RESOURCE

The

SCALE

NEWS, REVIEWS, INFORMATION TO USE

Volume 3 No. 6 July/August 2016

> Oddities O Scale West

Make Your Own Clamps Building a Squire Dingee Pickle Car The Evaton Branch from Down Under Making and Installing Driver Crank Pins Kitbashing a Korber Models Sanding Tower and much more...



Published Bi Monthly

The Model Railroad Resource LLC Dwight, Illinois

> Owner / Publisher Amy Dawdy

Managing Editor / Advertising Executive Daniel Dawdy

July/August 2016 Volume 3 No. 6

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

4-4-0 No. 53 with the local passenger train in the Evaton yard on Bruce Lovett's Evaton Branch of the Spokane Portland and Seattle Railway. Photo by Bruce Lovett

Rear Cover Photo

Howard McKinney: Denver Rio Grande & Western RR: On3 RR Photo by Dan Dawdy

Bill Of Lading

Page

- 2 Bill Of Lading
- 4 From the Publishers Desk
- 5 News You Can Use New items of interest
- 9 O Scale West Amy and I head West for wine and trains

20 Layout Tours A few scenes from California layout tours

- 25 The Evaton Branch Bruce Lovett shows us his beautiful layout in the land down under
- **42 Building a Squire Dingee Pickle Car** David J. Leider shows how he built his car
- 51 Making And Installing Driver Crank Pins Glenn continues his series
- 63 Kitbashing a Korber Models Sanding Tower Dan adds extra detail to a nice little kit
- 71Make Your Own Cheap ClampsDan gets frugal and makes his own clamps
- 75 Oddity One that is odd
- 76 What's On Your Workbench
- 78 Scene Around the Layout Reader photos
- 79 Show Schedule
- 80 Classified Ads
- 80 Advertisers Index

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 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

 $\sim 0 \sim$

This issue comes out as summer is in full swing, and just after the last of the spring shows - O Scale West in Santa Clara, California May 5-7. There are some highlights from the show in this issue for you to enjoy. Dan and I met a lot of new people, rekindled freindships and saw some great layouts. Of course, we couldn't visit Califorinia without sampling the fare at local wineries, breweries and enjoying the food, which, by the way, included Ghiardelli chocolate (heavenly!). This was our first trip to O Scale West, so we met up with family before the show and added a few other firsts to our list which included seeing Lake Tahoe (breathtaking) and gambling for the first time in Reno. I know, hard to believe right? Rod Miller has assured us that O Scale West 2017 is in the works, so we hope to see everyone again next year. We'll be sure to keep you updated as details emerge.

I am writing this just after reading and article by an Australian author, Bruce Lovett, featuring his Evaton Branch on the Spokane Portland and Seattle Railway. Bruce's article is inspiring in that he is celebrating his 87th birthday as I write this! He made me think about aging, and the fact that we should never stop doing what we enjoy. Not only do we continue to grow and learn as we enjoy modeling (or any hobby for that matter), we are inspiring others and keeping our minds and bodies active. His article proves that just because we're getting older, we can still enjoy what we love.

This issue also brings you some great modeling with an article from David J. Leider on building a Squire Dingee Pickle Car. Glenn continues his series to show you how to make and install driver crank pins. Dan does some kitbashing on a sand tower, and also shows you how to be frugal when it comes to needing a lot of clamps for your layout.

Be sure to check out Canadian modeler Serge Lebel's workbench project. It was neat to see the basswood he cut from a log that was acquired locally, and how he used it to scratch build a bulkhead flat car. I always enjoy seeing what others in the hobby are doing (and hope you, the readers, do as well), so keep sending in your projects for "What's On Your Workbench Today?" Send your photos and comments for "What's On Your Workbench Today?" to: <u>daniel@modelrailroadresource.com</u>

We also have a new photo page that is dependent on you, our readers, entitled "Scene Around the Layout. With your help, this will become a new feature in upcoming inssues. Thanks Don Smith for sending us your picture and comments for the first scene. Send your photos and comments for "Scene Around the Layout" to: scene@oscaleresource.com.

As always, thanks for reading and enjoy this issue!

Happy Reading & Happy Modeling,

Amy Dawdy

48TH NATIONAL

O' SCALE CONVENTION

SEPTEMBER, FRIDAY 23 & SATURDAY 24, 2016

Wyndham Indianapolis West 2544 Executive Dr, Indianapolis, IN Reservations 317-248-2481 Discounted Room Rate \$105 "O" Scale P:48 On30 On3 On2 Scale 3 Rail Hi Rail

Sept 22	4:00 PM	Dealer set up	Visit Website	
	7:00 PM	Trading hall closes	indyoscalenational.com	
Thursday	7:00 pm - 10:00 pm	Pre-Registration Party	For Updates	
	8:00 AM	Dealer set up	1/48	
Sept 23	9:00 AM	Trading hall open to public	NATIONAL	
Friday	5:00 PM	Trading hall closes	O SCALE	
	5:30 PM	Happy Hour/ Banquet & Awards	Convention	
Sept 24	8:30 AM	Dealer set up	Model Contest	
	9:00 AM	Trading hall opens to public	Locomotive, Diesel	
Saturday	2:00 PM	Trading hall closes	Freight Car; structure	
	3:00 pm - 6:00 pm	Layout tours	Passenger Car; Diorama	
Daco in a life time o	nnourtunitu to colohrata	our 49th National Convention First	Clinics	
Once in a life time oppourtunity to celebrate our 48th National Convention. First convention was in Indianapolis and the 48th will be at Indianapolis making it			Friday and Saturday	
L/48. This is a two day "O" Scale Model Train Convention, 200 tables in one large			I I kata yana babai aay	
	av "O" Scale Model Train	n Convention, 200 tables in one large	O Scale Layout Display	



		H		7.
	6		0	
		Ď.		53
- Contra				1
	R			いたの
	170 01	-75	L. Ma	Oct

NEWS YOU CAN USE



From the Chicago show this past April. From left, Norm Buckhart, Jimmy Booth, Dick Harley and Frank Peacock. Photo by Arnie Menke

Tichy Train Group has new O Scale decals for the R30-9 version of the car as rebuilt around 1937. The car has orange sides with black ends and roof. Both the SP & UP heralds appear on each side of the car with the UP herald in full color. The 9024-6 decal has 6 unique number sets with no splicing.



9024O PFE R30-9 decal O 1 set \$5.00 9024O-6 PFE R30-9 decal O 6 sets \$24.00 Decals are available direct only. <u>tichytraingroup.com</u>



<u>Atlas O</u> has announced new paint schemes and numbers for their 42' Coil Steel Car and 36' Wood Refrigerator Cars.



See their Website for full details.



Protocraft received their 1937 AAR boxcars for Southern Pacific - Versions of B-50-20/21/ and 23 available in O or P:48. Once again, Boo Rim Precision Scale of Korea, has produced an exquisite and accurate model in all-brass of this S.P. series using builder drawings from both the Pullman Library in Illinois and the Museum of Transportation in St. Louis. See their ad in the issue and their <u>Website</u> for more details.



<u>TCS (Train Control Systems)</u> has announced their newest Version 4 of WOW Steam decoders. WOWSteam Version 4 introduces our New Calibrated Proto Chuff (Patent Pending) taking prototypical operation to a whole new level! Your locomotive will automatically chuff loudly when it is pulling a heavy load or going uphill and then coast downhill. Adjustable rod clank and snifter valve sounds add to the fun. The WOW 101 is available now.



Great news for us O Scalers is their WOW 501 due out soon. It's a full 5 Amp motor output and 4 Amp lighting (maximum load).



See their <u>Website</u> for more details on all their products.

News from Sunset Models .

ALCO PA/PB Diesels Announced. All the detail and features you demand will be in these road detail accurate models. <u>Click here for details</u>.



Announcing the C&O H-6 2-6-6-2.#1309 is being restored to run again. #1308 is on display in WV. Sunset will be making these monsters of art and engineering in Life-Time brass with all the detail and accuracy you expect from Sunset Models. <u>Click here for details</u>.



The Texas and Pacific had 70 2-10-4s. We are offering the in service version in Grey or Black boiler, Freedom Train version #610, and excursion service #610. Yes, this bad boy is still in operation. <u>Click here for details</u>.



New from <u>Model Tech Studios</u>: Bucker operating his Dragsaw, sawing Felled trees, set - Saw & Operator, Comes Pre Finished. This Unique backwoods set includes both the Dragsaw and it's operator, the Bucker. Both come Pre Painted for you as well 4 Small detail pieces on the saw are to be installed when installing on the layout...all included...very easy !! The Iconic LumberJack / High



Climber or Tree Topper as they were known. Comes Pre Finished. The High Climbers job may have been the most spectacular in the backwoods...he would climb the tree selected for the logging company "spar", trim off the limbs and "top off"



the tree, all while hanging from a looped rope as the tree topples over the top of him to the ground. Includes the "1 man" saw, "Toppers" Axe plus the Rope.



The 2 Man ChainSaw Team of Fellers....cutting

down a tree. MACHINE vs. MUSCLE... Comes Pre Finished. "In action" this set includes the classic 2 man ChainSaw as well as the 2 Fellers working the saw. O Scale Classic Logging Figure Series

See all these and more at Model Tech Studios.



THE ELBOW ROOM

The history of The Elbow Room bar was that it was a small bar located in Hazleton, Pennsylvania behind the old Hazle Drug store. This was a bar room that was mainly for Anthracite Coal Miners at that time. It was small enough to hold probably about 10



people. The Coal Miners would usually drink at this bar after their shift in the mines.

The model front was manufactured under the supervision of a former customer's son. Sadly, the original building was demolished in 2001.

Check out this new kit our website www.riverleafmodels.us



"Railroad Line Models" is yet another new manufacturer from New England. The new line of kits will be laser-cut and offered in all four major scales, with a focus on budget pricing and simplified construction. Their first offering... "Pete's Garage" features laser-etched concrete stone work over heavy cardstock... heavier wall panels help to eliminate additional structure bracing, while the "keyed" corner construction adds to the strength of the completed structure. This entire line of kits will be available through your local hobby shop... or visit

"S" Kit #9301_\$34.95 retail and "O" Scale Kit #9401 \$39.95 Retail Also available in HO and N Scales.

www.railroadlinemodels.com for more information.

New Built-&-Ready® Building: Emilio's Italian Restaurant

Brand new to the Woodland collection of Built-&-Ready Landmark Structures® is Emilio's Italian Restaurant. Architecturally accurate and handpainted, buyers will appreciate every aspect of this gussied up, brick building. This building shows off windows accented with red stained glass, an outdoor menu board and seating, and a printed interior. It also includes four Just Plug LED lights, two warm whites



for a lighted interior, and two warm yellows for the exterior entry way. JP5855 O Scale – MSRP \$149.99 Find Emilio's and more Built-&-Ready Landmark Structures at your local hobby store. For more information and other products visit the Woodland Scenics website <u>WoodlandScenics.com</u>, contact Sales and Customer Service, at 573-346-5555. Bill Basden of Delta Models has two new castings.

DM 252 A/C duct work sections for heavy weight Pullmans. You get 2 sections 25' 6" long and 4 transition end pieces. Additional sections can be added to increase the length as needed by using DM 252A.

DM 252A sections in 3 length.---these come in 5', 6'3" or 8'6" lengths. These were the most common lengths on Pullmans and will allow you to increase length as needed for a particular car.

These parts will work on both plastic and wood cars. <u>See his Website for more details.</u>



Alf Modine passed away peacefully on June 4 in Los Gatos as a result of complications from a fall at the end of March. Alf is survived by Evelyn, his loving wife of 20 years, step-son Jeff Scammon and stepdaughter Karen Scammon; his beloved sister Bonnie Mesha, niece Pam Daniels, nephew Pete Mesha, and



their families; and his son's partner Margie Littau and her family. Alf was preceded in death by his first wife Arlene (Mikulecky)

Modine and their son Wayne Modine. Alf will be dearly missed by his family and many friends across the country. Alf was a

life-long train enthusiast, with a love of O Scale model railroading and the Chicago & North Western Railway. Alf was internationally recognized for his scratch-built model steam engines, and his layout was a regular stop on the O Scale West convention tour.

FScale West

Article and photos by Daniel Dawdy



Amy and I made the trip out to O Scale West this year which was held at the Hyatt Regency Santa Clara from May 5-7, 2016. For those who may not know, this convention has traditionally been held earlier in the year, but with some big football game held right across the street, this year the organizers had to move the show later into the year. We left Chicago Midway a week early and spent time with my brother, Dick, and his wife, Norma, in Northern California. We again toured many wineries in El Dorado County, spent some time in South Lake Tahoe and Reno, and then drove down to Santa Clara on Thursday. Set up was quick for us, and the rest of the night we met up with some advertisers and Web clients.

This was not the magazine's first trip to O Scale West, but was ours. We meet a lot of new people face to face that up till now we only knew via Email and phone calls. Thursday night set after set up, we bumped into Mandi and Doug Kearney from the O Scale Hauler in the lounge. Jay Criswell joined us as we tried to solve all the world's problems with beer, pretzels and wings.

Friday night, we went out to dinner with Bob Stevenson of Stevenson Preservation Lines who came out by train to the show. After eating, we visited a few layouts, including Rod Miller, Bob Brown and Gary Schrader.



Saturday night, Kathy and Tom Dempsey from Clover House took us out to dinner. Afterward, we went to see Howard McKinney's beautiful layout.

Speaking of Mr. Dempsey, he "conned" me into doing a clinic on cutting glass for modeling based on an article I wrote in *The O Scale Resource* September/October 2014 issue. OK, so "conned" may not be the right word, and the two clinics went well with more interest than I thought there would be.

What follows are a few images from the O side of the show. We had a wonderful time, as I think everyone did, and are looking forward to next year.



Celebrating the life of Lou Cross. Memorabilia, achievements and other items from Lou were on display. In the background is Lou's first scratch built locomotive.



Another small sampling from the Lou Cross estate.



And still more from Lou's estate. There were many rare and beautiful models, kits and books. The prices were extremely reasonable. I dropped a few dollars at these tables!



Doug and Mandi Kearney with their new line of storage and transportation boxes.



Ted Schnepf of Rails Unlimited made the trip West with his line of cast cars, books and a bit of everything else.

Sunset/3rd Rail showing new and current projects.



A few versions of Southern Pacific's "fire trains" were available for purchase.



A bit of everything offered by Greg Anastopoulos.



Part of Norm's O Scale Trains display.



Mike Calvert from Gilmaur Models was there showing his O Scale and S Scale model kits.



Rich Yoder showing his beautiful line of trucks and taking reservations for his new Mather Box, Stock, and Refrigerator cars.



Pre-Size Model Specialities manufactures urethane cast tunnel portals, retaining walls, abutments, culverts, bridge piers, and much more for all the popular model railroading scales.



Gregory of Rio Grande Southern Railroad Hobbies was showing battery power for O scale. 2 or 3 Rail. CVP Converter QSI sound and 11.1 Li Ion battery What you have is a battery powered fully independent DCC locomotive. It can run on 2 or 3 rail or the floor. It encompasses three speed steps, full DCC sound depending on manufacturer lights and able to MU or double head 4 units. Range depending on transmitter setting is about 50 feet and run time will vary per load and grade, but average about 6 hours.



Kathy and Tom Dempsey of Clover House had a busy show.



Even British models were offered. These were offered by Rick Weil.



Bob Spaulding of Altoona Model Works made the trip West with his fine model kits and accessories.



I am explaining the ins and out of cutting glass in my clinic.



Tom Dempsey explaining the art of applying dry transfers in his clinic.



Bill Basden was there with his massive inventory of beautifully crafted passenger car details. Bill also took first place in passenger cars with his model of The Eagle REA car below.









A FEW SCENES FROM LAYOUT TOURS

Article and photos by Daniel Dawdy

Layout tours are always fun and informative to go to. It's nice to see how other modelers approach the hobby. Photographing them in a crowd and sometimes questionable lighting is another story. Instead of bumping into people with my larger Canon, I used my iPhone 6 for the follow tour pictures.



Bob Brown's Tuolmne Forks: 28' x 28' 0n3 Sierra logging & mining railroad. This highly detailed layout is 90% sceniced and includes three sawmills, a stamp mill, a resort hotel, and many scratch built structures. Many of Bob's prize winning models are incorporated into the railroad. Some earthquake damage from 1989 has been left visible. The layout is DCC controlled. Bob is the editor of the NG&SL Gazette. He also has an extensive collection of models from pioneer narrow gauge modelers from 56-76 years ago on display. Bob's 0n30 Shoehorn Mining Company layout is complete, as is a new 0n30 tourist line, adding an old time standard gauge running to a tourist hotel.





Gary Schrader: ATSF & SP: 0 Scale, 20' x 40', 1947-1951 timeframe. Double track mainline and large yard, Union Station, 14 stall roundhouse. All track is handlaid. About 50% of the scenery is done including a large curved timber trestle. All engines & cars are highly super-detailed. Control is by NCE radio controlled DCC. Some engines now have Soundtraxx Tsunami sound, stunning sound in 0 Scale. Check out the complete, accurate 14 car Daylight and 11 car Super Chief with lighted drumheads.





Gary Schrader's massive roundhouse complex.

Howard McKinney: Denver Rio Grande & Western RR: On3 RR running between Victoria and Notell, CO in late 1930's - early 1940's in 7' x 19' with 5' x 6' extension. There is no mining, but lush pine forests provide timber for the mining industry. Engine facilities exist at Victoria & Notell. C&S & RGS equipment operates. Geared loco trains move logs to the mill. All trackage is complete and operational. Scenery is 70% complete. Many major structures are in place. NCE DCC and Soundtraxx sound are used.





More of Howard McKinney's layout.





STORY AND PHOTOS BY BRUCE LOVETT



RS-1 No. 50 emerging from a tunnel onto the trestle is on its way to Lakeside with a freight. This Atlas loco has since been lightly weathered to represent a loco after a complete overhaul. It is powerful, quiet and a very smooth runner.

The Evaton Branch, situated in Northern Oregon, was opened on the 4th of June, 1929. It was built to tap the rich resources of the district, mainly cattle and sheep, but also wheat and timber. Like so many SP&S branch lines in those days, it was laid with light rail, wooden ties and blue metal or ashes for ballast; whatever was readily available at the time. The light rail restricted the types of locos suitable for working the branch to the 4-4-0, 4-4-2, 0-6-0, 2-6-0 and 4-6-0 wheel arrangements. In an emergency, 2-8-0 locos could be used with a speed restriction of 30 M.P.H. The lighter RS-1, RS-2, RS-3 and GP9 diesels were also suitable. Normal passenger traffic is handled by a two car set, or, in holiday times, by anything up to five cars. School workings are handled morning and afternoon by the ubiquitous gas electric.

Branching off the main line at Pendleton, the line travels in a southerly direction through a number of small towns, all of which generate business for the railway, to Evaton where the mainline trains terminate. Two branch lines radiate from Evaton, one to Mt. Elli and the other to Lakeside, which were both opened on the 8th of November, 1933.

At Evaton there is a turntable, engine house, water and coaling facilities for turning and refueling locos before they return to the main line at Pendleton. Also at Evaton are a freight depot, cattle yard, loading platform and a number of industries all of which generate a lot of business for this developing town and, of course, the railway. Apart from Evaton, there are the two branch lines to Mt. Elli and Lakeside plus all the towns along the way that also generate a lot of business to justify daily passenger and freight trains in this opening up area of Oregon.

Being close to the snowfields, the branches enjoy a brisk winter season of special passenger trains for skiing enthusiasts with heated passenger cars, and of course, the amount of business it generates in the towns. During spring and summer, the fertile earth provides plenty of work moving prime cattle, sheep, wool, wheat and timber to local and overseas markets. With primary and secondary industries supplying our own country's needs, an ever expanding export market, a growing sound economy, a jobless rate of less than 1%, winter and summer tourism on the increase, the future of these highly productive branch lines is secure.

Well, you have read the fiction, now read the facts. My wife Eva and I lived in a large home on a large block of land where I was fortunate to have a 24'0" x 12'0" room under the house with double brick walls, a smooth concrete floor, lined and insulated ceiling and good natural light in which to build my O Scale empire. This was behind the garage of the same size which was also my workshop. Over the years, I had built and exhibited a number of portable HO and O Scale layouts, but this was my first permanent O Scale layout.



4-4-0 No. 53 with the local passenger has just exited the tunnel and is entering the Evaton yard. This loco was kit bashed from a Rivarossi 4-6-0 with added detail, weight and the original small motor. It is not very powerful, but runs well enough to haul a two car passenger train.

In designing the layout, I kept in mind the number of permanent layouts I had the unfortunate job of helping the builders destroy because they had to move – something they thought would never happen. Therefore, my new layout was built on lightweight baseboards measuring 6'0" x 2'0" and 6'0" x 2'6" It was then bolted onto free standing bench work, which was also portable, just in case we had to move one day. This bench work is 4'0" high, a comfortable height for hand laying track and a good viewing height. Underneath are two rows of shelving for storage.

The O Scale Resource July/August 2016

The frames were made from 2" x 1" pine timber on edge with three intermediate spacers of the same size timber and diagonal braces of 1" x 1" timber, with all joints being glued and screwed. The tops were sheeted out with ¼ inch plywood glued and nailed onto the frames. These frames were light and strong; the diagonal braces eliminating any chance of twisting. Upon completion, the frames were laid on the concrete floor and weighted with full gallon cans of paint overnight while the glue was curing. Then, all surfaces top and bottom were coated with a mixture of left over solvent based gloss, semi-gloss and flat enamels well stirred. It dried to a semi-gloss grey colour which sealed the timber thus preventing moisture penetration which causes distortion and warping.

The roadbed consisted of strips of 1/8" cork for straight and curved track, the curves being formed by cutting the cork from the centre to the outside of the curve about every ½". These strips were then glued in place with an acrylic glue and weighted overnight. When dry, the cork was lightly sanded to remove any bumps or unevenness.

Ties were cut from Californian Redwood on my circular saw using a 100 tooth blade, which left a very smooth finish. They were then glued to the cork strips with an acrylic glue and sanded smooth when the glue had dried.



The conductor on caboose No. 943 is receiving instructions from the Station Agent in Mount Elli yard. This is an original Atlas caboose that has been fitted with extra weight, metal trucks and wheels, then painted to represent one of the SP&S more modern cabooses.

The sander used for sanding the cork strips and ties was made from a 12" x 2" x $\frac{3}{4}$ " inch piece of pine. The ends were rounded so that they would not dig into the ties and on top, saw cuts were made across the width 1" in from each end about $\frac{1}{4}$ inch deep. The abrasive paper was stretched along underneath and around the ends overlapping the saw cuts. Two pieces of $\frac{1}{4}$ inch steel angle $2\frac{3}{4}$ inches long are forced down into the saw cuts to stretch the paper and held in place with a screw through holes in their centres. Before laying the rail and spiking it in place, the ties and cork were given a coat of thin grey undercoat, which dries flat, to give the timber a weathered appearance.

Peco nickel silver Code 124 rail was used for the main lines and Code 100 for spurs, Shinohara HO spikes for the Code 124 and Shinohara HON3 for the Code 100, four spikes per tie. And they say men do not have any patience !!!



The Lakeside station building is an Atlas product, reduced in depth with a scratch built roof. Inside, the operator is seated at his desk.



Here are Lakeside's two main industries, breakfast cereal boxes at this stage, with correct buildings on the "to do" list. A slide switch to operate the turnout is visible in the foreground.

After carrying out the necessary electrical work, and of course running a few trains just to test the track, the track and turnouts were ballasted with various colours of HO Scale ballast as the size appeared to be about right for an O Scale branch line.

To achieve a rusty, used look, the sides of the rails were painted with a dull redish coloured paint and the tops wiped clean when the paint had dried. For a further weathered, used look, a coat of "weathering goop" was applied with a 1" brush over the whole lot, rails, ties and ballast. This "goop" is made by dissolving one part of black shoe dye in fifteen parts of rubbing alcohol. Use in a well ventilated area, otherwise you may feel a little light headed!



The scratch built freight house and platform at Evaton. The roof came off the Atlas reduced size station building at Lakeside. Inside, all the walls have top and bottom plates, studs and bracing the same as the engine house. It is built entirely from styrene sheet scribed by the author to represent boards.

A word here about the turnouts. They were built in "jigs" made of ½ inch plywood with photocopies of the turnout plans glued in place then protected with a couple of coats of clear gloss polyurethane. Small nails with the heads cut off held the rails in place, while lengths of stiff steel wire were soldered across the tops of the rails. When complete, the whole turnout was lifted out of the "jig", placed on top of the prepared ties and spiked. Afterwards, the steel wire was unsoldered and the rails cleaned of solder.

More trains were then run, of course, to test the track and turnouts! The O Scale Resource July/August 2016



Older flat car No. 1319 was shot in Mount Elli yard waiting for a load. This is one I built entirely out of timber as per the prototype with hidden extra weight, metal trucks and wheels.



Fresh out of shops, 0-6-0 No.8 is entering Mount Elli yard with a freight. This is a Sunset Models brass U.S.R.A. loco bought 35 years ago that I have painted. The large can motor and toothed belt drive makes it a very powerful and quiet loco. The original Atlas box car behind is one I have painted with extra weight, Athearn trucks and metal wheels.



The cattle yard at Evaton is entirely scratch built out of timber cut by the author with two types of cattle waiting to be loaded. Old reliable 4-4-0 No. 53 is switching in the yard.



This will be the main industry at Mt. Elli, Powershift Tractors Inc. It will have a proper building and display area soon, which is also on the "to do" list. The steel wire in black plastic tube with a knob on the end to operate the turnout slide switch still requires hiding.



One of the engine house staff is going for a "you know what"! Inside is a toilet, cistern, wash basin and piping.



The engine house staff are having a break before moving those crates inside. Just viewed inside the building are steps from the outside door, a work bench, a tool board on the wall. Further along are a pot belly stove and chimney that can't be seen in this shot.

To get rid of the "plywood plains", scenery was next on the agenda. This was built up from various layers of expanded polystyrene foam glued together with an acrylic glue and weighted until the glue dried. Shaping was then done with a hacksaw blade, a keyhole saw and a wood rasp. A good vacuum cleaner was essential after the shaping to get rid of the "snow storm".

Over the foam, a coat of two parts plaster to one part sifted sawdust with a teaspoon of a red oxide dry colour added to the dry mixture was well mixed. Water was then added, stirred to a thick, creamy consistency and applied with a 3" brush and a putty knife for the awkward corners. This mixture dries quite hard, and as well as providing texture, it protects the soft foam. By adding the red oxide dry colour, if the plaster is chipped at any stage it has an earthy colour instead of glaring white.

On rock faces and cuttings before the plaster has set, the rounded end of a putty knife or old table knife was used to run horizontal lines to represent stratas. The same method was used in cuttings vertically to represent blast holes.

After the plaster was thoroughly dry, which took several days, flat plastic household paints slightly thinned were used to colour the plaster applying one colour on top of another with the same brush while they were still wet so that one colour merged into another. When dry, the extra detail of Woodland Scenics, trees, bushes, weeds, rocks etc. were glued in place.



This flat car, No. 4356 with the rail load, has just been switched into a siding at Mount Elli to wait for unloading. It is one of the original AHM models with extra detail, weight, Athearn trucks and metal wheels. The load is old brass Code 100 rail suitably "rusted". It is heavy and tracks very well. In the background, is another original Atlas box car with extra weight, Athearn trucks and metal wheels. I copied the colour scheme from an HO Scale Accurail box car, so, I can only assume it is correct.

Along one 24'0" wall, three 6'0" long sections were set up for the main station, yard and loco area. As a temporary measure, two "L" shaped corner sections 6'0" x 6'0" were built with a tunnel on one, a deep cutting on the other in each corner, and open ground in the centre where the two units met. Down the other 24'0" wall from the corner section, were two 6'0" long sections with three spurs and a pivoted sector plate to connect the three spurs, so that a loco could be released to run around its train.

The reason for all this "temporary" work was that I had put up my hand for a layout visit at a forthcoming O Scale convention. It was finished in time, the visitors arrived at 2:00 pm and the last were kicked out the door at 7.30 pm !!! I must have done something right, as several of the visitors started construction of their own layouts soon after.

After the layout tour, I was keen to start on the rest of the layout and designed a ficticious branch line in Oregon. My good friend, John Lee, came up with an even better design with point to point operation and a continuous run, the best of both worlds.

THEN THE CRUNCH CAME BEFORE I COULD START ON THE NEW LAYOUT.

As previously mentioned, we lived in a large home on a large sloping block with a large number of stairs front and back with ever increasing maintenance causing problems. Eva and I had discussed it over the years; so, the move was made to our current smaller home on a much smaller FLAT block with NO steps. Our new home has an 18'0" x 16'0" double garage attached to the house in which I had to fit our car and two work benches, leaving a space of 18'0" x 8'0" for my layout. This definitely was a case of squeezing a quart into a pint pot! There was not enough room for the original layout, so, the two corner sections and "fiddle yard" are now part of my friend Brian Thomas's O Scale layout in Canberra, Australia's Capitol.

The main station bench work only was set up down one 18'0" wall, and bench work from our previous home set up as an island section. A new piece of baseboard joined them at one end with a wide hinged lift up section at the other end. New baseboards were built for the island section and bolted onto the bench work.



Pulling into the Lakeside station road. The Chevy pickup is waiting to receive some freight.

The design was that it would be a point to point and continuous run with Evaton on the upper level and Mt. Elli on the lower. There were a series of health problems after our move, so it wasn't until nearly two years later that work recommenced on the layout. To get things running, the lower level track was installed first so that at least I had somewhere to run a few trains.

Initially this worked well, but, if a loco failed or a vehicle derailed on the outside while I was operating from the inside, I had to go under the wide lift up section on a mechanic's garage creeper to rectify the problem. The O Scale Resource July/August 2016 33 I kept bumping my head and shoulders on the underside of the lift up section; so, sponge rubber was fitted, but to no avail. With old age not creeping on, but galloping on, the body said enough is enough! Don't laugh, it could happen to you one day if you have lift up sections.

So, I made an executive decision and changed the design to a point to point on the same level. Another reason for the change was the fact that Evaton on the upper level would have had two turnouts underneath it on the lower level with very limited access, something I have never liked. I should have asked John Lee to design



this layout also!

Evaton station and yard baseboards were finally installed on their bench work, two new sets of baseboards 3'0" wide with a scenic board down the middle were built and bolted to the island bench work. This left a space 1'6" wide for two new branch line stations and yards, one on each side of the scenic board. Not a lot of space, but it was a case of "cutting your suit according to your cloth".

At the Southern end of Evaton is a curved turnout leading to two branch lines, the left hand curve to Mt. Elli, and the right hand curve to Lakeside, both tracks into tunnels, under a

box car by myself?" A dilemma at Evaton!

"How the Hell am I supposed to load all this stuff into that mountain in the corner and onto the island section bench work.

All the track and turnouts in the Evaton station and yard are hand laid, so, the same was applied to the new Mt. Elli section. However, I cheated with the track and turnouts for the Lakeside branch which are Peco turnouts and Hego (German) flexible track, all suitably rusted and weathered. The fact was, I was running out of time with so much more to be built.

Oh, I forgot to mention. My curves are 36" and 39" radius, but, being a branch line, I do not run SP& S 4-6-6-4's or 4-8-4's. All my locos and rolling stock negotiate my transitioned and super elevated curves with ease.

With the new design, a re-think on controlling the trains was required. Previously, I had used two hand held tethered controllers, each running off 12 volt, 4 amp car battery chargers that my late father made for me forty years ago. These were the conventional 12 volt rheostat type and were excellent with older open frame motors, but lacked slow running qualities with can motors.

Digging into my stock of items purchased many years ago and put aside for "that rainy day", I unearthed three transistorised controllers with all the bells and whistles such as braking and inertia. They consisted of two Codar (English) controllers, one for Evaton and one for Mt. Elli. The third one was a Locomotion (Australian) brand, and that was assigned to Lakeside. The three of them are powered separately by three ex slot car 12 volt, 1.5 amp power packs. They all perform exceptionally well with my variety of locos, but of course do not have the wonderful world of SOUND.

Initially when the layout sections were built, in order to operate the turnouts, small DPDT slide switches were installed in the baseboards next to the turnouts and connected to the turnout tiebar by a piece of stiff brass wire through holes drilled in the tiebar and the handle of the slide switch. Using the contacts in the slide switch, the turnouts were back wired so that when the slide switch was moved to the straight or curved track, it powered that track and isolated the other track. This was simple, very effective and saved a lot of wiring. The O Scale Resource July/August 2016 34



This is Lakeside looking South, showing the whole 15'4"x 1'6" area. It's amazing what you can put in a narrow space!



Overhead shot of the North end of Mt. Elli with sheep waiting for transport and stacks of freshly sawn Western Red Cedar (the real thing!) to be loaded onto the two flat cars. This is Mt. Elli in it's entirety, the same size as Lakeside, looking South.


Overhead view of Evaton yard looking South with two passenger cars stabled in the foreground spur. The station building on the right is an Atlas.

Later, as the layout progressed with more locos and rolling stock on the tracks, and the buildings in place, reaching across the layout to change a turnout became very hazardous. To alleviate this problem, the slide switches were connected to the front of the layout by lengths of stiff .030" steel wire encased in tight fitting plastic tubing glued in place with large plastic knobs on the end which were turned up on my lathe. This setup, which works very well, was disguised with Woodland Scenics and ballast. At my age (87), climbing under bench work to install point motors and wiring is a definite NO NO!

The exception to this setup is the curved turnout and the left hand one at the Southern end of Evaton. They were too far away for the wire in tube system, so, two turnout motors were installed on top of the baseboard, the slide switches removed, and two momentary contact switches mounted to power the tracks. All of this gear is hidden under the Signal Tower.

With these two branch lines, there had to be a reason for sending empty freight cars to these locations with returning full ones or vice versa, not forgetting the passenger trains as this was 1950 when people still travelled by train. The Evaton and Mt. Elli station buildings are Atlas straight out of the box with some weathering yet to come. The Lakeside station building is also Atlas, but had to be reduced in depth to fit the limited space available. This required a scratch built roof and with a coat of paint, windows "glazed", an operator inside at his desk, and with some weathering, it fits in nicely.



The scratch built engine house at Evaton with the 4-4-0 No. 53 inside and the 0-6-0 No. 8 stabled outside. The engine house has just been repainted, but won't stay like that for long!

The Signal Tower is a Kittle Kits (English) kit, not quite finished, which has been Americanised and will have a detailed top floor. The bottom or ground floor hides the two turnouts already mentioned. When time permits, I enjoy scratch building. The Evaton Freight Depot, Engine House, cattle yard, loading ramp and low relief factory are all scratch built, along with the loading ramps at Mt. Elli and Lakeside. These were all built from plastic sheeting I scribe to represent tongue and groove boards, wood shapes and commercial sheets of shiplap boards, corrugated iron, brick and stone. In stock, are two Ameri-Towne brand building kits which will be used to build low relief buildings at Evaton and Lakeside. Mt. Elli will require several buildings which will have to be scratch built.

The O Scale Resource July/August 2016



This is Evaton's turntable which was converted from HO Scale by very, very carefully removing the track and gluing O Scale track in its place. At present it is "finger" powered.

At Evaton, the turntable is HO Scale that was purchased second hand. The HO track was removed very carefully as it was glued in place, O Scale track was fitted, plastic "brick" sheeting glued to the side of the well and installed in the baseboard. It only needs power to the motor and the two storage tracks off the turntable to be in operation. Lining up each track will have to be done by eye as I do not have the means to buy an automatic track selector.



The local freight is getting ready to leave Mt. Elli yard. That B&M boxcar is a long way from home.

The new setup means that I have lost the continuous run; however, I think I am more than compensated by the amount of operation with a main station generating a lot of activity with trains arriving from and departing to Pendleton. Then there is the Mt. Elli branch with cattle, sheep, timber and produce, plus the industries at Lakeside. This entails a huge amount of switching in making up and breaking up trains, operations of which I thoroughly enjoy.

Building my new layout has been, and is a one man show, because, four of my friends are no longer with us, five have "escaped to the country" and another has moved to different state. It has provided me with a great deal of satisfaction, and at times frustration in building it, but also a lot of pleasure. In the past sixty years, I have been privileged in being asked to help many people build their layouts, having a lot of fun, gaining experience, hopefully passing on some of my experience and forging wonderful friendships.

Hopefully, in the future, I may find some kindred souls to help me operate my O Scale layout in half of a two car garage.

Footnote

You, dear reader, are probably wondering where the names of these towns came from as there are no such towns on the real SP&S Railway, so here's the history:

My wife's name is Eva, hence EVAton.

Our eldest daughter's married name is Jane Lake, hence LAKEside.

Our youngest daughter's married name is Louise Ellicott, hence Mt. ELLI.

The dates of opening these branch lines, 4th of June, 1929, was the day I was born and the 8th of November, 1933, was the day my wife was born.

If you are to enjoy the World's best hobby, it pays to stay in your family's good books!

The O Scale Resource July/August 2016

PROTOCRAFT

ith these components are as follows:

Southern Pacific's 1937AAR design boxcars



Available in Proto:48 or O Scale

8

As the depression waned beginning in 1936, the SP began a steel boxcar acquision program using the new 1937 AAR 10°-0° H design with a 3713 cubic foot capacity. This resulted in 7,994 new cars added to the fleet by mid-1942, contracting with all major car manufactures. This version is of the later design intoducing the new stronger round (W) corner 4/S Dreadnaught ends and steel non-skid running boards. Once again, Boo Rim Precision Scale of Korea, has produced an exquiste and accurate model in all-braxs of this SPS series using builder drawings from both the Pullman Library in Illinois and the Museum of Transportation in St. Louis. The new design ends built by Standard Equipment Ralivay Company of Orkiago-Cickago-Hutchins (Murphy) raised panel roofs, SP style polling pockets, 7/7 Wine ladders and Apex Tri-Lok running boards with 6° ft Youngstown doors, and Equipco Power Hand Brakes throughout. Models built with these components rate as follows:

Version for B-50-20, B-50-21 and B-50-23

Series 83740-94239, 500 cars, Pressed Steel Car Co, - delivered December 1940 Series 83740-94295, 500 cars, Pressed Steel Car Ca, - delivered December 1940 Series 83240-84739, 500 cars, Bethelhem Steel Corp, DF 11, delivered February 1941 Series 83240-83739, 500 cars, General American Transportation Corp-delivered January 1941 Series 8950-083239, 250 cars, Fullman-Standard Car Co, Lot 5672 - delivered Muly 1941 Series 95520-96819, 600 cars, American Car & Foundry, Lot 2370 - delivered March 1942 Series 99690-919, 100 cars, American Car & Foundry, Lot 2370 - delivered March 1942 Series 996920-97619, 700 cars, Pressed Steel Car Co, - delivered July 1942

50-20
50-20
50-21-equipped with 7-Panel Superior doors*
50-21
50-23
50-23 -equipped with 7-Panel Superior doors*
50-23
50-23

*Note: 7-Panel Superior doors are available to o

: In 1956, all cars were renumbered into 114753-117411 Series to free up numbers orehensive series of the SP Historical publication SP Freight Cars, Vol 4, pages 247-261 s for new cars. Refer to Tony Thompson's excellent and





WE BUY Single Brass items OR Collections Please call

www.normsoscale.com/ norm@normsoscaletrains.com







EMD F and E Unit Cab Interiors Parts And Kits Kit # 5790K Shown

31280 Groesbeck Rd, Fraser, MI Voice: 586-296-6116 Fax: 586-296-5642 Open Mon-Fri 10-8 Sat 10-6 Sun 12-5

www.pdhobbyshop.com



BUILDING A SQUIRE DINGEE PICKLE CAR



After I built Ted Schnepf a pickle factory, I knew he needed a Squire Dingee pickle car after I spotted a Heinz car there. They were competitors, so it would be rare, but not impossible, that Heinz was picking up some brine stock at Squire Dingee. So I volunteered that if he would supply a 40-foot flat car, I would build it.

This is not a step-by-step construction article, but rather how I did it. As I had no plans, only photos to work with, I used some insight I had gained building a Soo Line car several years earlier. Squire Dingee had a large fleet of cars, some constructed by car manufacturers and some with tanks mounted on flat cars. I chose to model the latter, hence my need for a flat car with a deep fishbelly. I used a Berkshire Valley 40' flatcar. I assembled it according to the instructions, leaving off the stake pockets and filling the holes.

TANKS

I built the tanks next, as everything revolves around them. I used a section of 2" OD heavy wall PVC for the tanks. (It's actually 1 60/64ths). I used a square to be sure that the bottom was level. I then used a pipe clamp as a guide to cut four sections of tubing 4.5 scale feet tall. I filed the ends smooth and wrapped the tanks with scale 2 x 8's. (I used .0416 x .208 strip-wood). I cut them to length and placed them on a piece of tape as shown in the photos. I applied ACC to the PVC pipe and wrapped the tape around it, holding it in place with several rubber bands. Any gap was filled with a small piece of strip-wood. Do not use grooved siding, as the tanks were made of individual boards, with no gaps between them. The bands were made of string and commercially available band tighteners.

When finished, each tank scales out to a correct 8' in diameter. I sanded the top and bottom smooth. The tank did not sit directly on the flatcar deck, but was supported by 8×8 timbers. I glued them to the bottom.

BRACING

The tanks were held in place on the flatcar deck with heavy timbers. The ones that were next to the tank were grooved to accept the tanks. I sanded these with a jig I made using a scrap of 1 x 4, half of a hinge for a stop and a bushing for the drill bit. It is easier to see the photo than describe it, so see the illustration. I used a $1\frac{1}{2}$ inch diameter hole saw with masking tape wrapped around it to give the proper diameter (the same as the tank), then an outer layer of sandpaper. Make four braces for each tank. I used string to represent the bands on the tanks. I drilled a hole through the tanks and wound the string around the tank, held in place with white glue. See the photos.

Assemble the tanks and braces on the deck. The large timbers are 8×8 's. There is a piece of 8" angle iron at each end that bolts the 8×8 's to the deck. The top 8×8 's are supported by 3×10 's at the ends and 6×8 's in the middle. See the rough diagram. After the tank assembly was completed, I built the roof out of basswood. There are eight hatches on the roof to get the pickles in and out. I did not feel like making eight hatches, so I made a master and poured castings. The hinges were so thin that I had to reject some hatches, but overall, they turned out well. The hatches measured 4.25 feet long and 3.5 feet wide. They were made of 3×3 boards. The four sides had a sheet metal L to protect the edges of the wood and a handle to lift them.

Glue the hatches to the roof and attach the running boards. The remainder of the project was done as constructing any freight car, ladders, grabs, brake gear etc.

PAINTING

I painted the entire car mineral red, but the color changed in later years to a drab color that I would describe as dirty yellow. Ted gave me some dimensional data he had, but no other decals are available. I understand that John Hagan is making white decals for Ted's car. The drab color scheme may be easier as black decals can be printed on a color printer. I hope you enjoy building this very distinctive car as much as I did.



Hatch 1 above: Photo of the mold I used to make the hatches

If you want more information on pickle cars, how they were used and the salting stations, see my book "Pickle and Vinegar Makers of the Midwest" by David J. Leider. Ordering information is at <u>vinpic.dhke.com/</u>



Hatch 2 above: The mold I used to cast the hatches, along with the master and a casting. Notice that I made a simple handle out of brass wire.



Tank 1 left: Tanks were made from PVC pipe. I first made sure that they would be flat on the end.

Tank 2 right: I used a hose clamp as a guide for cutting each section the proper length. I used a simple hacksaw. Turn the pipe as you go to assure you are not cutting at an angle.





Tank 3 above: I placed the boards on a piece of masking tape. Test to make sure you will just cover the tank. I then put ACC on the PVC pipe and ran the masking tape around the tank and held it in place with several rubber bands until dry.

Tank 4 below: When dry, I drilled holes along one side of the tank for the retaining bands. I used string. The holes will not show as they will be hidden by the bracing. There are plastic clamps available to simulate what was used on the prototype, two clamps per band were used.



The O Scale Resource July/August 2016







Sander 1 above left: Photo shows the hole saw with masking tape around it to get to the same diameter of the tank. A final piece of sandpaper finishes it up.

Sanding jig1 above right: This simple piece of wood with a hinge attached holds the 8 x 8 in place as it is sanded. Note the bushing in the wood for the drill of the hole saw.

Sanding jig 2 left: This demonstrates how it is done.

Sanding jig 3 below: An 8 x 8 properly sanded. The section of 8 x 8 glued to the jig acts as a stop.





Final assembly above: I painted everything before final assembly as it is impossible to paint between the tanks once they are assembled



Underside above: This shows the underside before final assembly.

Top below: Showing the hatches and top before final assembly.





Finished above: Finished car with some dimensional data added. I think it captures the look of the prototype quite well.



End above: End view of completed car. Notice how tall the brake staff is. This is correct.

On the next page is David's initial drawing which proves that you don't need fancy computer software, just an idea, pencil and paper.

PICKLE and VINEGAR MAKERS of the MIDWEST

The history and operations of two fascinating industries



DAVID J. LEIDER

<u>PICKLE and VINEGAR MAKERS of the</u> <u>MIDWEST</u>

140 pagesOver 190 photos, 39 in color31 maps68 drawings and illustrationsIncludes plans of vinegar and pickle cars

David Leider has written articles on pickle and vinegar cars and operations for several model railroad magazines, and presented numerous clinics on pickle and vinegar operations.

'David Leider for root SX8 Sterge 3x6 3x6 3x70 3x10 7x10 7x10 7x10 8 long HE WANTANL サイリ 3 " " ž Š 9 D d A B ONTE " 0 0 den. 550



Nissland pickles above: This is the photo that I based the model on. There are a lot of small details. The bottom band is a metal strap, rather than a metal rod. I did not model it that way, although I should have. Next time. The photo also shows how cucumbers were transferred from the salting vats to the pickle cars to be shipped. Wheelbarrows of pickles are dumped into the vats for shipping, hard, dirty work. Brine was pumped into the vats before loading to lessen the fall of the pickles. Notice the side of a vat visible in the photo. Photo courtesy of Rick Mills from the Nisland, Nebraska Historical Society

SDX118 below: This photo of a later pickle car shows the lettering. The car was built by the Thrall Car Manufacturing Company in Chicago Heights, IL. The car was a drab yellow with black lettering. There is possibly an enclosed Heinz pickle car in front of it.



The O Scale Resource July/August 2016

Making And Installing Driver Crank Pins

By Glenn Guerra

In the <u>May/June 2014 issue of *THE O SCALE RESOURCE*</u>, I wrote an article on how I machined driver centers. That article stopped when I had the tires on the centers. Since then, some people asked me to continue with the rest of the assembly. Now that I have finished the fuel tank articles, I will get back to my model. In this article, I will explain how I made the crank pins, drilled the hole in the driver center, and pressed the crank pins in place.

Let's start with the crank pins. There are two ways to make crank pins and each has its merits. One method is to use a shoulder screw for a crank pin. The driver center is tapped and the screw is installed with the side rods. This method has the advantage of just needing a tapped hole in the driver center. The disadvantage is the screw can back out or unscrew while the locomotive is running. This can be fixed with Locktight. The big disadvantage to this for the home machinist is making the shoulder screw. For the thread and the shoulder to be concentric the threads need to be cut on the lathe with a single point tool during the same set up when the shoulder is turned. If you try to make the threads with a die, the chance of the thread and the shoulder being concentric are not good. Since drilling the crank pin hole will have some error associated with it, this will only add to the error, and the sum of the two could be more than the locomotive mechanism will tolerate. If you are installing a different driver center on an existing model that uses a shoulder screw for a crank pin, by all means reuse the crank pin that came with your model. It will have been made on a screw machine and will be spot on for accuracy. I decided to make a press in crank pin for my model.

When making a press in crank pin, there are two things that are critical. The first is the diameter of the part that presses into the driver center. This is an easy dimensional tolerance for a home machinist to achieve. By using a reamer for the hole, it is very easy to get the correct diameter for the hole. The diameter of the crank pin can be turned on most any lathe to plus or minus a half a thousandth of an inch. This will give you the interference fit you need. The other diameters are not that critical since looser seems to work better in models. Also, since you will be turning all the diameters at the same time, they will all be concentric. When planning how to make the pin, I considered how I would measure the critical diameter. This would need to be done with a micrometer and not a caliper since the micrometer is more accurate. I needed to keep in mind how I would get the micrometer on the part to get a good reading.

Drilling the crank pin hole in the driver center is a bit critical, but it can be done with just a drill press. By making a fixture to hold the driver while drilling the hole, you will at least make your whole set of drivers the same. If they are all the same, the model will run fine. To copy an existing driver is a bit more work, but uses the same fixture. Install your old driver in the fixture and use it to locate the center of the hole. Then, clamp the fixture down and remove your old driver. Install your new driver, drill the crank pin hole and then ream it to size.

I want to mention again that this is not the only way to do this, but this is the way I did it. Hopefully, I will explain why I did things so you can see where the critical steps are. By understanding some of this, you can come up with a method that works for the tools you have. That covers the basics; now lets look at the photos to see what I did.



The first thing I did was make a drawing of the crank pin I wanted to make. The model I wanted to make had a split bearing on the main rod with the main rod is on the inside. In the drawing, the main rod will run on diameter B. The side rod will run on diameter A. Diameter D is the critical dimension as it will be the press fit into the driver center. I am tapping the hole with a 00-90 thread. I felt the pin would be delicate and did not want to push on diameter A when installing the pin. This was one of the reasons for the diameter C. Diameter C is to give me a shoulder to press on when inserting the crank pin. It will also give me a little space between the main rod and the driver center. If you are retrofitting an existing model with a different style of driver center, use the crank pins from the old drivers and save yourself some work. If you are starting from scratch like this, I would recommend always making a drawing.



I started with a piece of leaded steel. The alloy was 12L14, which is a very common alloy for screw machine and other machining operations. A small amount of lead in the steel lubricates it and makes it very free machining. The tires on many models are made of this. You can buy it in small quantities from McMaster Carr. I used a carbide tipped tool as shown. I set the tool up in the holder so I could cut the diameter and leave a square shoulder where I stopped. You don't need a carbide tool to cut leaded steel, but you will get longer tool life.



The first step was to turn the rod to .125" diameter, which is diameter C on the drawing. Take a cut and measure the result. Then, advance the cross feed a known amount on the dial and take another measurement. This will tell you about the dial on your lathe. Sometimes the dial will tell you how much the tool moves, and other times it will tell you how much the diameter changes. On my lathe, the dial tells how much the tool moves. When I advance the tool .010", I am actually making the diameter smaller by .020". Once you take a few cuts and are getting close, you will be able to see how much more you need to take off. For example, say you measure your diameter at .137". That is .012" larger than what you need. To make the diameter .012" smaller you need to advance the tool half of that or .006". Do that, take a cut and you should have it. If you end up with .126" in stead of .125" don't worry. This is a non critical diameter, but it is good to practice your feel for the lathe on operations like this. The caliper works fine for these dimensions.



Once I had the correct diameter for diameter C, I set the dial on the cross feed to 0 as shown. The next diameter I will cut is D – that is the critical one. This step is not necessary and does add some error. If you have two diameters that are concentric and critical, it is best not to reset the dial, but it requires more math. For my next cut I need to move the tool .016", and now it will read direct off the dial. If not set on 0, you need to pay close attention to the numbers. If you are starting at 42 on the dial and want to advance 16, you need to add 16 and 42 to get 58. You will notice that there is no 58 on the dial. It ends at 50, so you need to subtract 50 from 58 and get 8 which means you need to turn the dial until it reaches 0 and then go 8 more. It's the more accurate way, but it's harder to keep the numbers straight.



Once you have the main diameter C turned, set the feed on your compound to 0 as shown. Always feed into the work and stop at 0. Don't back up to 0. All machines have play in them, and the only way to negate the effect is to always set your dials when you feed in. I used the compound to feed the tool .093" for the length of diameter D which will be cut next.



Now, using the main carriage feed, advance the carriage until the tool touches the end of the stock as shown. If you need an exact length on the next diameter, back the tool off and advance the carriage a bit more. Then, advance the cross feed to face off the end of your part. Now your tool is at exactly the end of the stock. Back the cross feed off to your 0 mark and advance it around .010" to take a cut. Now advance the compound .093", which is two complete .040" turns plus .013" more on my lathe. Stop and back the compound off so you can check the diameter. By using the compound to advance the tool, I was able to use the calibrated dial on the compound to advance the .093" I wanted. I should mention here that you need to make sure your compound it set square to the cross feed. To check the compound, back it way off and cut as long a diameter as you can on a scrap by advancing the compound. Then, measure the diameter at each end. If there is a difference, you are cutting a taper and the compound is not set square.



Here I'm cutting diameter D on the drawing – this is the most critical dimension. For this, it is best to use a micrometer as shown. Right now the micrometer is reading .096" and I want .093" since I am reaming the holes to .092". I need to advance the cross feed by .0015" to take .003 off the diameter. It is actually not a good idea to leave your last cut so small as it is hard to get repeatable results. It is best to do your first cut a little less and then finish with the second cut around .010" less on the diameter.



To make the next cut, I ground my cut off tool to look like this. I needed a sharp corner to be able to cut the flange, and I wanted to feed from right to left. I could have come in with a tool similar to the first one I used that was designed to cut from left to right, but to me that seemed to complicate things. I would need to change gears on the feed for my lathe to get the feed screw to go the other way, or use the compound and feed from left to right into the flange. So, take your pick as to which way you think would work best for you.



Here is what my special cut off tool looks like when advancing the cross feed to cut. I need to advance .016", so I did it around .008" on the first pass. The tool gave me a nice clean cut along with a sharp corner on the flange, and did cut from right to left. It is not the optimum tool for such a cut, but it did get the job done and that is all I wanted. Like the other cuts, I made a first pass and checked the diameter before making the final cut. I polished the surface with a little fine wet/dry sandpaper when I was done. Then, I moved the compound .093" and set up to cut the diameter A on the drawing the same way.



In this photo, I am drilling out the hole I want to tap with the 00-90 thread. Use a starter drill first, then the final drill. Make many small advances with the drill and back it out often. The deeper you go, the harder it is for the drill to eject the chips. They will clog the drill and the drill will start to wander. It will also bind and break. It looks like I made the part the wrong way here, and the smallest end should be out. The diameter D was the most critical, and I needed to be able to get at it with the micrometer, which is why I did the turning in this order. I tried it the other way, and had a long area of diameter D to be able to get the micrometer on it. Try both ways to see which way you like best.



This is another result of grinding the cut off tool the way I did. As you cut the part off, the sharp point of the tool will cut through at your part and leave a clean cut like this with no burr. This does impart a side force on the cut off tool, and it will flex and bind if you try to do a deep cut. I clamped the tool up close and only taking a shallow cut, so it worked.



Next, it was time to make the fixture for drilling the crank pin holes in the drivers centers. I used a cut off of a bar of aluminum I purchased from the local hardware store. The black is marking pen and works good in place of layout dye. I scribed a line down the center of the bar. The location is not critical, it is just for reference. What I will do next is drill and ream a hole for a pin that is .001" less than the center hole in the driver center. This is the same reamer you would use to make the driver bearings with. Then, I went to the lathe and made a pin. I used the parallels to make sure my fixture was parallel to the vice and the drill press table. That way my pin hole would be perpendicular to the face of the fixture.



Here I am drilling the main center hole. I will ream it to .155", so I started with a #26 drill which is .147".



Here I am reaming the hole. Notice I bolted the vice to the drill press. I just changed from the drill to the reamer, making sure I was on the same center as the pilot hole.



Now I have the pin in my fixture and a driver set in place. I used one with the hole already drilled for the crank pin to make a point here. As I mentioned, many of you will be using this to replace a driver on an existing model with a different type of driver. Use your old driver here if it is similar. If you are replacing a spoked driver with a disc driver, you will need to orient the disc driver and fix it in place also.



Here you can see I have drilled holes and installed two roll pins to locate my drivers. Now, every driver I place in the fixture will be oriented the same. If your replacement driver is not the same, you will need to install the locating pins differently. This really has no bearing on the function; it just makes the drilling and reaming easier. It also holds your existing driver better for the next operation which is locating the existing crank pin hole.



This was the tricky part for me. The quill on my drill press is not too tight, therefore, I was not sure how this would work. The idea is to pick up the center of the existing crank pin hole. I tried the reamer first thinking it would slide the vice into position. The reamer had too much give. Then, I tried a countersink and that worked better. As I mentioned, the quill on my drill press has some play in it, and I noticed the counter sink moved when trying to find the hole. I played with it a while until it would just seat with no movement. Then, I bolted the vice down again. I checked the alignment a few more times, and I thought I was very close to the center of the existing crank pin hole. With a better drill press, this would work and give enough accuracy for the model to function. You will see how this worked for me.



With the vice bolted down, I drilled and reamed the crank pin hole in a blank driver. Here I am reaming the hole. Now I should have a driver that matches the rest of the drivers in my set. I was not very happy with the play in the quill of my drill press, but that is what you get with cheap tools. It just takes a little longer to get some results.



Here is my driver ready to install the crank pin. I made the pressing tool on the left to seat and push on the flange of the pin. This kept me from pushing on the end of the pin which would cause it to distort.



I used my drill press to push the crank pins in. The force required was not much, and the drill press would handle it. The real advantage to using the drill press was that I could clamp the insertion tool in it. This held the crank pin straight while it was pushed in. If you go back and look at the <u>November/December</u> 2014 issue of <u>THE</u> O <u>SCALE</u> <u>RESOURCE</u> you will see an article where Fred Oakland converted a 3 rail engine to 2 rail, and he talked about this same idea. In Fred's case he, had his arbor press modified so he could hold the axles straight while he inserted them into his wheels and gears.



My drivers ready to go. I need to put them on axles and quarter them, but that is another whole article. I will keep you posted on that.

So, this is how I did it so far. I think the first thing you need to determine is what are the critical dimensions. With a press in crank pin, the press fit is critical. Generally, you want the pin to be .001" larger than the hole. This will give you a good interference fit. The side rods on most models have at least .005" of clearance or they will not run. There needs to be some slop. For this reason, the bearing surfaces for the rods are not that critical, therefore, the way I cut them should work. The next thing to consider is trying to plan your work so you can get to those dimensions easily. When using the lathe, think through the steps. By paying attention to the steps, you will eliminate some unnecessary steps and dial turning. I must admit I am not very good at that yet, but each job you do will show you more of this. Then, look for repeatability. Whether the crank pin holes and axle hole are on .25" centers or .255" centers will not matter. What will matter is that the whole set is the same. That is what will make the model run smoothly. The simplest way to get to repeatability is make a fixture and do all the drivers at the same time. If I had a milling machine, I could find the exact center of the holes and get back to the same starting point. This is fine in a perfect world, but with a few correct steps, you should be able to get very good results with simpler tools.

My next challenge is to quarter and mount these wheels on axles. I will keep you posted on how that turns out.

KITBASHING A Korber Models Sanding Tower

By Daniel Dawdy

For the open house I had in conjunction with the Chicago O Scale Show this past April, I wanted to get some ground cover, mostly dirt and cinders, around the roundhouse area. Leading into the roundhouse, I have an Ogle coaling tower by Golden Gate Depot. In reality, it's probably too large for this smaller servicing facility, but I like the look. I then bought a cinder hoist from Crescent Locomotive Works. I have a water plug which will give the impression that there is a large tank out of sight. I do not have enough room for a sand dryer complex, so I thought I would get a sand tower and then create a siding to bring in sand by covered hopper a was done in many locations.

I saw that <u>Korber had a sandhouse</u> which I did not have room for, but they also now offered a sanding tower for \$25.00. So I ordered the tower, and a few days later had the kit. For the money, it's good basic kit with a PVC tank, well done lasercut tower sections, a tower cap and some wire for piping. If this were to be a

background model, I may have built it as is, but it was going to be next to the other buildings close to the front of the layout.

Looking back through my photographs, I found a few pictures of sand towers. One taken in Hawk Junction, Ontario Canada on our way to



Korber Models #305A O Scale Sanding Tower

Hearst for Christmas 1993. The other earlier photo is the CXS ex-C&O yards in Ludington, MI. These pictures gave me an idea of the extra detail I could add to the Korber model.

I leaned more toward the Ludington version as it was closer to the Korber model. The first thing was to put the lasercut tower together making sure it was square. This was going to be painted and not stained, otherwise I would have stained before gluing. There was a



Sanding tower in Algoma Central yards, Hawk Junction, Ontario Canada December, 1993.

Sanding tower in CSX yards Ludington, MI. August of 1990.



lasercut round piece of wood for piece of wood for the top. So now that I had the tower built, I set the PCV on the platform and the cover on the top of the PVC. (Figure 1) There was a piece of heavy gauge black coated wire in the kit. To install this, you were to cut a hole in the side of the tank and make a 45 degree bend to represent the fill hose. Here is where I started to add some of my own details.

From a previous project, I had some Plastruct piping pieces in my parts stash. I started by drilling two holes in the tank. One higher for the fill, and the other lower for the sand hose. I glued in a flange (Plastruct F-4), and then glued on a 90 degree elbow (Plastruct E-4) (Figure 2).



Figure 3

Now it was time to work on the tank. I cut a bottom for tank from some scrap styrene using my circle template. (Figure 3) I cut it just a bit larger, glued it to the tank, and once the glue was dry, sanded it to shape. Again, following the Lundington picture, the railing uprights were made from brass wire. Five pieces were cut and one end bent to a 45 degree angle and inserted into holes that I had predrilled into the tank. ACC was used to secure the wires into the tank. The wire extended up about four scale feet from the top of the tank. (Figure 4 next page)



Figure 4



Figure 5 The O Scale Resource July/August 2016

For the railings themselves, I bent some wire around the tank just to get a close shape, then, beginning with the end, soldered the railing to the first upright. After getting it started, it was just a matter of going around the uprights and soldering the railing as I went. This was done twice to complete the railings. (Figure 5)

A ladder was needed and many of you may recognize it as an InterMountain boxcar ladder. Hey, it works and I have a pile of them! The last thing I added were standoffs for the tank using small bits of 1/8" styrene for the legs or standoffs. That completed the tank portion for now. (Figure 6)



Figure 6



Figure 7

Figure 10

The tower itself needed a ladder, and again back to my stash, I found a Plastruct ABS ladder (KL-8) and cut that to fit going up the inside of the tower. (Figure 7)



Figure 8 above and 9 below show the hole cut into the tank base, along with small pieces of styrene tubing used for the legs or standoffs.



The kit had a hole cut into the wood for the tank base large enough for a scale man to get through at the top of the ladder. (Figures 8 and 9)

Placing, but not gluing, the finished tank on top you get an idea of the total look of the new tower. (Figure 10

Next, I headed into the paint shop for a covering of engine black. I thought about silver for the tank, but since this is 1947 and sitting in a steam terminal, black won out. Now, the tank can be glued to the top of the tower. Next, I made the fill pipe. To do this, I glued a 90 degree elbow onto the tank, attached a piece of 1/8 tubing (Plastruct TBFS-4) and then used a small piece of heat shrink tubing (green piece) which went down to a flexible rubber tube for filling the locomotives. The rubber tube is just a piece of insulation removed from a 24 gauge wire. (Figure 11 next page) Now I needed a way for to all of this to fit together and install it. First up was a concrete pad for the tower to sit on. I cut a piece of Bristol board, styrene would also work, and made a scale 8' x 17' pad. These measurements were completely arbitrary to fit my space. The length was to ensure I had room for the fill pipe to drop into the pad, as well as, a small building to house the controls.

I put a thin layer of spackling compound in the board, and not too carefully, smoothed it leaving a few small gouges to show wear. (Figure 12) Using a straight edge, I pressed it on the still soft spackling to represent expansion joints. (Figure 13) Once dried, it was painted Old Concrete from my Floquil paint stash.



-Figure 11

A small building was needed for the controls as the sand would come in on covered hoppers and then dump into a pit to be drawn up into the tank. Back to the scrap box, I found some grooved siding. Using 2' x 2' scale lumber supports were glued inside to square it making a about a 4' x 4' x 7' scale foot building. I framed the door with strip wood and stained it. I then used paper for hinges with small holes poked into it with a pin for screw holes, used a piece of wood for a door handle, and finished it off with a piece of corrugated metal for the roof. (Figures 14, 15 and 16)



Figure 15

Figure 16

That about wraps it up. The concrete pad was glued in place on the layout and held down with weights until dry. Another flange was added to the pad for the intake pipe to attach to as seen on the next page. Add some trash, oil barrels or other details you want to the pad to make it more interesting. Is this a one hundred percent accurate replica of a sanding tower? No, but it is a good inexpensive alternative and allows even a beginner to kitbash with very little cost.





Engine servicing area. No 203 has just come off the turntable and is heading out for helper service. Now I just need to cover the bricks and scenic the background.





Clamps. We use a lot of them. For holding fascia while gluing, for building up spline roadbed and too many other things to mention. These can get pricey. I have seen pictures on many layouts with 50, 60 or more clamps holding spline while it was being glued. A good 3 or 4 inch spring clamp will run you at least \$3.50, maybe more. If you are building your mainline using the spline technique, you will need a lot of clamps, and upon completion, will have a large investment in something that you may not need. Several maybe, but 50 or 60?



When it came time for laminating fascia and doing spline roadbed on my Richmond, Danville & Southern, Glenn Guerra showed me another way.

Using all scrap wood, we started with two pieces of pine about 6" x 2" x 3/8" thick. Any scrap will do here. About 1/3 of the way from one end, end drill a hole for the carriage bolt or machine screw. I used 3/8" x 4", but again, the measurement is not critical. Place the bolt through the wood, add a washer and wing nut and there you have it – a cheap clamp!

To use these, you want the non-clamping end, normally the longer end, but that depends on the height of your material being clamped, to have the same amount of material as is being clamped on the clamping end. That's where the real small scraps of wood shown above come into play. Confused? Don't be; there's more detail in the pictures on the next page. As they say, "a picture is worth a thousand words".

The O Scale Resource July/August 2016

The picture below show fascia being laminated together. Once glued, clamp every few inches. Notice at the bottom of the clamp is where the scrap wood come in. That scrap needs to be roughly the same thickness of the material being clamped. If we did not account for the thickness of the material being clamped, the the boards would not lay flat across the item being clamped.



With the laminated fascia being 3/4" and no scrap material at the bottom of the clamp, there is a large V looking opening at the top of the clamp.

By adding some scrap wood at the bottom of the clamp, roughly equal to the material being clamped, there is now a full flat clamping surface

If you need a wider area, such as this fascia, simply flip the clamp upside down with the shorter portion of the clamp at the bottom.



This shows the clamped spline while gluing. Notice here that I used the shorter end for the clamp and large scrap stock for the other end. This provided me with more strength on the clamping end.



The O Scale Hauler



THE ULTIMATE TRANSPORTATION AND STORAGE SOLUTION FOR YOUR O SCALE TRAINS

www.oscalehauler.com oscalehauler@verizon.net The final Masonite is being glued to the laminated fascia. Here, I flipped the clamps because if the height of the Masonite.

I still have a few store bought clamps in my arsenal for different jobs, but for spline and fascia work these homemade versions work well. You may even have enough parts in your scrap box and hardware bin to make them at no cost.







Red Caboose GP-9's

Undecorated Red Caboose GP-9 kits \$59.95 each

Order from www.desplaineshobbies.com



We stock the complete P&D drive with brass trucks. Complete drive includes brass trucks and gear box shown, brass body bolster, motor, and drive shafts. Part # PDH2201K \$260.00



We stock many brass detail parts. See the complete list under O Scale America at www.desplaineshobbies.com One piece brass frame for your Red Caboose GP-9.

The frame is completely milled and drilled to fit the Red Caboose GP-9 chassis with no modification to the chassis.

The frame is designed to use the P&D drive and trucks.

Part # OSA1055

\$59.99



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 :-)

This is what may happen if crews complain about the heat in the summer months. It's the new "convertible" cab. Bring your own chairs and control stand!



WHAT'S ON YOUR WORKBENCH TODAY?

We are continuing our series to show 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 <u>daniel@modelrailroadresource.com</u>





Here is my small contribution, it is a scratch built bulkhead flat car (yeah, just when I was done Atlas came out with theirs... Go figure!). It is all made out of basswood cut from a log acquired from a local forested area.

Here is what I managed to cut on from that log on my table saw.



Using that wood and some birch plywood, I found a plan on the Internet and designed all the parts in my computer. Using my laser cutter, I cut and engraved all the parts.



Even the end platform and ladders are wood. I then added an old set of Bettendorf plastic trucks and Kadee couplers. I cut some tree branches from the yard and voilà! From a log to a log-carrier!!



Here is a shot of my modeling studio. I made the cupboards in my shop. Who said model railroading has to be expensive?

The O Scale Resource July/August 2016

Scene Around The Layout

Hey Daniel!

I just want to say thanks to you and the others who have made *The O Scale Resource* such a great online magazine. I really enjoy it and you are doing so much for the hobby.

I am currently building my 1960's themed B&O layout and have about ³/₄ finished.

Best,

Don Smith



I have admired Don's posts on many forums over the years. We are proud to feature his work, as well as anyone else who wants to submit pictures of their layout scenes. Depending on your response, we would like to make this a regular feature. \sim Daniel Dawdy

So get those cameras and cell phones out and start shooting! High quality JPG or TIF files only. Email to <u>scene@oscaleresource.com</u> with a description of your picture.

O SCALE SHOWS & MEETS

The O Scale Resource Magazine will now be providing a free listing of upcoming events. This small, text only listing will include the Event, Date, Location, Type of Event, and Contact Information. <u>Click here</u> to go to the sign up form. This form will take your information, and we will publish it in our next issue. If it is an annual event, you will need to submit your information every year.

O And S Scale Train Show July 10, 2016 Hudson Elk's Hall 99 Park Street Hudson, MA Train Show and Sale - O Scale/Hi-Rail and S Scale/Gauge Sun. 10 AM to 4 PM Adults - \$6 Family - \$8 Tables - \$20 Contact Larry Grant 508-337-6661 BigBrotherLar@netzero.net http://trainweb.org/metrowest

The 10th Annual St. Louis RPM (Railroad Prototype Modeler) Friday, August 12th and Saturday, August 13th, 2016 Gateway Convention Center Collinsville, IL golden1014@yahoo.com

Eastern Pennsylvania O Scale Show August 13th, 2016 Strasburg Fire Department Strasburg, Pennsylvania Email: <u>jdunn8888@hotmail.com</u>

The 48th National O Convention Indianapolis Indiana

September 22-23, 2016 Wyndham Indianapolis West 2544 Executive Drive Indianapolis, IN Please come join us in Indianapolis September 23rd and 24th at Wyndham Indianapolis West located at 2544 Executive Drive, Indianapolis, IN 46241 317-248-2481 to make your room reservations for the 48th year of the Indianapolis 'O' Scale Convention

Southern New England O Scale Model Train Show and Open House October 1st, 2016

161 Chestnut Street Gardner MA 01440 Dealers, Displays, 2-rail, P48, 3-rail scale for sale. The Club's O Scale layout with its 850' double track main line opens at 10 AM. Free Parking and lots of great homemade food. Contact Maynard Stowe, Phone: 413-369-6010 or sneshowchairman@snemrr.org godfreys78@aol.com Eastern Pennsylvania O Scale Show October 14th, 2016 Strasburg Fire Department Strasburg, Pennsylvania Email: jdunn8888@hotmail.com

23rd Annual Railroad Prototype Modelers Conference RPM Chicagoland (aka Naperville RPM) October 20 - 22, 2016 Sheraton Hotel and Conference Center, Lisle, IL <u>mike@rpmconference.com</u> <u>http://www.rpmconference.com</u>

Cleveland 2 Rail O Scale Meet November 5th, 2016 Lakeland Community College Auxiliary Gym 7700 Clocktower Drive Kirtland, Ohio Email: J1d464@yahoo.com

Chicago March Meet March, 17, 18 and 19, 2017 Weston Lombard Hotel Lombard, Illinois Email : info@marchmeet.net Web Address: marchmeet.net

O Scale West 2016 TBA



Have an upcoming O Scale event? We would like to help publicize it. Send us the information up to one year in advance, and we'll place it here along with a direct link to your Website and/or Email. Click here to send us your information.

CLASSIFIED LISTINGS

MANUFACTURERS	NICKEL PATE MODELS	DEALERS
O SCALE TURNOUTS [™] , INC. [™] Ready to Lay on your Right of Way ¹⁰⁰ info@oscaleturnouts.com 810.231.4461 O-scale, 2-rail, precision	DF MARYLAND 13732 Lakeside Dr. Clarksville, MD 21029 Phone: 301-854-3200 Email: NKP48@aol.com	Caboose Stop <u>Caboose Stop Hobbies</u> <u>301 Main St.</u> <u>Cedar Falls, IA 50613</u> <u>Phone: 319-277-1754</u>
engineered, high quality, prototypical looking turnouts. Made in America	Third Rail Division	trainguy34@mchsi.com Hobbies trainguy34@mchsi.com Web: www.caboosestophobbies.com
The people people" Gam26S Fam & Gam26S unparalleled creftsmanship	Sunset Models Inc. 16 Beta Court, Sam Ramon, Ca. 94583 Ph 925-820-7701 www.3rdrail.com	RGSRR Hobbies 1102 Dyer Rd Whitewater, CO 81527 PH 970-245-5100
Phone: 573-619-8532 Email: orders@scalefigures.com Web: scalefigures.com	BOATS 🛦	www.rgsrrhobbies.com
Free Shipping See our web site for details	hulls & fittings for your layout or diorama www.seaportmodelworks.com 603-498-3849 sales@seaportmodelworks.com	Proto 48
Cast resin items for your S & Sn layout. Tunnel portals, bridge piers, abutments, culverts, and retaining walls. Trackside details and sage brush tree armatures.	Freight Car Loads Retaining Walls Tunnel Portals	13052 Ratliff Run, Fishers, IN 46037-6266 Phone: 317-774-5755
	P.O. Box 1200 Masle Valley, Washington USA 96038 www.choochenterprises.com	Email: jfpautz@comcast.net
DETAILS A MUST	PRE OWNED	18498 Half Moon Street, Unit 203 Sonoma, CA 95476-4835
Advertisers Index	Jim Hackworth MODEL TRAINS	Phone: 707-935-7011 Email: protocraft48@yahoo.com Web: www.protocraft48.com
Allegheny Scale Models Pg 74	jhmtrains@columbus.rr.com Web : www.jhmtrains.com	Please let

Anegheny Scale Models	<u>rg /4</u>
Altoona Model Works	Pg 19
<u>B.T.S.</u>	Pg 4
Berkshire Car Shop	Pg 74
Clover House	Pg 41
Crow River Products	Pg 41
Delta Models	Pg 19
Des Plaines Hobbies	Pg 74
East Gary Car Co.	Pg 19
JV Models	Pg 70
Korber Models	Pg 74
Norm's O Scale Trains	Pg 41
O Scale Hauler	Pg 73
O Scale Kings	Pg 19
O Scale National	<u>Pg 4</u>

RESOURCE

SCALE

S. INFORMATION TO USE

<u>Pg 41</u>
Pg 41
Pg 74
Pg 19
Pg 19
<u>Pg 70</u>
<u>Pg 19</u>
<u>Pg 19</u>

Please let our advertisers know that you saw their ad in The O Scale Resource

