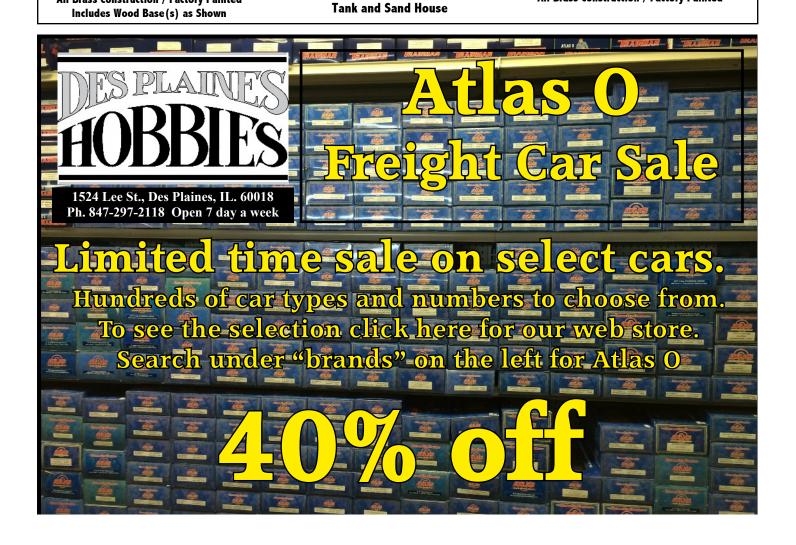


Models Shown With Sand

All Brass Construction / Factory Painted

All Brass Construction / Factory Painted





Published Bi Monthly

The Model Railroad Resource LLC Dwight, Illinois

Owner / Publisher

Amy Dawdy

Managing Editor / Advertising Executive

Daniel Dawdy

November/December 2016

Volume 4 No. 2

Welcome to the online *O Scale Resource* magazine. The magazine is presented in an easy to use format. The blue bar above the magazine has commands for previewing all the pages, advancing the pages forward or back, searching to go to a specific page, enlarging pages, printing pages, enlarging the view to full screen, and downloading a copy to your computer.

Front Cover Photo

Santiago Pineda's beautiful customized Rio Grande F7.

Photo by Santiago Pineda

Rear Cover Photo

Small oil depot on Mike Hurlburt's layout.

Photo by Glenn Guerra Photoshop by Daniel Dawdy

Bill Of Lading

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The Model Railroad Resource, LLC publishes <u>THE O</u>
<u>SCALE RESOURCE</u> and <u>THE S SCALE RESOURCE</u>.
Be sure to look at both of our magazines. There are many

Be sure to look at both of our magazines. There are many articles in our magazines that are not scale specific and will be of interest to you. Click the magazine title in this announcement to see the magazine.

From the Publisher's Desk



The modeling season has begun in earnest, along with the fall shows. The first of which kicks off in Indianapolis. There was big news coming out of the show this year, as Jim Canter has decided to step aside as promoter. In doing so, he has turned the show over to us at the Model Railroad Resource. We have decided to rebrand the show and promote it as the *Indianapolis O Scale Show and S Scale Midwest Show*. This is something that has been done successfully at O Scale West / S West in California. The show will continue in the same venue, the Wyndham Indianapolis West and will be on the same weekend in 2017 - September 21-23, 2017. This will continue to be an all scale show, and will bring in more people and vendors. The other idea to come out of the Indy show was to promote September as National S Scale Month, October as National O Scale month, both of which will lead up to November and National Railroading Month. We hope to see you there! For more information, see the ad in this month's magazine or go to the website indyoscaleshow.com.

Dan and I also made the trek out to Strasburg, PA for the Eastern PA 2 Rail O Scale Train Show/Swap Meet. While there, we visited the Strasburg Railroad, rode the train, did a back shop tour, and rode the train again for dinner and a murder mystery. We also visited the Railroad Museum of Pennsylvania which is right across the street. Both venues were interesting and Dan took a lot of pictures to help with modeling details. Stay tunes, as he will use them in future articles here in *The O Scale Resource*. We took a side trip to Birdsboro, Pennsylvania to see layouts by Lee Hart and John Malley, and will feature these in upcoming issues. So as not to miss any of the upcoming issues, be sure to click on the "Notify Me" tab at the top of *The O Scale Resource* main page.

This issue offers some great modeling tips from a couple new authors including Santiago Pineda and his modifications of a Rio Grande F-7 complete with up close photos. Bill Basden begins a series on building a Texas and Pacific Baggage Dormitory car, and shows how important research is to a modeling project. Besides these articles from new folks, there's also an article on Computer Aided Drafting (CAD) from Glenn Guerra and how it can help or hinder your project. Glenn also visited Mike Hurlburt in Elkhorn, Wisconsin where the took a tour of Mike's Trap & Garnet Ridge Railroad. Also, be sure to check out Dan's coverage of the Indy and Strasburg shows.

"Scene Around the Layout" and "What's on Your Workbench", two of our newer features, still need your help. Your pictures will inspire others in the hobby and get them motivated. I (and our readers) love to see what everyone is working on, along with what is being done on layouts, so keep sending your photos and comments to: daniel@modelrailroad resource.com.

Hope to see you in Cleveland November 5th at the Cleveland 2-Rail O Scale Meet!

Happy Reading & Happy Modeling,

Amy Dawdy

NEWS YOU CAN USE

Bill Mosteller from greatdecals.com says: L&N Hummingbird/Georgian tavern-lounge and dining car decals, in dulux gold, are available in O-scale (set # 135) for 17.99 each. Each set has the letterboard script, numerals, and car names specific to the this group of cars. The sheet includes four pairs of L&N road names and each train name, car names and road numbers. Each sheet does up to four cars. Artwork by Curt Fortenberry, this is his set SE-1, rendered in N-scale. Car names include Churchill Downs, Boston Club, Carnival Club, Belle Meade, University Club, Aristocrat, Fiesta Inn, Bouquet Inn, Azalea Trail, Dixiana Inn, Duncan Hines, and Cincinnati Club. See there web site, www.greatdecals.com

Yard House & Storage O Scale Kit #9404 \$37.95
The latest release from "Railroad Line" is a nifty little yard structure. Available in all four major scales, the kit consists of tabbed wall panels, & peel & stick construction techniques. Whether used for rail service, or as a maintenance facility, this kind of structure was commonly found both in and around railroad & industrial areas. This laser-cut kit features simple construction with a special focus on beginning & intermediate modelers. Interlocking walls, and self-adhesive "corner posts" help to make this offering suitable for modelers of any skill level, and all scales, N-HO-S-O will be available through your local retailer or visit www.railroadlinemodels.com for more information.

Bill Basden of Delta Models will be having a 15% off sale for the month of November starting 11/1/16. coupon code will be NOV15.



James Bester from Model Tech Studios LLC has some new items. The One Ton Industrial Loading Crane is a popular PILLAR Style used in many small industry applications perfect for Trackside, Railcar use also WaterFront or Logging use. Comes preassembled and pre-detailed. Approx 2" sq footprint.



Harold is drinking away his troubles sitting on a bench with bottle in hand and covered with an old blanket on his lap. This creative scene figure fits right in anywhere, and is sure to be a conversation piece on your layout! O Scale Pre Painted Figure ready for your Layout.



Richard Rands from Berkshire Valley Models has released a new O Scale laser cut kit, the Small Town Station that sells for \$139.00. The general layout of the station, with a waiting room, ticket office, and baggage room, was used by nearly every railroad in North America. The ornate trim was very popular and used on multiple railroads. Also available separately are detail parts packages that allow the modeler to enhance the station. These are: Interior wainscoting, door, and window trim. Interior detail parts, 32 total including a station bench, potbelly stove, roll top deck, crates, and more. Exterior detail parts, 27 total including a baggage cart, a hand truck, scale, barrels, luggage, and more. The footprint of the building is 4" x 10". See more photos at

http://www.berkshirevalleymodels.com/what-s-new.





Ed Skuchas sent some photos taken this weekend showing the progress on one of the new Canadian Light Rail Vehicle kits recently brought out in O Scale by The Berkshire Car Shop. The one piece resin body kit comes complete with interior and detailed floor/underbody. The photos show the body components and the progress after cleaning the flashing, body prep and painting. The body is not fully lettered nor has the window glazing been inserted. This model is an exciting new product of a prototype transit vehicle that many modelers remember when they were first introduced, and which have been supplying continuing service to the large









Toronto transit system. Three cars also operated on the Boston system as demonstrators. The model is shown on Q Car trailer trucks with the kit sideframes awaiting installation of a power truck. The introductory price for the body kit is \$180, and they are currently being shipped to customers.

New from Woodland Scenics®. Coming soon to the line of Built-&-Ready Landmark Structures is the H&H Feed Mill. Available in O scale. This structure is authentically weathered and hand-painted. Not even the finest details were overlooked, down to the pigeons on the roof and their droppings. Other details include a positionable grain chute off of the indoor silo, a large back loading dock and a smaller side loading dock, a cyclone sitting above the dumping area, and other loading accessories sit along the docks. The Feed Mill also features interior and exterior lighting with a printed Horizontal Canon Motor Drive interior. Made for use with the Just Plug® Lighting System.





JUST ANNOUNCED: 3rd Rail is producing the SD40-2 Diesels in stunning detail in your favorite road names. We welcome your reservations. Expect these beasts to arrive in the fall of 2017. Expertly Crafted, ABS Bodies, Full Cab Interior, Canon Powered, metal drive, Sound in 2R and 3R. 3R With ERR Cruise, Railsounds & Smoke. 2R with QSI "Titan" DC/DCC and Sound.



Road specific details not shown ABS BODY and FIXED PILOTS Ball Bearing Axles Journals 3R ERR Cruise, TMCC, Railsounds 2R - QSI "Titan" DC/DCC New Extreme Detail Cab Interior (Lighted) Smooth Operating, All Wheels Powered Only Powered Units \$729.95 (MSRP) See their Website for more details.



Liz & Steve Nelson acquire the assets of Korber Models, LLC.

Liz and Steve Nelson, owners of MrMuffin's Trains formerly of Carmel, Indiana, announced today the purchase of the business assets of Korber Models, LLC and the business' relocation to Atlanta, Indiana. "Korber Models continues to be a leading manufacturer of building model kits and assembled buildings for the model railroading hobby in both HO and O scale. With a long heritage of creative and innovative products manufactured exclusively in the United States, we will continue to offer these products to hobbyists through our growing model train hobby operations located in downtown Atlanta, Indiana along the historic Nickel Plate Road mainline" reported Steve Nelson. For the past five years, Korber Models based in Milford, Ohio has been owned and operated by Rich and Teresa Redmond.

Liz and Steve Nelson own and operate several small businesses out of their headquarters in Atlanta, Indiana, including MrMuffin's Trains, a model train museum and retail shop that serves the hobby needs of its customers across the United States.

www.mrmuffinstrains.com

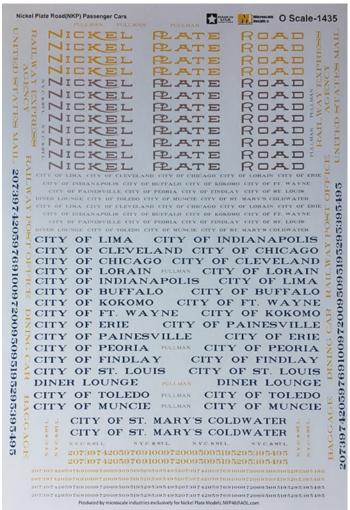


David Vaughn of Nickel Plate Models has new Nickel Plate Road decals. The decals are for Nickel Plate diesels, Nickel Plate post-War (WWII) passenger cars and Nickel Plate Steam locomotives. Note that the steam locomotives come in three versions: berkshires, mikados and small engines. All sets contain appropriate lettering, including class designations.



These sets are far more complete and accurate than the Champ NKP steam set and the Champ NKP passenger car set. The diesel decals will model multiple classes and manufacturers of NKP diesels.

The diesel decals are \$20. Passenger decals are \$16 and steam locomotive sets are \$18 (berkshire set) and \$15 (mikado and small engine sets). Each are plus postage and handling. Postage is the larger of \$4 for any decal order including diesel decals, \$3 for any decal order including passenger decals and \$2 for any decal order of steam locomotives. Decals are shipped in stay straight envelopes.



Note on decal images. The reproduction here in no way shows the beautiful detail of these sets and are purposely shot at low resolution. Page two of the Diesel set (strips) not shown. For more information contact David Vaughn.



Recap of The 48th O Scale National Show in Indianapolis

By Daniel Dawdy

Another Indianapolis O Scale show has come and gone. This year's event was on September 23rd and 24th. Amy and I arrived Thursday night, set up our table and then went over to Jim Canter's home for his open house and catered party. Jim has been rebuilding his layout, and was able to get two trains running by the time we arrived. Not only was there food, but an open bar – Amy drove back to the hotel.

We stayed at the convention hotel as the cost is really in line with the others in the area; and, as you may know, the promoter needs to guarantee a number of room nights for the convention. I really like the venue and Nicolino's restaurant in the hotel was very reasonable and the breakfasts were fantastic.

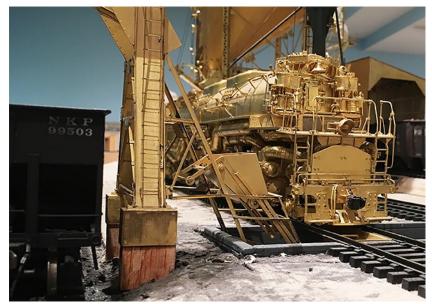
Friday morning came early for me, but I was there for the show opening! It was a full hall with many old friends and some new ones. Bill Davis from American Scale Models was there with some 32 tables of items of all kinds priced to sell. Merlyn Lauber from Caboose Stop Hobbies, Marty Milner from Scale City Designs, Pat Mucci from P&D Hobbies, Norm Pullen from Norm's O Scale, Ron and Sue Sebastian from Des Plaines Hobbies, Rich Yoder from RY Models, John Pautz from American Switch & Signal, Bill McConnell from O Scale Turnouts, Bob Spaulding from Altoona Model Works, and many many more.

The big news coming out of the show this year was that is was Jim Canter's last show as the promoter. After 15 great years, he has decided to turn the show over to others with the hopes of building it into a premier event. The "others" are Amy and myself. We hope to continue the tradition and exceed expectations. There is more information in this issue, and we are making ready for next year's event which has been rebranded the *Indianapolis O Scale Show and S Scale Midwest Show*. Yes, we want to welcome in the S Scale crowd like is done at O Scale West and S Fest. We want to keep this an all scale show, and since there is no real S Scale event in the area, we thought it was a natural to add S Scale. There will Much more on this later, but for now let's look back this year's show as we first look at Jim Canter's under construction P48 layout shown below.



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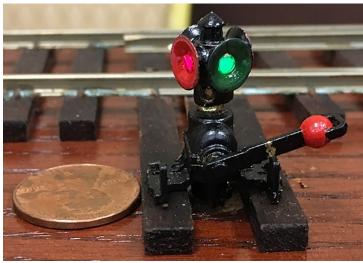
Above are more views of Jim Canter's P48 layout. On the right are Bruce Grundy and Jim having a laugh, hopefully not at me.



Below, on to the show!



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All Aboard Trains was showing their new switch stands. The one shown is a working light manual stand. They also showed a motorized version. These are all new castings.



The Hobby Station had many beautiful weathered cars for sale.



Bill McConnell from Oscale Turnouts was showing his new products.



Bruce and Carole Grundy showing their custom modified passenger cars.



Bob Spaulding from Altoona Model Works had his great display of buildings.



Jason Dickie looking over parts. Jason, from the UK, has a Facebook page: American O-Scale in the UK.

Check it out and spread the word!



John Pautz from American Switch & Signal with his Proto 48 track components.



Norm Pullen from Norm's O Scale was on hand with his display.



Pat Mucci from P&D Hobbies showing of his parts and models.



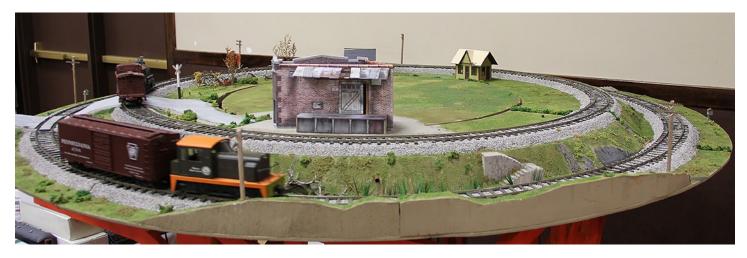
Ted Schnepf from Rails Unlimited looks on as Dan Pantera looks over some books.



The always happy Milners with Scale City Designs were showing all their products including the old Kiel Line parts.



Lots of assortment at this show.





Unaffiliated O Scalers of Central Indiana had a small modular layout running.



Bob Stevenson from Stevenson Preservation Lines had his line of parts and locomotive kits.



Beautiful shirt!





The Indiana On30 Narrow Gauge group had their module up and running with some really beautiful scenery and equipment.



Gary Engle (standing) and Dr. Nick Mannarino enjoying he show. Nick and I go way back to the mid 1980's as part of the old Southern Wisconsin O Scalers.

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Just one of American Scale Models' some 32 tables of quality used and new brass.



Left to right: Jim Williams, John Kessberger, Bill Heaton, Greg Bergman, David Vaughn Kim Ryker in center with Nicholas Ryker in front.



Not sure I even want to know what this discussion is about...



Bill Hirsch and Jim Canter



Jim Canter announcing with Amy Dawdy that The Model Railroad Resource would be taking over the Indy show next year.



Jim Canter and Kim Ryker have put on this show for many years. We all owe them a big thank you for all their hard work.

Model Contest and Show Awards



Russ Haigh First Place Diorama



Jamie Robinson First Place Trackwork



Darcie Lang accepting an award



Martin Brechbiel First Place Traction



John Russell Best In Show Rock Island Caboose



Russell Pholmann First Place Passenger Car. Russell also won first place Diesel.



Robert Schultz First Place Freight Car



Nicholas Ryker Youngest O Scaler



Jim Canter, Jim Williams, Chuck Hinshaw and Greg Bergman pose for Jim's last show at the helm.



Jim Canter and David Vaughn (Co-Chair of this year's show)



Jim Canter and Bill Davis of American Scale Models. Bill was presented with The Manufacturer of the Year Award,



Jim Canter and Richard Baldwin who was the banquet speaker



Jim Canter and Lifetime Achievement Award winner Ron Rendfeld

INDIANAPOLIS O SCALE SHOW



S SCALE MIDWEST SHOW COME TO INDY AND KICK OFF YOUR MODELING SEASON!

The new banner for next year's show combining the best of O Scale and S Scale modeling.

A vote was taken at the show and September was designated as National S Scale Month along with October being designated National O Scale Month, both of which lead up to November which is National Model Railroad Month. We would like to think of the Indy show as being the beginning of the modeling season as many of us get back into hobby mode and begin work in earnest once again on our models and/or layouts.

PROTOCRAFT

New York Cental's 1937 AAR design boxcars the Pittsburg & Lake Erie and the Indiana Harbor Belt.

Part PC-3524



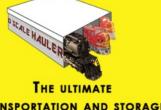
Available in Proto:48 or O Scale.

PRUTURAFT'S all-brass model of the New York Central's 1937 AAR 10'-0"IH design all-steel boxcar. One thousand seventy three cars were delivered in August 1942, from Dispatch Shops as Lot 779 (703-8). Series was 157000-1580729. The NYC's subsidiary, Pittsburg & Lake Erie, received 500 cars from Pressed Steel Car Co under Lot 119 in July 1940 as Series 30000-30499. NYC's Despatch Shops built 600 cars under Lot 812 (729-8) for subsidiary Indiana Harbour Belt Railroad. Cars came equiped with Standard Railway Equipment Co's 4/5 Dreadnaught ends, and the improved Murphy raised panel roof. Ajax power hand brake, Royal F Brake adjuster, wood running boards, 7-rung Wine Equipment ladders and bolster-end roping staples. Equiped with Bettendorf 50-ton trucks, the model rolls on hard steel sintered rib-back wheels with ball-bearings and have working journal covers. These exquisite and highly detailed models are built by Boo Rim Precision of Korea using builder's actual drawings.









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See available kits



By Santiago Pineda Photos by the author



This is the unit fresh out of the box.

Four years after their celebrated EMD E7 debut, Sunset Models continues to successfully import low quantity, full-scale and prototypically detailed diesels. Here, I am looking at their first EMD F7, specifically the Rio Grande version in the famous tiger stripes paint scheme. While many modelers are content with the factory-level product, others may find that there is room for cosmetic and detailing improvements. This article depicts the most significant modifications I performed in order to bring this set closer to a "fine scale" appearance.

Starting with the guts, all engines come powered and equipped with their own DCC decoders, meaning all sounds and lights may be controlled independently. Suffice it to say, this A-B-B-A set delivers exceptional sound and pulls my California Zephyr, 12-car train with ease. The inside reveals QSI Titan decoders that, after a few CV tweaks and a Q3 file upgrade, perform flawlessly.





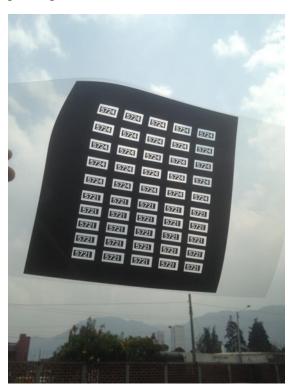


Appearance-wise there were some irregularities to deal with. My biggest complaint was the missing anti-glare, anti-slip paint on the hood of the A units. These are historically correct for "as delivered" versions, but we know it didn't take long before the said feature was applied to the fleet. All D&RGW gold hooded diesels, except "as delivered" or repainted engines had this safety item applied because of the bright, high altitude sun from the Colorado Rockies. To add this detail, I carefully masked the hood with Tamiya's masking tape before airbrushing the antiglare green. This step was risky, but a relevant addition that helped give the engine a more recognizable look.





The pilot was completely re-done to reflect Rio Grande's trademark lift bar with chain link mechanism. To do this, I used P&D's pilot lift bar brackets, .20 brass wire, and Precision Scale's 32 links per inch chain. To strip the paint off, I let the pilot sit in paint thinner overnight. Surprisingly, the stripped brass pilot displayed a lot more detail than with the factory paint on. In my opinion, the factory applied excessive amounts of paint covering most of the bolt and line details. Once cleaned, I proceeded to prime, detail, paint and clear coat the pilot again.



From the factory, the units came with a number board font that did not match the prototype. Using photographs as a reference, I was able to replicate the original font using Adobe's InDesignTM. Once happy with the file, I had it printed by a business that makes negatives for offset printing*. The result is a high quality acetate print that doesn't show light bleeding and keeps the shiny appearance of actual number boards. This element truly helps bring Grande's character to the F unit bulldog face.





The paint job is good, but not exceptional. The decorations could be sharper and the lettering could be crispier; there is no denying the room for improvement. Perhaps these drawbacks became evident due to the less forgiving high gloss finish these engines came with. Since I prefer a satin finish, I re-sprayed the units with Micro Scale Satin in a 50/50 water-product mix for the desired "out-in-the-field" look.



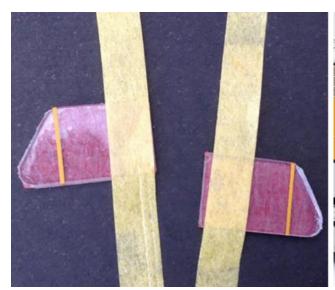


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On a brighter note, the models are full of surprising details. My favorite feature is the light housing treatment. Displaying correct dual MARS, headlights and lenses, these look better than any other model in its category. The cab interior is also well done with correct coloring and decent detailing. All I had to do was remove the FT brake wheel post, re-paint the crew figures, and add horn cords, sun visors and minimal cabinet details.



As some modelers may have noticed, the side cab window vent was mistakenly placed at the factory. The piece protruded from the locomotive body.

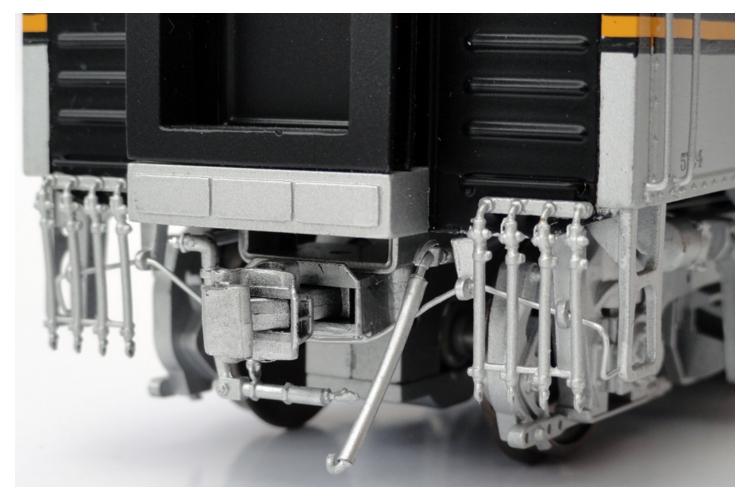




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Instead of installing it from the inside, the factory installed it from the outside. At first I thought of simply swapping the windows and placing them in the intended way. But, the two-piece window was too thick and still looked out of place. Thus, I traced and cut an exact piece from a thin polycarbonate plastic sheet on which I then airbrushed the window frame before installing it on the cab side.

The underbody provides a great opportunity for detailing. Out of the box, these come with couplers and MU hoses. I decided to add steam lines, brake lines and coupler cut bars with supports. This set of details is a combination of Atlas and Precision Scale parts. After fitting these add-ons, the units look more complete and realistic.



With each new release, Sunset diesels continue to improve. Whether someone is inclined or not to make these modifications, I still believe that the value found in Sunset's products remain unmatched in the ready-to-run market. As a testament of this, and more than 30 hours of work, I was left with a set that would make any collector proud, one that rivals some of the best brass F-units available.

^{*}See photolithographic printing plate negative.

















TEXAS & PACIFIC No. 300 BAGGAGE DORMITORY CAR



By Bill Basden

Editor's Note: This month we begin a multi part series of articles by Bill Basen on his building of a Texas & Pacific Baggage Dormitory Car. This will be done in sections dealing with the prototype information, tools and equipment used, part fabrication, part assembly painting with decaling and finally, the interiors and lighting.

When I start a project, there is a tremendous amount of research that has to be done. This model is very unique in that it has portholes on one side and square windows on the other side. The one thing that really

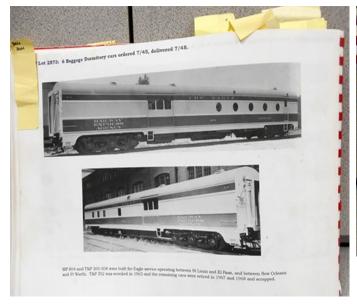


bugged me was the relationship from side to side. It took me three weeks to find the dimensions for the window layout. One thing I also do is to keep a binder with all my information – photos and drawings – special notes and sketches that I have done to fabricate the various parts that are used.

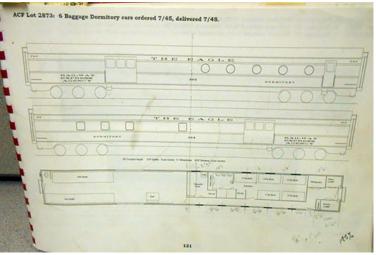
I am always setting the bar higher with each model project to get the best final result with every new project.

By doing this, it helps when you go to a show with a model contest. All you do is just fill out the basic info for their entry sheet and put the binder with it. This also helps people or a judge visualize just what it took to get the end results. I have won many first place entries with this method and approach.

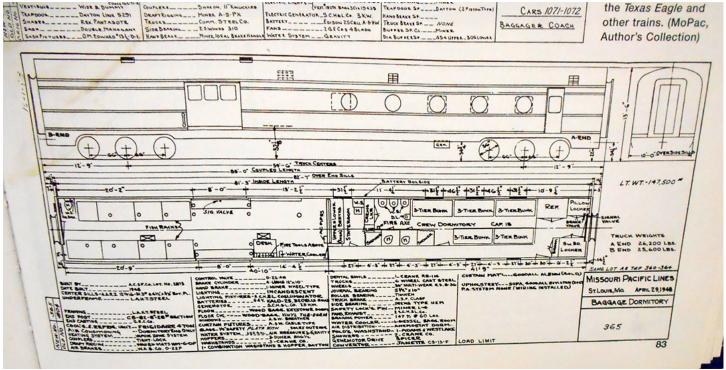
The prototype for this model is the Texas & Pacific #300. These were built by ACF, lot 2873, 6 baggage dormitory cars delivered July, 1948.



Pictures at the ACF assembly plant from Vol #7 Southwestern Railroads by David W. Randall.



One of many plans in Randall's Vol #7. Some of the plans are very plain, and you have to look for other data sources as well to clarify dimensions. If you have a known measurement, you can use proportional dividers and be very close.



This is the plan that finally clarified the window locations – it had all the dimensions for locating the windows. As you can see going left from the service door, the first three line up with the opposite windows. The car was basically a half baggage section with an area dorm for 15 crewmen sleeping three-high and very cramped. The dorm area for the model was constructed of brass, but we will get into that later in the series.

I used this plan during most of the building.



In service car Dallas, Texas



Six wheel trucks with in board mounted brake cylinder. These were very unique trucks similar to some used on the NYC 20th Century cars.



Service door window detail. The divider method was used here as well.



Opposite side of car with the rectangular windows, stainless bars in baggage door and brake wheel detail.

I think this covers the prototype information very well, and gives you a feel for the car and concepts that will be involved to build a model. Overall, the build took six-seven months to finish, was entered in the model contest at O scale West in May, 2016 and awarded 1st place.



Model at O Scale West 2016



This photo taken with the lights out in the workshop shows nice contrast to the silver molded stripes, painted interior and constant LED lighting.

Let's talk about when you look at the plan and ask yourself "Where should I start the process?". You're dealing with known dimensions for current features – windows, door locations, truck wheel base, and this is a very good thing to have – car width and height. I stated earlier that with these few facts, you can do a good job of laying out the car sides. The best tool to use for this is a proportional divider, with the truck wheel base of 11' 0", you can dial it in using a scale rule until it reads 11 on the rule. Now, you can figure out size for things you may not have as a given. This is a very good method, and could be used for most photos that are in this segment. I will show you in Part 2 of this series how this works.



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The other thing I do is I work in decimals of an inch. So, for the car end we know it is 10' 0" wide so I am working with 2.500", door openings are 8' 0" which is 2.00" and so forth. All of this helps when laying out your brass car sides. The layout begins when you have your materials cut to size. For this model, I started from the right edge and worked to the left for the windows. For the baggage door, I started at left edge and worked to the right. The other measurements are from the top of the side edge down for vertical locations.

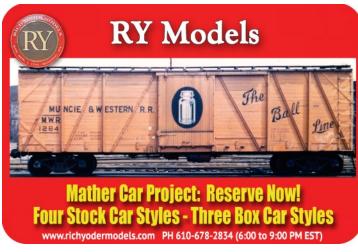
Now, with all this said, you may still be confused, but this is what has worked for me for many years. Keep in mind, you just cannot do this with your Lufkin 6' metal tape measure from Harbor Freight, it won't work, but I have seen people try.

Part 2 in the series will deal with the tools and equipment used as well as art fabrication of components and assembly of the model.

Welcome to the workshop.

Through this door, you will see the inner workings of my small clutered shop which is only 9 x 18 feet.









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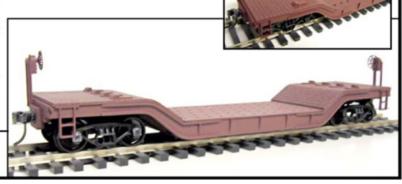


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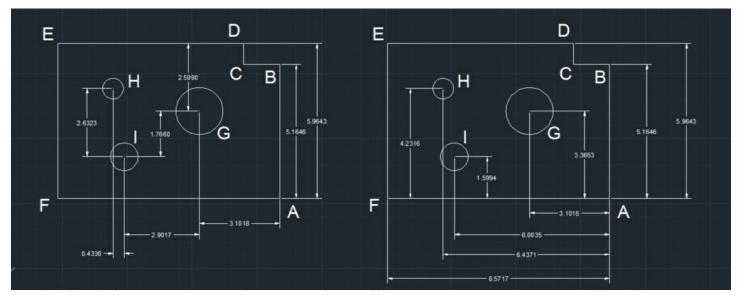
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Computer Aided Design For Modeling

By Glenn Guerra

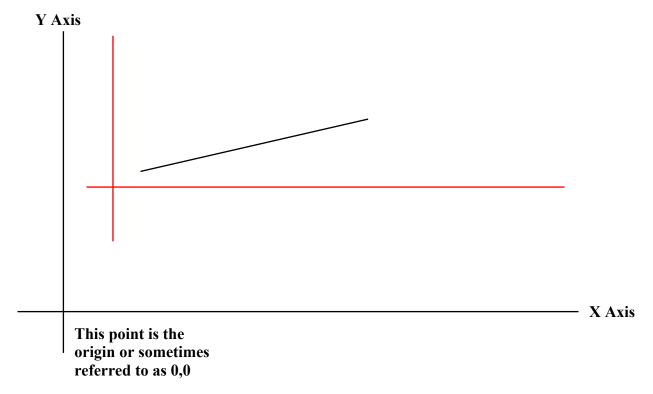
Computer Aided Design, or CAD as it is known, can be a powerful tool for modeling. Notice I said that it "can be". It is not always necessary, and a lot of good modeling has been done without using CAD. Good modeling relies on good design and good planning. A CAD drafting system will not make up for poor design and poor planning. Actually, CAD can get you into trouble with your design. I have been working with CAD since 1993 and have used it a lot. I don't claim to be an expert, but have used it enough to appreciate what it can do and what kinds of trouble you can get into. Many of you are starting to use CAD more for modeling so I thought I would share some of my past experiences with you.



This sketch illustrates some good practice and one of the ways CAD can get you in trouble. The parts are the same and were drawn with a computer. The first item to note is the dimensions. They are to the fourth decimal place. The computer does not care and will show the dimensions to more decimal places if you want. The problem is when we go to make the part. If we are using hand tools, getting to within .01" of where we want to be will be a challenge. Getting to within .0001" is impossible. Be realistic in the use of the computer for design. The next thing to note is how I dimensioned the two parts. The one on the left is unrealistic. On the right, I have dimensioned everything from point A or the line FA. Every time we make a mark for layout, we introduce an error. If we then measure from the point we just made to some other point, we have the error from the first point and also introduce an error for the second point. By laying out from one point, as I did at point A on the right, every other point is only one measurement from that point and, consequently, only one error inducement. The computer will be happy dimensioning things any way you want. You may not be happy with the results if you don't dimension correctly. One last point here. The notch on the upper right corner defined by points D,C,&B may be a critical dimension on your part. It may be advisable to layout and measure from D to C in that case. Measuring from A for both D and C will introduce two errors into the D to C distance. Measuring from D to C will introduce only one error in the D to C distance, but the distance from C to A will have two, so you need to determine what is the more critical dimension for your part.

I would like to start with some of the basics of plain drafting. You can work out your design on scrap paper as we have seen many people do. You need to understand how to show different views of your model on paper. What is the front view or elevation view? What is the right side and top view? How will you show holes and cut outs in all those views? When we draw on paper we tend to dimension from edges of the part or centers of holes, etc. This works well since we will generally use those same dimensions and same locations when we lay out our parts. When we lay out the dimensions on our part, we need to think about how to minimize measuring errors. I went through some of this when I was talking about laying out the fuel tank for my RS-3 in the January/February 2016 issue of The O Scale Resource. For this kind of work, drawing on scrap paper will work just fine. Where CAD has an advantage is that your drawing can be taken right to a machine or other computer driven process. This can be done because of the way the CAD software generates your drawing.

As I mentioned, we generally show the dimensions on our drawings from some location of our part or assembly. The computer cannot remember your drawing this way; it needs to remember the lines of your drawings. Let's go back to our paper for a minute. If we draw a horizontal line and a vertical line we have created two axes. The horizontal line is usually called the X axis and the vertical line is the Y axis. Now, draw a point anywhere on the page and we can define the point relative to the crossing of the two axes. The point will be so many units from the intersection on the X axis and so many on the Y axis. The location of the point is then expressed as X,Y (whatever those numbers happen to be). Now if we draw a line on the paper, the line can be expressed by the formula Y=aX + b. To find any point on the line enter the missing X or Y number and solve the equation. The letter a in the equation is the slope of the line and the letter b is where the line crosses the Y axis. All lines or curves you can draw on paper can be expressed by some formula. One last point before we move away from this for a bit. By drawing the X and Y axis on our paper, we have established an arbitrary intersection point commonly known as the origin or 0,0. If we move the arbitrary 0,0 point, the formula for the line will change by changing the point it crosses the Y axis or the b in our equation.



Any point on a line can be found by going some distance on X and then some distance on Y. To find the Y point, the line is defined by an equation. The basic equation is Y=aX+b. The slope of the line is defined by a, and the point where the line crosses the Y axis is b. By knowing either X or Y, we can solve the equation and determine where the point on the line is. Let's say I moved the XY grid to a new location shown in red. The slope of the line, or a in the equation, will stay the same, but b will change. When the computer establishes a different origin, it only needs to change the b in our equation.

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Line 1	X=2
Line 2	go to 4
Line 3	x=x+1
Line 4	Y=aX+b
Line 5	Does Y=12?
	if yes-go to Line 6
	if no-go to Line 3
Line 6	whatever the next operation in our
	program is

The simple example above gives you some idea of how the computer uses a formula and determines points using that formula. How it works is described in the text on the left.

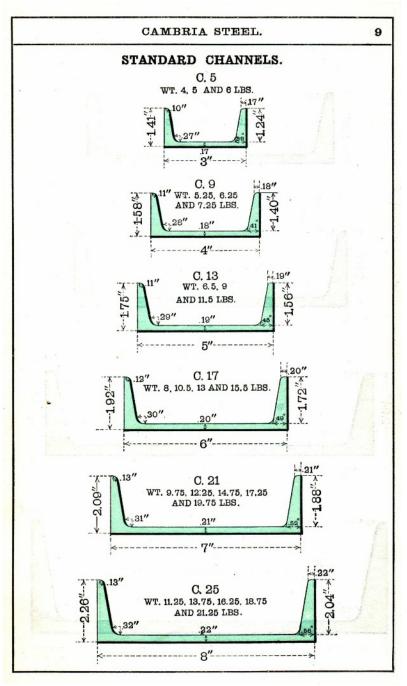
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Now back to the computer. There are two ways your computer creates an image, a raster file or a vector file. A raster file is like your photos. The computer divides the space up into squares and assigns a value to each square. In the case of a photo, the value defines the location and the color. In vector files, the computer remembers the formula for the line or curve, as well as, the start and end points. Let's say we have a line that starts at 2,4 and goes to 8,12. In the most basic logic, the programing goes like this. Line 1 of the code states the starting point 2, our X coordinate value. Line 2 tells us to skip line three and go to line four. Line 4 is the formula for the line, and the computer solves the equation to come up with a Y value. Line 5 asks, does Y=12 which is where we want our line to end. If the answer is no, the computer goes back to line 3. In line 3, it takes our starting value of 2 and adds 1 to it so we have a new X coordinate. Then, back to line 4 to solve the equation again and on to line 5 to see if Y=12 yet. It keeps going around and around like this until it draws the line. This happens really fast in really small increments so you see a line on your screen. To draw a square, there are four loops like this, one for each side of the square. All drafting software compiles these loops in some fashion for all parts of your drawing. We can exchange these loops from one software to another most of the time through some basic drafting language. So, why do you need to know this? Well you don't need to know how to program, but it will be helpful to know the basics of how this works as I will show you.

This is one of the advantages to CAD. We now have a computer file of formulas that other computers can recognize and work with. Let's imagine we are going to have a laser cutter use our drawing to cut something. The laser will solve the loops and move the laser around as it solves the equations. There is a catch though. On our drawing, we have an X,Y axis and our computer has our line formula that fits the 0,0 intersection of our X,Y axis. When we send our drawing to the laser machine, we need to establish where that 0,0 point will be on the laser machine. Sometimes that is automatic. When you look at the image on your computer screen to send it to the laser machine it may assign a new 0,0 point as some corner of the display on your screen. Your actual 0,0 may be way off the screen or in the middle of it. Remember, this is an arbitrary point that you picked out for your drawing. Your computer made all it's formulas based on your 0,0 location. When you send the drawing to the laser machine the plotting software will establish it's own 0,0 location and adjust all the line formulas to suit. What comes next is interesting. It looks like your laser is cutting a smooth line on an angle, but in fact it is cutting stairs. Remember the loops? The laser will move along the X axis to the next X value and then move on the Y axis to the point it just calculated. Then, it will move on X again and recalculate Y making stairs. Remember, I said this happens really fast and in really small increments. To you, it looks like a smooth line because the steps are so small. If we drew this on paper, we would have no way of telling the laser machine what to do, and this is one of the biggest advantages to CAD.

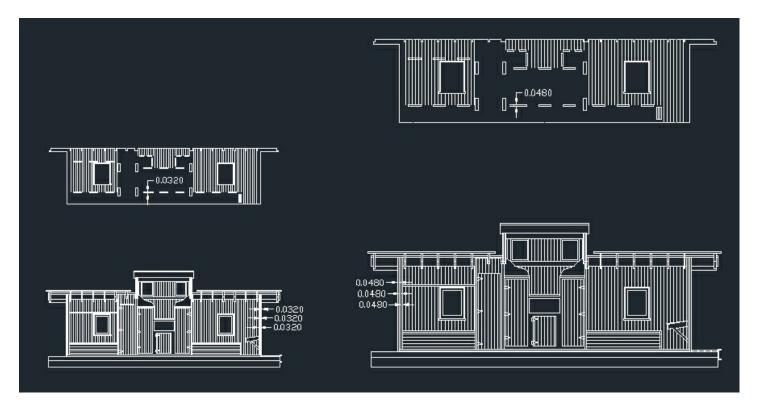
This is how it works in two dimensions with just an X and Y axis. To put this in three dimensions, we add a third axis through our 0,0 point. This axis would stick straight out of our



This page from an old Cambria Steel catalogue shows the dimensions for some standard steel channel structural shapes. Freight cars were made with these shapes.

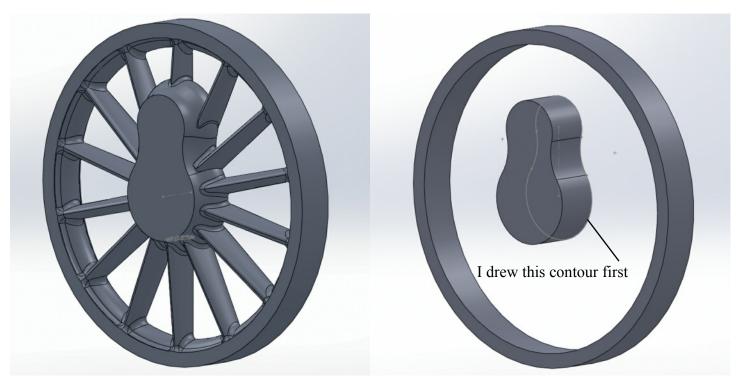
paper and is called the Z axis. Now we can define any point in space relative to our arbitrary axis as X,Y,Z. With this, we can define solid shapes. These are still done as equations, but are much more complex than our simple line formula. It works the same way though. When we send our 3D image to some machine to cut it or make it, we still need to reestablish on that machine a 0,0,0 point. Then the software will readjust the formulas to suit that new 0,0,0 location. Sometimes we make a note to use a hole or edges on our part for the machine operator to use as a 0,0 point. The operator will manually set the machine to that location, and then tell the machine the current location is 0,0.

At the start of this article, I mentioned how CAD can get you in trouble. Here is an example. All of us who use computers know you can zoom in or out to make things bigger or smaller. We also know how easy it is to make that happen. Just push a button or roll the dial right? Well, that is true and it is also true for CAD. We can "scale" our drawing to any size. Here is where we get into trouble. Many people tell me to just draw things full size and scale them. Let's take a freight car as an example. Many of them have channels for structural shapes. Look at the cross sections of these shapes from an old Cambria Steel catalogue. The 8" channel has a thickness of .22". If we draw this full size and scale it, we will have .22"/48=.004" for O Scale or .22"/64=.003" for S Scale. Do you think this is possible to make? Go get some .005" styrene or brass and see how strong it is. It's called Computer Aided Design, not magic! I recommend when drawing you should always draw in the scale you will be modeling. If you are using prototype drawings or your own field dimensions, always convert them to scale first. Keep your calculator handy. Then, consider how you will make the model. Let's say you will be designing something for plastic injection. Besides the strength, there are limits to what thickness can be reliably molded. You also need to consider how to get the part out of the mold. This is why plastic injection molded parts have tapers on them. Also besides the strength and durability, you need to consider the process that will be used. If you are using your drawings for scratch building, you need to consider the materials that are available to you. As an example, suppose your prototype used 5" channels. That would be 5"/48=.104" for O Scale or 5"/64=.078" for S Scale. Evergreen styrene channels come in .06", .08", .1", and .125" sizes. You will need to pick one that is close and go with that. Use the dimensions of the available material on your drawing because it will affect other dimensions on your design. If you are using these shapes to create the frame of a car for



This drawing shows the cross section and interior wall of a Mullet River B&O caboose kit. On the left is the 1/48th or O Scale drawing as drawn. On the right is a 1/32nd scale drawing made by scaling the O Scale drawing by 1.5 or 50% larger. Notice the thickness of the end wall plywood has gone from .032" to .048". Since .048" plywood is not available, I need to adjust the 1/32nd scale drawing. When I do that, the floor will be loose and so will the interior wall. They need to be adjusted. Notice the slot in the interior wall is .048" wide. This needs to be adjusted to fit the .032" plywood the kit is made out of. Every part of the kit will require some adjustment. The computer is only smart enough to scale the drawing, not make it all fit what you have to work with.

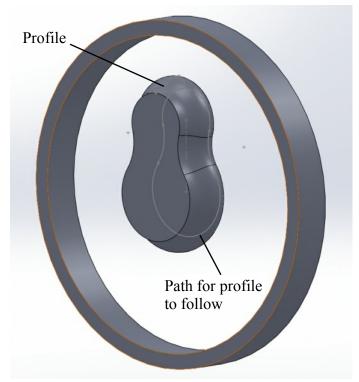
example, it will affect the location of the floor in your car. That may in turn affect the height of the coupler and so on. On this same thought, prototype clearances may not work on your model. Our model wheels are usually wider and the flanges are usually larger. To add to this, the model curves are tighter, meaning the trucks will turn more. This may cause interference on your model. You will be able to see this on your CAD drawing. Using a sketch, we would need to calculate these clearances. Using CAD, we can draw the parts and then ask



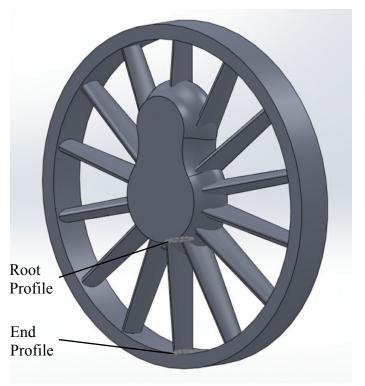
The drawing on the left is my first attempt at drawing a locomotive driver. On the right, you can see how I started creating the hub. I drew a contour first and then extruded it out to form a solid.

the computer what the clearances are. If we had a plan view of the frame, we could rotate the truck and see what happens. If it gets close to the frame, we can check just how close. The good news is, using CAD makes it easy to modify your drawing to make these changes.

On the subject of scaling drawings, let me give you another example. I drew all my Mullet River drawings in O Scale since that was my biggest market. Many people would ask if I could do the model in another scale. The answer was yes, but it would take around eight hours to convert the drawings. After assuring me I was not very smart, they would proceed to tell me how simple it is to scale drawings. This usually went into great detail on step by step on how to do it. Here is the problem. The computer will scale the drawing to anything you want with a few clicks. However, just like the previous paragraph explained, the materials you need may not be available. On the Mullet River kits I used .032" plywood for the sides of the caboose models. The side of the model was made out of three pieces of this .032" plywood. There was an exterior, a core, and an interior piece all laminated together. In addition, the interiors had partitions and bunks made out of the same material. The parts were located in the interior walls by tabs and slots. When you scale the drawing, everything scales. So, as an example, when I scale a drawing done for 1/48th to 1/32nd, the drawing gets 50% larger. The computer then shows my .032" thick walls as .048" thick. Since no one makes .048" thick plywood, I need to move those lines back to .032" on the sections of the walls. In addition, the slots in the interior walls are now .048" wide. Most of you would not be happy if I made a model kit for you that had .048" slots that you put .032" plywood into. The loose fit would be of some concern to you. If you think about this, you will see that only the overall dimensions and scribing for the siding are any good. Everything else on the drawing needs to be adjusted so it will fit. Then, it all needs to be laid out on panels to be cut by the laser machine. What I saved by scaling the drawing was the overall dimensions and the basic design concept of how the kit would be assembled. Scaling drawings can work for you and will save some time, but it is not as easy as click, click, click, done.

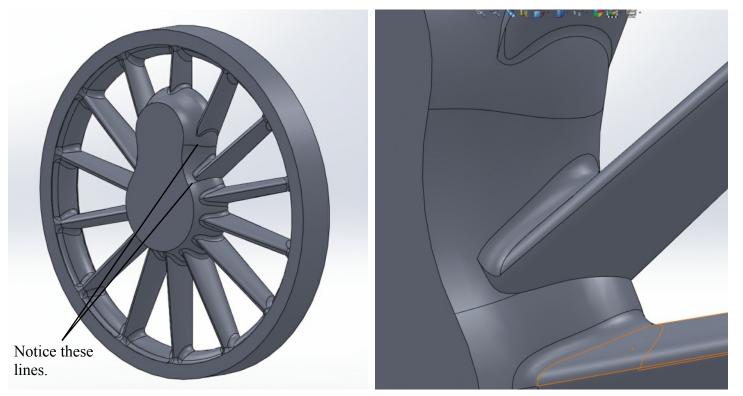


At this point in creating the drawing, I drew a profile of the bulge in the hub. Then, I had it sweep around the outline of the hub.

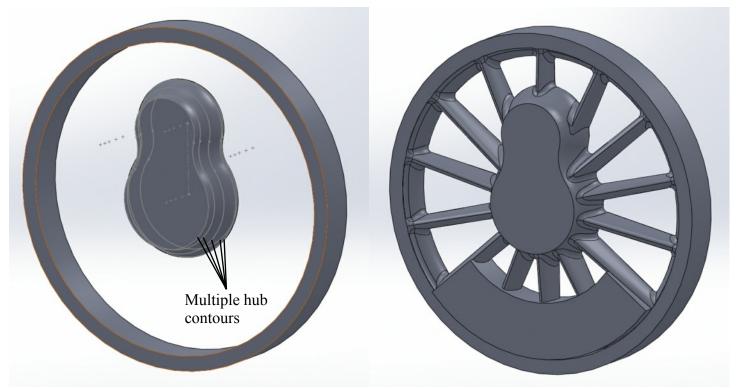


To create the spokes, a master spoke was drawn using the root and end profiles and connecting them. Then, they were copied in a pattern

For another example, I want to show you a 3D drawing. I took some classes in Solid Works 3D CAD about six years ago at the local tech collage. These were semester classes that met for four hours one day a week. I ended up taking the advanced course, and took it twice to get even more familiar with it. If any of you are considering



The view on the left shows where something mathematically changed on the hub. On the right is a close up. The fillet would not cross this line as you can see in the close up view.



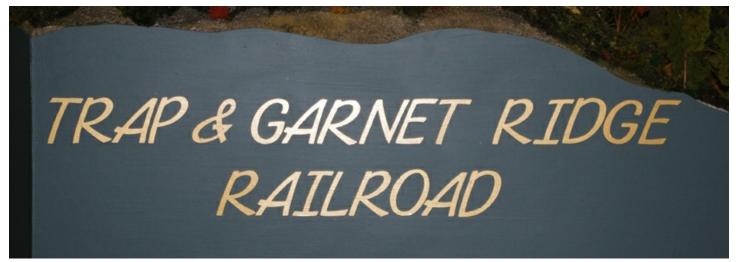
The final version of the drawing had the hub created differently. I have drawn multiple contours and connected them. The computer was able to do this with a single formula, and I have no breaks in the hub. On the right, you can see that all the fillets fell right into place.

getting into CAD, or even if you are using it now, I would recommend taking a course. For me, it was time well spent.

Now to my example. Remember me talking about all that math and computer programing stuff a few pages ago? Well, here is where you will see why I brought it up. CAD is used for producing 3D rapid prototype parts that are all the rage these days. That process is another article in itself, and I will get to that some other time. For now, all we need to talk about is creating the drawing. I took these classes for the purpose of learning how to create these drawings and, of course, I was creating model train parts. One of the first was a locomotive driver center. I made a bunch of screen captures to show you how I created the drawing. The first drawing shows the driver model. In the second drawing, I have rolled back the steps to the point where I was creating the hub. To create the hub, I drew the contour first. Look closely at the photo and you will see the lines I drew. This was then extruded out to create a solid. After that, I drew a profile to create the bulge in the hub and had the profile sweep around the outside of the hub.

Next, I drew the profile of the root and end of the spokes. To draw these profiles, I had to create two new planes to draw on. Then I had the computer connect these profiles with a solid form. SOLIDWORKSTM calls this lofting, your software may call it something else. Another reason to take a class. The next step was to create all the spokes using a pattern command. Now the fun started.

The spokes have a fillet around them where they meet the hub. No problem. I know where the fillet command is and away I go. All was well until I got to one particular spoke. It would not create the fillet. I tried over and over. Don't we all do this? Keep pushing the button expecting it will somehow work. Einstein was right, we are all fools doing the same thing over and over expecting a different result.



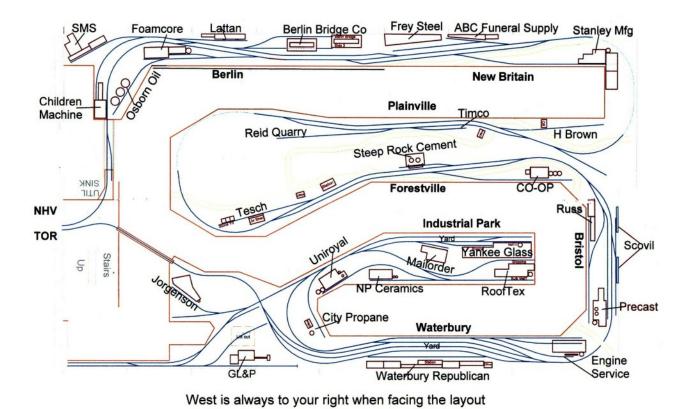
Mike Hurlburt from Elkhorn Wisconsin is modeling a fictitious short line railroad in Connecticut called the Trap & Garnet Ridge Railroad. Trap and Garnet are two types of rock quarried in the area, and he thought it would be a good name for his railroad.

By Glenn Guerra

This summer, the Rockford O Scalers had an open house for some of the guys with the State Line S Scalers. I tagged along with some of the S Scale guys and ended up seeing their layout nearby. When we all went to lunch, I was sitting next to Mike Hurlburt who has a O Scale layout. We were talking about his layout, and I recently made a trip to see what he was doing. I enjoy these trips to see what other people are doing. In modeling, we are creating make believe worlds and it is fun to see how other people create their make believe world. When we create these make believe worlds, we are inspired by something. Many times the inspiration comes from our past experience. How many times have you been talking to people about their models and there is a story that goes with the models? The story brings the model to life. Let's get on with Mike's story.

Mike grew up in Connecticut. Surprisingly, he was not a model railroader as a kid. He was telling me that some other kids and relatives had model trains, but he was not that interested himself. He is old enough to remember a few steam engines still running on the New Haven Railroad. We were talking about this, and he mentioned his grandfather was a businessman and did travel by rail. On one trip with his grandfather, Mike saw a steam engine pulling into the station and moved to the track side to see it. He was quickly told to get away and move back into the station. Seems all the leaking steam, smoke, and cinders was not as romantic to the people who lived with it as people today like to portray. Along this same line, Mike told me he was on a trip one day by himself and had the window of the coach open. The conductor told him in no uncertain terms and unprintable language to close the window. The rest of the people in the coach were not too fond of the cinders coming in the window. So much for the romance of steam. It's still nice to look back through rose colored glasses and imagine it was all good as we listen to the sound coming from our model.

Mike graduated from High School and went into the Army. After the Army, he went to college and then into the Navy to take up flying. He spent 20 years in the Navy on active duty and as a reservist. During this time, he got married and had two daughters. No trains yet. One of the daughters had a doll house model and Mike was helping her put it together. Well, father daughter time turned into a hobby for Mike. Building things was fun. Some of those childhood railroad memories started coming back, and Mike took up model railroading. You would expect that he would have picked up with steam engines, but that was not the case.



The track map of the Trap & Garnet Ridge Railroad. This map is handed out to operators as part of the operations packet they have while operating the railroad.

By the time Mike got interested in Model railroading, it was the 1980's. He had some memories of railroads from the 1950's, but those were not model related memories. I guess what I am trying to say is Mike had no foundation of interest to build on, so he started looking around at what was going on in 1980. What was going on in 1980? Well, most of the old time railroads were gone or just a shell of their past glory. There were, however, many new short lines that were running branches spun off of the big railroads. These short lines still did some switching. This was just the inspiration for Mike.

The first adventure into model railroading for Mike was N Scale. He started attending train shows and meeting other modelers. The size of N Scale fit the space Mike had, and there was a lot of contemporary equipment available. As Mike started looking into model railroading, he started getting interested in operation. How did these cars get where they were going? Some of the guys he met had operations on their layouts, and Mike started getting involved in operating sessions on their layouts. The next thing was getting involved in round robin groups. One thing I have noticed is, people who like to operate their layouts tend to hang out with other operators. The scale of your layout is not what brings them together, it's the operation.

Well, Mike was having fun with his N Scale empire, and even built a few modules to take to shows. Next came retirement and a new home. Mike and his wife have a home in Florida, and thought about giving up on the Midwest. After some discussion, they decided to be snow birds and stay in the Midwest for the summers. Believe it or not, the model railroad was part of the discussion. There are no basements in Florida, so where to put the model railroad was a problem. Besides, all the friends and model buddies were in the Midwest. There was still one more move though. They lived on a lake and decided they had no interest in water activities like swimming, boating or fishing, not to mention the noise from the speed boats was getting annoying. Time to move. They found a lot and decided to build. Mike was telling me his wife was a project manager before she retired and he was able to leave all the new house design to her. All he asked for was room for a model railroad, and he got it.



Operation on the T&GR RR starts here at staging. Cedar Yard in New Haven is where Conrail sends out the local that brings cars to the T&GR RR at Berlin. The upper track is a reverse loop from Jorgensen.

The next step was the new layout. Two things influenced that. Mike thought that N Scale was not big enough to for the operation he was doing. The other influence was Hank Brown from Madison who was one of the model buddies. Hank talked Mike into giving O Scale a try. That was only 10 years ago, so Mike is still relatively new to O Scale.



This view of the staging looks the other way from the photo above. The upper loop is a return loop from Jorgensen. A crew works this yard during operating sessions. They make up the Conrail Local and send it out from here. Then, they go to Berlin with it and back right away. Once back, they route the cars for other Conrail points and make up a new local to Berlin.



Torrington is in front of us. This area had a reverse loop at one time, but Mike did not like the way it worked in operations. He took it out and is making this industrial area. Notice the aisle so the operators can get at the switches.



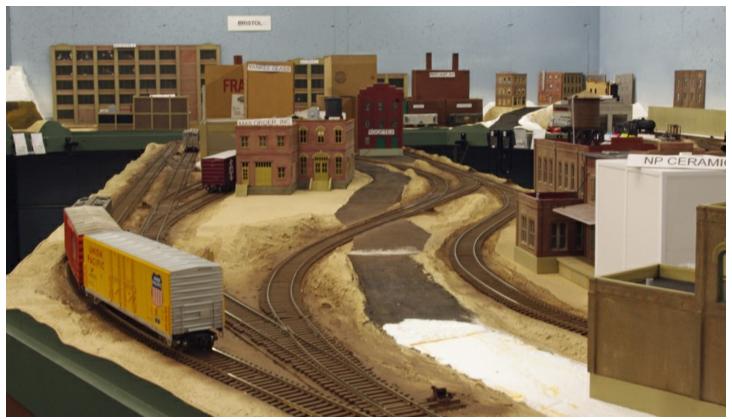
Torrington is on our right here. Just to the left of the red building, you can see a track with a post in it. This is the lift bridge to staging. The post is a spring loaded dowel that pops up when the bridge is lifted so the train cannot run off the track. Behind is the town of Forestville at the end of the peninsula. The curve is tight at the end of the peninsula and Mike has disguised this by hiding it in a tunnel. By going with the tight curve, he was able to keep the aisles large for the operators to move around. It also gave him more of a run on the straight sections on the peninsula.

This gets us up to the building of the current O Scale layout. Mike decided to model a fictitious short line in Connecticut in the timeframe of the 1980's. The larger size of contemporary trains made main line yards and terminals a bit of a problem for the space available. Another consideration was operation. Mike likes having a group over to operate, and that means you need big aisles. That started to squeeze the layout space. Another consideration in O Scale is the radius of the curves. Mike decided to go with tight curves in the corners and ends of the peninsula so he could get longer straight runs for industries. He would be using all diesel power and they could negotiate the tight curves. One of the other drawbacks to tight curves is their look. This would be emphasized by the larger cars as well. The solution was to hide the curves. It works well. When you are at Mike's layout, it seems much larger than it really is. The curve on the end of a peninsula goes through a tunnel. At one corner of the basement, the main line goes behind a building complex and disappears. At another corner, the main line goes under a bridge behind an urban scene. All the curve is behind a hillside and you don't see it. What you do see are long switches and sweeping curves. This makes the layout seem larger.

Since operation was going to be a big part of this layout it had to be thought about in the planning. The first step was what the basic operation would be. Since this would not be a main line, terminal operation and branch lines were out. A short line running on an old main line railroad would work though. A connection to the outside world would be made to a main line railroad. The short line would then distribute the cars to the industries. Mike's short line is the Trap & Garnet Ridge Railroad. Trap and Garnet are types of rock in the area. In Mike's plan, Conrail is the main line carrier. They come from staging with a cut of cars for interchange.



I liked this idea. The wood block is the rest for the lift out section. There is a copper water pipe in it with a cap on it. Inside the copper pipe is a door spring. Then, a wood dowel gets dropped into the copper pipe. When the bridge is lowered, it forces the dowel into the copper pipe. When the bridge is raised, the spring forces the wood dowel up and the track is protected. No more forgetting to protect the track and driving the train to the floor. The lift bridge at Jorgenson is protected the same way.



This is the industrial park at Waterbury. Mike is starting to develop the buildings a scenery here. The track has been weathered and is ready for ballast. After ballasting the track at Plainville, Mike decided it looked in too good of condition for a short line. He is working on a new idea for this track that will make it look more like old industry track.



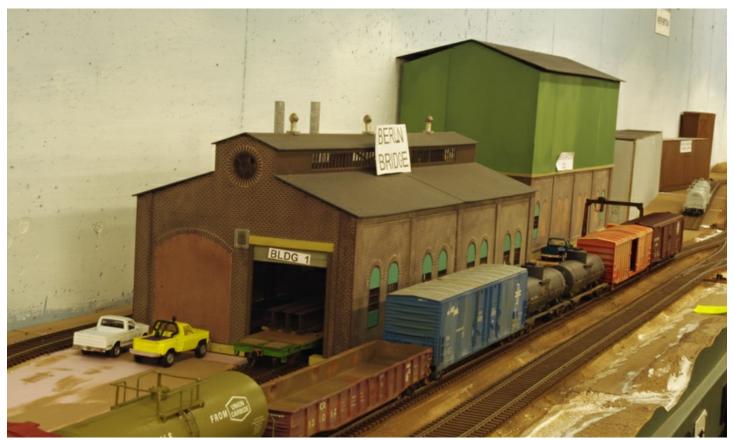
This Uniroyal building complex is in the industrial park at Waterbury. Notice the different types of buildings in the complex. I liked this idea, and it works on a contemporary layout. The building on the right was the original, the addition on the left came later. Also note Mike has created two different locations to spot cars here and two different types of cars to be spotted. This increases operation on your layout without using a lot more space. The crew has to be thinking also to know where to spot the car.



Mail Order, Inc is also in the industrial park at Waterbury. Mike is using the large size of O Scale buildings to his advantage. By making them big, he is creating view blocks. As you walk around this peninsula, every view is different and looks like a different area. When the scenery is done, areas like this are great for photos on your layout. This creates a lot of different looks.



This view of the industrial park at Waterbury is from the other side of the peninsula in the view above. It gives a completely different look to the peninsula. By mocking up the buildings out of cardboard, Mike is seeing how they look and creating temporary industries for operation. In doing this,, he can then look for commercial components that will work or figure out how to kitbash something to get what he needs.



The Berlin Bridge Works is a good example of how building kits can be altered. Many of you will recognize the first building as an inexpensive engine house made by IHC in the 1970's. These kits still show up at model shows. Mike bricked up one of the doors and put a modern roll-up door on the other. The windows have been filled in and modern steel frame windows have been installed. All this makes the building look like an old factory that has had many changes to keep it going.



This view down the layout at Berlin gives you the idea that the layout is much larger than it is. The tight radius curve at the back corner gave Mike about 18 more inches of scene here. The gradual curve to the track breaks up the long straight. You have a feel of some distance here. Notice the mix of buildings from the old mill building of the Berlin Bridge Works to the new cast concrete building of the Lattan Furniture Works. This works on a contemporary theme layout.



The yard at Waterbury is a busy place and there is a full time crew working here during operating sessions. Mike had to add a fourth yard track. In case you are wondering how a Southern MP-15 got here, Mike likes the model. He has one more and they are scheduled to go to the paint shop this winter to be repainted to T&GR RR red and black.

The interchange takes place as soon as they appear on the layout at the town of Berlin. This is very much like contemporary operations. The Conrail local drops off the cars and picks up the cut left by the short line. The engine is put on the other end and heads back to staging for new cars. The T&GR RR crew takes over and heads for their yard at Waterbury where the cars are sorted. Mike was telling me one of his operating buddies was a railroad yardmaster and he gave Mike some information on how it is done. When you look at the track plan, you would assume the T&GR local would start distributing cars in Berlin as soon as they picked them up from Conrail. Well, that is not the case. They haul the cars to Waterbury where the cars are sorted by a switch crew. They put the cars into cuts for locals dispatched out of Waterbury. One of these locals works its way back to Berlin with the cars for Berlin. Mike said they can keep 10 people busy on the railroad during an operating session.

I asked Mike what he uses for an operating system. There are some different ways of doing it. Mike said he hand writes a switch list for each job on the railroad. There are computer programs that do this and I asked about them. Mike said he tried one of the free ones and did not care for some of the features. Since his Conrail local would come out of staging more than once during an operating session, it messed up the program. Since his operation at this point is simple enough, he decided to hand write the switch lists for now. The other system a lot of people use is a car card system. This is simple to do, but requires the train crew to carry a fist full of car cards. I thought it worked fine when I used it. My point here is that there are different ways of doing this and you should pick what works best for you.

Since Mike would be modeling a line in Connecticut, there are two hundred years of industrial history squeezed into narrow river valleys. The confined space between industries would suit the model railroad perfectly. There was also something else that I never considered until seeing it – many of these old industrial complexes have been added on to many times.



Mike recently ballasted the track here at Plainville. He said it looks to perfect for a broken down short line, so he is considering other ideas for the rest of the line. There is a quarry here that makes ballast so this will stay since it is close to the quarry where it came from. A good story don't you think?

The construction and architecture of each addition is different, and Mike is having some fun with this. Whenever he sees a building kit that looks interesting, he will get it. No need to worry about era, it all works. He combines them into complexes. Making big buildings and complexes is working well even with the larger modern cars. At this time, many of the buildings are mock ups waiting for the right building components to come around. Take a look at some of the more complete ones though. The Uniroyal complex is one that is starting to come together. Another one is Mail Order, Inc. Behind it, you can see the cardboard mock up of Yankee Glass. Mike said a lot of this is trial and error, and many of these buildings will change as they get built. The mock ups give him a feel for how the final scene will look while providing someplace to spot cars during operation.

As an example of how things change, the area at Jorgenson was a return loop. Mike said it was not working well for operation and the tight return loop was not good. What he did was put a lift bridge in and put the return loop in the other room with the staging yard and dispatcher. This freed up a lot of space for Mike to put in another industrial area. We were running the train a little while I was there and Mike said to listen to the crossing at Jorgensen when the train goes over it. He uses all metal wheels and the clickity clack of the train going over the crossing sounded great.

Mike built the crossing himself, as well as, all the switches. He uses a Fast Track fixture and files the points components. Then he solders them together and builds the switch on printed circuit board ties before mounting it. The switches are all hand thrown. Mike wanted to get up and running and not take time to install electric switch machines. He said he was able to run trains one year after starting. The track is Micro Engineering weathered track. He has done some ballasting of the track around Plainville but is not sure what he is going to do on the rest yet. The track a Plainville looks good, but almost too good for a broken down short line. Some other types of ballast are being considered. At Plainville, one of the sidings is Reid Quarry where hard trap rock is mined. Since the rock is right there, why not ballast the railroad with it? Problem solved – now you have the reason for the nice ballast at Plainville.

Speaking of the quarry, Mike was telling me about a twist in the operation. The railroad gets its ballast from the quarry only a few cars at a time. As it turns out, he found a prototype operation that was similar. When the railroad showed up with a few empty cars for loading, the local would pull the cars out of the quarry siding and spot the railroad cars right away. Then, the quarry would load the cars while the local waited. When the railroad cars were loaded, the local would pull them and put the other cars back in the siding before leaving. Mike said his operation does the same thing, and the crew has to wait a certain time for the cars to be loaded.

Getting back to the scenery, Mike likes to use white Styrofoam. All modeling techniques have some good things and some bad things about them. Mike said he tried the pink insulation foam and did not like it so he went back to the Styrofoam. I asked what the difference was. He was telling me the white Styrofoam can be a little messy when shaping it, but he felt it shaped better than the pink foam and he was willing to put up with the mess. See what works best for you. The peninsula with Forestville and Plainville on it had a backdrop down the middle. After a while, Mike said he did not care for the backdrop and took it down. Some people like the backdrops and the view focus they provide, but Mike liked the more open room. Since they were operating, it was nice to see other people in the room. Again, do what works for you. The ridge spine down the middle of this peninsula was made from foam and is very narrow. Mike said he covered most of it with vegetation left over from the N



I liked this view. The road going through the ridge is nice. It gives you a view of the buildings at Forestville, but not enough to look like Forestville. The road seems to go somewhere, and not just be there to take up space. The foam rock pile will get covered with stones as more scenery develops here.

Scale layout. He also does not cover the foam with plaster and instead uses thick latex paint. The town at Tesch was also a late comer. Mike thought at first of making it a hill since it would be too hard to reach for sidings. Then, he decided to put a small commercial street tucked into the hillside. He said once the scenery was finished, you would not need to reach back there to throw any switches. That brings up another point.

One of the reasons for going to O Scale was it is easier for the operators to couple and uncouple the cars. Mike uses picks for uncoupling the cars. He did say though that operation can be hard on the scenery. He has found that delicate scenery near the tracks tends to get bumped a lot. His advice is to keep the scenery near the tracks simple and durable. Save the delicate stuff for areas that moving hands don't get near. Also, make as much of the track accessible as possible. In areas where it is necessary to reach over buildings to throw a switch, keep the foreground buildings low and roof detail to a minimum.



The Tesch lumber yard still gets building products by rail. This modern boxcar is not out of place here. There is a yard like this near where I live.

For equipment, Mike said he has mostly Atlas locomotives and likes the way they run. The freight cars are a mix of Atlas, Weaver, MTH, and a few Lionel cars. Some were three rail cars that he had to convert. He was showing me a lumber car that he had to relocate the bolsters on. With the high rail wheels and truck mounted couplers, the high rail trucks were not mounted on the center line of the bolster. The good news is the car is scale other than that. After adding new bolsters and some scale trucks, Mike had some nice cars. The locomotives have DCC and sound in them. Some were older ones he installed the decoders and sound in himself. You may have noticed the Southern MP-15 in the Waterbury yard. Mike likes those and wanted the Trap & Garnet Railroad to have a few, so he bought some. Sometimes you take what you can get, and Southern was what he could get at the time. They are scheduled to go to the paint shop this winter.

It was a good trip to see Mike, and I plan to attend the next operating session. I like what Mike is doing with the contemporary railroading. As I travel around and look for railroading in small towns, I am disappointed at how much of it is gone. I sometimes wonder how you can model it when all that is left is a track through town. Well, those main line trains are still setting those cars out somewhere. Seeing Mike's layout reminded me of Plymouth, Wisconsin where I live. This was once on the Milwaukee Road main line, but today it is the end of a short line. GP-35s' and MP-15s' crawl into town with plastic pellet cars and sometimes gondolas and fertilizer covered hoppers. They switch the cars here at the transload site, and then head down the old C&NW to Sheboygan Falls where they drop more cars. Switching and spotting cars is still done; you just need to look a little closer to see it. It's done by small operators, and short trains are the norm. Mike has discovered that and is having a lot of fun with modeling these types of operations.

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Eastern PA 2 Rail Scale Train Show Strasburg, PA

By Daniel Dawdy

Amy and I headed out to Strasburg, PA for the Eastern PA 2 Rail Scale Show on October 15th. The show is put on by Rich Yoder and John Dunn three times a year and held an the Strasburg PA Fire Company. It's a half day show, but pulls in many vendors and people with lots of items you may not normally see at the larger shows. If you have never been to this, it's a really fun show where everyone knows everybody. Less than a mile from the show is is the Strasburg Railroad, the TCA Toy Train Museum and the Railroad Museum of Pennsylvania. We spent Friday at the Strasburg Railroad and the Railroad Museum of Pennsylvania. (The TCA museum is closed on Fridays this time of year.) The Strasburg Railroad is a working railroad featuring steam excursions and shop tours. The Railroad Museum of Pennsylvania is a world class museum with most displays inside their beautiful building. What follows are a few pictures of our weekend.



This photo of the excursion train returning to the station on the Strasburg Railroad was taken looking out the back shop doors.

Next page top: Railroading is a dirty job as work continues on Number 475.

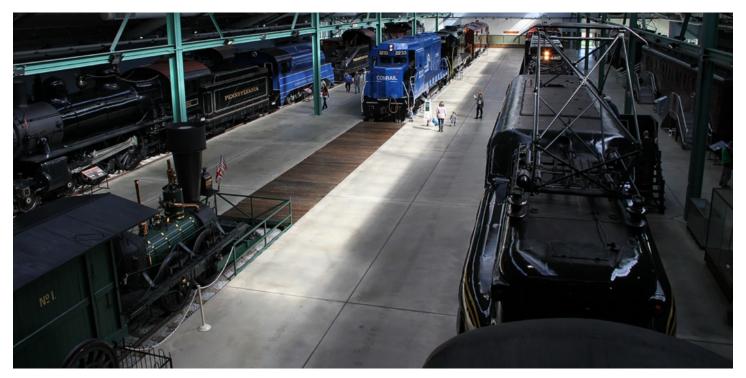
Next page bottom: If you like historic Pennsy power, the Railroad Museum of Pennsylvania is the place to go.

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Looking down on the Railroad Museum of Pennsylvania's main building.



O Scale and real fire trucks! Can't get much better than that.







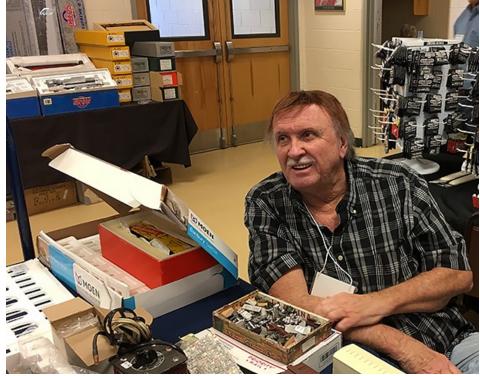


Above: John Dunn is always happy, while below Jack McGarry from Allegheny Scale Models and Rich Yoder from RY models take a pause in their deep discussion.



Above: Old models, some of which I have never seen, along with new and even 2 railed MTH are abundant at this show.

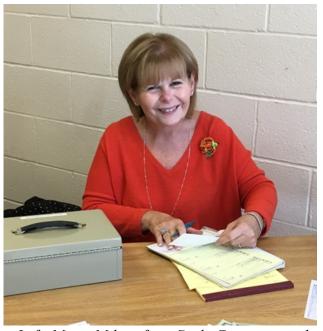
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Bob Heil representing 3rd Rail/Sunset looks on.

Below: Patty Dunn greets us and happily lets us in the show.





Left: Marty Milner from Scale City seems to be hitting every show with their models and castings.

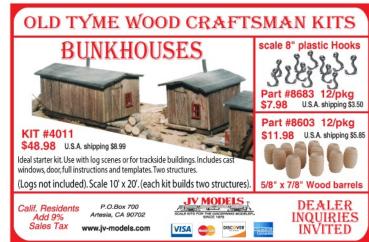


Rich Yoder's display of fine O ad P48 trucks, as well as, sheets to take orders for new cars.

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Old and new, expensive and reasonable. There is something for everybody at this show.





SCALE

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SCENE AROUND THE LAYOUT



The SP Palos Verde Division is Jim Harper's version of the SP from San Francisco east over the Sierra Nevada mountains. The enclosed picture catches Eastbound Extra 5604, a G-9, crossing a combination deck girder and deck Truss bridge over the American River near Auburn, California with a mixed freight heading toward Donner Pass and Reno/Sparks, Nevada in 1955.

We are proud to feature readers work. Depending on your response, we would like to make this regular feature. So get those cameras and cell phones out and start shooting!

High quality JPG or TIF files are only.

Email to scene@oscaleresource.com with a description of your picture.



n. 1. One that is odd. 2. The state or quality of being odd; strangeness.

By Daniel Dawdy

Many people take photos of engines and even cars, but most stop at that. I, on the other hand, just love to shoot things that I may want to model in the future. I love to model details and have people say, "Must have made that up... never seen a real railroad do that.". That's when I whip out the picture to show them that indeed the real railroad did.

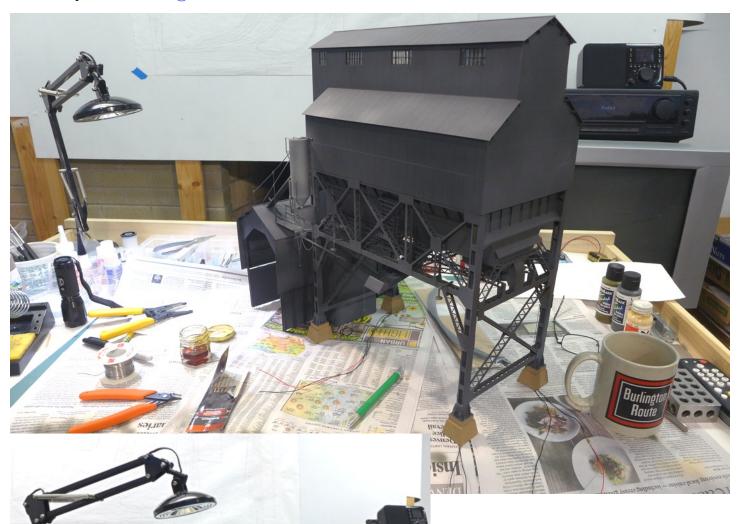
Caution: This tactic does not make many friends:-)



Well we have a cab, a prime mover and a few cans of diesel. What else could we hope for???

WHAT'S ON YOUR WORKBENCH TODAY?

This series shows our readers what other modelers are working on, and we need your help to make it successful. All that's needed is a simple snapshot of what your workbench looks like and the project on it. Send us a picture or two along with a short description of what you are working on so we can share it here. If it's a project under construction, send it in. Repair job, send it in. Completed project, send it in. Send your pictures and descriptions to daniel@modelrailroadresource.com



Jeff MacDonald writes: Picture is the Overland 350 ton UP coaling tower I have had squirreled away for too many years. Took two rattle cans of dark gray primer to paint. Has eight surface mount LEDs wired up with very fine aeronautical Teflon coated wire fished thru the supporting structure. I did not have to paint Nutkin the cat, she comes that color.



Good Evening.

I received the latest issue and was happy to see the article about George Zrust's Pitttsburgh Railways Layout in the September/October 2016 issue. Pittsburgh is a neat system to model and research. However, when reading the article there were inaccuracies.

Background: Ken Robbins built the master for the pre-war PCC shortly after Frank Muise came out with his Franklin Models Boston cars. Ken is the "R" in the R&M name. "Our first ad ran in Traction & Models magazine in April, 1970, I believe." "...we had to use Superior Models in Delaware." (for casting). I corresponded with Ken on 2/1/2016.

I used Superior Casting to cast my Osgood Bradley Electromobile trolley kit. Mr. (Ian) John Carter was the owner of Superior. Superior Models produced the castings for the R&M PCC, the original Copetown Car Works kits (which were made by and owned by Herb Kephart and not the Copetown Car Works shop which only marketed the kits for Herb.)

Jack Bailey purchased the Copetown Masters from Herb and proceeded to make those kits himself. He also had additional patterns made for o ther Chicago kits.

Jack could not cast all of the CCW kit parts like the Brill semi-convertible roof which Jack could not make properly. Jack went to Superior to have the parts made. During conversations with John Carter John mentioned that he had an old mold for the PCC cars. John made some castings for him and Jack marketed the car kits under the Ashland Car Works name. John also made the same castings for me and they were marketed under the Berkshire Car Shop name. Jack nor I purchased the mold. I later learned that Superior Models did not exist any more and the location of any of John's business molds or parts is a mystery.

Most of the Ashland molds and patterns (CCW & Bailey) are currently owned by East Gary (Andy Sunderland). I still have PCC kits for sale.

Sorry for taking so long, but I wanted to relate my first hand knowledge on this particular subject. We are still developing New projects including PCC models, Canadian LRV models, Trolley freight cars, building kits, Illinois Terminal models, etc.

Regards, Edward G. Skuchas, PE, Owner The Berkshire Car Shop

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Rockford O Scalers Annual Fall Open House 2016 Saturday, November 5, 2016| 1:00 pm to 5:00pm 3886 Lookout Drive, Rockford, IL 61109 The Rockford O Scalers: John Handlogten, Frank McCabe, Greg Anderson, Bruce Morrall For Directions / Information call: 815-874-7036 (fsm1019@aol.com) (Frank) or 815-207-3603 (j.handlogten@comcast.net) (John)

Strasburg Train Show
April 22, August 12 and October 14, 2017
2 -rail swap meet at the Strasburg Fire Co, 203 W. Franklin St, 9
AM - 1 PM. Admission \$5 (Wives/children/military w/ID free).
Tables are \$25 for first table, additional tables \$20 each. Great food, modular layout, clinics. Contact John Dunn 609.432.2871
or jdunn8888@hotmail.com or Rich Yoder at oscale48@comcast.net.

Cleveland 2 Rail O Scale Meet
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Lakeland Community College Auxiliary Gym, 7700 Clocktower
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O Scale South 2017 January 14, 2017, Atlanta, Georgia, Two-rail swap meet at the Cross of Life Lutheran Church, 1000 Hembree Road, Roswell, Georgia, 9AM-1 PM. Modular layout and clinics. Admission \$5 (spouses & children free). Tables \$25. Layout tours on Saturday afternoon and on Sunday, Jan 15, 2017.

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the tradition for the 49th year. Website: indyoscaleshow.com Email: info@indyoscaleshow.com

Greater Houston Train Show February 18th, 2017 Stafford Centre, 10505 Cash Road, Stafford Texas (Houston area)

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