good reason, I overlooked this detail until the structure was finished. I had to add them afterward. That’s why you don’t see them in the unpainted photos. The finished platforms were then glued to the front of the structure. To allow a little time for the platforms to be correctly positioned before the glue set up, I used Elmer’s White Glue to attach them.

**Staircase Construction**

I followed Harold Russell’s excellent drawing of the staircase and duplicated it exactly in basswood. If you don’t care to scratchbuild the staircase, Plastruct has risers and treads that should work. You’ll still have to build up the railing. Staircase construction began with the two risers. Before I cut the risers, I checked the height on my model from the upper platform to the bottom edge of the foundation. Small dimensional differences from the drawing can creep in, and the angular slant of the staircase risers will compound an error. The top tread on the staircase should sit 3/16” below the upper decking.

The easiest way to make the risers is to lay out the tread notches and riser outlines on a sheet of 1/32” basswood. When you have the lines drawn, cut the tread, right angles first, and then cut the riser outlines. A fresh #11 X-Acto blade will ensure that your cuts are clean, with no crushed wood. See Photos 8 – 12 for clarity.

The treads are 1/32” x 3/16” basswood strips as specified on the plan (Figure 5, page 20). When the railing was done, I glued the 1/16” square posts to the outside riser and then glued the assembled staircase to the side of the building. The building, sans roof and cupula, is now complete.

**Roof, Cupula Installation, and Paint**

The CP prototype has minimal roof overhang. The 6” rafters were boxed in with fascia and soffit trim boards. To replicate this feature, I used 1/8” thick basswood sheet for the roof panels. I hid the exposed end-grain at the peak ends with 1/32 x 1/8” basswood trim strips (Figure 6, Page 17).

After gluing up and cutting the two roof panels to size, I beveled their upper edges so that they met neatly at the ridge. The roof panels were glued in place with Elmer’s White Glue and held down with masking tape while the glue cured. I recommend the tape because the white glue can warp the panels just enough to impart some curl before the glue sets.

I measured the footprint of my cupola, then marked that outline onto the roof. Two Zona-saw cuts were made, cross-grain to the roof ridge, then down into the roof. I made the remaining two cuts with an X-Acto knife. I cut the roof opening slightly undersized and then trimmed the opening so the cupola slid snugly into the opening. I plumbed the cupola and glued it in place with slow-setting CA glue.

We’re now ready to paint the structure (except for the roof), and upper and lower platform decking. Then I’ll show you a neat way to replicate asphalt roofing shingles. At this juncture, I masked off the entire roof, the upper platform joists, and the lower platform decking. I left the eaves and roof ends exposed for painting.

My research on the correct colors for CP icehouses began at CPR’s archives website, migrated to Ted Culotta’s excellent Steam Era Freight Car Yahoo discussion group, and then the CPRSIG (Canadian Pacific Special Interest Group) Yahoo group. See the references at the end of the article for the Internet links. Overall, I received several responses which varied by sender. I’m sure much of the variation is due to the different locations where these icehouses were built and the span of time over which these CP structures were in use.

Jo-Anne Colby, at the CP archives, says the body and trim of the icehouses were brown. The upper body and eaves were a cream color. Roofing was dark gray asphalt shingles. A CPSIG contributor suggested using red oxide, as the builders bought their paint locally and likely
would have used common barn paint. Another CPSIG contributor said that, in
1919, CP structure colors were brown with dark gray (black) trim and doors.
Windows and eaves were painted cream. Roofing was asphalt shingles over tar
paper unless “ready roofing” was available. A third CPSIG contributor said, in
the ’50s (my modeling era), the icehouses were painted boxcar red with roof brown
trim. If there were windows, the windows were painted a cream color. A fourth
CPSIG contributor said that, in eastern Canada, the roofing shingles were defi-
nitely black.

Confusing? Perhaps, but then again maybe not. One can imagine the color
changes that would have occurred over a 50-year span as icehouses were painted
and repainted and roofing was replaced. Since my CP icehouse is sited in the mid-
1950s period, I elected to paint my structure with oxide red paint. I went with
black shingles, though I was tempted to paint them Floquil SP Lark Light Gray. I
used Floquil 130601 spray can primer. For some reason the label says it’s Zinc
Chromate Primer, which implies to me a greenish-yellow hue, not the red oxide
which it is.

After spraying the entire structure with the Floquil primer, I removed the roof
and decking masking tape and brush painted the door hinges with Floquil
Old Silver. At this point, I laid down the upper platform decking. It’s cut from
1/32” x 1/8” scribed basswood sheet. Note that these boards run the length of
the platform. I then applied several coats of AIM Products’ Quick-Age solution to
both upper and lower decks. I also dry-brushed and streaked the boards with
heavily thinned gray paint to really dirty up and weather the decks.

That done, we’re ready to shingle the roof. Prop a ladder against the eaves and
let’s do some roofing. Don’t forget to bring the nails and your roofing hammer.

**Asphalt Roofing**

Photos 13 – 15 show the roofing progress as we go. The first thing I did on the
unpainted basswood roof panels was to lay out the shingle lines. I drew the first
line 3/8” up from the lower edge of the roof. The remaining lines were spaced
drawn 3/16” apart as I progressed upward to the ridge. These lines serve to
guide and keep the shingle lines straight. I use 180-grit waterproof black sandpa-
der to replicate asphalt shingles. I lay out and then cut strips of this sandpaper
3/8” wide the length of the sandpaper. I cut enough shingle strips to do the entire
roof. As I recall, I cut about 38 or so strips for this job. After cutting the sandpaper
into strips with an X-Acto knife and steel straight edge, I sandwiched and aligned
four strips. With a pair of scissors, I cut notches 3/16” deep into the four strips
every 1/4” or so, to simulate the shingle notches and breaks. I vary the cut spac-
ing so the shingle breaks alternate from row to row.

I began at the bottom edge of the roof with a starter strip, just like you’d do a
real roofing job. For glue, I like Aleene’s Original Tacky Glue from Duncan Enter-
tprises. This glue is available at craft stores. I find this glue better suited than
Elmer’s White Glue when I’m doing a lot of gluing to basswood. Too much Elmer’s
can cause warping of thin basswood. Aleene’s Original Tacky Glue dries clear
and flexible and won’t warp basswood. Lay each shingle strip down so that the
cut lines do not align. What you want is row-to-row staggered cut lines. With
the cupola already in place, you’ll need to shingle around it. Depending on the
humidity, the shingles may try to curl. If this occurs, lay down strips of masking
tape to hold the shingles while the glue cures. The tape will come up easily after
the glue has set. When all of the shingles were down, I capped the ridge with a
1/2” wide strip, folded in half lengthwise into a V shape. I didn’t shingle the cupola
roof. On my model, its galvanized roof painting painted black.

I painted the shingles with two un-
thinned brush coats of Floquil Engine
Black. Any shingle color is possible. I’ve brush painted and sprayed my sandpa-
per shingles with any number of solvent paints and acrylics. As long as the shin-
gles are firmly glued down, they won’t curl when you paint them.

I brush painted the foundation with
Delta Ceramcoat Acrylic Mudstone paint,
which I use for all my simulated con-
crete. It’s inexpensive and available in
craft stores in about a thousand different
colors. I use Delta Ceramcoat acrylics
for painting most of my basswood struc-
tures. I would have brushed it onto the
icehouse, but the staircase and platforms
lent themselves more to spraying than
brushing.

So that completes construction on the
CP Standard No. 2 icehouse. I hope you
enjoy yours as much as I do mine. It’s
on my layout now, servicing a short but
needy line-up of ice-hungry reefers. ◆

**References**

STMFC-subscribe@yahoogroups.com
cpsig-subscribe@yahoogroups.com
Model Railroader March, 1978 “CPR
Standard No. 2 Icehouse” by Harold
W. Russell

**Bill of Materials**

**Northeastern Scale Lumber**
1/8” x 1/4” strip
1/8” x 3/16” strip
1/16” x 3/16” strip
1/8” sqr. strip
3/32” sqr. strip
1/32” x 1/8” strip
1/32” x 1/16” strip
1/32” plain sheet
1/32” thick 1/16” scribed sheet
1/32” thick 1/8” scribed sheet
1/16” thick 1/8” scribed 6” wide sheet

**Midwest Products**
1/8” x 4” basswood sheet
1/4” x 4” basswood sheet

**Evergreen styrene**
0.020” x 0.125” strip

**Grandt Line**
#3524 hinges
Roofing
180-grit waterproof sandpaper 8-1/2 x 11 sheet

Paint
Floquil Spray Can Primer #130601
Floquil Engine Black
Floquil Old Silver
Delta Ceramcoat Acrylic – Mudstone
AIM Products Quick-Age Weathering Solution

NB: The drawings are not to scale. Exact measurements are shown (in inches) on each figure.
Figure 4: DECK CONSTRUCTION
Figure 5: STAIR CASE
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#8001 EMD F7-Ph1 late, F7-Ph2, 36” low fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles (shown above)
#9001 EMD F9, 36” fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles

POWERED F “B” Units: Reg. $315, SALE $264.99
#3001 EMD F3-Ph3, F7-Ph1, 36” low fans, 36” dynamic brake, 3 portholes, horiz grilles
#4001 EMD F7-Ph1 (late), F7-Ph2, F9, 36” low fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles

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#8002 EMD F7-Ph1 late, F7-Ph2, 36” low fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles
#9002 EMD F9, 36” fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles

UNPOWERED F “B” Units: Reg. $200, SALE $169.99
#3002 EMD F3-Ph3, F7-Ph1, 36” low fans, 36” dynamic brake, 3 portholes, horiz grilles
#4002 EMD F7-Ph1 (late), F7-Ph2, F9, 36” low fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles

F Unit “A” Body KITS: reg. $99.95, on sale $82.99
#7000 EMD F3-Ph4, F7-Ph1 early, 36” low fans, 36” dynamic brake, 2 portholes, horiz grilles
#8000 EMD F7-Ph1 late, F7-Ph2, 36” low fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles
#9000 EMD F9, 36” fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles

F Unit “B” Body KITS: reg. $94.99, on sale $79.99
#3000 EMD F3-Ph3, F7-Ph1, 36” low fans, 36” dynamic brake, 3 portholes, horiz grilles
#4000 EMD F7-Ph1 (late), F7-Ph2, F9, 36” low fans, 48” dynamic brake, 2 portholes, Farr (vert) grilles

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In Part 9, I had mentioned that our building was finished, but decided that it needed an interior. In this issue, I will be showing you how to make the interior for John Crapper Plumbing Supplies. One of the nice things about O Scale is that the buildings and windows are big enough to be able to see the interior. I have started putting interiors in some of my foreground buildings. As this structure is a plumbing supply house, I decided to do a simple interior that only showed the front of the store with its order desk and showroom (Photo 1). Interiors do not have to be highly detailed, as you only need the suggestion that something is inside the building.

**Making an Interior**

The first thing you’ll need is the floor, so measure the area you want to cover and lay it out on a piece of 0.060” styrene sheet, then cut out the floor (Photo 2). You will have to make the floor the same height as the bottom of the door. To do this, glue some styrene strips to the bottom of the floor to bring it to the correct height (Photo 3). With this done, test fit it in place (Photo 4). Next, cut out the walls from a piece of 0.040” styrene sheet. I measured the height from the floor to the top of the tabs that hold the roof in place, then measured from these same tabs to the back of the front wall. Then I measured the distance between the two tabs on the sidewalls. This gave me the dimensions for the walls. Once the wall sections were cut out, I laid them flat in a line on my work desk, holding them in place with pieces of masking tape (Photo 5). This makes it easier to do the kickboards, chair-rail and door trim, all made from strip styrene.

With all the trim finished, I was ready to paint the walls. I used cream and reddish brown colors. Once the paint is dry, add any signs you want to, then glue the walls to the floor (Photos 6 and 7). The tile floor effect was created on my computer using the same program that I used to make signs, and was then printed out on paper. The pattern was cut out to fit the area and glued to the floor with white glue.

**The Sales Counter and Details**

The next thing to be made was the sales counter, which I made from 0.040” styrene sheet (Photo 8). The counter was made 3’ high and 3’ deep. I made a space at one end of the counter for the swinging half door. The counter was painted in the same reddish-brown paint used on the wall assemblies, then glued in place with CA glue once the paint was dried. The front sales-showroom was now ready for details. This is where I used the Berkshire Valley bathtub, and radiator kits, and one of the Walthers’ toilets with a scratch built toilet tank. I then put some pieces of brass wire on the counter to represent pipe. Some pieces of paper were also used for the invoices. Once this was all done, I added some people. The interior was now finished (Photos 9 and 10).

**The Finished Building**

The finished interior was glued in place using liquid plastic cement (Photos 11 and 12). I always put my initials and the date someplace on anything I build, hence the “MC 05” on the back of the wall. Put the roof back on, but don’t glue it. You will want to remove it to put in lighting later. In Photo 13, the building is ready to put on the layout. Once we do that, our scene is complete. Interiors add that little something that makes a building look more complete. Not every building needs them, just some.
of the foreground ones you’d like to highlight. Give it a try.

**The Completed Scene**

Remember, back in Part 7, we had this vacant area on the layout that looked so boring and empty (Photo 14). Now, with some scenery and a good-looking structure and few details, it looks more like part of a real scene (Photos 15 and 16). It doesn’t take much to create this. By using the techniques that I have shown you, it’s quite easy.

In Part 11 of this series, I will carry on with how to make structures for your layout. This time, I will show you how to make a large factory building using DPM wall modules. I will be showing you how to design a building using these wall sections and how to assemble them, as well as painting, weathering, and how to create the mortar effects between the bricks.
**Jim Hackworth**

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Little Things

As we take a big picture look at finescale modeling, I'd like to focus in a little tighter and look at some small details that can set a layout apart from the ordinary. In the photo below we're looking down Canal Road from the crossing of the I&W's Whitewater Secondary, our connection with CSX.

The thing to notice here are the crossbucks. I made them from Evergreen Scale Models styrene using dimensions from a PRR Standards book. I did the lettering on my computer and attached it with Walthers Goo. I got extra fancy and added some nut and bolt details, since these are right at the front of the layout. I wanted to tell a story here, so I made the foreground upright out of some Code 125 rail I had laying around. The story goes that a driver had to swerve to avoid a deer one night and hit the sign. The always cost-conscious I&W management simply replaced it with the length of rail, since the sign itself wasn’t too damaged. I might add some tire skid marks to the road someday.

The diamond shaped highway sign in the background is styrene, too; the lettering also done on the computer. I got the dimensions by measuring a real sign near my house. The model sign reads, “HIDDEN DRIVE”. The road goes over a slight rise at this point, creating a partial blind spot for a driveway coming in on the other side. The road extends into the background by means of a photo that was cropped to match the modeled scenery and secured to the backdrop with double sided tape.

Another trick of the artist’s trade was to force the perspective of the road by tapering it toward the background. At the tracks, it’s full O Scale dimension at 22’ wide. Where it meets the wall I used S Scale proportions, again, 22’. The highway sign is also a bit undersized. The actual front to back distance from the crossing to the wall is only 14-1/2”. Not real deep, but the forced perspective makes it seem further.

There is a culvert just to the right of the road that carries runoff from the drainage ditch under the track. It’s clogged with melting snow at this point, so it’s hard to see. The technique I used to make these is so bonehead simple that I’m certain someone else has done it before, so I’m not claiming the credit for it. I just cut a piece of heavyweight aluminum foil to the desired width and wrapped it, dull side out, around a fine threaded carriage bolt to make the corrugations. This was simpler than trying to bend commercial corrugated stock into a rounded shape since the corrugations would be crushed or otherwise deformed. You could make any diameter of culvert needed, depending on the size of the bolt. The whole process took longer to think up than to do. I glued the two culvert halves to each side of the roadbed with full strength white glue, being certain to line them up with each other, then added ballast to blend everything together. You could leave the foil in its natural color for a new culvert or paint it for an older one. A little weathering and it’s done. How simple is that?

You may also notice that there is some fresh ballast on the right of the crossing. This is story telling again. Maintenance-of-way crews recently did some track work here, fixing a low spot from a “mud-pumper”, a crosstie where the ballast washed away or became encrusted with mud from poor drainage. They often occur near road crossings, from water and silt draining off the road. Details like these are not expensive or time consuming. They just need an observant eye and attention to the little things that can have a big impact.

Best regards, Mike
2006 O Scale Trains
3rd Annual Digital Photo Contest

The Categories
• Steam locomotive
• Diesel locomotive
• Narrow Gauge/Industrial
• Traction (New category this year!)

The Rules
• You may only enter ONE category of the contest.
• You may enter a maximum of TWO (2) photos in that category.
• Image must include O Scale equipment befitting the category.
• Image must be submitted in digital JPEG format.
• Images must be at least 250 dpi but not more than 300 dpi and at least 4 x 5 inches.
• Image must be emailed to: jag@oscalemag.com
• All submissions become the property of O Scale Trains Magazine.
• Images must be submitted by midnight, August 1, 2006
• Winners will be announced and winning images published in OST Issue #29, Nov/Dec 2006.

Additional Details
• All photos MUST be submitted by email
• Photos DO NOT have to be taken with a digital camera. You may take a photo with a wet-film camera, scan it into your computer, and then submit it.
• Four winners will be picked by judges in each of the four categories.
• Prizes
  Steam: MTH ICRR 2-8-0, Proto-Scale 3-2
  Diesel: Weaver V01000, 2 rail, undec.
  NG/Indust.: Bachmann On30 2-8-0
  Traction: An unpowered trolley kit from East Gary Car Co., and a Western Hobbycraft trolley.

Don’t wait! Enter now.
Adapting to Change

I once attended a sales meeting where the sales manager was lecturing the sales force about change and adapting to changing market conditions. While he was discussing the topic, he distributed toy dinosaurs (not 1:48 scale) to each attendee. He pointed out that you either change and adapt to conditions, or you become a dinosaur. He emphasized the point further by knocking the toy off its feet and off his podium. As we watched the model fall to the floor we realized that adapting to change is not necessarily a bad thing; it is crucial to survival. The dinosaur could not adapt and became extinct.

I am a HiRailer in transition. HiRailers are accustomed to change. They have been adapting and changing their model railroads from the time their trains left the station at Gitgo. Even the definition of a HiRailer suggests change and adaptability, “three-rail O Gauge trains operating in a realistic environment”. HiRailers represent one of the largest segments in the hobby today. They are becoming a major force in model railroading. In fact, OST’s publisher, recently opined that HiRailers now represent about 40-50% of this magazine’s subscribers. They have developed an insatiable appetite for scale and realism. Their interests have grown beyond the toy train venue to appreciate the art of 1:48 modeling.

Manufacturers are paying close attention to this interest group and actually listening to their comments about model prototype fidelity. This group lobbies for more details, more scale looking products, and more realistic models. They are not shy about voicing their wants and desires. They are not afraid to stand up and be counted. That is a good thing. That is very positive. HiRailers actually help drive the O Scale market. As a result, O Scale has more choices and products available today than ever before.

Several manufacturers produce locomotives and rolling stock that are available to both 3-Rail and 2-Rail operation. Manufacturers require some minimum number for production. Some even base that production decision on the pre-order count. Some projects have been cancelled as a result. A product has to sell in significant numbers in order to be produced. Gone are the days when model trains were mass-produced in record high production numbers. Because of their pre-orders, HiRailers play a significant part in the process.

This represents a major scale movement that is underway. It is driving the O Gauge market (scale and semi-scale trains running on three-rail track) and it is influencing the O Scale (scale models operating on two-rail track) segment of the hobby. Realistic modeling, detailing, kit building, weathering, and kitbashing all fall into place. Attention to detail and model fidelity to prototype are key elements and DO get noticed. The HiRailer’s appetite for scale and realism provides the numbers and drive for more choices for O Scale modelers. This is only a good thing.

As a HiRailer in transition this Hobo acknowledges his friends in the HiRail community. Their encouragement, support, and suggestions over the years have been very helpful. Operating model trains in a realistic environment has always been my goal.

Years ago that same sales manager quipped, “If you are not the lead dog the view never changes.” HiRailers tend to be restless, ahead of the pack, always looking for ways to improve their modeling. That’s what happened to me one day while looking through some open boxcar doors. I had an epiphany and realized that the very realistic environment could become even more realistic if I operated my railroad on two-rail track. Whoa! I was struck.

My focus is now on O Scale and how I can transition that railroad with its locomotives, rolling stock, buildings, and track, without breaking the bank. That is my challenge. It is a big step, but my quest for realism has led me here. I am not the lead dog, but I am far enough ahead to see that the O Scale view is constantly changing. I am making a lot of new friends and finding a lot of old HiRail friends over in "scale-land".

How far will the HiRailers go in their search for realism? That is the question. Change is inevitable. There is a lot going on in this great hobby. Keep an open mind for new ideas and new ways of doing things. After all, who wants to live in the land of giants and be content being a dinosaur?
Round and Round

If I may, I’d like to take “friendly exception” to some comments made by Hobo D. Hirailer in his recent column, “Going Around and Around and Around” (OST #25).

Hobo seems to feel that his HiRailer friends like to run their trains just “for fun” whereas some 2-Railers take their trains “seriously”, using the adjective in a somewhat condescending sense.

Okay, we “serious” 2-Railers can take a ribbing as well as the next guy, and what kind of dope wouldn’t agree that this, after all, is just a hobby and it should be “fun”? But the same could be said for any pursuit in life! I tell my sons that if you have “fun” in your career, you are likely to be better at it, or at minimum will do better because others will enjoy working with you. But you also must be “good” at your job.

I believe Hobo is confusing types of people with types of model railroading. There are some people who are “fun”; they make you laugh and they are almost always “up”. Some of these people are HiRailers and some are 2-Railers. Then there are the “serious” types who perhaps have certain other burdens to deal with which prevent them from being “fun” and “up” as much as even they would like. Some of these people are HiRailers and some are 2-Railers.

But there is another aspect to “seriousness.” If “fun” is all you are looking for from your hobby, then you are a dilettante. There’s nothing wrong with being a dilettante, like people who “fool around” with the piano but aren’t really capable because they don’t really know how to read music or play subtle and sublime pieces because, well, they are too difficult, too “serious” and it’s not “fun” learning this stuff.

But for many “serious” 2-Railers, model railroads are more than just a layout of tracks to run trains on. They serve other functions, the result of which of course is “fun”, but “fun” is just the beginning, there’s so much more to it. For some of us, it’s the fulfillment of a long dream. To have some kind of outlet, right in our home, for our “love of trains”.

For some of us it’s the recreation of long-gone scenes or trains we recall from our childhood or our pasts, places and times we wish we could revisit but now can only be revisited in miniature.

For some of us it’s the challenge of figuring out how to build that special model we have a craving for; a model which perhaps we can’t purchase anywhere and which therefore must be made from scratch or in some other fashion.

For some of us it’s the intricate game, or dance, of operating our layouts as if they served real industries and real commuters, with timetables and operating rules.

For some of us it’s the “art” of model railroading, creativity in 1:48.

There are undoubtedly many more; everyone has his and her personal reason, and “fun” is always taken for granted. If “fun” is your primary or even only reason for model railroading, well, more power to you. But most of us want to get “good” at our pursuit. Just as learning to be a better pianist requires the investment of your time and effort, to become a better model railroader, your investment will have to be made in a somewhat “serious” way.

Now, seriously, isn’t that fun?

Andy Romano, Crestline, Calif. (via email)

PS: Hobo also says “A lot of 2-Rail guys do have layouts but they are very difficult to see since they often exist only in their minds.” I do not find this to be true either. I am a serious 2-Rail guy and Hobo is welcome to visit my fun layout at [http://trainutz.com/ironbound.shtml]

Scace responds: Andy, Hobo, et al:

“Perhaps a second (or is it third) opinion, for what it’s worth…”

“I think you both are hitting around a note that needs to be hit just a little harder, so I’ll smack it. The key word here, in my most humble (yeah, right) opinion, is “satisfaction”. Many find their comfort level on the satisfaction scale in the “fun” regime, as Hobo notes. Others find their satisfaction level somewhere in those categories that Andy cites such as prototypical operation, reproducing a snapshot of history (my personal favorite), or the satisfaction of scratchbuilding something no-one else has done to a level no-one else has achieved.

So Hobo, Andy, your not-so-humble Editor, and all of us should remember a couple things. First, our hobby has plenty of diverse areas where one can find their personal “satisfaction”. That’s why we come to the trough. Second, and closely related, is to avoid the trap that snaps when we think that our “satisfaction” choice should be the choice for all.

Let’s be careful out there.

O Scale Generations Comment

Brian Scace wrote some pointed comments in Issue #26 “Observations” concerning, mostly, command control. But the message went a little further in comparing the differences in his (and my) generation of “doing it all” in building our railroad as compared to the newer generation accepting most everything already built. Well, some building is required, of course, but that is often just adding a few details to a car, locomotive, or a structure rather than starting the whole thing from scratch.

Brian mentions that the “newer railroaders don’t have the time to spend wiring receivers and speakers let alone building kits and scratchbuilding.” True enough, as that does describe our lives today with technology as it is and fast advancing to be even more complex. Time is precious when one is supporting a family and trying to get ahead in the job. But then, wasn’t it the same when we were younger even though the technology may have been a lot less sophisticated? Family and work was just as important then as now. And time spent on building that RR was allotted in small increments when time allowed.

When I first started in becoming a model railroader in the mid 50s as a young hard charging sergeant of Marines, married with a family, time and money wasn’t always there to pursue that growing interest in all things railroad. But it was done, and mostly by scratchbuilding as it was sure a lot cheaper than buying it already made. MR, in every issue back then, had scratchbuilding articles...
because that was the norm during those days. Remember Eric Stevens “Dollar Car” projects? Or brass locomotives built at the “kitchen table” using a hand rotary drill to turn domes and stacks? Even electronic throttles were scratchbuilt as evidenced by the numerous articles in Model Railroader and Railroad Model Craftsman. I built a couple of these, they worked, and I don’t know anything about electronics! But the philosophy is different now. “Why build it when I can buy it already made?” There are certainly more model products out there now than there ever was when we were younger and probably a little more affordable with today’s personal incomes.

But still, scratchbuilding and “doing it all” has slowly drifted away from what it once was. Most everything I have is built from scratch with only a few kits and they are usually modified in some respect. I have written a few published articles on some of my projects but I suspect, broadly speaking, that the majority of modelers today are not much interested in the details of carving brass and styrene for a complete model or the research involved in getting the details right. It’s a new generation!

Enjoyed your editorial on O Scale Generations, Brian! It was well said.

Tom Mix, Capt. USMC ret., Monument, Colo.

Brian writes: I can agree with Tom’s comments, with a few more of my own of course. There’s another component to this that needs be brought out. As an example, I still have the first locomotive I ever scratchbuilt (it’s awful, and it isn’t for sale at any price!) I built it under the tutelage of some of the old prewar crowd, now long gone. From their perspective, my use of decals was a sacrilege! Why didn’t I hand-letter it, the way it was supposed to be done?

Simple. Decals were available to me, but not to them in their formative years. I regarded decals as an available tool; they regarded them as a cop-out. The generation behind me doesn’t have to scratch-build or modify everything like I did. Now their available ready-to-run stuff becomes my cop-out. We scratchbuilt, first from necessity, and then (after we got good at it) for pleasure. That first locomotive was not fun. It wasn’t even satisfying. It was, however, very formative. These young hard-chargers come from a different set of formatives, so the perspectives are different yet honestly held. I can respect that.
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For as long as I can remember, I wanted to be able to hear the appropriate locomotive and railroad sounds when I operated my trains, whether steam, Diesel, gas or electric. In 1950, my first American Flyer 4-6-2 Pacific had an internal sound piston that made an acceptable chuffing sound, so I placed the whistling billboard just before the grade crossing near the station and I can still remember those exciting sound effects.

When I turned to HO, and then to O Scale, I played cassettes of recorded railroad yard sounds through speakers under my layouts, but that was not quite what I hoped for. I wanted sound to be heard from the locomotives, and for the models to sound like their big brothers. I wanted all the whistles and horns to be slightly different so that each locomotive took on its own character.

After PFM introduced their control and sound systems, I purchased two complete sets. I was pleased with the sounds that emanated from my On3 locomotives, but I was pretty much limited to operating one locomotive per block unless I was double-heading two similar units. Even my old Magoffin sound system provided acceptable sound effects, but it also had similar limitations and it eventually went out of production. I tried several other steam and Diesel sound generators and found them unsatisfactory, and not compatible with each other.

With my layouts, I always build in lots of operations that can involve and entertain several operators. I derive the most satisfaction from the light-hearted banter that is part of any operating session. When Digital Command Control was introduced, it seemed to be just what I wanted. Each operator could control the movements and sounds of his own locomotive as he walked along with his train.

Only a few years ago, it was predicted that DCC and sound generators could be combined and made small enough to install a single decoder and speaker into the tiniest of power units. I was delighted when the NMRA and the manufacturers worked together to develop industry standards. Now, it seems that there are so many different DCC and sound systems to choose from that one hardly knows where to start or when is the best time to jump in. Well, the time was determined for me when a prominent discounter began selling the excellent BLI On30 C16 with DCC and sound for under $120. I bought two of them and stumbled into the new world of DCC without even owning a control system. Now, a few months later, I have to think that my timing was just right.

Upon investigating, I learned that the Bachmann E-Z Command Digital Command Control System is a decent entry-level package that can get you into DCC with minimum expense. Lately, it has been available on Ebay for around $60. When the Walk-Around Companion and Connector Panel became available, I bought one to allow two operators to control up to nine DCC-equipped locomotives and one analog (DC) unit. Additional Companions can be added as necessary. Bachmann has included DCC in all three of their latest On30 models, including the tiny Davenport diesel, the Rail Truck and the 2-8-0 Consolidation (See my review in this issue.) They have not introduced sound yet, but their DCC models are configured so that they can be operated on DC or DCC with no modifications. Moreover, the new Consolidation can often be bought on Ebay for under $130, the Rail Truck for around $80 and the Davenport for around $40. Most On3 modelers quickly learned that the Rail Truck can be re-gauged to On3 by simply sliding the wheels out on the axles.

I believe that there are currently more On30 modelers than all the other O Scales combined, including traditional standard-gauge, P48, On3 and On2. Bachmann Trains has earned its place at the front of the On30 parade by producing high quality and low priced narrow-gauge products for thousands of new O Scalers.

At this time, I can report that having three narrow-gauge locomotives with DCC and sound, and nine more with DCC only, has added to my pleasure immensely and I am a happy operator. I expect that most manufacturers will offer all of their new locomotives with DCC and sound in the near future. Soon, when the Bachmann five-amp booster becomes available, it will be time to start installing DCC and sound in some of my standard-gauge locomotives. I might want a better or more expensive DCC system in the future, but for now I’m satisfied with what I have. With one-amp decoders now available for around $10, it might be time for you to start thinking seriously about moving your railroad into the Digital Age.

Happy trains to you from Bobber
Powering Up

Ted Byrne

After spending several issues of OST discussing power supplies, I would like to return to the “PoweringUp” column and something simple. Of course, by simple I mean profound.

But first, I want to pass along one piece of information. Those of you who read the smaller scale magazines are familiar with QSI, who builds DCC controllers and sound systems. QSI has appointed American Hobby Distributors (AHD) for exclusive distribution and support of their Quantum locomotive sound system. The word is that they are going to enter the O Scale market in the fall. They won’t say any more at this time (at least to me) but there should be more information in a few months.

Now, on to my main topic for this month. I would like to consider the “Illusions of O Scale Modeling”. I don’t mean the fact that O Scale is 1/48 of life size. That is purely mechanical. We have to go beyond that and play tricks on our senses.

For example, I model the DL&W Railroad, and one of their major achievements was the set of four concrete arch bridges completed in the early 1900s. I have to use selective compression to model their Tunkhannock Creek viaduct because it was 2375 feet long. In O Scale, it would be about 50’ long, longer than my house. But I’m not here to talk about bridges; in this magazine, I usually go on about electrical/electronic aspects of modeling, and that is what I want to do now.

Light Illusions

When I was at O Scale West, I visited Tom Towner’s layout in San Jose. Like in many model layouts, he uses spotlights in the ceiling. Tom mentioned that he had to replace some burned out bulbs and, by mistake, bought the daylight-style fluorescent bulbs that screw into ordinary outlets. The difference was just dramatic; his scenery looked completely different. He emphasized this, because he had a branch that went into an adjacent room and it still had normal (yellow) incandescent lights. Your eyes could do an A-B test by just walking back and forth. These bulbs are made by Sylvania (and probably others), and a 23-watt bulb gives as much light as a 100-watt incandescent bulb. They repay you by saving energy and, with summer coming up, they save air conditioning. Be sure to look for daylight bulbs; all fluorescent bulbs that screw into ordinary outlets. The difference was just brilliant. His scenery looked completely different. He emphasized this, because he had a branch that went into an adjacent room and it still had normal (yellow) incandescent lights. Your eyes could do an A-B test by just walking back and forth. These bulbs are made by Sylvania (and probably others), and a 23-watt bulb gives as much light as a 100-watt incandescent bulb. They repay you by saving energy and, with summer coming up, they save air conditioning. Be sure to look for daylight bulbs; all fluorescent bulbs are not daylight.

By the way, there is a well-known principle in architecture that you cannot have light unless you have dark. That’s obvious once you think about it; the dark area creates the boundaries for the lighted area. You might want to try experimenting with this on your layout by turning off some spotlights and see how it emphasizes the places that are still lit up. Tom went a step further by using one incandescent spot to take the place of the sun. You can see the two kinds of light. He says he would have done his scenery differently if he had known about this at the beginning.

Sound Illusions

Brian Scace, our editor, tends to make comments that keep me honest. Recently he complained (Me? Complain! –ed) about locomotive sounds. Now I am a convert to locomotive sounds, so of course I try to convert everyone. But actually he is correct. You can have, and many do have, too much sound. If I can hear the train at the other end of the layout, then the sound is unrealistic because that is supposed to be miles away. And if I can hear the engineer and fireman talking, it is unrealistic because I cannot hear them in real life.

Part of the track on my layout goes into, along, and out of a bookcase (Don’t ask; it’s a complicated story.) From the railroad side, the bookcase is a tunnel and it allowed me to experiment with sound. It was dramatic as the train came out of the tunnel. The sound appeared as the train appeared just as it would with a real train. Just as above, where you cannot have light with having dark, you cannot have sound without having quiet. Anyone can perform this same experiment by creating a temporary tunnel. This can be just a large cardboard box with track openings in each end, set over the track (in my case two tracks). You can glue pieces of paper towel on the inside to make it absorb sound better. Then your train will announce itself as it comes into town. Even better, it would be nice for the trains to go through a rock cut before entering a town, in order to provide a separated sound zone.

I can’t avoid mentioning the idea of cutting notches in your rail every 9-3/4 inches (the length of 39’ rails in O Scale) at the places where visitors stand. They will be startled and amazed as they hear the “clickety-clack” of old time railroads as the train passes them. Of course you’ll need to use steel wheels to make this work.

The real point is that you’ll have to design the light and the sound on your layout to create the illusion of reality, the same as you design any other aspect of the layout. These are so profound because the average person doesn’t know that they are being influenced by what you have done.

Reality Illusions

My final point is not electrical, and I didn’t create it. At O Scale West, I purchased two of the show cars (I never buy just one of anything. That’s not realism, it’s the “L” word; real trains have groups of like cars.) They are 40’ outside braced boxcars made by Atlas, with weighted and detailed undercarriages and steel wheels. Each car weighs about 18 oz. I brought them home and set them on a siding. As I walk by I nudge them, and they roll a few feet so realistically that they give a dramatic feeling of reality. They act like they have the mass of real boxcars, not toys. They are not twice as realistic as HO. It is more like the eight times difference that the volume would suggest. Have you noticed this? To me this is an instance of the Unique Mystique of O Scale.
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Modeling the Baltimore Terminal of the Washington, Baltimore, and Annapolis

Reader email is one of the nicest aspects about writing this column. Gerald Brothers, a reader in South Dakota, recently contacted me, and we’ve gotten to emailing back and forth about favorite traction books. He mentioned one of his favorites, Every Hour on the Hour, a Chronicle of the Washington, Baltimore, and Annapolis Electric Railroad, by John R. Merriken and Leroy O. King.

He mentioned several maps of terminals in the book. I was about to go online to order a copy, when my wife asked, “What’s wrong with the copy downstairs?” She was right; I already had a copy! (Oh well. It’s only money.)

The maps were as good as promised. The line’s namesake terminals in Baltimore and Washington cry out to be modeled. The Baltimore terminal, shown below, is the larger of the two. It had four stub-end tracks, plus a turning loop and three passing tracks. The Washington terminal, to be described in the next issue, takes up less space and contains a loop with three tracks.

Baltimore Terminal

Notable elements of the Baltimore terminal include the large covered platforms for both the stub tracks as well as the loop. The structure covers both the boarding areas as well as the tracks, creating an interesting “tunnel effect” as the trains enter and emerge. Yet, since the sides of the platform are open, trains are easy to access if required.

Less-than-carload (LCL) freight and express played a major role in the Washington, Baltimore, and Annapolis’ revenues. Accordingly, there is a long freight siding along the bottom of the terminal. Since the majority of the terminal trackage is paved, the ties used on the freight track will form an interesting contrast. In addition, the freight track is on a slope about four feet higher than the passenger tracks, heightening the contrast.

We opted to include the driveway in front of the freight house in the terminal module. This provides space for a variety of trucks awaiting loading and unloading. Interest in the foreground could be enhanced by paving the driveway with cobblestones or bricks. If space is at a premium, the driveway could be reduced in width.

Note the two inspection pits. How would today’s litigious society, and OSHA, feel about open pits in the middle of a terminal without fencing? Were people more careful in those days?

Like several of the terminals described in previous columns, building flats and painted backgrounds can be used to create an urban atmosphere. One of the nicest aspects of this terminal is that it’s situated in a “box canyon” with buildings on three sides, focusing the viewer’s attention on the terminal.

Operations

The original terminal could accommodate almost 50 cars at a time. We’ve applied some selective compression and, accordingly, capacity is reduced. Yet, there’s still room for a half dozen two, three, and four-car passenger trains, plus a string of express and freight cars, to be on hand at any given time. That’s certainly enough space to showcase your favorite equipment, and still operate trains into and out of the facility.
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The Design

I wanted to incorporate a pickle plant in my evolving plans for my version of a branch line of the Cumberland Valley RR that survived into the 1930s. Having completed my two pickle tank cars and a vinegar tank car, their logical destination would then be a pickle plant, very loosely based on a picture of the Heinz plant in the city of Chambersburg, PA. This brick structure was very large and extensive, and I had yet to locate an adequate number of views that would let me accurately build it. Additionally, much of my layout is more rural, so wooden structures would be in the majority. I did manage to locate an O Scale kit (Wabash Valley Hometown Series, I think), but only after I had already started my building. I also found that there was a simple plastic kit in HO that apparently passed through several brand names. The two that I acquired were from IHC and Tyco, yet were identical in all regards. These kits provided the spark for getting started. While my building, Lauther’s Perfect Pickles, may have a passing superficial resemblance, I think the rest is unique.

The Materials

The vast majority of the construction used commercial scale lumber from various sources (primarily Kappler and Northeastern Scale Lumber), some other commercial building materials, as well as a number of detail parts. The sources for all materials are listed throughout this article. The board-by-board style of construction is also fairly close to the techniques for building on the 1:1 scale, with the exception that various glues assemble the parts rather than real mortar, bolts, and nails.

The Foundation and Base

Just like any good structure, the entire building needs a good foundation. This fictional building was planned to reside on my Cumberland Valley & Metal branch line operating in Franklin County, PA. A common foundation style seen in that area is built of cut fieldstone or limestone blocks. Only a small portion of the foundation would be visible after “planting” this building into the scenery. Options included variations on plaster castings or blocks, but I chanced across another commercial material, Dr. Ben’s Baby Building Blocks. These come with a rough edge on four sides, and are of uniform thickness so they can be easily stacked into a wall. They also are a blue-grey color that nicely mimics limestone, and appear to originate from some sort of tilting material that can be easily cut with a pair of nippers.

The foundation for the main building was then constructed of these building blocks with an outside dimension of just over 30’ x 40’ (I’ll use scale feet and inches except as noted) with three courses of stone tightly fitted together with staggered joints. These went together very quickly and smoothly with CA glue. I should note that I built the entire structure working on a sheet of plate glass. It provides a very flat surface, and allows a razor or scalpел to release any errantly glued pieces of the foundation. The foundation for the adjacent boiler house was constructed similarly, with outside dimensions of just over 24’ x 14’; this was only two courses high to obtain a step down between the two connected structures (Photo 1). The foundation of the one wall extends an additional seven feet to ultimately support a trellis wall and the rafters for the boiler house. The two foundations were attached initially by a little dab of Walthers Goo to set them in place with the boiler house foundation located ten feet north from the South wall. At this point, I want to define the compass as it pertains to this project. The wall with the porch is “South”, the opposite trackside wall is “North”, the boiler house is on the “East” wall, leaving the sheltered tanks at the “West” wall (Photo 1 and Figure 1 on Page 44).
Sill plates of HO 6" x 22" were CA'd on top of the foundations. Side sills of 1/16" x 3/16" dimensional lumber were added next making a 30" x 40" box for the main building and an adjacent 24" x 14" box for the boiler house on top of the sill plates. With these in place, floor joists of 1/16" x 3/16" dimensional lumber were inserted between the side sills, spaced at two feet on center running north-south. With the supports for the floor complete, both areas were floored over with 1/16" thick North-eastern Scale Lumber scribed siding (3/32" spacing) and secured with CA (Photo 1).

**The Front Porch**

The “front porch” was started with a frame of 1/16" x 5/32" dimensional lumber, essentially a 40" x 8" box with a 1/16" x 5/32" center joist that was then decked over with individual HO 3" x 12" boards. Support posts for the porch were made from HO 8" x 10" cut to bring the surface of porch flush with the level of the flooring of the main building. These were applied to the perimeter away from the main building. Diagonal bracing was added, tying the porch legs together, which were fashioned from HO 3" x 12". The ramp (3-3/4" x 13") was fashioned from the same framing and decking materials and the angles at each end were sanded to fit. The ramp was secured with a combination of CA and Walthers Goo. The exterior framing of the porch was dressed up with Grandt Line #23 nut-bolt-washer (nbw) castings. The deck entire assembly was then attached to the south facing side sill of the main building with CA.

**Building the First Floor**

The first floor walls of the main building were constructed board-by-board as sub-units, and the four finished walls were then assembled to enclose the first floor. I had initially planned to use commercial clapboard siding, but this building material was quickly abandoned as the wall thickness seemed to be too thick. Normally, this might not be a consideration but, since I intended for this structure to have a fully detailed and accessible interior, the scribed siding would not be accurate and the walls needed to be dimensionally acceptable to the eye.

All four of these pre-assembled wall units were assembled as 2 x 4 stud walls, with 7¾" long studs spaced on two-foot centers, and a 4 x 4 on each end (Figure 2, Page 44). Doubling of the studs below the support for each window, and to support the header over each window was included in all walls as needed. The North wall was 40’ long and the studs were “adjusted” to accept four Grandt Line #5031 windows. The South wall was also 40’ long and had the framing set to accept a #5031 window and three Grandt Line #4040 freight doors as depicted in Photo 2. The East wall is a 29½’ long wall unit that fit in between the North and South walls. There was one large window in the center of the wall that was made from two #3702 windows merged together. The West wall is also a 29½’ wall unit that also fits in between the North and South walls. There was one opening for a modified Grandt Line #3604 door that was cut down slightly to the size of the door framing. There were also two 4 x 4s set into the framing to provide a surface to tie this wall into the North and South boiler house walls. An additional 2 x 4, next to these 4 x 4s, provides an attachment surface for clapboard siding (Figure 2 and Photo 2).

I intended to have a full-interior detailed structure, so finishing the interior walls for at least the first floor was necessary. The intent was to add “plaster” to these walls. To accomplish this, all four wall units for the first floor interior framing were given a very quick application of CA and a sheet of 0.005” clear Evergreen styrene was attached. Then, the assembly was laid flat on the glass, under a board with a lead weight, until the glue set. After the glue was well set, the excess styrene was trimmed off with a sharp scalpel to meet the wall dimensions, and the window and door openings were cut out (Photo 3).

Next, I installed all of the interior window and door opening trim. The South wall doorways were finished with HO 1” x 10" and the single window frame with HO 2 x 6. The West wall large window opening was trimmed out with HO 1” x 10" and the joint where the window castings were modified was filled with matching lumber. The North wall window openings were finished with HO 2 x 6. With this phase completed, all of these interiors were then brush painted with two coats of Polly S Aged White to simulate an old finished plaster interior (Photo 3).

The exterior of the four first floor wall units was finished in individual clapboards. This method created realistically thick walls. An HO 2 x 8 kick-out board was glued at the base of the walls and clapboards of HO 1” x 16”, no more than 12’ in length, were used with staggered joints. The ends of the individual clapboards on the East and West walls were left approximately nine inches long to provide material for forming an appropriate overlap where the ends of these walls would join to the 4 x 4s of the North and South walls. The openings for all of the windows and doors were very carefully trimmed and each window or door casting was test fit in place prior to assembly of the first floor walls as a unit (Photo 3).

The first floor walls were then assembled onto the floor First, carefully glue (CA) the North and South walls to the edges of their respective location on the floor. Make sure to set these as close to 90° to the floor and parallel to each other 29-1/2’ apart. The East and West walls were then carefully glued (CA) to the floor, and inserted in between the North and South walls. Glue was added on their ends to contact the 4 x 4 ends of the North and South walls. The excess overlapping clapboards were then very carefully trimmed off with a brand new scalpel blade.
Building the Exterior Vinegar Tanks

Two large exterior holding tanks were assembled with board-by-board staves over solid interior forms. Four 3.5" diameter wood circles were cut out of one inch pine using a hole saw on the drill press. A 5/16" center hole was drilled in each. A 15" length of 5/16" dowel was glued (yellow carpenter's glue) into each base circle. Then, I slid the second circle down over the dowel, leaving five feet protruding above the top of the pine (Photo 4 and Figure 3 on Page 45). Staves were made from HO 3" x 14" scale lumber that was Goo’d to the circular form. This size of scale lumber was just about right for the barrel radius, and the casual observer won’t notice that the staves are not beveled. The barrel band hoops were fashioned from Special Shapes 1/16" x 3/32" brass stock. The brass was pre-rolled into shape, marked with a 1-1/2' overlap, clamped, and soldered for a press fit over the staves. The overlap section in each hoop was drilled with a #70 bit for three Grandt Line #23 nbw’s in each band. These nbw’s were CA’d in place and the excess was trimmed off, after which the hoops were installed on the barrels spaced roughly equidistant (Photo 5). In addition to the barrel bands, nine cables were also added around these barrels. To do this, nine Grandt Line #48 hoop fasteners were each threaded with #0 surgical silk secured with CA. Groups of three were Goo’d to the barrel equidistant between each barrel band. The length of surgical silk was then wrapped around the barrel and the end secured on the hoop fastener with CA. The barrels were then stained with a mystery mixture of Minwax (a mystery since the bottle is continually topped off with whatever color I find first and/or thinner). The hoops were painted with Polly S Steam Black, and various stains added with washes of Roof Brown, Milwaukee Road Grey, Rust, and Aged White. A final light overspray of Floquil Grimy Black was added, since they are under cover from the weather (Photo 6).

Building the Attached Boiler House

The North wall of the boiler house is a 24’ long wall unit, again pre-assembled with 2 x 4 studs. The studs are 7-3/4’ high, set on two-foot centers with a 4 x 4 on the ends. The 4 x 4s on the ends were used to join this wall to the East wall of the boiler house, and also to the East wall of the main building where a 4 x 4 was left for this purpose. The framing was set to accept a Grandt Line #5031 window and a modified #3601 door that had the door framing “adjusted” (Photo 7 and Figure 4 on Page 46).

The East wall of the boiler house is 33’ long, assembled with 7-3/4’ long 2 x 4 studs on two-foot centers. Again, a 4 x 4 on the end forms the end post at the south end of the wall to join with the lattice/trellis exterior wall that also supports the roof rafters. There is also an interior 4 x 4 in this wall to join with the South wall, along with an additional 2 x 4 to support attachment of the board & batten exterior. The framing was also set to accept a #5031 window.

The South wall of the boiler house is 24’ long, minus the width of the East wall. This wall fits “inside” of the East wall of the boiler house while joined to the East wall of the main building. This was again assembled with 7-3/4’ long 2 x 4 studs set on two-foot centers with a 4 x 4 on the ends. The framing was set to accept a modified #3601 Grandt Line door, again after the supplied framing has been “adjusted”, and four modified windows of unknown origin from the “junk” box that were glued.
together to assemble a single unit. All of these castings were painted with Polly S Aged White, glazed with microscope cover slip glass cut with a diamond tip scribe, and installed right after the exterior sheathing was completed (since later access would be limited).

The exterior of the boiler house walls were finished off with board-and-batten siding made from individual HO scale 1” x 24” and 2 x 4 boards that extended down over the side sills prior to the walls being mounted on the flooring of the boiler house. An “interior” portion of the East wall, exposed inside of the slatted exterior trellis wall, was also finished off with this same board-and-batten sheathing. An HO 8” x 12” was added to the end of this wall for the header of the trellis part of the slat-

ted exterior wall to rest on (Photo 8).

Installation of these three walls for the boiler house was done starting with the North wall. It was first secured to the floor and to the anchoring 4 x 4 of the main building East wall with CA. The West wall was then installed, secured to the floor and to the North boiler house wall, being careful to keep it square and plumb while running out to the end of that foundation extension. The South boiler house wall was then slid in between the East wall of the main building and the previously secured East wall of the boiler house, and glued in place with CA. The exposed southern end post of the East wall was doubled on the interior side of the East wall with scrap wood. This brings the thickness of this post up to nearly the width of the foundation. The addition to that post provides the tie-in of the exterior trellis wall and support beam for the rafters of the boiler house.

Lattice Exterior Wall

The uprights/supports for the lattice/trellis exterior wall were made from HO 8” x 12” wood, spaced equidistant between the boiler house East wall and the free end of the lattice wall. Note that the lattice wall comes adjacent, but actually does not directly attach to the East wall of the main building. An HO 4” x 12” beam extends from the end support post of the East boiler house wall and rests on these supports. This beam then provides support for the rafters. The lattice or trellis boards were made from HO 3” x 10” lumber. The end of the trellis boards extend to attach to the HO 8” x 12” end-post of the boiler house East wall. The joints of these boards were dressed up with Grandt Line #1 nbw’s. The ceiling, over the area extending from the South wall to the lattice/trellis header, was closed in with scrap 1/32” thick Northeastern 3/32” spaced scribed siding (Photo 9 and Figure 5 on page 46).

Boiler House Rafters

The roof rafters were made from 1/16” x 5/32” dimensional lumber. They are quite simple, with the two roof rafters resting on a single center support up from the traversal beam (Figure 6 on Page 46). These were set to match the spacing of the lattice/trellis supports, then additional rafters were added equidistant between those. The far western rafter was not attached to the main building. Instead, the roofing later ties this structure into the siding of the main building with flashing. I’ll cover the roofing issues in Part 2. Soffit boards were inserted between the rafters (1/16” x 3/16” scrap dimensional lumber). A chimney platform was made from 1/32” scrap, spanning two rafters near the main building. The chimney was built up on this platform, well above the rafters and capped with additional Dr. Ben’s building blocks. Stone steps at each door of the boiler house were also built from Dr. Ben’s building blocks.

Roofing

The boiler house roof was gap-sheathed with HO 1” x 24” material for a metal roof. I’ll return to how the entire building was roofed with metal standing-seam roofing material later, as all the roof sheathing and finishing was done as a unit.

The First Floor Interior

The interior of the first floor was fitted out at this point, as later access would be limited. Berkshire Valley supplied the desk, file cabinets, books, chairs, stove, coal bin, shelving unit, buckets, and barrels. The interior also features a modified Grandt Line door between the two buildings, the two cucumber washing, sorting, and preparation troughs, and the “elevator” to take barrels upstairs (Photo 10). The large washing basins were built from sheet copper formed and soldered into shape, then “wrapped” in 1/32” dimensional lumber with HO 6” x 12” legs

continued on page 45
**Figure 1:** Foundation and set up of floor joists for the main building and the boiler house

**Figure 2:** Framing patterns for the East, West, North, and South walls of the Main Building

- **East**
  - Large Double Window

- **West**
  - Doorway to Boiler House
  - 4 x 4's for attaching boiler house North & South walls

- **North**
  - 4 x 4's for attaching East & West walls

- **South**
  - 4 x 4's for attaching East & West walls
and supports under the basins. Drains (a washer soldered to a
length of brass tubing) were added in the center of the basins
that run down into a hole in the floor. A Berkshire Valley hand
water pump was added at each end of the basin. These were
extended with brass tubing so that they would mount into the
floor. The entire assembly was painted with Polly S Green, with
the work surface stained with Pecan MinWax. The stove was set
on a metal pan (0.005” styrene painted with Floquil Platinum
Mist), then a length of brass tubing (painted with Polly S Steam
Black) that fit snugly over the stovepipe was added. This stove-
pipe extends up through the second floor and up to the roof
where a smokejack casting was installed.

The elevator was made from scrap wood with 3/64” brass
angle (from Structural Shapes) cut, bent and soldered into a
framework which has a chain linkage for hoisting and lowering.
The winch is planned for installation on the second floor with
a ceiling beam mounted pulley. The winch and pulley arrange-
ment, for hoisting the lift, was made from scrap wood and a
collection of odds and ends of castings from the scrap box. All
of the “ladies” working on the cucumbers were Langley castings
that were handpainted with a variety of Polly S colors, while the
remaining figures were from Arttista. Cucumbers were created
from short grain rice that was briefly soaked in water for about
15 minutes and drained. Then, green food coloring was added
until I got to a shade of green that looked cucumberish. These
“cucumbers” were then laid out to dry on a paper towel, after
which they given an overspray of both Dullcoat and Glosscoat.
Loose cucumbers were secured with Goo, as were most of
the other detail parts and castings. Barrels from Berkshire Val-
ley were filled with cucumbers, secured in place with dilute
carpenter’s glue. All of these parts had to be prepared, cleaned,
painted / stained, and placed appropriately into the first floor
space. The floor and all exposed wood surfaces were stained
with Pecan Minwax.

Well, this now seems like an opportune spot to take a break,
having described how the entire first floor of the structure was
built, including the interior. I’ll pick up from here in the next
installment, to describe how the second floor, the roof structure,
the second floor interior, and the exterior finishing were done.
_to be continued..._
Figure 4: Framing patterns for the North, South, and West walls of the Boiler House

Figure 5: Pattern for the South Trellis wall of the Boiler House

Figure 6: Pattern for the Boiler House Rafters
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“Prairie Skyscrapers, Midwest Sentinels.” Whatever you call them, the grain elevators and feedmills that used to grace nearly every small town in farm country are fast disappearing in the wake of changing farm economics and giant agri-business conglomerates. Yet, some outstanding examples remain throughout the country. My part of Indiana still holds quite a few, and I’m sure that other regions across the country have similar treasures. Their simple boxy shapes would be easy to model, with either scribed styrene or wood for the walls and some homemade or commercial corrugated tin siding from K & S Metals or Plastruct. Both manufacturers also make a wide range of structural shapes that would be useful for the elevator leg and distribution piping. Small buildings like these often fit into the model scene nicely, lending character and revenue to our operations. You’d better get to them with your camera and notepad fast however. They won’t be around for long. Here are a few of my favorites from close to home.

Photos 1 and 2
Knightstown, IN: Located on the former Pennsylvania Railroad’s St. Louis mainline, a few miles west of Richmond, Indiana, the Knightstown Elevator is still very much in business, although everything is shipped by truck now. The PRR’s mainline was elevated through town just behind the building. There’s evidence that a spur track once dropped down from the main to serve the elevator.

Photos 3 and 4
New Lisbon, IN: Here’s another going operation, located on a former Nickel Plate branch that came south out of Muncie, split at New Castle, with lines running southeast to Connersville and south to Rushville. The elevator was served by a double-ended siding with a capacity of 13 cars. Everything goes by truck now.
Photos 5 and 6

Mays, IN: Located on the other NKP branchline (now abandoned), from New Castle to Rushville, Indiana the Mays elevator still serves the needs of the farm country surrounding this tiny East Central Indiana community. A general store is located next door, forming a time warp scene from the good ol’ days.

Photo 7

Gem, IN: is another tiny town along U.S. 40 just east of Indianapolis. This facility is on the same PRR line as the Knightstown elevator. The tracks were in the foreground of this scene. The long narrow footprint would lend itself nicely to a shelf-style layout. Many elevators added large storage silos and other modern grain handling and drying equipment in the late ’60s and early ’70s. Depending on the era of your railroad, you could omit them to save space.

Photos 8 and 9

Millville, IN: Does it get any more classical than this? Believe it or not, this was photographed in 2002! Located on another former PRR line out of Richmond, Indiana, (now Norfolk Southern), this timeless prairie sentinel stands tall in the mostly flat landscape surrounding it. It’s a true gem. The Liar’s Bench (Photo 9) is a “must-have” detail on any model.

Photo 10

Cedar Grove, IN: Here’s a real small town beauty. Located on the Indiana and Ohio’s branchline from Valley Junction, Ohio, to Brookville, Indiana, this nifty little feed mill was also served by a double-ended team track (recently removed). It has hardly been modernized.

I modeled this one for my Indiana and Whitewater. That will have to be the subject of another article, however.

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Modern Accountability

The biggest part of model railroading is the train. That seems pretty obvious to most of us, I believe. The train is the reason we build benchwork, run wires, and layer on scenery materials. The train is also the reason many of us like to follow prototype operations and schedules. As if there weren’t enough things to study when modeling miniature worlds, we also have to add our own stack of paperwork for car routing. There is a joy in it all when you follow the rules and complete a switchlist for a session of model operation. Following a prototype operation schedule is a busy task in itself, and adding more work for the crews and dispatcher seems as though it would start to detract from the fun of the hobby – the train.

The major railroads across this land have added new safety and security procedures to train crew operations. These new procedures must be followed when a train crew requests blocks or gives up blocks of track on the mainline. New operational authority numbers are given by the dispatcher to train crews that operate within a specific territory. It’s like a password for accessing a given territory. When requesting blocks or giving up blocks of mainline track, this authority number must be read first for the action to be valid. Authority numbers can be added to your dispatcher orders with ease, and it doesn’t require a change to the overall operating session. The authority number is simply a four, five, or six-character number, assigned to each train crew, that they hold until they clear a subdivision. By adding a blank line to your switch list or track warrant, you can duplicate this authority action. It would follow this example, “CSX 232-22, authority number 5135, date 7/10/2006, has a clear track, South, in the Birmingham Mineral Sub.” It will bring an aspect of modern prototype railroading to your model operation that is currently a big issue – security.

Tragically, humans do make errors. The absolute worst place to make them is on a railroad. To combat crew errors, railroads are adopting a new permission based system of accountability for operating switch machines. It is simple and very easy to understand. The train crew just asks the dispatcher for permission to use a given switch machine. The switch machine location is given in the form of a milepost reading, or may have a given designation like “XX”-100 where “XX” may be the subdivision name like CSXMS-100. Simply, this stands for the CSX Mineral Subdivision switch number 100. The train crew records the time of this “granting of permission” on the train paperwork, as does the dispatcher in his log. When the crew finishes the operation, they notify the dispatcher of the final switch machine position. If the train crew fails to call the dispatcher after some allotted time, the dispatcher is going to call the train crew for an update. The permission to operate a switch machine must be read, along with any given instructions a track warrant or block order may carry. If no switch machines were to be operated, that must also be noted in the final track warrant or block order. Mimicking this practice in your operating sessions will bring another aspect of modern railroading practice – accountability.

In our world of fancy computer gadgets and gizmos, human interaction is still needed for making critical decisions. Computers can remotely operate switch machines, code information from prying hackers, and locate any train at any moment. The purpose of these new procedures is safety, security, and accountability. A computer device may be the back-up alarm, if a switch is not returned to the normal position, by alerting both the crew and dispatcher. It is prone to failure, and expensive to implement in remote territory. A human can be on the spot at any time and visually confirm a switch position, but it’s the interaction of this person with the switch machine that requires the accountability. Attaining verbal permission for operating any switch, when not under control by the dispatcher, is just plain safe and makes a fine addition to a model operating session.

In the next issue we’ll take a look at modern train consists. Are the cars in a train in some random order because of destination, safety, or just how they got sorted at the yard?

Happy Railroading.
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Bill Mosteller sends word that he is now offering C&O trust plate decals in white. Each set provides 12 pairs of plates. Six pairs are suitable for cars bought in the 1930s and six pairs for cars bought in the 1940s. Major credit cards accepted. Dealer inquiries welcome. Virginia residents must include sales tax.

Chooch’s new Ultra Scale II flat cars come with all the details, less trucks and couplers. The car is cast in two resin pieces; the highly detailed floor is separate from the one-piece body. This car was created by master car builder, Gene Deimling. The kit features brand new tooling for the brake wheel and stake pockets. The kit is in limited production. Visit the Chooch website (or call) to order and for details about which roads used these cars.

There are many things that are more complex than a simple detail casting, and yet much less work than the easiest small building kit. They are the things that can be finished in just one evening of model building... One-Niters!

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The Prototype

In the early 1940s, the C&O decided it was time to replace the aging fleet of H-7 2-8-8-2s hauling coal over the mountains to the Eastern seaboard docks. Management's initial thought was to go back to Lima for additional T-1 2-10-4s. Lima, however, had a different idea. They pitched a new design for a heavy, six-coupled, single expansion, articulated locomotive. The engine was so big that its firebox had to ride on a six-wheeled trailing truck. C&O like the design and ordered the first batch of ten to be delivered in December of 1941.

Classed H-8, the 2-6-6-6 was named the Allegheny for the mountains it had to climb. These locomotives were, arguably, the largest and heaviest articulateds ever built. The Allegheny had 67” drivers for speed, a huge boiler with a 9” x 15” firebox, 22-1/2” x 33” cylinders, and a boiler pressure of 260 psi. There is some question whether these behemoths were put to efficient use by the C&O. For an excellent discussion, see “Fast-Freight Articulateds”, in the 2004 Classic Trains Special Edition #2, Steam Glory (Kalmbach Publishing).

The H-8s were built in batches. The Sunset model represents the last batch, built between October and December 1948. These “late model” Alleghenies were built a bit differently than the other batches with major differences in cab windows, stack, eccentric crank, bell, and a host of other minor changes. These changes, along with photos and drawings, can be found in Huddleston and Dixon’s The Allegheny: Lima’s Finest (Hundman Publishing).

The Model

Sunset sent us a 2-Rail DC model. Inside the box was a certificate that noted the model was #10 of 17. A plate on the bottom of the locomotive carries the same info. I checked with Scott Mann at Sunset, since this sounded like a very low production quantity. Scott clarified that there are 17 each of locomotives numbered 1645 through 1659. Of each batch of 17, nine are 2-Rail. If you cotton to a particular locomotive number, make your decision soon. Our test model was numbered 1648.

I checked the model against plans in The Locomotive Cyclopedi, Vol. 1 (Hundman Publishing). With the exception of a few discrepancies in the chassis, the model is very accurate as to placement of major appliances, domes, etc. As I have noted in past reviews there is always an engineering trade-off between accuracy and operability. To be most compatible with most O Scale layouts, some accuracy has to be sacrificed. In this model it is the driver wheelbase. I measured the drivers to be exactly the 67” of the prototype, but the driver wheelbase (i.e., the spacing between each main driver) was three scale inches longer than it should be. That adds up to a scale foot overall. I also measured an extra foot between the rear wheel of the trailing truck and the tailbeam of the chassis. There were some minor differences at the front of the engine, too. Overall, there is an extra 2’ 6” of length added to accommodate the scale driver size and operate on modest curves. The fit and finish of the model was excellent. The paint was flawless, as we have come to expect, and the lettering was crisp.

Operations

I ran the Allegheny on the OST layout and put it through its paces. For a big articulated, the locomotive had no trouble negotiating 48” radius curves, nor a #5 crossover. It did have a bit of a problem on a superelevated 80” curve. While the front engine is free to articulate from side-to-side, there’s not much vertical play in the chassis and I experienced an occasional derailment in one spot. Perhaps my track needs work, but my other locomotives do not show any problem in the same location.

I hooked up the amp- and voltmeters and found the engine was drawing 1.7 amps at seven volts on a three percent upgrade and 1.3 amps on the downgrade. As hard as I tried to get a slow crawl, this was not possible. The locomotive would start to crawl forward and then stall. It took over two amps to get the engine out of the stall. While I was inspecting and measuring the locomotive after my operational tests, I noticed the front gearbox cover was crooked. I could see the axle bushing sticking out from under the cap. Aha! I have found the bind and the reason for the high current draw. I removed the cap and swapped it end-for-end. It seemed to install properly this way. On retest, the engine ran much smoother and did not bind. However, the current draw remained unchanged.

I queried Scott Mann about the current draw. The reversing valve gear works by friction and is most likely the cause of the higher current draw. Scott says the manual that comes with the Allegheny has instructions on how to adjust the amount of friction needed for the valve gear to work. Since I’m not keeping...
this loco, I did not attempt the adjustment.

As with other Sunset/3rd Rail engines, the Allegheny has lit markers on the tender and class lamps on the engine, plus reversing headlamp and backup lights. These come on fully at around five volts.

**My Opinion**

The C&O Allegheny is one of the most-produced locomotives in O Scale. At one point there were three O Scale models from three different importers on the market at the same time. It is a very popular model and there will be another coming soon from another major importer. Sunset/3rd Rail has made its bones by importing brass steam locomotive models at prices that are affordable (where “affordable” here is a relative term; $1800 ain’t cheap). This model is well-made and looks great.

**REVIEW: Dremel Stylus Battery Powered Motor Tool; MSRP $69.99; Dremel Work Station; MSRP $44.99**

*Dremel/ Robert Bosch Tool, 4915 21st Street, Racine, WI 53406 www.dremel.com*

reviewed by Brian Scace

Dremel has announced a couple of additions to their tool line that I have found to be quite interesting. Now, I love tools. Being a locomotive builder, Dremels have been a mainstay for many years, and some of mine are probably true antiques.

**The Stylus (Photo A)**

On the left, we have the newest battery powered motor tool, the Stylus. I admit having some misgivings about this one, for two reasons. First, the battery is integral with the tool, so you can’t swap out spares when the first one runs a little dry. Second, the pistol grip shape struck me as unwieldy, at first blush.

Since I was in the process of dis-assembling the railroad I had in storage, getting ready to re-build it in my new basement, I had a golden opportunity to run the Stylus off against a Dremel 770, the standard battery powered motor tool many of you are familiar with. The task was a daunting one, cutting nickel-silver rail. Lot’s of it. I armed myself with the Stylus, and my un-hired help with the 770.

The Stylus beat my 770 (even with its spare battery) hands down. First, it’s a ramp-able speed tool, rather than a two-speed tool. Second, the battery never died during a full day of rail-cutting; I just dropped ‘er back in the charger when I put it down after a cut, and it lasted all day long. You have to get used to the very high speed/low torque behavior, compared to the 770. Once you get the hang of it, it cuts rail cleanly and very quickly.

The pistol-grip shape turns out to be OK, too. I thought it would be in the way doing this job, but merely holding the Stylus inverted allows you to get the nose down close to the work and still have a steady hold on the tool.

The tool comes with a basic array of wheels, accepts my rather vast collection of standard Dremel collets, and has an integral Lithium-Ion battery. The speed range is 5000-25,000 RPM, compared to a 15,000 RPM maximum for the 770.

**The Workstation (Photo B)**

On the right, we have the new Workstation. This thing is a bit of a sleeper, too. It consists of a drill-press arrangement, a bit-holder (They call it a “Crow’s Nest”), and an extendable column designed to hold one of Dremel’s flex-shaft machines.

The drill-press features a rotating head, so you can orient your Dremel from straight down to 90 degrees sideways. Something I like is the fact that, unlike my old Dremel press, this is not a rising-table machine with a wheel, but a moving head machine with a rack and lever control. Much better.

The press holds any Dremel with the standard threaded nose, such as my 395 shown in the second photo. Cord management has been thought out, with places to clip the cord on the left side of the head.

Although I’ve shown the “crow’s nest” in the position cited in the instructions, I found it to be just plain in the way. Once I moved it to the very bottom of the column, under the head, it became very handy. You’ll need to try a few configurations to decide if it’s useful, and where it can live. The base is cut for tee-clamps, and I would suggest you make use of them.

The pay-off for me is the extension for a flex-shaft machine. The top of the extension matches the hanger for my old 232 Moto-flex, and I found the Workstation to be a nice space-saver in my new shop. Again, cord management has been thought out nicely, so I can use the 395 mounted in the press while the flex-shaft machine is hung, and visa-versa (Photo B). Rubber caps are supplied for those of you who don’t use a flex-shaft, so the top of the column can be neatly covered over and the extension not used. I found the ability to load this guy up with both tools a valuable space-saver for me, hence worth the price of admission.

I love tools. These may have a place in your shop, too.
REVIEW: Baldwin Catalog On30 2-8-0, MSRP: $245
Bachmann Industries, Inc. 1400 W. Erie Ave. Philadelphia, PA 19124
[www.bachmanntrains.com]
reviewed by Bobbie Gibbs

The old news is that, once again, Bachmann has delivered another winner for On30 and On3 modelers with its new and distinctive 2-8-0 Consolidation. The new news is that, rather than copying one of the usual Colorado three-fooeters that many narrow-gaugers are familiar with, Bachmann has created a unique model of a genuine Baldwin thirty-iner, one of four ordered in 1909 for the Mexican Railroad. They were woodburners with a tractive force of 18,000 pounds, a bit larger than the D&RG C16 class.

However, these Baldwins had outside frames and could negotiate a curve radius of 197 feet and grades of 2.5 per cent. By 1920, Number 12 had been converted to burn oil, and it continued in service until 1957. It was then purchased and moved to the Edaville Railroad in South Carver, Massachusetts. In 1992, a private operator bought it and, after a complete rebuild in 1999, it went to the Alder Gulch Short Line, a real thirty-inch gauge tourist operation between Virginia City and Nevada City in Montana. The 96-year-old prototype is in better-than-new condition, and the model is simply superb.

The best news is that this model will operate on Direct Current (DC) or Digital Command Control (DCC), right out of the box. It also demonstrates that Bachmann’s E-Z Command DCC equipment (not included) is perfectly adequate for their On30 DCC models, which now include the Consolidation, the Davenport and the new Rail Truck.

Bachmann has included a number of extra parts so you can create your own distinctive model. You can install a straight stack in place of the balloon stack, or go with a coal load, wood load or oil tank for the tender. You can switch a cowcatcher for the switcher pilot, or change the front wheels from spoked to solid. This is a heavy model, so it tracks nicely, runs slowly, and goes through Peco turnouts without hesitation. There are several roadnames to choose from, but I prefer the undecorated model which allows me to apply my own lettering.

The 2-8-0 easily pulled 35 cars (I had no room to add more on my test oval.) It is geared for a realistic top speed. I understand that it is not a difficult operation to modify this model to 36-inch gauge, but I have not yet seen it done. If it is easy to do, then Bachmann has deeply enriched the lives of all On3 modelers and I expect that a more than a few of these Consolidations will wind up operating on On3 layouts. The On30 model will negotiate a 15” radius curve, but looks better on wider curves. Note that the full-size engine required a minimum radius of about 200’, or about 48” in O Scale.

It must be noted that, while the suggested list price is $245, you can find it for $160 - $145 in many discount outlets. This model is a beauty and can be dressed up in so many different coats that it should please every taste. It also deserves notice that the future for On30 is sure to include larger and larger locomotives, which will call for full-length cars and curves of larger radius that may render many current layouts too small. The very aspect of more operation in a smaller space that attracted me to On30 ten years ago is falling by the wayside, and larger layouts will be necessary to accommodate larger equipment. I suppose this is a natural evolution for any scale, and I will have to find a way to incorporate my larger On30 locomotives with some dual-gauge trackage on my standard-gauge layout.

For those who crave larger locomotives, I have to wonder how Bachmann Trains can top this Consolidation. Incorporating DCC and sound into all new products would do it for me.

Published by Highlands Station Inc., 2600 S Parker Rd, Ste 1-211, Aurora CO 80015
888-338-1700
reviewed by Joe Giannovario

Highlands Station, publisher of Model Railroading magazine, has published a second volume of PRR standard drawings. This volume includes structures such as signal and switch buildings, passenger stations, yard and shop buildings and much more. Most of the plans are in HO Scale and some of the larger are rendered in N Scale. All the plans were compiled and drawn by Jeff Scherb, who authored the first volume in this series. (Scherb is also the originator of the all-time model railroad magazine index now at [index.mrmag.com]).

The book is done in a horizontal format, which lends itself nicely to the drawings. There are 96 pages covering almost any type of railroad related structure you might need. While these are PRR-specific plans, they will work for almost any railroad. I’m going to use one of the wooden engine house plans for my N&W branch service facilities.

I reviewed the first volume in OST #6 and feel that Volume 2 is every bit as useful, if not more so, than the first. Trackside on the Pennsylvania, Vol. 2 is available direct from Highlands Station or at your local hobby shop.
REVIEW: Proto-Switch Switch Stand, MSRP: $2.99 per pair plus shipping.
Motiveworks Hobbies, 1205 16th Street, Pleasant Grove, AL 35127
www.proto-switch.com

reviewed by Joe Giannovario

Motiveworks has produced this nifty little trackside detail for the modern model railroader. You get a pair of stands per package with a choice of handles, straight or triangular. The straight is the more common type seen. Our samples came with one of each type handle.

The parts are molded in plastic and are very clean with no evidence of flash. Everything fits together very well. The instructions tell you to drill a hole with a #62 drill to mount the handle. I found it easier to start the hole with a much smaller bit and the finish up with the larger bit.

Other than the drill bit, all you need is tweezers (to hold the parts) and liquid plastic glue to assemble these stands. In fact, it took longer to paint them than assemble them.

These are non-operating items but, with a little ingenuity, I think the targets could be made to move with the switch points.

Okay, I do have one gripe. The instructional text on the package is way too small to read. I’m nearsighted and still had trouble. Other than that minor complaint, these are a very nice detail.

NEWS: Keystone Model Works PRR H21 Quad Hoppers; MSRP: see text.
Keystone Model Works, P.O. Box 143, New Cumberland, PA 17070-0143
www.keystonemodelworks.com

Keystone Models Works is now shipping its PRR H21 quad hoppers. Currently available are several versions of the H21a, and the H21b and H21e rebuilds. This run of cars represents the “sawtooth” H21 hoppers with Westinghouse AB brakes. The “shallow hopper” and KD brake versions, as well as fully detailed PRR 2E-F2 70 Ton Crown trucks, will be available at a later date. The models are available as “S” series cars at $359 with working draft gear and scale couplers, and as “K” series cars at $328 for use with Kadee O Scale couplers.
Snap-on Hi-Rail to Scale Coupler Adapter
A One-Hour Project with Near-Zero Cost
Nick Pulskamp

There’s been talk lately about ways to facilitate transitioning from Hi-Rail to Scale, and specifically about ways to pull two-rail scale equipment with existing three-rail power (on T-section track, of course.) Here’s one convenient way to use Lionel steamers.

You’re familiar with Lionel’s post-war freight trucks with remote couplers that have a plate armature mounted under the plate that holds the coupler (the truck labeled PT-1 or 479-1 and the armature that is activated by an electro-magnet in a remote control track assembly #480-25). The coupler-holding plate is what we’ll use. Find one that has lost the armature, yet still has the axle-gripping fingers intact. Next, find a scale coupler that will work with the scale rolling stock you want to pull. Remove the Lionel coupler from its mounting plate and attach the scale coupler using the rivet hole left by the Lionel coupler. A 2-56 bolt/nut works well. Don’t tighten the bolt up all the way; let the scale coupler swivel, but not droop.

Take the post-war Lionel eight-wheel tender you plan to use to pull those beautiful scale cars and carefully remove the coupler assembly. Spread the sideframes enough to remove the axles, remove the plate assembly from the axles, and put the wheelsets back on the truck without the coupler mount.

Here’s the important part. Both coupler mounts (the stock Lionel one you just removed and the scale mount) will be modified identically to become “snap-on” coupler assemblies. Then, when you want to go back to pulling some regular Lionel cars, just snap off the scale coupler plate and snap on the regular coupler plate. Here’s how to do it.

Note the four “fingers” that are bent over the axle slots. The fingers at the back (B) end stay as they are. The frame just inside of these fingers is trimmed away as shown in the photo. This way the axle can now be slid into the “slot” without bending the fingers or removing the wheelset from the truck. Do this to both coupler mountings.

The fingers at the front (A) end are a little tricky. They need to be bent, as shown in the photo, so as to act as snap fittings when the coupler plate is slid onto the rear axle and rotated up to snap the front axle into the front axle channel. Try to bend these fingers as few times as possible: this metal fatigues easily and can break. If you need to adjust the coupler height, do what you do for your Lionel couplers – bend the coupler mounting plate.

You’re no doubt way ahead of me at this point. Anyway, changing the tender from Lionel-pulling to scale-pulling is simply a matter of snapping off one coupler plate and snapping on the other. The first time will take maybe five seconds. After that it’ll get quicker.

One more thing. As long as you have a scale coupler on a tender, why not put a scale coupler on a pilot? Now you can couple this engine to another scale coupler-equipped tender, and double-head two steamers.

Double-heading steam locomotives is a pleasure few Lionel fans (like I always will be) have experienced. Once you have run two steamers pulling together at the head end of a train, you’ll begin to understand one of the new dimensions of pleasure scale operation can give. You might even find yourself at least mentally transitioning to 2-Rail, as I have.

It starts with little steps and leads wherever you want to go. What a great hobby!
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What’s a Cam-Liner? A Fairbanks-Morse C-Liner with a TV camera in its nose, of course. The project didn’t start with that goal in mind, however, so I’ll begin at the beginning. Like many of us, some years ago I became the proud owner of a set of used Rivarossi F-M C-Liner Diesels, purchased at a train show. My original intent was to convert the loco into a super-detailed contest model with see-through fan and dynamic brake grilles, separate handrails and grab irons, constant voltage headlights, and other assorted goodies. I also bought one of the conversion kits from Central Locomotive Works which consisted of a Pittman can motor, gear driven wheel sets and universals for four axles, and a brass frame. Being an NYC fan, I naturally wanted to finish it in a lightning stripe paint job. NYC had more of these Diesels than any other railroad. I may have even ridden behind one of these units, having traveled as a teen-ager on both the Ohio State Limited and the Cincinnati Mercury.

The locos and conversion kit sat in storage for about ten years, with occasional openings of boxes and inspirational thoughts. One thing I did accomplish during this time was the assembly of the motor and frame of the drive conversion kit and installation into one of the two A-units. I also purchased a reference book, C-Liners, by David R. Sweetland, published in 1996 by Withers Publishing, 528 Dunkle School Rd., Halifax, PA 17032. This volume is a very necessary aid for a project such as this.

Recently, I bought a set of P & D Hobbies F-unit kits. I built, painted, and decaled them in the classic NYC lightning stripe paint job. They turned out beautifully, and my compliments to P & D for producing such gorgeous models. In the process of painting the F-units, the light bulb of inspiration lit up above my head, “As long as I’ve got all this paint and airbrush equipment out, why not paint those C-Liner bodies too?” Great idea! Prior to applying the paint, however, some modifications had to be made, so I found myself off on a whole new project. Some of my original goals for the models were abandoned, no contest models with see-through screen grilles or real glass windows. I did still want real three-dimensional railings and grabs, and the pilots needed to be modified to reduce the oversize coupler openings.

So with knives, chisels and sandpaper I went to work. All of the cast-on handrails and grabs were carefully carved and chiseled off. styrene inserts and backing pieces were made to reduce the oversized coupler openings, and then cemented in place. Filler putty hid all the seams and dings. Horns, headlights and window glazing were carefully removed. The holes in the lower body sides where the tabs from the chassis fit were covered with pieces of 0.010 styrene sheet and a coat of primer covered all. Then, each body shell was given two coats of Badger Modelflex NYC dark gray. The next step was the lightning stripes. To my knowledge no one makes these decals specifically for C-Liners, so I used Micro-Scale #48-92 Alco PA decals. They will work on the F-M units with some cuttin’ and splicin’ around the nose area. Short lengths were cut from the stripes forward of the cab doors and these were used to extend the vertical stripes at the bottom of the nose. The side stripes had to be lengthened a bit, but I had some straight stripes left over from the F-unit decals (Micro-Scale # 48-421) which worked perfectly for that. Some of the decals had to be cut away around the ladders below the cab doors and these areas touched up with paint. I had to mix up a light gray to match the decal color. A box of tissue and a bottle of Solvaset later, the decaling was done and the paint touched up.

All of the cab and side door railings and grabs were fabricated from brass wire and inserted into holes drilled in the plastic shells. This was a bit of tedium, but the end result was worth the effort. All of the railings were carefully attached with CA after the decaling was done, as it would have been impossible to apply the decals with them in place. When everything was thoroughly dry, the body shells were over-sprayed with Model-Master Semi-Gloss Lacquer overcoat, giving them a nice newly painted out-of-shop appearance. The truck side frames were...
sprayed with Testors Silver, and the cab window frames were carefully painted with dull aluminum using a small flat brush. The rigid plastic diaphragms between the units were removed and flexible rubber ones from Precision Scale were installed in their place.

Installing the CLW gear-drive axles in the power trucks proved to be more of a challenge than I anticipated. The conversion kit did not include any instructions for adapting the new axles and gears into the Rivarossi trucks. Owners of these Diesels know that Rivarossi designed the power trucks with built-in motors which are rather puny and noisy. Converting them to take the CLW axles and gearboxes was (for me) impossible. The only parts usable were the truck sideframes. I removed these from the motor units, and drilled out the axle holes to take short pieces of brass tube which became bearings for the axles.

The biggest challenge was getting the conversion kit bolsters attached to the truck sideframes. Using a drill press and an end mill, I carefully milled out an area in the center of each frame to take a 1/16” thick piece of phenolic. This, in turn, had a hole bored through it to take a short piece of brass tube that exactly fit through the hole in the bolster. The tube was epoxied through the hole in the phenolic and this assembly was epoxied to each side frame. With this accomplished, the sideframes were rejoined around the axle units and the bolsters snapped into the brass tube. Short pieces of Evergreen square styrene tube were used to re-enforce the joints where the frames were glued back together. Pieces of 0.040” styrene sheet were glued across the bottoms of the sideframes for rigidity. It worked! However, there was no power pickup as the CLW gear drives are non-conductive. I could have made some brass wipers to pick up current through the axles, but it was far easier to let the dummy A-unit do the job. Its original Rivarossi trucks and wheels were retained but with the motors and worms removed. The pickups and headlight were wired through a Miniatronics four-pin mini plug-and-socket to the motor in the other A-unit. Since the units can never be operated separately, I used a simple drawbar coupling between them, rather than normal couplers.

Sometime during the course of this now-complex project, I got the idea to put a mini-TV camera in the nose of the non-powered unit as there were gobs of space inside the body. At the same time, I envisioned making the loco battery powered and radio controlled. Having had many years experience with scale model R/C boats, I had the components on hand to try this, which I did... and it worked, but not well enough. The speed-direction control unit I used wasn’t very sensitive to low speed running, and there was too much interference in my train room for the transmitter and receiver to work without “glitching”. So it was back to track power, but I still thought the camera idea was feasible as I had seen these tiny mini-cams demonstrated at train shows. The unit I purchased is available from many hobby sources. The mini-TV camera sends a signal to a small receiver which, in turn, is plugged into the “video in” socket on a TV set. Everything needed to run the unit is included except for a 9V battery to power the camera and the TV set, of course. If it is desired to use track power for the camera, an adapter is available.

To provide a scale looking opening in the Diesel’s nose for the camera lens, I used a left over Mars light from my F-unit kit. This was cut down so it would match the area of the door in the C-Liner’s nose, which was then carefully...
cut out. Of course this was done before I painted the body. It is prototypically correct, too, as NYC had two C-Liners with Mars lights. Numbers 4506 and 4507 were so equipped, although their lights were later removed. Those same two units also had three-axle rear trucks to support the weight of their steam generators. My models will never have this feature but, frankly, I'm not that much of a rivet counter. I numbered the camera unit 4507 and the motor unit 4505, as that unit was not equipped with a Mars light.

I used Miniatronics yellow white diodes for headlights; 5 mm clear plastic diode holders fit exactly in the headlight openings. The tiny camera was a tight fit in the nose. I had to cut a slot in the vertical bulkhead that runs across the body so that the camera's antenna could lie against the cab roof. The camera is held in place with short strips of aluminum furnace tape, which doesn't ever stretch or sag. It is not installed permanently, as I might want to try something else with it in the future. The 9v battery which powers the camera lies in the fuel tank, and is held in place with Velcro®. I had to cut away some additional pieces of the chassis unit to make it fit properly into the body shell under the camera. I installed a mini-slideswitch under the side skirt to turn the camera on and off. Kadee #6 short shank couplers were screwed to plywood spacers glued to the under-sides of the chassis units. The plywood was painted flat black and doesn't show.

The completed C-Liners look great, run smooth as silk, and can be operated with the camera on or off. In the “off” mode, I turn the units around so that the non-Mars light equipped end faces forward. The only non-scale look to the Diesels is the darkened Mars light that the camera looks through. I had to sacrifice some air-hose detail around the couplers, as the frame units must be twisted 90 degrees when removing them from the bodies, so that the couplers will go through the smaller size openings. Brass windshield wiper castings add realism to the thick molded windows, and I enhanced the plastic air horns by carefully drilling out the bells to give them some inside dimension. I haven’t done any weathering on the Diesels, but may do so in the future. That lightning stripe paint job just looks too nice to dirty up.

The little camera operates as advertised, and it’s really fun to get an engineer’s eye view of the layout “as the train goes rumblin’ through”. It’s even fun to see the unfinished portions as the loco passes the giant screwdrivers, baby food jars and
other assorted junk lying at trackside. I have one long section of track that passes under the scenery, so if anything ever goes awry in there I can at least run the Cam-Liner in to see what the problem is. Watching the “TV train” is a great draw for the grandkids, too.
Tom Kabele sent these photos of his Delaware & Hudson locomotives. D&H pacific, #608, was scratch built by Frank Miller, and painted and detailed by Tom.

The second engine is a D&H Northern, #302. It was the last D&H Northern under steam. It started as an Overland UP FEF-1, and was modified by Tom Harley. He scratchbuilt the tender. It was painted and detailed by Tom Kabele. Both engines have DCC and sound.
Mr. Fleetwood Shawe sent this photo over from the UK. The loco is an M.T.H. PRR H3 converted to run on Mr. Shawe’s outdoor garden O Scale railroad using radio control. Mr Shawe has been in O Scale for over 75 years!

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WANTED: Wisconsin Dells MINIRAMA items and information including slides and old home movies of the operation. Contact Jeff Haertelt, PO Box 328, North Freedom WI 53951. Phone 608-522-3326 between 3PM - 7PM Central time.

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July 2006

2-8: Philadelphia, Pennsylvania

19-22: Parsippany, New Jersey
2006 O Scale National Convention sponsored by the New York Society of Model Engineers, celebrating their 80th anniversary as the oldest club in America. Convention held at the Hilton Hotel, One Hilton Ct, Parsippany NJ 07054. Special room rate: $119 per night single or double occp. Call 1-800-hiltons or register at the hilton website [http://www.parsippany.hilton.com]. Full convention registration is $40 per person. Tables are $40 each. See the convention website for more details. Call 201-399-9212, or email. Contact [06oscalenet@comcast.net]

August 2006

5: Denver, Pennsylvania
Eastern O Scalers 2-Rail swap meet held at the Denver Fire Hall, 4th & Locust Sts. 9:00 am – 1:00 pm. Admission $5: (spouses & children under 14 are free), $16 for the first table (includes one admission) and $12 for each additional table. Dealer’s set-up Friday evening 6:00 pm to 9:00 pm and Saturday morning 7:00 am to 9:00 am Admission $35; SASE to, EOS, PO Box 1781, Bensalem PA 19020; (215) 639-3864. Bring an index card with your name, address, etc., for $1 off your admission. Contact [oestrains@comcast.net]

12: Lenexa, Kansas
NMRA Turkey Creek Division Meet, Lenexa Community Center 13420 Oak St. 8:30 am to 2:00 pm. Admission $5; under 12 free; in advance $4. Info and registration form: Paul Richardson, 816-866-4043. Contact [paul@purgatoryanddevilriver.com]

September 2006

16-17: Dothan, Alabama
Wiregrass Annual Model RR show and sale at the National Peanut Festival Fairgrounds, US 231 S, Dothan, AL. Admission: $5 adults, children under 12 are free. Open from 9 am to 5 pm on Saturday and from 10 am to 4 pm on Sunday. Contact Danny Lewis, 491 Ashley Circle, Dothan, AL 36305. PH: 334-792-0728. Sponsored by the Wiregrass Heritage Chapter of the National Railway Historical Society. Contact [dannylws@yahoo.com]

22-23: Indianapolis, Indiana
Indianapolis O Scale Fall Meet. Two day O Scale swap meet with over 250 tables in one large hall. New and collectible 2-Rail trains and products available. Also includes model contest and display layouts. Registration by August 15 gets custom name tag. Dealer tables $40 by 8/15/05, $45 after that date. Admission $15 per person, good for both days. Contact Jim Canter for more information: 1203 Rotherham Ln, Beech Grove, IN 46107, 317-782-3322. Contact [jcanternkp@aol.com]

October 2006

14: Gardner, Massachusetts
Southern New England Model RR Club’s O Scale train show on Saturday at the United Methodist Church, 161 Chestnut St., Gardner, Mass., from 9:30 am to 4:00 pm. White Elephant table, sales & exhibits, operating layout, model display area, door prizes, food on site. 6 ft. vendor tables $15 before Labor Day, $20 after, 8 ft. vendor tables $20 before Labor Day, $25 after, setup 6:30 to 9:30 am. Admission: $5.00, $8.00 Family max. Contact: Larry Grant, (508) 337-6661 Contact [BigBrotherLar@netzero.net]

November 2006

4: Wind Gap
Eastern O Scalers 2-rail swap meet at the Plainfield Fire Hall, 6480 Sullivan Trail 9:00 am – 1:00 pm. Admission $5: (spouses & children under 14 are free), $16 for the first table (includes one admission) and $12 for each additional table. Dealer’s set-up Friday evening 6:00 pm to 9:00 pm and Saturday morning 7:00 am to 9:00 am Admission: $35; SASE to, EOS, PO Box 1781, Bensalem PA 19020; (215) 639-3864. Bring an index card with your name, address, etc., for $1 off your admission. Contact [oestrains@comcast.net]

For a more complete list of events, visit the OST website at [http://www.oscalenews.com]
Digital Photo Contest

We’re running our digital photo contest again, and this year we again have some great prizes to award. Please take a look at page 28 for all the details. The deadline for submissions is August 1.

DCC Technology Moves In

There’s been a whole-lotta chatter, both on- and offline, about Atlas O’s decision to drop support for 2-Rail TMCC in favor of DC/DCC utilizing QSI sound. At about the same time, Sunset/3rd Rail announced it will be using QSI sound in select O Scale locomotives and is considering offering DCC-ready 2-Rail locomotives if there is enough demand. Sunset has not offered 2-Rail TMCC. Lionel has not offered any 2-Rail TMCC and shows no signs of paying any attention to 2-Rail at all. M.T.H. has its own proprietary DCS control system. Weaver offers 2-Rail locomotives with and without TMCC sound, as well as 3-Rail TMCC equipped locomotives.

With two major players (Sunset for steam locomotives and Atlas O for Diesels) offering DCC equipped, or DCC-ready locomotives, O Scalers are being dragged, kicking and screaming, into the 21st century, and it’s about time, too. The Hi-Railers have had the lock on the most fun parts of O Scale for too long, i.e., sound and command operations. In the smaller scales, DCC is the accepted standard for command and control.

Some people still have a low opinion of DCC for O Scale (our honored Editor being one of them) based on past experience. The DCC manufacturers haven’t exactly had O Scalers beating down their doors looking for higher-current decoders. Even if we were, we’re such a small segment of the total DCC market, it was likely not profitable to make them.

Now, however, with two manufacturers willing to put DCC into their 2-Rail offerings, the market opens up for the manufacturers and users, as well.

Why did Atlas drop 2-Rail TMCC? There are several answers. Sales didn’t meet the per-piece minimums at the factory. Then there is the license fee to Lionel, slim pickings for licensed TMCC sounds, and some uncertainty about what will happen with Lionel in bankruptcy. Plus, DCC is an open architecture, with no license required to use it, unlike TMCC or M.T.H.’s DCS.

What, DCC is expensive, you say? Well, somehow Atlas is selling their Gold DC/DCC-equipped Diesels for only $20 more than the Silver DCC-ready. If you already have the base station, that’s a real bargain!

Perhaps what’s needed is for one of the DCC manufacturers to put together a simple user interface that will simplify DCC use for O Scale. We’ve seen Bachmann’s EZ-DCC for HO and their On30 offerings. That’s the right direction, but it does not have enough current capability for standard-gauge O Scale. Maybe all we really need is an O Scale current booster for the EZ-DCC system (and my wish is granted — see the new Bachmann ad on page 8i). I heard that Maerklin has something called the Central Station that uses a touch-screen to run their trains. That’s another possible approach to simplify DCC. I guess what I’m looking for is the Macintosh among the PCs of DCC, the DCC “...for the rest of us.”

O Scale National and the NMRA

The NMRA has approached the O Scale community, through the O Scale Kings organization, with the idea of rolling the O Scale National convention into the NMRA National. John Roberts, the NMRA President, is an O Scaler. Mike Brestel, who serves on the NMRA Board, is also an O Scaler. Roberts and Brestel sent their inquiry to Rod Miller, who is the President of the O Scale Kings. Rod told me the OSKers board was pessimistic about the idea but that they were continuing talks with the NMRA to surface issues about logistics, finances and, yes, politics. At this time there is no host for the O Scale National on the horizon for 2009. Should it come to pass that no one stands up for 2009 at this year’s banquet, then maybe merging the O Scale National with the NMRA National, even if only for one year, might make some sense.

I can think of a few reasons both for and against merging our convention with the NMRA National. On the plus side, we’d expose O Scale to a much larger audience of potential newcomers, mostly people moving up from HO and N Scales. Also, there is economy of scale. With a lot more people in attendance, it might be less expensive to attend.

On the negative side, I can see O Scale getting lost in the shuffle of the larger crowd. Manufacturers that serve more than just O Scale (like Atlas, Bachmann, and now M.T.H.) might be hard pressed to bring out the O Scale goodies when the majority of the crowd will want to see their HO and N Scale wares. The NMRA National is more likely to be held in larger cities (like Philadelphia this year), and that means rooms could be more expensive than we’re used to paying. In the end, it will have to be the O Scale community at-large that decides. I’m interested in what you think about this idea. Write me or email and let me know.

Visit the OST Forum

The OST Forum has been up and running for a couple months now and many of you have registered so you are able to post your comments. I invite those of you who have not visited our Forum to do so. It gives you the opportunity to talk back directly to our regular feature writers. A great opportunity would be to post your comments at the Forum about the NMRA proposal I talked about above. This entire column will be posted on the Forum by the time you read this. You can go to there and enter your comments and see what others have posted, too. I’ll be notified automatically anytime one of you posts and, if necessary, I can reply directly. When we have lots of comments, I’ll edit them and fold them into the Letters column here in the magazine for those that don’t have online access.

Bear in mind, this also works for any of the columnists posted at the Forum. Anything you write there will be sent to them directly. It’s a great way to communicate your feelings and opinions to our writers.

A Testimonial

I ran into Don Squires of Armstrong Tool Co., at the Indy meet last September. I asked if he had a diagonal cutter tough enough to cut through Code 148 rail. He pointed me to a tool display and suggested I try one of the cutters there. Ed Duddy graciously provided a piece of rail to nip. The cutter Don had suggested went through the rail like butter. Ed cautioned me that many times a cutter will work great when new, but will get dull with repeated use. In that regard, I’ve held my tongue while I used the cutter working on the layout. Now I feel I can recommend the PLR 791.00 cutter. It works great and should be in every O Scaler’s tool box. Don is offering the rail cutter at a special price to OST readers. See his ad under Armstrong Tools in this issue. If you order one, tell him you saw his ad in OST.

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For the NEW 2006 Spring/Summer Atlas O Scale Locomotive & Freight Car Catalog, please send $5 ($7 outside the US) to the address shown below.

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