M.T.H. Electric Trains will be shipping its 2005 Volume 1 Premier Line 4-4-0 steam engines next month for arrival on M.T.H. Authorized Retailer shelves by year’s end.

Two different versions of the Premier Line 4-4-0 will be produced: a Pennsylvania D16 model that will be available in Pennsylvania, Long Island, and Strasburg Railroad liveries, and a non-Belpaire firebox version for the New York Central and Baltimore & Ohio railroads.

The Pennsylvania D16 4-4-0 production model sports a Belpaire firebox and the classic Brunswick Green paint scheme characteristic of Pennsy steam engines. Additional details include fine pinstriping on the locomotive, drive wheels, pony truck wheels, boiler domes and tender body. A pull cord for the whistle and bell, sliding glass windows in the cab, opening hatches on the tender, an engineer and fireman figure and the incredible performance of Proto-Sound 2.0 round out this diminutive locomotive. Look for versions in Long Island and Strasburg Railroad livery as well. Note that while the preproduction models pictured on this page lack counterweights on the drivers, the actual production models will have the correct counterweight on each driver.

Aside from the Belpaire firebox, the New York Central and Baltimore & Ohio versions of the 4-4-0 are identical in detail to the Pennsylvania D16, and represent typical mainline steam locomotives of the late 1800’s.

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Creating Work at Lancaster on the Great Western

In this view looking south, Train 121 the westbound Dubuque Turn headed by Alco FA units, passes the FP-7 engine stationed at Lancaster. Train 121 is scheduled to arrive at 7:30 AM.

If you have ever visited New Orleans, you’ve probably discovered that the mystery of the city is that things aren’t what they seem. You can sit outdoors in the French Quarter, enjoying a beignet looking due east across the Mississippi at the west bank of the river, which at that point is flowing north, rather than south, and begin to understand the city’s source of charm and creativity.

Well, my freelanced O Scale Great Western Railroad is located up river about a thousand miles. Operators on the walk-around layout look north, with west to the left and east to the right. Noted track planner John Armstrong refers to such layouts as “sincere”. I guess, for sake of a longer mainline run, I got a little insincere. At the town of Lancaster, Wisconsin, you are looking south, which forces your imagination into play.

The Great Western is essentially a single-track shortline based on actual rail lines that, in reality, are now abandoned or have become bicycle trails in Wisconsin and Iowa. When an article was published in Model Railroader (July, 1997) describing the GWRR’s track plan changes, I made the observation about constructing a parallel hidden track between Lancaster and Potosi,

The lightly traveled access road to the fuel oil dealer is purposely blocked by setout cars to facilitate safe and expeditious switching. The E.P. Evans boxcar behind the engine carries batteries for train power.

Not requiring pusher service today, the caboose trails the Dubuque Turn as it leaves Lancaster and re-enters the “hidden valleys” region of the GWRR.
Having made its local drops, the Lancaster engineer backs down the siding to pick-up the Fennimore cars and is ready to depart town at 4:00 PM.

The Dubuque turn has split its train to pick up the setouts and leave Lancaster and Fennimore cars behind.

Local switching is done first by the Lancaster engine as cars are dropped at the fuel oil dealer.

"...better to err on the side of too much track rather than too little".

My speculation, then, was one possible use for the new siding is to imitate the prototype Chicago & North Western’s branch to Fennimore. If I consider the hidden siding to be the branch and assume that Fennimore has no turning facilities, then the westbound Dubuque Turn could leave its train at Lancaster and push loads destined for Fennimore into the hidden track and then return.

The C&NW’s operational pattern was of particular interest.

There were two places where trains backed down the track for miles to arrive at branch-terminating stations. That knowledge opened the door for some interesting operational enhancements.

On the GWRR, it is apparent that a helper engine is needed to occasionally push Dubuque-bound trains through the “hidden valleys” area under the Mississippi Dam and up the 2.9% grade.

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The C&NW’s operational pattern was of particular interest.
The brakeman throws a turnout as the train crosses from the siding to the mainline for the return run to Lancaster. In our imagination this is a run-around move at Fennimore.

grade to the Dickeyville power plant. There are three westbound trains daily, but not all of them need help. So what else could a Lancaster-based engine do? It could switch the Lancaster sidings rather than using the engines from the daily Dubuque Turn (Train #121), although the capacity is only 5-6 cars. It could also provide switching service at the Dickeyville power plant after pushing duties. This work would be shared with occasional, but daily, visits by the Dubuque switch engine.

Then there is the prospective Fennimore branch. The Dubuque Turn can drop and pick-up Fennimore cars at Lancaster. The Lancaster engine has the additional work of taking trailing cars to Fennimore (after it has been determined whether #121 needs a shove to Dickeyville). At the end of the branch, which is in a tunnel (this is where imagination bears fruit), the engine pushes the setouts forward while dropping the deliveries. Then the engine runs backward to Lancaster, caboose first, pulling the pick-ups.

I'm pleased to have found extra work for the Lancaster job. So, let's do a reality check. Fennimore is actually west of Lancaster. That works okay if you remember that you're looking south and the branch is on the north side of the mainline. The line through the so-called “hidden valleys” emerges from a tunnel. The siding representing Fennimore is adjacent to the westbound mainline still on the north side of the track. Because the setouts are blocking the return trip, the Lancaster-bound return trip will use the mainline, which your imagination says is okay.

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Do you need a manual turnout switch that operates with one finger, has adjustable throw range, securely holds the points in place, routes electrical power to the frog, and looks (if not prototypical) at least not intolerably ugly? I’m not sure the contraption shown here meets the last criterion, but it does the other things quite nicely.

I am planning a switching layout in a 2’ x 12’ space that will be run with a DCC system. The trackage will be Code 125 flextrack, with turnout assemblies from Old Pullman and BK Enterprises. Turnout assemblies are spiked to wood ties from Mt. Albert, which are CA glued to 1/8” thick Styrene bases. The spikes are Old Pullman #00195. Completed turnouts are self-contained, portable, and reusable.

In making a suitable switch, the first problem was to select a commercial single-pole double-throw (SPDT) toggle switch. Here, I chose the Radio Shack #275-603A rated at 5 Amps. It is not too big or too small, has good sized electrical terminals, a small foot-print, and its toggle lever can be ground, drifted, and soldered. Start by grinding a flat spot on the tip of the toggle switch lever. Drill a 1/8” hole, 3/16” down into the lever, and solder in a piece of 1/8” brass rod. The length of the brass rod determines the final height of the switch; I use something between 7/8” and 1-1/8”. Take a 1” length of 1/32” x 1/8” brass strip and bend it into a clevis shape around a 1/8” drill bit. Drill a hole using a #50 bit through the ends of the clevis and tap them for a 2-56 screw. The switch, rod, and clevis are shown in Photo 1. Then, solder the clevis to the base of the brass rod in the toggle switch lever. The clevis should just slip through the toggle switch nut-and-washer holes, but a little grinding may be necessary. Take a small length (1/4” - 5/16”) of 1/8” square brass stock and drill a hole near one end with a #45 bit. At right angles to that, drill another hole with a #50 bit, tap it for a 2-56 screw, and solder in a 7/8” length of 2-56 threaded rod (available at hobby shops catering to the RC airplane crowd). A #45 hole will just clear a 2-56 screw; position this piece in the clevis as shown in the photo.

The throw bar is a piece of a tie made from printed circuit (PC) board, from Fast Tracks (part #PB-O-S); these are 1/16” thick x 3/16” wide, with copper cladding on both sides. At one end, solder in a 3/8” length of brass rod to fit the predrilled hole in the turnout assembly throw bar (NOTE: The PC board throw bar is not removable once the rails are spiked to the ties. You should attach it with a small screw going down through the turnout throw bar if you want to be able to remove and replace it.) The length of the PC board throw bar will vary with the distance between the center of the track and the toggle switch. The toggle switch fits into a 7/16” hole; a point about 1/4” from the edge of the hole should be the closest point of travel for the PC board throw bar. A 3/4” length of 3/16” square brass stock, drilled with a 3/32” hole about 9/16” from one end, is soldered to the other end of the PC board throw bar so the hole is in line with the throw bar. Photo 2 shows the completed assemblies.

The throw range of the toggle switch lever is greater than needed, so the 2-56 threaded rod must slide back and forth until the nuts force the throw bar to move the required distance. By positioning the nuts you can get a good point-to-rail fit just as the toggle switch snaps into position. Bevel the ends of the hole by hand by twisting a larger bit at the mouth of the drilled hole. This step will allow the 2-56 rod to slide back and forth more easily. Once the nuts have been set to their best positions, a dab of paint will hold them in place. Connect the outside terminals of the SPDT toggle switch to the stock rails and the middle pole to the frog and you are good to go.

Photo 3 shows the manual switch in place. I clean and paint the rails of turnout assemblies as soon as I get them; when the turnout is put into service paint is removed from the rail tops with a cotton swab soaked in isopropyl alcohol. The angle of the toggle lever gives a visual indication of the position of the switch. If you want position indicating lights, you can run appropriate leads from the toggle switch terminals. This switch may not be pretty, but a little makeup (paint) can go a long way. Besides, the more you see it work, the prettier it will look!

**Sources:**


Combining a mid-1950s Lionel 520 locomotive body with the mechanism of a 1970s Atlas six-wheel Diesel switcher produces a very inexpensive 1930s electric or Diesel, perfect power for very small O scale layouts. This conversion is simple. Believe me, if I can do it anyone can, and you’ll probably do a better job. Expert modelers will find hundreds of ways to detail the finished locomotive.

Lionel made the low-end 520 electric locomotive between 1956 and 1958. Usually found at train shows minus its plastic pantograph, with body-mounting tabs broken, and otherwise decrepit, the 520 nowadays sells for about $35. Our 3-Rail friends enjoy finding scarce Lionel pieces, and it is our duty to buy 520s and cut them apart, making them rare. Asking how well a 520 runs often causes an immediate drop in price. After purchase, remove the bright red plastic body (usually no longer attached anyway) and offer to sell back the metal carcass (Most dealers will pay five dollars for it.) The silver LASER train caboose resembles the 520 body, but is too narrow, so leave that for the collectors of the future or to our On30 friends.

The little Atlas six-wheel switcher, introduced in the early 1970s, irritates prototype purists who condemn it for being oversized and for having side frames where the Plymouth prototype had none. Often available in its original box with front-end handrails still packaged separately, the so-called WDT Industrial Switcher (# 6121 is the one painted Santa Fe) can be had for about $25, not bad for a locomotive with working headlight. Used versions sometimes have a split nylon axle gear, which causes the motor to race and the locomotive to stand still. Repairing the split gear is easy. Remove it from the axle by first pressing off one wheel, wrap some braided fishing line around the hub of the gear three or four times, apply CA glue, and let it set overnight. Then press the gear and wheel back on and re-assemble the drive. Try to get a switcher with all handrails intact; we will recycle them.

Using a new hobby knife, carefully remove the cast-on ladders, handrails, and leaf springs from the 520 sides. Do not remove the piece of belt rail when removing the ladder castings. While the body is still whole and rigid, use a razor saw, file, and sandpaper to remove the cast-on air tanks from the roof. Then sand the roof smooth. Suddenly the casting shows tremendous possibilities. Then shorten the body by 2-1/2”. The 520 body is 6-1/2” long; the final body must measure 4-7/8”. Choosing where to remove the section involves removing all of the portholes or keeping one. Making the decision personalizes the finished model. Make sure the cuts are square and that the two ends butt together without gaps, then glue. Now glue thin Styrene sheet over the entire roof. A good source of extremely cheap, thin plastic is a “Keep Out” sign in hardware and discount department stores. If you’d rather, glue Styrene beneath the rectangular holes and the holes for the pantograph and reverse lever, fill with Bondo, Green Putty, or similar product, let dry and sand smooth. Glue a piece of Styrene behind the hole in the end door. Once it’s dry, fill the hole with putty and sand smooth.

Thin wire can be used to make grab irons and handles. Drill holes in the same locations as the cast-on parts, especially for the ladder. Plastic or brass ladder stock can be substituted for ladder grabs. The end doors deserve door levers or knobs made from the heads of pins.

Remove the body of the Atlas switcher, the end stanchions and air tank. Then, remove the footboards by gently prying with a thin screwdriver or (with goggles on) the end of a hobby knife. The sideframes snap off, making cutting away the side steps a bit easier. The front steps are molded to a gusset which must be separated from the steps (best done after removal of the side frames from the chassis). After removing the rear steps, carefully cut away the end gusset with a hobby knife. With a large file or coarse sandpaper, remove just enough plastic from the frame to allow the 520 body
to drop over the frame in a pressure fit. Remember to remove material equally from each side of the switcher frame. An alternative is to remove the bottom 3/16" from the side channel of the 520 body and glue a piece of plastic channel to the outer edge of what remains of the original channel. Filing the switcher frame is far easier. Glue the steps back onto the side frames, a set of steps at each end.

Very carefully remove the bottom plate, exposing the gears and making possible the removal of the original Atlas couplers. Fit Kadee couplers into the pockets, using a Kadee coupler height gage to be certain the coupler is mounted at the correct height. I shimmed each Kadee pocket down 1/8" using a piece of basswood. Add high-quality lubricant to the gearbox. I use Super Lube, which has Teflon in it. The footboards will interfere with the Kadee coupler actuator, so remove a 1-1/8" x 1/8" piece from the center of each footboard. Snap the side frames and the front end-railings back on the frame. Make the opposite end-railings from one of the side-railings assemblies.

The original headlight bulb is not only too large to fit inside most scale-size headlight castings, but uses the weight as one side of its electric circuit. I splurged for a cast-brass headlight. I mounted it on the frame, added an ordinary 12-volt grain-of-wheat bulb, and ran the leads under the door. I soldered one lead to the original headlight lead, and the other to a brass screw I set in the tiny hole next to the original headlight slot. If you do not want to solder, you can try a tight wrap-fit on the screw. A headlight (or two) could be mounted on the roof, and the car-body allows ample room for a diode-reversing circuit or even constant lighting with diode reversing. Since I run my switchers in pairs, I put a working headlight only on one end of each. A piece of brass tubing with a lens made from clear acetate punched with a paper punch makes a suitable headlight. You might be able to reuse the two headlight lenses from the Atlas body, but they seem very small, given the style of the emerging engine.

Now you have a freelanced 80-ton locomotive, either a Diesel or, with a pantograph added, an electric. Dress up the roof with air tanks (use the one removed from the switcher), and maybe some handgrabs and a roof walk, a horn or whistle, and other items. I used a Lionel operating pantograph, and translucent green beads as insulators. I ran 2-56 hex-head brass bolts through the pantograph holes, then the beads and into the roof. Scale pantographs are sold by several OST advertisers and look better, but I had the Lionel pantographs on hand from my days in 3-Rail.

Replace the side frames and paint the weight flat black so it does not show through the windows. Once you’ve painted the body and frame, lettered the body to suit, and added window material, you’ll have a locomotive that will take very tight curves and switches. It is at home at any period from about 1910 (as an electric) or about 1935 (as a Diesel). I do not have an airbrush, so I brush-painted my locomotive. Using a spray can of very dark gray might have been a wiser idea. I built two of these units, liked them, and had Other Ideas.

Using two Atlas switchers and another 520 body (or two), one can freelance a transfer locomotive. The big, heavy unit will operate around sharp curves, even through the 1970s Atlas #2-1/2 turnouts, amazing onlookers.

This time, start with the two Atlas switchers. Remove the bodies, then remove the side frames and cut away the steps, remove the gussets, and glue the steps back to the front ends of the side frames. Then, sand or file each side of the frame to accept a Lionel 520 body. Remove the Atlas couplers and install Kadee couplers under the hood ends of each mechanism but not under the cab ends. Notch out the footboards as before, and install them.
Articulating the two switcher mechanisms under a single long car body is really not hard. Remember, I did it, and I wanted to do it simply and reliably.

There is no need to sand the Atlas frames slightly narrow. Just position the two Atlas switcher mechanisms motor end to motor end, so the weights are 2-1/4” apart. Drill a 1/4” hole 3/8” from each weight on the center line of each mechanism, down through the plastic frame where the coupler was originally located. From 1/4” plywood, tough plastic, or aluminum, shape an oval 1-3/4” x 7/8” and drill a 1/4” hole centered 1/4” from each end. File away any burrs, and run an inch-long 1/4” bolt from below, first through the oval drawbar, then up through the frame. Use washers, and tighten a hex-head nut onto each bolt so that the drawbar pivots easily. A drop of epoxy or CA will keep the nuts in place.

From 1/2” plywood, fashion an oval 3/4” x 1-3/4”. Then cut it in half lengthwise. Glue the flat side of one piece to the end of one frame above one end of the drawbar, and glue the other piece to the other frame. Make certain that the drawbar moves freely; the curved ends of the plywood pieces should be about 1/8” apart at all times. While the drawbar actually works, the two plywood pieces are cosmetic: they give visual bulk to the center of the locomotive.

With the articulated locomotive frame (for that’s what it suddenly is) straight, locate the rough holes in the cast weights. Cut a piece of 1/4” plywood 8” long by 1” wide, draw a line down the middle lengthwise, and drill two 3/16” holes 7-3/16” apart; the holes should be almost exactly 3/4” from the ends (Don’t worry about extreme precision.) Sandpaper around the holes. The holes are slightly loose for two 1-1/2” long 10-24 machine screws (roundhead, slotted), but the looseness allows the articulation to work smoothly. Drop a 10-24 screw through each hole. Then, on the bottom side of the plywood, slide up a washer and spin on two nuts on each screw, but only loosely. Next hold the plywood with the two 10-24 machine screws jutting downward through the washers and the nuts, above the castings, and carefully screw the machine screws into the rough holes in the metal weight castings. Make sure the 10-24 machine screws go in vertically. Only tighten them in a few turns; the bottom of the plywood should be 7/8” above the top of the casting around the machine screw, and should easily clear the motor brushes. The two nuts on each screw are for height adjustment, but right now is a good time to test the locomotive frame. It should run smoothly and flex around very tight curves. It’s fun to watch.

Now we lengthen, rather than shorten, a 520 shell. Remove the cast-on details and cut off the air tanks as before. You can hold the casting against a stationary belt sander and grind down the air tanks (wearing a respirator) until they are almost flat. Go gently, and don’t melt the plastic. If you grind down the tanks, you can build a raised section of roof later on by gluing a 2” x 10” rectangle of plastic on the roof of the lengthened body, or you can cut off the tanks, sand the roof smooth, and cover the holes as before.

Cut the 520 shell in half exactly between the second and third portholes, then add a 2” x 5” rectangle of Evergreen Styrene plastic of the same thickness as the 520 sides. The shell should be 11-1/2” long. Reinforce the butt joints with very thin Styrene glued over the inside of each. Styrene plastic strips form the belt rail along the entire side, just below the windows, and vertical pieces will mask any roughness at the butt joints. Plastic channel will match the channel at the bottom of the original casting. Thicker plastic strip, sanded with fine paper after the glue is thoroughly dry, will match the curve where the sides and roof join above the side windows. You may find it easier to just buy two 520 shells. Cut one in half, and cut a 5” section from the middle of the other and join them together.

Now add headlights and detail to suit. Add the pantographs if you are modeling a heavy electric transfer locomotive circa 1920. If you want a 1930s Diesel, add exhaust stacks. Then put the lengthened body on top of the plywood strip connecting the two Atlas mechanisms. The body must ride 1/16” above the floors of the articulated mechanisms. Getting that height right requires gluing a 1” x 6-1/2” piece of 1/4” plywood on top of the plywood connecting strip between the heads of the machine screws. This gives a smooth surface for the underside of the roof. Let dry, then try the body. Slight adjustments are easily made by tightening or loosening the nuts on each 10-24 machine screw. Put the locomotive on something level (using a level to make sure), then crouch down and squint to make sure the body rides level atop the plywood. When the body rides level and at the correct height above the mechanisms, put a few drops of CA glue under and around the nuts so they will not loosen. Drill two or three holes in the roof, position the body exactly, and drill pilot holes into the plywood below. Screw the body in place into the plywood with #4 x 1/2 screws. The screwheads can be hidden by roof walks or other details, or inserted down through exhaust stacks. Remember, they must remain accessible; the screws make the body removable.

Install the Atlas switcher front railings at each end of the massive locomotive and headlights as you wish. Paint and letter to suit. Next, add window material (Don’t forget the portholes!) and perhaps an engineer figure.

The 520 shell and Atlas mechanism can also be combined to make a locomotive with three driving axles and a single-axle pilot truck at each end. Given the very low cost of the 520 shell and the Atlas switcher, and the fundamental simplicity of the basic combination, experimenting proves a nice way to enter the realm of O Scale kitbashing. Everything here can be done nicely with hand tools (I mention the belt sander only because I had one; it is not at all necessary.) The boxcab locomotive is a bit bigger than a narrow-gauge critter, but it takes very sharp curves and turnouts, and lends itself to all sorts of detailing. It is wholly freelance, and so never causes remarks about errors in copying the prototype. Also, it makes Lionel collectors stare, then squint, then realize that a bottom-of-the-line 1950s locomotive rolls into a classy 21st century O Scale future.
The Neurotic's Guide to Moving

Well, the day has come and gone, some sooner than I originally planned. As I write this on my trusty dusty laptop, I'm sitting in my ten-year old Jeep (and you thought Editors could afford Lexus's, uh Lexuseses, er Lexi), surrounded by cleaning supplies, paint, and a couple of boxes filled with tools. The dust from the moving trucks (Two of them!) has started to settle in the old Maryland neighborhood. That's right. The Scace clan, complete with soapbox, Neurotic-0-Meter, O Scale Cover Child, and the Three Furry Felons, has broken its ties with the Southland. While the memory of packing up our troubles in our old kit bag (and smiling as we crossed the Mason-Dixon line) is still fresh in the brain, here are some thoughts about moving all that O Scale loot with an eye on reducing the trauma level.

Keeping original boxes for locomotives and other brass treasures has always been a thing with us. We do it so we can enjoy selling our stuff for obscene prices because we have protected the collector value by storing those “OB”s forever in a most inconvenient place. Although that premise has turned out to be an absolute crock, those boxes are now handy for moving purposes. Thank God we kept ‘em. Wrap your rolling stock up in them. They got this stuff here from Asia; they’ll do just fine getting your stuff to Pine Ridge. Remember, a moving van is nothing more than a container with landing gear.

I wrapped everything with plastic wrap. We used to call it Saran Wrap, but any brand will do. Get many rolls of it and use it with impunity. There are a couple of reasons I did this. First, I’ve seen too many paint jobs ruined by old yellow foam in those wonderful original boxes. When this stuff degrades, it eats into finishes. Take the time to isolate the foam from the model. Also, plastic wrap works extremely well for securing locomotives to those wooden slats in the bottom of the box. If there aren’t any slats to tie your prize slob bucket down on, make some out of Masonite, making sure the bottom of the box. If there aren’t any slats to tie your prize slob bucket down on, make some out of Masonite, making sure the slat is as long as the inside of the box. That’s what they are there for, and the wooden slat/plastic wrap combination works very well to minimize shifting (hence serious damage) of heavy locomotives. I ship locomotives this way, too. I’ve never lost one to shipping damage with this method.

Now that you have a bazillion weird sized original boxes packed up, go to the phone book or online. Find a box factory that sells rolling stock sized corrugated boxes for the rest of the equipment that needs packing. Also, get a couple of those huge bags of foam popcorn. Don’t skimp on the padding, and pack everything as you would to ship it by UPS or the Postal Service. Make the time and do it right.

Moving companies sell moving boxes. So do folks like U-Haul. You’ll get raped for these boxes, but think seriously about getting them, anyway. They are very sturdy, and of uniform size. You want them, because they can be stacked in the van from floor to ceiling without crushing the bottom layer and the resulting pile is very stable. Copier paper boxes are too flimsy. If you are on a budget, take an ad out in a local paper looking for someone, who just moved into the area, who would like to get rid of their moving boxes by having you haul them away. However you get them, pack your boxes into these boxes. Use lots of foam popcorn, and fill all the voids pretty tightly. Pack these as if you are shipping them, too. Label the ends and number them so you know how many there are.

Check your insurance policy. I have my railroad stuff on a separate policy from the homeowner’s policy, and I discovered that neither is fully covered in transit by common carrier. Transit insurance from my homeowner’s and my train insurance underwriters was cheap. Check it out. After the charred remains of the van have cooled off is not the time to become knowledgeable about your insurance coverage.

I spent a few bucks and had some pallets dropped off at the new house before the trucks rolled. The movers placed them in the basement and stacked all the boxes of railroad gear (and other stuff that wasn’t going to be unpacked immediately) up off the floor. I labeled each pallet so the movers knew which kind took which boxes. I suggest this for anything cardboard that sits on concrete for a time. The cardboard will soak up moisture from the concrete; the bottoms of boxes will then fall out when you get around to picking them up. This is hardly optimal. Also, should your basement leak (or flood by your own stupidity), you don’t have to panic quite so quickly. I know a guy, who was an R/C airplane master, who lost forty years worth of modeling work (including a scale B17 that was eight feet long) just after a move. It turned out that he had plugged the sump-pump into a switchable socket rather than one that was still powered when the lights were turned off.

Finally, you may be wondering if we really had so much stuff that we needed two trucks. As it turned out, it all would have fit handily in a single tractor-trailer, however the folks I hired split the load between two “straight” trucks instead. When we were discussing the move, I showed them what we had and asked if we could split the load, one load for the furniture, books, liquor cabinets, and other potentially devastating missiles, and one for the worrisome stuff. As it turned out, they were pleased with that idea. It cost a little extra in fuel, but we made up most of it in unloading speed and peace of mind. It never hurts to ask.

Now I’m staring at this nice new basement…

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I'd like to acknowledge the recent generous gift of a large file of older drawings and instruction sheets for O Scale from Ed Campbell (of Anaheim, CA), to enrich future GOD columns (no impiety intended by the acronym). Among them, interestingly enough, was a scale drawing of what is clearly the Hawk SW/SC switcher, issued by a firm in Los Angeles called Modelcraft Manufacturing Co., which also published blueprint-format drawings for a number of cars and locomotives produced by firms such as Lobaugh and ScaleCraft. I am not sure what their role was in connection with commercial kits from other sources, so that will have to await further study. Since the last column, I also found a photo essay in a 1940 MR issue depicting Bill Lenoir's CGW locomotives, including an EMC SW, likely the pilot model for the Hawk kit.

Hawk also had a good basic line of car kits and parts, which were pretty accurate attempts for their time to represent specific prototypes. My first real encounter with the Hawk O Scale line came with a basket-case D&SL stockcar. The car was clearly built from a bundle-of-sticks kit (it almost looks like one of their model airplane kits, doesn't it?) with some ingenious printed-card lettering and detail to be cut out (probably with a single-edge razor blade back then) and glued on. In fact, I suspect Hawk may have been the only O Scale manufacturer to ever produce commercial models for the D&SL. With their D&RGW woodside caboose, D&SL flat, C&S refrigerator, and photo of a D&RGW 4-6-6-4 on the kit boxes, all suggest someone with strong Colorado interests.

The quality of their freight car parts was typical of the time, neither of unusual quality nor despicable, but what caught my attention was their truck sideframes, which seem clearly to be the predecessor of what became the General Model and later All Nation trucks. Although the earlier Hawk wheels were cast (as were the Monarch), a practice which ultimately created more problems than the savings realized by not having to machine them from steel, they were also double-insulated at the hub. This practice was by no means uniformly followed, at a time when many O Scale railroads were powered by outside-third rail. By 1940, the “new and improved” trucks had turned steel wheels and the earlier cast bolster had been replaced by a sheet steel one. It is teasing to wonder what actually happened circa 1940, as we now can find only surface indicators of what must have been going on. When Gordon Varney briefly entered O Scale, right after WWII ended, he not only offered a ground-breaking new 4-6-0 locomotive but also six-wheel passenger trucks and two kinds of freight trucks. I am reasonably sure that it was not coincidence that Varney was then operating a large precision machine shop with an HO Scale sideline in Chicago, right down Fullerton Street, when Hawk decided not to re-start their train line.

An even more perplexing question, which may never be answered so long afterward, is the one alluded to above. One wonders whether operations like Hawk actually produced their hobby items in-house or whether they were contracted out. In fact, whether Varney may already have had a close connection with Hawk before the war is an open question. It is hard to imagine many other items in the Hawk inventory which would have required the same specialized skill of sand-casting as the major components of the Diesel.

The more I delve into Hawk, the more questions I have. What is interesting to trace is the rapid disappearance of Hawk ads in MR from 1939, through 1940, and pretty well gone by 1941. They seem to have kept improving the line from its inception, in about 1936, until it abruptly disappears with the wartime restrictions on critical materials in 1941. In the accompanying scan of a Hawk tankcar kit, there is a cast dome. I have an instruction sheet from 1937 for a tankcar that has a wood dome to which track spikes are attached as detail. The scans also show what seems to be later and larger boxes with the D&RGW photo on the side, which are entirely different from the shallow kit boxes I own. Moreover, the numbering scheme for the kits changes at least three times, so far as I can tell. They also seem to keep moving around Chicago. Dan Dawdy thought he recalled a different street address for Hawk, from the usual West Fullerton, and forwarded a scan of a dark green box with the Hawk logo and an address of 4314 N. California Avenue. Also, on one instruction sheet (I think from the late 1930’s), I found an address of 4946 Irving Park Blvd.

Here is a tentative listing of what they offered:

| R1   | FGEX refrigerator car kit - $3.00 |
| R2   | PFE/SP                           |
| R3   | PFE/UP-SP                        |
| R4   | C&S                              |
| R5   | WFE/KN                           |
| R6   | CB&Q (presumably BREX)           |
| R7   | MDT/NYC                          |
| R8   | SFRX                             |
| R9   | LRX (DL&W)                       |
| R10  | NRC/IC                           |
| R11  | VGN gondola - $2.50              |
| R12  | N&W gondola                      |
| R13  | Gondola                          |
| R14  | VGN twin hopper                  |
| R15  | N&W “571/2T” twin hopper         |
| R16  | D&SL flatcar                     |
| R17  | CGW flatcar                      |
| R18  | CB&Q flatcar                     |
| R19  | D&RG wood caboose - $3.00        |
| R20  | 4-wheel transf caboose - $2.00   |
| R21  | Gulf tankcar - $3.00             |
| R22  | Pickle tank - $3.00              |
| R23  | CB&Q stockcar - $3.50            |
| R24  | D&SL stockcar                    |
| R25  | C (cylinder) tankcar - $3.00     |
| R26  | C&NW boxcar                      |
| R27  | CPR                              |
| R28  | MEC                              |
| R29  | MILW bay-window caboose          |
| R30  | Bettendorf trucks                |
| R31  | Andrews trucks                   |
| R33  | USN helium car - $4.50 (the most expensive kit in the line) |

Sides were available for 35 cents each, and components were principally pine, birch, and maple stock. Hawk also sold crossties. Checking other references, kit boxes, and instruction sheets, one finds that at some point the D&RGW caboose was catalogued as kit #115, the 10K gallon tank car as R108, an unlettered woodside refrigerator kit as R300, a similar stockcar kit as R310, and a 50’ automobile car as both #312 and R201. Jim Wood says he has a Hawk UP automobile car kit, from his uncle, with a catalog code of #303. Go figure.

Here are a few random observations on the freight car kits. I have some of the sides (actually ends, too) for the Milwaukee Road early bay-window caboose, and it looks as if it would be quite a bit of fun to use them to construct a car. The USN helium car and the chlorine tank car were unusual prototypes, designed to appeal to the modeller who wanted something out of the ordinary, as was the pickle car. Pickle cars have had a long-standing fascination for O Scale modellers. The Hawk kit and the later Walthers kit were about
all there was for the open-sided vat cars, except for the K-Line three-rail productions of a few years ago which can be converted to scale (though a more modern prototype), and brass imports. I actually prefer the Hawk to the Walthers, as affording more scope for detailing (I have both in basket-case condition). The closed-side, or “coffin” cars, were available as a Lobaugh kit or, currently, as a very nice urethane casting from Ted Schnepf’s Rails Unlimited.

Jim Wood assures me that, early on, Hawk also offered rather crude kits for passenger cars,

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Building a Small O Scale Layout
Part Seven
Michael Culham

Happy New Year, everyone! I can’t believe that a whole year has passed since this series started. So far, we have covered benchwork, trackwork and basic scenery. In Part 6, I showed you how to do the scenery around the tracks. There is still an area on this part of the layout, between the tracks and the front edge of the benchwork (Photo 1), that needs scenery. This time, I am going to show you how I did this. The main components I will cover are a roadway, the ground cover, and a wooden fence. There is also a building that will be included in this scene, and I will cover painting and detailing this structure starting in Part 8.

Before we get started, I have made a list of materials (made by Evergreen Styrene) that you will need:

For the roads:
(1) 0.040 thick Styrene sheet
(2) 0.040 x 0.125 Styrene strip (Part #146)
(3) 0.060 x 0.125 Styrene strip (Part #156)

For the fence:
(1) 0.125 scribed sheet 0.040 thick (Part # 4125)
(2) 0.040 x 0.100 Styrene strip (Part #145), to use as 2x4s
(3) 0.100 x 0.100 Styrene strip (Part #175), to use as 4x4s

You will also need some Polly-Scale paints:
(1) #414311 Earth
(2) #414176 UP Harbor Mist Grey or #414137 Grimy Black
(3) #414317 Concrete

You should already have the rest of the materials needed, as you used these to do the ground cover around the tracks in Part 6. With all these materials at hand, let’s get started creating this scene. The first thing to do is to mark out the areas for the structure and the road. Then, paint the area where the ground cover will go with an earth colored paint, as you can see in Photo 2.

**Making a Road**

With the area all marked out and painted, we are ready to do the road. In this scene, the road runs along the front edge of the layout and will not be full-width. Styrene is the material that I have been using for years to create asphalt or concrete roads. I find it very easy to work with and it gives me the look that I want. Start by taking a sheet of 0.040 Styrene and marking off a strip three inches in width. Once you have done this, scribe along the line with a sharp modeling knife, snap off the piece you need, and glue it in place using white glue (Photos 3 -5). Once the glue has dried, paint the road surface with Polly-Scale UP Harbor Mist Grey. I find this color gives the effect of older asphalt. If you wish to create a newer asphalt look, or want to create a patch job in the road, you can use Grimy Black paint. [By the way, if you are going to paint centerlines on your roads, remember that the colors are era specific. Before the late ‘50s in the US, the centerlines were white, rather than the yellow we’re used to now. –ed.]

**Gutters and Curbs**

The next step is to create the gutter and curb. First, I laid a piece of 0.040” x 0.125” Styrene strip flat along the side of the road to make the gutter. Then, to make the curb, I stood a piece of 0.060” x 0.125” strip on its edge alongside the gutter.
to form an L shape. While holding these pieces in place with map pins, run some liquid plastic glue along the joints to tie them all together (Photo 6). Once the glue has dried, I ran a sanding sponge along the top edge of the curb to round it off a bit and painted it with Polly-Scale Concrete (Photos 7 & 8). I will be covering more on how to make roads and grade crossings and how to finish them off later in this series. There you are; the road is done.

Building a Wood Fence

The next thing to do in this scene is to put the wood fence along the edge of the property by the tracks. First, we have to make it and here is how I do it. On a sheet of scribed Styrene, mark and cut a strip the height you want the fence to be. Then, make the 4x4 posts from 0.100” x 0.100” Styrene strip. Make as many as needed for the length of fence you want. They are spaced eight feet apart. Glue these to the back of the fence. Now cut the 2x4 stringers (0.400” x 0.100” Styrene strip) to a length to fit between the posts. Glue these in place as in the drawing (Figure 1, Page 20). Once the glue has dried, add some character. Cut out a board or two, and make
some a little shorter than the others by cutting a short bit off the length of the board. To create a knothole, just drill a small hole in one of the boards.

I have found this a quick and easy way to make wood fences. Once the fence is ready to install, paint it whatever color you wish and weather it. To secure the fence, put a bead of white glue along the line where the fence is to go. Place the fence in position, holding it upright with map pins until the glue dries (Photos 9 & 10).

**Ground Cover**

With the fence in place, we are ready to do the ground cover using the same techniques that I described in Part 6 of this series. First put down the grass and weeds, followed by the gravel parking lot (Photos 11-14). The scene is starting to look finished, as you can see in Photo 15 (see page 20). Now, all that is left is the structure and the scene will be complete. Starting in Part 8, I will show you how to take a basic plastic structure kit and turn it into a good looking building by using some paint and details.

**Update on the Track-laying Templates**

Back in Part 2 of this series, I talked about the track-laying templates that I made from Styrene using some metal ones I had borrowed from a friend that had purchased them in the UK. I couldn’t remember the company name that made the metal ones. Ivan, a good friend who lives in the UK, did some looking around for me and found out the company name and address. If any of you would like to acquire some for yourself, the name, address and phone number are:

**Railwood Products, 30 Frilsham Way, Coventry, West Midlands UK CV5 9LH.**
**Phone: (02476) 715846**

They make them ranging in radius from three feet all the way up to ten feet, as well as straight templates.

So until next time...

Happy Modeling
Building a Small O Scale Layout

Below: A few shots from Mike’s previous layout and a view of what we can expect when the new GCR is done.
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O Scale models, parts, decals, newsletter for Nickel Plate and related roads.
On the journey back from York, this old Hobo had a chance to do some serious thinking about the good old days. Consider York. What a trip! It certainly is the “greatest show on earth” for model railroaders.

What about the past? You hear a lot about the good old days. Let’s take a trip down memory lane to look back at York during those good old days. The show at that time was held entirely in the Blue Hall. Even though almost every table was filled with trains, there were no electronics except for that one Lionel set. Most of the trains were made by one or two main companies. The choices were simple: Pre-War and Post-War. The only train sounds that came standard were clickity-clack. The term “scale” was used loosely and varied from train to train. The 700E came close. Hi-Railing didn’t exist and realistic model railroading was a term that wasn’t used, existing only in some other distant galaxy.

York 2005: “These ain’t yer daddy’s trains,” as Joe G. says. The place has grown so much; there are now so many buildings and halls that the average guy can’t possibly see all the trains in the time that he has (even in the three days that the show is now open). Take the Orange Hall, for example. It is as large as most of the other halls combined. Some train people have been known to get lost in that hall. Many do get lost at York, lost in nostalgia.

Gone is the ambience of Yorks gone by. It wasn’t that long ago when the atmosphere in the other halls was subject to the outside weather, including rain, road dust, freezing cold, and even humid hot. Tables were covered at the end of each day, not so much for security but for protection—protection from droppings from the wildlife that resided in the hall (the original “ultra-realistic weathering”). Most of the other buildings have been improved, but the new Orange Hall is a modern exhibition hall with great constant-lighting, climate control, and a clean, organized design. Times have definitely changed.

There have been a lot of changes. Look at the trains today. Electronics galore! The hobbyist is confronted on all sides with DECISIONS and CHOICES. This is a hobby of individuals. That’s what drives the hobby. That is what makes it FUN. You write your DECISIONS and CHOICES. This is a hobby of individuals. That’s the whole idea. Make it look real.

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Gone is the ambience of Yorks gone by. It wasn’t that long ago when the atmosphere in the other halls was subject to the outside weather, including rain, road dust, freezing cold, and even humid hot. Tables were covered at the end of each day, not so much for security but for protection—protection from droppings from the wildlife that resided in the hall (the original “ultra-realistic weathering”). Most of the other buildings have been improved, but the new Orange Hall is a modern exhibition hall with great constant-lighting, climate control, and a clean, organized design. Times have definitely changed.

There have been a lot of changes. Look at the trains today. Electronics galore! The hobbyist is confronted on all sides with DECISIONS and CHOICES. This is a hobby of individuals. That’s what drives the hobby. That is what makes it FUN. You write your DECISIONS and CHOICES. This is a hobby of individuals. That’s the whole idea. Make it look real.

In the modern train world there are so many choices and lots of competition from various manufacturers. The train market is flooded with product. The dams and levees have broken! New, more innovative, products overshadow the older items and tend to devalue them. It is definitely a buyer’s market. “New in-the-box MINT” means little, even if the product is only a year or two old. There is already a new and improved version to take its place. You just have to carefully decide what is right for you.

Through all of this, my train friends in both the 3-Rail and 2-Rail venues have been both a help and a hindrance. A lot of guys will tell you what you should get and what you should avoid. I challenge you to avoid peer pressure. Choose wisely. Buy it only if you REALLY like it. Brand-bashing should not exist. Like the large burger chain says, “Have it your way!” When it comes down to making a decision, the only decision that really matters, where the wheels do meet the track, is: IT IS YOUR DECISION.
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#9000 EMD F9, 36" fans, 48" dynamic brake, 2 portholes, Farr (vert) grilles

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All kits include brass etched grills, appropriate detailed parts, and preformed grab irons for indicated model. These kits include only the parts above the frame.
Bell Crawler - Model 36

Everyone needs several of these mechanical beasts. Offered with and without the blade, they are perfect as a load on the flatcar above, carving a road out of the woods, or hauling logs to the railroad.

These freelanced model kits consists of high-quality, no-odor urethane castings with brass wire, NS mesh, decals, and a few other bits. Approx. size as shown - scale 20' long with a 10'-6" wide blade.

#18600 O Scale Crawler 36 w/ Blade $129.95
#18601 O Scale Crawler 36 w/o Blade $109.95
#18604 O Scale Crawler 36 w/ Logging Arch Stba

The Logging Arch is in production now, but the model was not ready in time for an ad photo.

Check our web site!!
Here is a simple piece of scenery for around your wharf. Old tires were used in lots of places on the waterfront. Here is how I made a pile of them for Pier 6 on the BRHRR. I bought packets of tires from Diecast Direct in the USA, and found some at a diecast swap meet here in Perth.

1. Glue down a carved piece of foam.

2. Paint it with thick black water-based paint.

3. Apply wood glue and press the tires into it.

4. Touch the tires up with paint, add a couple of figures, a pickup truck, and it’s finished!
It has been almost a year since a regular Finescale/P48 oriented column has appeared in OST. After a pretty intensive search, we discovered (or perhaps he discovered us) Mike Cougill. Mike is an accomplished modeler, and brings a fresh perspective to Finescale modeling. We hope that Mike's musings will inspire you to try your hand at this fascinating aspect of O Scale.

Welcome, Mike!

Okay, you're wondering, who is this guy and why haven't I heard of him before? The questions are fair enough. Let's answer them. I'm Mike Cougill. Professionally, I'm self-employed as a fine artist working in watercolor and pen & ink, specializing in railroad and architectural subjects. Art and model railroading have a lot in common and that theme will be a regular one in this column.

I've been a model railroader since childhood. I model in O Scale to P48 standards, having switched from HO Scale for simple reasons. Fifty-year-old eyes and mildly arthritic hands suggested a larger scale. My last efforts in HO used P87 track and wheel standards, which are gaining a following in the HO community thanks to the efforts of folks like John Wright and Iain Rice, both from Great Britain.

Upon deciding to switch to O Scale, there was no question in my mind that P48 was the route to follow. I'm enjoying the change immensely, now that I'm in the middle of laying track on the new layout. The detail that I sought in P87 track is much more visible and enjoyable in P48. My current layout, a proto/freelanced affair called the Indiana & Whitewater, represents a 1990s-era shortline operation. There are two such prototypes in my area, and I'm using elements of both.

The shelf-style layout occupies one wall of my 10' x 24' basement workshop. The benchwork is built using grid construction, and measures two feet wide by 24' long. One track will curve 180° around the end of the layout room, and act as a staging/fiddle yard where my railroad meets the rest of the world. This will allow a train to leave the modeled portion, which I think is critical on a small layout. The railroad is designed for prototype operations focusing on my favorite activity, switching. All my layouts have reached the scenery stage; it must be the artist in me, but I've always thought that a layout was incomplete without scenery. It's one of my favorite parts of the hobby, along with scratchbuilding structures and track, although I've found something to enjoy in all the different phases of construction. To me, the term "finescale" applies to all parts of a layout, not just the track, wheels and couplers. Building a complete layout has always been my goal in the hobby. Choice of scale shouldn't have any bearing on it.

My modeling philosophy is simple: I enjoy seeing and learning about excellence in modeling and craftsmanship, regardless of the scale. I've seen work that I appreciate in all the scales. I simply consider myself a model railroader who happens to model in O Scale. I've found the hobby to be one of the best you could pursue. It is, however, just one part of my life, taking its proper place among family, church and professional responsibilities. Balance is the key for me. Model railroading is my hobby, not my religion.

My goal with this column is to share how I've chosen to do things, and show what can be accomplished with some extra effort beyond the norm. My hope is to inspire, not preach. I like to challenge myself through the hobby, therefore, I pursue modeling techniques that not only suit my temperament but also push my skills. We could all approach the hobby this way, however what one finds enjoyable may bore or frustrate someone else to tears. That's what's so great about model railroad ing, there really is something for everyone at every skill level to enjoy. I use the words "joy" and "enjoy" a lot, because that's what it's about. When it stops being fun, or turns into a grind, its time to move on to something else.

Lastly, let me make it clear that I'm not going to try and fill Gene Deimling's shoes. I will put my own stamp and style on this column as long as Brian and Joe give it their blessing. Like so many, I learned a lot from Gene's writing and appreciate the willingness to share his knowledge with all. I look forward with the rest of you to seeing his byline in the magazine again. I will touch on P48 products now and then, perhaps in the Product Review section, but they won't be the central focus of the column. I hope that excellent modeling and inspiration will be. With that thought in mind, here's to new beginnings.

Best regards,
Mike
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If you do a lot of scratchbuilding, there will come the time when a particular model that is high on your list to construct will require a set of trucks that are not commercially available. What to do? Well, if you can build that car or locomotive, why not build the trucks too?

Some research will be required to find the drawings of that particular truck, and there is a lot of info out there. Over many years, I have accumulated a sizeable reference library, including Locomotive and Car Builders Cyclopedias (reprints), Train Shed Cyclopedias, and drawings in the model railroad magazines. The plans in the model magazines will generally show just the side frames, and not much of the internal depth detail that is required to build a complete, accurate, truck model. All this is part of my philosophy of building a true and complete representation of the prototype, trucks included. Keep this “philosophy” in perspective of course; no need to become a nut about it. Just enjoy the research and the building of a reasonably accurate model that will perk the interest of others and give you a lot of construction enjoyment.

Here are some of the trucks I have built over the years. Here, too, is a plug for Proto48 (had to get this in!) There is no need to stretch dimensions here to accommodate wheels made to traditional NMRA O Scale standards. Because P48 wheel forms follow the prototype (AAR) standards, they are correct in all directions!

1. (Photos 1-4) The Burlington Route and the Colorado & Southern are the roads that interest me the most. This includes history, and equipment like this waycar (or caboose on other roads). The Colorado Railroad Museum in Golden, Colo., has one of these waycars, as well as a number of these wooden trucks partially disassembled, laying around, and stacked in their yard. This made it easy to take photos and measurements and note the construction methods.

The “wood” frame members are milled from brass to the scaled down measurements. All the components are pretty much there, per the prototype, including the brake gear. I made a wood
jig to precisely position and solder the journal pedestals to the "wood" beams and then to square the truck assembly together. The pedestals have a thin wire outline soldered along the edge. The "cast" portion in the center is flat brass bar stock. The journals are machined from brass with Precision Scale lids and their cast nut/bolt detail used where appropriate. PSC leaf spring castings were also used.

The waycar is built with Styrene. I used cut-down Grandt HO house windows in the sides, and had to build up the windows in the cupola. I used real wood for the walkway. There's no sandpaper on the roof; it's just painted. Wood ladders are correct for my era of about 1925-35.

2. (Photo 5) Mainline Modeler has plans/article for rebuilt New Haven 36' cars (July 1988). The archbar trucks were an odd size, being 5' 3" between journals. Mine are built up from Special Shapes flat bars using 1/32" x 3/32" for the top and center members with 1/64" x 3/32" across the bottom, an accurate scale size for the truck components. The journals are old Back Shop castings, but PSC also has these parts. The bolster was hollow in the photos, so that's the way I made mine. The bolster and spring plank were bent from nickel silver or brass sheet. The vertical members were machined, filed, and drilled for nut/bolt castings.

The springs are common truck springs available from many sources. The brake gear is from a San Juan P48 truck kit (fit just right). The P48 wheels are from Protocraft. A jig, with stubs at 5' 3" for the drilled journals and a center plug the size of the bolster/spring plank opening, was made to accurately bend the arched members to complete the side frames.

The car is built from Styrene and some Grandt parts; the end "Z" and "L" steel members are from Styrene strips. I just need to finish the corner steps and walkway corner platform braces, and it'll be ready for painting.

3. (Photos 6-7) Remember that 69" driver article in OST #13 for the Burlington R4 Prairie? The tender for that engine had archbar trucks. I have a CB&Q truck diagram book that has the measurements for this truck. The prototype bars were five inches wide and, no, I ain't gonna mill 1/8" brass strips to a scale five inches in width! I like to be accurate but I'm not a fanatic about it! Since 3/32" comes out to 4-1/2", that's close enough. Note that the ends of the center bars bend up to fit the top bar over the journals. I used the same type of jig as above, but with the usual 5' 6" journal spacing this time. The "wood" bolster is milled from brass with the spring plank bent from sheet. The journals are PSC, as is the leaf spring castings; these were four-across so I cut one row of leaf springs away to represent the prototype's three-across. Brake gear will be robbed from a San Juan truck kit or maybe scratchbuilt. PSC has brake components, too, but they are too wide for P48.

4. (Photos 8-10) The next two tender trucks are a little more complicated, as they use equalizers between the journals with the journals sliding up and down in slots. The first is for a CB&Q B-1 4-8-2. I have a number of copies of actual railroad drawings for this engine, including the complete tender trucks. These were built up from brass with all of the individual parts machined to scale.
in the milling vice. Then the 16 individual “channels” were gang-milled to the correct size. After that they were unsoldered, ready for the construction of the sideframes. The cast springs and journal lids were from PSC.

The second tender truck of this type is for the F-2 0-8-0 (rebuilt from T-1 2-6-6-2). The process is the same, but with different component sizes. For the B-1 tender trucks I had the complete drawings so I could make the bolster per the prototype. I only had this diagram for the F-2, though, so the bolster was fabricated using the drawings of a similar truck in a Train Shed Cyclopedia. Note that the thickness of the equalizers is 1-1/4 inches, about 0.026” in sheet brass. Use that thickness to be more to scale. Resist the temptation to oversize components for strength. Also note that, on the bottom view of both these two trucks, the bottom bar underneath the journals is soldered to a crosspiece that can be removed by two screws. The “nut/bolt” castings up through the bar are just sticking into holes. This allows the wheels and journals to be separated from the truck frame.

5. The Milwaukee auto boxcar in Photo 11 (found in Train Shed Cyclopedia #61) and the C&S caboose in Photo 12 (found in The Colorado Road) have regular O Scale trucks that have been converted to P48 by using a different bolster and shortening the spring plank. The boxcar has old Max Gray trucks, and the caboose trucks are imports from Pacific Limited with coil springs removed and PSC leaf spring castings substituted to make a softer ride for the crew.

6. The trailing truck on the Burlington 2-10-4 (Photos 13 & 14) has a scratchbuilt frame, using the drawings from the Main-Line Modeler plans in the February 1989 issue and drawings in the 1930 Locomotive Cyclopedia. The wheels are spoked castings from PSC, thinned to prototype-size and with new turned steel P48 tires. The journals and keepers are from PSC. The truck is made with two pieces on each side, per the prototype, with cast leaf springs inside (also from PSC). A small coil spring was added on top of each spring casting.

The waycar, New Haven boxcar, and the Milwaukee auto-box trucks are sprung. The tender trucks are equalized so that some movement of the journals is possible. All wheelsets are from Protocraft. I have built more trucks than shown here, including a set of boxcab Diesel trucks that I am working on. I never thought I would have a smelly Diesel on the layout, but this 1926 C&NW boxcab is kind of interesting and a challenge to build.

Scratchbuilding is a part of the learning process in model railroading that gives a lot of enjoyment (and sometimes frustration!), not only in the building but in the research. Give it a try. As before, if you have questions concerning the building of your own trucks, please send an email (tamix@earthlink.net) and I will try and explain in more detail.

◆
Until a few years ago, most narrow-gaugers working in O Scale modeled one of the Colorado three-foot lines in On3 or one of the Maine two-foothers in On2. I was one of those in On3, and found that very few worked in any of the other narrow-gauges, such as 42", 39” or 30” gauge. Many locomotives and cars were available only in brass or as kits. To put it mildly, it was expensive to be in On3 or On2.

Back when the Internet was in its infancy, I created the On30 Conspiracy mailing list to promote O Scale narrow-gauge trains operating on HO gauge tracks. On30 has a special appeal to me because I enjoy operation above all else. I found it fun to convert inexpensive and reliable HO mechanisms to 1:48 scale narrow-gauge and I could get lots of O Scale operation in a relatively small space.

Slowly, the number of members in the On30 Conspiracy grew until the membership reached over 2,200, which was more than the combined membership of all the other O Scale groups, including On2, On3, On42 plus standard-gauge O and Proto48. Clearly, the On30 Conspiracy reflects the number of new O Scale modelers in our recent past.

Around ten years ago, Bachmann Trains announced that they would produce an On30 passenger train set for the Department 56 Village collectors. The advance ad showed a neat Mogul and three coaches in Colorado & Southern livery, but it would be a number of years before the sets became available. When they finally did, O Scale opened up to the masses. Each Bachmann set contained an oval of track and a transformer and thousands were sold for around $200 or less. Following the success of their On30 passenger sets, Bachmann introduced a line of freight cars, including a boxcar, flatcar, two-board gondola and caboose. Next came a tiny Porter 0-4-0, a tank car, stock car and an exquisite Shay. An 0-4-2 Porter and a tiny Davenport side-rod Diesel followed and the new Climax was a jewel. Two tiny dump cars and skeleton log cars were next, followed by a collection of reefer and beer cars. All of the rolling stock was ready-to-run, included trucks and couplers, and was painted closely, I experimented and found a simple way to make all four doors usable for unloading, but I'll explain that at length in my next column.

Recently, Bachmann introduced a ventilated boxcar, a high side gondola and a two-bay steel hopper. At the National Narrow Gauge Convention in Detroit, I purchased a pair of high-side gondolas for ballast operations on my Rockwood District Railroad. I had already owned six two-board gondolas, out of which I created three four-board cars by combining the sideboards. The sideboards are added to the standard flat car, and the new high-side gondola employs the same flat car with five boards, providing an interesting contrast. This car comes with a removable simulated coal load but has no emptying bays, so it must be unloaded by hand or by machine. It comes lettered for the Colorado Mining Co., Midwest Quarry & Mining Co., Greenbrier & Big Run Lumber Co., D&RGW, or unlettered in brown or black. The D&RGW owned many five-board gondolas that they unloaded manually until a rotary dumper was built. Bachmann's On30 flatcar is about 26’ long over the coupler pockets and eight feet wide over the stake pockets.

I also wanted some more modern equipment with unloading bays for myballast operations, so I ordered three pairs of steel hoppers (packaged two to a box). Now, these are interesting cars and they are equipped with Vulcan trucks. All previous freight cars came with archbar trucks.

The new steel hopper is a model of an early East Broad Top two-bay coal car and it is available lettered for EBT, D&RGW, Colorado Mining Co., Midwest Quarry & Mining Co., or painted brown and unlettered. It is about 23’9” long over the coupler pockets and about 7’11” wide. It is about nine inches taller than the high-side gondola, and is equipped with an air hose and valve. The car is unusually heavy, and it took a while to discover that the main beam is solid white metal. With a removable coal load, it is a perfect freight car for On30 and some On3 modelers will be quick to install 36” gauge trucks for their EBT lines.

The best news of all is that Bachmann has finally acknowledged what several of us have been saying for years. Couplers on On30 cars should be easily convertible between HO height and the usual 26” height. This car has it. It comes with couplers at the HO height but they are easily convertible to 26” in about ten seconds. You simply loosen a screw and remove the coupler cover, remove the coupler, loosen the spacer and install the coupler in the higher position for perfectly working self-centering couplers at either position. Top marks for Bachmann for this innovation.

When I found one bay-door loose in the box, I learned that all four doors are tightly glued in place over the solid sloped floor. The doors are easily removable. After examining the car closely, I experimented and found a simple way to make all four doors usable for unloading, but I’ll explain that at length in my next column.

Once again, Bachmann has hit a home run with its newest two-bay steel hopper, and a string of coal cars should look neat behind the soon-to-be-released outside-frame 2-8-0. Happy trains to you until we meet again.
Bobber Gibbs
bobber@sympatico.ca
**Modest Interurban Interchange**

Steam Railroad

Flashback: It’s 30 years ago, and I’m in the back room of the apartment on top of the Perkinsville, Vermont, general store, Post Office, and fire department. I’m working on a model of an interurban/steam railroad interchange. It’s been snowing all day, but I don’t care. I’ve been working with some fascinating and relatively complicated track and overhead work.

Flash Forward: The children that hadn’t been born then (thank heavens!), are now grown out of the house, but I’m still working on the same interurban/steam railroad interchange, which I’m re-creating using a second set of custom trackwork and overhead parts.

Such is the power of a good idea! Thirty years ago, I developed a simple, but flexible, track plan that still fascinates me. It’s based on two trackwork components; a pair of #6 right-hand switches with a crossing, and a #4 left-hand turnout next to a #4 single-slip switch.

**Goals**

My goal was to model an appropriately sized country junction, not an overly ambitious, high-volume, urban or suburban interchange. I wanted to model a junction where anticipated traffic volume would be five or six single or two-car passenger trolleys a day. I also planned for a steam line, if there was appropriate room, the interchange tracks could also operate. The steam line, if there was appropriate room, the interchange tracks could also operate. The steam railroad could either be a branchline terminus or a pass-through station, depending on available space. The steam line could also operate to the extent that steam trains can appear and disappear, even if they just proceed to a nearby staging area.

Although the module focuses on the traction line, if there was appropriate room, the steam tracks could also operate. The steam railroad could either be a branchline terminus or a pass-through station, depending on available space. The steam line could also operate to the extent that steam trains can appear and disappear, even if they just proceed to a nearby staging area.

**Construction**

My original layout was built using custom trackwork kits from Earl Eshleman, using Code 100 nickel-silver rail. After spiking the track down on the ties, the metal spacers are unsoldered and the rails painted. After the module didn’t survive its second cross-country move to (a Puget Sound island off Seattle, Wash.), I ordered a second set of crossing turnouts and single slip-switches from Earl.

The wiring of the interchange tracks could be switched between two-rail and overhead power, depending on whether the steam line or the traction line was exchanging, dropping off, or picking-up cars.

The resulting module can be either set against a wall or used as a freestanding island. As originally planned, the mainline tracks would be in the front, closest to operators. In this case, the majority of the turnouts could be manually controlled. However, this is not written in stone. Since the station is finished on all four sides, the module can also be operated from behind, with the interchange tracks closest to the operator.

Although the module focuses on the traction line, if there was appropriate room, the steam tracks could also operate. The steam railroad could either be a branchline terminus or a pass-through station, depending on available space. The steam line could also operate to the extent that steam trains can appear and disappear, even if they just proceed to a nearby staging area.

**Options**

So, basically, we have a three-by-twelve-foot interchange with railroad and trolley trackage extending off both sides. When incorporating the interchange into a permanent layout, adjacent modules could include a freight house or large factory, a traction line car barn, an additional passing (or run-around) siding or a reverse loop, so trolleys wouldn’t have to reverse poles after arrival.

Where did the plan come from? There probably was some inspiration from the way Vermont’s Springfield Terminal interchanged with Boston & Maine steam trains across the Connecticut River in Charlestown, NH. The traffic density during the Springfield Terminal’s peak years is similar to what I’ve described above, although the prototype interchange was less elaborate than I’ve described. Traction modeling permits you to build a lot of action into a small area. In this case, the area is more “open” than usual, and (perhaps for that reason) more conducive to creating a more laid-back atmosphere than found in our current times.

These are the track modules I’m working with at the present time. The nice thing about trackwork components is that they aren’t perishable.

As the illustration shows, the station is surrounded by a large platform made up of wood planks. I sorted out the vendor’s supply of stripwood creating my first platform, sawing the pieces into 12’ lengths and scribing wood grain into it. Today, thankfully, I’d use a NWSS Chopper to cut the stripwood. One of the keys to success was to use Weather-It to pre-stain the strips, varying the amount of time the planks were immersed. After staining, planks were randomly mixed together, emphasizing the texture of the planking.

One of the interesting features to both my original and current attempts is the way the trolley right of way and the steam tracks are built to dramatically different standards. The tracks purposely parallel each other for several feet, highlighting the comparison. The combination of #4 and #6 switches adds to the contrast between the two construction standards. In addition, the traction line uses Code 100 rail, with weathered rails and submerged ties lacking ballast. The adjacent steam line, however, is built using Code 125 rail and recently applied ballast. The contrast between the two is very pleasing.

*Flash Forward: The children that hadn’t been born then (thank heavens!), are now grown out of the house, but I’m still working on the same interurban/steam railroad interchange, which I’m re-creating using a second set of custom trackwork and overhead parts.*
An Overview of the New York Society of Model Engineers

Hosts to the 2006 O Scale National Convention

The question has been asked, “Does the O Scale community need a National Convention?” I have attended most of the Nationals from ’92 to now, and personally, I do see the need for these. Our needs are not being addressed by the NMRA. There are larger shows in California, Chicago, Indianapolis, and Ohio, but in the Northeast there are none. In the area between Boston and Washington, there are just a few small shows with modest attendance. A number of us in this area do enjoy going to these smaller shows, but, if we are to continue as a viable scale, we need this Convention to attract new members and highlight our great accomplishments.

In 1995, the New York Society of Model Engineers ran the Convention, which we held at the Marriott Glenpointe Hotel in Teaneck, New Jersey. We believed it to be a great success barring one small incident. Many still compliment the Society on it. Who knows what great treasures will come out in 2006? What collections will be sold? Will passenger cars built by Joe Fischer appear? Don’t forget, he lived in New York, along with Icken and Alexander. Perhaps some of the equipment they built will surface. How about the large number of locomotives built from ‘92 to now, and personally, I do see the need for these.

The Society and I will do our best to make this convention even better than the one in ’95. Here is just some of what we already have in store for you. Our convention site is the Parsippany Hilton, located on the westbound side of Route 10 less than a mile off Interstate 287, adjacent to Interstate 80 and Highway 46 and a short distance from Interstates 95, 78 and the Garden State Parkway. The facilities are newly renovated and access to the trading floor is at ground level with three access points. Dealers can handle their own merchandise, but help will be available if you need it. Security will be tight. Access will be granted only to dealers and helpers during setup; all others will be barred. Trading floor hours will be Thursday from 9:00 am to 5:00 pm, Friday from 9:00 am to 5:00 pm and from 7:00 pm to 9:00 pm. The trading hall will again be open on Saturday from 8:00 am to 2:00 pm. Breakdown is scheduled for Saturday from 2:00 pm to 5:00 pm.

We will have a great number of contests for those who have scratchbuilt or kitbashed cars and locomotives, or who are handy with a camera. The different categories will include freight cars, passenger cars, trolleys, maintenance-of-way equipment, steam locomotives, Diesel locomotives, electric locomotives, structures, photographs, narrow gauge equipment, dioramas, passenger trains or freight trains.

The Baltimore Club will bring their switching module for a competition. A prize will be given for the best time. I’ve tried it; it’s a piece of cake... NOT!

We already have commitments for the following clinics:
- Kithashing
- Building Large Structures
- Working with the Torch
- Wiring Double Slip Switches
- Resistance Soldering
- Applying Decals
- Bridges and Trestles
- Painting
- Turnout Building
- Catenary

But we’re not done just yet, there will also be designing and building modular railroads, building benchwork, scenery, Camelbacks (those ugly locomotives that look so beautiful), two different seminars on traction, Proto48, converting 3-Rail locomotives and cars to 2-Rail, making your own molds, and prototype signaling. Even more will be added. The times the clinics will be held, and the presenters, will be listed on a website prior to the convention.

Now for a taste of the tours we have planned. On Wednesday, there will be a lunch and a matinee in New York City (the musical Mamma Mia, mezzanine seats). Thursday, sign up to ride the New Jersey light rail, tour the maintenance facility, and visit Hoboken. After that, you can take a short Path ride to Ground Zero where the Twin Towers stood. Friday, we’re off to Steamtown, in Scranton, Pa., for a guided tour of their facility and shops, including the trolley museum, and short steam and trolley excursions. Saturday, tour Grand Central, and the PATH and New Jersey Transit maintenance shops. This last one was a high point of the ’95 Convention, so you might really want to consider it. If you plan to take advantage of any of these tours, please register early. To guarantee your place on a tour, and to ensure we have sufficient transportation arranged, please send your registration in by June 10, 2006.

We have commitments for numerous club and home layout tours. Clubs that will be open Thursday evening include the New York Society of Model Engineers, the Model Railroad Club of Northern New Jersey (North Haledon), Stamford Model Railroad Club, and the Bay Ridge Model Railroad Club. Home layouts will range from very large to small, but I assure you they all will be spectacular. Pennsylvania Railroad and New York Central fans will have many to choose from. Two Reading and one Milwaukee Road layout will be open, as well as other roads. Some have overhead wire. One large layout is all trolleys, except for a small branch line. You’ll get to meet the owners, who will be happy to share their wealth of O Scale knowledge, plus their magnificent collections of locomotives and rolling stock. We will furnish maps and detailed directions, plus telephone numbers in the event of a wrong turn.

There will be a panel discussion on the future of O Scale. This should make your list as a “must attend”. Panels will include AtlasO former-president Dick Maddox, K-Line Inc. VP Nick Ladd, Brian Marsh of Overland Models, Dave Divita of Key Models, and (hopefully) the president of Sunset/3rd Rail, Mort Mann, a former Junior member of the New York Society of Model Engineers. All questions that you wish to present to this distinguished group must be emailed to 06oscalenat@comcast.net. This is to guarantee that a wide range of questions can be addressed and to avoid some of the abuses of the past.

Finally, there is our Saturday banquet, hopefully the culmination of a great Convention. We will have an interesting speaker, will take care of the business of the convention (including award presentations, reports on the 2007 O Scale National in Indianapolis, and an update on how the New England group is coming with their plans for 2008). We are hoping a number of groups will bid on the 2009 Convention, allowing us to continue this tradition so our hobby can grow, and we can see what other O Scalers are doing and learn from each other.

For updates on our plans please go to the convention web site at www.2006oscalenat.org where you can download registration forms, link to our hotel, check out layouts on the tours, and other points of interest.

The Society looks forward to you joining us in New Jersey in July, 2006.

Jan/Feb ’06 - O Scale Trains • 35
Soon after I had finished my first GP35 conversion, described in OST #14, I started looking for a second unit as a basis for a new project. Searching through the websites of several dealers, I found what I was looking for, a later style KTM GP35 with the cast gearboxes instead of the earlier version with the milled brass boxes. Unfortunately for me, since my new project called for some extensive modifications of the body, the locomotive was nicely painted in the blue and yellow paint scheme of the Santa Fe. Fortunately, a friend, who owned an unpainted earlier version GP35, was interested in a painted unit. There are minor differences between an earlier and later version KTM shell, such as the door latches and louvers. To make a long story short, we just traded bodies and everybody was happy.

Next, it was time to start thinking about the conversion and the changes I’d need to make to the body, which would be more involved than the one we looked at in Issue 14. This time, I wanted to build a “GP38-3”. Some of the GP35s running today have had the turbo-chargers removed and updated electrical/electronic systems installed. The fuel consumption of the old turbo-charged prime mover was high, by today’s standards, and the original electrical systems were becoming a maintenance headache. The resulting arrangement is rated at 2000hp, down from 2500hp as built, quite adequate for the current users’ purposes. You can find them mostly in regional and branchline service.

So how do you identify a GP38-3 from a GP35, and what are the visible differences? The most obvious change is the lack of a single exhaust stack, indicative of a turbo-charged EMD. Also, there is a prominent air filter box on the roof, not present on a stock GP35. Because of the new filter box installation, the dynamic brake blisters had to be shortened at the front end. The exhaust on the rebuilt version is typical of non-turbo EMDs, a pair of exhaust stacks positioned in a similar manner to a GP38. These are the most visible differences between the two locomotives. You’ll have to be a bit careful, though. Some GP35s were rebuilt as the “GP38M-4”, or the rare Caterpillar-powered GP35C. Other locomotives were also used as the basis for the so-called GP38-3, such as GP40’s and GP50’s. To avoid all this conversion confusion, you’ll do well to take particular care in choosing a specific unit to model.

Kithashing brass locomotives is definitely not a project for the novice. Some skill with the soldering iron and the torch is a prerequisite, as well as some experience in metal working and metal forming. You’ll need good tools, too, such as drills, needle files and a fine metal saw.

I started by unsoldering all the old cast fan housings, which only took a few minutes with the help of a small torch. Then, I carefully shaped the holes for the new see-through fan housings I wanted to install. It took me two evenings before all the updated castings fit just right.

Next came the fun part, shortening the dynamic brake blisters. This was a fussy job, with no room for error. I was originally going to unsolder the existing blister castings and shorten them as separate pieces. I had to change my mind after I noticed that these castings were soldered into the shell to stiffen it, not on the shell as with Central Locomotive Works kits. I was concerned that the heat from removing the casting and re-attaching it after modification would seriously warp the hood. Instead, I used my Dremel and a diamond-impregnated cutting disk to make the “courageous cuts”.

Before I started carving at the blisters, I carefully covered the areas of the hood that could be marred by a “little mistake” with the Dremel. This prevented a minor “oops” from becoming a ruinous gouge in the thin sheet brass. Happily, everything worked as I planned it. The disk cuts like a hot knife through butter and, after few exciting minutes, the rough cut was successfully completed. Some little remnants of the blister had to be
cleaned up with the help of a rotating sanding drum, and some needle-filing done to get the correct length of the shortened blister and the right angles.

Now I had a pitiful looking shell, full of holes where the fan housings were removed and the dynamic brake blisters were shortened. I closed up the holes in front of the blisters with a thicker piece of sheet brass carefully trimmed to fit with as little gap as possible. As always for these sorts of operations, when it is necessary to hold the part in place and to protect the area around it from too much heat, I used my favorite jeweler’s clay. After soldering all the seams using a small torch, I smoothed the joints. Then the air filter box, built with two layers of sheet brass, was set at the correct height and soldered in place. A search on the Internet yielded several good photos, invaluable for finding the right dimensions and position for the air filter box and the finished length of the dynamic brake blister, since technical drawings of rebuilt locomotives were just not to be found in any publication. The access door at the left side of the air filter box and the exhaust stacks are GP38-2 parts. These castings (and many others too) are available from Central Locomotive Works in California. The prototype is equipped with an unusual combination of fan housings (Photo 1), and I was happy to find the correct types from Precision Scale. The fan housings were glued from the inside of the hood using epoxy resin.

To improve the appearance of the locomotive, I replaced the KTM truck castings with new CLW Blomberg trucks. These are available as a kit. The only modification needed to fit the cast KTM gearboxes (a very good and durable design), into the CLW trucks was to reduce the thickness of the bolsters. I replaced the wheel sets with my favorite 0.145” thread, with new turned axles. This step isn’t really necessary; in my opinion the new wheels just look better. Before I assembled all the drive components together, the gearboxes, axles and center tower got a good inspection, followed by a wash of lacquer thinner to clean them. Then, the gears and bronze bearings were freshly lubricated. Like my first GP35 upgrade, the KTM weight, a block of lead, was removed and the old open-frame motor was replaced by my standard Faulhaber type 2342. The reduced weight and the new motor give me a pleasing combination of prototypical speed and pulling capacity. By the way, the flexible joint between the center gearbox and the motor, which I found in a local hobby shop, is a part for R/C ship modelers. It works perfectly for our needs and runs silently. It is a now my favorite connection between center gearboxes and motor shafts. Photo 2 shows the rebuilt drive arrangement. The configuration of the major modifications, as well as all the little add-on parts like antennas, sunshades, inertial air filter, electrical junction boxes and ditch lights, are visible in Photos 3-5. These little things are important if you want to model a specific prototype, as they differ between individual units. A nice plow, a CLW part, mounted to the front pilot was the final new part for my GP38-3 conversion.

I always seem to be modeling leasing units, and this project is no different. My choice of prototype was CEFX 6537, a former SP GP35, of the CIT Leasing Company. The decision was made after I found numerous photos of this unit by searching the Internet.
was further inspired to model this particular unit because of the unusual combination of fan housings. This GP38-3 is painted a simple two-tone paint scheme like her sisters, but it was a difficult task to find the correct matching colors. I tried several mixtures to get the right shade of maroon. In some pictures it looks like a red color, while in others like a milk chocolate brown. I had the same problem with the gray; sometimes it looks like a concrete gray and other photos looked like a light gray. To make it short, I was getting a bit frustrated with the guesswork. Then I got the new issue of Diesel Era magazine, with an article about Erie Lackawanna’s SD45’s. The article contained many pictures of the SD45, shown in different locations and light conditions. Sometimes the maroon looked like a red and other times like a milk chocolate brown. To my eye, the EL colors are a very close match to the CEFF paint scheme, so the decision was to use the Badgers acrylic EL Maroon and EL Gray paint. Painting the unit follows the standard procedure. First, an extensive cleaning of the whole model is called for. Preparing the surface means an application of a good primer, therefore I used Revell’s Basic Color on all brass parts. Then the first color, the EL Gray, was applied. After curing, typically pretty short with acrylic paints (which can be shortened further by warming the piece with a hair dryer), the maroon was sprayed on the long hood, the cab number board, and then on the short hood. Extensive and accurate masking work was necessary for each section.

The decals were made, on my computer and ink jet printer, using Bare Metal decal foils. The “Modern No. 20” font is available in MS Word. The cab lettering was printed on a clear film with the standard brown color. For the black numbers on the front number boards, a white decal foil was used. The markings on the sidesills are Woodland Scenic dry transfers. After all the decal work was done, the whole model got a gentle bath in warm water to remove the remnants of the decal glue. Don’t skip this step, because these glue stains can show through as flat-finished spots and blemishes in the final clear coat. I use Badgers acrylic Clear Satin for this. My choice for all black parts on the model, like the fuel tank and the trucks, was Badgers Weathered Black. This gives the model the appearance of a freshly painted locomotive, just a few days out of the shop.

After the locomotive was reassembled, the first hasty digital pictures were taken on a sunny afternoon. They improved my satisfaction with the decision to use the EL colors. I remember an article, by Jim Six, where he describes his difficulties in matching those EL colors. He was having problems duplicating the scheme, too, because of the variations in colors in different lighting conditions.

The final step for any locomotive project is, as always, the successful test run. This locomotive was a very silent runner from the beginning. After a few slow test runs, it was time for a full throttle trial. It ran perfectly, until that all-too-familiar sound of a derailment was heard. An initial suspicion of a worn out frog, given the location of the derailment on a switch, was wrong. An NMRA gage identified a set of wheels that were too tight. That would explain it! A little while later, the wheelset was fixed, and I now have a fine-running GP38-3.

**Reader Feedback**

**Multi-Comments on Issue #22**

As usual, [OST #22 was] a very nice issue. I was most interested in the command-control article, since I have absolutely no experience with CC—except for a short brush with one based on model aircraft components adapted to trains, and a very recent chance at the M.T.H. DCS system. There has been much interest in the various CC systems on the Internet forums, and I always seem to stick my nose in there, even without much background.

This isn’t much of a connection to an excellent article, but my copy of DCS (aimed at that big Challenger) worked without any ground at all, and worked equally well on AC and DC on my two-rail track. I was really quite impressed, as were many of my guests. It is the sound that is the grabber!

I too have reviewed the Challenger and concur with your dimensional evaluations. I probably would have missed the extra length, had I not parked a Lobaugh Challenger next to the M.T.H. unit. I am convinced that the extra length can be trimmed out. I missed the 1 1/4” in the tender! I am quite impressed with the entire M.T.H. setup; I maintain that Sunset and M.T.H. will not be competing since diecast appeals to a different group. But if diecast continues to be the medium for truly scale locomotives, then I may find myself once again wrong! I have one of the K-Line Berkshires here for evaluation, and its physical appearance is just as startling as the Challenger! It didn’t get run as much, because the DCS was just such fun!

Finally, I had to smile when I read your editorial. It is standard in O Scale to begin laying track long after a collection has been expanded beyond any reasonable limit. It is also standard to sweat bullets making things run. In my experience, even tried and true antiques need a thorough overhaul to fit a new railroad, and even then, it is difficult to get the same performance on a friend’s layout. Rolling stock is a headache, as well, and you will find simple freight cars shorting through couplers and metal underframes. The all-time best idea is the Kadee plastic box with a metal coupler inside. Too bad Kadee can’t do it; I bet K-Line will, real soon! There are so many millions of ways that 2-Rail can short-circuit that it would take an entire issue. The most troublesome way (as I am sure you have found out) is steam locomotive brake shoes! They short on USH and M.T.H., and if I work on a steamer with brake shoes, I simply will not guarantee it. Cheer up; once the bugs are worked out, they pretty much stay out. Either that, or you become an expert at spotting them, and can fix stuff pretty quickly.

I am delighted that O Scale 2-Rail has two very good magazines! Keep up the good work.

Bob Turner, Calif.

**A New Switch Control**

Greetings and salutations from Tarpon Springs, Florida. Your mention of choke cables (Yes, I’m old enough to have installed a couple) prompted me to pass on a web site you might look at. It’s [www.humpyard.com]. These are the neatest switch throws I’ve encountered in over 60 years of model building (I got a late start). Even though they are primarily for HO, the proprietor said they would work with most handlaid O switches. Of course, with a little geometry thrown in, the actual end travel could be increased by using an uneven bellcrank or lever. OK, put down that glass of “Spiritus Fermenti” you have been swirling and crank up the generator so you can use the computer to have a look-see!

Bob Garrelts, Fla.
Heartfelt Thanks

As you already know the Eastern “O” Scalers is an extension of my hobby and as such I seldom get the time to talk with people at our meets. I would like to thank you once again for attending our meets but most of all for what you and your staff have done to revitalize the O Scale community. O Scale Trains is not only informative but most of all it is interesting.

There doesn’t appear to be a topic that your staff wont research and discuss. Unlike so many other train magazines you don’t beat a dead horse; the articles vary from issue to issue with great appeal. Each issue has its own identity with fresh material and follow-ups from previous articles. Since model building is becoming a lost art I really appreciate the scratchbuilt or kit-bashed features in O Scale Trains. They stimulate deep thought and make me want to sit back down at the workbench and catch up on some of my lost projects. Well, they aren’t really lost; they’re in boxes in the back of one of the closets or the shed, and they were multiplying!

Dave Richter, Pa.

Why Not Prototype Measurements?

I enjoyed Ron Gribler’s article in Issue #23 on building the C&O gondola. There is a real need for articles like this to encourage a try at scratchbuilding. How nice it is to show a model that didn’t come out of a box.

One suggestion though. Why not use the prototype measurements? It would seem to bring out the feeling of building a representation of the real thing by using a scale that shows feet and inches to measure the components for the particular equipment being built. I know, 1-1/16 of an inch is the same as 4’ 3”, but if a modeler is going to do much scratchbuilding a steel rule to scale is a necessity as most published drawings use the actual feet and inches of the prototype. And there it is on that O Scale rule.

No criticism is intended of Ron’s excellent article. It was just a thought. One question though concerning those gondola parts, I would sure like to buy some of those brass boxcar ends! Does Jim Watson sell these to other modelers by chance?

Tom Mix, Colo.

Joe replies: Tom, we’re at the mercy of the author when measurements are provided with an article. We don’t have the staff or time to redraw plans in prototype measurements. I’m sure Boxcar Jim Watson sells parts to anyone. You can contact him at 256-435-5014.

Comments on Scace’s Editorial

Although my approach to 2-Rail O Scale is not directly affected, Brian Scace’s Observation in OST #23 really drove home some important points about 3-Rail manufacturers entering the 2-Rail field. And after reading Hobo D. Hirailer’s take in a similar vein, I might conclude that Brian is “ghost-writing” that column under this pseudonym.

I wonder if and when the 3-Rail manufacturers will finally get a grip and start listening to the market they wish to exploit. It is SO simple to listen to the market when you climb down into the trenches. Like any company, everyone clamos for market share and will employ some ruthless tactics at the expense of the market. And these guys might figure, “Hey, we’ll ride on our brand-loyalty reputation and ‘throw these 2-Rail guys a bone’ just to see if they’ll bite.” You don’t have to be a genius or market analyst to start listening, and reading on discussion boards what 2-Railers are actually saying. And if Darwin’s Theory applies, there may be an exodus to 2-Rail should 3-rail modelers begin to refine their approach to model railroading.

I know, business is business and every manufacturer in a highly competitive market will rush to beat the competition. And production shortcuts are borne out of necessity to efficiently produce a product at the lowest possible price. But have they really done their homework and research? Have they read any discussion boards or reviews to find the niche and offer a product that satisfies? I hardly think so when I read comments from casual reviewers sitting at their keyboards. Does it really require any major costly tooling changes to make something right the first time? I doubt that, too. Should any of us buy something that we might have to cannibalize just to get what we want? Most don’t want the bother today if these same manufacturers are realizing a much stronger ready-to-run market.

And finally, will ANY manufacturer eventually realize, in any scale, that the only models capable of doing 200 scale miles per hour should maybe be an Amtrak Acela? C’mon, figure it out! Some already have. I know anything I run on my line will do 30 mph tops! That’s why, even with what is offered today, and if the entire 2-Rail market went “belly up”, I could still infinitely enjoy this without them. I graduated from other model railroad pursuits to enjoy and practice an artform of scale fidelity, not repackaged and glorified trade secret trains from an early toy era. How easily they shoot themselves in the foot.

Phil Opielowski, Mass.

Scace Editorial Take Two

Thank you for your comments in “Observations”, especially in the July/Aug. and Nov./Dec. issues.

I’m retired and still love to build railroad models, but it is not getting and easier in many way. And some 3-Rail manufacturers have a self-serving attitude toward the hobby as a whole.

It was very refreshing for me to see “We don’t need it” finally in print. To use an old and outdated motto “Model Railroading Is Fun” (and still is for me). I’m glad some in this hobby think so too and want to keep it that way. Well said!

Jim Bond, Calif.

Command Confusion?

Love your magazine and the interesting crew you have somehow come up with to write the columns. Brian is too much.

I read the article on command control systems and I still don’t know which system to go with as I switch from HiRail to scale 2-Rail. I was in 3-Rail for 15 years and used both TMCC and DCS. I can’t imagine what a newcomer must think: AC, DC, DCC, DCS, TMCC!!

Russ Page, Vt.

Train Carving

Nice magazine, I especially look forward to the scratchbuilding articles. To those of you who haven’t crossed that line yet, I urge you to try it. Taking a pile of raw materials and transforming it into a viable piece of rolling stock scratches, for me anyway, an itch that writing checks can never quite reach.

Nice as it is to follow the step-by-step instructions and end up with a new N&W caboose, Pennsy or C&O gon, you don’t have to patiently wait for an article on your favorite car. Step back from the “drill this size hole here” details for just a second and you’ll see the big picture. What these articles are really teaching you is how to build anything you want.

John Krukowski, Wisc.

ERRATA Issue #23

In William Kendall’s “Barrel Car” article Bill offers Jim Watson of Alabama an apology. Everywhere in his article that read Boxcar Jim it should have read Boxcar Ken. It should have read Boxcar Jim. In Gerald Brothers’ “Building An Interurban Combine” Parts List, the Northern Indiana combine body came from LaBelle, not the Q Car Company as listed.
We've all seen those rough sandcast bronze trucksides under some of our favorite cars and they look like a bit of history worth preserving. The skill and dedication of those who made the masters, pounded the sand, melted and poured the metal tells of a time when craftsmen enjoyed their professions enough to practice their arts on their own time. We are the beneficiaries of their dedication and care; their creations are still working for us decades after they went on. Though many of these parts are a bit rough, they are by and large very dimensionally correct and faithfully contain key design elements, the recreation of which deters some of us from starting projects they made look easy.

New materials have made it possible for us to use their results as starting points to produce more refined parts than their technology permitted. This article explores one project that demonstrates just how easy it has become for each of us to produce just the parts we want. The part in our project (Photo 1) is the 43-R passenger truck (referred to often as the “Napoleon Hat” truck) used by Pullman on some of their prewar passenger cars. No doubt some stout souls finished some of these to a smooth finish. I gave up! Then the dawn; it’s got to be easier to work plastic to a smooth finish than it is to work bronze!

**Re-Casting a Sandcasting**

Recently, there have been several fine articles published on casting using silicone molds and resins, so we will presume knowledge of the basics though we will have some molding tips along the way. Also to the best of my knowledge, all the parts used for this article come from defunct companies so no copyrights are infringed. I suggest you do the same.

**The First Mold**

We’ll begin by making a mold of the bronze original for use as an “artist’s master” that needs refinement to create a “casting master”. The mold really does pick up everything. I actually used the truck side I gave up on, but it shows the unfortunate detail (Photo 2). The outer springs were removed because I hadn’t the skill to rescue them. We’ll replace them with our own later.

Now, you have a mold to start the process. Pour and pull the best part you can, even if it takes several tries. This part you will work over to become a new master (a “casting master”), so start with the best you can get. The object, at this point, is to clarify the original intended contours while smoothing all the surfaces appropriately.

Use lots of tools for smoothing and forming. Different nooks and crannies call for different blade forms. All these tools have been described and their use explained elsewhere. Besides, you have your own favorites. Photo 3 shows some of the tools I used.

**The Second Mold**

You could stop here and make clean editions of the original from this second mold, or you could continue by upgrading some of the detail features. We’ll use spring replacement as an example.

Use some half-round Styrene with the same apparent diameter as the coil material represented in the original sandcast springs. Wind the Styrene on to a round brass rod of such a size that the finished spring will be the same size as the sandcast coil springs. Wind about an inch for two springs. The half-round is wound closely with no space between the turns. You’ll want a good tight “wind”, because the result will become part of a new master and must not leak mold rubber behind it (Photo 5). Wick thin CA into the wrapping and allow it to set. To fit the new spring into its place in the part, sand what will be the back...
side of the spring flat (Photo 6). Strip off the remaining C-shaped coil (Photo 7), trim to length and anchor it to the part with CA. Ordinary modeling clay is used to fill in the back of this new casting master to keep out the silicone rubber when the third mold is made (Photo 8).

It's looking good, so far. A small confession is due here. Those journal boxes (Photo 9) are also new, like the outside springs. I took them from an old AMT plastic truck that was otherwise beyond redemption. You can use this new master to make a third mold to get something like this (Photo 10). One could stop the process here and create truck sides with this mold. It all depends on how far do you want to take this thing.

What about that set of leaf springs? We can do better. Borrowing from an old lead casting, the entire original leaf spring was removed and the rectangular opening dressed toward square. Here you might notice the opening is off center, as well as not quite square. So be it. I wanted to improve what I could while retaining the character of the original sand casting. A sheet of 0.020" Styrene was used to back the new lead spring, holding it positioned in the opening while providing a backing for the new cast springs in the mold.

How about some brake rigging? Why not use some from a non-useable Diesel truck? Then, there's brake cylinders. We can make those in a couple of minutes from brass rod using a drill press, files, and fine sandpaper. A truck is just not complete without some brake shoes, by the way. There must be an out-of-production broken truck side around that doesn't need its shoes anymore.

Now we have something like in Photo 11, at least in theory. This thing is starting to get some attitude! Problem is, we're over our heads with this assembly when it comes to making a mold.

So, we'll resort to making a five-piece kit for our new 43-R! It'll look like this (Photo 12) when we're ready to pour the mold.

The Third Mold

Yes, those pink lumps are from obsolete silicone rubber molds. Use them as filler for your new molds. They work great and become completely a part of the new mold. Because of them (and a few more) this mold was filled with only one ounce of new material. That translates to sixteen molds of this size per jar of new material. Not a bad deal.

The parts are thin CA'd to a flat, smooth glass surface and the box is built around them using most anything that can be glued and sealed with hot-melt glue. Here, some stripwood and foam board was used. This is the most adaptable, easiest, and cheapest way I've found to make mold boxes.

Look closely and you can see that our master has a slight downward bow toward the ends. This is one of the characteristics of the original bronze casting that we need not perpetuate. Here's another technique occasionally useful with flexible molds. This is an elegant solution to this issue. Torque the mold to make the casting straight (Photo 13). I hold the torqued shape with balsa, or whatever can be hot-glued to the flat surface on which the mold will rest when the plastic is poured. If there's no balsa handy, a lump of hot-melt will do (lower left chock.) Any slight vertical distortion of the mold will be cancelled when the squash plate is placed over the fresh pour and weighted.

The pull looks like this (Photo 14), a straight part from a curved mold. The final truck side we've made from the torqued sand casting looks like this (Photo 15), while the non-torqued (bowed) truck looks like Photo 16. There's still a family resemblance to the bronze ancestor, but it looks like the kid went to college. Aesthetically I prefer the lower, bowed truck, but the
straight truck is probably more “prototypical”.

This project demonstrates the concept of serial casting to evolve one part from another. The first mold was made using the original bronze as a form. That from mold we took a casting which became our “artist’s master” which is a faithful, though rough, creation of the artist. We then cleaned up the artist’s master to make a casting master. The second mold was made from the first casting master. From this mold we made casts to modify in various ways until we got something we could continue to develop. We developed a finished casting master that included separate parts that would make for a superior finished product.

The third mold was made from the finished casting master and ancillary parts. This was used to produce a finished product, needing only minimal cleaning, assembling and painting.

There is absolutely nothing difficult about this process. Most of the total time was spent waiting for the molds to cure! Otherwise, I estimate about five hours were involved, including trial- and-error next project. After coming far this with the 43-R, I’m going to use these sides to make some truck assemblies with metal bearings and other hardware imbedded. And, well, there are some nifty Buckeye trucks out there just waiting for this kind of attention, except maybe they’re going to have real springs in the spaces where the cast-in springs are now. This hobby really does let you go as far as your imagination can take you.

Parts List:

All parts used were scrounged from discontinued, broken assemblies which have accumulated over the years, except for the styrene backing sheet for the leaf spring and the styrene strip used for the coils and as a tie-rod of sorts along the bottom of the truck. One could borrow a part from an old assembly, use it as part of a master and replace it after the mold is made!

For molds I used Alumilite’s RTV Mold-Making Rubber. For casting I used Alumilite’s Low Viscosity Super Light Liquid Casting Plastic which I get from The Original Whistle Stop in Pasadena, Calif., www.thewhistlestop.com. You can probably get it from your local supplier or direct from Alumilite at 269-488-4000. Also check the ads for similar products and suppliers.

Note: Neither the author nor the publisher condone the practice of copying castings produced by companies still in business whether those castings are in-production or not. The copies made here were from castings that are both obsolete and from a company that is long out of business.

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Steam Locomotives

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## Brand Locomotives

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<th>Name</th>
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Four times over a period of forty years, the Cascade Northern has risen from the rubble to become a semi-completed model railroad. Three times the layout was three-foot narrow gauge. In its most recent reincarnation, the track has been widened to standard gauge. Without exception, however, the CNR has always been quarter-inch scale.

As the result of retirement and the building of a new house, I'm about to start building a new layout. This has caused me to return the drawing board to design what will (hopefully) be my last, final, and best layout ever. Let me tell you about the experience.

Home Sweet Home

A piece of advice I often receive when I mention to model railroad friends that I'm about to construct a new house and railroad is this, “Build the basement you want and then put a house on top of it.” If only matters were this simple. The presumption in this statement seems to be that the design of the house is either not a major concern or someone else’s worry, or perhaps both.

With us, the house and the railroad space are both important. My wife and I asked an architect friend of ours in Seattle, Bob, to design a house for us with a “great room”. We did not want just any great room either. We requested one that would take its inspiration from architect Bernard Maybeck’s masterpiece, the Great Hall in the Faculty Club at Berkeley. Oh, and one more thing, could you please include a room directly below the Great Hall to accommodate the Cascade Northern?

“No problem.” said Bob the Architect.

Some time thereafter, I had the train room of my dreams. And then, not long after that, I didn’t. Several times I said to Bob, “Can you make the basement just a little bit larger than it was last time we talked?” Each time he would respond, “No problem.” Finally, my retired banker wife rather convincingly persuaded me that another...
lowing conversion from slim gauge. I resolved to stay the course with railroad number five. One thing that became apparent very soon after my conversion, however, is the large amount of space standard gauge curves consume. No doubt, like many before me, I had struggled to fit a standard gauge pike into the essentially narrow gauge sized basement in our present house.

By the time I reached retirement age, the case for a larger space in which to build a new CNR had already been made. Along the way to this point, I did give some thought to Proto 48 for the new layout. This branch of the hobby has some persuasive advocates around the Puget Sound region. The thought of having to convert an existing fleet of locomotives and rolling stock to a new track gauge was, I ultimately decided, just too much to take on at this late point in life.

Shuffling through 50 years of accumulated back issues of model railroad magazines at the time I designed the fourth CNR, I found two people whose work really impressed me. One was Paul Larson and the other, Brian Ellerby. Larson was the editor of MR back in the early 1950s when I first started reading the magazine. He focused on realism and operation and was a pioneer in both fields. At the time he died, far too early in life, the railroad he had under construction was in O Scale. I knew Brian both from his work published in the Gazette and as a fellow Seattle area resident. From Brian, I learned the importance of keeping operation in mind during the planning phase of layout design. I had incorporated as much of the good thinking of these two model railroad heroes of mine as possible into the first standard gauge Cascade Northern. Along with my givens and druthers, I was determined to do the same on the new layout.

Another thing I wondered about was whether to stick with my decision to use 60" as a minimum mainline radius
on the new layout, as I had on the present one. Should this be increased to, say, 72″? No question, the trains would look better going around broader curves, but, oh the space these curves would consume, not to mention the space that would be lost in the center of loops. To resolve this matter, I stuck with 60″ and I made an accompanying decision to continue my focus on small and medium sized locomotives pulling trains of modest length.

Talking to friends about the new railroad proved a useful source of good ideas and, not infrequently, sage advice. For example, one evening I telephoned my good friend Charlie
Morrill, in Texas. He listened patiently to me carry on about all the great things that Larson and Ellerby had accomplished and that I was going to try to make features of my new railroad, plus all my own ideas. When at last he spoke, his comment was, "Just don't try to put seven gallons in a five gallon bucket."

**Pencil to Paper**

If you look at the track plan that accompanies this article you will see that the Cascade Northern Railroad is laid out to operate primarily point-to-point. Operations begin in a town called Skagit, located on the western side of the Cascade mountain range a little south of the US-Canadian border. There is a division point yard located here, from which trains arrive and depart, headed toward the eastern part of the state. Both road engines and helpers can be found in the engine service area.

West of Skagit, the mainline passes through a small industrial area. The dominant structures here are a sawmill, with accompanying log pond, and a fruit packer. Slight unseen, this route is presumed to continue west to a port city on Puget Sound, where there is also a connection with the Great Northern. Eastbound traffic heads uphill from Skagit towards the town of Concrete. Concrete is named for a real place and has a hopefully self-evident reason for being. Along the way, the mainline passes a lumber camp and reload located higher up the slope. Eventually tracks reach the summit at Rainy Pass. Rainy Pass is named after one of the two passes the North Cascades Highway crosses to get from one side of the state to the other. It seems aptly named in light of the propensity for western Washington to experience rain throughout much of the year. An elevation gain of 14" is required for trains to reach the highest point on the railroad.

While descending the east side of the Cascade Mountains, the CNR passes through the high elevation Methow Valley town of Early Winters (See OST #16 for a description of the depot I built for this location.) With a slight stretch of the imagination, coal is mined here and a couple of mines keep the CNR busy delivering empties and picking up loads.

Eventually the tracks reach the mythical metropolis of Methow. From here they continue on to Pateros, a real Washington town located on the banks of the Columbia River but not the place I’ve elected to model. Agriculture is the dominant activity in Methow. Reelfish are iced and filled with produce headed over to the western half of the state. Grain is loaded here for milling in Skagit. A petroleum products dealer receives regular deliveries from a coastal oil distributor.

**The Cascade Northern’s Economic Rationale**

Every railroad needs to have a purpose. The CNR, as these notes are intended to suggest, has several. One is to bring agricultural products across the Cascade Mountains from eastern Washington to the metropolitan markets of the Puget Sound region. Traffic headed in the opposite direction carries a variety of manufactured goods destined for markets in the eastern part of the state and beyond. Passenger traffic across the state is brisk, and several trains serving this market traverse the summit each day. The Cascade Northern operates no signature passenger trains, but consistent with my goal of providing plenty of operating opportunity, several two- to five-car consists will cross the state each day. A friendly relationship with the Great Northern provides the CNR with a modest amount of bridge traffic that might otherwise have crossed Stevens Pass.

**Why the Tracks Go Where They Do?**

It wasn’t too hard to figure out early on that the main yard would have to be located adjacent to the one long, straight wall in the room. Only by doing this would it be possible to get a yard area of reasonably realistic proportions. For the overall layout configuration, I debated adopting a spiral-walk style arrangement, but I soon abandoned this notion. John Armstrong’s Canandaigua Southern took this shape. His comment about a duck-under saving 90-some steps of walking if a person wanted to get from one end of his railroad to the other persuaded me to think otherwise about this specific configuration.

With three aisles for viewing, my goal of having visually separate scenes was achieved. A floor-to-ceiling backdrop assures this. Including several towns along the right of way provides ample opportunity for switching and to display the structures I like to build. Without question, the two loops usurp a significant amount of space, but to my mind the benefits of scenes being visually isolated from one another ultimately justified the real estate they consumed.

One thing I wanted to incorporate into the railroad was at least one example of all three major means of reversing the direction of travel of locomotives, the turntable, wye and loop. The first two were fairly easy to achieve. A turntable is located at each end of the railroad. Early Winters has a wye. Directly below the fully visible loop near the town of Concrete, I plan to build another that will be hidden. This will be a return loop. I can already see that a tight radius at this location will be necessary. Elevation problems demand that the radius of a loop located beneath the track leading to from Skagit to Concrete must be on the order of 54".

Another "druther" I wanted to achieve was to have the direction that an operator faces, when standing at the layout, always be north. This makes any train moving to the left a westbound, and to the right an eastbound, consistent with the convention of maps. To achieve continuous running, the GN connection on the east side of the mountains turns into a loop via a turnout located under the east end of the yard in Concrete. This way I can keep something in motion without too much hands-on attention while entertaining guests. Finally, if you want to see my specific homage to Mr. Larson, it’s to be found in the track layout at Methow. To the maximum extent possible, I borrowed the configuration of River City from his Chicago, Neosho River & Pacific. The track plan for this O Scale railroad that he was building at the time of his death was published in the April 1966 issue of RMC.

**And Now For Something Completely Different**

Unlike Paul Larson, who wanted long trains to streak past viewers at high-speed headed to a far away destination, my railroad’s operations are intended to be less intense. Not surprisingly, given my previous experience with narrow gauge, natural resource extraction does play a role in the economic prosperity of the CNR. Two commodities dominate. One is timber and the other is coal.

Logs are transported by the Skagit Valley Lumber Company, over its own railroad that connects with the CNR. You can see on the track plan that there is a logging camp and reload located in the hills above Concrete. It is reached via a line that originates in this town. Geared engines bring fully loaded log cars out of the woods to Concrete where they are assembled into trains destined for Skagit and the mill located just beyond. This traffic generates revenue for the CNR. Because the speed of geared engines is significantly slower than the larger and faster steam power of the CNR, the lumber company has a couple of medium sized rod locomotives on its roster to handle this chore. In case you’re wondering why the logging operation in the woods isn’t narrow gauge, this choice would go against the grain here in the Pacific Northwest. Logs being removed from local forests were typically so large that standard gauge equipment was best suited to their transport.

Coal is another (reasonably) logical product to originate in the North Cascades. This may stretch a point in reality, but ore laden with valuable minerals was never found here, so coal is my mineral of choice. At least one coal turn a day can be expected to be part of the operations. A heavyweight Shay, already on the
locomotive roster, finds a purpose handling hoppers filled with this commodity.

**Extra Goodies**

While the grade needed to reach the summit at Rainy Pass is not excessively steep (around two percent), helpers will be employed on both sides of the mountains. Trains will be allowed to operate without a helper only if they have less than a certain number of cars. This number is likely to be set somewhere in the range of seven to nine, mainly to insure that there will be lots of this activity occurring. Short trains and slow speeds, as every narrow gauge modeler knows, are also quite helpful in making the layout seem larger than it is.

The CNR locomotive roster is presently being converted to DCC and modified to incorporate sound. To forestall any temptation to acquire larger locomotives than those already present on the CNR’s roster, both turntables are already on hand. The larger one scales out at 105’ in length.

When will construction of the new house commence? Just as soon as County officials issue us a building permit. When will construction of the new Cascade Northern Railroad begin? It will probably be best if I wait at least until the contractor gets the foundation poured before beginning the benchwork. Recently I asked Bob the Architect if he could help me with the design an effective lighting system for the layout.

Predictably he replied, “No problem.”
NEWS: Hot-steel Ingots, MSRP: $5 a pair.
20th Century Models, 32575 Pettibone Rd, Solon, OH 44139-5454
j1d46@yahoo.com

20th Century Models has a new hot-steel ingot holder manufactured by DA Industries. They are made of a heavy gray plastic and are sold in pairs.

NEWS: McCabe Lumber Co kits, MSRP: see text
B.T.S., PO Box 856, Elkins WV 26241-0856
www.btsrr.com

B T S ' s M c C a b e Lumber Co. S l a t y f o r k sawmill is a Master Cre- ations kit and consists of laser-cut basswood, plywood, and lots of detail castings. Interior walls and floors are included. Standard features include peel-and-stick window sashes, positionable doors and window sashes, slot-and-tab construction, and brass doorknobs. Removable roofs give easy access to the huge interior. This is a very limited-edition kit.

Since not everyone wants interior machinery, it will not be included with the mill, but will be offered as a separate kit of lost-wax brass, urethane, white metal and laser-cut components to complete the interior of the mill.

Slatyfork Sawmill #18300: $850.00
Sawmill Interior #18301: Price TBA

The McCabe Lumber Co. would not be complete without a set of logging camp cars, and the next two in the series were used to feed the loggers. The logging car kits consist of laser-cut basswood, plywood, cardstock, tarpaper roofing. Plastic, brass and white-metal detail castings include door knobs, queenposts, turnbuckles, lamp shades, assorted junk, and pigeons. Movable window sashes and doors are standard B.T.S. features. The tabbed, well-engineered construction provides fast and easy assembly. The cars include the ramps and walkways. The kits are sold without trucks and couplers.

Cookhouse #19306: $94.95
Dining Car #19307: $84.95

NEWS: On 30 Rail Truck, MSRP: $135.00
Bachmann Trains, 1400 East Erie Avenue, Philadelphia, Pennsylvania 19124 USA
215-533-1600 • www.bachmanntrains.com

Bachmann’s new rail truck is based on the Rio Grande Southern Motor #1 that resides in Colorado’s Ridgeway Railroad Museum. This new model comes DCC equipped, has a diecast frame, bed and hood, and uses LEDs for working headlights. The truck comes in a number of liveries. See their ad in this issue for details.
The Prototype

The Pennsylvania Railroad, “The Standard Railroad of the World”, is synonymous with Belpaire fireboxes on its steam engines, with a few notable exceptions. Those include the N2sa 2-10-2 and the J1 class 2-10-4.

The tale of the PRR J1 starts, oddly enough, with the C&O. In 1930, the C&O bought 40 2-10-4’s (C&O class T1) from Lima Locomotive Works. The T1 was basically a slide-ruled design of the superbly successful Lima 2-8-4 Power Superpower locomotives. The C&O loved them.

As the Second World War descended on the U.S. railroads, traffic saw a huge increase and most roads needed to upgrade their rosters with bigger and more powerful locomotives. However, wartime restrictions did not allow for new designs, and many railroads had to pick and choose among designs already in operation by other railroads.

Thus, the PRR cast its corporate glance to the south and noticed the C&O 2-10-4, which was easily capable of running the mountains in the Pittsburgh Division, as well as fast-running elsewhere on the PRR system. So, they borrowed a T1 for testing, after which the Altoona Shops set about creating 125 copies of the T1.

There were minor differences in the running gear. Pennsy used 70-inch drivers rather than 69, 270 pounds steam pressure versus 265, and added about 4000 pounds more weight on the drivers. The result gained a tad more tractive effort for those changes.

Now, the T1-cum-J1 was a strange sight on the PRR. It utilized features and accessories almost never seen on the Pennsy, such as a Commonwealth outside journal lead truck, Commonwealth Delta four-wheel trailing truck, Baker valve gear, and radial stay firebox. No Belpaire!

But the PRR managed to make the J1 its own with its standard “modern” cast-steel drop-coupler pilot, high-mounted headlight, smokebox mounted keystone number plate, and a PRR standard 210-F-84 tender. What a gorgeous sight!

The Model

For reference purposes I used Al Stauffer’s Pennsy Power 1 (1962) and the Locomotive Cyclopedia, Vol. 1, from Hundman Publishing (1998). I measured the M.T.H. model against the Hundman plans, and found several differences. Model manufacturers are often faced with a dilemma when designing steam locomotive models, especially those with large diameter drivers. It comes down to this. Make the drivers the correct size and spread out the wheelbase to make room for them, or decrease the model’s driver size and keep the wheelbase accurate. In this case, M.T.H. chose (wisely, I feel) to keep the driver size accurate. They scale out to 69.5 inches. However, in order to fit all that driver under the locomotive and allow it to operate on our relatively sharp curves (when compared to the a prototypical curve) they lengthened the wheelbase by a little over two scale feet (slightly more than half an inch). That will have some implications later on.

Every other measurement on the locomotive, including its over-all length, is very accurate. The tender is dead-on in dimensions. Noticeably absent on my sample were the trailing truck booster engine and booster steam pipes under the cab. However, on the production samples these items are present.

All ten drivers are flanged. I felt the Baker valve gear was a bit oversized. I also felt the lettering was a bit too orange and should have been more yellow. The paint was flawless and all the lettering was crisp. The model has many operating features such as cab roof hatch, cab windows and an opening smokebox front. A Kadee O Scale coupler bolted right onto the tender with the screws provided.

M.T.H. also offers this model in C&O livery but C&O fans will be disappointed, as the boiler details are incorrect. In particular is the sandbox/steam dome combination. It almost appears M.T.H. put their previously issued C&O Greenbrier (4-8-4) boiler on the J1 mechanism. It’s close but it doesn’t win a cigar!

Operations

Using the M.T.H. DCS Command System with both sound and smoke turned off, the engine drew 0.2 amps with no load. With the sound and smoke on, plus lights, it drew 0.3 amps at a standpoint and 0.5 amps running light. Under a full load on a 2% grade the locomotive drew 0.6 amps. Similar load currents were measured running the locomotive on straight DC.

On my slow speed test, the J1 had trouble trying to run at 1 smph. Perhaps this was due to the gear not being broken in yet, but I was not able to get the J1 to move smoothly at this setting. At 2 smph on the DCS controller, the locomotive ran smoothly and the calculated real speed was 2.2 smph. At 4 smph on the DCS, the real speed was 3.85 smph. So, slow speed operation was very good, but could have been better.

The real problem with this locomotive’s wheelbase became apparent when I ran it over the test layout, or rather tried to run it. First, the J1 had trouble running through a pair of AtlasO #5-1/2 switches in a crossover. The diverging route curves were too tight for the J1’s wheelbase and it derailed. I’d recommend #6 switches or larger. Then, the J1’s lead truck derailed on my freshly re-laid 60” radius curve. The M.T.H. website says the J1 will negotiate a 54” radius curve, while the box says it requires a 72” radius curve. In my estimation, neither is correct. A 54” curve is much too tight and a 72” curve is likely far larger than necessary. In any case, you will need wide radius curves (better than 60”) for this scale-wheel version of the J1. Had I been in charge of design, I might have opted for a blind center driver to ease passage on the curves. The 3-Rail version of this baby has blind second and fourth drivers, and will take 36” radius curves.

The Bottom Line

Pennsy fans will rejoice at having one of the PRR’s best steam locomotives available as a ready-to-run diecast model. It’s big. It’s good looking. It runs very well and it will pull a long string of freight cars up decent grades. But, your tractorage better be up to snuff with this behemoth and only the widest curves will do. If you’re a “neurotic”, as Scace calls it, maybe this isn’t for you. But, if you’re a gotta-have-it Pennsy fan, then this J1 won’t disappoint you. On the other hand, if you’re a C&O fan, you will just not be satisfied.
REVIEW: Rail Cam™ Onboard Video System; MSRP: $269
Applied Technical Solution (ATS), 4205 N. Austin Ave.
Chicago, IL 60634
773-205-2277 • www.railcam.net

Reviewed by Carey Hinch

One thing great about this hobby has to be the gadgets. Applied Technical Solution is adding two new products to their Rail Cam™ line of X-10 wireless train cameras. The additions are basically the same systems as their 3-Rail and S Scale units, but are now offered in 2-Rail O Scale and HO Scale. I will admit I know more than I should about computers and electronic devices. Still, my first impression was that this is going to be a daunting task to operate. Shortly, though, I realized those feelings were unfounded. This is a great little system to operate. I never picked up a single instruction sheet, deciding to “wing it” on my own to see if it could be done. In just a few minutes I had everything hooked to the VCR, and I was ready to begin filming. I turned on the receiver, then the camera, pressed “record” on the VCR, and (just as advertised) I was filming from the rails. The picture was clear, the color looked very good, and the sound was a great bonus.

The camera in the Rail Cam™ system is a high-resolution CCD with a wide 120-degree field of view. It delivers exceptional quality from simple battery power. Rail Cam™ is not track-powered, a real plus if you experience shorts or have dirty track. Rail Cam™ can transmit for four hours on four standard AA batteries. I didn’t test the system quite that long, but this would be a nice feature for running the “Camera Flat Express” for visitors at a train show. Also, there are high-capacity AA batteries out now, for digital devices, that could extend that four-hour run time. The camera is mounted to a basic flat car using some oversized screws. The flat car is a standard two-rail undecorated 50’ flat car. The couplers are Kadee-compatible and are user installed. Obviously, Rail Cam™ is not meant to be scale in appearance. The flat car dimensions, with camera installed, fall well within the NMRA clearance gauge, and will clear any trackside object, bridge, or tunnel that meets NMRA recommendations. An interesting note about the camera mounting is that it can be removed from the flat car and positioned anywhere above or below the layout for some “run-by” footage.

As I said, Rail Cam™ is an X-10 compatible system. Simply put, X-10 is a brand of home automation hardware and software. If you have an X-10 system controller in your house, you can activate the Rail Cam™ camera while it is plugged in to the X-10 compatible wall adapter. Rail Cam™ is not controllable by X-10 while attached to the battery pack. Knowledge about X-10 is not required to use Rail Cam™, but an X-10 instruction booklet about the camera features is included with Rail Cam™. To find out more go to www.x-10.com or a local bookstore for X-10 books and magazines. Also of note, Rail Cam™ customers have access to 1-800 customer support by providing their order number and name to an X-10 agent. The support line is open from 7 AM to 11 PM CST, seven-days-a-week, and can help with set-up and operation of the X-10 camera provided with the Rail Cam™ system.

The receiver module has an AC adaptor, all necessary hookup cables, and full instructions. The receiver instruction booklet has a troubleshooting section if needed. I did not encounter any problems installing the receiver, camera car, or with operation. Most remote camera systems prefer a direct line-of-sight transmission path. To test the range capability of the receiver, I moved the VCR out of the train room to a remote corner of the house. I was extremely pleased to find out that the Rail Cam™ receiver and camera (operating on battery power for more than an hour now) maintained perfect communication while separated by more than 60’, a floor, and four walls.

It was quite enjoyable to view my layout from the train engineer perspective. The features of Rail Cam™ place it on the upper end of the price spectrum for onboard camera systems, but it is quality hardware that has multiple uses. Rail Cam™ is a great way to promote your layout at a show, impress your friends, or simply document your layout building progress from the rails.
**REVIEW: N&W Wood and Steel Cabooses, MSRP: $260**
Weaver Models, PO Box 231, Northumberland PA 17857
570-473-9434 • www.weavermodels.com

*reviewed by Joe Giannovario*

Fans of N&W rejoice! After so many years of manufacturers pumping out N&W steam locomotives, in both 2- and 3-Rail, we finally have some N&W steam-era cabooses. Weaver has brought us two classes of N&W cabs, CF (wood sides) and CG (steel sides). For a brief history of the class CF and CG cabs, please refer to my article “Scratchbuilding an N&W Steam Era Caboose” in *OST* #20 (May/June 2005).

I compared the Weaver models to the plans published with the article, and these new cabs are pretty much “on the money” with a few minor exceptions. Overall length, width and height are correct, as are the placement of windows and other major details. One nice touch is these models come with a scale coupler factory installed, if you order a 2-Rail version.

Weaver played it very smart and offers these cabs in both steam-era and Diesel-era paint schemes. Both classes survived into the Diesel-era on the N&W, so these additional paint schemes are correct. Both the paint and lettering are sharp and very nice. I would have liked the steam-era lettering on the CF to include the ampersand (&) rather than “AND”, but that’s my personal preference.

The Weaver models are lighted. The box says “overhead” lighting, but on all the samples I tested (three) the lighting came from up inside the interior. No big deal, but that’s not what I would call “overhead”. I was also disappointed to note the marker lamps were not lighted. Oh well, you can’t have everything.

Both of these classes have been done before in brass. Sunset did the CG way back in the 1970s and Division Point did both the CF and CG in the late 1990s. The old Sunset cabs are very hard to find and the Division Point cabs are not only scarce, they’re expensive (over $400 each). So, how do the new Weaver models stack up against these older brass imports? The Weaver cabs are painted, lettered, lighted, have interiors and come with scale couplers installed. Neither of the other two models can match these features and the price is a really great value for a brass model with so many features.

Okay, I did find some glitches. The pilot models shown in the Weaver ads have rain gutters (as does the Division Point model). The Weaver production models do not have the rain gutters. That’s a shame because they’re a nice detail to have. Also, the Weaver models lack the notches in the roof corners that allow the markers to be placed on either end in the proto-type. As a result, the outer handrails descend from the roof too far out and the builder added an “S” curve at the lower end so the railing would intersect the end platform. It looks weird and there’s no simple way to correct it.

Overall, these are really great-looking cabs and a great price. If you’re an N&W fan, whether steam or Diesel, Weaver has a new caboose for you!
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Erie, NYC, CNJ, ATSF, other "good" ones...$65
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Weaver, Jack Frost, Gulf, BN, Truewest, ADN, Army
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8K...Bakelite, NE Alcohol, Navy Gas...$30
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58 • O Scale Trains - Jan/Feb '06
REVIEW: Trainman Series Freight Cars;
MSRP $39.95 (3R), $42.95 (2R)
AtlasO, 378 Florence Avenue, Hillside, NJ 07205
www.atlason.com

Reviewed by Brian Scace

Let’s start with a little history. Back in the 1970s, Atlas Tool marketed a line of O Scale plastic equipment in cooperation with Roco of Austria. For their time, these were really nicely detailed models, and quite affordable. Many of us remember the F9, boxcar, stock car, gondola, and a couple of different cabooses. There was also a plug door box (marketed as a refrigerator car), an ore car, and a somewhat hormonally enhanced Plymouth industrial switcher. While not exactly a barn-burner success story for Atlas Tool, Roco continued to crank out the box and gondola for various people, such as P&D, after Atlas left the O Scale market. Examples of all these still can be readily found.

That’s not to say that there wasn’t something to like, here, for the more neurotic among us. I remember a lot of conversations with the late Ted Stepek, who had a bit to do with the original line and was as knowledgeable a Pennsy guy as ever drew breath. The original boxcar was a very credible model of the PRR X43c. The gondola was one of the PRR G31 series of 14-panel cars, if memory serves me right. The stock car and “reefer” were done by changing the side-facets in the boxcar moldwork, so these cars weren’t specific to a particular prototype. The ore car was a B&LE prototype, and the extended vision caboose was one of the International Car versions.

The reason for the possibly flawed history lesson is pretty simple. Some of the components of the old Atlas/Roco line have been resurrected in the new “Trainman” line from AtlasO. Let’s be clear here. The intent of the line is not to produce models with all the bells and whistles, nor to produce a line with prototype-specific details on each and every model. This line is intended as a more budget friendly choice. It is intended to be scale proportioned, nicely detailed, yet a bit generic in deference to the pricing. Let’s look at some of the freight cars.

As a quite logical starting point for the line, the boxcar and gondola draw their lineage directly back to the Roco project. The carbodies really haven’t changed, and the result is what you’d expect from the marriage of the older bodies with current AtlasO components, such as trucks, couplers and a new underframe. I must confess that I really liked the old Roco underframe, but I also really like the new see-through roofwalks on the Trainman versions. The cast-on grabs haven’t changed from the older versions, nor have most of the other add-ons such as the ladders and brakewheels.

The plug-door box and stock car both appear to be side-facet adaptations of the original boxcar. For our Hi-rail brethren, our sample of the plug-door box came through as the three-rail version. The trucks and couplers are the standard version AtlasO units. The extended coupler rig that is included with the standard line was not included here, probably again in deference to the pricing.

Fit and finish are up to the expected AtlasO standards. From what I can see with these freight cars, the intent of the line is met. These aren’t super-detailed cars, nor are they intended to be. They are good solid starter equipment, decent layout-fillers, and the boxcar and gondola are still excellent candidates for detailing and noodling to suit as prototype-specific rolling stock.

REVIEW: P48 Self-guarding Frogs
American Switch and Signal, 1945 N. Hwy 300 West
Winamac, IN 46996 • 574-946-7667
Reviewed by Brian Scace

One of the things I look forward to, at the spring Chicago show and the fall Indy show, is the sight of John Pautz’s devilish grin as he reaches into his pocket to produce his latest addition to his P48 turnout component line. This is usually followed by John and Woody Grosdoff steering me into the bar for my twice-annual “you need to convert to Proto 48” lecture.

This fall, John’s pocket yielded this #7 Code 125 self-guarded frog. This is the third style of switch frog (that I’m aware of, at least) in American Switch and Signal’s line, joining the simple style and manganese-insert types we looked at in these halloved pages earlier this year. A quick phone call for pricing is in order. So many choices!

With my new empty basement, I wonder…
This nifty little substation didn’t win Dave Clendenon any prize but we liked it alot!

This open-air car shop was scratchbuilt and loosely based on an L&N prototype in Kentucky. We didn’t get the builder’s name.

Below: This Dayton and Western trolley took Second Place. It was built by Andy Sunderland of East Gary Car Co., using an ICC body with Wagner detail parts. Andy did the painting and lettering.
Above: The B&O baggage car was scratchbuilt by Don Cabdalone and garnered him a First Place. Don also scratchbuilt the PRR B-60 baggage car shown below and took Third Place. The Pennsy car was painted and lettered by Warner Mayfield.

This little steam dummy was kit-bashed from a Testor’s cable car kit and a Grandt Porter 0-4-0 for power. Builder unknown.
Civil War Era Model Railroading!

Western & Atlantic 32’ Wood Boxcar (ca. 1862)

This detailed quality brass model features real pin-and-link couplers. Built in Korea for Schneider Model Railroading by AJIN. Available with 3-rail trucks only, easily converted with SMR’s 2-rail Freight Truck. Three car numbers available. Single $279.95; 2-car set, $529.95; 3-car set, $789.95.

Wood Beam Freight Trucks

Crafted from brass and steel. Comes in sets of two trucks, one with and one without brakes as was typical of the era. Unpainted, $32.95 per set.

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Contains two each of coupler bodies, pins, links and mounting screws, plus an oversize link for tight curves. $9.95

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Carlstadt, NJ 07022

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The New York Society of Model Engineers is working hard to prepare
for the O Scale National Convention next year. The convention committee
is working rigorously on all the details in order to make sure the
convention is an enjoyable one for both dealers and the attendees.
The 2006 "O" Scale convention will feature over 14,000 square feet of
display area at the Parsippany Hilton. There will also be seminars,
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2006 O Scale National
341 Hoboken Rd.
Carlstadt, New Jersey 07072-1152

Tel: 201-939-9212 / 908-925-1164
Email: 06oscalenat@comcast.net
www.2006oscalenat.org

Jan/Feb '06 - O Scale Trains • 63
Part 2

We are building a power supply to use with any one of the three common command control systems for your layout (DCC, TMCC or DCS). In Issue 23 (Nov/Dec 2005), we talked about transformers in general and gave the usual warnings to not build this unless you are comfortable working with electrical equipment that plugs into the wall. You may want to go back and reread Part 1, because we will start here where we left off in the last issue. Photo 1 shows the unit.

We are building the power unit in a standard 4” x 5” x 6” aluminum box to protect the inside wiring. This box is composed of two parts that fit together to enclose all six sides. We will mount the transformer on the middle of the box to separate the 117 volt wiring from the 18 volt wiring. In this case, we will mount the transformer to the top, outside of the box, and everything else will be inside. The bottom will then be attached to close in the box. When you look at the aluminum box and the transformer, you will get the idea to put the transformer inside, rather than on top. You may want to rethink that, though. I ran the unit at full load for eight hours, and the transformer got almost too hot to touch. If it is in a box, where moving air cannot cool it, it might self-destruct. I know you will not be running ten amperes continuously, but you may not want to take the chance. It also would be more typical to put the power switch, indicator light, and the output terminals on the front of the box and the power cord, fuse holder and circuit breaker on the back side of the box. You may choose to do that.

Detailed Construction

Okay, let's walk through the construction, one step at a time. There is a complete parts list at the end of this article. I will give details and dimensions based on the parts I used, but remember that your parts may be different. Several alternatives are also described at the end. It is not easy to undrill a hole, so proceed carefully. Figure 1 shows my drilling template for the box top, which is the 5” x 6” side. Let’s start with the transformer itself. It isn’t square, and I want to orient it with 110 volt wiring on one side of the chassis and low voltage toward the other side. I placed its pattern of four 3/16” holes right in the middle of the aluminum chassis. I then fastened it with 8-32 bolts, nuts and lockwashers. Don’t mount it permanently until all the other holes are drilled, filed and tested. Next, make holes in the chassis for the two primary and two secondary wires. This transformer is a typi-
cal power transformer, in that the primary leads are on one side and the secondary leads are on the other side. On many transformers, the 117 volt primary leads use wire with black insulation and a low voltage secondary uses wire with colored insulation. You will also notice that the green secondary leads are heavier gauge wire, and there is a third green-with-yellow-stripe wire connected to the center of the output (which I will not use).

Primary Side

On the primary side, there is a three-wire line cord with a standard wall plug at the end, a fuse to cut the power if something horrible happens, and a switch to turn the unit on and off.

The hole for the line cord is 11/32” diameter. I prepared the line cord by carefully trimmed off five inches of the black outer insulation, thus exposing the black, white, green and bare wires, before mounting it. Electrical manufacturers often use a nifty plastic insert to put into a hole in the aluminum to protect the cord and keep it from being pulled out. Lacking that luxury, I carefully smoothed and chamfered the hole, to remove sharp edges, and placed a hose clamp on the inside of the case to hold the cord. This is the same kind of clamp you use for radiator hoses in your car, but much smaller so that it can be closed to a 1/4” diameter. I got mine at Lowes (or Home Depot or any auto parts store). You can also wrap some bare wire around the black insulation, and twist the ends together, so the cord cannot slip out of the chassis.

I used a standard fuse holder, which uses a 1/2” hole with one flat side for mounting. Since the fuse holder comes with a rubber washer and doesn’t get twisted very much, I just drilled a 1/2” hole for it. You can drill a smaller hole, file it to size, and include the flat, if you wish. It uses standard type 3AG fuses which are 1/4” diameter and 1-1/4” long.

With less than two amperes of input current, small toggle switches that mount in 3/8” or smaller holes could be used. I don’t care for them because their frame brackets are so close to the electrical leads that it is easy to create a solder short circuit. I recommend a physically larger toggle switch that mounts in a 15/32” hole. This is not a common drill size, so you may need to drill a 7/16” hole and file it slightly larger. You will notice there is a notch in the switch to match a tab in the chassis (to prevent it from rotating). Again, I ignored that and used a round hole, because you won’t twist the toggle switch during normal use, especially if you use the star-type lock washer that usually comes with the switch.

That is the primary side and we got away with round holes. I will come back to the wiring later.

Secondary Side

Before you start on the secondary side, decide if you are going to use some optional configuration so you don’t drill holes that you don’t need (Alternatives are described at the end of this article.) As stated above, I am building an AC supply with banana jack outputs. On the secondary side, I will have the terminals to connect this unit to the control equipment, a ground connection, a ten amperes circuit breaker, and a small signal light to show when it is powered and turned on.

My secondary side has three banana jacks, one red, one black and one green, as in the picture. By accepted convention, the green is for ground. The ground termination provides access to your house ground. The banana jacks each have oblong holes. I drilled a 1/4” hole, and then file it to 5/16” long, with a 1/4” or smaller round file. Be sure to make it oblong along the edge, so that the hole in the banana jack points outward to make it easy to insert a wire. By convention, these holes are 3/4” apart.

The circuit breaker fits into a 17/32” x 5/8” hole, and snaps into place. I drilled the 17/32” hole and then filed it oblong to 5/8”. You will see that the 5/8” dimension has a rounded edge. Just keep filing until it drops into place and snaps tight.

An indicator light is not absolutely necessary, but I used a Light Emitting Diode (LED) since it uses so little power and lasts almost forever. An LED can be glued directly into a 7/32” hole in the box, but I used a socket. Mine needed a 5/16” hole but other sockets may differ.

Primary Side Wiring

The two black primary transformer leads are pulled through holes in the chassis. I slipped pieces of heat shrink tubing on each lead, up to the transformer, to act as extra insulation and protection.

The line cord follows common power wiring conventions. The black wire is the “identified” wire or the hot wire. It is connected to the narrower prong on the plug. We will be routing it through the fuse holder and switch. The white wire is the common wire. It is the power company’s ground, but it is never connected to your ground. Instead it is insulated just like the hot wire. It is connected to the wider prong on the plug. The green wire is local ground and is connected to the round prong on the plug. We will connect it to the aluminum box and on to the green output ground connector. The bare wire is the shield in the line cord and it is connected internally to the green wire at the plug end. A shield does not shield if current runs through it so we will cut it off and not connect it to anything at the unit.

The black line cord wire, initially 5” long, is cut to the correct length to reach to the lead on the fuse holder, further from the chassis (Cut all the wires a little long to be sure.) The end is stripped about 1/4” and soldered. Save the part of the wire that you cut off, and cut it to length to go from the other fuse holder terminal to the switch terminal, stripped and soldered at each end. Either transformer black lead is cut to reach to the other switch lead, stripped and soldered. Your switch may have two or three terminals; if three, connect to the center terminal and to either end terminal. We have now properly put the fuse and the switch in the hot line cord lead.

The white line cord lead and the other transformer lead will need to be insulated. Slip on a piece of heat shrink tubing, about 1 1/2” long and just large enough to fit over the larger wire (line cord). Then both wires are cut long enough to connect together, both are stripped, wound together, and soldered. Then, slip the tubing back over the wire joint and warm it with the solder iron to shrink it to a snug fit.

The green lead is purposely long enough to reach to the ground on the secondary side, so we will connect it then.

Photo 2 shows the primary side wiring.

Secondary Side Wiring

On the secondary side, the center tap lead (green with a yellow tracer) is not used. It should be cut fairly short and a piece of heat shrink put over it and shrink with a solder iron so that it will not slip off. Then it will not accidentally touch anything.

The LED circuit requires three parts: the LED itself, which has been described, a diode which protects the LED from back voltage (it is a DC device being used with AC), and an 1800 ohm resistor to limit the current to the LED. I mounted these on a small piece of plastic, which also has holes for the two banana jacks, so they can hold it in place. This is shown in Figure 2. I placed this on the red and black banana jacks before I fastened the 10 amperes leads. When I soldered these large wires, I also soldered the small LED assembly wires. Two small wires go to the actual LED.

The two green leads are interchangeable. Cut the more convenient one long enough to reach either circuit breaker terminal, strip
Testing

Visually check for any loose or wrong connection or any bare wire strands. If you have a multimeter, check for resistance between the aluminum chassis and all visible soldered joints and both plug prongs. You should see infinite resistance except for the ground wires (the green wire from the power cord and a wire going to use a star washer, and used the other hole to solder both of the ground wires (the green wire from the power cord and a wire going to the green output terminal).

Photo 3 shows the secondary side wiring.

Odds and Ends

The various items on the chassis top are fairly obvious but you might want to use a permanent black marking pen to label the switch, the fuse size, the output terminals, the ground and the circuit breaker. You might also glue plastic feet to the bottom of the box, so it does not scratch.

The chassis box is higher than it needs to be. This is not a problem and it raises the hot transformer up into the air stream. If you are building an AC power supply and never plan for any other additions, you could cut the box down to about 2.5” in height. Don’t make it shorter, or the fuse holder could touch the bottom of the chassis.

Alternative 1: Output Barrier Block

I will not give details of alternatives, but the general ideas are as follows. You can use a barrier block instead of banana jacks. The photo in Part 1 shows one of these. This is a rectangle of plastic with, in this case, three pairs of bolts. You feed the wires from the transformer and the ground lead to one of each pair, and connect the outputs to the other of the pair, by tightening the bolts down over the output wires. One green transformer lead can go directly to the barrier block. The other should go through the chassis to the circuit breaker and then back up to the barrier block.

Alternative 2: DC Output

For DC, the transformer leads go to the inputs of a bridge rectifier and the rectifier outputs go to the banana jacks. The rectifier is a 1 1/8” square unit with four wiring terminals and a hole through the middle. Its other side has a flat steel plate which is mounted tightly to the chassis in order to conduct heat away from the rectifier. The rectifier will give off about 16 watts at full 10 ampere output, so this heat sink is important. Drill a 3/16” hole in the center of the low voltage end (not top) of the chassis. Fasten the rectifier to the inside of the chassis with an 8-32 bolt. Put a flat washer under the bolt head on the outside of the chassis, to discourage the aluminum from dimpling, and put a lock washer under the nut on the inside.

Put silicon heat-conducting grease between the rectifier and the chassis before mounting. One corner of the rectifier is cut off diagonally. This is the positive output lead and goes to the red terminal. The opposite lead is the negative output lead and goes to the black terminal. The two other leads, in either order, are the input leads where the green transformer wires connect. The LED circuit is the same as above, except a diode is not needed because the power is DC. Of course DC output can be used with a barrier block.

### PARTS LIST
See [digikey.com](http://www.digikey.com) or [radioshack.com](http://www.radioshack.com) for details

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FOR SALE: KOHS UP 4-12-2 #9051, mint, never run; Sunset C&O 2-10-4, new in box; Sunset UP early Challenger, coal version, new in box; Overland UP 4-8-4, coal version, custom painted and detailed by Harry Hieke; Overland UP FEF-1, 4-8-4, coal version, custom painted by Harry Hieke; USH UP FEF-3, 4-8-4, mint, unpainted. Call Harry Bender at 410-488-4259 between 6 pm and 9 pm Eastern time.

WANTED: Joe Fischer cars. American Standard hvywt baggage and Pullmans. PSC 10 sec. Pullmans w/A/C. Mail only, please. Jim Seacrest, PO Box 6397, Lincoln, NE 68506-0397

WANTED: Lobaugh WWII early Westbrook boxcars only. ORL Ltd/AN CB&Q waycars, 3 or 4 window RTR. Mail only, please. Jim Seacrest, PO Box 6397, Lincoln, NE 68506-0397

WANTED: For sale: Intermountain, Key, Keystone, Max Gray, NJ Custom Brass, Seacrest, PO Box 6397, Lincoln, NE 68506-0397

FOR SALE: Reynolds (Athearn) 50' PRR and NKP 50' boxcars. Mail only, please. Jim WANTED - PSC PRR X29 boxcar #15467 and similar #15453, Pac CB&Q waycars, 3 or 4 window RTR. Mail only, please. Jim Seacrest, PO Box 6397, Lincoln, NE 68506-0397

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DD31 Far East Trading 99 Delivered
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DD202 Rainbow Beverage 5 x 36° 65
Fireworks , Apartment Building 59

Backgrounds 50” X 1” 2 x 129
2-3 Stall Engine House 68 211

Korber Models
304 3-Stall Roundhouse, 50”T’
304A Xtra Stall or 304B Extender 45
305 Sandhouse, 16 x 39
306 Diesel Shed 25 x 11
307-3 Stall Trolley Barn 85
315 Grain Silo, 7 x 19 6 22 H
320 Roundhouse 25” Deep 139
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320C Skyline Steel 6 x 8
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500 American Flag Co.4 x 9 3
505 Joe’s Pickle Factory 14 x 59
504 Buck Island Canning 8 x 12
506 James Company 13 x 8 4
507 Lewis & Standards 1 8 x 24
508 Mill Works 11 x 7 w/TOGER 35
509 Midland Supply 2-Story 8 x 32
509F Jenco Freight Terminal 9 x 115
509G Gen Li & Power Office 6 x 312 x 59
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Another year under our collective belts, wow! Time flies when you’re having fun. And believe me when I tell you that we’re all really enjoying producing this magazine for you.

Befitting a new year, we welcome a new writer to the masthead, Mike Cougill. Mike will be writing the new Art of Finescale column each issue. Mike has also contributed a couple articles which you will see in upcoming issues. His work is outstanding.

As sort of an “annual” report, OST continues to grow both in subscribers and newsstand/hobby shop sales. The numbers have steadily increased and we’re most pleased at the results. Kalmbach has been a great help getting OST into hobby shop beyond the O Scale specialty shops. That puts us in the hands of many modelers who don’t even know that O Scale 2-Rail exists. And, it puts us in reach of Hi-Railers looking to make the transition to 2-Rail scale. What it all means is that it’s good for OST and it’s good for O Scale in general by increasing the number of modelers in 2-Rail.

I am writing this in November and I just announced online the new O Scale Trains Magazine Interactive Forum. It’s not like most online forums and BBSs. It’s actually a blog site where we post the regular columns that we print in the magazine. You may visit the site by going to our main page [www.oscalemag.com] and click on the “Forum” link in the navigation bar on the left side. Anyone may read the forum. You have to register (It’s free) in order to post a comment. And that’s where our forum is a bit different. You can comment directly on what our guys have written and they will get a copy of your comments. Others can comment on your comment and so on and so forth. This gives you the opportunity to talk directly to the writers. We think it’s kinda cool and hope you do, too. Roger Parker (he of our Trac-tion column) has spent a good deal of time posting capsule book reviews to the forum. So, even if you don’t want to comment on the columns, check into the forum for Roger’s reviews. We will most likely use the forum for special contests in the near future so make sure you register soon.

I expect more great stuff for O Scale in 2006. They say that hindsight is always 20-20 and looking back what I see is a surge in the availability of 2-Rail trains from all sides. M.T.H., K-Line, AtlasO, Weaver and Sunset have poured out two rail items at very reasonable costs over the past year. For my money the best two rail locomotive produced in 2005 was the M.T.H. Western Maryland H9 2-8-0. It was the perfect O Scale locomotive; not too small, not too big, accurate in every dimension and a great running piece of equipment. I was most impressed.

So, based on what has happened over the past two years, I believe that we will see 2-Rail O Scale continue to grow and have more offerings from all the manufacturers. M.T.H. has announced it will produce Diesels with their Proto 3-2 technology and scale wheels. Andy Edelman of M.T.H. says they’ve also redesigned the trucks on many of their Diesels to make it easier to convert them from 3-Rail to 2-Rail. Now that’s way cool.

Jim Weaver from AtlasO was supposed to make a “big” announcement at York in October but he played it cagey and would only say, “Look at the new catalog.” Well, I’ve looked at the catalog and what you see on the back cover is a headlight in a tunnel with some smoke coming out of the tunnel. Hmmm... could someone at Atlas be trying to tell us some thing? Like they maybe, might, could, should be bringing out a steam locomotive? We’ll just have to wait and see what the year brings.

Going back to the Western Maryland H9, what O Scale really needs is more steam locomotives in this vein, i.e, 4-6-0, 2-8-0, 4-4-0, and (my favorite) the 4-8-0! Seriously, smaller steam locomotives are much more practical for the size layouts we can build in O Scale. Sure, I want to see my 2-6-6-4, run, but it’s gonna look silly, even on 60” radius curves. I’d much rather run a fleet of 4-8-0s, 2-8-0s and 4-6-0s, just like the N&W did at the end of steam (Hey, I’ll model a branch, not the main.) The Diesel guys have it made. They can get just about any Diesel they want for any era. It’s not that easy for steam modelers. If its not a brass model then we’ve got to make it ourselves or bash it up from something that is available.

Well, I’ve been pounding on the keys all day (and it’s a Saturday - shoulda been workin’ on the layout), so I’m just going to quit here and wish you all...
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ITEM# 3-RAIL REALISTIC ROADBED DESCRIPTION

STRAIGHT SECTIONS

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SWITCHES & CROSSINGS

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<td>66076</td>
<td>0-36 Right Hand Switch</td>
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ITEM# 3-RAIL TMCC ITEM# 2-RAIL DC/DCC ITEM# 2-RAIL TMCC

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