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Cover: A scene from Gerald Brother’s Rapid City, Black Hills & Western traction layout. Car 321 in the foreground is their subject of his article starting on page 29.

Centerspread: A scene from Mike Culham’s current Great Central Railway. Mike scratchbuilt the Joe’s Burger Shack which is named for OST publisher Joe Giannovario. Mike’s multi-part series on building the new Great Central continues in this issue.
Scratchbuild a
CHESAPEAKE & OHIO
High Side Gondola
Ron Gribler

The 1953 Chesapeake & Ohio 50 ton gondola, with its high sides and oval-shaped Dreadnaught ends, provides a distinctive prototype for O Scalers. Mainline Modeler published full plans in the April, 1991, issue. A plan of the early Dreadnaught end was published in the Mainline Modeler September, 1992, issue. Rich Yoder produced brass models of this car in 2002. The O Scale car in this article is modeled from the earlier 37000–37299 series that had the full lower sides between the side ribs. For those of us who like to scratchbuild, here’s how to build one.

Construction

The ends of the car were fabricated from stamped brass boxcar ends, so that the end corrugations would be visible on the inside of the car. The floor and sides were built using Styrene sheet and shapes. Rivet details were embossed on thin Styrene and on paper labels. The labels provide sharp rivet detail, adhere strongly to Styrene and, being 0.003” thick, are about equal to 14-gauge steel in O Scale. The steel centerbeam and brass trucks provide additional weight to bring the finished car weight to 12 ounces. A number of commercial detail parts were used to complete the car. The techniques of this article can be used to build models of several other prototypes. See the Materials and parts lists for the necessary items. It’s recommended that these be obtained before the project is started. I’ve also included a list of the tools I used to build the car. Diagrams of the construction fixtures used are at the end of this article. These fixtures are not specific to this car, so they can be used for other rolling stock projects. Finally, I’ve outlined the riveting methods used to build this car.

Underframe

Cut the sub floor from 0.060” Styrene sheet using the dimensions in Figure 2. Square up the cut edges with a sanding block. Use a center-finding rule to locate the two centerlines and the locations of the holes. With a fine-line pencil, mark the centerlines of the seven floor joists and the two bolsters. Drill the two truck mounting holes.

If you are using Kadee coupler boxes, drill the mounting holes and tap the 2-56 threads. Using the dimensions in Figure 3, cut and drill two upper draft gear blocks from 0.040” Styrene sheet. File the bevels with a square needle file. Cut and drill two lower draft gear blocks from 0.060” Styrene. Cut off the rear mounting hole boss on each Kadee coupler box. File away any rough edges. Assemble the couplers and draft gear per Kadee, instructions. If desired, the trip pin can be cut off with a heavy-duty wire cutter.

Cut the center beam from 1/4” square steel key stock as shown in Figure 1. File the ends so they are smooth and square. Drill and tap the truck mounting holes for 4-40 threads. Then, assemble the sub floor and the center beam to the underframe fixture using two 4-40 x 1” screws with their screw heads in the counterbores of the fixture. Before tightening the screws, flow a small amount of thin CA glue between the beam and floor. Do not allow the CA to glue the screws in place. Check the fit of the draft gear using one of each block and a Kadee box with two 2-56 screws at each end of the floor (Figure 4).

Cut two lengths of 1/4” Styrene channel to 8-7/8” long. On one channel, drill a 0.032” diameter hole adjacent to the lower flange, 4-3/4” from the right end. This end of the channel is installed toward the “B” end of the floor. Coat one side of the center beam and CA with a small bead of liquid plastic adhesive along the intersection of the beam and floor. Place the channel against the beam and floor, clamped for several minutes. On the other channel, drill a 0.032” diameter hole adjacent to the lower flange, 3-3/4” from the right end. This end of the channel is installed toward the “A” end of the floor. Repeat the gluing process for this channel. This completes the car’s center sill.

Cut four bolster bases from 0.060” x 0.250” Styrene strip to 63/64” long. Glue one of these on each side of the center sill on the truck centerlines (Refer to the left end of Figure 5.) Cut four 1/4” lengths from the 0.060” x 0.250” strip. Glue one on the outer end of each bolster base. Then, cut eight bolster sides from 0.060” x 0.250” Styrene strip to the dimensions of Figure 6. Tape four of these together with masking tape on the sides’
These figures are not to scale.

**Figure 2**

- **Sub Floor**
  - Dimensions: 2.375, 8.875, 4.438, 3.828
  - Material: 0.000 Styrene

- **Center Beam (Weight)**
  - Dimensions: 3.828, 3.828, 4.875, 4.875
  - Material: 0.000 Styrene

**Figure 3**

- **Brake Rigging Mounting Locations**
  - Dimensions: 0.156, 0.438, 0.219, 0.003
  - Material: 0.060 Styrene

- **Block - Lower Draft Gear Box**
  - Dimensions: 0.006, 0.48
  - Material: 0.060 Styrene

- **Truck Block**
  - Dimensions: 0.48, 0.363, 0.083
  - Material: 0.000 Styrene

- **Boister Cover**
  - Dimensions: 0.48, 2.375
  - Material: 0.006

- **Glue**
  - Dimensions: 0.812, 0.350, 0.383, 0.003
  - Material: (3) 0.003 x 0.003 XG 0.003 Styrene

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Note: The figures are not to scale.
narrow edges (Figure 7) Clamp this stack into a vise. Using a file, shape the sides. Cut the notches with a razor saw. Drill the trainline hole through all four pieces. Repeat for the another four pieces, except don’t drill the hole. Separate the pieces from the tape and smooth the cut edges. With liquid adhesive, glue the bolster sides to the bolster bases, the sub floor and the center-sill. Use care to locate the sides so the holes are on the train line sides of the center sill.

The riveted flanges used on the bolsters and floor joists are 0.100” strips of 0.010” Styrene sheet with a line of rivets embossed along their centerline. Cut eight 31/32” strips of riveted flanges. Glue one of these to the floor adjacent to each of the bolster sides. Cut three 5/16” lengths of 3/32” wide strips of riveted flanges. Glue these across the center-sill at the center floor joist and at the second joist on either side of the center floor joist (Figure 8) Then, cut two bolster covers from 0.010” Styrene sheet per the dimensions in Figure 3. Glue each cover on the bolster sides and center sill, being careful to align it squarely. Clamp the cover with two miniature bar clamps until the adhesive sets up. Make two truck blocks from 0.060” Styrene sheet (per Figure 3). Glue one of these on the center of each bolster cover. On top of each truck block, glue a #10 flat washer using CA.

Now, we’ll move on to the floor joists. Cut 14 floor-joist webs from 0.040” x 0.156” Styrene strip (per Figure 6). Cut the notches using a razor saw. Drill the 0.032” diameter hole in seven webs. Locate each web on one of the web centerlines and, with liquid adhesive, glue to the sub floor and the center sill. Four of the webs with the holes are toward the “B” end of the floor and three on the “A” end. Next, cut 14 floor-joist flanges from 0.011” x 0.090” Styrene strip. Glue each flange to the web with the flush side toward the “A” end of the floor. Then, cut fourteen 31/32” strips of riveted flanges. Glue one of these to the floor adjacent to each floor-joist web toward the “A” end of the floor.

At this point, we’ll finish off the floor ends and mount the brake rigging. Using the draft gear and screws as clamps, glue the coupler blocks in place, keeping the bevels of the upper blocks toward the fixture. When the adhesive is set, remove the draft gear. Cut four floor-end stiffeners from 0.060” x 0.100” Styrene strip to a
adhesive is set, remove the draft gear. Cut four floor end-stiffeners from 0.060” x 0.100” Styrene strip to a length of 25/32”. Glue these to the end of the floor at either side of the coupler blocks (See Figure 5.) Intermountain boxcar airbrake parts are used (See Figure 8.) Use the actual parts to determine their exact location. File the ends of the air reservoir bracket so it will fit between two floor joists. The valve bracket is a 0.060” x 0.060” Styrene strip cut to span two floor joists. Add a short length of rivet strip to each end. The brake cylinder bracket is a 0.020” x 0.125” Styrene strip cut to fit between two floor joists. Two 3/16” lengths are added at the ends to support the bracket on the floor joist web. Drill two 0.032” holes to match the brake cylinder mounting tabs. Following the dimensions in Figure 3, drill seven holes and add three stiffening strips on the center-sill to mount the brake rigging.

Ends

I made the ends for this car by modifying some brass boxcar ends from Jim Watson. Clamp one of the brass boxcar ends to the end fixture. Mark a line 1/32” below the lower rivet line. With a razor saw, cut through each side flange at the line. Remove the end from the fixture and cut along the line with tin snips. Then, draw a line across the end directly above the fifth rib. Reclamp the end onto the fixture and, at the line, cut through the end with your razor saw. Set aside the upper half. On the lower half, draw a vertical line 5/8” from the left edge of the side across the top rib. Draw another vertical line just inboard of the edge radius from the top edge to the fourth “dart”. Cut out the section between the lines and the top of the fourth “dart” (See Figure 9.) Clean up the cut line with a small flat file. With a small round file, clean out the open end of the top rib. Repeat for the second end.

Use tin snips and files to cut out two

Figure 9

top end sections from 0.010” brass sheet, per the dimensions in Figure 10 (Note: the template of Figure 10 can be copied and used to cut the top panel.) Check often while cutting to assure the top section is flat and fits inside the lower end section. Next, clamp the top end section in place under the lower end section. Draw a line on the top section along the interface line. Unclamp the pieces. Apply soldering flux and tin
the top section with solder, in the area under the line. Do the same thing on the inside of the lower section at the corresponding location. Re-clamp the two pieces and solder them together. Repeat for the other car end.

To make the upper flanges, cut two 2-3/4" lengths of 1/64" x 1/16" brass strip. Form them to conform to the profile of the upper end section. Apply flux and tin the lower edge of the strip and the upper edge of the side. Clamp one end of the strip in place on the fixture, and against the end with a small block of wood using a miniature bar clamp. Solder the strip to the end section, beginning at one end and moving the iron along the strip, while holding it tight with a wood dowel. Clean off the flux and buff the soldered areas with a wire-brush wheel in a Dremel tool. Fill the open end of the fifth rib and the joint line with filler putty. Repeat for the other car end (Figure 11).

The corner plates are next. Cut two pair of corner plates from 0.010 brass sheet using the dimensions in Figure 10. Form the corner plates using flat-jawed pliers. With a flat needle file, remove the bottom rivet on each flange and the first three rivets on either end of the lower rivet line. Apply flux and tin the inside of each corner plate with solder. Do the same for each end where the corner plates will be installed. Clamp a corner plate to the end on the fixture so that the height of the end at the corners is 1-7/16". Solder the two pieces together. Repeat for the other three corner plates (Figure 12).

Now, we can add the end details. Make two grab hand supports (per Figure 10) from 1/16" square brass tubing. Cut the ends with a Dremel cut-off disc. Form the ends with square-jaw pliers. Fill the end gaps with solder and file smooth. Drill the five holes with a #74 drill in a pin-vise. Clamp a car end to the fixture. Locate one of the supports on the car end as shown in Figure 13. Mark the location of the two mounting holes and drill both about 1/4" into the fixture. Push two brass pins into the fixture to hold the support in place. Measure 3/8" horizontally from each grab iron hole of the support to the left. At these locations, drill three holes. Cut one end of three straight-type grab irons to 1/32" long. Place the short end of each grab iron
into one of the holes in the support and the long end of the grab iron into the hole in the car end. Slide a 1/16” x 1/4” strip of wood under the grab irons to space them from the end. Clamp in place and solder the grab irons to the support. Drill the holes for the other four grab iron locations on the car end as shown in Figure 12. Using the dimensions in Figure 10, drill five holes on the left-hand end flange and three on the right-hand flange for the side grab irons. Unclamp the car end, and remove from the fixture. Drill the holes for the other four grab iron locations on the car end as shown in Figure 12. Using the dimensions in Figure 10, drill five holes on the left-hand end flange and three on the right-hand flange for the side grab irons. Unclamp the car end, and remove from the fixture. Install one drop-type grab iron into the holes on the second rib of the end. Slide a 1/16” x 1/4” strip of wood between the grab irons and the end. Turn the end over and clamp to the fixture. Flux and tin the four grab irons and the two pins holding the support. Solder these to the end. Snap off the ends of the grab irons and pins as close as possible to the rear side of the end. Clean up the soldered area with a small file and a wire brush in a Dremel tool. Repeat the whole grab iron process with the other car end.

On one end (the “B” end) locate the brake platform as shown in Figure 12, and drill the four holes about 1/4” into the fixture. Remove the end from the fixture. Install the brake platform to the fixture with brass pins pressed into the four holes just drilled into the fixture. Remove the platform between the brackets with a cut-off disc in the Dremel tool. Remove the two brackets from the fixture and install them on the end with the pins. Flux and tin the pins, and solder these to the end. Snap off the ends of the pins as close as possible to the rear side of the end. Clean up the soldered area.

Ribbed Sides

You can set the ends aside, now, and we’ll start on the sides. First, cut two sides from 0.040” Styrene sheet using the dimensions in Figure 13. Square up the cut edges with a sanding block. Tape the side to the construction fixture with double-sided tape. Using the center-finding rule and a small square, draw pencil lines at the locations of the nine side ribs. Repeat for the other side. Next, we’ll cut 18 side ribs from 0.060” x 0.100” Styrene strip to the dimensions in Figure 6 using the following method. Tape a 1/4” x 1” strip on the Chopper at 45°. Set the stop for a straight cut of 1.5”. Cut one end of the strip to 45°, then cut to the required 1.5” length. Repeat for a total of 18 pieces. Pin a square of Styrene to the construction fixture at the side angle of the rib as shown in Figure 14. Using the sanding block, taper the rib. Round the outer edges of the ribs with the side of an X-acto knife. Place one of the sides against the guide of the construction fixture and secure it with strips of double-sided tape. Mark the locations of the side ribs on the top of the guide of the fixture. Using the small square, align the first rib on the first location line on the left and secure it with liquid cement (See Figure 15.) Do the same for the other eight ribs and repeat for the second side.

The next step is to prepare and install the 14 outer side panels. Roll two rivet lines spaced 3/32” apart on the rear side of a sheet of 1” paper labels. With a fresh # 11 blade, trim each label 1/32” beneath the lower rivet line and to a width of 29/32”. Make four end panels in the same manner, using 2” wide labels, trimmed to a width of 1-1/16”. Cut a spacer jig from 0.060” x 0.156” Styrene strip to a 7/8” length. Per Figure 16, place it between the first set of ribs and against the fixture guide. Peel about half an inch of the backing from the riveted end of one of the label side panels. Place this end of the strip against the spacer jig and press the label onto the side as the rest of the backing is pulled away. Work slowly to insure that the label is pressed tight to the side and is aligned between the ribs. Trim the panel flush with top of the side with an X-acto knife. Repeat for the remainder of the panels.

The 36 riveted flanges for the side ribs are 5/64” strips cut from labels, with a line of rivets embossed along their centerline. Cut the flanges to 2” lengths. With a small set of tweezers, place a flange on either side of each rib. Press tightly in place with a dull X-acto chisel blade. Trim the flange at both the top and bottom edge of the side with an X-acto knife (See Figure 17.)

Next, we’ll make and install the parts that replicate the insides of the side panels...
of the car. Prepare six inner side panels and four splice plates from labels as described in Figure 13. Place one of the sides with the upper edge against the fixture guide with the inner side up. Align the center of the side with the centerline marked earlier on the guide. Peel the backing from the center panel and press it onto the side keeping it against the top edge of the side. Add the two other panels. Add two 3/32” splice plates (with two rivet lines) centered over the two gaps between the three panels. Repeat for the other side of the car (See Figure 18.) At this point, we can spray both sides of each side assembly with two light coats of clear gloss coat (Let the first coat dry over night.) This will seal the paper label surfaces for painting.

Assembly

Now, we’re ready to start the final assembly of the car, so let’s start with the ends. Install the underframe assembly onto the frame, making sure the top of the sub-floor is up. Place spacers under the end of the frame so the end will sit flush with the bottom of the frame (See Figure 19.) Drill four #74 holes into the frame, using the lower grab iron holes of the end as a template. Insert two straight-type grab irons through the holes; apply CA adhesive on the protruding ends of the gras and on the end of the frame. Hold the end in place and push the grab irons into the holes. Space them from the end using a 1/16” square piece of wood. Repeat for the other end. Remove the car from the frame fixture. Then, per Figure 20, cut the floor, two bolster plates and three floor ribs from 0.010” Styrene. Emboss the rivet lines as shown. Brush on a very thin layer of ACC on the sub-floor. Align the floor to it and press it in place. Using liquid plastic adhesive, glue the two bolster plates and three rib plates in place on the floor. Cut two 5/32” wide rivet strips 2-3/8” long and glue to the floor against the ends. Cut two 5/32” wide rivet strips 3/8” long and glue to the top of the coupler blocks.

Now, we’ll install and complete the sides. Brush on a small amount of CA on the inner end flanges on one side of the car. Bend the side outward slightly and slide it behind the end flanges. Assure both ends of the side are flush with the top of the end flanges. Repeat for the other side. Turn the car over and set it on a 2 x 4 block. Clamp the sides against the floor using two small bar clamps. Run a small bead of plastic glue along the side/door interface. Now, cut two upper side channels from 0.156” Styrene channel, 10” long, and glue to the top edge of the sides. Insure that the inner edge of the channel is flush with the side. Make two pairs of side-end corner plates, per Figure 6, and glue to each corner with CA. Using the grab iron holes on the corner flanges of the ends, drill through the sides. Use a small square to measure 3/8” horizontally at each hole and mark the location of the other end of each grab iron on the side. Install the grab irons with a small bit of CA on each. Use a straight-type grab iron in the top holes on the right end of the sides. Use drop-style grab irons on next three sets of holes on the right end, and on the top two sets of holes on the left end. Cut off the top set of holes on each of the four corner steps. Mount the steps, with a drop-style grab iron on the right end of the side, and with two pins on the left. Snip off the ends of the grab irons and pins on the inside of the car. Install a vertical rivet strip on the inside of each side against the ends. Now, cut two 0.030” x 0.060” x 10” stiffener strips. Glue each at the floor and the lower edge of the sides with the 0.060” side against the car sides (See Figure 21.)

Now, it’s time to add the underframe details. Cut 14 floor joist angles per Figure 6. Glue one to each rib and to the inner care side. Glue a 5/16” rivet strip to the top of each rib next to the angle. Cut twenty 5/32” wide rivet strips to fit between the ribs and bolsters against the sides; glue in place. Install train lines...
through the holes in the bolsters and floor joists. Form the ends to fit into the holes in the center sill. Cut off the air lines of the Intermountain brake system components and replace with 0.025” diameter brass rod. See Figure 22 for mounting locations. Cut off two stanchions to 1/4” long. Mount these in a 0.032” hole in the end stiffener at the ends of the train line. Add the shutoff valves for the gladhands. Attach them with CA. Drill another hole 1/8” from the side to hold the cut lever. Form four pulling rings from 0.020” brass rod. Bend to a 5/32” diameter half circle with 1/16” ends. Flatten the ends and CA to bottom of sides, 5/8” from the each end.

Moving on to the end details, we’ll start with the “B” end. Cut the clevis from brake wheel rod and shorten the rod. Reattach the clevis using a short length of brass tubing. Glue the brake wheel box to the mounting plate with CA. Locate the retainer valve between the ladder and the brake wheel. Cut a 1/4” x 9/16” piece of open grid roof walk for the brake platform and attach it to the brackets (Figure 23). Form the cut levers from 0.025” brass rod using the dimensions in Figure 10. Drill a 0.025” hole at the center of the lower edge of the Kadee draft gear box. Cut two stanchions to 0.5” length and bend the ring end 90°. Slip the cut lever into the stanchion and install the stanchion in the hole in the end stiffener, gluing it in place with a drop of CA. Press the other end of the cut lever into the draft gear box. Repeat the cut lever assembly process on the other end.

We’re now ready to finish the car. I painted the car flat black. As an alternative to airbrushing, I used Model Master Flat Black in an aerosol can with excellent results. See Figure 24 as a guide for installing the decals. The “C&O for Progress” decal required several cuts to fit on either side of the ribs. Set the decals with an appropriate decal setting fluid. I then applied Testors Dull Cote to the entire car. Install your favorite trucks and couplers and add the air hoses and gladhands. I weathered my car with pastel chalks. Add a few bits of real coal in the corners and put the car into service on your railroad.
Creating Rivet Lines

The Riveting Tool is a modified clock gear installed on a rectangular wooden handle. The handle is a 3/4” x 7/8” x 9” clear pine board. Glued to one side is a 1/4” x 3/16” wood spacer strip. The 1” diameter, 72-tooth clock gear was modified by filing off every other tooth for a rivet spacing of about 2”. The tips of the teeth were flattened slightly with a file. The gear has a 3/4” long, 1/8” diameter shaft with a smaller gear swaged to the shaft side. A 5/32” hole was drilled through the board and a length of 1/8” ID brass tube was pressed into it for a shaft bearing. The location of the hole was set so that the tips of the teeth would be 1/32” below the lower edge of the board. The flat side of the gear is recessed 1/32” from the outer edge of the spacer strip. A brass strip was shaped and mounted to retain the gear in place.

This Riveting Tool is used with the Construction Fixture (See Appendix 3.) A piece of light cardboard (the one from a pad of paper is best) is placed against the guide on the fixture and is held in place with a few pieces of double-sided Scotch tape. Place the material to be riveted against the guide. Secure it to the cardboard with a length of double-sided tape. For labels, use masking tape. Place the Riveting Tool against the cardboard, line up the “X” tooth and “roll” down the first line of rivets along the length of the sheet. Place a 0.010” strip of Styrene against the first one and “roll” down the second rivet line. Continue adding strips and rolling rivets until the desired length of flanges is achieved. With a fresh # 11 X-acto knife guided by a cork-backed scale, cut the flanges to create the desired shape.

A similar method is used to create riveted flanges for floor joists, bolsters and side panel angles. Put several pieces of double-sided tape on sheet of 0.100” Styrene sheet and place it against the guide. Place a 0.010” strip of Styrene against the guide, and “roll” down the first line of rivets along the length of the sheet. Place second 0.010” strip of Styrene against the first one and “roll” down the second rivet line. Continue adding strips and rolling rivets until the desired length of flanges is achieved. With a fresh # 11 X-acto knife guided by a cork-backed scale, cut the flanges to create the desired shape.
Scratchbuilding Fixtures

The Construction Fixture is a 3” by 24” piece of basswood with a 1/2” wide guide along the long side. It is used in the fabricating of car sides, roofs, and various panels. A major part is placed on the fixture, tight against the guide, and taped down. It then can be scribed, held while other parts are added perpendicularly to the long edge, or just held securely when details are added. The fixture can be used to hold material while rivets are embossed into it. The guide provides the straight edge to guide the riveting tool.

The construction fixture is 4” by 24” piece of basswood with both centerlines scribed on it. The truck centerlines are located on the board and holes are drilled. The holes are countersunk on the backside of the fixture. Screws are used to hold the floor and center sill to the fixture. The entire underside of a car can be built up on the fixture, which keeps everything flat during construction, and helps assure minimum damage to any small component.

The End Fixture is a 2-3/4” by 6” piece of 3/4” white pine. An O Scale car end fits snugly onto the fixture. A 3/4” square wood strip, mounted with a wood screw, acts as a clamp to hold the car. The fixture can be held in a vise or clamped to the workbench. Tasks, such as modification, drilling, or installing details, are much easier when the car end is securely held. The fixture can be also be used to hold a kit, like an Intermountain boxcar, for detailing.
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Recently, I resurrected a locomotive project that had lain dormant for many more years than I’d like to admit. It was just time to finish these up, though I didn’t really have a lot of free time to devote to it. Still, the tarnished bare brass and dust were a visual irritating reminder of how little time I’ve been devoting to my modeling lately. I split the task up by sending Joe Foehrkolb an invite to join the fun and frolic. A couple weeks later, I had a pair of B&A J2 Hudson mechanisms in hand, and I’ve been happily detailing up the superstructures that Tom Harley had made sand boxes for, and changed the feedwater heaters on. It’s typical brass-bashing at it’s best, smoke curling around the magnifier, the smell of solder, that gentle “click” as another piece of brass something-or’-nother breaks its bond from the mother structure, and the mournful far-off wail echoing off the distant hills when that smoking part lands in my sock. A couple of old Sunset K5 tenders are ready for the paint-booth, after which they’ll be mated up with the two J2’s rising from the rubble. There was a time when I had the freedom to sit down for hours on end, reveling in the relaxation gleaned from the rampant destruction of multi-thousand dollar brass locomotives. “Flame on!” I had to change my tactics just a bit from those days, but I still find something new to learn as my needle on Scace’s Neurotic-O-Meter continues to creep up, even after all these years.

For some of you, especially the newly polluted, the word “scratchbuild” or “kitbash” creates a mental image combining Merlin, Freddie Kruger, and Australopithecus. Lately, the feature articles in OST have had a pretty heavy emphasis on scratchbuilding and kitbashing individual pieces. Our scale tends to attract people who enjoy these pursuits. Most of you who are recent converts, though, might wonder what all the fuss is about. Coming from the Hi-Rail World, you’re used to (and still may well revel in) the overall aura of sound, smoke, and action. Where the check valves were on a Hudson mechanisms in hand, and I’ve been happily detailing up the superstructures that Tom Harley had made sand boxes for, and changed the feedwater heaters on. It’s typical brass-bashing at it’s best, smoke curling around the magnifier, the smell of solder, that gentle “click” as another piece of brass something-or’-nother breaks its bond from the mother structure, and the mournful far-off wail echoing off the distant hills when that smoking part lands in my sock. A couple of old Sunset K5 tenders are ready for the paint-booth, after which they’ll be mated up with the two J2’s rising from the rubble. There was a time when I had the freedom to sit down for hours on end, reveling in the relaxation gleaned from the rampant destruction of multi-thousand dollar brass locomotives. “Flame on!” I had to change my tactics just a bit from those days, but I still find something new to learn as my needle on Scace’s Neurotic-O-Meter continues to creep up, even after all these years.

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Your model is the railroad in its entirety.

Bringing those concepts into our world is good, though it can be a bit frustrating only because the availability of these components is a little more problematic. You’ve joined the rest of us because of what I term a “rise in neurosis level”. What was acceptable a couple of years ago is so no longer. Your needle on the Neurotic-O-Meter is slowly creeping up, just like mine. Accepting that as true, two things will happen. Either you’ll reach a “good enough” plateau, or your ever-tightening self-set standards will make you revisit various elements and improve their fidelity.

One major step in that rise is the desire to redetail something commercially available to your new standards level, or replace it with something you’ve built yourself. Elsewhere in this issue, you’ll find a review of the new K-line B&A Berk. It is pretty typical of the new wave of modestly priced motive power that has helped make the transition to O Scale more attractive to folks from both the smaller scales and the Hi-Rail community. That jump of the needle is much easier than it was ten years ago.

I was a bit hard on that model. For most of us it is just fine, with good general form, lots of details, decent running characteristics, and a price that most will find palatable. For me, it doesn’t measure up to my level of neurosis. Now, I have a few choices. I can whine about it, which is really pretty counterproductive. I could lower my personal standards, which really doesn’t satisfy my reasons for being in this hobby. Even after some forty years in O, I’m still on my learning curve. My needle, she climbeth.

My third choice, which ties this whole boring treatise up in a big neat bow, is to accept what is good about it and hone my skills such that I can excise all the stuff that’s flat “wrong” and redetail it to suit. In short, it has great potential as an enjoyable kitbashing project for the neurotic. If your needle plateaus at some level, that’s fine. However, you came here for some reason, which tells me your needle hasn’t stopped climbing yet. As it continues to creep up, you’ll hone some new modeling skills so that you can meet your own expectations. Our goal is to alleviate some of the anxiety that comes with unfamiliar territory.

Suddenly, you may find that you’ve become one of us old neurotics. Someone will look at you, one day, with loathing on their face and that “rivet-counter” epithet on their curled lip. It’ll feel good, too. As long as you’re on that learning curve, there’ll be something new and fresh right around the corner. Try your hand at some of the building projects in these pages. They aren’t hard, and the skills you’ll gain open up a whole avenue of options for your railroad. Also, the exploration of new areas will rekindle and sustain your enjoyment and satisfaction.

So what did I do about the new Berks? I bought two. It only hurts as long as it takes for the first part to hit the floor!

Let’s Go Exploring!
I have been promising something on Hawk ever since the column began, so I guess it is time to deliver. Many O Scalers have come across their plastic kits for San Francisco cable cars, and may have wondered why the manufacturer of such well-designed models never produced other railroad items (I believe Testors later bought the dies from Hawk, but I do not think even that re-issue is currently available.) Traction modelers have found them especially useful for kitbashing into older prototypes.

Actually, Hawk DID produce O Scale models a very long time ago. My first exposure to the company, however, was their well-done plastic kits for historic aircraft models, back in the 1950’s, a very different technology from their pre-war conventional and much broader line. Only gradually did I start stumbling among vestiges of that line. Perhaps those readers who get to O Scale shows will have noticed orange and pea-green boxes on tables, with a logo that looks a great deal like the Maltese Falcon on them; this is the packaging for the Hawk Model Aeroplane Company of Chicago.

As I noted in a previous column, the Hawk Company was one of those vertically-integrated businesses that operated a retail sales outlet, a wholesale distribution network, and basic manufacture of hobby items to supply both. They offered a full line of models: aircraft, boats, racing cars, and trains (in both the classic O Scale and the new-fangled HO), as well as many craft items. I have never been clear as to what extent such operations actually produced any or all of their proprietary hobby items in-house, and whether some may have been contracted out. Certainly, in the case of the Hawk car kits and parts line, that would have required a decent wood shop and a modest foundry.

The crown jewel of their train offerings was a credible model of the brand-new EMC (the Electro-Motive Corporation, using mostly Winton prime movers, rather than the reorganized EM Division of General Motors) SC/CSW Diesel switcher. Further information on the prototype can be found (in decreasing order of usefulness) in John Kirkland’s *Dawn of the Diesel* (out-of-print, currently available.) Traction modelers have found them especially useful for kitbashing into older prototypes.

As the description in my copy of the Newark Electric Company (323 West Madison Street, Chicago) model railroad supply catalog states (and I quote), “Used on the Nations’ largest railroads and may be lettered for any of them. Ideal for switching service because of its compactness. Will negotiate your sharpest curves. Only the usual run of hand tools plus a few drills and one tap are required to complete the job.” (Clearly a knowledge of drilling, tapping, and soldering is assumed.)

- Designed by W. J. Lenoir (I bet you didn’t know he did.)
- Powered by K&D #1 motor (their smallest, but not small).
- Trucks completely assembled. Power truck has gearbox installed with 20:1 worm gear.
- Motor mounts assembled on motor.
- Mainframe bronze casting. Front and rear steps cast separately with lugs for handrails and coupler lift bars.
- Body front cast bronze with grill detail.
- Body cast in bronze in two halves to incorporate all fine detail.
- Cab parts cut to outline shape of sheet brass leaving only the windows to shape.
- Reverse switch ready to assemble.
- Bell, exhaust stacks, horn, and tank caps turned brass.
- Automatic Couplers.
- 3- or 2-Rail, Price—Complete Kit: $32.50

From internal evidence (no date anywhere I could find), I’d guess this catalog is from about 1940 or early 1941, as all the Hawk line I’ve found in a 1939 catalog is there, with some additions. The economy was starting to recover to the extent that model railroaders could afford to buy things again, but war production needs had not yet stopped model railroad manufacture (the Lobaugh listings also concur with my Lobaugh 1940 catalogue). Again, from the catalog itself, Newark seems to have been primarily an electronic specialty house, supplying ham radio operators and experimenters, but starting to test the market for model railroad sales as well.

Very few of the locomotives have shown up, perhaps because relatively few were ever produced. It was not inexpensive when introduced, and, before long, WWII intervened and production ceased. When the war ended, Hawk does not seem to have reactivated their O Scale line, nor does anyone else seem to have picked up most of their dies, jigs and fixtures. Perhaps the new General Models NW-2 and its competitor, the Lionel semi-scale version, dissuaded potential manufacturers from competing in the Diesel switcher sweepstakes, as the new models’ production costs were less, relying on Zamac pressure diecasting rather than the sand-cast bronze or brass used in the Hawk kit.

As most of us model now, probably a minority of scale modelers choose contemporary prototype, although there surely is serious interest in it, as the many offerings available from Atlas, Weaver, K-Line, MTH, Lionel and all the other manufacturers (and the regular column by my colleague) indicate. A generation or two ago, however, when railroads were at the center of American life, modelers, both scale and toy, were fascinated by what they saw daily in front of them. Hence, most hastened to model the latest full-size innovation. Granted, both of the principal hobby magazines would have the occasional article about earlier period modeling. Also, there were a handful of “old-time” kits, but it was very much a specialized interest, more likely to elicit the response “How quaint/cute!” than a desire to reproduce a complete railroad faithful to older practice and context.

There is surely an opportunity for a column or two, recounting the various attempts to model the new Diesel from the late 1930s up through the early 1950s (by which time most modelers had begun to realize that the Diesel was a serious threat to the steam power almost all loved, and nostalgia began to enter the modeling picture). Some of them were well-conceived, others resulted in cartoon-ish products suffering from either ignorance of prototype engineering practice in an unfamiliar technology, or from relying on fanciful artistic representations of what the prototype was SUPPOSED to look like. Most O Scale modelers should exercise caution when encountering pre-1950s Diesel locomotives, but if you should find a Hawk sitting on a show table at a price under $100, you’d better grab it before I do. I’ve just told you how to identify it.

**Closing the Loop Department**

Not long ago I acquired a few more issues for my run of the Lang *Whistle*Stop magazine. In the May 1951 issue, I discovered
a notice that William Beeman (of RailCraft) had died unexpectedly, so he never got to enjoy the pleasant retirement I had conjectured. So far as I know, his estate did not arrange for anyone else to continue the line, and presumably some informal settlement disposed of the remaining inventory. Although it was possible to buy just the basic components and solder them together, the more usual sale was for an assembled body, leaving only details to be added. I do wonder if the box of parts sometimes found may not come mostly from the posthumous closing out of the line. I only just bought one of the unique (or so Ed Bommer assures me) B&O “More Service” experimental flatcars that RailCraft replicated (There is a very sharp publicity view of the prototype on George Elwood’s Fallen Flags website.) It gives me pause to reflect on what an impact the RailCraft line has had from a run of fewer than a dozen years (with almost half of that span inactive because of WWII shortages) by a spare-time producer. I wonder how many current manufacturers will have hundreds of cars still in service (or at least horded carefully in train closets) more than fifty years after they were produced.

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**MTH 2-RAIL LOCOMOTIVES**

<table>
<thead>
<tr>
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<tr>
<td>ATSF Northern</td>
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<td>CNJ Blue Comet</td>
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<td>CNW S/L Hudson</td>
<td>$900</td>
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<tr>
<td>C&amp;O Greenbrier</td>
<td>$975</td>
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<td>NKP Berkshire</td>
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<td>SP AC-6 CAB FWD</td>
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<tr>
<td>T&amp;P GP9</td>
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Building a Small O Scale Layout
Part Six
Michael Culham

In Part Five (OST #22), we talked about ballasting the track. The next step in completing the overall scene is the modeling of groundcover. For our purposes, groundcover includes grass, weeds, small shrubs, trees and a gravel parking area. Doing the groundcover is just as easy as ballasting; it is just a matter of taking your time and following the techniques that I am about to show you.

Earlier in the series, I mentioned about taking photos of prototype trackwork for reference. I also find having some shots of the area around the tracks beneficial as well, so go out there and take some photos. From these photos, one can get a good feel for appropriate groundcover features. As I am modeling an industrial area, I went out and took some photos around the industrial area near where I live (See Photos 1-4). This gave me ideas on how to do the scenery around my tracks.

I usually do the groundcover just after I have done my ballasting, while the glue is still wet. If the glue has dried, don’t worry. You can always add some more glue when we get to the point where we add grass and weeds to the track area.

Remember back in Part Five when I mentioned using a margarine tub for the glue mix? I also use these empty tubs to hold my scenery materials, as you can see in Photo 5. Also, save the lids so you can close up the containers when you are not using them. I find that using these containers makes it easy to grab some of the scenery materials, instead of trying to fight it out of the bag.

Speaking of scenery materials, here is a list of the materials that I use. These are all made by Woodland Scenics:

- Part# T49  Blended Turf
- Part# T63  Coarse Turf (Light Green)
- Part# T64  Coarse Turf (Medium green)
- Part# FC183 Clump Foliage (Medium Green)
- Part# B74  Fine Ballast (Light Gray)
- Part# T44  Turf (Burnt Grass)

With all these materials at hand, make up another batch of the white glue mix, and we’ll get started.

Making The Grass Grow

The first thing I do is put down a base coat, as I like to call it. Here is how I do it. First paint on some of the glue mix with a cheap half-inch brush, covering the area between the ballast (Photo 6). Next, take some of the Blended Turf (Part# 49) and sprinkle it over the glue, making sure that the whole area where you have spread the glue is covered (Photo 7.) I should mention here that I only do small areas at a time, say about a six to eight-inch strip. If you try to cover too much of an area, the glue...
will start to set up and will not hold down the material. You will
do the same with the areas on either side of the tracks, as you
can see in Photos 8-10.

The next step, if you are going to do a weed grown right-of-
way as I did, is to sprinkle some of the material over the track

area (Photo 11). If you are modeling a main line, you won’t
need to do this step. If the glue has dried on the ballasted area
of your layout, just use an eyedropper to dribble more glue mix
in the areas where you want the weeds.

Now that the base coat is done, the next step is to create the
weed effect. What I use here is a 50/50 mix of the Coarse Turf

(Part#s T63 and T64). This mixture is sprinkled over the area,
as you can see in Photo 12. Don’t put a lot down, just a light
sprinkling.

The next step is to add the Clump Foliage (Part# FC183). I
like to use this material for small shrubs and large weedy areas.

Take pieces of the clump foam and spread them around in the
area beside and between the sets of tracks, as in Photo 13.
Next, dribble some of the glue mix over the clumps with an
eyedropper (Photo 14). Then, sprinkle some of the Blended Turf
(Part# 49) over the clumps (as shown in Photo 15). This gives a
leafy effect to the clumps, as you can see in Photo 16. One thing that I do, after I have finished applying the ground-cover, is to run my finger along the top of the railhead to wipe off any material that may have landed on it. I do this while the glue is still wet (Photo 17). After the glue has dried, vacuum off the area to remove any loose material and then sand off the railhead.

You can use these same techniques in the area around the turnouts, as you can see in Photo 18. I also used the same techniques to finish the spur in the back of the scene. All that’s left to do now is the gravel parking area.

Making the Graveled Area

In the scene that I have been working on, I had to put in a gravel parking area; this is quite easy to do. What I used for the gravel effect is a 50/50 blend of the Fine Light Gray Ballast (Part # B74) and Turf (Part # T44), mixed into one of those handy margarine tubs.

I painted on some of the glue mix on the area where the
That's it for now. Happy Holidays.

Then you should have a realistic scene like the one in Photo 21. That was easy, and now your layout is starting to look more realistic.

I have more scenery tips that I will be covering as the series progresses, plus we’ll get into building and detailing structures. That’s it for now. Happy Holidays.

Until next time

Happy modeling.
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26 • O Scale Trains - Nov/Dec ’05
“This business will get out of control. It will get out of control and we’ll be lucky to live through it.” Admiral Josh Painter's famous quote from the hit movie *The Hunt For Red October* seems to sum up the current state of affairs for the world of three-rail model trains. As a life-long Hi-Railer, I am concerned. Even as a Hi-Railer in transition, I am concerned. Most of the major players in the 3-Rail market are involved in some sort of legal battle. This old hobo thinks it is best to stop and reflect before catching the next train out. That train, for some, may have already left the station.

Copycats have always been with us. Whether they are copying your grade school arithmetic assignment or stealing the plans, technology, and research of a major company, they are still copycats. It is a case of the haves vs. the have-nots. Those with the might always think they are right. Do the ends really justify the means? It all adds up to this. Shortcuts were allegedly taken to gain the competitive edge and protect the bottom line, but at what cost?

I think Charles Darwin would smile at the evolution of the 3-Rail model train hobby. As in “the survival of the fittest”, it seems to have started out as an early lifeform down low on the hardwood floor. Running in a tight circle, the Evergreen Loop had one tree in the middle of the layout, albeit one very large tree (decorated with tinsel and lights). Even in those early days, competition was fierce between the flyers and the other lines and they even got into some scraps. Everybody had a model train, especially during the holidays. Through some very creative marketing, it became the standard in many a household, and part of Americana. Gradually the model railroad crawled up from the hard floor to the kinder, gentler, floor covering where it operated under the name of Carpet Central. This time, it outlived the normal two-weeks-in-December lifespan and actually stayed longer than expected. In time, it even gained the competitive edge and protect the bottom line, but at what cost?

Today the 3-Rail hobby has come a long, long way... or has it?

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Today the 3-Rail hobby has come a long, long way... or has it?

All of the current upheaval, between 3-Rail manufacturer accusers and accusees, is really hurting the growth of the hobby in a time when competition is fierce and product is plentiful. More is definitely not necessarily better. The hobbyist finds himself in the pawn position on a very large chessboard. It has been reported that one of the large companies involved in the fiasco spends tens of thousands of dollars per day on legal fees. Now this old Hobo is a man of means by no means, to be sure. What if all that money could be used to develop new technology and exciting new products? Just consider it.

And it’s not just the money. In addition to the huge financial costs, this creates another problem: polarity. This is not the polarity dealing with AC or DC current, but the results are just as shocking. This is polarity of people taking sides with their preferred manufacturer, a sort of brand loyalty. This is really a big deal for my Brothers of the Third Rail. Such emotion about which is better or best adds to the turmoil. Not since the War Between the States have we seen such lines being drawn. “Survival of the fittest”

As a Hi-Railer in Transition, I note that my friends in the Scale World do not have loyalties to one given manufacturer. O Scalers smile as they watch all of these legal battles; since they have no real stake, they have nothing to gain or lose. Their focus is on modeling, scale fidelity, studying prototypes, and enjoying the model train hobby. WHAT A BREATH OF FRESH AIR! Who would have thought that one additional center rail could cause of all of this commotion?

Charles Darwin and J. L. Cohen might have concurred that a lot of the problems evolved when toy train manufacturing left “Made in America” for foreign soil. It seems to suggest that, when that occurred, quality control and business integrity went south... and not just to Mexico (like it did for MPC Fundimensions). What business ethics, if any, are practiced by foreign Tim-buck-toos remains a question. “It happened over there”, becomes a convenient excuse. I suggest that, once the executives of American toy train manufacturers allowed others to make decisions, with or without their knowledge, the deeds were done. This all happened on their watch. They signed off on it and they did it to themselves.

As I ponder over all of this turmoil I come to this conclusion and offer a simple solution. This is a hobby. It is supposed to be fun. If you are finding that your 3-Rail world is turned upside down, and you are depressed and not enjoying your trains as much, join this Hi-Railer in transition. Hey, everybody switch over to 2-Rail!
Modifying Your Layout

Don’t be frightened to change things on your layout and hold up operations while doing it. Just like the real thing, my Bay Ridge Harbour Rail Road (BRHRR) has made changes while operations continue uninterrupted.

On the BRHRR at North Brooklyn there was once a small narrow gauge line that served Pier 6. The management decided, after many years, that the line was not paying its way and had to go (Sound familiar?). In its place a new industry was formed, the Stilgoe Printing Works. This industry is now served by a long standard gauge siding resulting in an increase in revenue for the BRHRR.

The photos show the before, during and after construction look (the scenery that was not altered) giving you a guide to the changes that were made.
As much as I admire those modelers who capture the tiniest details of the prototype on each and every car, engine and building, I just don’t share that vision. I don’t want to “re-create” a railroad, I want to create my own. The interurban railroads had a few suppliers who did provide the basic cars they needed at first, but to grow and meet their own needs required craftsmen with ingenuity. To meet their own needs, they built or rebuilt what they had. I wanted to capture the vision of the actual builders and recreate that experience, so here is an interurban combine as it is rebuilt to suit my world.

The year was 1912. The Rapid City, Black Hills & Western was prospering, running train after train of tourists to a town called Hot Springs, SD. The people came from long distances to “take the waters” and enjoy the healthful hot springs and large sumptuous hotels of this early tourist Mecca. They came with sons and daughters, dogs, and even horses. But they also came with many, many trunks of clothes and sports equipment. To accommodate the desires of the ridership, the Rapid Canyon Line had to have a combine that could haul people, trunks and whatever else was required and do it in style. Glossy brochures touted the beauty of the Black Hills, so wide windows, a fine look and a large body were required. It also had to match the rest of the cars in the train, so the railroad set its shop foreman to the task of converting an existing car into the type of car that was needed. The shops could easily handle the job and they went about blanking out windows, designing, and installing a second baggage door that would match the existing doors. When this was accomplished, the car was freshly painted and lettered and set out at the front of the premiere train to Hot Springs each day. This article describes this conversion.

The Kit

If you have never had the pleasure of building a LaBelle kit, you have been missing a great opportunity. Photo 1 shows the kit as it comes out of the box. These are not peel-and-stick kits. Be prepared to add a little wood or remove a little wood or make a piece that needs a special shape. It is this adjusting and fitting that lets you experience that feeling of creativity that I truly seek and enjoy (and remember that old modeler’s axiom, “No amount of sanding will make a piece longer.”) The beauty of the design of these kits is that they are built in layers and can be quite easily modified to suit your needs. They demand concentration and fore-thought, however. Fore-thought means read the directions first and/or plan your work well ahead. Detail parts
are separate and easily adapted to your railroad’s needs. I use yellow glue for wood-to-wood attachments (with weights and waits) and CA or epoxy for all other types.

The Sides

Photo 2 shows the sides as they are being modified. The sides are assembled as per the instructions up to the fifth window from the oval window. The best procedure for blanking out the other windows is to use a piece of strip wood for the bottom layer set into the lower window frame, and an overlay of scribed 1/32” wood to match the existing sides. Then, cut out that one window (or wider) while leaving a strip at the bottom, to provide rigidity for the side. Make sure that the strip you left matches the width of the strip at the bottom of the baggage door. The door is made from 1/32” wood cut to match the width of the previous window and a height that reaches the top of the side, just like the existing doors. The window arrangement is optional but, just as the real people did, it must be of the styling and nature of the existing doors and windows. I used the existing doors as a guide. Frame this door opening with strip wood in the same manner as the other doors. The space below this door then can be finished to match the other baggage door. Finish the sides as per the instructions. I usually leave the wooden strips that are to be mounted across the inside of the bottom of the doors until after the sides are mounted to the floor. Do both sides.

The Floor

Using the finished sides measure the floor against them. They should fit snugly against the notches in the floor end pieces. Cut or lengthen the middle floor piece to make a good fit. I usually make the roof removable, so that is what I will show in this article. It is fairly simple to make the middle floor piece the removable part, if you prefer, simply by leaving the middle section unglued. For a removable roof, carefully glue the three floor pieces together, making sure they stay straight and level. Now, attach the end formers to the floors as shown in the plans, making sure that you differentiate between the baggage end and the passenger end. What needs to be considered now is how and where you intend to mount the trucks. Since this is a combine, the logical place to put the power truck is in the baggage end. I mounted the trucks 3-1/8” from the ends as measured along the center line. This provides enough clearance for the trucks to swing without hitting the steps. I have managed an 18” radius with these big cars. First consider which way you will mount the trucks, gear forward or motor forward. Then using your trucks, measure the swing clearance needed and cut a hole in the floor of the necessary size (You can later cover over most of this hole.) You will also have to allow room for the wiring, if you intend to bring that up into the body. See the drawing for the size I used. Make sure you leave enough floor to mount the body bolster (which is provided with the trucks). Carefully measure all these things out before actually cutting the floor. Don’t mount the body bolster until after the body is completed.

Attaching Sides and Ends

The sides can now be attached to the floor, ensuring that they stay at right angles. I usually attach one side first, using large angle plates from Micro-Mark, along with several heavy weights and a few clamps to hold everything in place. Make sure that the bottom of the side is lined up correctly with the floor pieces. It is easy to let the side slip up during this operation. Once that side is dry, it is easy to glue the other side in place and attach the end formers, making sure they are vertically aligned with the end formers attached to the floor. At the same time, make sure that the second side is correctly upright and lined up with the floor pieces, just like you did with the first side. You can now do the ends as per the instructions. I add small pieces in between the scribed board and the end pieces to provide a stronger mounting and to ensure a nice even curve. The ends should now look like those in Photo 3. The carbody can also be easily modified, by putting a train door into each end, with only a little more work. Once all the pieces that form the ends are in place, use the roof to mark the letterboard filler pieces to the correct radius. Then, attach the end letter board after a short soak in water to make it easy to bend. A few clamps will be needed for this operation along with a bit of patience. When you have finished all these steps, you will have a strong wooden body ready for the roof.

The Roof

The roof is a bit fussier. First, check the length of the roof and mark it using the body. Also mark the ends of the roof and the body so that you will know which end is which. Next, glue in the small pieces that finish the windows, and the filler piece that goes from the end of the windows to the end of the roof. Using the template marked “Y”, make four pieces as shown in Photo 4. Bevel the inside of these pieces (Remember that you have two different sides!) at about a 45-degree angle where the piece will fit to the lower roof. Now, sand the ends of the roof to the desired length; then sand the lower roof to approximately the curve shown in template “X” in the instructions. Achieving a nice round contour is not all that difficult. Hold the roof
in one hand and begin filing at about a 45-degree angle to the roof edge. As you file, rock the roof gently back and forth and you will very quickly begin to achieve a nice rounded contour. I use needle rasps, jeweler’s files and nail files for this operation. Now, very carefully cut away (less than you think you need) the roof overhang and glue the four roof-overhang pieces in place as shown in Photo 4. When this has dried thoroughly, get your motor tool and sanding drum out and contour the roof to an acceptable shape. You will find that this is not all that difficult. The use of a motor tool seems to lend itself to making a nice round contour. Take care not to remove too much. Then finish to the final shape with a sanding stick or sanding block. I use fingernail files, the large wooden cheap kind. Now use your shop vacuum, as you and everything around you will be covered with sawdust. It smells so nice but it makes you sneeze. Try not to sneeze when the motor tool is in use.

**Attaching the Roof**

There are several ways to make the roof detachable, which you will need to do if you want to finish the interior. One way to do this is by simply drilling a hole through the floor (for the screwdriver) and another hole through the upper end former and attaching the roof with a small, short woodscrew or sheetmetal screw. When this is in place in the finished model, it will be almost invisible (or you can swear it is an overhead light fixture). You need to plan where the hole in the floor will be in relation to your coupler mounting and interior furnishings. Another way to mount the roof is to place strong magnets in the roof ends and put a piece of steel in or on the end formers. Mill out the hole for the magnet, leaving just a slight space for some Epoxy. After the steel piece is attached to the body, place the magnet on it. Check the roof for fit and put a glob of Epoxy on the magnet, put the roof in place and hold it all together with a couple of weights. This will ensure that the magnet fits down onto the steel piece. Make an aligning dowel by holding the roof exactly where you want it and drilling a hole down through the roof and end former. Then, place a dowel into the hole, glue and sand. Photo 5 shows how my roof is done. After painting, it won’t show at all.

At this point, you have a basic body ready for finishing.

**Wiring and the Interior**

How much work you put into the interior is up to you. My philosophy is that the interior will only be seen in relation to the exterior. That is, if you had nothing inside, it would jar your eye and wouldn’t seem complete. Seats and only a few other details, painted so that they don’t draw your eye from the overall view of the car, will make the mind see the car as complete. Finishing the insides of the walls and putting in some partitions is fairly easy. Go as far as you like. When you wire this car, you will need some place to put all those wires and, perhaps, a decoder. Plan for this now. There are several ways to wire interurban cars, so a detailed plan will be needed. I use the simplest way, with outside third-rail shoes, pantograph and trolley pole as one side of the power and both trucks as the other pickup with a decoder in between and a small plug from the roof to the floor. You will notice that my car is single-ended and needs to be turned at each end of its run. That is another consideration when wiring this car. Wiring can be internal or under the floor. I usually put everything inside. Wire the car after all painting is complete.

**Couplers and Truck Mounting**

As all my trains are required to be able to couple to regular freight cars or interurban express cars, I use radial couplers made from Kadees, mounted at standard O Scale height on most of my cars. They are simple to make. Cut two pieces of 1/4” x 1/8” rectangular brass tube and two pieces of (at least) 5/32” brass angle. Cut the tube slightly longer than your required swing radius (I use 1-1/4”) and the angle slightly more than 1/4” long. Solder the angle to the end of the tube so that it faces back over the tube and is about 1/16” above it. Simply place a piece of wood of the desired thickness between the angle and the tube, hold it all down with a heavy weight, and solder. Open the end of the tube with a drill and files. Cut the angle to about half its width and round the corners. If you use Kadee couplers, as I do, cut off the shank of the coupler at the point where it widens out and thin the shank so that it is a press fit inside the tube. Glue the coupler into the tube with Epoxy. Drill a hole at the radius point to accommodate a #2 woodscrew. Cut two pieces of brass (about 0.020” - 0.032” thick) to the same radius and shape as shown in the drawings. Glue two pieces of wood to the floor so that it supports all but about 1/8” of the radius part of the brass shape where the angle will slide. Now, glue the coupler support to the wood so that it lines up with the bumper of the car. Make sure this brass lays flat and is free of burrs. Mount the coupler with a small washer and a woodscrew which is short enough so that it won’t protrude through the floor. I usually hold the coupler in place and mark the screw location while rotating the coupler. Check for free rotation. Normally, the pilot will keep the front coupler from rotating too far. You may have to arrange some sort of stop for the rear coupler if you don’t have a pilot at that location. With a little more work, a close-to-prototype coupler can be made. I go for functionality first. Photo 6 shows the completed radial coupler assemblies, one installed and one ready for the other end of the car. After the coupler assemblies are complete, mount the body bolsters, furnished with the trucks,
to the body. It is a good idea to drill a hole larger than the truck screw under the bolster, but not all the way through the floor, for the un-powered truck before mounting it. This will preclude you having to cut the mounting screw rather short. Use Epoxy to mount the bolsters. For the faint of heart, a couple of screws can be added. Attach the trucks to the car and check for proper coupler height. Add spacers as necessary. I use small springs on the attaching screws to stabilize the car.

**Painting and Finishing**

Now you can begin the process by which you turn this bare wood into a model. I start with an undercoating of sanding sealer. Then, I spraypaint the body yellow, inside and out. Paint the roof shiny silver. Do this with a large brush and don’t try to get it absolutely smooth. I once saw a picture of people applying this coating, and they were using a bucket and a mop. The silver stuff looked about the consistency of tar. Once the car is painted, you can begin to apply the detail parts. Although Photo 7 doesn’t show it, I paint the parts before gluing them in place. Like a good painting, you need to make some parts stand out to emphasize their existence and paint others to de-emphasize them. I use handrail parts that are slightly oversize and paint the chairs so that they contrast with the body color but do not attract the eye. A good reason to use sturdy detail parts is that they will withstand rough handling. I spent 28 years in the US Navy and I had to make things that would stand up to all those constant moves. I still model that way. Place the other detail parts where you wish and you are ready for lettering, followed by a good overspray of gloss clearcoat. My decals are printed by Rail Graphics Custom Decals. My railroad requires all cars to have a roof walk and a platform under the pantograph. I use strips of scale 2 x 10 for this. There seemed to have been no consensus of opinion about roof walks in the interurban world. There are satisfactions that the wiring is correct, you can add seats and paint other details. I placed a control set and a pilot at the baggage end of my car, as it is intended to be single-ended and turned at its destination.

**The Completed Car**

At this point you have a car ready for service (perhaps after a bit of touch-up painting). I have outlined a rather basic car in this article with the idea that you will take it from here. Much more can be done than I have shown. Did I make a contest-ready model? No. Does my car have a few warts? Yes. Did I achieve my objective? You bet! I “imagineered” a car (as Bill Kee used to say) that is just the car that my railroad needs. I built it, experienced that building just the way real people did so many years ago (though mine is in a slightly smaller scale), and produced a fine unique car that will serve my railroad well. The experience of designing and building that car is what keeps me in this hobby (more years than I care to count).  

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**Parts List**

<table>
<thead>
<tr>
<th>Q-Car Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O-255 Northern Indiana Combine Body (60' - 6&quot;)</td>
<td>1 each</td>
</tr>
<tr>
<td>C5389 Interurban Steps</td>
<td>1 set</td>
</tr>
<tr>
<td>C5138 HL Controller Set</td>
<td>1 set</td>
</tr>
<tr>
<td>UB123 Underbody Set</td>
<td>1 set</td>
</tr>
<tr>
<td>C5077 Highback Plush Seats</td>
<td>28 each</td>
</tr>
<tr>
<td>B055 Knudson SB Retriever</td>
<td>1 each</td>
</tr>
<tr>
<td>C5004 Handrail Post</td>
<td>18 each</td>
</tr>
<tr>
<td>C5024 Trolley Pole Base</td>
<td>1 each</td>
</tr>
<tr>
<td>B150 Pole Hook</td>
<td>1 each</td>
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Coming Soon in “O” Scale...
The Pennsylvania S-2 Direct Drive Turbine 6-8-6

Only Key imports Inc., can produce this engine as it was in both the “as built” and “as modified” version. In “O” Scale this massive experiment in latter day steam powered locomotives. The HIG WHOOSH, as it was called, weighed in at one million pounds plus and was quite capable of handling the fastest passenger trains that the Pennsy had to offer. Painted & Lettered – you won’t believe the detail on this “Key Classic”!

Always inquire about Key Imports models through your nearest Key dealer.
Modeling the Sacramento Northern—Online and Offline

Few prototypes offer as much diversity and as many interesting points of modeling interest as the Sacramento Northern. There are numerous reasons to consider modeling all, or just selected parts of it. I’ve been attracted to the Sacramento Northern ever since I first encountered the picture of a steeple cab engine and train sitting on top of over 4,000 feet of collapsed trestle in the first edition of William D. Middleton’s *The Interurban Era* many over years ago. (Let’s just forget how many!)

The Sacramento Northern’s diversity begins with operating environments. Street running in cities and towns was accompanied by extensive private right-of-way operation, with numerous bridges, trestles, and tunnels. For several years, the Sacramento Northern served San Francisco via the Bay Bridge and an elevated viaduct leading to the modern downtown East Bay terminal. Different divisions were powered by uncovered third-rail as well as overhead wire.

Passenger service ranged from deluxe two, four, and six car trains, with open-ended drumhead observation cars and dining service, to rural, one-train-a-day, flag-stop stations. The Sacramento Northern operated commuter service in both the San Francisco and Sacramento areas. The Sacramento Northern is definitely a line, for fans of multi-car trains, to model. Cars were of wood, composite (wood and steel), and steel construction. Stations ranged from the modern East Bay downtown station in San Francisco through a variety of stone, wood, and Spanish Mission style stations.

The Sacramento Northern had an equally extensive freight service with distinctive motive power. There were distinctive steeple-cab electric locomotives, box motors, unique wood cabooses, and numerous locations where trains of agricultural products crossed busy streets in urban areas. During the final years, there were also several classes of Diesels—including F-units from the New York, Ontario, and Western.

There was also water, water anywhere. For many years before the Bay Bridge was completed, Sacramento Northern trains terminated at the huge Key System pier in Oakland, an often fog-shrouded, high-density structure that has never received the attention it should have. Another Sacramento Northern signature feature was the ferry “Ramon”, which carried both locomotives and cars across Suisan Bay—America’s only interurban ferry cruise. The “Ramon” is noteworthy not only because of its many years of service, but also because of its distinctive shape created by overhead wires and elevated control cabin.

**O Scale Resources**

O Scale modelers also enjoy a jumpstart, thanks to several LaBelle combine and coach body kits, plus a Car Works steeple cab which was available painted in Sacramento Northern colors and striping. Also, and perhaps most importantly, there are numerous online and print resources for information about this unique interurban/maritime interface.

**Online and Print Resources**

The wide variety of photographic resources available makes the Sacramento Northern of special interest to modelers. As one of the most widely photographed and fan-tripped electric lines, it’s possible to not only find desired detail shots useful for modeling specific pieces of motive power and rolling stock, but also to get a great feel for the line and its environment before post-war suburban growth changed the California landscape.

- **Sacramento Northern Gallery**, by James H. Harrison. This is recent book, 8 1/2 by 11, with great photos and a fair price, was published by Shade Tree Press.
- **The Interurban Era and The Last Interurbans**, by William D. Middleton, both contain interesting coverage of the Sacramento Northern.

An event worth waiting for is the forthcoming book *Sacramento Northern*, by Harre W. Demoro, a noted authority on the Sacramento Northern. The publisher, Signature Press [http://www.signaturepress.com/forth.html], is one of the top-quality providers. Based on an unpublished manuscript, and newly uncovered resources, this book could be the definitive treatment of the subject.

**Online Resources**

- **The Inside Gateway**, a Bellevue, WA, hobby shop has an interesting portfolio of Stan Espeseth photographs from the Steve Depolo Collection, including some great Ramon photos at: [http://www.theinsidegateway.com/Trains/sngallery.html](http://www.theinsidegateway.com/Trains/sngallery.html)
- **The Bay Area Railfans** website has an impressive gallery of 249 Sacramento Northern photos and scanned newspaper clippings at [http://www.bayarearailfan.org/gallery/sn/okpress6_82](http://www.bayarearailfan.org/gallery/sn/okpress6_82)
- **Sacramento Northern Online** website has one of the broadest selections of illustrated articles and features I’ve ever encountered about a single railroad. There are over 40 illustrated articles, including numerous reminiscences by Robert A. Campbell, Sr. who extensively traveled and photographed the line. The site has been updated as recently as March, 2005 [http://www.peo-ple-virginia.edu/~ggg9y/home.html](http://www.peo-ple-virginia.edu/~ggg9y/home.html)
- There’s a wealth of Sacramento Northern photographs, many from the Bill Volkmer collection, at [http://206.103.49.193/sn/sn.htm](http://206.103.49.193/sn/sn.htm). On this page, you can select photographs to be viewed large from thumbnails organized by photographers.
- Robert Morris’ photograph of the Sacramento Northern Fan Trip, 6/17/62, can be found at [http://www.snowcrest.net/photos/bob/sn.html](http://www.snowcrest.net/photos/bob/sn.html) with many specific equipment shots.
- If I’ve unintentionally omitted any of your favorite resources, let me know via e-mail to roger@oscalemag.com, and we’ll keep the list updated!
by Bob Lavezzi

The New York Society of Model Engineers is celebrating its 80th anniversary as the oldest club in the United States. Our organization, at present, has three divisions. One is our shop where we build, paint, and repair our models, the other two are O Scale and HO Scale. At one time we had ten more divisions. The Society has survived eight moves, the Depression, embezzlement of its funds, sabotage of O Scale in 1967, a fire, and the fluctuation of its membership.

Our present railroad has been under construction for 50 years. Henry Wilhelme designed the original model of the Erie. Why the Erie? It was in reaction to losing our lease at The Lackawanna Railroad’s Hoboken Terminal in New Jersey. The members chose the Lackawanna’s major competitor, a rivalry as severe as that between the Pennsylvania and New York Central. And yes, it runs through Carlstadt, our home.

In many ways the railroad is unchanged since its concept and design. For example, the constant problem of not enough equipment storage still goes on. However, times have changed and so have we, making numerous upgrades and changes both large and small. Certain design flaws have been corrected.

Let me take you on a ride around the Union Connecting Railroad. Starting in Jersey City, the terminal area is eight tracks wide, the coach yard is seven tracks wide and the mainline is four tracks. The throat has 24 double-slip switches. The Secaucus freight yard is nine tracks wide. At Carlstadt, there is a series of five double-slips crossing the mainline. The four-track mainline divides in two, becoming a pair of double-track mains. One goes through Passaic, Paterson, and Ridgewood, and the other through Garfield, Glen Rock, and Ridge-wood. These two different routes re-join at Ridgewood, forming a single double-track mainline. Then we move on to Ramapo, where the route becomes the single track mainline to Highland Mills and Howell’s Junction, arriving at Port Jervis.

At our western terminus there is an eight-track stub-end yard with a double-track loop around it. There is a passing siding in front of the passenger station. We have a car shop and small engine facility with the supporting structures. This yard area has the capacity to handle our largest trains. Plans are being developed to add three additional stub-end tracks and a small turntable.

As we depart Port Jervis and head eastbound, we arrive first at Middletown and its passing siding. Then, it’s on to Harriman after which we join back up to the mainline at Ramapo. You’re now back at Ridgewood (where you have a choice of traveling to Glen Rock and Garfield, or Paterson and Passaic), finally arriving at Carlstadt and then on to Jersey City. By the way, there were three diverting routes you could have taken along your way, plus a number of sidings.

Those old-timers knew how to build a great railroad, teaching new and junior members solid construction, and how to do it right the first time. Their construction techniques were adopted by the NMRA, and written up in numerous articles in Model Railroader and other publications.

The only problem with our railroad is that it was designed for operating trains prototypically. We were able to get the maximum amount of track in a given area, but the scenery really suffered with tracks looping over more tracks. Our scenery people have overcome many of these obstacles, doing a wonderful job of using viaducts, bridges, lift-out areas, false-front structures and flats, and the use of backdrops.

The scenery crew undertook a major project of changing the railroad’s summertime setting to fall season coloration. This meant that all the trees, shrubs and grasses were removed and replaced. We re-dyed and flocked all the trees. Considering the size of our railroad, 45’ x 75’, this was a major undertaking. The result is striking. The trains we run just seem to pop out of the scenery, giving such a dramatic effect.

Now for what they did right (You can copy how we built our rail- road.) The 1 x 4 x 2” wood is placed on edge for strength, with 2” x 2” blocks at each end with no “end screwing” allowed. The legs are 2” x 2” oak, with a pin at the end. Holes were drilled into the concrete floor so that these legs would not move. That’s just the base. The entire railroad, including the yards, is built on risers. The base of the track is on 3/4’ plywood, then there is 1/2” clear white pine all screwed from the bottom. The reason for this is, if you ever have to make a change or dismantle something, you can take things apart from the bottom and not have to tear things apart on the top.

You’re not finished yet. You now put down black roofing material with small black or gray stones on the face of it. Then you lay ties and spike your steel rail (don’t forget FOUR spikes per tie). By the way, there were no cordless drills back then, though electric drills existed. Pilot holes were drilled, but all the screws were set with the time-honored bit-and-brace. There were so many switches to be built that a machinist made up fixtures, so that we could mass-produce frogs. Along with that, a number of track gages were made, especially to work on switches. All the turnouts were custom built to their location; the motors were the courtesy of scrapped relays from B-17s.

Our new mainline control system has block occupation LEDs on the panel. Photocells are installed, to indicate whether trains could be fouling turnouts, with TV cameras and monitors to give us additional protection. Red and green LEDs indicate point alignment of switches. New transistorized throttles now supply power to all points of the railroad. A new panel is now being installed in Port Jervis, having many of the features of the mainline. This panel will not only be capable of doing the switching moves, but also be able to take over some parts of the mainline.

In the 1920s, the Society had special dies made to cold-roll steel into rail. This process made the rail half-hardened. The rail was modeled after the Pennsylvania Railroad’s new mainline track. It was the highest rail in the country at the time. The only part of the rail that was not made to scale was the area called the web. Steel rail was made in four-foot lengths, and sold to the general public that attended our open houses. We knew that the Baltimore Club had purchased rail, but it re-surfaced at the South Bend Club in St. Louis. Both St. Louis and the Atlanta Club in Georgia also purchased this rail from us. We are interested in knowing what other clubs and individuals may have purchased our rail.

The quality of our work is recognized at our annual open houses. During the months of December and March, the club operates on Friday nights for three hours, and on Saturday and Sunday afternoons for a grueling five hours of operations each. During all this time there are minimal derailments, due only to operator error or malfunctioning equipment (not our track work).

That just about brings us up to the present. As you may see, we have been working hard to make the railroad look its best for the 2006 O Scale National Convention. We look forward to hosting the National, and welcoming you to New Jersey and the home of the Union Connecting Railroad!
REVIEW: Alco C424, 2-Rail TMCC version, MSRP $469.95
AtlasO, 378 Florence Avenue, Hillside, NJ 07205
908-687-9590 ● www.atlason.com

Reviewed by Brian Scace

A few issues ago, Joe accused me of eyeing Diesels in a covetous manner, even though I am a modeler of New England in the 1940s. Yeah, OK. He’s right, for a couple of reasons. You guys modeling the Diesel era have got a good thing going here. Whether it’s the bad ol’ days of the ‘60s and ‘70s or today’s railroading, there’s a lot of nice stuff out there, and these eras probably represent the fastest growing segment in O Scale. I also have a personal reason to at least keep a wary eye on what you guys are doing. As a young man, in the Northeast, I had a (probably mercifully) short stint on the railroad back in the mid ’70s. It wasn’t the best time to go railroading, but I learned a lot. I especially learned that I liked Alco power. There was a healthy percentage of Alco power there, and a very capable shop force that understood them. The only other stuff we had, other than what showed up from the system pool, was a collection of old F-units (the “Shuddering S—-boxes”) and a couple of orphan 567-powered Geeps. Sometimes they ran; often they didn’t. Anyway, I’ve been having a bit of fun, lately. Occasionally, I’ll lock the doors so none of my steam-era friends can catch me, and break out some ’70s-era stuff.

I have to say I like this model. It looks good. The fit and finish on my sample are straight, true, and mechanically sound. Everything is handle-able, yet the detail finesse is visually there. Since the prototype Century-series Alcos rode high on the trucks, there are no apparent height compromises needed or taken to accommodate 3-Rail clearance issues as was needed for some of the AtlasO EMDs. By the way, if you want to lower the frames onto the trucks on your Geeps and SD-35s, pop the trucks off (carefully!) and file down the two bearing lugs on each truck. Look in between the trucks and the frame before you take it apart, and you’ll see the lugs in question.

The model hangs together nicely. By the way, these are available in several different carbody phases, representing the C424, which was the original 2400hp design meant to out-horsepower the EMD GP-30, and the C425 (basically a C424, upgraded to 2500hp to compete with the GP-35 and the U25b).

The behavior of the TMCC version was quite enjoyable and controllable. I tested this one using the basic TMCC system and...
a Lionel AC transformer. I had no signal issues in a 25' x 30' space. All the functions worked reliably. I still can’t take the appearance of those coil couplers, though. It is a quick change to standard Atlas couplers with a couple snips of the diagonal cutters and some light screwdriver effort. I assembled a health-sized train of mixed rolling stock, ready to exercise our friend up and down some 2% grades and around some 54” radii. MU-ed with an SD-35 and a GP-9 (all with speed-feedback), there was a nice mix of sounds, certainly reminiscent of the furballs we used to tie together and call a locomotive in those days. The speed-feedback kept everything going in a nice stately manner, upgrade and down, giving me the opportunity to independently run the prime mover RPMs up and down. Like I said, you Diesel-era guys have it good!

By the way, I couldn’t resist the temptation to see what happened while MU-ing an earlier AtlasO TMCC unit (without the feedback control) and these newest offerings. A quick call to Bob Thatcher, at AM Hobbies, yielded up an earlier-run GP35 for the purpose. On the level, there were no issues; not a big surprise. Going up and down my 2% grades with a train, there was a little wrestling going on, but nothing so major as to cause jerking around and other anti-social behavior. You can switch off the speed-feedback (the instructions tell you how) in the newer units, which is the recommended practice. You can just ignore the whole thing, which I did. The speed disparities just didn’t do anything really bad to blow the realism aura for me. The third option is to pick those units with speed-feedback to MU separately from those that aren’t so equipped. You can always make up some sort of cock-and-bull story about “these units have 21-pin MU and those have 23-pin MU”, or some other crock, and add a new dimension of operation to the game. It is an issue, though I found it to be ignore-able for my tastes, and already addressed by both AtlasO and (TMCC manufacturer) Lionel. Still, it’d be nice if there was a retro-fit available for the older production units, to upgrade to the speed-feedback version. These models are also available in a DCC-ready configuration (for those of you who are using either cab-control DC or DCC) and in unpowered form (handy for those who want to engineer their own drive systems).

I like Alcos. I like this model. There are lots of good memories involved, and lots of new features that are dragging some of us steadily (kicking and screaming the whole way, I might add) into the 21st century. Perhaps a four motor U-boat, like a U28b or U30b, would be a nice next product. I’d bet most of the drive components from the C424/425 would be useful! Meanwhile, a C628/630/636 would go nicely with the announced SD-40 that’s just around the corner. Oh, yeah. I’m still primarily a steam-era guy. FT’s, anyone?

The Lima 2-8-4 was the first true “Superpower”. Here was the first locomotive with a boiler steaming capacity that was higher than the engine’s ability to consume it. Suddenly, the industry’s interests shifted from tractive effort (how big a train can be started) to horsepower (how fast can that load be moved). It may be a little unfair for me to review this piece, as the prototype has been a particularly interesting subject for me over the years, both in my modeling interests (B&A during WWII) and from the standpoint of my academic interests in the history of 20th century transportation. If there was a landmark steam locomotive order, delivered in 1925-26, which lasted until just before mid-century on the B&A proper. Paint is evenly and neatly applied. The only real flaw in the lettering is the tender capacities. The tender, an ex-J1 Hudson tank, had a 12,500 gallon water capacity with a 24 ton coal bunker. I won’t even comment on the abbreviation, “cals.” that appears on the water capacity.

The detail fit suffers a bit, on the two I have in hand. Both have loose or crooked details and one has a droopy feedwater heater, for example. The quality of the basic castings and mechanical assembly on both pieces was quite nice, on the other hand. The tender has an oversized umbilical with a right angle plug, precluding the existence of a deck plate between tender and cab. Since there are no electronic features in this

**REVIEW:** B&A A1a 2-8-4, 2-Rail version, MSRP $ 899.95
K-Line Electric Trains, PO Box 2831, Chapel Hill, NC 27515
www.k-linetrains.com
**Reviewed by Brian Scace**

The Lima 2-8-4 was the first true “Superpower”. Here was the first locomotive with a boiler steaming capacity that was higher than the engine’s ability to consume it. Suddenly, the industry’s interests shifted from tractive effort (how big a train can be started) to horsepower (how fast can that load be moved). It may be a little unfair for me to review this piece, as the prototype has been a particularly interesting subject for me over the years, both in my modeling interests (B&A during WWII) and from the standpoint of my academic interests in the history of 20th century transportation. If there was a landmark steam locomotive order, delivered in 1925-26, which lasted until just before mid-century on the B&A proper. Paint is evenly and neatly applied. The only real flaw in the lettering is the tender capacities. The tender, an ex-J1 Hudson tank, had a 12,500 gallon water capacity with a 24 ton coal bunker. I won’t even comment on the abbreviation, “cals.” that appears on the water capacity.

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model, replacement with something a bit less obtrusive would be pretty easy. You may want to shorten the drawbar while you're there.

I added a Kadee to the tender before testing. A minor step was apparently omitted in the manufacturing process, however. The coupler pad holes needed to be tapped. I've heard from some other folks who have these models and all four Berks we have in hand between us needed threads in the coupler pads. I spun a tap through the holes and screwed on the Kadees with 1-72 screws not provided. The coupler height was just fine.

Scace's Scientific Tests

I used my standard MRC Controlmaster 20 to exercise them a bit. Where the detail fit may not up to speed, the mechanical fit is excellent on my samples. Both operate smoothly and quietly, and can haul my standard 15-car train of mixed brass, plastic, and depleted uranium freight cars around my incredibly average railroad with no bad behavioral tendencies. I took a peek inside and found scads of room for whatever control system components you might want to add, be it DCC, Locolink, or whatever trips your trigger. The drive is a little bizarre, for those of us used to the standard USH-type arrangement. The motor points forward and is cantilevered off the gearbox. There are no alignment issues here! Although the motor strikes me as a bit small, it has a decent turned brass flywheel attached and seems to be quite capable in operational testing. Although a strange arrangement to some, it appears to be well thought out, engineered and executed. I found no vices in this locomotive's operation. Don't forget to properly lube 'er up before extensive operation.

Conclusions (Sort of…)

There is nothing here that can't be dealt with by a reasonably skilled modeler. The general form is quite nice, and the result is certainly tweak-able into a very nice model of this landmark locomotive. While the price is comparable to the rest of the ready-to-run offerings in this segment of the market, the features many would expect in crossover locomotives, such as smoke and sound, aren't there. Also, the quality control in assembly is not "out of the box and on the railroad". On the plus side, this model runs well and pulls a respectable train on my 2% grades and 54° radii. Although unsprung, there is no apparent loss of traction or propensity to derail as in other unsprung eight-coupled power I've tested on my less-than-stellar trackwork.

In all, it ain't bad. It is a good candidate for a detailing project, with decent running characteristics and good general form. As a piece intended for the ready-to-run segment of Our World, I would suggest a little more attention to quality control in assembly, and a little more attention to detail fidelity in future offerings; the competition is stiff in this price range. If you want to nodle up the fidelity, we now offer…

Notes for the Neurotic

The configuration dates this model to the late WWII-1950 period, as K-Line has chosen to use a modified J1 Hudson tender. These were added to some, though not all, A1a and A1b's when the Hudsons started to get big pedestal ("centipede") tenders during and after the war. If you look around, you can probably find an old Sunset NYC K5 tank, which is very close to the original A1 four-axle tender, and backdate your Berk. K-line is to be commended, though. They added the stoker engine hatch on the tender side. The A1 had no frame (hence no place to hang the stoker engine) under the cab, so the stoker engine was mounted under the slope sheet of the ex-Hudson tank and an access hatch added. It would have been so easy to cheat and use an un-adulterated Hudson tender casting! Thanks for noticing!

Our sample is appropriately painted black. The available green paint scheme, if it existed at all in prototype form, would represent the pre-war era. It would not be appropriate for a Berk in this configuration.

Those oversized class lights just have to go. PSC makes a very nice Pyle National globe class light casting which is appropriate for these engines.

The headlight is, at least, atypical. Again, PSC has a nice Pyle National headlight which is much more appropriate for these engines.

For those of us who care about such things, the running gear configuration is, visually, the weakest part of the model. The steam chest casting is more appropriate for a later 63" drived Berk, such as the A1c or the B&M T1. On the A1a, the valve chest extensions were completely forward of face of the cylinders. The model has extensions front-and-rear. The lubricator is hung off the rear extension on the model, and should be on a separate bracket cantilevered off the frame. Perhaps the hardest thing to deal with will be the rods. One of the landmark developments on the prototype was the "tandem rod", where the last section of side-rod was actually a knuckled extension of the main-rod. This served to split the thrust load between the main and fourth drive-pin on each side, rather than concentrate the thrust only on the main pin. Tandem main-roads from the old Lobaugh CNW Berk (check availability from Stephenson Preservation), and a little judicious cutting of the K-line side-rod, will solve this. If you are going to this level of neurosis, you'll want to redo the counterweights on the drivers, too. The prototype's were unbelievably huge for so small a driver. While you're down there, slap some 33" wheels in the pilot truck. I can't understand why undersized pilot truck wheels are put on these cross-over pieces. Lord knows, there's enough room to clear three-ruled flanges, so full-sized wheels on the scale version just can't be a problem!

I can understand the lack of ashpans on the trailer, given the mechanical considerations for the three-rail versions. I plan to add pans and hoppers on the trailer (not on the frame as in normal practice; there wasn't a frame over these early two-axle trailers!). Take a file and knock those funky little half-pans off the front bottom of the firebox. They really are part of the hopper/pan assembly you're building on the truck. You may want to add full sized booster piping from PSC at the same time.

It's easy to assume that the first stack-looking thing on top of the boiler is a stack. Actually, it's the throttle body. Close the top off. Then, re-run the pipe from the engineer's side of the cab to the throttle body. It really is a pushrod and should be straight through the sandbox to the bellcrank just forward of the steam heater. While you're up there, the pipe between the stack and the throttle body is the booster exhaust. Replace it with an unaflagged pipe; no need for wound asbestos insulation on an exhaust stack! Then, with a couple photos in hand, check some of the pipe routings and modify to taste.

The conversion of one of these A1a's to the slightly different A1b is simple. Look at the top of the boiler on the fireman's side. See the pipe snaking up from the turret (just ahead of the cab), around the sandbox, and up to where the superheater header is? That's the supply line for superheated steam to get back to the turret and operate all sorts of auxiliary stuff. Take it off, and fill the holes. A1b.
**REVIEW**: WM H-9 2-8-0, 2-Rail version, MSRP $799.95
M.T.H. Electric Trains, 7020 Columbia Gateway Drive, Columbia MD 21046
410-381-6122 ● www.M.T.H.trains.com

**Reviewed by J W Mathews**

**The Prototype**

As many students of steam locomotives know, the 2-8-0 Consolidation was the most popular wheel arrangement used in North America. Some 25,000 were built following its development at the formation of the Lehigh Valley in 1866. The type became the mainstay of freight operations for many roads, and continued to be built for several years after the 2-8-2 type came along. In fact, some Class 1 railroads never owned a Mikado. Along with the Bessemer & Lake Erie and Norfolk and Western, the Western Maryland was such a road.

The WM developed several classes of 2-8-0s, culminating with the H-9. Built in 1921 by Baldwin, the locos were numbered 801-840, and carried 210 psi boiler pressure for a tractive force of 68,200 pounds, ranking among the most powerful of the type. With a tractive effort of 71,500 pounds at 220 psi boiler pressure, the similar-looking H-9a class (841-850, built in 1923) was at the top of the most powerful Consolidations ever built. These were exceeded only by a few one-of-a-kind D&H experiments, equaled by only the Lehigh & Hudson River’s nos. 90-95, and even exceeded the Reading’s I-10 class! The H-9 classes eventually ran over most of the WM, except the branches west of Elkins, WV.

Possibly the toughest duty performed by the larger WM 2-8-0s was moving coal trains east from Elkins up the twisting 3% Black Fork grade to Thomas and on to Cumberland MD. Depending on the tonnage, as many as nine locos, including mid-train helpers and pushers would power one of these coal trains. For further information see the Morning Sun color book *Western Maryland*. Also, some movie footage of the WM has been converted to video and is available on the market.

**The Model**

M.T.H. announced this model in their 2005 Vol. 1 catalog. The models arrived in June. I checked major dimensions against a prototype plan from the 1922 *Locomotive Cyclopedia*, and found the model to be very close in most respects, including the 61” drivers. The plan shows the cab width at 135” but the model measured about eight scale inches less. I think the proportions look nice, though, even if the cab is a bit narrow (assuming no view). Running on conventional DC, the 2-8-0 requires about 61” radius) while the Hi-Rail version will operate on O-42 (21” radius) curves.

With “Protosound 2,” these models will operate on either AC or DC, without any adjustment. This capability has led me to some interesting experiments. I have found that these models require higher operating voltages because of their original three-rail design. When turning on the power, the lights come on and the generator whines. Standing idle at about nine volts, it is possible to hear the “crew talk” feature. At roughly 40-second intervals, the sound system broadcasts recorded dialogue (what some toy train designer thinks steam engine crewmen might say when readying a loco for duty). One example is, “Those black diamonds are red hot.”

The chugging sound is set at the prototypical four chuffs per driver revolution. The sound volume is adjustable by a rotary switch on the bottom of the tender, which can be turned with a small Phillips screwdriver. With the sound turned on, it will seem more natural to operate the loco at slower scale speeds, because fast running will cause the sound to change pitch and the exhausts to blur together (not pleasant listening at all, in my view). Running on conventional DC, the 2-8-0 requires about 10 volts to start moving. Running light at 12 volts the loco’s scale speed was 20-21 scale mph. At 14 volts, its speed increased to about 33 scale mph, with a nice rapid exhaust beat. These models, therefore, will not double head well with conventional DC two-rail locos, which normally can start moving at four volts or less and reach realistic maximum scale speed at 12 volts. When voltage is decreased, brake shoe squeal is heard.

These new M.T.H. locos have smoke units, also equipped with an adjustable volume control identical to that of the sound system. The H-9 smoke control is under the operating tender water hatch, and can be turned on/off without turning the tender upside down. The smoke unit adds to the loco’s current draw, however, requiring higher voltage to maintain a given speed than with the unit turned off.
In addition to the two “volume” controls mentioned above, the tenders of these locos have two slide switches. They are on the bottom of the H-9 tender. One of these selects the two- or three-rail power option. The other is marked “polarity” and is needed for the M.T.H. DCS remote control system when changing direction via reverse loops, wyes, or turntables. I think this may apply only when using DCS on alternating current, but am not sure. At this writing, I have no experience with DCS on a two-rail layout. But do know that DCS will work on either AC or DC. [The polarity switch is necessary using DCS in two-rail DC applications.—ed]

Using conventional DC, these locos operate like normal two-rail domestic kit-built locos and brass imports (except for needing higher voltage), changing direction by moving a DPDT toggle switch on the control panel. The bell and whistle sounds do not function on conventional DC (but will operate with DCS regardless of type of current). These can be heard operating the locos using conventional AC (no electronic control, just an ordinary toy train transformer with bell and whistle push buttons). On AC, the loco “fires up” in neutral; turning the power off and on activates the sequence reverse to obtain forward/reverse motion.

Accordingly, on two different layouts with double-track mainlines, we connected a Lionel transformer to one mainline track, leaving the other track powered by DC as usual. These new M.T.H. locos operated nicely on AC. The H-9 bell “ding-dong” sounds are very nice, I think, just like a prototype manually operated bell. Other M.T.H. locos, as appropriate, have a “ding-ding” air-ringer bell, also realistic in my opinion. The H-9 whistle is hard to describe in writing. It is not a “musical” chime whistle, but has a kind of “mushy/steamy” sound somewhat like the UP 844 and SP 4449, both 4-8-4s which I have heard. I do not know if the whistle sound on this M.T.H. model is accurate for its prototype, or generic.

The electrical system on these models could stand some improvement, I think. The wheels of the rear tender truck (two or three depending on the model) are connected to both rails, but this is the only electrical contact to the right rail. The loco’s drivers are connected to the left rail also. The front tender truck is electrically neutral, but it should be possible to connect the front tender truck to the right rail to improve the current path.

Operating on a friend’s layout, the H-9 would go dead (open circuit) at one point when entering a super-elevated curve at low speed. We determined that the rear truck was losing contact with the right rail. Typical of three-rail design, these locos have neither sprung drivers nor tender trucks. I thought that loosening the tender kingpin screw to allow a little more play might solve the problem. It did, after removing/replacing six screws holding together the tender floor and body shell, one more screw holding the smoke control switch and backup light socket on the underside of the water deck, detaching the backup light plug from the socket to separate the chassis from the body shell, and then three more screws holding the sound speaker over the rear truck to expose the head of the kingpin screw!

The loco has carbon steel driver tires, but as one would expect the scale-tread drivers do not have traction tires. On my level (old Atlas plated brass) track, the H-9 pulled four loaded Weaver twin hopper cars with high-friction journal bearings weighing 2.25 lbs each. On the level it can pull a dozen or so ordinary O Scale freight cars without slipping, but due to its heavy tender and possible friction from the tender axle wipers, its pulling power on a 2% grade is less than one might expect.

If one does not care about the electronic features of this model, removing its internal components could lighten the tender. The loco would need to be rewired as well. Doing so would permit removal of the large “umbilical cord” between the loco and tender. This is probably the most unsightly feature of these M.T.H. models. Because of the complex electronics, a ten-pin connector is required. The “right-angle” plug is used, I think, to give the wire more flexibility on very sharp three-rail curves. Even a straight connector would improve the appearance and allow addition of a cab apron, and would function properly, I believe, on 36” radius and larger curves. A shorter drawbar could be used on wider curves as well, to close the noticeable gap between loco and tender.

NOTE: M.T.H. states that not all locos and tenders are wired the same way, and warns that tenders should not be swapped among different locomotive models. The plug may fit the socket, but the wires may not connect to the same components and the result could be some burnt-out electronics.

Summary

I think this is a good-looking model of a prototype that has not been made by any other firm to the best of my knowledge. The sound effects are enjoyable to hear, and add a new dimension not often seen in 2-Rail, and certainly not available in other ready-to-run two-rail models. Another consideration: The M.T.H. locos with Hirail wheels can operate on some brands of two-rail track, and thus “open the door” to two-rail operation of larger steam locos on very sharp curves. I think there may be some potential here for bringing O Scale newcomers into the greater realism of two-rail track, because they can enjoy all the control and sound features that have become commonplace in three-rail RTR locomotives during the past fifteen years.

Those interested in getting an M.T.H. loco with scale wheels may have to do some looking. I’ve been told that M.T.H. is making but 20 to 30 of each model with the scale wheels, and I doubt they’ll be found on the shelves of most hobby shops. It would be possible to turn down the flanges of the three-rail version if one wanted the model badly enough. I suggest finding a reliable M.T.H. dealer willing to order the model when it is announced. A prospective buyer might want to ask about the dealer’s return policy in event of dissatisfaction. M.T.H. may offer a smaller dealer profit compared to some other firms, but some stores will discount MSRP by 10% or so, and one could always ask for a lower discount when pre-ordering, if payment is guaranteed.
In 1949 The Budd Company introduced their Rail Diesel Car, or RDC. These 85’ self-propelled stainless steel passenger cars were powered by two 275 hp Detroit Diesel engines and had a motorman's cab in each end, eliminating the need for turning them. RDCs were also equipped for multiple-unit operation, so they could be connected in any reasonable train length. There were several versions produced over a seven-year production span. The RDC-1 was passenger seating only and had 90 seats. The RDC-2 added a 17’ baggage compartment and cut passenger seating to 70. The RDC-3 added a 15’ postal section to the RDC-2 design, further cutting seating to 49 passengers. The RDC-4 was a “shorty”, at just under 74’ long, and consisted of a 31’ baggage compartment and a 30’ postal section with no passenger seating. The RDC-9 was essentially an RDC-1 with only one engine. It had four additional seats, eliminating one bathroom and the motorman compartments. Only the Boston and Maine purchased the RDC-9, where they were typically run between two other RDCs.

In 1956 Budd upgraded the design with 300 horsepower engines, cast steel trucks, and smaller front windows. On these later versions, Budd wrapped the side fluting around the end (not all railroads chose this option), modified the pilot, and raised the headlights several inches in a streamlined housing. Sunset’s model is of the original version.

Overall, Budd produced 398 RDCs, of which 239 were RDC-1s. New York Central was the first to buy, Boston and Maine eventually had the most (109), and 33 different railroads purchased The Budd Company’s offering directly. Many more railroads bought them secondhand. Though initially marketed as an economic replacement for lightly used branchline trains, some railroads used their RDCs to replace conventional commuter trains and even their intercity mainline runs. With a little help from The Budd Company’s marketing department, railroads referred to their RDCs by such names as “Highliners”, “Dayliners”, “Shoreliners”, “Beeliners”, or “Railiners”. Eventually, the lure of the family auto was too great, and Budd ceased production of the RDCs in 1962.

Sunset is offering their RDC-1s for 12 different railroads, with two, three, or four numbers each (as well as undecorated) in both powered and unpowered versions. I purchased one of each in Boston and Maine livery. Upon removing them from the box I was immediately struck by the quality of the exterior, which is a satin finish with the look of stainless steel. Upon further review I noted the multitude of details. Door latches, safety chains and vents abound. The streamlined “blister” on the roof is covered with a fine screen with cooling fans within. Grab irons were not mounted out of the way so they shouldn’t get mangled with handling. The model is rugged enough to allow reasonable handling.

Regarding operation I was very pleased with the truck mounted Mashima motors. They are a little noisy, but not objectionally so, and they don’t extend up into the passenger compartment. After my grandsons provided a reasonable break-in period (They nearly ran the wheels off them!), the powered unit was able to crawl at less than one scale mile per hour. At 12 volts DC, it was clocked at 69 smph, a very reasonable speed range considering the prototype’s top speed of 83 mph on level track. Pulling the dummy unit slowed the train only slightly. Starts and stops were extremely smooth when using the power pack’s momentum feature. Amperage draw is about 0.3 amps for the two motors and another 0.4 amps for the lights. The Budd Company did not design these units to pull unpowered cars. If you bought several dummies and only one powered car, you probably already know that Sunset’s powered unit is pretty strong. It pulled seven Atlas “Horizon” passenger cars around my layout without slipping the wheels. Both the powered and unpowered units weigh four pounds each.

All eight wheels provide electrical pickup and provide traction. While the wheel contacts are quite delicate, they are mounted out of the way so they shouldn’t get mangled with normal handling. Speaking of handling, the cars are very solidly built. Kadee couplers are installed at the correct height, so they are truly ready to run.

Sunset indicates that these 85’ cars will negotiate a 36’ radius curve. I was able to cox a single unit around a 24’ radius curve but, as you might expect, it looked rather ridiculous doing so. I had no problems with the coupled units on 42’ curves with easements.

Sunset has provided six-volt constant lighting consisting of twin headlights at both ends, green LED classification lights at the front (so you know that is the front), red LED markers at the rear, and four interior lights. All of the lights are on all the time. The cars are moving at a moderate pace by the time the six-volt level is reached, but the headlights and red markers look great. The green classification lights indicate a following section. I am not sure how often RDCs ran with second sections, so I would have preferred red LEDs at both ends and directional lighting for them, as well as the headlights. After all, one of the assets of the RDCs was their ability to operate in either direction. The interior lighting is not “Lionel Bright” but, with the room lights turned down, the cars look good as they head off into the night.

One electrical oddity came up when I place the unpowered unit on a DCC layout. The LEDs worked as before, but all bulbs remained dark despite the 16 volts AC on the rails. When I do install a decoder, I will eliminate the constant lighting boards provided so this will not be a problem for me.

One of the advantages touted by Budd was that an RDC could operate profitably with as few as twenty passengers. Sunset provided only four “little folk” in each car, so you may
want to add a few more paying passengers to keep your operation in the black. This is not difficult to do. Remove the six floor mounting screws and gently unplug the two wires at one end for the lighting circuit. I had to open up some of the wire ties Sunset used to hold wires neatly in place in order to get enough slack. Just work slowly with a pair of tweezers. There are only 82 seats in the Sunset car, but let's face it, who's going to fill all those seats with passengers anyway? Glue your passengers in place with a dab of clear adhesive.

Adding a DCC decoder will be a bit more work. Finding a hiding place for the decoder in the RDC-1 will take a little planning. Also, those very short wires connecting the motors and light boards will have to be cut apart carefully and more wires will have to be added to allow separate control of the markers, headlights and overhead lights. Hopefully, in the future, Sunset will provide NMRA-compatible decoder plugs, as is done in most HO locomotives.

A few years back Division Point imported O scale RDCs, so how does Sunset's offering stack up? Well, DP's model is right on dimensionally, has more doors that open, and offers directional headlights. It lacks the marker lights, has a top speed of only 45 smph, has more gear noise, and a price tag more than double that of Sunset's. All in all, the Sunset model is a real bargain and a well executed model. Looking to the future, Sunset has already announced the production of the RDC-2. No word yet on doing the RDC-3 or -4, but we can only hope that they keep a good thing going.

For more information on The Budd Company's very successful RDC, see: Budd Car, the RDC Story by Chuck Crouse (1990); Mainline Modeler (January, February, & May 1991) and the B&M Bulletin (October, 1986).

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**Review:** Tow Hitch Coupler, $49.95 + $6.00 flat rate shipping
Grand Scale Railroad Signals, 16346 Westwoods Business Park Dr., Ellisville, MO 63021.
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reviewed by Carey Hinch

There are many novelties in the model train world, but few are ever a “gotta have it” item like the Tow Hitch Coupler from Grand Scale Railroad Signals. Once installed in your vehicle’s hitch receiver, it looks as if you could couple right to a hotshot freight. The coupler is styled like the knuckle coupler found on any U.S. railcar or locomotive. It is cast from solid aluminum, it is non-operating, and weights about 5 pounds. It comes in 1.5” or 2” hitch tongue sizes. Grand Scale Railroad Signals also sells a locking hitch pin to protect the coupler from theft. This is a fun and unique piece of railroad art.

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**Nov/Dec ’05 - O Scale Trains • 45**
Detachable Custom Castings
Nick Pulskamp

There are times when one wants to remove a casting from wherever it is mounted. It can be cut off, desoldered or unglued (or worse). Each method has drawbacks, which we have all experienced. For those cases where you can foresee removing a casting from an otherwise permanent mounting (for servicing a locomotive drive, painting, or whatever) this simple technique used at the time you make the casting can save a world of bother later. There’s no need to go into details of moldmaking or casting material preparation and pouring, as these topics were well covered in OST #9 by Gary Woodard.

What we’re going to do is include threaded mounts as part of the casting itself. Let’s start with the mold. We’re going to drill tapping holes for small brass screws (We’ll use #2 screws for this demo, but smaller can be better) right through the mold, out the bottom and into a supporting block of something flat and rigid (See Figure 1.) Then open up the holes in the support (See Figure 2.) Do not tap anything. The tapping-sized holes in the mold will seal around the screws and keep the casting material in the mold. Push whatever screws you want to use through the mold far enough so that the heads are just below the finished upper face (Figure 3 shows the screws sticking out the bottom.) Turn the mold over and insert the screws into the holes in the supporting block. Be sure the mold sets securely on the support (See Figure 4.) Pour as usual, let set up, and CAREFULLY remove the casting from the mold. The screws will put extra stress on the casting material as you remove the part, so you might want to give it a little extra time to cure (See Figure 5.)

Finish the piece (See Figure 6.) to your usual high standards, like removing those silly cast “pipes” and inserting some good brass fittings. Drill clearance holes to mount your casting, secure a nut behind the mounting surface, and that’s that.

Here’s a final note. This demo uses an air pump from an old IHC kit picked up at a show (the famous “Indiana Harbor Belt O-8-0”). It’s no longer manufactured, so I don’t suppose anyone will mind. You’ll want to use your own masters of your own designs. The important thing is the technique, which can be used in many variations. It occurs to me that some anarchist wag out there might wonder about threading the casting rather than imbed-
d)ing a screw in the casting. It can be done easily by reversing
the position of the screws in the mold (see Figure 7.)
Before demolding, the screws are unscrewed from
the molded object, the object demolded, and the screw(s)
replaced. The use of this type of threaded mold has some
drawbacks. Plastic threads do not hold or wear as well as
metal threads and the length of the screw mounting the
part must be just the right length so as to use as many
threads as possible. A metal nut on a metal screw will last
virtually forever. Still and all, there are no doubt applica-
tions where threading the mold is best.

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PRR, SP Greenville '70 100 Ton Gondola, FP, New .......... $275
MIDDVR, PRR H12a Quad Hopper (Allan), FP, New, Professionally Weathered . $30
A Spicy ROT

I have a good “Really Obvious Tip” to pass along. We all could use storage on or near the workbench for small parts, chalk powder, scenery dirt, etc. I found, at a garage sale, a spice rack with 16 four-ounce bottles in a “revolving tower” type rack that takes up only about 8 square inches on the bench. A wall-mounted rack should work well also. Some of the bottles have inserts with holes in them for shaking out the spices, which should work well for foliage materials. While my fellow modelers are at garage and rummage sales looking for railroad items (you folks do go to the sales, right!), look for spice racks to hold your materials and small parts in an orderly fashion. Hope this helps someone!

Ron Durbin, High Ridge, MO
Wolf Creek & Demaree Railway

Hobo Gets Some Kudos

Thanks for a really great article at the beginning of the May/June issue (OST #20). After reading it, I went back and highlighted some of the points I wanted to remember—there were several. I was particularly struck by the suggestion for making a curved roof, by using scribed siding on the inside. I have got most of the way through building a passenger car, struggling with the rounded roof, and eventually made a frame out of carved wood with the Styrene glued to it. Your method is far simpler. I should have thought of this because I built a Westwood kit of the Sumpter Valley cars, and the roof was made the same way you suggested, except out of wood. I don’t know why I didn’t think of it, except that I built the kit more than 30 years ago, and have been out of the hobby for the past 25 years (raising kids and working).

Your magazine is an excellent way to get back into the hobby of model railroading, with lots of articles on stuff that I have missed out on. Keep up the good work, especially the scratch-building stuff. I have Gargraves stainless steel rail with plastic ties in my backyard so that I can run my old Lionel stuff, but I intend to figure out how to run the scale stuff on it as well.

I appreciate your rational approach to the HiRail/Scale controversy, as displayed in your Hobo D. Hirailer articles.

Dave Pottinger

Decal Source

Hi gang, just got my copy of OST #22 and saw Neville’s article about cement canisters. If anyone needs decals for the canisters I have them available in NYC and LV. And if anyone has older decals that need to be rejuvenated, I can do that too. Also if you are looking for a long out of production decal I may be able to help there (such as Champ reprints, since they are no longer doing them).

Bob Anson,
2520 Spring Lake Rd, West, Jacksonville, FL 32210

Insincere Layout Design

I enjoyed your column on layout design in Issue #22 of O Scale Trains. My O Scale Hinton Division layout was featured in the Nov 2000 issue of Model Railroader and it breaks the usual rules of layout design. I have track and turnout motors that are difficult to access and scenery that is vertical but I’m willing to deal with those issues for the overall benefits. What follows are my rules?? for layout design:

The Layout Design SIG people sometimes refer to the ideal track plan as “sincere” which means that a train runs only once through any scene.

Eu Daly’s Rules for an “Insincere” (Hypocritical) Layout Design

1. In order to obtain the maximum possible mainline run AND maintain a spacious feeling it is necessary to have multiple layers of track, but not multiple decks, with trains running through each scene more than once.
2. How much track should you have?
   a. If you don’t have some awkward spots in the scenery—add more track.
   b. If you don’t have some track that is difficult to access—add more track.
3. If you want a high ratio of scenery to track spread the layers of track vertically and stand the scenery on edge.
4. Unless you enjoy running trains backward across the layout or enjoy picking up your models do not design “dead end” stub staging which traps engines and trains on the stub tracks.
5. Make any necessary design compromises to plan for continuous restaging. Do you want to spend time re-staging after every operating session?
6. “Experts” enjoy making rules for the rest of us to follow so don’t be afraid to violate my rules or any others: be your own expert.
7. Happy railroading and dare to be different.

Jim EuDaly

(Brian replies) Jim:

Oh, the term brings back memories of John Armstrong (who was, of course, one of the driving forces of that SIG).

I agree with the premise of sincerity, as a guide and if possible, and would recommend that folks in the design phase consider them. I also strongly agree with you. Don’t let others (especially me!) dictate that the “sincere” way is the only way! If it was, then nothing would be built by most folks, and that would be more than just a shame.

For me, that lesson was driven home by the loss of interest in my point-to-point creations, espoused as the one and true faith by the most learned (by their own admission) in MR, et al. Now, I always provide for continuous running in my designs, as there are times when I just want to watch the parade.

Your point is excellent. Although the SIG (and John) brings out excellent suggestions for layout design worth consideration by anyone starting a new railroad, or reconfiguring an old one, they are really only suggestions. John would be the first to say so.

Thanks for the kind words, and for your thoughts.

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Modern “Tab Keeping”

Have you ever wondered if anyone knows where all those train cars crossing on the track in front of you are really going? I mean, there are a lot of cars passing in and out of rail yards every day, if not every hour. On our model railroads, we can relax when we pull five cars around the tracks, “Two will go to the bakery, one to the dairy, and the last two for staging.” But what if you’re pulling 50 or 150 cars? Luckily, our model trains are a little easier to manage when sorting destinations. A card system is a time-tested realistic approach to sorting freight cars. The big railroads, however, have some pretty sophisticated ways of watching where every car on the system is headed, now and in the future. Let’s take a brief look at how a modern railroad can keep tabs on all those freight cars at once.

You knew it couldn’t happen without computers. In a fraction of a second, a trackside scanner (Photo 1) can update a hundred different variables on a freight car by sensing one little device. That device is the AEI (Automatic Equipment Identification) tag shown in Photo 2. The AEI system can store information on locomotives, train cars, intermodal equipment, and EOT (end-of-train) devices. For the sake of space, let’s focus on the rail car, but remember that the uses of the AEI are numerous and can be applied to all types of rail equipment. The AEI tags are, themselves, modern wonders that can be programmed and reprogrammed when the car arrives at its destination or anywhere in between. The information transfer between the AEI tag and scanner is fast and simple. The signal level is low-power and similar to a cordless phone. The AEI tag can store all the information about a freight car the railroad, the shipper, a receiver, or the Federal Government needs to know. Not to be confused with GPS or global positioning, the AEI stores shipping and/or car information only, although you will know the location of the last scan.

Once a scan occurs, the data is available to computers over the entire rail system. This lends itself to fast computer sorting capabilities. When a mixed train gets pushed past an AEI scanner on the hump yard lead, the hump yard computers will align the switch points to guide the car into the necessary outbound yard lead (or the car shop lead if maintenance is due). This robotic car-routing is quite simple by principle. What if each car in your fleet had a tiny microchip embedded in the undercarriage that carried preprogrammed information about the car? Then, every time it rolled across a sensor at your railroad’s yard or staging lead, it sent signals for the turnouts to align themselves for a track you designated as “local”. Interesting, huh?

What if your railroad was a track plan on the computer? You, as a dispatcher, clicked on your yard and it zoomed in to a miniature track layout with freight car shapes. Then, imagine that another click on a freight car shape revealed a nice photo of a real GATX tank car? The photo would now show a destination, the tank farm. Next, it would show time spent traveling the layout (based on last scan), time scanned (based on the fast clock the computer keeps), contents, weight, maintenance due, and more. From your laptop at the office, you (or anyone) could go to a website you created and view all the information saved from the last operating session about the GATX tank car arriving at the yard, where it should go next, and countless other things associated with your tank cars. Are you beginning to understand?

Having all this information in hand, a dispatcher from Florida can give orders to a train that’s three states away. Did you know the dispatcher clicked on his computer screen and zoomed in on Mississippi? Did you know he then clicked on the subdivision name and zoomed in to a squiggly line representing 97 miles of single mainline track with a train symbol at the lower end? Then, once he clicked on the train symbol, the screen zoomed in to the Q293-16 at MP 174.6, a 98 car coal train waiting for the signal indication to enter the yard at Meridian. This is equivalent to you sitting at home and controlling your club’s modular layout that’s set up at a train show!

Next issue, “The Modern Image” takes a break. I have to hit the train room for some overdue construction projects. See you in 2006!
A number of 80-plus-year olds reading this can probably remember when all stores sold things in barrels. Up until the 1930s pre-packaged goods were still the exception, especially in rural general stores. The cracker barrel truly did exist, as did the flour barrel, the pickle barrel, the nail keg, the beer keg, and even the pork barrel. In the 1950s and ’60s, I can only remember hardware stores with their nail kegs and scales. You dipped a shovel into the keg and dumped your nails onto a nearby scale, buying them by weight. And it was a lot cheaper than those silly little packs you now find. Most barrels traveled in boxcars, but some railroads had cars specifically designed for barrels, especially empty barrels that could be returned to a central warehouse for redistribution. Remember those days? Waste not, want not.

This is a wonderful steam-era oddity, and Ye Olde Huff n’ Puff has recently made the kit available. If you want this truly unusual car, get the kit and let’s build it. This article is meant as a supplement to the kit instructions, which list dimensions. Photo 1 shows the kit pieces laid out in a sorting pile. This is always the first thing you do; sort everything out and be certain that it is all there. Occasionally, a piece will be missing or a floor or roof badly warped. Contact the maker and you will get a replacement immediately. This is not like dealing with a major manufacturer; these people really care about repeat business. With warped wood, I have had success by steaming it, or soaking it in hot water. Then I put it into a press (boards and bricks or hanging weights) until it is straight. I do not recommend such stunts unless you have, or until you have, more experience working with wood. Once you have everything ready, I recommend painting on a sanding sealer to prevent future moisture damage.

The kit instructions start with the floor and that is a good way to begin. Use a metal ruler and square to measure off the proper distances. With a metal ruler you can slide your pencil down the etched-in marking and be spot-on the measurement. Your final product will depend upon how accurate your measurements and how square your angles are. By the way, a sharp point on your pencil does make a difference. Drill holes for the nylon (fishing line works well) trussrods, and thread them through. At this stage, it’s easy to reach everything. Tie off the ends, and add a drop of Super Glue (CA adhesive) to the knot. Be sure to thread the trussrod turnbuckles on as you go. They may need to be opened up just a bit with a drill or jewelers broach. Wait before you Super Glue them; only do so when you have almost finished the car and have all the supports and posts lined up. I usually leave the queen posts off until late in the construction process since I have a bad habit of forgetting they are there and breaking them off while working on other parts.

A million barrels, or so it appears, come with the kit. I decided to stain mine with an oak stain which I had in my paint cabinet, but they can be painted just about any color depending on how much time you wish to spend on this portion of the project. Now is a good time to paint or stain them, since they will have to dry before you go on to the step of gluing them together. While the barrels are set aside drying, it’s a good time...
to attach the bulkheads. They can also be set aside to dry overnight. I started with the end bulkheads. Be sure they are square, clamp them up, and leave them to dry. Drying time is one reason that I usually have more than one project in the works. In Photo 3 you can see my C-clamps in action, along with clothespins on another car floor, and hinge clamps on a third car. You can never have too many clamps in woodwork. (Yes, that is a brass 1860s passenger car hidden in the background.) I did the end bulkheads first because I wanted to be able to cross-check my measurements for the interior bulkheads with the actual barrels in place. You can see the interior bulkheads clamped in place with barrels affixed between them to aid the spacing in Photo 4. Even so, I did not get it perfect. “Measure twice, glue once” is the rule, but things do have a way of slipping around. To release Ambroid cement, I run some acetone down the bad joint, wait a bit, and gently pull it apart. Then it’s back to square one. Don’t worry about these mishaps. They happen to the best professionals, so amateurs are in good company. All it means is that you get to glue again and let everything dry again. Of course, this time, you will triple-check that nothing has slipped prior to your turning your back. Sometimes glowering at offending parts makes them behave.

The instructions mention that the barrels may need to be sanded to fit between floor and roof. Each barrel gets sanded (filed) a bit prior to gluing the stack of three together. The sanded portion gives a better surface for glue adhesion anyway. My stacks needed about a sixteenth of an inch removed. I glued the barrels on the floor, and then laid the roof piece down. Do not try to glue the roof until you have assured yourself that the roof lays flat atop the bulkheads. This process took me a couple of tries; just be patient and unafraid of removing and re-gluing barrels. I had started out with a steel straight edge, but the actual roof was the final arbiter of what fit. Once the roof is measured and glued you will end up with the basic box seen in Photo 5.

From then on, the rest is detailing.

I fit the upper and lower fascia boards at this time, followed by the main horizontal braces. Once they were dry, I fit the W-shape braces. I only added a K brake and one line. Perhaps I will get energetic and do a full brake rigging and cut levers later.

Photo 6 demonstrates the slips of paper I use to keep from painting the barrels while I was painting the bracing. The roof is the traditional Kleenex applied with watered down white glue. Once applied, let it dry, and then paint it black to resemble tar paper. The car is painted with Floquil, which I find brushes onto wood perfectly. I have not lettered the car yet, since I have not decided who will own it. Perhaps Frank Ellison’s box factory or the Delta Lines would be good. They are the proper vintage.

I have an old Kemtron track gage, with coupler height gage attached. I have never figured a way to line up couplers without having the trucks attached. Fortunately wood can be easily shimmed or chiseled, to adjust the coupler height. Use screws to attach things, so that they can be easily removed for these adjustments. I used Boxcar Ken’s excellent archbar trucks on these older cars, I have also used the old Athearn trucks, which are also sprung.

By the way, if you build this car for Hi-Rail trucks, you will probably have to leave the bolster off or the car will ride way too high. Hi-Rail trucks usually attach directly to the car floor, and fairly closely to the car end so that the attached coupler swings free. So, Hi-Railers, measure that truck up to the floor right after you finish threading the truss rods.

This car really does stand out, and I hope you have a fun time building it.

◆

Resources
Ye Olde Huff and Puff, PO Box 1103, Lewiston, PA 17044
Part 1

So, you want to convert to command control for your layout. Whichever method you choose (DCC, TMCC or DCS), you will find one characteristic they all have in common. They don’t plug in. This column will describe how you can build your own power source as shown in Figure 1.

Generally, you have three options. First, you can use something you already have, such as a Lionel ZW or an MRC AH501, with the speed control turned up. If you haven’t come from the 3-Rail world, you probably don’t have either (and maybe don’t even know what they are). In any event, they are overkill because you don’t need to adjust the voltage; the command control takes care of that.

Second, you can use a power unit recommended by one of the vendors. Examples of such power supplies are the Lionel Powerhouse or the Digitrax PS2012 or PS515 (See their web sites for more details on their offerings.) Be careful that it provides enough current for your application and for your command control unit. Usually the ratings are 15 to 18 volts at 5 to 10 amperes (Remember, the command control system might be powering more than one train.)

Finally, you can build your own if you don’t find the capability or configuration that meets your needs. The simplest way to do that is to buy a transformer, as recommended by the vendor, connect a wall plug to the 117 volt leads, connect the 18 volt leads to your command control unit, plug it in and go. That isn’t a very good solution. The somewhat fragile transformer leads are exposed to wear and tear, there is no fuse to protect the unit, the wire leads are probably too short and difficult to connect, and there is no ground, which some of the computer methods need.

In this multi-part article, I will describe how you can build your own power unit if, like me, you don’t think that a ‘naked’ transformer is safe enough. I will describe how to build a safer and sturdier 18 volt 10 amperes power supply. I will emphasize an AC supply, but I will also describe how to convert it to a DC supply. This will not work for DC cab-control, because its output cannot be varied. I will describe, step by step, the full construction details and will give a list and source for all the parts. Perhaps you will not build yours exactly like mine, so I will explain my rationale to guide your version.

It would be nice if all the parts could be ordered from one source, but that is not likely the case. The less common parts have to be ordered from a big mail supplier like Digi-Key, but they often sell common parts in lots that are too large for the one-timer. Radio Shack has less selection, but they are just down the street so you can conveniently kick the tires.

You should not undertake this project unless you are equipped for, and comfortable with, electrical power wiring. The primary side plugs into the wall (at 117 volts ac), and can be dangerous. The secondary side can provide at least 10 amperes, and so begins to look like an arc welder and can be a fire hazard. Since we have no control over what you do, O57 cannot be responsible, so build it carefully and safely or find someone to build it for you. You will also need tools to cut, strip and solder copper wire, and to cut and drill aluminum. Eye protection is a must when soldering or working metal. You will also find an electrical multimeter very handy.

Overview

First, a word about transformers. A transformer has two (or maybe more) lengths of copper wire, each wound around an iron core. A transformer only works with alternating (reversing) voltage power, because the alternating current in the primary winding of the transformer causes the soft iron core to be magnetized in alternating directions (north to south). The magnetization, in turn, induces a voltage in the electrically separate secondary winding of the transformer, which we can use to power our equipment. The magnitude of this secondary voltage depends on how many turns the primary and secondary windings make around the transformer core.

You don’t get something for nothing, so if 180 watts (18 volts at 10 amperes) come out, then 180 watts must go in, or 117 volts at about 1.5 amperes. In fact, you don’t even completely get something for something. Because no transformer is perfect, some of the input power gets turned into heat. This heat comes from the resistance of the wire in the transformer windings and the magnetic losses in the iron core. The iron transformer core is made in thin sheets, rather than one large piece of iron, to minimize this loss.

If you read electronic supply company fliers or browse Radio Shack aisles, you see plenty of inexpensive transformers. Typically, they supply much less than 180 watts. We will use the Hammond model 165S18, which is one recommended by the command control vendors. It provides an output of 18 volts at up to 10 amperes (See Figure 2.) You won’t find it in condensed catalogs or in stock, but suppliers such as Digi-Key list it on their web sites and can provide it. Part of the reason for making this a multi-part article is that it will take you about a month to obtain it.

Our power supply will plug in. In the USA, this means 117 volts at 60 hertz (cycles per second). The output should be about 18 volts and be able to supply up to 10 amperes of current. By the way, if you live where house power is 220 volts ac, then ask Joe for details on a modified version of the unit.
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WANTED: PSC PRR X29 boxcar #15467 and similar #15453, Pac Ltd 32 ARA boxcar #5000A, CN cabooses, Crown B&M boxcar, Reynolds [Athearn] 50' PRR and NKP 50' boxcars. Mail only, please. Jim Seacrest, PO Box 6397, Lincoln, NE 68506-0397

You will note that the power unit is in an aluminum box with a bottom, to protect the inside wiring. It has a three-wire grounded line cord, an on-off switch and light, and over-current protection on both the input and output.

Various types of output terminals can be used, but remember they have to be sturdy enough to carry 10 amperes of current. I will use banana jacks. They match the banana jacks on DCS equipment and, alternatively, allow a wire (up to #14 gauge) to be clamped on. I will also explain how to use a conventional bar strip output terminal. There is also a ground output, internally connected to ground from the power source. You can connect it to either side of your output, or not, as you wish.

If you are interested, the immediate job is to order the major components. Below is a list of vendor references for these major parts. In the next issue, we will actually put it together and I will reference and discuss other components which are optional or selectable (Figure 3 shows most of these other parts.) In the meantime, you might want to get some shrink-wrap tubing (a package of assorted Heat-Shrink Tubing from Radio Shack 278-1627B). You put it over a wire-joint, heat it with a solder iron, and it shrinks down over the wire and does not expand when it cools. Cool!

Don’t start cutting and drilling yet. Some of the parts go into holes that are not round! You do have square drill bits don’t you?

See you next time.

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<td>(1) Single Pole Toggle Switch</td>
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<tr>
<td>USH NYC L2a, N/P, Mint, OB</td>
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<td>MG PRR K6 4-4-2, N/P, NOB, Can Motor</td>
<td>$1,675.00</td>
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<td>MG SP MT4 w/Flaten Gears, C/P</td>
<td>$1,895.00</td>
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<td>USH NYC H10, 2-8-2, Mint, N/P, OB</td>
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<td>OM NP A5 4-8-4, C/P, Mint</td>
<td>$3,895.00</td>
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<td>SS PRR H 2-10-0, Long Tender, N/P, OB</td>
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<td>USH NYC L4b, 4-8-2, Mint, OB</td>
<td>$1,250.00</td>
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<tr>
<td>OM BNSF SD70MAC, F/P, OB</td>
<td>$1,875.00</td>
</tr>
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<td>Key NYC RSJ, New,</td>
<td>$975.00</td>
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</tbody>
</table>

**Consignments**

- Weaver PRR M1a, 4-8-2, F/P, NOB ............................................ $695.00
- MG SP GS 4-8-4, C/P, Lites, Nice, NOB .............................. $1,595.00
- OM PRR FAPEBA Set, Late Run, F/P, New .............................. $3,990.00
- PSC #16951-1 NYC Baggage Mail, Green, New .......................... $4,995.00
- Keystone PRR H25 Hopper, C/P, New ..................................... $319.00
- SS N&W J 4-8-4 Rebuilt w/Sound, C/P, OB .............................. $1,500.00
- WSM PRR M1/K4 Tender Only, C/P ........................................ $295.00
- PRB GP15, F/P Chessie, L.N, OB .......................................... $675.00
- OM ATSF Erie Built “B” Unit, F/P, New ................................. $899.00
- PSC CB&Q BE-1, C/P Troop Kitchen .......................................... $395.00
- PRR H 2-10-0, Long Tender, Ptl By Bill Wolfer, OB .................. $1,450.00
- Custom Built PRR GG1, Ptd Green, 5-Stripe .......................... $575.00
- PL4300 PRR R-7 Reeper, C/P .............................................. $295.00
- Koks PRR Gle Covered Hopper, F/P, New ................................ $375.00
- MG #102 TT Flats, C/P PRR w/USH RB Tku (25 available), each .... $129.00
- MG PRR N8 Caboose, N/P, NOB .............................................. $250.00
- Alco PRR N6a, C/P or N/P, each ........................................... $225.00
- CB PRR N8 Caboose, N/P, OB ................................................ $295.00
- Lionel 13 Car NYC Smithsonian Set, F/P ................................ $Call
- Sunset 14 Car Congressional, C/P, Lights ............................... $Call
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**Nov/Dec ’05 - O Scale Trains • 57**
Standard Gauge Surprise At Narrow Gauge Convention

As a longtime O Scaler in both standard and narrow gauge, I was pleasantly surprised when I attended the 25th National Narrow Gauge Convention from August 31 to September 3, in Dearborn, MI. The convention was well attended, with over 1,000 people registered, and was wildly successful from most accounts. It was only at the last minute that I was able to arrange my schedule to attend. I was very fortunate to contact Terry Hansley, through the On30 Conspiracy on the Internet, and share a room with him at the convention hotel. We enjoyed the weekend and we both gained another friend in the hobby.

There were more than 60 clinics to choose from, and the photo and model contests were fabulous. There seemed to be more O Scale models than any other scale and the quality was amazing.

Three large ballrooms were filled with manufacturers and dealers, and a buying frenzy built up right to the last minutes of the show. Another large ballroom was set aside for modular and display layouts, and that was where about 40 members of the On30 Conspiracy gathered late one night to talk about future convention plans and to pay homage to O Scale. It’s a Conspiracy tradition now, and when the group broke into a couple of spirited howls that echoed through the hotel, those working in other scale/gauge combinations had to be impressed by the enthusiasm for O Scale and thirty-inch gauge.

There were plenty of home layouts to visit and many of us also enjoyed the Henry Ford Museum and Greenfield Village just a few minutes away from our hotel.

I have been attending narrow gauge conventions for 18 years and I was really happy to visit with many old and new friends I have met at other meets and on the Internet. When the manufacturers’ and dealers’ rooms open, most of us like to visit each booth quickly, then revisit in a more leisurely fashion before we start checking out the displays.

I vividly remember one convention in Denver, where I arrived just a few minutes after the commercial room opened with dealers around the outside walls and displays in the middle of the large ballroom. I quickly toured around the outside perimeter and was just going to start my slower revisits when I heard one fellow say to another, “Have you seen to the BIG room yet?” I learned there was a larger room next door, so I hurried around those commercial booths and was planning to return to the smaller room when I heard someone say, “Have you been to the BIG room yet?” Sure enough, there was an even larger third room and that threw all my plans off kilter. Well, something like that happened at Dearborn.

I visited one home layout and was very impressed by its size. Later, fellow Conspirator Dan Wolshon invited me, and a few friends, to follow him to a secret location that was not included on the layout tour. He told us he was taking us to see a BIG layout. Noll Horan, Bill Roy and I were passengers in Terry’s car and Steve Fisher and Mike Yoakam rode with Dan. I have no idea where we went but we eventually arrived at a private residence and entered into the side door of a large barn-like building. As we climbed a flight of stairs, we caught a glimpse of about eight Ford muscle cars that Dave, the owner, stored on the main loft. When we reached the upper loft, we were treated to a scene that was simply amazing.

The entire top floor was filled with plywood, set on the floor or on temporary legs, that showed where a large O Scale standard gauge layout was under construction. The building had been expertly prepared with coved corners and no interior roof supports. Dozens of fluorescent light fixtures were recessed into the finished ceiling and the workmanship was first class. Professional drawings illustrated how the four-track mainline will wind around the room numerous times and several other single-track lines will branch off. An On30 layout will also be featured, and most of the work was completed by Dave and Dan alone. According to Dave, 47 sheets of plywood were used just for the track underlay. All we could do was shake our heads in amazement at the scope of this project. This layout will have to be followed closely and properly documented in the future.

As Terry, Noll, Bill and I returned to the car, Dan came by and said, “Now we’re going to see the BIG layout.” We laughed at this joke and followed the other car until we arrived in the huge parking lot of a building that had obviously been a large store, 122’ long and 80’ wide. Inside the front doors, we stopped and looked at each other in silence because we could not believe what we were seeing in the 10,000 square foot space.

To give you some idea of the complexity of this standard gauge O Scale layout, a raised walkway, about ten feet high, ten feet wide, and over 90 feet long, extended almost the entire length of the middle of the room. Seven different stairways descended down into various parts of the inside of the layout. The three-track mainline runs around, over, under, and back over itself, as it makes its way around a continuous route that is 565’ long. The mainline tracks and several yards were operating, but there was little or no scenery.

Paul, the owner, held an NCE radio controller in his hand, and he motioned us over to where he stood at the head end of a long coal train that stretched away to our right and wound around what I will call Farway Curve. Beside Paul, five large Diesel units with Soundtraxx were idling impatiently. Paul welcomed us and pushed a couple of buttons and the train began to move. The Diesels wound around a curve and disappeared into the heart of the layout, and the coal hoppers kept coming. About a minute later, the Diesels rounded a curve to our left and entered a tunnel, so that the front and back parts of the train were going in the same direction six feet apart. Still, the hoppers kept coming around Farway Curve. About a minute later, the Diesels reappeared, exiting the same tunnel in the opposite direction to the cars on the adjacent track and the train could be seen in three different locations with no end in sight. Finally, the last car came around Farway Curve and Paul told us he was running a 325-car coal train “just for fun”. Then he sent out two long passenger trains and another 44-car freight, while the coal drag continued on its journey. We were speechless when Paul told us he was the sole owner, and he intends to expand around the outside walls in the near future.

At one point, Paul could not recall where he had parked three big Challengers and, when he finally located them, he pointed out ten more complete passenger trains on adjacent tracks that will become his Union Station. In the nearby freight yard, the shortest of 17 yard tracks is 40 feet long. By this time, I was not surprised to learn that he has installed 18 ten-amp boosters around the layout.

For security reasons, I have left out the full names and locations of the owners, as I hope that O Scale Trains Magazine will
feature both layouts in the future. Then both owners will have the opportunity to divulge as much information as they wish.

It is an understatement to say that I went to a narrow gauge convention and received a standard gauge surprise, but that’s what O Scale is all about. It’s always interesting to learn what others are doing in O Scale, and I hope to bring you more news about these standard gauge layouts as well as some big happenings on the narrow gauge scene.

In my 20 years of narrow gauge modeling, I have witnessed the trend from HO/n3 to On3 to Sn3 and then to large scale garden railroading. With the recent interest in On30, I suggest that there may now be more narrow gaugers in O Scale than in any other scale. It’s a great time to be in O Scale.

The 2006 National Narrow Gauge Convention will be in Durango CO, August 21-26, and I can only imagine what surprises might await there.

Happy trains to you until we meet again.
Building telephone, utility, or telegraph poles is the perfect first scratch-building project for the beginner, as well as an enjoyable project for more experienced modelers.

I believe that, if one is going to build a diorama or a scene on a model railroad, one should do their level best to make it as realistic as possible. Utility poles seem to be missing from so many model railroads. HO and N Scale have telephone poles available, in quantity no doubt, and can be detail painted and have wires strung on them. In O Scale, it’s been difficult. Poles have been available from Lionel, Marx, and a couple of other firms, always looking toy-like since that is the market they are made for. K&L House of Wood did make some nice craftsmen-type kits for telephone poles, but those were both expensive and tedious to build. Weaver Models has just introduced a new telephone/telegraph pole. They look pretty nice though they, like their HO and N scale counterparts, are plastic. The nice thing about the Weaver poles is that the insulators look right, but this article isn’t about buying Weaver poles. Those will be left to the reviewers.

I start with 1/4” dowels. These are very close to the size that a telephone pole should be in O Scale. I like using real wood to make models of wooden things. For me, nothing looks more like wood than, well, wood. They are too long out of the display, of course, but a typical dowel will make several poles. At the craft department in Wal-Mart, you can also find suitable material to make the crossarms. Since I don’t have a decent hobby shop close to where I live, I look elsewhere. I found some wood matchstick-type wood; its about eight and one half scale feet long, and is perfect for the crossarms of any scale telephone poles built for six wires per arm. If you want eight wires per crossarm, you will need about ten scale feet, which most should be able to find at their local hobby shop. Also in the Craft Department, you will find the brown, green, and clear beads we’ll use to make insulators.

First, notch the main pole depending on how many crossarms your pole will need. In areas where there are large cities, you will need up to eight crossarms per pole. In more rural areas, you would only need perhaps two or four crossarms. Cut each notch just big enough to allow the crossarm to fit in snugly. I usually go down a 5/16” from the top of my pole to make my first notch, about 1.25 scale feet below the top. The other notches are about 1/2” in between the arms, or a scale two feet.

You can add some grain to the pole by dragging a snap saw, or X-acto saw down the dowel. Next, use that saw to cut an angled pitch at the very top of the pole. Then, when it rains, you won’t have water puddling at the top and degrading the wooden pole. I know it doesn’t rain in the train room, but realism is what we are striving for here, isn’t it?

Let’s talk about crossarms for a minute. Crossarms can range in length from eight to twelve feet, depending on how much the crossarm has to support. In some instances, they can be shorter. There are all different kinds of poles out in the real world used for power, telephone lines, or railroad telegraph systems. Our model worlds shouldn’t be any different. If you model the Pennsylvania along the four-track main around Horseshoe Curve, then you will want to have up to eight crossarms with ten wires each per telegraph pole, on both sides of the track. If, on the other hand, you’re modeling the Southern Pacific running through parts of Texas, you may want only two or four crossarms with eight wires per arm. In rural counties in Iowa, you may want to have poles with only two or three crossarms. Rural power and phone poles sometimes have no crossarms at all. Whatever prototype your
modeling, this variety is what you're going to strive for. On the other hand, you can also use modelers license and do anything you want; just make it look realistic, even if it isn't.

After putting the notches in your poles, drill a hole in the center of each notch, put a straight piece of wire into the hole, and glue it in with CA. This will provide the crossarms with something to cling to while the glue sets up. You can use CA to do the complete assembly of the poles, as I do, but many will choose to use either white glue or carpenters glue.

Next it's time to put in the wires that will hold the insulators, or insulator armatures. I usually use some cheap florist wire, but brass wire can also be used. It should be of sufficient gauge to hold the beads that we will be using to represent the insulators on the crossarm. I usually space my insulators about 1/4" apart (one scale foot). Come in 1/4" from each end of your crossarm and mark that point with a Sharpie or a pen. Then, about every scale foot, do likewise for three or four insulators. Do the other side the same way. This will give you an even balance between each side of the crossarm. You should have two scale feet of clear space, in the middle of the crossarm, where there is no insulator. Use a twist drill to drill out all the marked holes. Some like to use a thumbtack or push pin to open up the holes, and I'm sure it works fine. I've just never done that; I use a drill.

Now it's time to put on the insulators. The type of beads that you'll want to use for insulators are commonly referred to as Indian beads, or Rochaille. These can be found in the Craft Department of any Wal-Mart, or at Michael's Arts and Crafts stores. You'll need clear, clear green, white and brown beads. These are common colors of insulators on telegraph/telephone/utility poles. Clear green and clear are common insulator colors on railroad telegraph poles, for example, while brown insulators are common on roadside utility poles. Take your floral wire and start cutting small pieces about a quarter inch long, and glue them into the holes you drilled out. Then, trim them down to size. They don't need to be very long, maybe 1/8" or a little longer, but the initial 1/4" size is easier to handle during assembly. They can also be trimmed up after the insulators are glued on.

Next, place your beads, (insulators) over the wires sticking out of the crossarm. In essence, what you're doing is making a very short bead necklace by putting the wire through the bead. Each insulator is represented by two beads. Be careful not to mix the colors on one insulator, as that would look suspect at best, but you can certainly mix different colors on the same utility pole.

The next order of business is to put the crossarms on the pole. If you did things right, you should have a blank space in the center of your crossarms where there are no insulators. Lay the crossarm sideways and drill a hole in the center of the blank space. You should already have a piece of wire in the notch of the pole; put a little glue into the notch, either CA or white glue, and push the crossarm in place. If you use CA, then you should be able to handle the telephone pole within a few minutes. If you used white or carpenter's glue, then set the assembly aside to dry. When you can handle the nearly complete pole, it will be time to put on the crossarm supports.

---

One cross arm ready for insulators.

What the insulators look like when installed.

Now it looks good painted; use any shade of brown that looks good.
Crossarm supports are fairly easy to make. I use simple florist wire to make mine. Cut a piece about 1/2" long. Make a ninety-degree bend at the middle, to make a nice “V”. Then, use some CA and glue it down, two ends on the cross arm, and the point of the “V” on the pole.

Painting the finished pole is fairly easy. You can use any color of brown, or a mixture of green/brown, to make it look like creosoted wood. If you can still find it, tie stain from the old Campbell line is a great choice for this. Minwax is a brand that is fairly easy to find at any Wal-Mart or any home improvement superstore. You can paint or stain the pole at any point during construction. I know mine look great, however, because they actually sat outside in a can for over a year before I found where I had stuck them. They actually weathered pretty nicely, something I can’t say about most of my stuff that was left outside when I lived in a trailer.

Since my poles are about 8-1/4" in length, I don’t want to bury them too deeply. Nothing looks worse than a pole that is too short. The only reason my poles are only 8-1/4" tall is because these were my dad’s dowels. He used them for his model ships. I kind of inherited them after he went to the great shipyard in the sky, so when I got these dowels, they were already cut. Different areas of the country do have different standards, so these poles don’t have to be nine inches tall. In some instances, the poles on our layouts might only be six inches tall. I choose to use a taller one, so I’m at 8-1/4”. Now that I have thoroughly confused everyone reading this, lets move onto the next step.

As I was about to say, till I got sidetracked, there are a couple of ways of mounting the poles. You can either drill out the bottom of the pole for a small nail, or use a smaller drill and put a piece of wire in the hole. Then, drill a matching hole in the position required on the layout, and mount the pole using CA cement (love that Super Glue!) Another way, especially if you used brand new dowels, and cut them long enough, is to drill a 1/4” hole in the layout, and mount it using Super Glue or white glue.

At this point, if you’ve been building poles along with me, then you may feel you’re finished. This would be true of a lot of folks who don’t care to take that extra step and make power, phone or telegraph lines. Making power lines is somewhat tedious. I used an elastic sewing thread which can be found at any sewing center, or in the sewing department of any Wal-Mart store. Mine (found at, you guessed it, Wal-Mart) was made by a company called Stretchrite. When I got my supply of this stuff over a year ago, it was on clearance, but I’m betting it can be found at any sewing supply place, or maybe even at Michael’s Arts and Crafts stores.

As you can see by the photographs, I haven’t done this yet (it scares me, too!) Once I do this, then I will never again be satisfied with bare power poles, and I will always have to re-pull wire whenever I build anything, or rebuild anything. However, if you must know, you start at one end, get one end glued on, and you go from pole to pole. Don’t forget to check that the wire, or thread, is glued to the same insulator from one pole to the next. Repeat for every insulator on the crossarms, one at a time. There is no other way to do it, so be sure you really ready to do the whole job. For most of us, we can imagine the wires are there and be happy.

When doing a smaller customer power pole, I use a shish-kabob stick. You can also use a shorter piece of 1/4” dowel, or even a little smaller size, but you don’t want it really any taller than about fifteen feet. That would be about standard for a customer pole. You can also use a short piece of dowel to represent the transformer. Remember to paint them gray. Some mainline power poles will require a transformer also; in fact, you may want two transformers on a main power pole. As always, they are gray.

I hope you enjoyed making utility poles, with the shortage we’ve had of this one item in O Scale over the years, its nice when a layout has them, as it adds a completeness to any scene. Now, if we can only get true O Scale automobiles, then life would be perfect.

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Restoring a Vintage Tank Car
Tom Houle

Every now and then I see a piece of vintage piece of rolling stock that begs to be brought back to life. I spot these projects wandering through O Scale shows and antique malls. In this instance, I didn’t find the project. It found me.

My good buddy Jerry Roy found the car languishing in a Milwaukee hobby shop catering to 3-Railers. Jerry liberated the car with a ten dollar bill and brought it home. It sat around for several years before he offered it to me with the veiled suggestion I should tackle the restoration (See Photo 1.) The car sat in my basement for several more years until, one recent snowy December day, I dusted off the car and transferred it to my shop. I had no knowledge of its origins.

Was it a kit or an early brass import? Turning to a copy of Model Railroader’s drawings for USRA 7000, 8000 and 10,000 gallon tank cars (magazine issue date unknown), I determined my car was very close to a 10,000 gallon car. The tank scaled out to the right length for a 10,000 gallon tank, while the tank diameter is 2-25/32”, a scale 3” smaller than the prototype diameter. That’s close enough for me to call it a 10,000 gallon car. The frame is 11/32” or 1’-9” longer than the USRA frame. You can use these USRA dimensions to determine the capacity of your tank cars:

<table>
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<th>Tank Length</th>
<th>Tank Diameter</th>
<th>Frame Length</th>
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<td>8-25/32”</td>
</tr>
<tr>
<td>10,000 gallon</td>
<td>2-27/32”</td>
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I thought I might have a Thomas kit, but that didn’t work out. I had a Thomas tank car instruction sheet which said Thomas tank cars were 8000 gallon capacity. There were other differences as well that ruled out Thomas. I shot a digital picture of the un-restored car and posted it to the Yahoo O Trains and O Scale Modelers Groups. Neither group came up with anything definitive. However, after corresponding with Jace Kahn, I’ve concluded the brass tank, tank bands and fastenings, and the brass Dalman trucks were definitely early Lobaugh (1940 era?) The cast bronze platform ends and brass strip frame crossmembers are still a mystery. They don’t match up with Jace’s Lobaugh tank cars, which have stamped and formed brass end-platforms and stamped brass cross-members. Based on how the tank bands were routed through the bronze tank saddles, my sense is that this car was built from a single kit and is very likely early Lobaugh. If anyone has any further thoughts on the origin, I’d love to know.

What I liked about the car was its brass and bronze construction. I’ve never owned brass rolling stock, primarily for reasons of cost, but I couldn’t beat the price on this one. And as we say in Milwaukee, the detailing, hey, it wasn’t just too bad. There would be work required to clean and square up those sandcast-bronze platform ends. The tank was in good shape with rivet detail on the tank ends as nice as any brass import. The dome would need some cleanup and detailing. The dome walkways had been soldered to the tank at amazingly incorrect angles. They’d have to be removed and new ones made up. Curiously, the Humble Oil decals were still intact; not peeling, yellowing, or cracking.

The bronze Dalman trucks weren’t worth saving. The side frames were one piece shallow relief bronze castings with no springs and minimal equalization. The sideframes, stamped brass bolsters, and machined brass wheelsets with their oversized flanges would be relegated to the car knocker’s junk pile alongside the engine shed. Nor would I use the original coupler boxes and white metal couplers, which looked like Monarchs. The coupler shanks were screwed to the end platform undersides with no centering springs or draft gear action. These antiques would also go to the junk pile and be replaced with metal 804 Kadees. I would also have to modify the undersides of the end platforms to accept Kadee coupler boxes and raise the coupler boxes to the correct height.

The frame crossmembers were 0.030” x 0.250” flat strip stock crudely cold soldered between the center sill and the walkways. They were too wide and not even close to scale. They’d have to go. The threaded mounting holes for the couplers would have to be relocated for Kadees. It looked like a lot of work, but hopefully worth it in the end.

I began by completely disassembling the car except for the dome (Photo 2). I left it in place as I didn’t know how it was attached. The frame was completely taken apart. Using a water-based gel paint stripper, I coated the parts and brushed them clean with an old toothbrush and a brass wirebrush. The tank cleaned up easily, but the frame was another story. Whatever paint was on the frame, it didn’t want to come off. It took a lot of soaking and elbow grease to remove it, before we had a set of parts looking like Photo 3. I could have used Pine Sol, Castrol, brake fluid, or a solvent based paint thinner. I’ve used Pine Sol and, while it takes longer, it does a good job and is non-polluting. It works well on plastics, too, if you don’t leave the parts in to soak too long. I washed the parts in soapy water and the restoration fun began with reassembly of the frame.

I did the heavier soldering of the frame components with a Weller...
100/140 Watt gun and 60/40 rosin-core electrical solder. An 80 watt iron would do as well, in fact probably better, because of its greater tip heat retention. The lighter joints on the tank bands, walkways, and grabs were done with a 40 Watt soldering iron, Tix solder sticks and flux. Tix sticks are so thin that it’s hard to get too much solder into the joint. Tix flux is the best stuff I’ve ever used. Tix solder is low temp solder. It melts at 275 degrees F. You can make low temperature joints close to your higher temperature joints and you won’t melt what you’ve already soldered.

I began reassembly by soldering the bronze end-platforms to the center sill. I didn’t attach the end sills to the platforms. That would be done after setting the coupler boxes to the right height. I jigged the end platforms to the center sill, and then did the soldering. The end sills were left off to more easily grind away the undersides of the end-platform center sills to accommodate the Kadee coupler boxes. I had to remove 1/16” from the bronze center sill ribs to raise the coupler boxes to the correct height. I did the initial hogging with a Dremel tool and a tapered cutter bit. I finished up with a large flat file. As I cut down the bronze, I periodically set the car on a pair of Athearn metal trucks to check coupler height with a Kadee height gauge.

The Model Railroader USRA tank car drawings indicate the height from the walkway decks to the rail head should be 29/32”. I would need to add 5/32” to the bronze bolsters to raise the car to the correct height above the railroad. Basswood and Styrene sheet were added to the bolsters after I completed the soldering of the frame.

The frame walkways, 0.030” x 0.250” brass strips, were added next. I coated the walkway ends and bronze platform ends with solder, then sweat soldered the walkways to the platform ends. When the solder began to bubble from the walkway-platform joints, I knew I had solidly sweat soldered the joints. The end sills were then opened up for the Kadees and soldered back in place.

In plan view, the bronze end-platforms looked more like trapezoids than rectangles. Using a small square, a scribe, various files, and a few swipes with my belt sander, I squared up the end-platforms. To mount the Kadee 805 coupler boxes to the frame, I drilled and tapped 2-56 holes into the end-platforms. The original Lobaugh trucks were held in place with 30-minute Epoxy. That wrapped up the frame rebuild (Photo 4), except for the tank retaining bands which are attached to the underside of the end platforms. I would add these later after the tank was attached to the car.

The tank handrails are formed 0.025” steel wire running in turned brass stanchions. The wire required some soldering at the tank ends where the railings meet at the center stanchion. Photo 5 shows the tank at this point (along with the retaining bands we’ll discuss a little later). The original handrails are sturdier than brass wire and neatly formed at the tank ends where they wrapped around the tank ends.

The only detail on the dome top was a flattened disk meant to look like an access hatch. There were no vents. I ground the top of the dome flat, with my belt sander, and then Epoxy-ed a brass Lobaugh hatch from my junk box in place. I drilled two holes and installed a pair of Lobaugh brass tank vent turnings. I used Epoxy as I was afraid of loosening the dome if I tried to sweat-solder the details.

The original tank walkways were soldered onto the tank at the darnedest cock-eyed angles. On a rainy night, no self-respecting car knocker would have gone up the ladder to the dome hatch and stood on those walkways. I removed the old walkways and supports, and made new ones from 0.030” x 1/4” brass strip and 0.030” wire. I used the original mounting holes for the new supports. Lengths of 0.030” brass wire were soldered to the undersides of the two walkways. The inside support wires run straight into the upper set of holes in the tank. The outside wire supports were bent and angled downward to line up with the lower set of tank support wires. The holes didn’t have to be moved.

The brake wheel and staff are original. I removed the wheel and staff for cleaning and then soldered the staff back in place. The brake wheel isn’t as pretty as what you can find today, but in the interests of the restoration, I decided to re-use it. It has a sort of charm and is beefy enough that it’ll never break. The original brake cylinder, a minimalistic brass turning, was removed and replaced with a larger, better detailed whitemetal cylinder from Auel. That is as much underframe detail as I will add on a car that might be 0-5-0’d by my grandchildren.

What’s the fun of having your kids or grandkids join you in the railroad room if they can’t touch anything? Several years ago, my now 13 year-old grandson would spend hours pushing a scratchbuilt Lackawanna baggage car around the layout. He’d get on a stool, operate over every inch of track forward and backwards, go through every turnout, do it a zillion times and all he ever did was knock off a couple of the stirrup steps – easily replaced and worth it. My granddaughter’s favorite car was a vintage Atlas plastic Santa Fe plug-door car, virtually indestructible and God help the grandson who dared to touch that red car.

At this juncture, I soldered the stirrup steps back onto the platform ends. They had been loose when I started, so I removed and cleaned them up before I reinstalled them. Made of 0.060” steel strip, the steps are quite sturdy and feature a second rung on the step. They are nicely made and, to my eye, look good for their age.

The side- and end-sill grabs went on next. The original grabs were pretty beat up, so I removed them and drilled new holes for 0.030” brass wire grabs. I don’t normally use 0.030” wire for grabs. I prefer 0.020”, but I was drilling into the bronze and could see myself breaking a bunch of 0.020” bits before I drilled the required 16 holes. The heavier wire isn’t that noticeable on the finished car, and then there is always the 0-5-0 factor. The grabs were soldered inside the platform ends with Tix solder and flux.

With most of the frame soldering done, I added the bolster pads. These are 3/32” thick basswood blocks CA-glued to 0.060” Styrene pads. The Styrene pads serve as the bolster bearing faces. Before cutting the pads to the correct size, I through-drilled them to clear 6-32 screws. The pads are held to the bronze platform ends with 30-minute Epoxy. That wrapped up the frame rebuild (Photo 4), except for the tank retaining bands which are attached to the undersides of the end platforms. I would...
holes. Now, the dome walkways are plumb with the rest of the car.

On the original car, the tank was held to the frame by the two tank bands. I opted to drill two holes through the center sill and into the tank 2" from each end. Self-tapping panhead screws go through the center sill and thread securely into the tank. The screw heads are completely hidden by the sides of the center sill and the tank is removable. Ladders came next.

By the time I got the car from Jerry, one of the original brass ladders was missing. I cleaned up the one I had and soldered it between the handrail and walkway. Rather than trying to replicate the original ladder on the opposite side, I used a whitemetal casting from my junk box. It's close to the original and, on my layout, you can only see one side of the car anyway. I attached the whitemetal ladder to the handrail and walkway with slow setting CA glue.

The original tank retention bands were 0.025" x 0.060" brass strip. The width was correct, but the thickness scaled out to over an inch. Still, I might have used them. The bands were terminated with some neat brass fittings. The tops of these fittings were slotted to receive the tank bands, which were soldered into the slots. The bottom ends of the fittings were drilled and tapped to accept 2-56 screws that came up through the bronze tank saddles and threaded into the fittings. You could literally adjust the tank band tension. In fact, the tank was held to the saddles only by these bands. After cleaning up the fittings, I re-soldered the original bands to the fittings only to find solder had wicked in and filled the threaded holes with solder. Those fittings were just too small to drill out and re-tap. So I shopped around for new and thinner banding.

I used Detail Associates #2350 0.015" x 0.060" brass strip. This stuff scales out to 3/4" thick. You get six 12" strips in a pack for three bucks, and it's also available in 0.015" x 0.040" strips. It's great stuff for tank, boiler, and barrel banding requirements. I bought mine at Walthers' Terminal Hobby Shop, where they had both sizes in stock. I found out later K & S Brass has 26" lengths of 0.015" x 0.062" brass strip available.

I soldered one end of a Detail Associates brass strip to the underside of the end-platform, and then routed it up and over the tank and down the other side of the tank. Tiny drops of CA glue at the tops of the bands keep the two bands from sliding around.

The completed car (Photo 6) was ready for a mild etching bath in a solution of vinegar and water. I filled a plastic storage box with the solution and let the car bathe overnight. The next day, wearing plastic gloves to prevent finger oils from etching into the brass, I rinsed the car in clear water. When it was thoroughly dry, and in preparation for the final paint job by Jerry Roy, air brusher extraordinaire, I shot the car with two light sprays of Floquil Gray Primer (Photo 7). The car was ready for the paint shop. I never considered repeating that silver Humble Oil paint scheme, though.

For years, I'd wanted a tank car painted and lettered in the Union Oil 76 royal blue and orange livery. I already had the correct decal set, Champion #OT-218. While the orange and blue colors and billboard lettering are an eye candy sort of paint scheme, that wasn't the real reason. I wanted a link to my very first HO kit, an Athearn HO Union 76 metal tank car kit, and this time it would be in O Scale.

Athearn ads called their tank car kit a “Shorty”, and I don't know why. The car is standard length, nearly matching the dimensions in the Model Railroader USRA tank car drawing. Richard Hendrickson, of the STMFC Steam-era Rolling Stock Yahoo Group, reports 49 of these blue and orange 10,000 gallon cars were operated in the 1950s. Richard says the color and lettering scheme came about after the UOXC fleet was taken over by General American and operated by them for Union Oil. STMFC Group members, Charles Morrill and Gene Deimling, provided scans of the Athearn ad that ran on the back cover of Model Railroader magazine in the fifties. This prototype photo may be the only photo in existence of this car (Photo 8). It's too bad Athearn never did this car in O Scale.

After some debate over Union 76 royal blue, Jerry Roy sprayed the tank and frame with Badger Model Flex CSX Blue. We think this is a close match to the original. He shot the dome sides with Floquil Reefer Orange. After applying a set of Champ OT-218 decals, Jerry sealed the car with Uñil Cote. Jace Kahn provided a pair of Athearn metal trucks. Kadee 804 couplers finished off the project.

Rebuilt, re-fastened, re-trucked, and splendid now in royal blue and orange, I can't help but wonder who built the original car? Where did it operate? I'll never know, but in the meantime I have the satisfaction of knowing this vintage beauty is ready to serve another fifty years. In fact, the damn thing is gonna outlive me!

I'd like to mention the STMFC and O Trains Yahoo Group folks who helped to restore this car: Bob Anson, Gene Deimling, Richard Hendrickson, Jace Kahn, and Charles Morrill for contributing model and pro-
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**Events**

**November 2005**

- **19-20: Parma Heights, Ohio**
  Valley Forge HS Railroad Show. All scale model railroad show at 9999 Independence Blvd. Parma Heights, Ohio, Sat. and Sun. hours 10:00 AM to 2:30 PM. Admission: $4, children (6-12) $1, tables for 2 days only $35 each. Contact Bob Frieden, 9695 Chillicothe Rd, Kirtland, OH 44094, 440-256-8141.

- **19: Cincinnati, Ohio**
  Cincinnati O Scale Meet O Scale (2-Rail only) sponsored by the Cincinnati Model Railway Club at the Cincinnati Holiday Inn North at I-775 and Rt 42 (Sharonville). Open 10 AM to 4 PM. Table $20. Admission $5. Contact Frank Koch, 4769 Silverwood Dr, Batavia OH 45103, PH: 513-334-4264. Note: This meet replaces and continues the 24 year tradition of the Western Reserve O Scale Meet of Robert Boeddner and friends. Email contact: fkkoch@hotmail.com

**December 2005**

- **16-18: Franklin, Tennessee**
  Annual Christmas Train Show at the Factory. Dealers and displays from around the country will buy sell and trade all brands of trains and railroadiana. Display layouts in O, HO, N and G. Special VIP passes for all 3 days. For dealer or show info call Patrick Edwards toll free at 1-888-844-4403. Email contact: patrick@southboundtrains.com

- **18: Parma, Ohio**
  Parma Senior HS Railroad Show. All scale model railroad show at Parma Senior HS, 6285 W 54th St, Parma, Ohio. Hours 10:00 AM to 2:30 PM. Admission: $4, children (6-12) $1, single table $25, multiple tables $19 each. Contact Bob Frieden, 9695 Chillicothe Rd, Kirtland, OH 44094, 440-256-8141.

**February 2006**

- **3-4: Santa Clara, California**
  15th Annual O Scale West at the Westin Hotel Santa Clara, 5101 Great American Pkwy (hotel 408-986-0700). Over 190 tables and layouts, photo & model contests, movies & videos, self-guided layout tours (28 club and home pikes open), door prizes, videos, meet car, contests and more. Sales on Fri. and Sat. ONLY. Thursday registration. To sign up send a SASE for the Western O Scaler newsletter. Admission is $25 until 12/31/2005, after $30 (spouse and kids under 12 free); tables $35 until 12/31/2005, after $45; electricity free. For more info write: O Scale West, 876 Boyce Ave, Palo Alto, CA 94303-3003, 650-329-0424 or Contact rod@rod-miller.com

**March 2006**

- **18-19: Chicago, Illinois**
  Chicago Midwest O Scale Meet at the Arlington Park Sheraton Conference Ctr, 3400 W Euclid Ave (hotel 847-394-2000; reserve by 2/15/06 for $85 room rate). Sales, display layouts, tours, and model contest. Registration (1 or 2 days) $15, spouse and under-18 free. Badge required, no exceptions. Vendor (O scale only) tables $45 until 12/31/2005, $50 after that date if available. Electricity free, subject to availability. Info: send SASE for dealer confirmation. March Meet, PO Box 333, Park Ridge, IL 60068; or call the message center 847-823-1719.

**July 2006**

- **2-8: Philadelphia, Pennsylvania**

**September 2006**

- **22-23: Indianapolis, Indiana**
  Indy “O” Scale 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 8/15/06, $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
MEMO: Editorial Opinion Letter

From: Brian Scace, Editor, O Scale Trains Magazine

To: 3-Rail Equipment Manufacturers Entering the 2-Rail Market

Recently, word has come out of yet another lawsuit over in the 3-Rail World. While we at OST are loath to voice an opinion, especially as we are not an adjudicating institution, a few observations come to mind that have been bothered me about the fuzzy-ing of the border between the 3-Rail World and the Scale World. With the entry into the Scale World of several traditionally 3-Rail manufacturers comes many new choices for us. I still maintain that new choices are good, and 2-Rail (O Scale) is growing hand-in-hand with them. New people, new ideas, and new products are indeed welcome. However, to succeed in this very different marketplace, some baggage needs to be left behind, lest it adversely affect us all. Here are some things to consider.

There are many differences between the scale marketplace and the three-rail marketplace, but most germane to this commentary are the customer-base loyalties that create the market dynamics. The 3-Rail market has been traditionally brand-loyalty driven. Although the lines are getting a bit fuzzy up in the Hi-Rail end of things, this driver is still predominant. There are the Orange Box guys, the Purple Box folks, and the Black & Yellow Box people. Loyalties are fierce and emotions are, very often, high. Also, what can develop is a tacit assumption that the consumer, out of brand-loyalty, will buy a substandard piece as a “duty”.

Our market reacts to a different driver. Because we traditionally seek to duplicate a prototype in miniature, or freelance to a theme based on era or locale, the O Scale World is fidelity- and compatibility-driven. Most of us don’t care whose name is on the box that our Pennsy H21 hopper came in. We care that it is a better model of an H21 than the last version someone did, and that it is compatible with everything else in our miniature world we create. It doesn’t matter who brought it to market commercially, or if it’s one of our treasured self-built pieces, the individual model is an element of a whole made up of products from many sources. We purchase based on the merits of the individual piece, rather than to add to our collection of a product line.

These two very different market drivers create two very different sets of dynamics. In the first case, entire product lines compete. This requires a major player to possess a complete line of track, rolling stock, locomotives, scenery supplies, hardware, structures, even power supplies. To be innovative, hence competitive, one needs to maintain an aggressive brain trust in each of these product elements. You need an electronics guy, a locomotive research person, a mechanical design guy, someone who does concepts for the structures and accessories, marketing folks, ad infinitum. Vertically comprehensive product lines are very people-intensive, in order to stay innovative and competitive. Add to that the need to make the concept-to-marketplace timeline as short as possible, in order to capitalize on a “new” innovation, and you can see the pressures that can, unfortunately, tempt one to possibly push the envelope of propriety a bit.

The Scale World, because of the fidelity/compatibility driver, has much more of a niche dynamic to it. The larger successful players have horizontally comprehensive product lines. Some folks concentrate on locomotives and/or rolling stock, while others do trackwork. A company that only produces structure kits can do quite nicely, thank you. We could really use a comprehensive line of prototype-faithful passenger cars, by the way. Also, in our world, the concept-to-marketplace timeline is not driven as much by who gets there first. More important to us is “who gets it right”. Since it all should be compatible, “first” isn’t as important as “best”. We actually tend to sell off, for example, KTM C&O hoppers and replace them with newer Yoder ones simply because the Yoder car is more faithful to the prototype. It makes no difference to us that the KTM was “first”. When you aren’t driven by box color, you can make choices like that.

If you are serious about expanding your market by entering the Scale World, it will serve you well to consider these basic differences in the producer/consumer relationship. I recently sat in an industry forum, where the rep from (one of the established three-rail manufacturers that was entering the two-rail marketplace) spoke. He went on about the vagaries of the 3-Rail market, or believe us (as a marketplace) to be sheep fat for the slaughtering. His comments probably would have been appropriate at, say, a TCA forum, but because he was so devoid of understanding the Scale World dynamic, he blithely stood before the crowd and slit his (and his employer’s) throat. He would have learned so much had his ears been open rather than his mouth.

Here is an example of how understanding those market differences can benefit both you and us. In this case, I’ll use the compatibility issue that comes to mind with the whole control system mess. DCC aside (with its own handicaps), we have a couple of pre-installed command control/sound systems that are available. These are reliable, robust systems engineered for the high-amp electrical environment of O-sized gear. What they aren’t is compatible, either with each other or with other equipment I use to model my prototype of choice. If only one of these systems would reach the O Scale market in a blister pack with available interchangeable components, such as sound chips, as a stand-alone product line. The system thus re-engineered, such that the average consumer can drop the receiver into any one of his locomotives in the manner the HO guys install DCC decoders, would sweep the field. That will be the control system I go with and add to over time. As long as these systems carry the product-line specific constraints that they do from their birth in the three-rail market dynamic, however, my (and other’s) wallet will stay put. Sales will continue to be limited rather than his mouth.

While we welcome the new (to us) manufacturers and importers who are joining us from the 3-Rail World, we do ask one thing. Please take the time to understand that compatibility and fidelity, rather than brand loyalties, drive our world. If you don’t realize this, the chances are excellent that you will fail and we will hear (once again) that your failure is our fault because we didn’t do our “duty” to support your attempt. Since your ultimate goal is to sell products, know that we’ll buy product that meets our needs and desires. We don’t buy out of some perceived “duty” to a particular product line.

Oh, yeah, and please leave the acrimonious baggage on the other shore before coming over to this side of the Styx. We don’t need it.
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**Features Include:**
- True 1/4" dimensions and details • Solid die-cast chassis, fuel tank, trucks and pilots
- Railroad specific details • PRR style includes radio antenna on the Pennsylvania "A" units • Operating diesel exhaust unit

**TMCC Features:**
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**Additional 3-Rail Features:**
- "A" units include alternate full scale pilot for great scale look on curves
- Minimum diameter curve: 0-54

**Additional 2-Rail Features:**
- All wheels insulated with 8-wheel pickup • DCC-ready • Directional lighting
- Die-cast scale knuckle couplers

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### ATLAS O FM ERIE BUILT LOCOMOTIVES – NEW ROAD NAMES & ROAD NUMBERS!

<table>
<thead>
<tr>
<th>ITEM#</th>
<th>3-RAIL 2-RAIL 2-RAIL</th>
<th>TMCC</th>
<th>DESCRIPTION</th>
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<td>1200</td>
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