

THE

O

RESOURCE

NEWS, REVIEWS, INFORMATION TO USE


*We're putting the "modeling" back
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Volume 11 No. 1

September/October 2023

SCALE

10
CELEBRATING
YEARS



3D Resin Printing 101
New Tracks & My Build
O Scale... Old School Style
Use of Jigs in Model Building
Scale-Craft in The Post War Era
CB&Q's BUY WAR BONDS Chair Car
Fixed: Out of Scale Windshield Sculpt on 3rd Rail
Early E Units
And So Much More...



Published Bi Monthly

The Model Railroad Resource LLC
407 East Chippewa Street
Dwight, Illinois 60420
815-584-1577

September/October

Volume 11 No. 1

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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

3rd Rail E5 leads a wartime Expo with the War Bonds car. Photo by Santiago Pineda

BILL OF LADING

- 2 Bill Of Lading**
- 5 From the Publisher's Desk**
- 10 News You Can Use - New Items of Interest**
- 18 For Freedom's Sake: Depicting 4514, CB&Q's BUY WAR BONDS Chair Car**
By Santiago Pineda
- 25 The Use of Jigs in Model Building**
By Robert S. Robbins
- 26 Welcome to 3D Resin Printing 101**
By Dan Dawdy
- 51 Addressing the Out of Scale Windshield Sculpt on 3rd Rail Early E-units**
By Santiago Pineda
- 58 Tar Paper Shack Diorama**
By Phil Camp
- 61 Scale-Craft In The Post War Era: What Happened?**
By Jay Morris
- 68 O Scale... Old School Style Vintage O Scale 1926-54**
By Carey Williams
- 72 New Tracks Modeling**
By Contributing Editor Jim Kellow MMR
- 96 New Tracks May 24, 2023 My Build**
- 100 So, What Are You All Up To?**
- 104 Show Schedule**
- 106 Classified Ads**
- 106 Advertiser Index**



The Model Railroad Resource, LLC publishes *The O Scale Resource* and *The S Scale Resource*. 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.

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From the Publisher's Desk

This issue represents our 10th year as your O Scale Resource. I never thought an online publication would work as well as it has, much less last this long. With *O Scale Trains Magazine* going to a once a year format, it leaves us as the only resource for current and up to date news and advertising. We want to say a big thank you to all our readers and supporters. With over 6000 readers per issue* we are the largest and best source for Scale O.

* Based on IP address

We have meet so many wonderful people in this hobby as we travel around to shows and layouts. We have also lost many. Are there new people filling in the void? From what I see and read, I think so. There is a thriving community on Facebook of younger modelers and builders. We don't necessarily see them at shows as being younger they have more family responsibilities than some of us.

On a side note of shows, don't forget about the 41st Annual Cleveland Two Rail O Scale Meet on November 4th from 9am - 2pm. It will again be at the UAW Hall, 5615 Chevrolet Blvd. Parma, Ohio 44130. Contact Sam Shumaker, 440-248-3055 or Email at j3a5436@gmail.com. Tables are still available, there is free parking, a food truck, layout tours and more. Admission \$7.

Is the sky falling? Well, my first National Convention was back in 1982 and the sky was falling then and so it goes. **O Scale Central**, (formally the O Scale Kings), is making great strides in getting out information and helping to promote O scale two rail. **The O Scale 2 Rail Product Guide™** is a fantastic resource for O scale products. So there is work being done. The question I would have in the series of promotion is, what's the end game? How do we measure the success of what we are trying to do?

There will be an O Scale Central Zoom on Sunday afternoon September 17th at 4:00 pm Eastern with a panel discussion which I would invite all you to participate in. The more people we can get involved and on the same page the better. The Zoom meeting number and access code are: Meeting ID 274 516 0415 and Passcode 640611. Also, upcoming sessions will be held on October 22, 2023, November 19, 2023 and December 17, 2023. The Zoom meeting and passcode will be the same: Meeting ID 274 516 0415 and Passcode 640611. These Zoom meetings are open to all.



As to the future of O scale, here are the thoughts of Dave Stewart used with permission. Dave's railroad, **Appalachian & Ohio**, is on it's second version and was open at the Denver National this past June.

"I guess I'll jump in and add some thoughts to this important discussion. This is a "look in the mirror" moment. What are we seeing? What are the real issues at work?"

I believe that the attendance and decline (demise?) issues are as much a reflection of societal change as any of the other issues/challenges put forth (as a personal observation from a shrink). Simply put, I believe social media and the Internet has left its fingerprint on literally everything. A person can get information and interaction from their laptop – immediately and for free, so why the need to travel or join? The Internet is a simple, endless entree without the cost or commitment. And that's another societal issue. (just look at the plummeting marriage/birth rate. Are we immune to this contagion?) Social data reveal an increasingly lonely and isolated populace as a result.

Membership and/or attendance to almost everything is way down, as noted previously by others. Clubs/events, churches, organizations, etc., and yes, conventions, numbers are declining. Why be involved when you can sit in the virtual gallery and slip out when done? And that is what's happening. Ours is far from the only entity trying to survive and chart a course forward – looking themselves in the mirror.

And this is also a generational phenomena. Our particular near, or already achieved, geriatric congregation still greatly values the in-person fraternity that are Meets and Conventions. Also, a fair number of us have a definite love/hate relationship with all things electronic, so that too, for now, encourages our in-person attendance. (I personally had technology-bypass surgery long ago.)

And we are "aging out", and that's not a bad thing. It's a natural thing. With some wonderful younger exceptions, the above thoughts have a lot to do with why "the torch is not being passed" to those younger. It is not entirely our fault. In this cultural/societal reality, it just is. We can not change the force and direction of the current, only recognize it. And that current has made us "look in the mirror" and assess reality.

I like the words of Vin Scully, the decades long play-by-play announcer for the Los Angeles Dodgers upon his much lamented retirement – "Don't be sad that it's over. Be glad that it happened." Or as Proverbs 3:1 tells us, "To everything there is a season..."

So it may be that I had the dubious honor of being one of the presenters and layout tours for what may be the final O Scale National. But it was an honor. To those of you who drove the hour from Denver to Milliken to see the A&O, you made the preparation entirely worth it. What a sweet time of fun and fellowship (and not equaled by a virtual tour.)

Long live the Meets and other events, for now. A final thought if I may – If I were 20 years younger...

- I would personally build a portable O scale switching module and do my best to "trick-it-out" with jaw-dropping monolithic structures along a high backdrop with attendant meticulous, yet ubiquitous, detail everywhere.*
- I'd attempt to construct an artistic scene with such realism that it pulls you in from the aisle to dissect all that's there.*
- I'd set it in the modern era with graffitied rolling stock (Ufff..) and exquisitely detailed and weathered motive power.*
- I'd put a deep-throated Loksound/Tang Band sound in these modern engine(s) for the "in your face" reality that draws you in, all controlled with a cordless throttle.*
- I would have it set to about 50" height with over module-reaching and module-directed halogens to give good, shadow-box like light to everything.*
- THEN, I stand in front and wait... for the "younger" crowd to form.*

To the particularly interested true RR viewers, I would put the throttle in their hands and coach them thru some moves, allowing them to feel the mass and visceral experience of operating O scale, which we all know and love. All this together is what sets O scale apart and is perhaps the greatest evangelistic tool in our arsenal.

- Then I, or accomplices, would attend all the large conventions/gatherings and seek a commanding location to set up. To help defray costs, I would look to some manufacturers for sponsorship, just like NASCAR (Non-Athletic Sport Centered Around Racing). This way I'd go to the masses with the message. What would be the result? We may never know. But I am not younger. Any takers??*

I witnessed Jim Harper's small, beautiful P:48 module at the '87 Eugene NMRA National. As an unrepentant HO scaler at the time, I was unalterably smitten by what I saw. How much more so today with the addition of sound and lighting. Little did I know, that was the beginning of the O scale A&O. Over time, I have had some guys confide in me that because of the A&O, they changed scales; took the plunge and moved up as I did. What if we could build on that by bringing the experience to them? Again, any takers?

Thanks for listening. It has been, and will always be, a great blessing.”

*David Stewart
Milliken, CO
www.aorailroad.com*

Well put David, what do you all think? Rather than funneling your responses, good or bad, to the issue I have set up an email that will be funneled to the O Scale Central members.

Any comments please send to: OComments@oscaleresource.com and let's hear what you have to say.



As for this 10th anniversary issue, we have a long over due follow up to my earlier 3D printing article. Welcome to 3D Resin Printing 101 is based on a clinic I gave at the June 2023 O Scale National in Colorado.

Santiago Pineda is back with two informative articles. First, For Freedom's Sake: Depicting 4514, CB&Q's buy war bonds chair car; and second, addressing the out of scale windshield sculpt on 3rd Rail early E-units.

Also in this issue, Jay Morris talks about Scale-Craft in The Post War Era: What Happened? Carey Williams is back with O Scale... Old School Style Vintage O Scale 1926-54 and Robert S. Robbins shows us the importance of The Use of Jigs in Model Building. And if that was not enough, Phil Camp shows us his Tar Paper Shack Diorama, not to mention New Tracks, Show News and so much more.

Lastly, we reworked the back issues on the Website. It was hard to find an article, so now each magazine is listed in order with the complete table of contents. You can use the search function in the browser to search the page. You may choose to read on-line or download the PDF. Check it out here <https://oscaleresource.com/WP/index.php/complete-back-issues/>.

Happy Reading & Happy Modeling,

Amy & Dan Dawdy

Blowdown

When steam and water are forced out of the bottom of the boiler to clean out sediment and buildup in the boiler. Or in our case, readers blowing off steam.

We have received a few Emails from [George Barsky](#) to this magazine, as well as O Scale Central, about smoke. We did explain that smoke coming out of locomotives is not really a thing in 2 rail O. Yes, some like it, but it's messy and smelly. But he is persistent if nothing else.

"I think there should be a discussion about smoke in O scale 2 rail steam loco models. Smoke is commonly available in all other scales and especially common in 3 rail. The P48 rivet counters require exactitude in every dimension but resist a smoking steamer or Alco diesel. 2 rail O scale is expensive and the option for those who must have smoke is not available in factory RTR models. Boo Hiss. We know about after market smoke like ESU, but who wants to disassemble a \$2000 lok? The 3 rail market loves it.

Also 3 rail O gauge steam locomotives have smoke but 2 rail O scale steam locomotives are forbidden to have smoke.

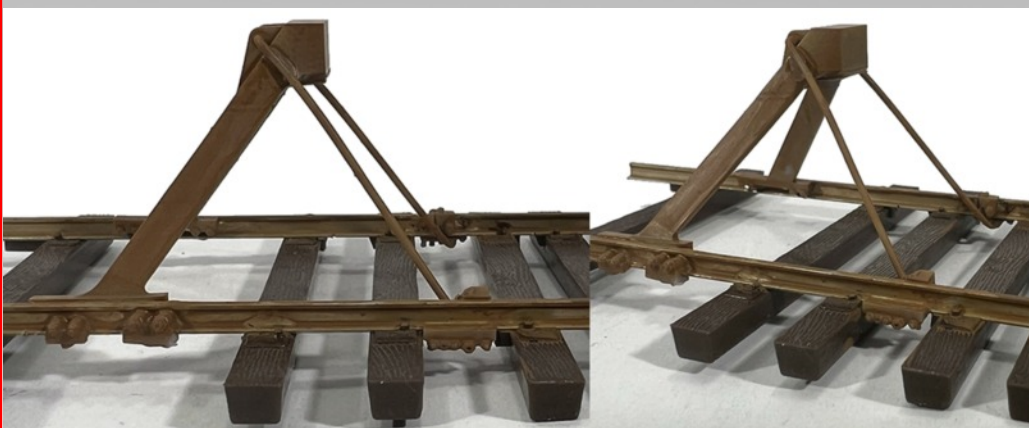
But American Flyer S gauge 2 rail steam had smoke in the 1950's. And now all other scales have smoke, BUT NOT 2 RAIL O SCALE. An ANACHRONISM for sure."

So what are your thoughts on this or any other subject you want to spout off about? Something bugging you about the hobby or trials and tribulations you have gone through? Send them in and get famous just like [George Barsky](#). [Click here to let us know](#).

Hey, it's cheaper than therapy!



Model Railroad Resource 3D Division - Resin Parts



Announcing our new BUDA No. 30 Clamp Type Steel Bumping Post. These can still be found all over, on customer sidings, yards and more. Kit includes the clamping parts to attach to the rail. Only \$8.95

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O-Scale Transition strips will be available in the next few weeks and are currently under development

41st Annual Cleveland Two Rail O Scale Meet

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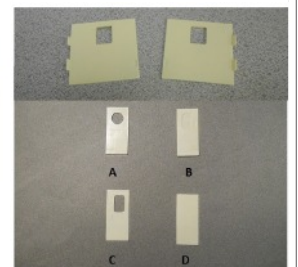
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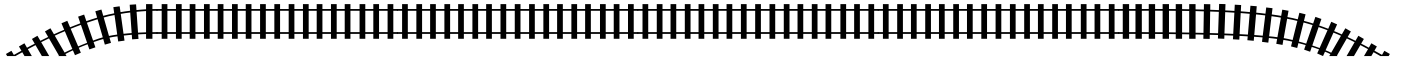
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NEWS YOU CAN USE



As of July 2023 , [Hangman Creek Diorama](#) has acquired the tooling, patterns, and inventory from Mike O’Connell to exclusively distribute, produce and manufacture products that were part of the O scale Ultra Scale II Line.

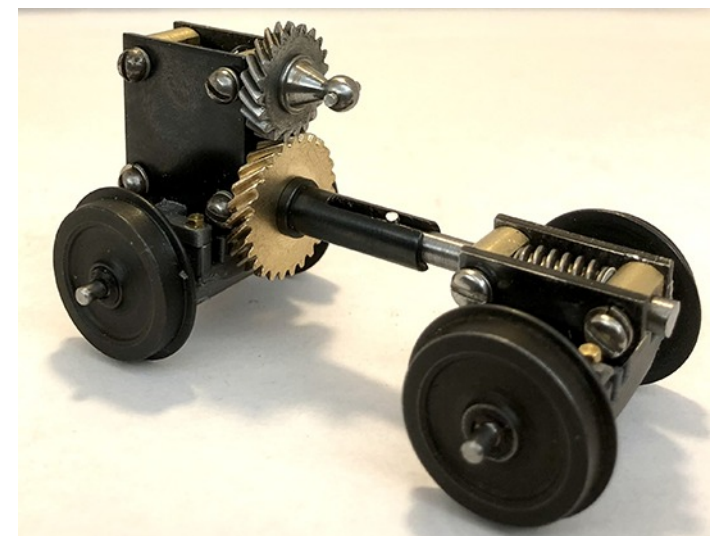
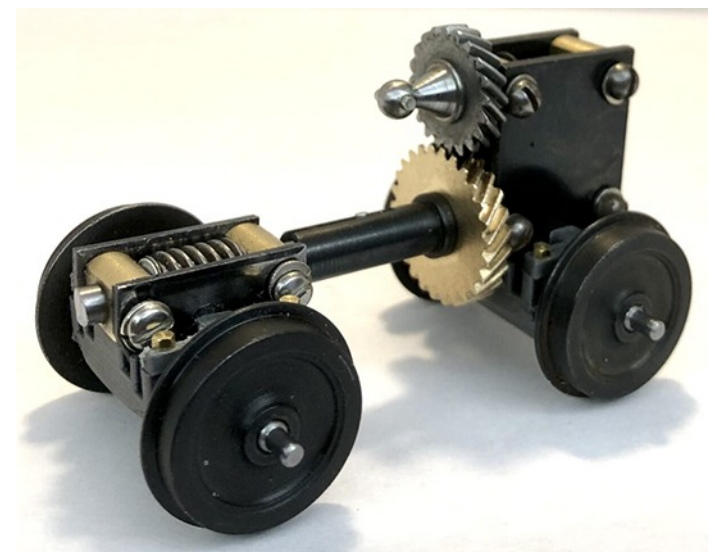


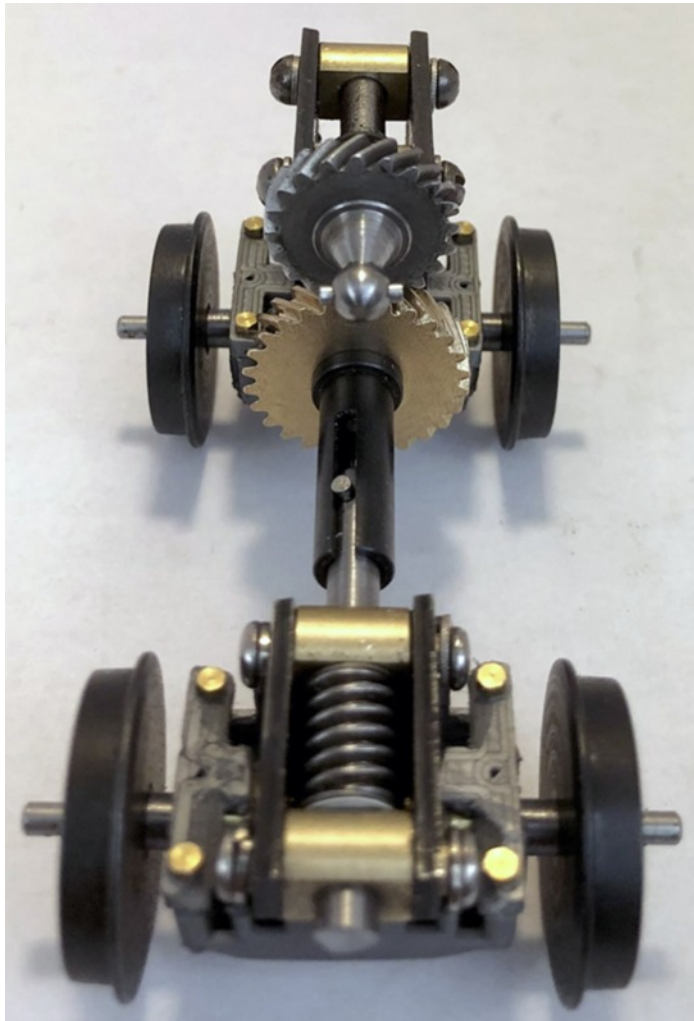
We expect to be in production of the building and Rolling stock kits progressively by Jan 2024 and have some of the detail parts for sale at [UltraScale2.com](#) and available now. We are looking forward to getting these back out into the 2 Rail/ P48 Communities.



From John Wubbel at All Nation Lines: “SURPRISE” All-Nation now has available the new helical geared Power Drive Constant Torque Transmission for the new F7 A Units and NW2 switchers. These are suitable for replacements or upgrade as well as supporting 3 Rail to 2 Rail engine conversion projects. All Nation drives are known for longevity and endurance over long operating periods.

Stop by and see for yourself at: <https://allnationline.com/WP/?product=all-nation-nw2-switcher-helix-gearing-tower-drive-transmission-40-wheels-assembled-pn373an>





Based on many customer requests to support conversions, our first release for 3 Rail to 2 Rail Conversion for a Lionel GP-35 engine with All-Nation gearing, power drive transmissions in the All-Nation Blomberg Trucks is now available for Ready To Run 2 rail DC.

Our Lionel Conversion in the Canadian Pacific has our recent dual chain drive configuration and our MTH GP40-2 Conversion in the Reading Lines has a single drive transmission. Both are ready to run!



Support for other Lionel (GP-30) as well as MTH (GP- 30, GP-35, GP-40-2, GP60M & GP38-2) 3 Rail to 2 Rail conversions will be forth coming soon.

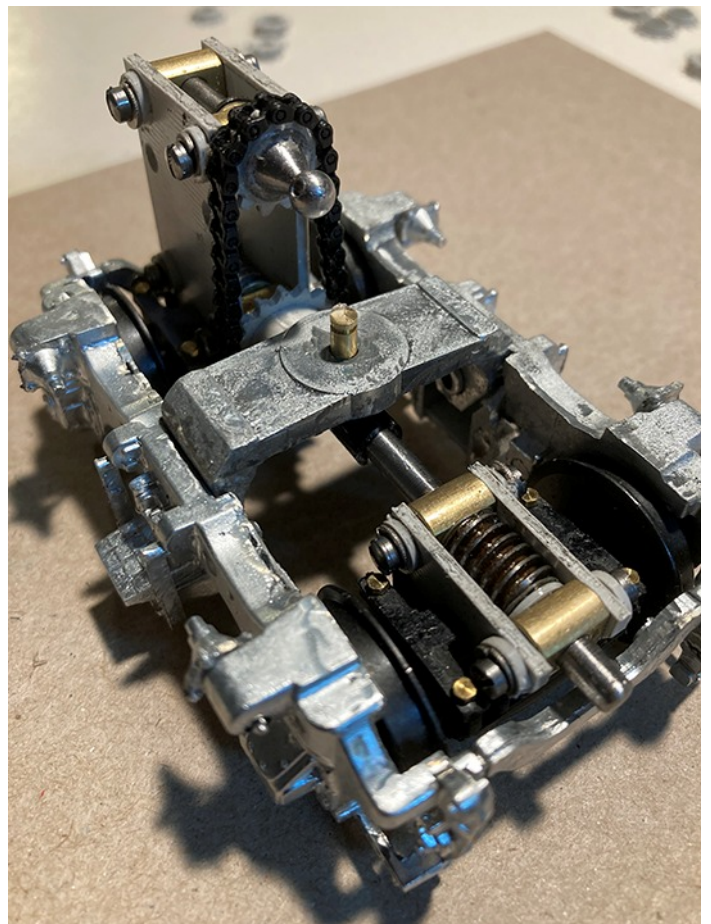
Check out these ready to run conversions at:

<https://allnationline.com/WP/?product=3-rail-to-2-rail-conversion-lionel-gp-35-all-nation-duel-transmission-drive-ready-to-run-n364an>

<https://allnationline.com/WP/?product=3-rail-to-2-rail-conversion-mth-gp40-2-all-nation-single-drive-transmission-ready-to-run-o-scale-pn366an>

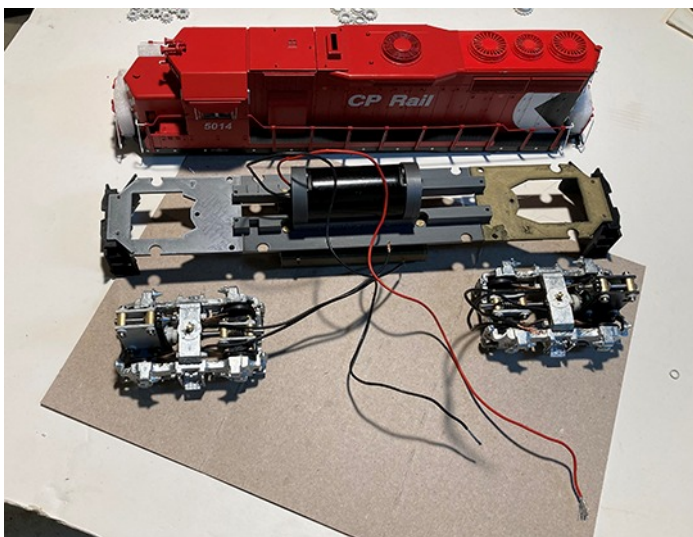


The All-Nation chassis and mechanisms facilitate easy disassembly for future maintenance requirements with replacement parts available to keep your locomotives finely tuned up and running. You can always count on hand crafted assembly of each of your transmissions purchased from All-Nation.



Via 3D Printing, our custom work includes bracket supports of various types for mounting a wide variety of DC motors. For the "Do It Yourself" model builder, component kits are available through our webstore or by special request for single or dual drives in several tower profiles or small gear configurations.

We have built in plenty of flexibility to power your locomotives. Our power trucks are available in 33" & 36" wheel sets in both 2 rail and uninsulated for traction modelers. The default drive shaft is a ball joint but can also be replaced for use with a universal joint connection to the motor.



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Check out all of your transmission needs at:

https://allnationline.com/WP/?product_cat=transmissions-drivers-motors

As always, if there is something you need that you don't see, give us a call as we are always happy to help you make that engine run! John Wubbel, 570-580-7406.

[See their main Website here!](#)

[Art Fahie of Bar Mills Scale Models](#) has some brand new items in their catalog.



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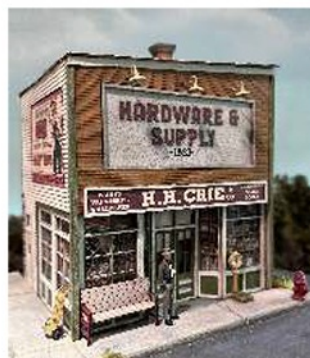
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KIT #0674 Retail: \$79.95
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"MAIN ST. POST OFFICE"
"O"-SCALE

KIT #0814 Retail: \$79.95
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[See all of their offerings on their Website here.](#)

Nick from ITLA Scale Models Inc. has two new models in both O scale and S scale.

S & O Scale "Brick Utility Building". Use this 1 Story Brick Structure line side as a Ground Level Utility Building, a Yard Office, or even on a structure's roof top as an HVAC Mechanical Room / Elevator Head House. Laser engraved & cut in MDF wood with Laserboard windows & trim. All brick walls with "saddle-style" chimney

"Tight Fit" corners Separate Window Sills for ease of paint Laser engraved brick "returns" within window & door openings Window & Roof "vents" Roof Top Access Ladder Colour instruction sheet with paper caution signs Easy to assemble. Sample model shown was painted with "rattle can" matte/flat coloured spray paints, and weathered with Acrylic washes!

Dimensions: S scale - 2 5/8"L x 2 1/8"W x 2"H
O scale - 3.5"L x 2 3/4"W x 2 5/8"H

S & O Scale "2 Story Brick Utility Building". Use this 2 Story Brick Structure line side as an Interlocking Tower, a Yard Office, a Ground Level



Utility Building, or even on a structure's roof top as an HVAC Mechanical Room / Elevator Head House.

A versatile 12ft x 15ft Two Story Brick Utility Structure measuring approx... 3.5"L x 2.25"W x

3.75"H Laser engraved & cut in MDF wood with Laserboard windows & trim.

All brick walls with "saddle-style" chimney, "Tight Fit" corners with brick detail, separate window sills for ease of masking / painting, laser engraved brick "returns" within window & door openings, roof top access ladder, beautifully detailed 2nd Story access Staircase and more.

Colour instruction sheet with paper "caution" signs. Easy to assemble. Sample models shown were painted with "rattle can" matte/flat coloured spray paints, and weathered with Acrylic washes!

[Please see the ITLA Scale Models website for more information and Detail Kits.](http://ITLA Scale Models website for more information and Detail Kits.)



[New from Model Tech Studios LLC.](http://Model Tech Studios LLC.)

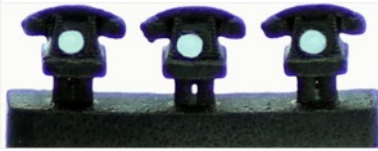
Chef in classic outfit finished figure. All decked out in his apron and hat with a serving tray of pizza.

The classic O scale diner or restaurant waiter or Chef figure will detail your interior scene.



Also new are a six pack of unpainted tree stumps and 1950s-60s era telephones Desk model finished 3 Pack of Vintage Desktop or tabletop-counter Style telephones. Comes Painted for you.

See all their fine products on their Website.



Atlas has new tank cars available. O Master 11,000 gallon tank car. Built in the 1940s and 1950s by American Car and Foundry, this 11,000 gallon specialized tank car was designed primarily for transporting liquefied petroleum gas and became a familiar sight on many of the railroads across the country.



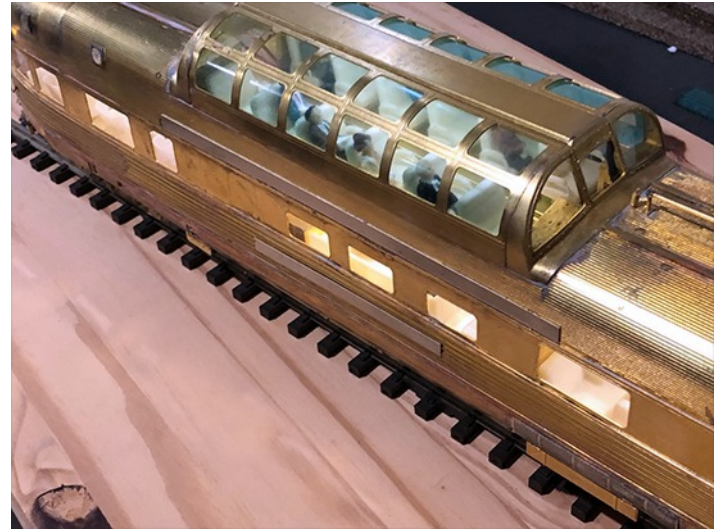
Also they have their Premier Amfleet Passenger Cars in many paint schemes.



See their Website for availability.

Roger Lewis of Wasatch Model Company has some new updated information on the California Zephyr Dome Observation car.

Lights on the Pilot Model of the CZ Dome Observation. Install by ROYZ Trains



Lights are too bright, will be fixed. The Rear CZ sign on the rear end door will be lit of course. The rear end door will be sealed so the light don't show around it. All the roof vents will have boxes behind them so the lights don't show through them. Please remember that this is a Work in Progress.



Greg Viggiano has an item for sale. This hull is a large 1/4" (1:48th) scale GEARING class hull and is the largest fiberglass model World War II destroyer hull available at this time.

The length is over 8' 1" with a beam of over 10 inches and it is designed for radio control operation.

The finished 1/4" scale GEARING ship will weigh about 50 pounds at its operating displacement, which will allow you to run the model on windy days with no problems.



This hull features the shaft exits, strut and rudder locations marked in the hull and comes with a set of arrangement plans. The shafts, struts, stuffing boxes, and props are included.

This hull features the shaft exits, strut and rudder locations marked in the hull and comes with a set of arrangement plans.

More information is available on the manufacturer's website: ([Way Back Machine](#)). All reasonable offers or trades will be considered. Drop [Greg Viggiano](#) an Email if interested.



[Rusty Rail](#) has some new products. Here is the O scale complete mining set. It includes the two mining cars one with ore and one empty, Then a set of mine track 2 straight and one switch and Miner Mike. What a deal. Castings are unpainted. All resin casting.

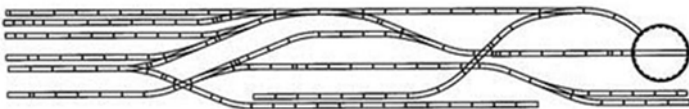


You can buy the O scale two mining cars one with ore and one empty or track set it includes two straight pieces and one switch. [See their Website](#) for details.



While maybe not new, we were made aware of some [layout packages from Atlas](#).

There are five packages to select from. For example the Hoboken Industrial.



This layout is designed for the modeler with a narrow, limited space. A great deal of back-and-forth switching is required to reach many of the sidings.

One of the neat aspects of this layout is the incorporation of the Atlas O's fully operational turntable. The switching possibilities are limitless. Minimum Table Size Required: 4' x 26' and includes the following.

- 2RL #5 LEFT HAND TURNOUT
- 2RL #5 RIGHT HAND TURNOUT
- 2RL 10" STRAIGHT
- 2RL 4 1/2" STRAIGHT
- 2RL 1 3/4" STRAIGHT (4PCS/BLISTER)
- 2RL 36" RADIUS FULL CURVE
- 2RL 36" RADIUS HALF CURVE
- 2RL WYE TURNOUT
- 2RL 45 DEGREE CROSSING
- 2RL TERMINAL JOINERS (1 PAIR/BAG)
- 2RL INSULATED JOINERS - 16 PCS/BLISTER
- 2RL LEFT HAND SWITCH MACHINE
- 2RL RIGHT HAND SWITCH MACHINE
- 2RL HOBOKEN INDUSTRIAL

This may appeal to people who want a one stop solution for a layout. [Check out all five packages here.](#)



[Berkshire Valley Models](#) has a couple of new ore cars. #750 Mine Car is an unpainted 3D plastic part. No assembly required. 18" gauge. #751 Mine Car Dumping is also an unpainted 3D plastic part. No assembly required. 18" gauge.



See these and all the other fine items from [Berkshire Valley Models](#) on their Website.



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July, 2023 Set

11009: Short Lines Set, #1

- TCP-114 Genessee & Wyoming- Yellow
- TCP-115 Genessee & Wyoming- Orange
- TCP-118 Providence & Worcester- Brown
- TCP-119 Providence & Worcester- Orange
- TCP-137 Dakota, Minnesota & Eastern- Blue
- TCP-138 Dakota, Minnesota & Eastern- Yellow



August, 2023 Set

12001: Southern-Central Freight Cars Set, #1

- TCP-181 Kansas City Southern- Freight Car Brown, 1944-1960's
- TCP-188 Missouri-Kansas-Texas- Freight Car Brown, 1944-1960's
- TCP-192 Gulf, Mobile & Ohio- Freight Car Brown, 1944 Forward
- TCP-201 Texas & New Orleans- Freight Car Red, 1949-1955
- TCP-220 National de Mexico- Freight Car Red, 1945-1960's
- TCP-240 Fort Worth & Denver- Freight Car Red, 1945 to Current



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- TCP-5001 Glossy, Sprayable Medium Red
- TCP-5008 Glossy, Sprayable Medium Green
- TCP-5011 Glossy, Sprayable Medium Blue
- TCP-5016 Glossy, Sprayable White
- TCP-5026 Glossy, Sprayable Medium Brown
- TCP-5032 Glossy, Sprayable Natural Wood



These paints are specifically designed with enhanced adhesion promoters for 3D-printed and cast resin models and parts.

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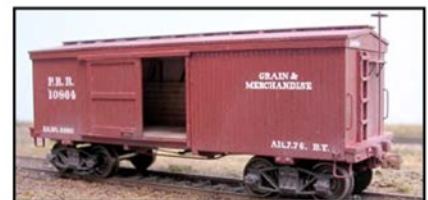
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For Freedom's Sake: Depicting 4514, CB&Q's BUY WAR BONDS Chair Car

By [Santiago Pineda](#)

Email author by [clicking on their name.](#)



*Suburban coach 4514 was "one of a kind".
Here, the finished model poses similarly to a well known photo of it taken on Aug 31, 1942.*

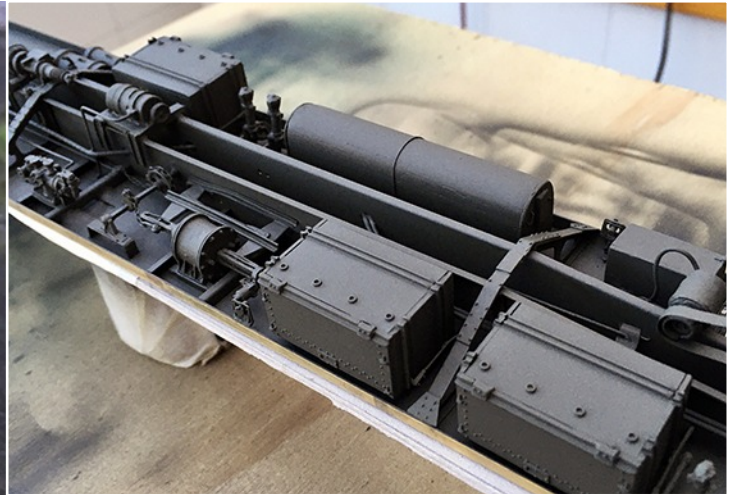
Last June I had the opportunity to give a talk at the Denver O Scale National Convention. In it, I presented an eight-year effort of putting together several consists of my all-time favorite train: The Exposition Flyer. At the end of the talk, I was happy to share my latest project of a unique car that was seen on such train. In 1942, CB&Q chair car #4514 was patriotically painted in US flag colors advertising the Buy War Bonds program. Although just a couple of pictures of the car are known, it was thrown in and out of CB&Q trains from 1942 to 1945. This car plan has never been done in O scale before, but I found a model that with some work served as a tolerable substitute for it. In this article I'll depict that process.

*The custom painted The Car Works NYC rebuilt 70' model I received.
The car was not a perfect match,
but after some alterations, it
resembled the CB&Q coach to a
reasonable degree.*



The starting point was a The Car Works NYC rebuilt 70' thermopane car. I bought this car on eBay for \$100 dollars, so I was off to a good start. After stripping the custom paint job, I started by making changes to the underside. Namely, the removal of a number of parts, the addition of a scratch-built water tank as well as PSC

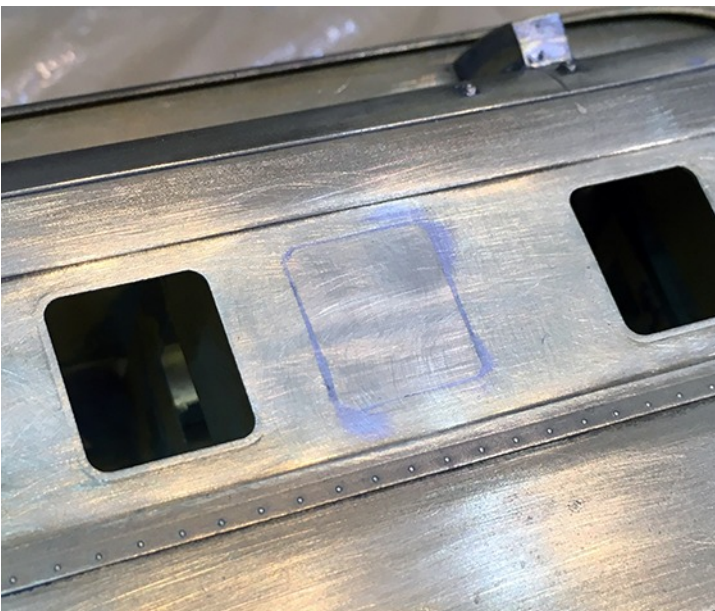
generator parts, and the installation of Wasatch Model Company's Pullman 2410 trucks. While the model's build quality was exceptional, the coupler carrier bar end draft sills and other small parts were loose, so they were promptly re-soldered. Once satisfied with the undercarriage changes, my attention was directed to the car's body.



Left: Notice the added roof details. Grab irons are PSC.

Above: The under carriage after a coat of primer. For this car, both the undercarriage and trucks were painted black.

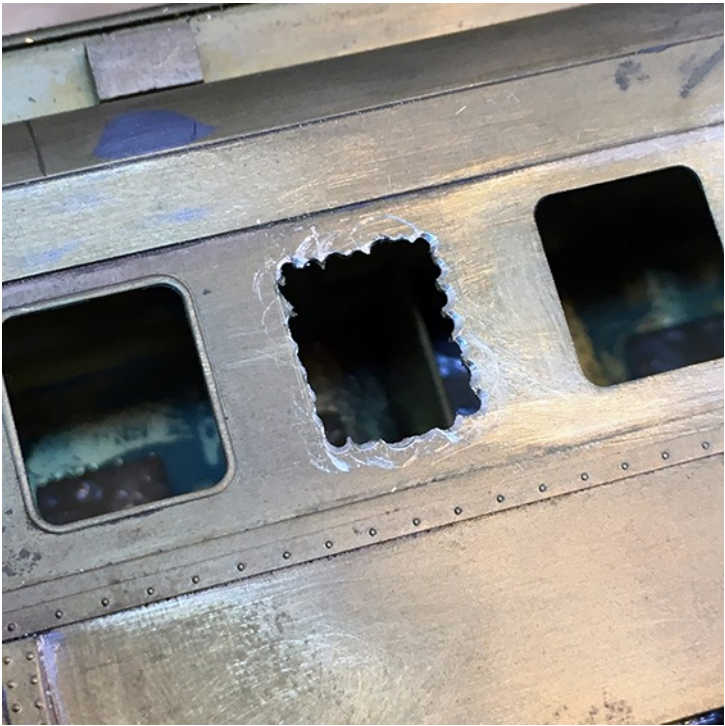
The roof was possibly the most straight forward part of the project. I removed four factory-installed grab irons and installed PSC grab irons with bolt details. I scratch built a small roof vent for one end of the car. Four medium square vents around the clerestory roof were also added. Additionally, I kit-bashed the larger roofs seen above the restroom doors. Finally, the car had a small dent at one end of the roof, this was fixed by melting solder into the dent and subsequently sanding it to shape. Gotta love brass!



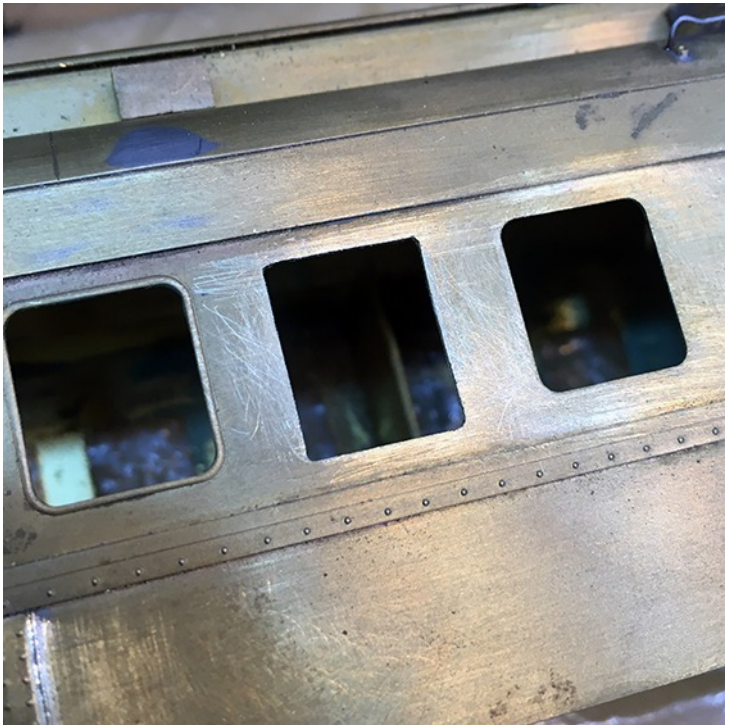
Left: Four windows needed to be covered. Note the sanded down window gaskets remain slightly invisible in this image.

Right: A few batten strips were added. The round window corners were later squared.

The car sides required the most amount of work. First, a total of four windows had to be covered. To do this, I cut, soldered and sanded brass sheets inside the undesired window openings. Later, one window had to be opened on one of the sides. I went about this by scribing the window's outline on the brass sheet, and performing multiple drill holes inside the outline until the piece fell off. To finish the window, I carefully filed as close as possible to the previously scribed window outline.



One window needed to be created. Notice the relief gasket on the left window.



The newly opened window shows the final form for all the remaining windows.

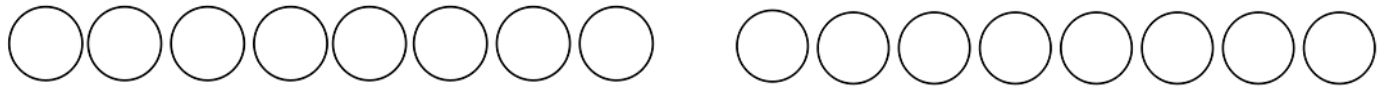


Two coats of primer were applied. The first one to prime the bare brass. The second one to seal the Archer rivet details. In the end, the only brass rivets on the car sides were the ones on the belt and the batten strips.

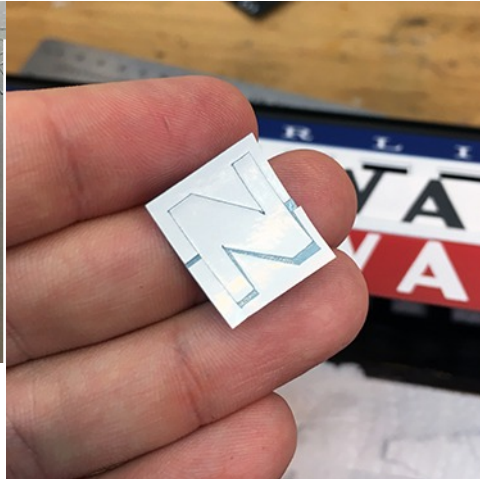
Next, the most tedious part of the process began: filing all the remaining windows to better depict the intended car. The NYC prototype had square shaped windows with curved corners, whereas the CB&Q car had rectangular windows with ninety-degree corners. The low-relief gaskets on the NYC car also had to be deleted. The process took me a couple of days to complete. By the end of the ordeal, I'm sure my lungs were filled with brass dust, but it had to be done one way or another. To enhance the look, I added a small step behind the brass sheet to model the window frames. Besides being prototypical, this added depth and interest to the build. Other additions to the sides were a few batten strips and hundreds of Archer's rivet details. The latter were added after a first priming and then sealed with a second coat of primer. But first, let's look at the artwork that was required for the car.

What made this car special was unquestionably the paint job. For the upper BURLINGTON lettering, I used K4 decals White Roman alphabet in 3.1mm height. Everything else had to be designed from scratch. To create the lower white BUY WAR BONDS lettering, I went back to the technique I used for my Baldwin VO-1000 switcher (See Volume 8 #1). In a nutshell, I created the design in a vector file, and then a vinyl cutting machine cut the design on white decal paper. This allowed each letter to be individually applied as regular decals. With that out of the way, I tackled the making of the Minute Man emblems seen on both sides of the car.

BUY WAR BONDS



After the lettering design was vectorized, it was used on a vinyl cutting machine that realized the design on white decal paper. A printout helped keep the spacing cohesive during application.



I was happy with the size of the emblem, I added several circles to the vector design containing the BUY WAR BONDS letters. Here is the trick, the circle's diameter precisely followed the middle of the black ring on the printed Minute Man design, so the Minute Man decals could be applied later on top of the white circle decals. No masking or extra painting required! Of course, all this had to be done in such a peculiar way because of the fact that centering a printed paper on a vinyl cutter machine is almost impossible, particularly at this scale.

The Minute Man emblem was made in a two-part process. First, the emblem was digitally designed, and then printed on clear decal film.

The celebrated Minute Man emblem was used by the US Treasury in the Buy War Bonds campaign.



For the model, the design was digitally rendered and then printed on clear decal film.



Once I had all the artwork elements ready to go, I proceeded to paint the car. For paint, Tru-Color was used exclusively. Besides the black roof and undercarriage, the prototype wore three more colors: white, old glory red and old glory blue. Looking at the Tru-Color paint charts I noticed the British Columbia Red and British Columbia Blue colors. They seemed like a great match so I ordered them. After testing them, they matched so well I decided to use them straight from the bottle. For once, I was happy that such a thing as the BC Rail existed!



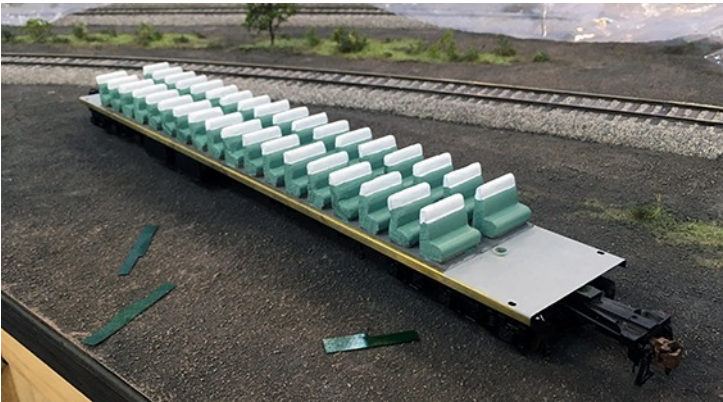
For such involved design, printouts helped keep size and space consistent.

After painting, it was simply a matter of carefully applying the decals while following a printout with the desired spacing. This was a very enjoyable process as the final look of the car started to emerge. Finally, the car was clear coated with Micro Scale Micro Satin Finish.



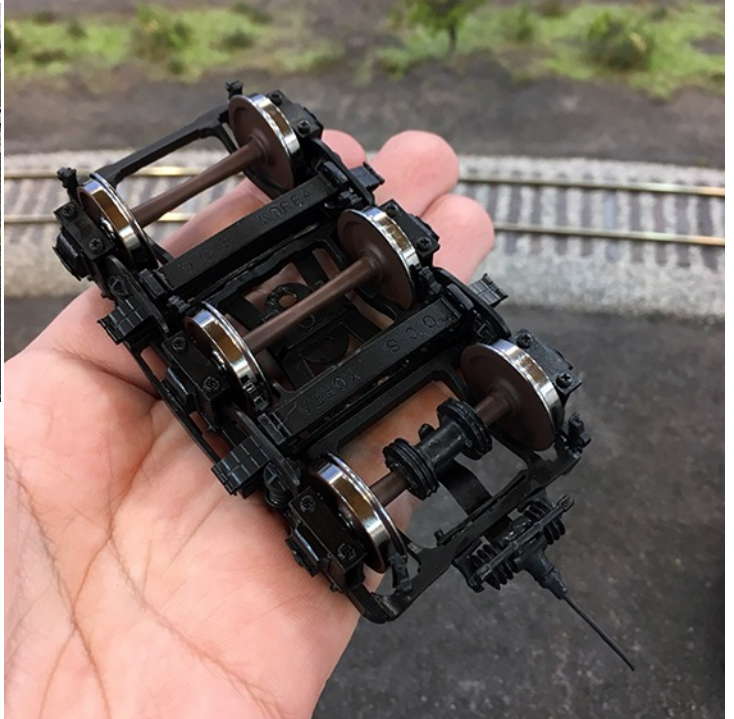
*The car in the process of being painted and finished. Tru-color paints were used exclusively.
The car was clear coated with Micro Scale Micro Satin.*

Glazing was completed by using real glass slides. To improve the model, Pullman colored window shades were also added. And, to model the interior, O scale bench seats from Northeastern Scale Lumber were cut, painted and installed.



Above: Following the car plan, a simple but effective interior was made.

Right: The car rides on Wasatch Model Company's Pullman 2410 trucks with added PSC drive details.



Modeling a year-specific car may not be for everyone. But I have found great satisfaction in modeling cars and consists that may be pinned down to a few short years. In this case, 4514 will only be put into service when sandwiched between other Expo-related equipment. And almost exclusively while being pulled by **Silver Arrow** and **Silver Swift**, a pair of E5A Phase II units, in a beautifully accurate 1942 wartime *Exposition Flyer*.



*The finished car on the layout.
Sadly no color images of the prototype survive.*



*Digitally weathered 3rd Rail E5s lead a wartime Expo.
The ultra-graphic BUY WAR BONDS chair car stands out in the consist.*



The Use of Jigs in Model Building

By [Robert S. Robbins](#)

Email author by clicking on their name.

SO THAT'S HOW ITS DONE!

Editors note: Robert is back again this time with his "Treatise on The Use of Jigs in Model Building". In the March/April issue of The O Scale Resource Magazine, we published his Ethelbert article with over 600 images.

This article is smaller, but we'll do the same as before, we'll start the article with Robert's explanations and notes, and then link to the slide show on-line with over 50 slides in step by step order.

A TREATISE ON THE USE OF JIGS IN MODEL BUILDING

A Treatise On The Use Of Jigs In Model Building.

Having found over the years in building models in 1/2" and 1/4" scales, the use of jigs for alignment, cutting materials, duplicating and gluing are a necessity.

Jigs made from plastic can be made quickly and for any purpose making any job easier.

[To view the slide show, please click here.](#)

[To download a full PDF booklet please click here.](#)
(5.6 Mb file)

ROBERT S. ROBBINS

Welcome to 3D Resin Printing 101

A Clinic from The Denver O Scale National 2023

By Dan Dawdy

Email author by clicking on their name.

Back in June of this year I gave a clinic on 3D resin printing. My aim was to take someone who had no knowledge of resin printing and give them enough information to make a smart purchase and print something.

Now, before we begin, there are a lot of safety issues with any 3D printing. Please see my last 3D article “The Wonderful Frustrating, Exasperating, Maddening, Awesome World of SLA 3D Printing” from March/April issue of *The O Scale Resource* that gives you all the beginning information of resin printing.

You may download the three documents below.

- “Resin Printing 101” contains my clinic with all links working.
- “The Wonderful Frustrating, Exasperating, Maddening, Awesome World of SLA 3D Printing” will contain an article from *The O Scale Resource* and gives you all the beginning information on resin printing. Please read this first if you have not seen it.
- “Drawing for 3D Models” will contain an article from *The O Scale Resource* about designing your models and Considerations You Need to Watch Out For.

Please remember that I am hardly an expert at this. I have enough experience to know what works for me and my printers. I also have a workflow that works for me. And since my prints turn out, that’s all that really matters. If they don’t, I step back and really look at what went wrong as we’ll see coming up. We are also looking at consumer grade printers and not some \$10,000 thing that is out of reach for most of us.

CLICK



I will also link to some great YouTube videos by people who can explain a topic better than I can that are probably easier to follow along, so check them out.

OK, let’s get started.

Resin vs Filament printers

- Resin printers and FDM (Fused Deposition Modeling) printers are two different types of 3D printers with distinct printing processes and characteristics.
- Resin printers, also known as SLA (Stereolithography) or DLP (Digital Light Processing) printers, use liquid resin materials. The printer creates objects by selectively curing the resin, layer by layer, using UV light. This process results in high-resolution prints with smooth surface finishes and intricate details. Resin printers are commonly used in applications where fine details and accuracy are crucial, such as jewelry making, dental modeling, and prototyping.
- On the other hand, FDM printers work by extruding melted thermoplastic filament, layer by layer, onto a build plate. The filament is usually made of materials like PLA (Polylactic Acid) or ABS (Acrylonitrile Butadiene Styrene). FDM printers may be more affordable than resin printers. They are often used for rapid prototyping, hobbyist projects, and functional parts. FDM prints may have visible layer lines and rougher surface finishes compared to resin prints.

CLICK



We all know Resin 3D Prints are amazing, but don't sleep on the capabilities of your FDM 3D Printers!
Click to watch

- In summary, resin printers offer higher resolution and better surface quality, but they are generally more expensive and require specific handling due to the liquid resin. FDM printers are more affordable, versatile, and suitable for a wide range of applications; although, they may not achieve the same level of fine detail as resin printers.

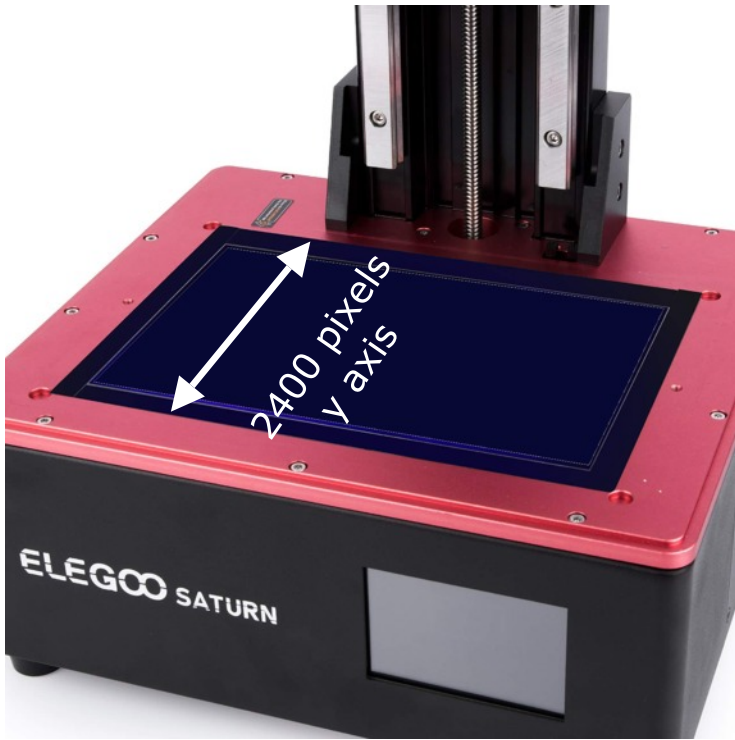
Types of Resin Printers

- Stereolithography (SLA) uses UV lasers as a light source to selectively cure a polymer resin.
- Digital light processing (DLP) uses a digital projector as a UV light source to cure a layer of resin.
- Liquid crystal display (LCD) uses an LCD display module for projecting specific light patterns.

For this clinic, we are only looking at the more popular, for now, SLA printers. However, the rest of the presentation will apply to DPL as well.

Ok, let's talk about the elephant in the room. What is with the marketing hype and "K"? We have 4K, 6K 8K up to 12K printers. What's a K and does it really mean anything? This number is arrived at by measuring the screen of the printer across the x axis and rounding up or down.





So if there are 3840 pixels across the X axis like in my old Saturn, it is roundup up 4000 or 4K.

4K = 4000 = Pixels

8K = 8000 = Pixels

10K = 10,000 = Pixels

The y axis is also measured the same way.

The “K” number from the manufacturer only means the number of pixels within the x axis screen.

So how does this relate to actual resolution and how may it cause you to spend more?

Width / X Axis = Height / Y Axis = Native Pixel Size in microns (The smaller the number, the higher the resolution) 1 micron (μm) = 0.001 Meter

Let’s take a smaller and less expensive printer like the Elegoo Mars 3 Ultra 4K and compare that to the Elegoo Saturn 8K and others

The Elegoo Mars 4K has a screen x axis of 143.43 mm with 4098 pixels.

The math: (X) $143.43 / 4098 \times 1000 = 35 \mu\text{m}$ of resolution (Y) $89.4 / 2560 \times 1000 = 35 \mu\text{m}$ of resolution

The Elegoo Saturn 4K has a screen x axis of 192 mm with 3840 pixels.

The math: $192 / 3840 \times 1000 = 50 \mu\text{m}$ of resolution.

The Elegoo Saturn 2 (8K) has a screen x axis of 218.88 mm with 7680 pixels.

The math: $218.88 / 7680 \times 1000 = 28 \mu\text{m}$ of resolution.

Sonic Mega 8K has a screen x axis of 381 mm with 7680 pixels.

The math: $381 / 7680 \times 1000 = 49 \mu\text{m}$ of resolution.

So from the first number with the smaller resolution being better, we can see that the Mars 4K having a resolution of $35 \mu\text{m}$ is much better than the Saturn 4K being at $50 \mu\text{m}$ of resolution. Makes sense, the Saturn has a much larger screen, think print area, but still being a 4K.

The Saturn 2 (8K) has a much better resolution than the Sonic Mega 8K because of the Sonic Mega 8K’s screen size.

Now there is another dirty little secret here. Let’s look at the Saturn 3 Ultra 12K. The light source on that screen has a resolution of $19 \mu\text{m}$ on the X axis and $24 \mu\text{m}$ on the Y axis, which gives us a rectangular pixel that can not be regarded as sum $20 \mu\text{m}$. But the new Elegoo Mars 4 Ultra 9K has $58 \mu\text{m}$ on both the X and Y axis. The build plate is smaller, but the resolution (i.e. print quality) is better.

The point here is that the “K” specification means nothing on its own. You need to consider the x axis of the screen.

So you really need to decide how much of a print volume you need and then look within those specifications. Even my larger The Elegoo Saturn 2 and Saturn 8K printers will not allow me to print a 40' O scale car in a single piece. And let's say I wanted to print a caboose and could find someone to draw it for me, that would take over 18 hours to print. Fine for a one off I guess, but not for going into production for resale.

Types of Resins

- Standard Resin – This is your basic resin, used for general-purpose resin 3D printing. If in doubt, this is the resin to start with as it tends to produce consistent results, but it isn't known for its durability or strength. Standard resin requires cleaning, is abrasive, expensive, and needs isopropyl alcohol to remove excess liquid resin.
- Water-Washable Resin – Water-washable resins remove the need to do the steps above by making the resin soluble in water, thus cutting costs and making post-processing a little less daunting for beginners. This resin does come with some downsides; however, chiefly lower strength and durability, partly because the parts absorb ambient moisture, which makes them brittle.
- Plant-Based, Eco Resin – Plant-based resins are formulated exclusively from natural, renewable products, often oils extracted from corn, soybeans, sunflowers, algae, and other plants. The main appeal is that these are eco-friendly materials free of the chemicals and additives that make up standard resin.

All resins are toxic when uncured...



There are hundreds of resins out there, but I want you to be able to print something right out of the box, so let's keep it simple. Any good inexpensive gray resin will work for your first prints. Start there and get comfortable before wandering off to other exotic resins.

Elegoo Standard Gray at under \$25 a bottle is a great one to start with. Anycubic Basic Resin is another good choice.

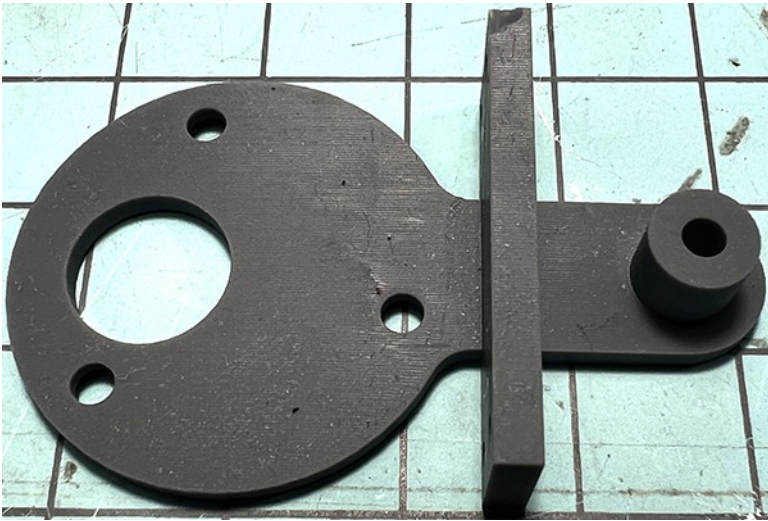
Within the previous three types of resin above, there many, many subsets of resins, colors and pricing designed to do a specific job.

To start off, I would use a simple cheap regular gray resin. Get your bearings first, and understand the process before going out and using speciality resins.

Most all companies will have some sort of specifications sheets on their Website or Facebook groups giving you general settings for your printer. That's a good place to start.

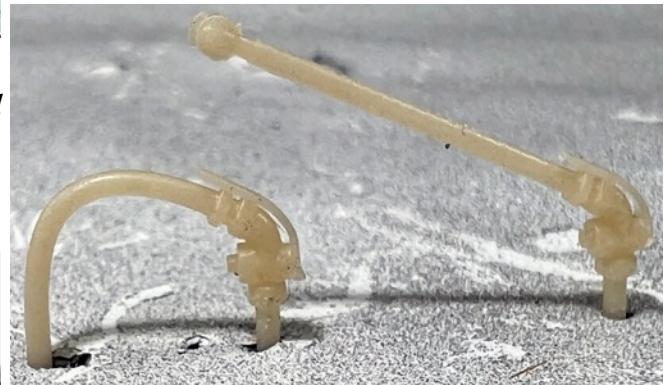
After understanding the basics, we did need some specialty resins and went off the experiment.

We needed a flexible resin for both Central Locomotive Works and Glenn Guerra's SW1 project to produce masters that could be used for lost wax castings.



White opaque for lamps and lenses.

Our first motor mount was made with a black nylon that could be machined. Unfortunately, or fortunately for us and the customer, we found that at over 95 degrees Fahrenheit, it would bend slightly. We found a new resin with the same machinability that could handle over 190 degrees.



Flexible resin for air and MU hoses.



Removing the part from the mold can be tricky without breaking the part, especially for non electrical parts like brake shoes and pick up holders. I also needed a very flexible resin for our own products that we wanted to bring to market, in addition to, needing a resin that could be easily drilled and tapped.

Some speciality resins can go higher than \$900 per 1000G bottle. I use over 10 types depending on the job.

I Need Files to Print!!!

File types needed are STL, 3MF or OBJ type files. These will be able to be inputted into the slicer. More on that later. The most common for our use are STL and 3MF. OBJ files carry more information such as textures.

Sites hosting only free STL files:

Thingiverse – Largest selection of free STL files

Instructables – Free 3D Printer files with great guides

GrabCAD

NASA – Free space-related 3D printer models

STL file marketplaces:

The NIH 3D Print Exchange – Free Medical 3D Printer Models

MyMiniFactory

CGTrader

TurboSquid

Sketchfab

Sites hosting both free and paid-for 3D printer files:

Cults 3D – Many free STL files as well as premium 3D printer models

Pinshape

Free3D

3DExport

STL file search engines:

STLFinder – STL file search engine for searching other sites

Yeggi

3DfindIT.com – Site for downloading industrial 3D files

Some models are better than others, and there is not a whole lot of good model railroad files. Some good detail files may be found and resized to fit your needs.



The one place that does have great files for free is [trinkitchen](#) run by Sarah Griessenböck.

Files for: Freight Car Parts, Diesel Locomotive Parts, Passenger Car Parts, Various Detail Parts! Not to mention scenery, modeling and much more. I have printed many of her parts for others who don't have printers and the parts are beautiful. Please check out [trinkitchen](#).



Create My Own Files?

There are many good software packages out there. Here are just a few, mostly free versions, that many modelers are using:

TinkerCAD best free 3D modeling software for beginners

FreeCAD open source free 3D modeling software

SketchUp free version

Blender advanced free 3D modeling software

Fusion 360 free for personal use for a year

Daz 3D: Daz Studio free with extra downloadable premium assets

Solidworks for makers (Monthly Subscription)

Can I Print Now?

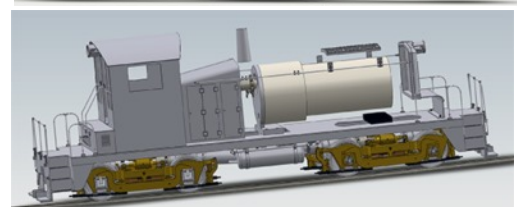
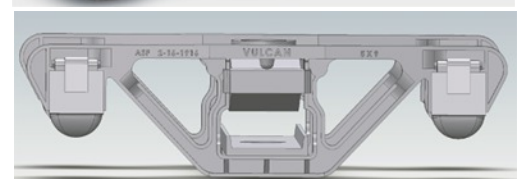
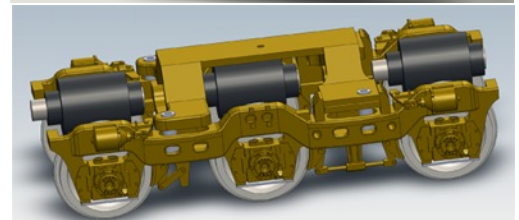
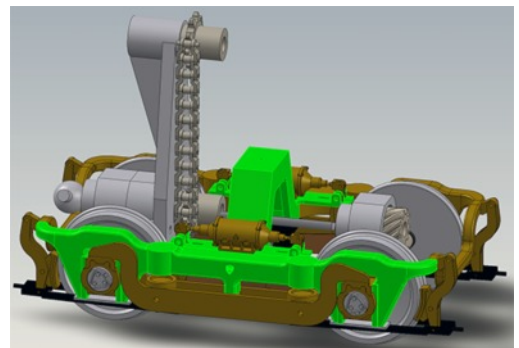
Almost... The last piece of the puzzle is a piece of software called a slicer. The model must be supported and aligned properly to print correctly.

A slicer defines how a model is built, and instructs the 3D printer how it's printed. The two most widely used slicers for resin are:

Lychee Slicer - Free and subscription versions (~\$60/yr)
For Resin and Filament!

ChiTuBox - Free and subscription versions (~\$169/yr)

There are others, but some are printer specific, and none have the power of the two above.



We could do an entire article on slicing, and we may do that in the future. Here we'll just cover the basics to get you up and printing.

A resin 3D slicer is a software tool used in the field of 3D printing, specifically for resin-based 3D printers. It plays a crucial role in the 3D printing workflow by converting digital 3D models into a series of 2D images or layers that the resin 3D printer can understand and use to create a physical object.

Here's how a resin 3D slicer works:

- **Importing the 3D Model:** The first step is to import the 3D model that you want to 3D print. This model can be created using 3D modeling software or downloaded from various online repositories.
- **Orientation and Support Generation:** The slicer allows you to orient the 3D model in the optimal position for printing. It also generates support structures that help to hold up overhanging parts and prevent deformations during the printing process.
- **Slicing:** The slicer software then "slices" the 3D model into thin 2D layers (slices) based on the printer's resolution and the layer height specified by the user. Each layer represents a cross-section of the final 3D object.
- **Exposure Time and Layer Settings:** For resin-based 3D printing, different layers may require different exposure times to ensure proper curing of the resin. The slicer allows you to adjust these exposure settings for each layer based on the complexity and specific requirements of the 3D model.
- **Generating Printable Files:** Once the slicing process is complete and all the necessary settings have been adjusted, the slicer software generates a set of files that the 3D printer can interpret. These files often include formats such as .STL, .OBJ, or proprietary formats specific to the printer.
- **Printing:** The output files are then transferred to the resin 3D printer, which uses them to create the physical object layer by layer, solidifying the liquid resin with each exposure according to the slicer's instructions.

So simply, a resin 3D slicer is an essential intermediary between the digital 3D model and the physical 3D print for resin-based 3D printers. It takes care of slicing the model, generating support structures, and providing exposure settings to ensure a successful and accurate 3D print.

Most good resins will have beginning settings on their Website for a variety of printers. That is a good starting place, and you can tweak from there. If you ask for settings from someone else, even if they are using the same printer and resin, your results may be off.

Temperature is Key!

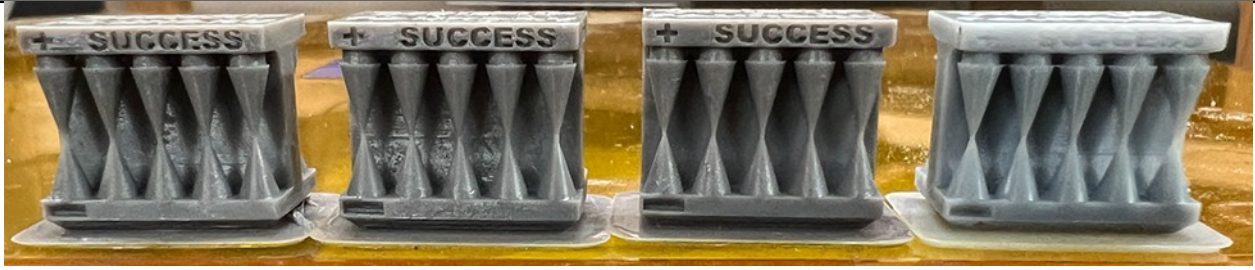
Most resins need to be above 68 degrees (20 C) and some higher. With some of the resins I use, it's as high as 80 degrees (26 C). Check the Website of the resin for their recommendations. Warmer isn't better - consistent is better.

Run an exposure test every time you switch resins

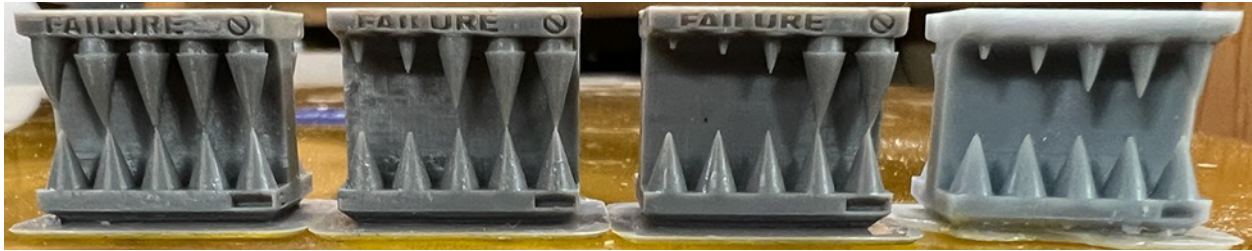
There are many calibration tests out there. Each has their good and bad points. Some are hard to interpret. I like to use the [The Cones of Calibration by TableFlipFoundry](#).

This test will dial in my exposure times and is easy to read. I can then use other test prints to tweak from there if I need to.

The cone test will get you to a good exposure to get started. Other tests will allow you to fine tune the others settings. There is no one size fits all. Let's take a look at the different settings you have control over and which are most important.



The above shows all of my exposure times, which were set at .25 second differences, worked. All cones formed on the Success side. However, on the Failure side the cones also formed which means overexposure. I kept reducing my time by .25 seconds until none of the failure side cones fully formed.



Click on image for download Instructions

On the left are three other calibration tests that are also popular.

AmeraLabs Town



Siraya Tech

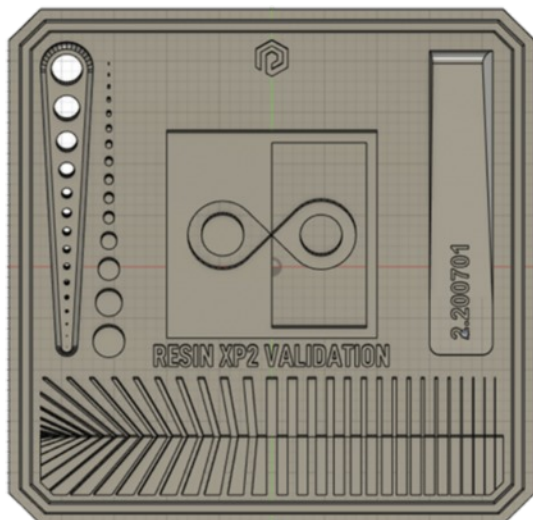


I again want to remind you that many of the resins have the basic settings on their Website. Start there and then tweak as necessary.

The screen shot on the next page is a setting for a specific printer and a specific resin and layer thickness. I'll switch between 50µm for most items but drop to 20µm for patters or highly detailed parts. The difference in print time of 20µm from 50µm can be three fold, so it depends on the amount of seeable detail you need. So let's break down the settings and what they do.

The top shows the brand of resin, type and color. The printer name is set as I have more than one printer and each will be slightly different.

Validation Matrix



Burn In Layers

The number of burn in layers are the number of layers you want to have printed on the build plate as an anchor for the model. The model/supports will sit on this foundation.

Burn-in Layer Exposure Time

The printer cures a few initial layers with longer exposures for a model to better stick to the build plate. This lays a good foundation upon which the remaining model is then built. The longer the bottom layer exposure – the better the model will stick to the build plate.

✕

Conjure Rigid Conjure Rigid Resin with engineering-like features Black (SATURN S ONLY) 20 um

Brand
Conjure Rigid

Name
Conjure Rigid Resin with engineering-like features

Color
Black

SATURN S ONLY

[Help for the Two Stage Motion Control / CTB V4 resin profile parameters](#)

Global Parameters ?

Two Stage Motion Control (TSMC) on off

Light off Delay (On) / Resting time (Off) on off

Burn In Layers ?

Number of Layers ?	5
Exposure Time ?	38.5 s
Transition Layers Count ?	8
Lift Distance ?	9 mm
Lift Speed ?	75 mm/m
Retract Speed ?	150 mm/m
Light Intensity ?	100 %

Normal Layers

Layer Thickness ?	20 um
Exposure Time ?	5.4 s
Lift Distance ?	9 mm
Lift Speed ?	75 mm/m
Retract Speed ?	120 mm/m
Wait Before Print	2 s
Wait After Print	0 s
Wait After Lift	0 s
Light Intensity ?	100 %

Scene Scale compensation ?

Scale X ?	100 %
Scale Y ?	100 %
Scale Z ?	100 %

Compensation ?

Compensation Type
Grey Pixel Pixel Removal

Burn In Layers ?	0 mm
Normal Layers ?	0 mm

Support resin compensation ?
on off

Price

Bottle Price	39.95 USD
Bottle Capacity	1000 ml

Print Time Override ?

on off

Time per Burn in layer	0 s
Time per layer	0 s

Delete Resin
OK

Transition Layer

Transition layers are the layers between the bottom and normal layers. If you set the transition layer count to zero, then you will print normal layers with normal layer exposure straight away after printing bottom layers with prolonged exposure. Transition layers allow a gradual transition from bottom to normal layers by gradually lowering exposure time over several transition layers.

Lift Distance

The distance the build plate moves up between layers to separate the printed model from the FEP.

Lift Speed?

Lift speed is the speed at which the build plate raises from the bottom to the top after each layer's exposure. This speed also defines the speed at which the model is peeled off the FEP.

Retract Speed

Retract speed is the speed at which the build plate lowers down into the VAT.

All the above only pertain to the Burn In Layers. Now we'll go to the right and look at the Normal Layers.

Normal Layers

Normal layers are now the model itself being printed.

Layer Thickness

How thick will each slice be. Many start and use 50 μm or 0.05 mm, and for most things we print that is perfectly acceptable. 20 μm or 0.02 mm being smaller will give us better detail, but at a price of more time to print. For example our [Buda 30 bumper post in O scale](#) will take 2 hours and 55 minutes to print at 50 μm . If we drop that to 20 μm , the time jumps to 7 hours and 9 minutes. For a part like this, it's not worth the extra time as I doubt anyone could tell the difference holding it in their hand.

Exposure Time

How long is the resin being exposed to the UV light on each slice. Yeah, this is the big one. Get guidance from the resin manufacturer for times and printer.

Lift Distance

The lift distance tells the Build plate after the exposure how high to go before it stops and makes its next downward motion to be exposed. What we're trying to do is make sure we go high enough to pull the print off the FEP on the bottom, so going a little higher is not a bad thing. Yes it will add a bit more time, but I usually have mine set for 9 millimeters.

Lift Speed

The lift speed is how fast the Built plate rises off the FEP area once you're exposure has been made. The thicker the resin, the slower you want that lift and I have mine really low at 75 mm/minute. If you have a thinner resin, you could go as high as 150 on this setting, but if you start getting failures where the print is actually being ripped off the supports, you need to slow down that lift speed. Think of it this way, if you put on a pair of waders and jump into a mud hole and then quickly pull your leg out, the wader will probably stay in the mud because you pulled your leg out too fast. If you pull your leg out slowly, the mud has time to come back underneath your wader and you'll get your leg and the wader out in one piece. Resin acts the same way.

Retract Speed

Retract speed speed is just the opposite, it's how fast the Build plate comes back down into the resin and the VAT.

Wait Before Print

The wait before print allows time for the resin to stop moving once the Build plate comes back down. With thicker resin, your Build plate comes down and the exposure starts immediately, but the resin is still moving around in the VAT because of the force of the of the Build plate. So it's good practice to put a hold there and wait a second or two. Now we know the resin has stopped moving around and we can do our exposure.

Wait After Print

The weight after print I've just left it zero and I've never had an issue with that.

Wait After Lift

The weight after lift I've just left it zero and I've never had an issue with that.

Light Intensity

Some 3D printers have an option to change the output power of their LEDs. This means that the LEDs can produce more UV light; thus, the resin could cure faster. I never play with this.

Most manufacturers have data sheets for their resins to give you as starting point. The graph below shows my two printers, both 8K, but show minor differences between settings. This is only a starting point but many find success here and then can tweak settings as needed.

The optimal printing environment temperature is 25-30 °C. If the printing environment temperature is too low and prints stick to the FEP film, please try increasing the bottom exposure time.

3DP Model	Resin Type	Color	Bottom Exposure(s)	Normal Exposure(s)	Layer Height(mm)	Z Lifting Distance(mm)	Z Lifting Speed(mm/min)	Z Retract Speed(mm/min)	Rest Time After Retract(s)	Notes
ELEGOO Saturn 2	Standard Resin 2.0	Grey	30	2.5-3	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 2	Standard Resin 2.0	Black	30	3	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 2	ABS-Like Resin	Grey	30	2.5	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 2	ABS-Like Resin	Black	35	3.5	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 8K	Standard Resin 2.0	Grey	30	2.5-3	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 8K	Standard Resin 2.0	Black	30	3	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 8K	ABS-Like Resin	Grey	30	2.5	0.05	3+4	65+180	180+65	0.5	
ELEGOO Saturn 8K	ABS-Like Resin	Black	35	3.5	0.05	3+4	65+180	180+65	0.5	

Arctan (And get ready for the rabbit hole...)

Arctangent, written as arctan or \tan^{-1} (not to be confused with $\frac{1}{\tan(x)}$) is the inverse tangent function.

ArcTan (layer height/pixelwidth)

Printing at an angle will help with some layer lines depending on your model and also lowers peel force, which causes the print to peel away from the Build plate. You want to reduce the peel force as much as possible.

People will say “Place it at a 45 degree angle for best results”. The angle will actually depend on your printer and its resolution as we touched on earlier.

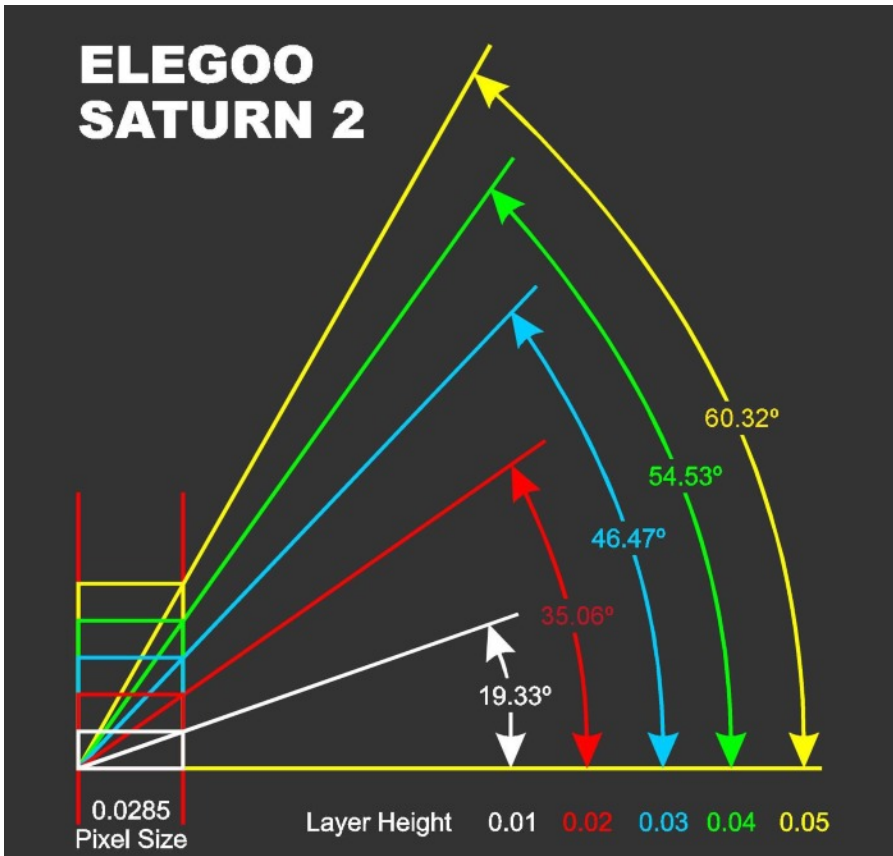
Organic surfaces (i.e. figures, undulating surfaces etc.) print beautifully with resin printers; however, large flat surfaces tend to show random layer lines, and the results are different for each piece and printer model.

The calculation is ArcTan (layer height/pixelwidth)

The pixel width is dependant on the screen resolution of your printer. We looked at that earlier.

As an example, my Saturn 2 is .028 μ m resolution and I want to print at 0.050mm layer height.

Or $\arctan(0.050/.028)$ in degree. Take that formula and drop it into Google to make life easier.



$\arctan(0.050 / .028) = 60.7511737$ degrees

Now let's print at 0.020mm


$\arctan(0.020/.028)$ in degrees
(Google is your friend.)

$\arctan(0.020 / .028) = 35.5376778$ degrees

This is best on flat surfaces.

Below are links to two great videos that explain this much better than I just did and give real life examples. The graph to the right shows the angles based on the Saturn 2 only.

CLICK  [How To Orient Your 3D Model](https://youtu.be/51lwKl8MjRk)
These are 5 basic tips that i always follow if possible.
<https://youtu.be/51lwKl8MjRk>

CLICK  [How to Angle your Resin Print for flat surfaces for Smoothest Surface Possible. Real life use of trigonometry!](https://youtu.be/Qs2Rb0ExnIM)
<https://youtu.be/Qs2Rb0ExnIM>

Supports

Regardless of the printer, regardless of the file, if you don't support and position the model correctly, you WILL have a failed print.

The following is taken from the AMERALABS Website:

“Why do you need supports in resin 3D printing?”

Before diving into this subject, we would like to discuss why we use supports in UV resin 3D printing in the first place. There are some subtle aspects here and it is worth understanding them. These are not all of them, but we listed most important ones based on our learnings.

Overhangs. It is obvious that you need to support overhanging structures. That is quite common to most 3D printing technologies not only to SLA.

Proper geometries at the bottom. It is quite common to over cure initial layers of 3D printed object to have better adhesion to build plate. However, this would result in visible layer lines and thicker sections at the bottom due to increased exposure time. To compensate this, object tends to be placed on attachment layer and supports.

Preserving uniform cross-sectional area when using orientations. It is important to preserve uniform transition of cross-sectional area of layers. That will help avoid visible layer lines. To achieve this, you use various orientations. Usually when using those orientations, you need supports to hold the object in place.

Obtaining proper dimensions. Most popular bottom-up style printers like Anycubic Photon, Phrozen, Elegoo Mars 3 have FEP or PDMS resin tray. After each layer is cured separation forces from FEP or PDMS put high stress on a printed object. That can result in various deformations, incorrect dimensions, glitches etc. By supporting more sensitive spots of the object you could reduce the likelihood of failures.


So, when you take all factors in you might end up with a bunch of supports all around the object.”

The video link below is one of the best covering beginning supports and all the hows and whys and a must view. Although the video shows the use of **ChiTuBox**, it works the same in **Lychee Slicer**.

Using videos like these is how I learned.

For the clinic, I did have video and screen captures while talking through them, but here I think this will be much easier to learn from.

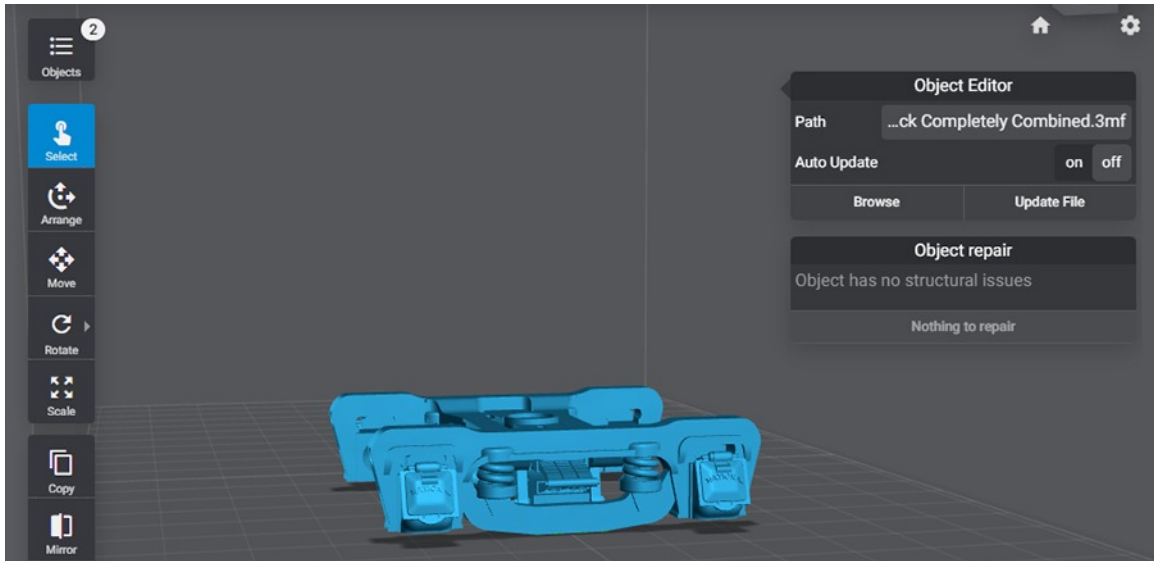
CLICK *3D resin print supports [EASY GUIDE]*
Supporting 3D resin prints to get GREAT prints every time is easy! Just orientate to avoid islands and overhangs, raft, anchor, support and print. If that sounds confusing, it really isn't. In this simple guide I'll show you how.
https://youtu.be/MU0Cq_bjhy4



Let me go through my work flow. If you have been printing for awhile your flow may well be different than mine. There is no right/wrong way as long as the basics are done.

Let's use the Erie Express Trucks from Sarah Griessenböck as she states, "The triple bolster / sping plank configuration is very complex to support and print. That's why I've divided the files into components that can be printed and then assembled. I printed the first test truck in one piece and it can be done, but it's difficult to support all the corners and levels". I love a challenge!

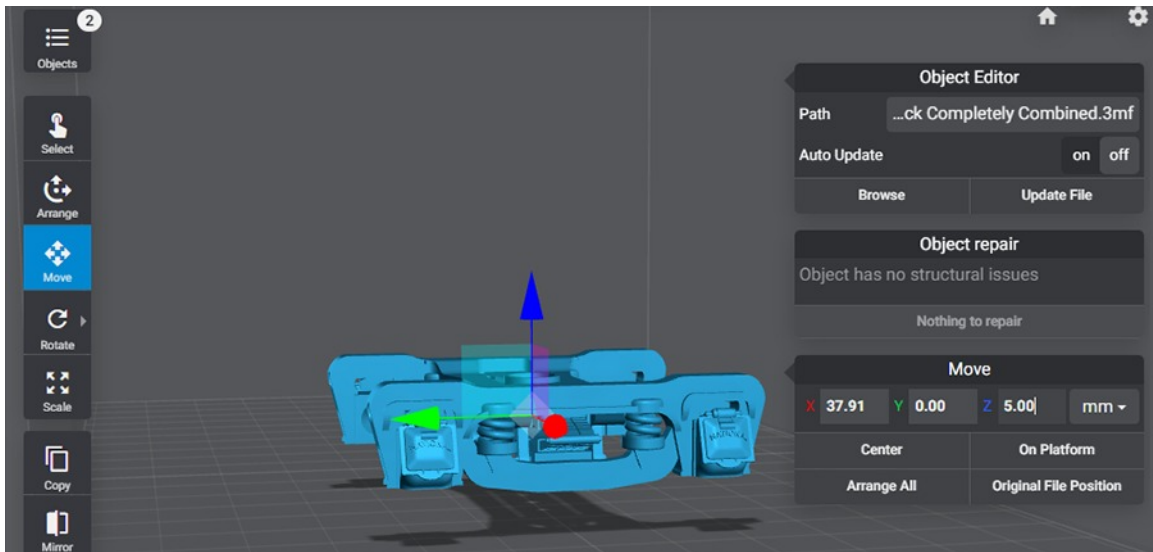
1



1) Here is the file opened in the slicer.

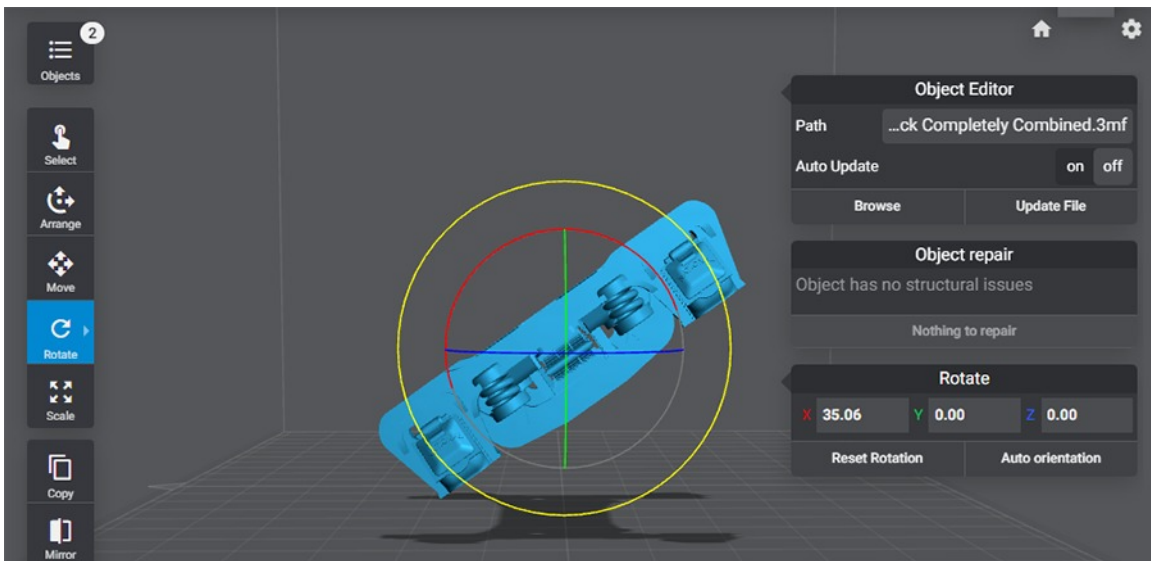
2) First thing I normally do is raise the part 5mm above the build plate. I do print some parts flat, but that really depends on the part.

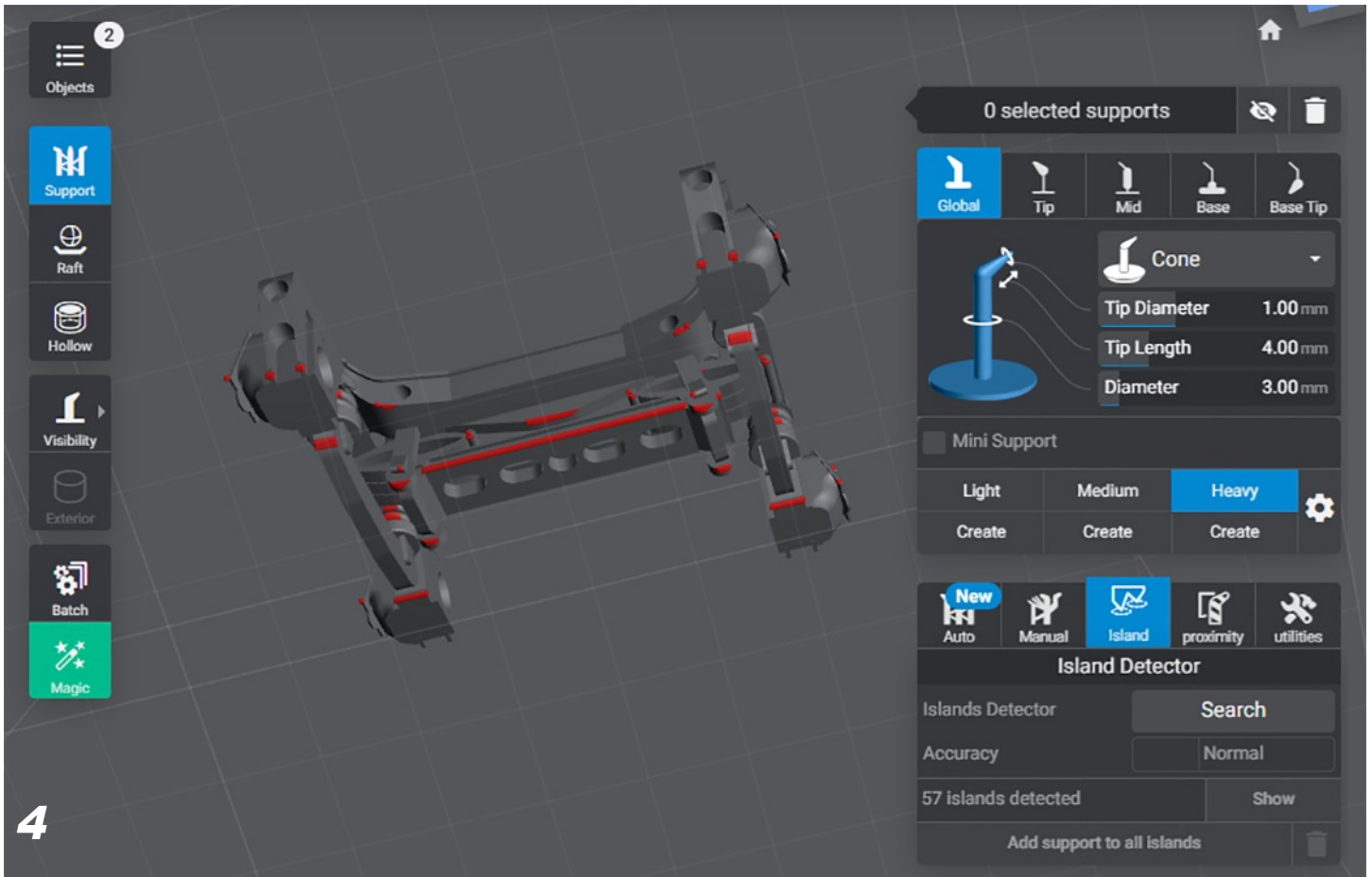
2



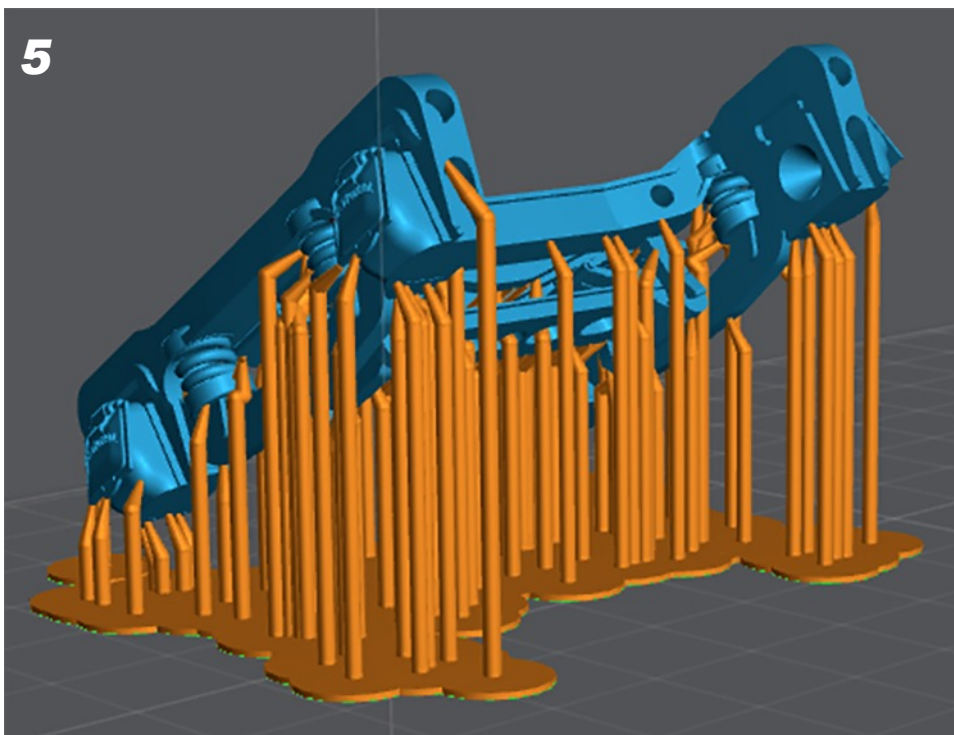
3) Using Saturn 2 and printing at $20\ \mu\text{m}$, the the ArcTan calculation comes out to 36.05 degrees so I rotate the print to that.

3





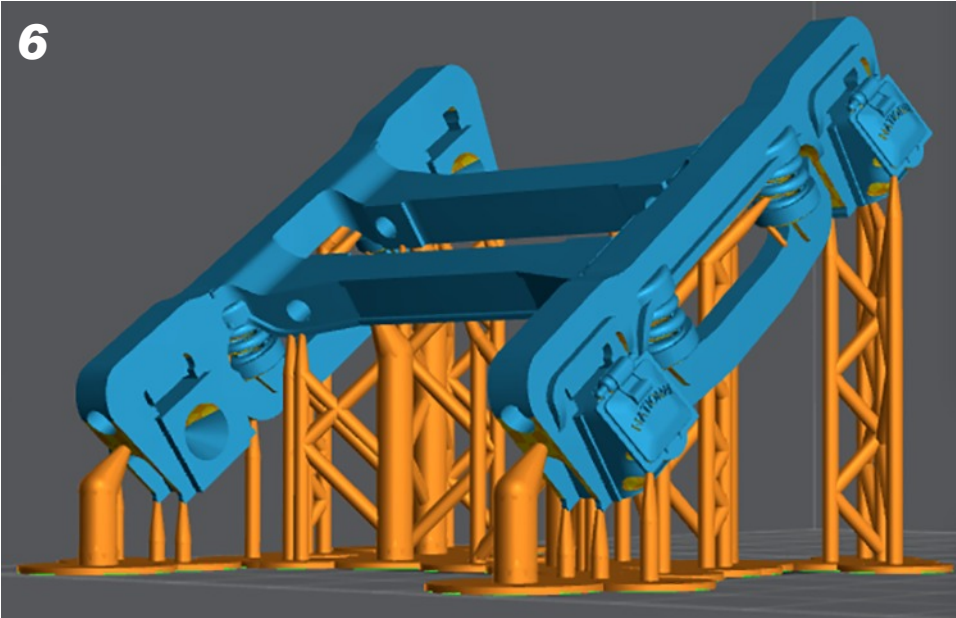
4) I now have the slicer examine the print and show me all the islands in red. There are two ways to do this. One is to let the program automatically add supports. Some slicers are better than others, but if I do that, I'll set to medium supports and let the program do its thing. Once it's finished, I can go in and decide what should be heavier or lighter supports and even add/remove as I see fit.



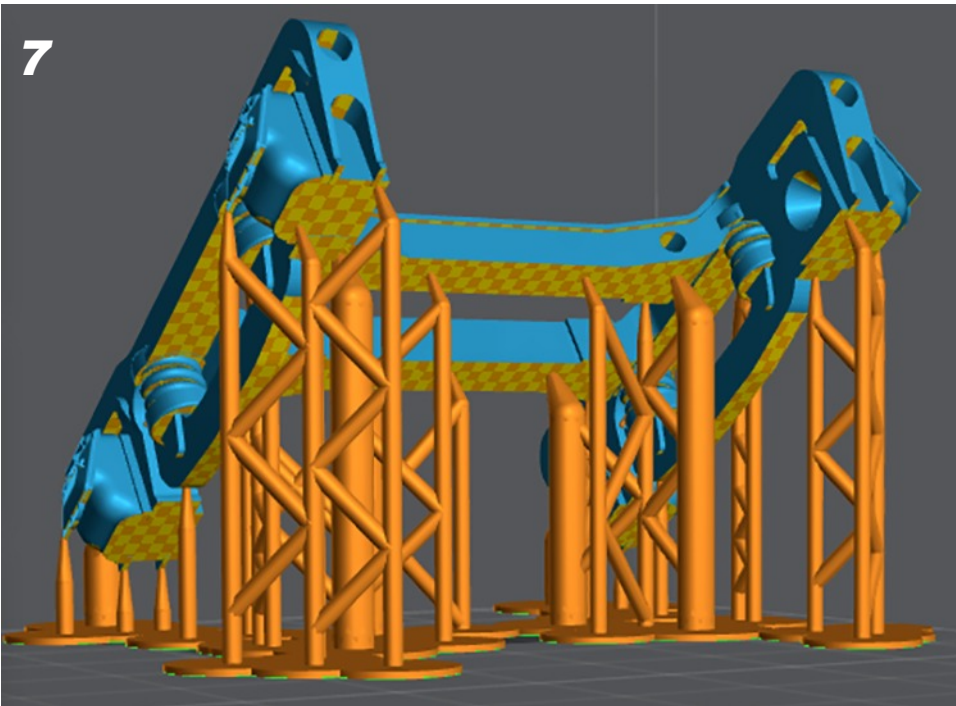
5) This is what the software came up with before adding bracing. Will this work? Probably, but then you need to think about clean up after the print. How easy will it be to remove all the supports that are inside the truck. Also the bottom of the truck, the first part to print, should have heavy supports as an anchor.

So option two is to go in and add supports manually using a mix of heavy, medium and even light supports as you think are needed.

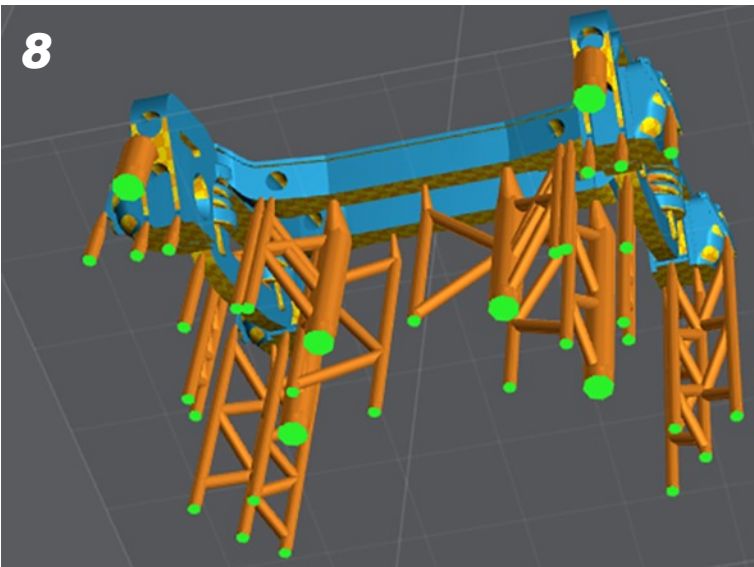
6



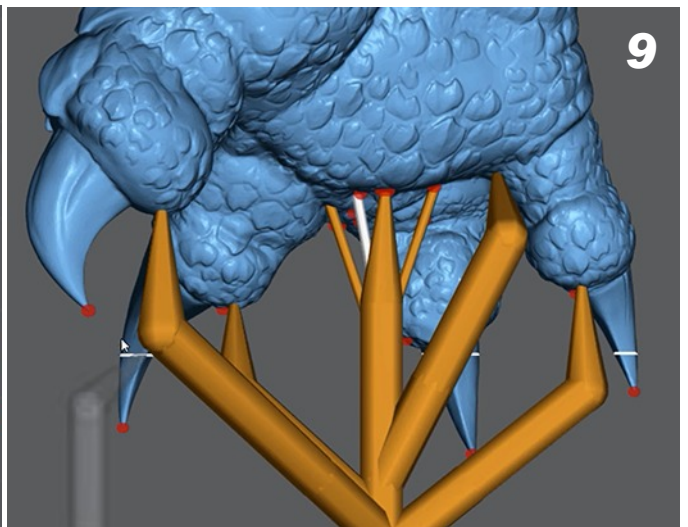
7



8



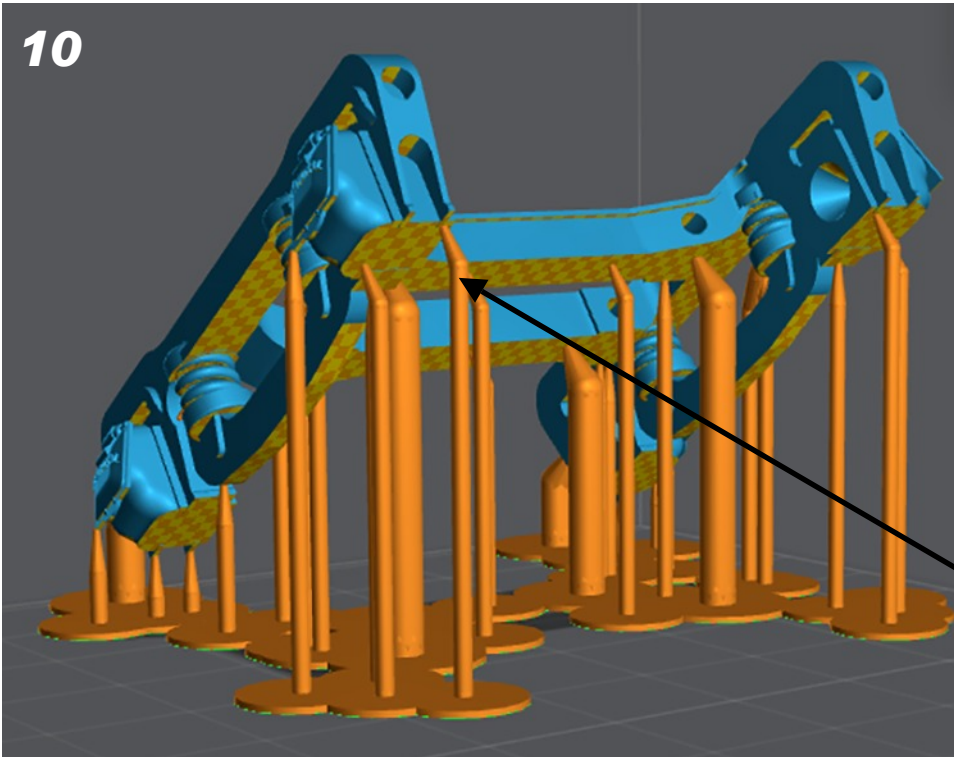
9



These three images show how I supported this print. Notice in image 6, the heavy supports toward the bottom and then image 7 and 8 where I used them again to support the bolster. (These have had bracing added.) It looks fine on paper, but printing will tell us for sure. Some people over brace and that's fine as long as you can clean up without a lot of damage after. The supports will leave a small bump or divot depending on how they break off. A light sanding will normally take care of the issue. If it's a divot, you can fill in with resin after curing and then curing just that area again and sanding. Many times you might not even see the spot where the support was. You can also change the tip size of the supports, as well as, how far they extend into the print, but that's for another day. I have been using default setting on most everything I print.

Another neat feature of some slicers is the ability to have a heavy support and then branch off of that with smaller ones as shown in image 9. This saves heavy supports from bonding with each other if they are too close and allows better support right where it's needed.

10

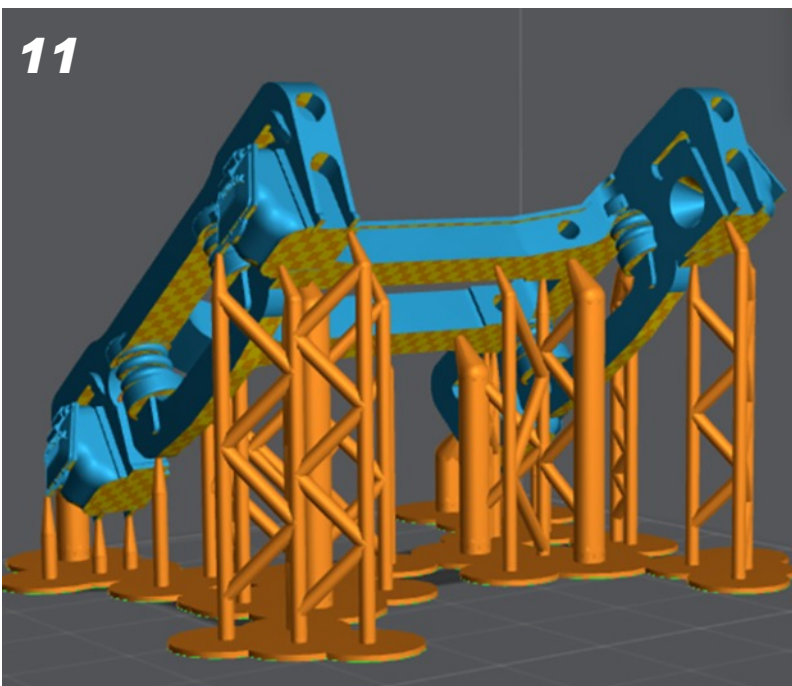


Real quick here so I don't confuse anyone, image 10 is after the supports, but before we add the bracing. A few previous images had the bracing showing. That's after all the supports are in place.

Bracing is done automatically and adds support to the supports. Wait, what??? Just as we don't want our model to move as it rides up and down, we don't want the thin supports to wobble around.

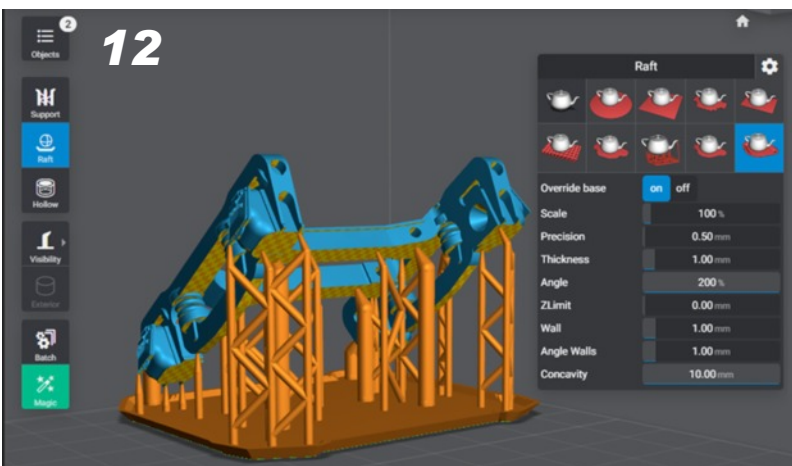
If this support were not braced it would move around as the Build plate moves up and down and possibly miss its target near the top. Image 11 shows how the slicer adds supports where they are needed.

11

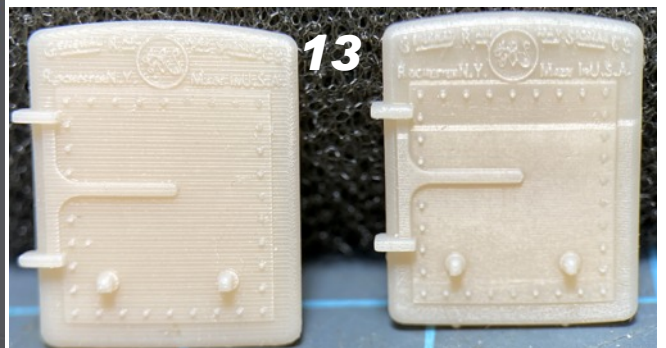


At this point, we could print but I like to add one last thing and that is a raft. Notice the bottom of the supports are just little circles attaching to the build plate. By adding a raft, as seen in image 12, we enclose all that area in making a much more stable base. There are many type of rafts, but the full one is what I use. I do know some people who do not think this is necessary, but I tend to be overly cautious and it makes removing from the Build plate easier without damage. Image 14 on the next page shows another type of raft I use. In this case, it makes it easier to ship and also makes it easier for the customer to remove without a full raft.

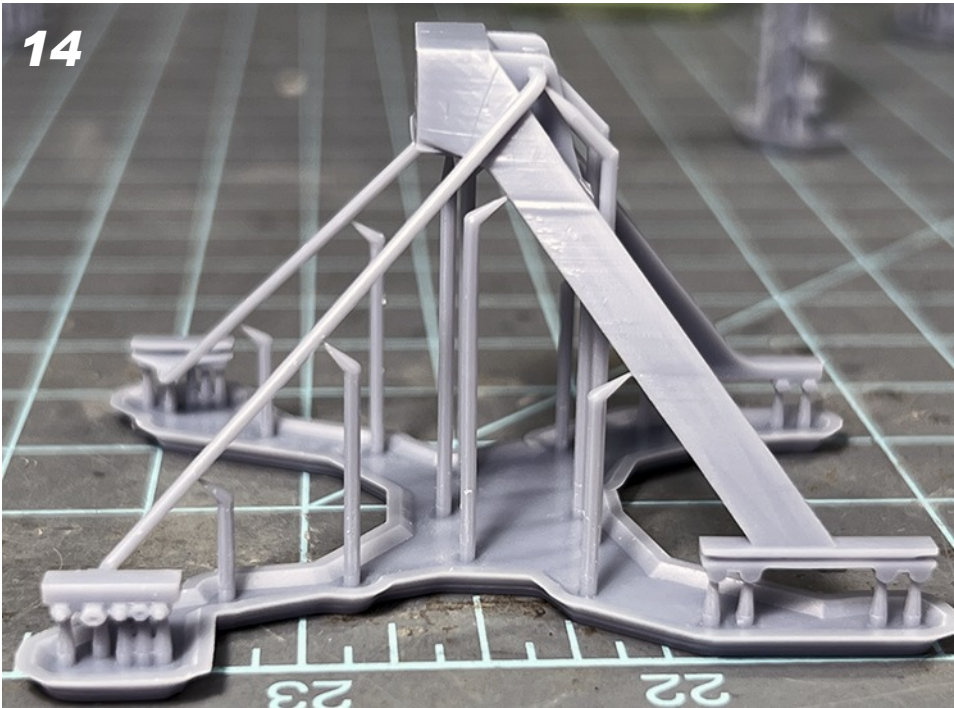
12



Still think that ArcTan stuff is not needed? Look at image 13 below. It does make a huge difference!



14



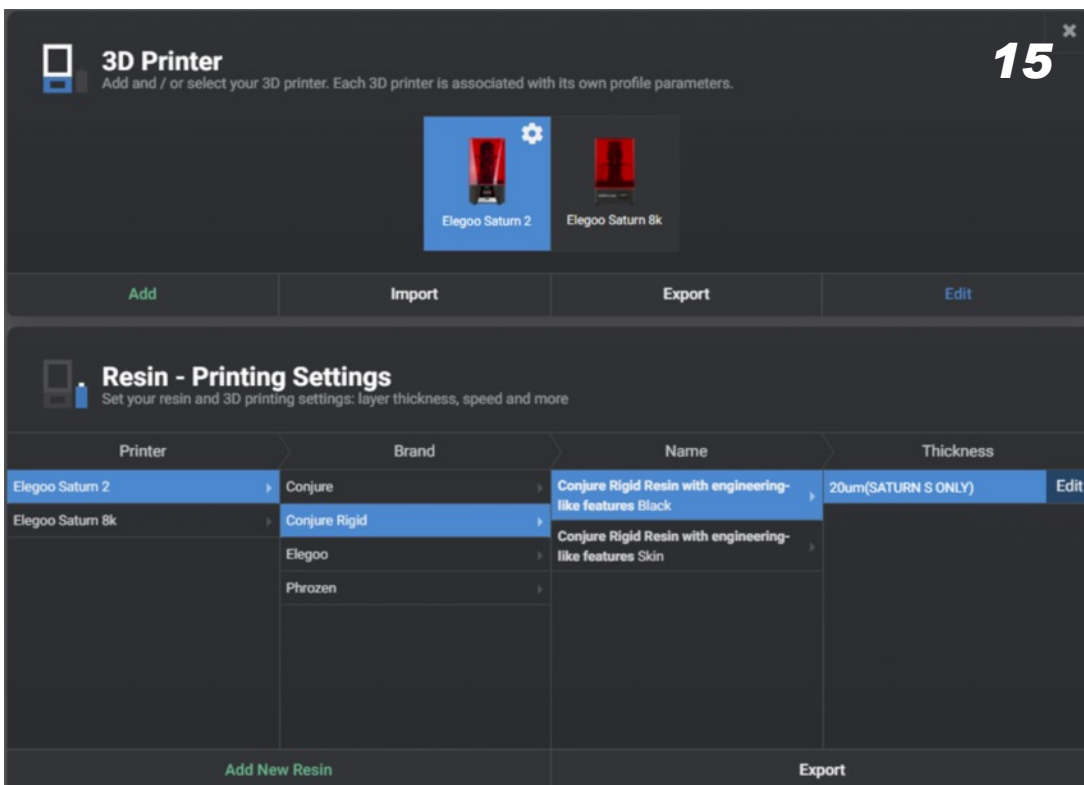
Early test print with modified raft.

So now at this point we are ready to print. I am not a skill for **Lychee Slicer**, but I really think it's a great slicer at a fair price. And even the free version works for 90% of what I do. Although it does install on your computer, it uses the cloud to store settings, printer information, resins, a full history of all your prints and has a fantastic community resin database.

The screen shot below, image 15, shows the two printers I now use. Each printer can have many types of resin settings. If you need to tweak your resin on a printer, simply double click on the resin and make your changes. The only thing to remember is the angle you used

is set to a specific layer height. I can have a single resin with different profiles based on printer and layer height.

Slice the file and save it to the thumb drive that came with the printer. Be sure to order some new drives as the ones that come with any printer is not very dependable. I ordered three SanDisk 32GB drives for \$15 on Amazon. Format as FAT 32 and transfer everything from the old drive to the new one.



Let's take one more look at what the slicer has to say. We see the file name, the printer we selected and the resin information, and in this example, 50µm slices. It show the appropriate print time which can vary, but it's close. If you input your resin information for cost it will show how much resin is being used and the cost of the run. So I am using 5.09 mL for the part and 4.50 mL for the supports for a total cost of 38 cents. Take that Shapeways... There are many times where the supports take more resin than the part. It happens.

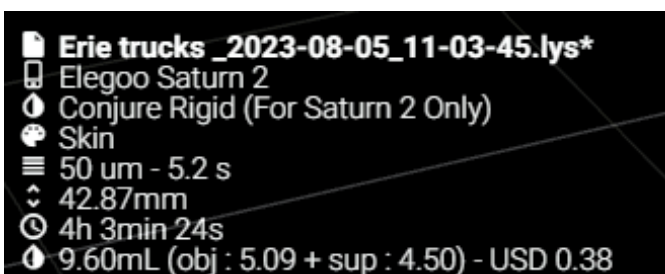
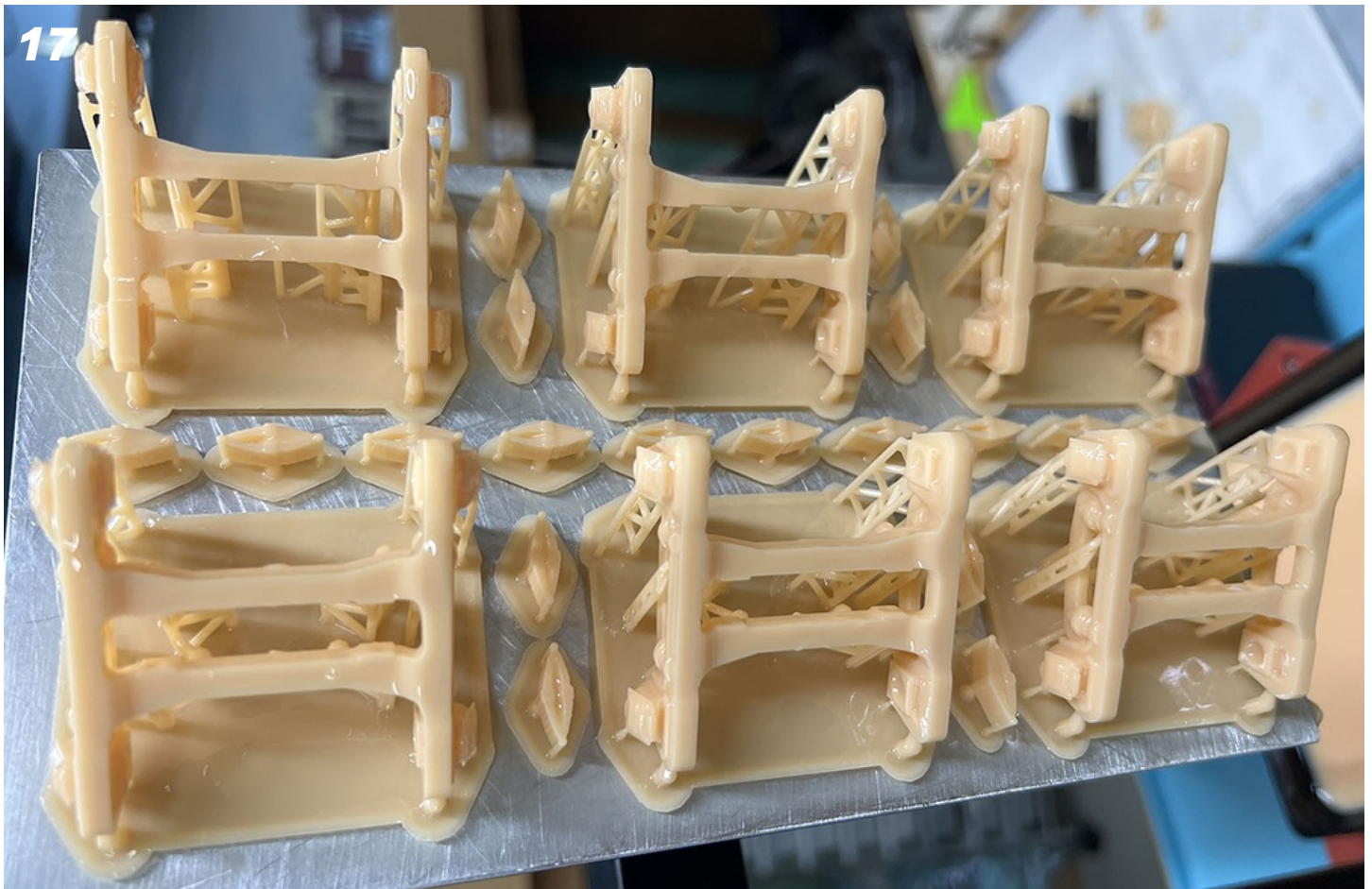




Image 16 and 17 are successful prints. Everything is there and nothing peeled from the FEP. Now at this point, we need to clean the models and cure them. Then we can take a good look to make sure the exposure is good and the prints look like we expect. That's hard to do when the prints are still goeey.





But boy howdy, then there is image 18 where we have some issues. First off, printing the doors up and down is better than sideways. Sometimes if I am not sure the best way to support, I'll run a test with different orientations. Something in the lower left broke off the supports. If the good parts are properly exposed, then my first guess would be to lower the lift speed and that should help the issue of the part breaking off the supports as we talked about earlier.

Don't just go willy nilly and start changing everything. Do one adjustment and try again. This was a thicker resin than the gray I was used to working with. The exposure test was fine, but now we see other factors that come into play. That's why I suggest starting with standard resins and getting good results with those before going off to more exotic ones.

Ok, let's wrap this up with the wash process, and next time we'll look at some failures and what caused them. I have a lot to show. Live and learn!

Wash and Cure

To wash and cure resin 3D prints, you'll need to follow these general steps:

1. **Cleaning:** Start by removing the print from the 3D printer's Build plate. Use gloves and avoid direct skin contact with the resin. Use a brush or soft cloth to remove any excess uncured resin.
2. **Isopropyl Alcohol (IPA) Bath:** Fill a container with isopropyl alcohol (IPA) and place the print inside. Ensure that the print is fully submerged and let it soak for several minutes. Gently agitate the container or use a soft brush to help remove any remaining uncured resin. The IPA helps dissolve and clean the print.
3. **Rinse:** After the IPA bath, remove the print and rinse it with clean, fresh IPA to remove any remaining resin or debris. Some people also use a dedicated ultrasonic cleaner to assist with this step.
4. **Curing:** Once the print is clean, it needs to be cured to achieve its final hardness and stability. Place the print in a UV light chamber or use a UV lamp specifically designed for resin curing. Ensure that the print is

evenly exposed to the UV light for the recommended curing time, which varies depending on the resin type and manufacturer's guidelines.

5. **Post-Curing (Optional):** Certain resins may require additional post-curing steps for improved strength and stability. This involves subjecting the print to a higher-intensity UV light source for an extended period. Check the resin manufacturer's instructions to determine if post-curing is recommended.

Always follow the specific guidelines provided by the resin manufacturer for best results, as different resins may have slightly different requirements. Additionally, make sure to work in a well-ventilated area and follow proper safety precautions when handling resin and cleaning chemicals. I have a stand alone air cleaner as well.

I Need More Help

There are many places to find help. YouTube has many good, and many not so good, videos. Try searching YouTube for your issue.

Facebook groups are a great resource for information not only by the manufacturers, but also printer specific groups. As an example:

- ELEGOO SATURN Series 3D Printer Owners
- ELEGOO MARS Series 3D Printer Owners
- ELEGOO Saturn/Jupiter/Mars/Pro 3D Resin Printer Un-Official Support Group
- ELEGOO Mars/Mars Pro/Saturn BEGINNERS RESIN User Group
- ELEGOO Neptune Series 3D Printer Owners
- ELEGOO Jupiter 3D Printer Owners

[Discord](#) is another source for information once you get used to its interface, and of course...

The manufacturers Website, well duh...

My favorite YouTube people:

- [Uncle Jessy](#)
- [dennys wang](#)
- [VogMan](#)
- [3DPrintingPro](#)

How to ask for help

When asking for help on-line, you must provide four things or you will get nowhere but more confused...

- A picture of the issue or bad print
- A picture or screen shot of the part in the slicer
- A picture or screen shot of your settings
- Temperature

I can help, but not by just looking at a bad print. I may have an idea, but with all the information, I can almost guarantee, I'll be able to give good advice.



SCAN ME

Welcome to 3D Resin Printing 101 The Denver O Scale National 2023

Scan the QR code above or go to

modelrailroadresource.com/WP/resin-printing-101/

You may download the three documents below.

- **Resin Printing 101** will contain this clinic with all links working.
- **The Wonderful Frustrating, Exasperating, Maddening, Awesome World of SLA 3D Printing** will contain an article from *The O Scale Resource* and gives you all the beginning information of resin printing.
- **Drawing for 3D Models** will contain an article from *The O Scale Resource* about designing your models and considerations you need to watch out for.

	G Scale	O Scale	S Scale	OO Scale	HO Scale	TT Scale	N Scale	Z Scale
G Scale		213%	284%	339%	386%	533%	711%	977%
O Scale	47%		133%	158%	181%	250%	333%	458%
S Scale	35%	75%		119%	136%	188%	211%	289%
OO Scale	30%	63%	84%		115%	158%	211%	289%
HO Scale	26%	55%	73%	87%		138%	184%	253%
TT Scale	19%	40%	53%	63%	73%		133%	183%
N Scale	14%	30%	40%	48%	54%	75%		138%
Z Scale	10%	22%	29%	35%	40%	55%	73%	

Find your scale in the table along the top. Then scroll down to the desired scale and find out the factor you need to enlarge or reduce. So, if, say, I have HO scale plans I want to enlarge to O scale, I run across the top to HO, then down to O scale, and see that I need to enlarge the plans to 181%. If I have O scale plans I want to reduce to S scale, I run across the top to O and down to S, and see I need to reduce the plans to 75%.

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1958 - 1978



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with
Kent Loudon

Along the Railroad features the exciting and unique railroad images of photographer Howard Serig who has captured the special time "when trains were really trains!" Many have claimed it to be "The best railroad book out there!" To see a video preview of the contents of the book please click on the image above. This is a limited edition hard cover book containing 222 pages of content. Copies are available for \$49.95 plus actual shipping. Orders may be placed by contacting the seller below:

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Check out our Website.

UPDATED: All back issues are available for viewing or downloading. Each issue has large cover image and full table of contents.

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**The O Scale Resource Magazine
September/October 2019 Volume 7 No. 1**

(Read On-Line)

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- SONIC 2020 Convention: By John Wubbel
- Black Fork Railway: By Robert Helm
- Model Railroad Signals and CTC Operations Part 1: By Serge Lebel
- Modifying a Rail King Boxcar: By Steve Harvath
- Building A Resin Gondola Kit: By Glenn Guerra
- The Story of Adams & Son Model Foundry: By Stephen K. Neill
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Addressing the Out of Scale Windshield Sculpt on 3rd Rail Early E-units

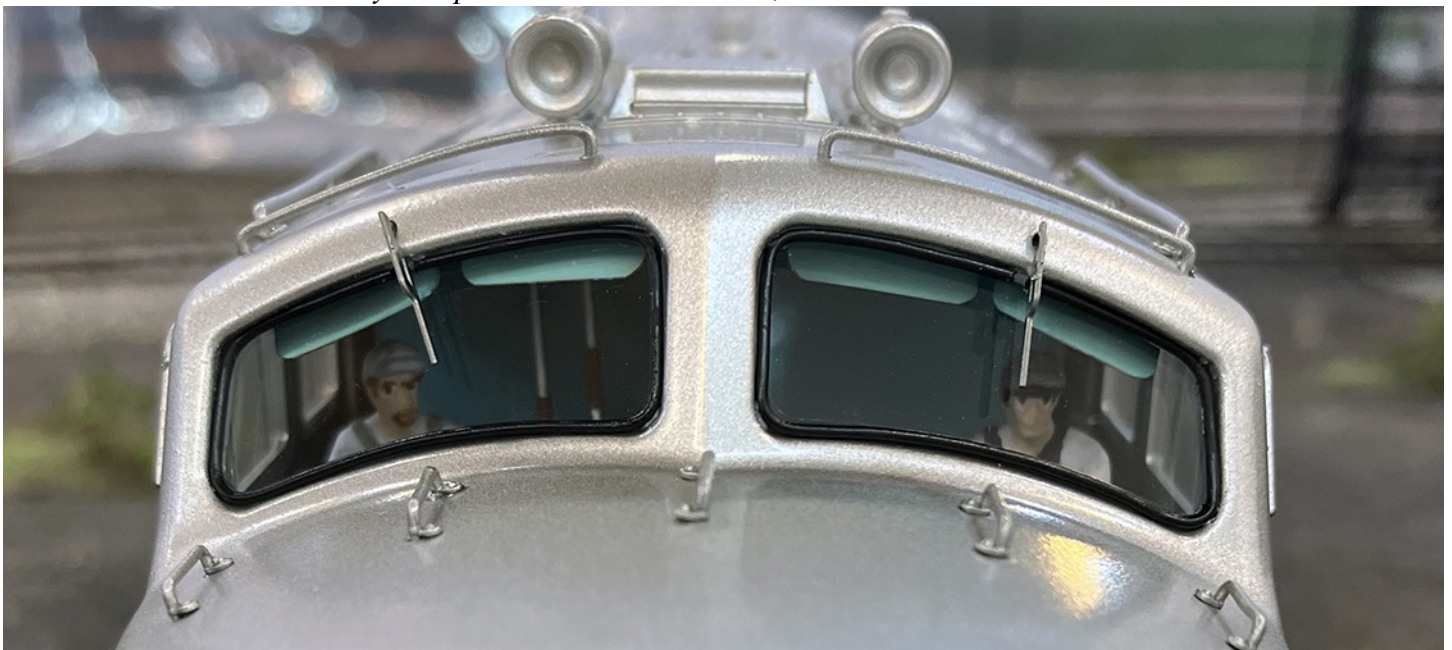
By [Santiago Pineda](#)

Email author by clicking on their name.

No model is perfect. Some, while outstanding, may present a feature that is either incorrect or simply out of scale. For example, the pilot on Key Model Imports early E-units hangs noticeably high above the rails. We still love them, though. In the case of 3rd Rail early E-units, the windshield sculpt stands out as particularly displeasing. When compared to any other well accepted F or E unit model, and those forms were virtually identical on prototypes (the glass pane size being exactly the same), this sculpt opening is simply larger than it should be. We still love them, though. Here, I'll present a reasonable fix to this part of the model that will render it, in my opinion, even more enjoyable.



Top before and Bottom after: from the factory, the windshield sculpt was out of scale, and the clear inserts were very conspicuous. Once dealt with, both conditions were resolved.

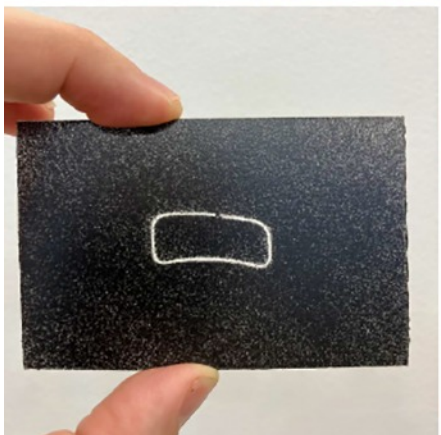
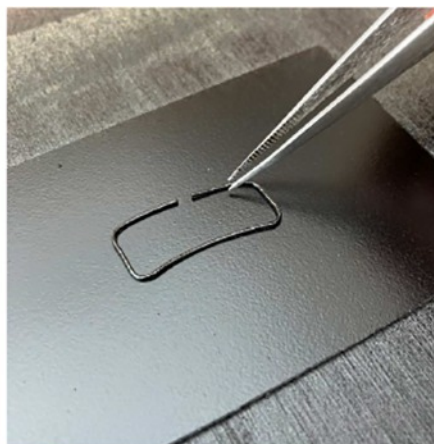




The P&D clear inserts provided the initial shape to which the wire was conformed to. The solder wire was 0.7mm in diameter.

The wire was later formed to better follow the 3rd Rail Diesel windshield sculpt.

To start, I used a spare P&D Hobby F-unit windshield clear plastic insert to form a simulated anti-glare rubber gasket. The idea being that the gasket would reduce the size of the sculpt. For this application, 0.7mm solder wire became the best option. Solder wire was used because it forms extremely easily while retaining its



shape over time. To my surprise, the resulting wire piece didn't quite follow the opening on the 3rd Rail Diesel. So, I placed the piece on the windshield and re-molded it directly.

Once happy with how the wire conformed to the sculpt's inner contour, I used it to create a wire bending jig that allowed me to reproduce multiple wire pieces. To do this, I placed the wire on a piece of 1mm thick plastic sheet and spray painted it. In doing this, the piece masked its own shape on the plastic. Thus, I was able to cut and sand the plastic sheet to the precise wire outline.

Once fully formed, the wire's outline was obtained by spray painting the piece over a plastic sheet.

This sheet was then used as a jig forming tool.

The bending jig expedited the production of multiple wire pieces that depending on which side was facing upwards could be used on either side of the windshield sculpt. The template was scribed at the location of the windshield wiper, so that the pieces could be properly cut and therefore would fall into place when added to the model. Various test fittings were needed, I admit.



The wire bending jig helped make exact reproductions of the needed wire pieces.

Depending on your particular road name, you may paint the simulated gasket a different color. In my case, the gaskets for the late era red-nose E5 were painted black. While as-delivered black-nose E5s were painted dull aluminum. To prevent the solder from coming into contact with the clear inserts, I brushed a couple of coats of Micro Scale Micro Flat clear resin. This should break the possibility of the clear plastic reacting in any way to the solder over time.



Top: Early era E5s had the anti-glare band painted dull aluminum, whereas the late era were black. Below: Once installed, the simulated bands reduced the sculpt's opening whilst concealing the clear plastic insert bottoms. A win-win.





The improvement is better perceived from certain angles. But notice how closer they now resemble a Key Model Imports E6.



Placing the pieces on the windshields was a little nerve-racking. A water-soluble adhesive such as Micro Scale Micro Kristal Klear was used in case excess oozed on the clear insert. I added a small dab at each corner inside the sculpt, and carefully positioned the pieces using nitrile gloves and precision tweezers. Whatever excess became visible, it was rapidly cleaned with a toothpick and a damp cotton swab.

Two situations haunted me as I addressed this upgrade. First, the fact that I didn't push the issue harder when I was consulting with 3rd Rail during the first run of the E5s. Second, I didn't order other road names from the second run because of this flaw. If I had tackled this issue quickly, I could have ordered those other engines I wanted and then "corrected" them. It is what it is, I suppose.

In no way I'm suggesting that in order to consider these models worthy of praise this procedure must be applied. These are by every measure (driving characteristics, level of detail, finish and overall quality) wonderful models. On the other hand, perhaps someone with training in 3D printing could come up with a drop-in part that better "hugs" the windshield contour, making a better solution available to anyone that wants it. In the meantime, I find that this "hands-on" answer does in fact make these models more pleasing to look at. I imagine you agree.







TAR PAPER SHACK DIORAMA

By Phil Camp

Email author by clicking on their name.



Allow me to start this story by giving credit for the inspiration for this diorama. A local hobby shop has a collection of old magazines that I peruse while shopping at that store. An article in the May 1992 edition of *Model Railroader* caught my attention as a project to tackle. My intention was to just build the structure as a stand-alone building, but once finished, I had to build a diorama to enhance the project.

The original article involved building an HO scale version for an existing railroad layout. The building was built to “fill-in” a corner section for scenery purposes. The article is listed as a project “Especially for Beginners”. Since I model in O Scale (1/48th) (1/4 inch = 12 inches), I used the plans and drawings to build to O Scale size structure. Drawings and plans were adequately represented and easy to follow to produce a completed structure.

Entire diorama measures 24 inches left to right, 12 inches front to back and the three sides displaying the murals are 17 inches tall.



Giving credit to suppliers, the background scenery mural is a product of Realistic Backgrounds using one whole section and part of a second associated section. Wood for the shack is Kappler brand scale wood strips (2x4, 1x3, 4x4, 2x10, etc.) Tar paper used for exterior wall sections is Colorbok brand cardstock (8.5 in x 11 in.) – color is called Tuxedo – purchased at Wal-Mart in the office supply section. Weathering is applied using colored chalks purchased at a local art supply store.

Use of weathering chalks allowed me to practice with various color combinations to get the “just right” look for a shack in the woods. Gray color acrylic paint was used to paint the wood. Color is a personal choice and the wood can be stained/painted/weathered, etc. – to the desire of the builder. Figures are Woodland Scenics brands.

The fire pit is actually a battery powered candle with orange colored flickering LED light – purchased at Wal-Mart (package of 12 found in the candle section.) The flickering colored light resembles a fire in the pit as actual individual wood pieces are stacked in this area (as well as stacked in the right covered part) outside the building. A hole, slightly larger than the diameter of the candle, was cut into the floor to accommodate the recessed candle and a block was added underneath as a support shelf for the candle.

The steps leading up to the front porch as stained railroad ties that are glued together to form a set of steps to access the porch. The scenery items are also Woodland Scenics including the ground cover (grasses), shrubs and trees (various types and sizes). I tried to group the trees as nature would have and also using the backdrop scenery as a guide.

Story of the figures in the scene: The guy resting against the porch post got up early to chop wood for the fire pit and the interior stove and now he is resting from his work for the day. The guy sitting on the steps just finished his lunch and he is just enjoying the outdoor air and sunshine. The dog on the porch is looking over the edge around the trash can because he just saw something moving on the ground – possibly an animal since the shack is in the woods.

With this particular diorama, I chose to not include any lights or wiring in the shack as this is a weekend retreat for the guys and not occupied full-time. There is no electric service to this building, so the guys have to rely on flashlights and/or lanterns for night-time illumination. The only light would be the glow from the fire pit when in use.

Hope you enjoyed this presentation. This was an easy build.



SCALE-CRAFT IN THE POST WAR ERA: WHAT HAPPENED?

By Jay Morris

Email author by clicking on their name.

“0” GAUGE KITS for

Powerful New York Central Hudson (4-6-4) Type Locomotive

Larger and more powerful than the Pacific, this locomotive, standard with the New York Central, hauls such famous fast trains as the Twentieth Century Limited, Commodore Vanderbilt and Empire State Express. Used on practically all important railroads, it is equally at home at the head of fast passenger trains or heavy freights. (See Locomotive and Tender Kit on opposite page.)

Distinguishing features of the Hudson are its water feed heater, Alligator crossheads and booster engine on the trailer truck which enables it to start long heavy trains smoothly. All these features are faithfully reproduced to scale in this model.

Because of a larger firebox in this model locomotive it is possible to use a horizontal type transmission and drive through a special improved spring coupling which cushions the start of the load and enables it to start smoothly and realistically. It can easily pull 30 to 40 freight cars.

The superstructure of the locomotive and the tender are cast in one piece, thereby eliminating much tedious labor to assemble. The tender trucks come completely assembled and are die cast to show every detail. All that is required to completely assemble all locomotives and tenders on this page besides the fitting together of the parts in some simple drilling and soldering. See opposite page for Taps and Drills.

Combined length of locomotive and tender, 23 1/2 inches, combined weight, 12 1/2 pounds. Kit contains detailed instructions and diagrams for easy assembly. Motor assembled to eliminate tedious wiring details. \$6 down on Easy Terms—See Table of Terms on Page 2. We pay the postage.

6 CP 42344—Hudson Type Locomotive and Tender Kit, Cash. \$62.50

NOTE: All locomotives on this page are for standard 1/2 rail operation. For 2 rail installation, add \$6.00 to total price and specify “2 rail installation.”

The Pennsylvania K-4

The super detail on this Pacific type (4-6-2) locomotive includes a Walschaert valve gear, Laid type crosshead, and turbo generator. Frame is one-piece bronze casting insuring long lasting bearing surface for moving parts. Motor and running gear are completely assembled to eliminate tedious wiring details. Length of locomotive and tender 29 1/2 in.; weight, 6 1/2 lbs. On Easy Terms, \$5 down.

6 CP 42327—We pay the postage. Cash. \$57.00

So. Pac. (4-6-2) Pacific Type

Southern Pacific uses this locomotive to haul heavy freight! Popular with model railroaders because with few changes it can be made into other Pacific type locomotives. Vanderbilt type tender. Length of locomotive and tender, 22 3/4 in.; weight, 10 1/2 lbs. Motor and running gear completely assembled. On Easy Terms, \$6 down.

6 CP 42367—We pay the postage. Cash. \$59.50

So. Pac. (4-8-2) Mountain Type

Originally designed for heavy passenger train service in the mountains! Now hauls fast through-freight. Has almost twice the pulling power of any other type. Length of locomotive and tender, 24 1/2 in.; weight, 13 lbs. 6 oz. Motor and running gear completely assembled to eliminate wiring details. On Easy Terms, \$6 down.

6 CP 42357—We pay the postage. Cash. \$67.50

The Santa Fe Mikado (2-8-2)

The Santa Fe Mikado makes an excellent model locomotive because it's fast and powerful. Famous Consolidation type locomotive with a two-wheel trailer truck... complete in every detail. Length of locomotive and tender, 23 1/4 in.; weight, 12 1/4 lbs. Motor and running gear completely assembled to eliminate tedious wiring details. On Easy Terms, \$6 down.

6 CP 42377—We pay the postage. Cash. \$62.50

20 SEARS & ROEBUCK

FIGURE 1

The slightly muddy pictures above showing all 5 engines is from the Sears catalog of 1941.



FIGURE 2

Scale Models Inc later renamed Scale-Craft (“SC”) was a big player in the formative years of the hobby, particularly for O Scale 1/4 inch models. The firm produced an ever growing line of O Scale, and later OO scale, models from the mid 1930’s right up until the early months of the second world war. I don’t intend to detail the pre-war line in this article, but it makes sense to list, in part, the large variety of equipment sold up until the war. I will concentrate on mostly the O Scale models and their relationship to the OO line.

By 1941, Scale-Craft (or “SC”) produced relatively large quantities of five different O Scale locomotives. Based on the number still in existence, there were far more Scale-Craft O Scale locomotives produced than by any other manufacturer except for the Lionel scale Hudson and 0-6-0 Pennsylvania switcher. Certainly, SC produced the largest number of 2 rail and outside 3rd rail scale models in the final years before the war. The models were a Pennsylvania K-4 Pacific, a New York Central J1D Hudson, a Southern Pacific MT-3 Mountain, a Southern Pacific P-13 Pacific (the prototype was one of the largest Pacifics ever made) and finally a Santa Fe Mikado (Figures 1-4). The Mikado and Hudson were cast bronze, the rest had formed/spun brass bodies. These were readily available into early 1942 with some improvements made to the models over their years of their production.



FIGURE 3

There was a large freight and passenger car range highlighted and included a line of beautifully pre-painted (sides and ends) double door round roof box cars, a highly detailed die cast passenger coach and a die cast baggage car. Though heavy, the passenger cars were considered by many to be far superior to other non-brass models available until modern times. (Figure 5).



FIGURE 4

None of the listed locomotives, and only a subset of the freight cars, were available after the war. To understand why, I will rely in part on catalogs, advertisements and the Woody Mathews articles from "O Scale News" magazine in 1991. In addition, having had a bit of time on my hands when I worked for USAF

JAG in the early 1980's, I had extended conversations about the Scale-Craft line with Henry Pearce (Pearce Tool Company) and Bob Smith (Central Locomotive Works). In the early 1980's Bob and Henry had all the

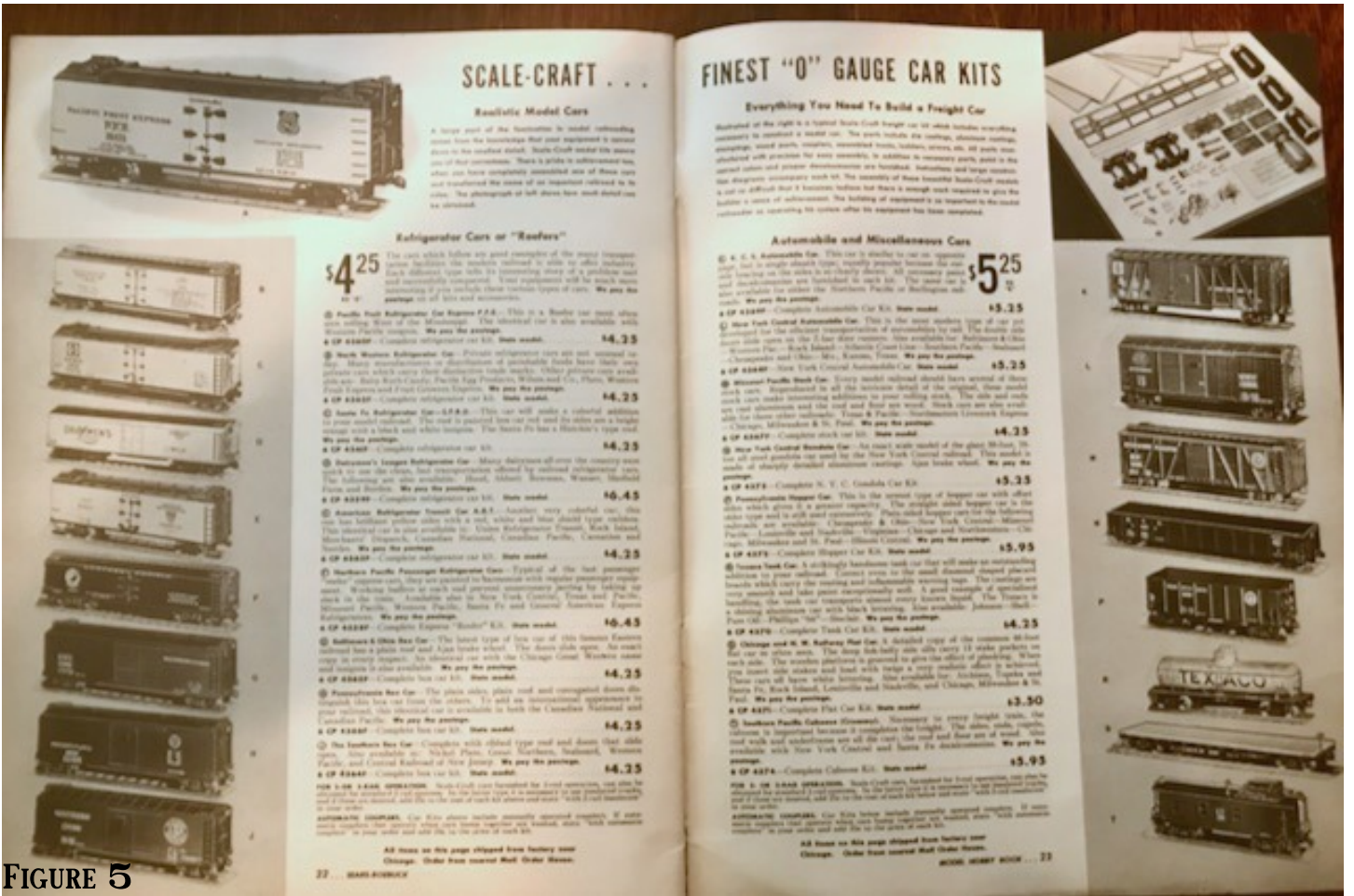


FIGURE 5

Above image is from the 1941 Sears catalog.

surviving locomotive tooling. The freight cars went to Thomas Industries (Jim Thomas) and were likely destroyed in a fire after Thomas' death in the early 1960's.

In 1945, Scale-Craft had BIG plans for the post-war period. They invested in a brand new up from the ground factory in Libertyville, Illinois. They proudly showed and advertised the architectural drawings and early external pictures of the new plant. Sadly, either they never actually occupied the facility or did so briefly.

Among the most consequential SC decisions made in 1945 was (1) the decision to convert all locomotives to sprung drivers in fabricated frames instead of the using solid bronze prewar frames and (2) produce a new line of O scale locomotives that were completely different from their successful pre-war line. In retrospect they bit off far more than they could handle, and it gets worse from here.

SC also saw an "opportunity", namely they found out that Lionel would not be continuing their OO Scale line after World War II. SC had sued Lionel in the late 1930's for quite obviously manufacturing nearly identical copies of the SC OO freight cars that SC introduced in 1937. Lionel settled the lawsuit and paid SC royalties on their OO sales. This might have influenced Lionel's decision to discontinue the line; however, Lionel was probably also looking at *Model Railroader* magazine surveys that indicated OO scale had crashed in popularity by 1945 and was in the low single digits as a percentage of active model railroaders. It is also likely that Lionel's pre-war sales of OO Scale models were disappointing as both Lionel and Scale-Craft both further complicated issues by offering both A/C and D/C, 12-volt and 24-volt versions as well as 2 and 3 rail models in OO. This was at best confusing and was somewhat costly to produce. HO modelers had no such incompatibility issues to contend with.

So, while SC probably thought they could dominate in OO scale after 1945, they failed to consider that American OO scale was on its way to near oblivion. They bet on the wrong horse, one that never left the gate after World War II. There was also a virtual explosion of new 12 volt direct current HO models as well as the wide introduction of new S scale models which are only slightly larger than OO scale models. Between HO and S Scale, there really was no room or justification left for OO scale.

Meanwhile, back to the O Scale line. All the new Scale-Craft O scale locomotives were designed to have operating leaf springs on the drivers similar to the prototype. This was extremely difficult to accomplish with the technology available to SC at the time. A result of this decision was that the locomotive drivers tended to be spaced too far apart which could only be partly disguised by driver brake hangers. Initial prototype model drive frames didn't go together well. More about that later.

Let's look at what was planned. Both Model Railroad Equipment Co of New York City and The Hobby Depot of Elizabeth New Jersey advertised three new SC locomotives in 1946. The Hobby Depot advertisements which ran in *The Model Railroader* magazine listed the new locomotives and prices. Please see attached page from the Hobby Depot's 1946 catalog (Figure 6). Sounds exciting! A Northern Pacific 4-8-4, a Hudson and a Pacific – maybe generic. There was a bit of a move to generic steamers after the war as some in the hobby thought such models would have broader appeal than those detailed for specific roads. New O Scale SC parts also began to appear on the market in 1946, such as die cast coupler draft gear, working reefer ice hatches and a self-contained diesel/MU power truck (I am not sure this last item was ever produced). After repeatedly advertising that their new O scale locomotive line was coming very soon, SC was abruptly sold off to their West Coast distributor, Doug Douglas, in November/December 1946.

Why was the line sold? Well, like so many stories, there was the official story and then there is what really happened. Officially, Donnelly stated in a full page ad in *Model Railroader* that he had to return full time to the family printing business, the RR Donnelly Company. I have been told other stories over the years.

Bob Smith told me that Donnelly had spent a fortune on the new SC factory and on the new locomotive designs and decided that it just had to stop. The key problem was that the new O scale sprung frames and drivers didn't fit together properly. Donnelly had paid for the manufacture of over 1000 locomotive frames with

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motor on hand	65.00
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Walthers, GG-1, Bedell trucks, delivery about Apr. 1st	100.00
Walthers, Bedell electric—1 motor: \$60 2 motors	70.00
Free lance, Mikado Pennsy L-1 and C&O or Frisco, No. 3 motor, new chassis half assembled	75.00
Same as above, chassis just started	50.00
Saginaw, 2-8-0	62.50
Scale-Craft 4-8-2, SP	70.00

K&D motors, universal: No. 2, \$4; No. 3, \$5 No. 4 \$6 (on order only).
Lobaugh motors, universal or permag.: No. 1, \$10; No. 2, \$11; No. 3, 12.00

We have Lobaugh freight trucks. See Jan. Lobaugh ad; order by number. Pr. 1.50
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Alexander GG-1, PRR art., 3-rail	285.00
High Challenger, UP art., 2- or 3-rail	285.00
Ferris Pacific, Erie K-5, 3 rail, new	150.00
Scale-Craft Mt., SP M-2, 2- or 3-rail	195.00
Scale-Craft Mt., C&O, 2- or 3-rail, new	250.00
Scale-Craft Pacific, C&O F-19, 3-rail, new	140.00
Scale-Craft Pacific, SP P-13, 3-rail, new	125.00
Walthers Mikado, C&O K-3a, 2- or 3-rail, new	150.00
Icken Diesel, 0-4-4-0, 3-rail, new	75.00
Miniscale Hudson, NYC, 3-rail	115.00
Scale-Craft Hudson, NYC, 3-rail, new	125.00
Saginaw Consol., PRR H10B, 2- or 3-rail, new	125.00
Praet switcher, PRR B-6, 3-rail, new	95.00
Walthers Alco, PRR 0-4-4-0, 3-rail, new	65.00
Lobaugh 2-6-6-4, C&O from Challenger kit, 2- or 3-rail. A real beauty	350.00
Lobaugh 4-6-6-4, N. P. articul.	325.00

O Gauge Cars CUSTOM MADE

1 Congress comb. Pullman, 2 Mini-scale Pullmans, PRR, sprung trucks, sold as 1 set	\$47.50
Alexander observation to match, PRR	20.00
Alexander Pullman, diner, coach, C&O, set	40.00
Walthers baggage, comb., obser. to match above	39.50
Walthers 6 car coach, NYC	75.00
Walthers full 6 car train, C&O	75.00

Custom Made Locos by George Stock of Philadelphia

1 Mantua Consol., run 2 hrs.	\$65.00
1 Mantua Consol., run 10 hrs.	55.00
1 Mantua Atlantic, run 2 hrs.	60.00
1 Mantua Mogul 4-6-0, run 20 hrs.	40.00
1 Stock Camelback 4-6-0, run 10 hrs.	65.00
1 Varney Mikado, run 15 hrs.	55.00
1 Mantua Goat 0-4-0, run 8 hrs.	40.00
2 Walthers Diesel switchers, run 10 hrs., ea.	37.50
1 Am. Fl., converted D. C.	28.50
1 Am. Fl., A. C.	19.50
7 Walthers switch machines, ea.	1.75
True-Scale roadbed, sections	.45

1000 More Items Write for specific needs

Special!

Send 6c for Our Catalog

Mention only gauge you want. 3 separate catalogs, 6c each gauge.

HO Gauge Car Kits

Mantua reefers, with trucks	\$2.50
Borden's, Baby Ruth, Swift, etc.	
Mantua tank cars, with trucks	\$2.50
Gulf, Shell, Penn Drake, etc.	
Mantua caboose, 4-wh., any road	\$2.50
Varney reefers with trucks	1.65
R-1, MDT; R-2, SFRD; R-3, FGEX; R-4, PFEK; R-17, PFEK steel.	
Varney box cars with trucks	1.65
B-26, Milw.; B-28, C&NW; B-29, South.; B-30, SP O. Mdse.; B-31, NP; B-32, Seaboard; B-33, C&EI Buy Bonds.	
Varney B-36, GN, all silver	1.90
Varney flat cars with trucks	1.65
F-4, L&N, red; F-5, GN, black	1.65
Lehigh box cars, GN, KCS (trucks)	2.00
Lehigh reefers; Asco, Swift, etc.	2.00
Sterling caboose, D&RGW	.60
Trucks for same	1.00
Walthers 50 ton, 50' reefer, 4-dr.	3.50
Walthers twin dome tank car	3.00
Walthers 4 sect. tank car	3.50
Walthers 54' post.-bag., 4-wh.	4.00
Walthers 60' postal, arch rf., 6-wh.	4.25
Walthers 54' post.-bag., 6-wh.	4.25

HO Gauge Loco Kits

Varney Dockside switcher	\$15.00
Mantua Mogul	29.50
Walthers Alco switcher, 12-v. motor	19.00
Walthers gas-electric, 12-v. motor	19.00
READY BUILT	
DLW interurban, 12-v.	28.50
Walthers gas-electric, trailer	30.00
Rock Island Rocket, 6-9 v.	30.00

Starline steel truss kit	1.75
Starline cattle pen kit	1.00
Starline letter box kit	.10
Starline conc. underpass, Ho \$1.50, O	3.00
Megow, all buildings	30c & up
Ideal, all buildings	30c & up
Marn-O-Power DC power unit, 12-v.	24.50
Ohmite rheostats, each	3.85
Midlin switches, left or right	2.75
Midlin track kit, 24' rail	6.00

NOTE

Full OO gauge list in May Model Railroader
SCALE-CRAFT loco kits IN STOCK MAY 1st.
CNW 4-8-4, \$45. 10-Wheeler, \$21.50. Switcher, \$29.50
Car kits NOW in stock, \$3.50 and up.

For additional information send stamped, addressed envelope and we will be pleased to go into detailed information.

TERMS: Money order in full plus 10% mailing charges. If merchandise is sold, letter with advice will follow promptly.

THE HOBBY DEPOT 274 N. Broad St., Elizabeth, N. J.

FIGURE 6

drivers to fit – they didn't. In addition, Elliot Donnelly was himself an avid OO modeler and just didn't want to spend any more money on this O scale project. I have also been told that Donnelly's young daughter died suddenly after some sort of accident. If this is true, then it is understandable that Donnelly would have lost interest in model railroading for an extended period.

The whole Scale-Craft line was sold to Doug Douglas, as mentioned above, in late 1946. This era was not a good one for Scale-Craft. Throughout 1947 into early 1948, Douglas made it clear that he was primarily interested in OO scale and no new O Scale models were promised or advertised. The OO Scale models included the beautiful die-cast 4-8-4 which was reissued with sprung drivers. Actually, Douglas' advertisements quickly became rather sad as they clearly indicated he was only selling down existing inventory including paint. As far as I can tell, the SC model tooling never left Illinois and there was little or no new model production from 1947-1949. Critical time was lost in the burgeoning post-war market. Douglas ultimately failed to make his payments to Donnelly who repossessed the line.

In March 1950, an advertisement appeared indicating the return of SC to Elliott Donnelly with H. Burton Barr as VP. Barr was with the firm in the glory days before the war. The cast aluminum and wooden O scale freight car kits were quickly advertised. These were kits that were originally designed in the 1930's and 40's. While the milk car and express reefer continued to be popular, the other cars, and particularly the undecorated box cars and reefers, were not competitive with newer products from other manufacturers. Worse, they were priced higher than better detailed cars with decorated/painted sides from Athearn and General Models (later All Nation). Other SC cars, such as the hoppers, were less detailed than the Railcraft and General Models cars then available. By and large, their old design freight cars didn't sell well. The GN 4-8-4 was advertised for delivery in late 1950 and then early 1951. It wasn't ready and never saw the light of day. Interestingly, the last SC catalog from 1950 proposed using some OO scale tooling to produce an ON3 model – O Scale narrow gauge before its time. Clearly, by 1950, Donnelly must have recognized that OO scale was near its commercial death.

Let's turn to where things stood at the end of 1950. The new SC factory had been sold to another commercial venture. The pre-war tooling was fragmentary and not possible to be easily put back into production. The cast tenders for the pre-war Hudson and the two Southern Pacific engines had been made by a form of low-pressure hard metal casting. This was sort of a poor cousin to modern high pressure die casting and was no longer in use by 1950. The K-4 design was very labor intensive to manufacture and labor rates in 1950 were much higher than in the 1930's. The masters for the Hudson boiler was damaged around the cab and stack areas and needed to be redone. Other models such as tank cars and the NYC caboose also relied on obsolete casting technology. The tooling for the new line of locomotives had never been finished other than one nonfunctional model of the 4-8-4 that reused some parts from the prewar NYC Hudson making it a bit of a generic model. As a final note, the Korean War began in June 1950 and it was expected that price hikes and rationing would be returning, particularly for the metals needed in the models.

We have now arrived at the break-up of SC. In late 1950, Elliot Donnelly was either not interested, or at least, didn't have sufficient time and the energy needed to reboot the company. He was likely upset with the Doug Douglas fiasco, the failure to finish the new O scale line and the recognition that OO scale line was not selling. Elliot asked Bob Smith from Central Locomotive Works to step in and take over as they were both in the Chicago area. Bob already had a very positive reputation in the hobby from his work at the Museum of Science and Industry display. Bob told me that he seriously considered this opportunity, but having two young children and a full-time job at RCA, he couldn't see his way to having sufficient time to run Scale-Craft and continue his own line of Central Locomotive Works models.

The decision was then made to sell SC in pieces. Thomas Industries purchased the freight car kits and associated stock. These kits, as noted above, had been slow sellers as they were mostly unchanged pre-war kits that were being sold at a premium over newly designed kits from others. Thomas would be selling existing stock for many years, eventually off-loading most remaining kits to Blum's Hobby House in Cleveland. There is little evidence that Thomas did any more than assemble existing stock into kits and box them up. It is possible that he could have produced a few parts as needed for complete kits.

A former factory employee of SC purchased the OO Scale line. I suspect it was sold for very little. The new owner placed a few small advertisements in *MR* and shipped existing kits before exiting and selling the OO scale line to Kemtron in the early 1950's. Kemtron had little success in OO even though they introduced a GP7 diesel and a few other newer pieces. Eventually, the line and its tooling were scrapped as interest in OO scale had faded out.

The most interesting part of this story to us relates to the O scale locomotives. These were sold to Bob Smith. Bob decided to retain the Central Locomotive Works name which he had already established in the hobby. He therefore passed on using the Scale-Craft name which Donnelly offered him. Sadly, around this time I have been told that Bob's young wife suddenly passed away leaving him alone to raise their children. As would be expected, this delayed any hobby work that was planned. With financial help from Donnelly, Bob was eventually able to complete a workable version of the 4-8-4 using both pre-war and postwar SC tooling with changes made to make it a manufacturable operating model.

As an aside, I actually saw and had an opportunity to purchase the only known version of the 4-8-4 Northern made by Scale-Craft and pictured in the 1950 catalog. It was exactly as pictured, but without gearbox or motor (Figure 7). Note the loco number and the sheet metal tender – it is the tell and it is exactly the same as shown in the 1950 SC catalog picture. When the model was finally produced by CLW, it had a similar but cast aluminum tender. This original SC model was owned in the early 2000's by a 3-rail (toy train) enthusiast who had purchased a large collection of pristine SC factory assembled models, mostly freight cars as pictured in the catalogs. He was looking to recoup his investment, but I passed on making him an offer. He did, however, gift me a fairly rare virgin work car kit in a pristine box as a present for helping him identify the collection. Rumor was that the collection perished in a garage fire a few years later.



FIGURE 7

Returning now to our main story. Bob Smith told me that after he received the Scale-Craft locomotive line that he had no interest in the pre-war models as the tooling was, as noted above, both in poor condition and incomplete. The exception was the Santa Fe Mikado which he considered "ugly" and he had no interest in offering it for sale. The pre-war tooling passed through All Nation to Henry Pearce and is now at least partially owned by Stevenson Preservation Lines. Henry told me that the Hudson boiler master was damaged and that for the brass superstructure models (MT-3, P-3 and K-4) all he had was the masters for the frames. He didn't know who made the pre-war spun brass boilers and didn't know whether they could be recreated. The cast metal tender tooling for the Hudson and Southern Pacific models was also missing or useless. When the pre-war tooling was owned by All Nation, there was a notice placed in *O Scale Railroading* magazine (June 1979) by



FIGURE 8

the then owner (Bill Pope). Bill stated that he intended to revive the original pre-war SC locomotive line. I strongly suspect that upon close inspection, he deemed it impossible to recreate these models and offer them at any reasonable price given very limited demand. No further mention was ever made of this project.

Bob Smith (CLW) did make an effort to complete work on the post-war line in about 1953. He had received "over 1000" locomotive frames for the planned the 4-8-4 Northern, Hudson and Pacific models. In all cases, they were designed with the working leaf spring arrangement which resulted in the drivers being too far apart for any known prototype. (Figure 8/CLW adv) Upon reflection, Bob determined that only the 4-8-4 Northern would look decent and devoted his efforts to it. I actually saw examples of the frames for the other models in Bob's shop in Florida in the early 1980's. In any case, about 1954, Bob gave the first working model of the Northern to Donnelly as a gift for the help he gave to Bob over the years. The model kit was offered by CLW from the mid-50's to at least the 1970's, but the tender was changed from the aluminum castings to an etched brass tender at some point. Note

that this later tender still differed from the original sheet metal tender in the only SC model of same.

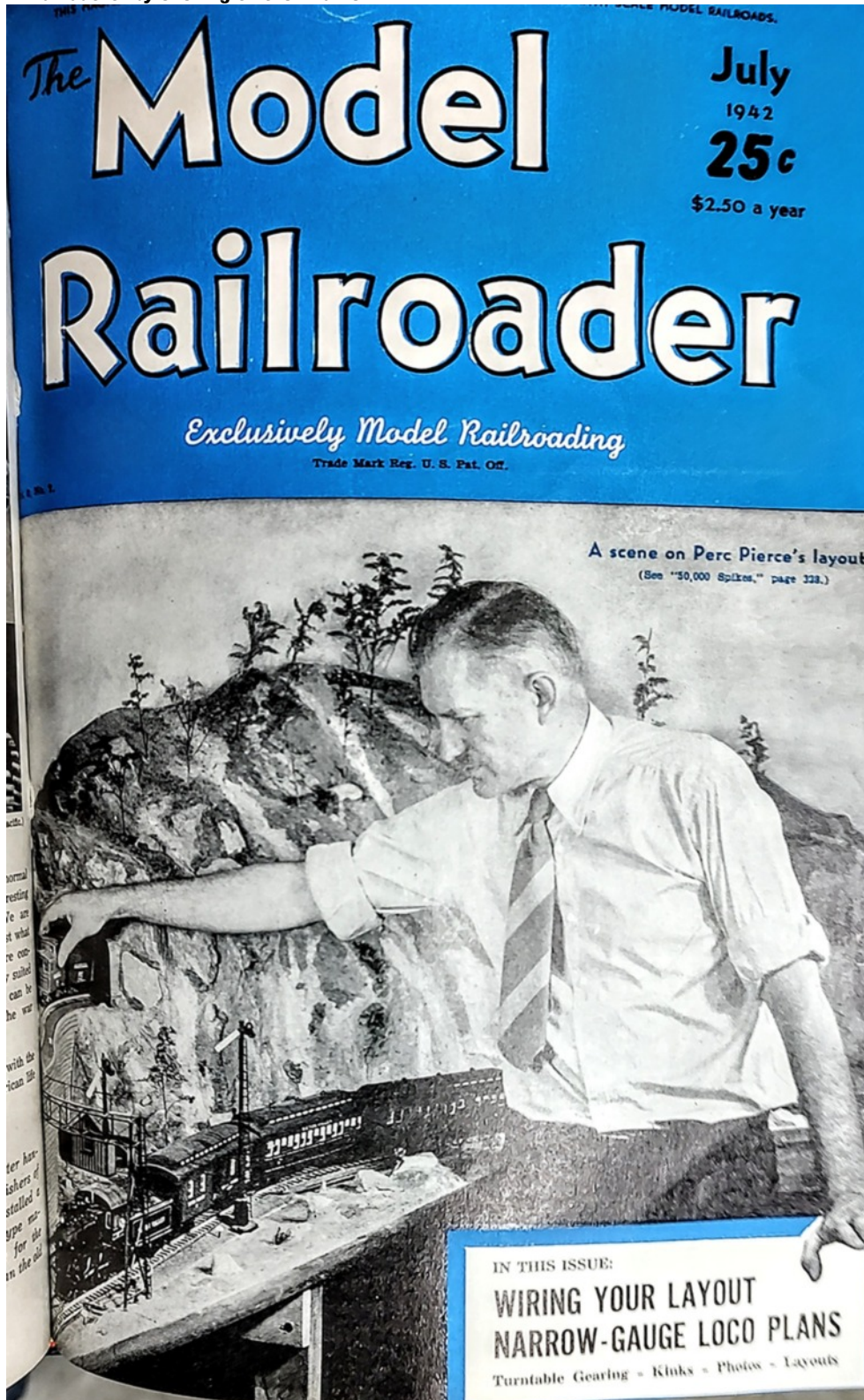
In summary, like so many things, there are several reasons for the company's failure. Concentrating on OO Scale, building an expensive new factory, adopting an overly ambitious and complex spring leaf design for the post-war O scale models, a benighted failed sale to an under funded and inexperienced buyer, failure to reintroduce the pre-war line as a commercial bridge to the future and a failure to understand the developing post-war model railroading market both in O Scale/O gauge and in HO are the main ones that stand out. Any one of these bad decisions could have killed Scale-Craft but in combination they were clearly commercially deadly.

One can but wonder if the history and growth of O scale modeling would have been far different if SC had emerged from WWII as an ongoing concern. The lack of new models outside of General Models (All Nation), CLW and a reduced Lobaugh line from the 1950's until AHM's and Atlas' entry around 1970 clearly hindered the scale as did the lack of a good track line after the closure of Bob Peare's trackage firm. The only source of significant new models in the late 50's and early 60's were imports by Max Grey and International Models. This created significant entry bars for new hobbyists wanting to start in O Scale but that is a story for another day.

O Scale... Old School Style Vintage O Scale 1926-54

By Carey Williams

Email author by clicking on their name.



All model railroader's fantasy ..

Wanna see my picture on the cover

Wanna buy five copies for my mother

*Wanna see my smilin' face
On the cover of the Model Railroader ...*

Percy Pierce made it to the cover of *MR* July 1942 with his Seton Valley Railroad. Hard to believe someone would find "model railroading" as a "fall back" hobby. Percy W Pierce's first passion in 1908 was aviation gliders & planes, models & full size, manufacturing and flying. When the new Franklin Institute building opened in 1936, they requested Pierce's glider as a display. Mrs Pierce was thrilled when Percy took up model railroading in the basement.

Percy lived in Philadelphia surrounded by many veteran model railroaders, including Paul Egolf who was the first to offer O scale trains in 1927 and had built several of Percy's model airplane kits before going into trains... the two hit it off. (Paul Egolf will be covered in a future article with his contributions to O scale.)

Paul Egolf provided components for a PRR D-16 to get Percy on the right track. D-16 has a cast bronze boiler, cab and tender sheet brass. K&D #1 universal motor.



Percy scratch built the passenger cars which are works of art. Wood and bristol board construction with full interiors including a baggage car. Note how each car is unique with windows and shades at different heights as if each riding passenger had adjusted their window to suit themselves.



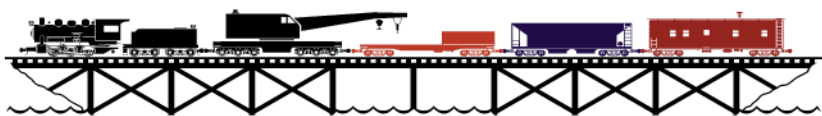
The trains ended up being auctioned off many years later, and tenders and engines were switched at the sale. Procurement of #17 engine and the 4 cars happened at a York TCA show and several years later, and I was able to purchase the other D-16 privately (after it visited AZ for awhile) to return proper tenders to both engines.

Percy's Seton Valley Railroad was heavily covered in various articles in *Model Railroader* and included in a book throughout 1942. Twenty years later, Percy passed away and the layout was taken down. To see Percy's 2 D-16's double headed pulling his scratch built passenger train please see link: https://youtu.be/lkeAyCm5_Xg



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NEW TRACKS MODELING



By Contributing Editor [Jim Kellow MMR](#)

MENTOR DEFINITION: A TRUSTED COUNSELOR OR GUIDE

MODELING WITH MENTORING FROM TALENTED MODEL BUILDERS AND EVEN FROM MODELERS IN OTHER HOBBIES

New Tracks Modeling Announcements

All serious manufacturers and Kit Modelers Take Notice: What makes a Kit great to build, gets more modelers building them, and gets the manufacturer more sales?

First, I want to thank Martin Breckbiel MMR for reviewing and making suggestions that greatly clarified this article. His editing also helped make it more readable. Thanks so much Martin.

I have been writing New Tracks Modeling articles about mentoring and model building for over five years in this magazine. I have profiled many small and medium sized manufacturers many of you may never have heard about before I wrote about them. I have also profiled many modelers that I believe can help all of us, and particularly less skilled modelers, improve their skills.

My purpose in writing these articles is two-fold: 1. to encourage more model building by today's modelers, and 2. to increase mentoring to pass along the skills and modeling knowledge from today's talented modelers to those less skilled or novice modelers, and therefore, to the future generation of modelers.

I never asked any of the manufacturers to send me a kit to build, but rather asked them to offer a free kit to one lucky reader through a contest drawing for readers to enter. I asked each winner to send me photos of the prize kit they built with any comments they had on building it. In this way, I hoped to accomplish a part of my purposes for writing the articles. I am pleased that I only had one manufacturer I contacted turn me down to supply a Contest Drawing kit.

However, I am extremely disappointed that the majority of winners never followed through on their commitment to share their model building of the kit they won. Why they didn't, I don't know. Maybe they put the kit in a closet to build later (never), or tried to build it, had a problem and gave up, or they built it and created a fantastic model and just did not want to take the time to share their model with the rest of us, or maybe they did not like the kit and just didn't want to give us a negative comment. Whatever the reason, I got nothing!

So I decided to try to find out what the problem is. Sending follow up emails got me nowhere. This is too bad because their non-response is not fair to the manufacturers who gave one of their kits for free to a reader of my articles who said they wanted the kit by entering to win the contest drawing. It's also not fair to other

readers who also entered the contest and did not win. I don't want to publicly embarrass anyone, but I hope all of the winners will please build their prize kit, and send me some photos with at least a couple sentences about their building experience. Note, I did say please.

But the question remained in my mind. Why does a modeler who gets a free kit that said he/she wanted to build, but either does not build it, or if he/she does, tells no one? Hmm... Partly because of my frustration in trying to figure out an answer to this question, and partly because of comments from readers about problems they were having building kits, I began to wonder if there is some kind of disconnect between modelers and kit manufacturers that results in modelers not building kits even if they are free.

Maybe the kits a manufacturer is producing are not living up to the expectations of modelers and modelers just don't want to build them. Or vice versa, the kit is so great to build that the modeler is too busy building the kit he does not have time to take a photo or send me an email. Therefore, I decided to see if I could determine if communication between the buyer and seller about what a kit includes and how to build it has broken down. If so, maybe my readers were not getting the benefits from the Contest Drawing efforts I was hoping for. My research is by no means scientific, but I believe it points us in a direction we should definitely discuss.

So I decided to ask what modelers and manufacturers believe make a great kit to build. I asked the question on my Facebook page and I got a lot of responses that I want to share with you. So here they are.

1. Jim, For me, it is:

Fidelity to the prototype.

Quality of components

How much do I have to fiddle with it?

Easy enough to assemble that I don't need the help of an octopus to get it together.

Quality components. Good trucks, good wheels, KADEE couplers. Preferably scale head.

Just a few that I can think of this morning.

2. Easy to follow instructions

Finely detailed parts

Scale, or as close to scale details as possible

3. Jim, I suppose that the answer/s to this question also depends on the skill level or interest of the person assembling the kit.

Even the finished product can be subjective. What I want is different from what someone else wants. So for some, a blue box Athearn kit is a great kit because it was simple to put together, was fairly quick to put together, but also gave them the quick satisfaction of building something.

Others may see an Athearn blue box kit as a great kit because it is fairly inexpensive and gives them a lot of opportunity to modify and detail it to whatever level they desire.

Back in the mid to late 90's, I thought Intermountain and Proto 2000 cars were the bee's knees because they had separate grabs and other finely detailed parts. However, after a bit of use I cursed them a bit because all those great details began suffering damage.

You've asked a very complicated question, Jim!

Final comment. Hands down the best kits in the world are Lego kits! Well detailed instructions, perfectly fitting parts, and never a missing part. I honestly don't think anything on the market comes close to Lego in terms of instructions.

4. Concise instructions

Parts (preferably with options) that fit correctly

Spruces suitable to the size of the aforementioned parts

Not too much flash

Decals in good register

5. A kit that provides an education, historical, applicational purpose of the kit as well as skill building.

6. Great instructions, all the pieces available, extra small bits in case something breaks

7. The parts actually go together.

8. Clear and easy to follow instructions. Good quality and accurate parts and a good looking finished product with good performance.

9. The fitment of the parts

10. A lot of good suggestions already. I think it depends on the materials. A resin kit I saw recently didn't have pre-drills for grab irons and ladders, etc., even though the masters were 3D printed. The kit producer should do whatever they can so the modeler can make the most accurate model.

11. Help in learning new skills.

12. Hi. Parts that fit and enough material to complete it.

Instructions that don't hinder construction.

13. Good instructions, well cut and fitting parts.

14. Good instructions is really important and has already been mentioned. Having instructions that discuss options that are possible with the kit to avoid everyone's kit looking exactly the same. Weathering and distressing processes outlined as you build

15. It fits.

16. A kit you would look forward to building again. A kit you could build differently each time.

17. Something original. Not the same old cookie cutter that everyone has. Ease of assembly and proper scale.

18. Specify the accurate footprint and height on box or web site; detailed painting weathering suggestions; period appropriate sign options; sources for details not included in the kit but shown on the model picture.

19. Good representation of the prototype, decent and sturdy detail, either decent instructions or intuitive assembly. Friendly to young and old, and not too difficult for those lacking dexterity. That is what makes a good kit in my humble opinion.

20. Parts that fit, complete bag of accessories, and good wall plans. Plans with detail pictures are a major plus!

21. Realism, good mold engineering, minimal/zero flash/warp/voids/etc. Fine, accurate and scale details. Extra parts for breakage. Optional parts to modify. Clear, verified and pictorial instructions.

22. Ambroid, Northeastern, Gloor Craft. etc.

23. Every answer above is dead on, but we need to add NO MISSING PARTS. Make sure your kits go out without missing parts, enough scale lumber, etc. Yes most all manufacturers will send you whatever is missing without question. But nothing sucks more than opening a box and not finding a part, and having to wait a week or even way longer to get that part sent and all you want to do is build!

24. 8 Traits of Flow According to MihalyCsikszentmihalyi

25. One you can finish before the estate sale.

26. All those things and that it looks good and natural on the layout and/or is easy to paint and customize to make it more unique.

27. A good kit develops new skills and reinforces known skills.

28. A kit from Tangent or Rail Yard Models. Sadly RYM is no more. But with it you got a CD with prototype photos and a color PDF showing every step. Sorry all you others, but that's the one to beat. Too much trouble? Maybe, but Gene Fusco went to the trouble to show what can be done. Tangent kits are excellent too, as are Moloco, if he's still offering kits. Kits that don't fit and have a cheap inkjet printed fuzzy instruction sheet that cost the same as a RYM kit... sorry no excuse. I threw that one in the garbage.

A whole lot in between. Intermountain and Red Caboose have made some fairly decent kits, but non-Kadee couplers and crappy trucks get thrown away.

Oh yeah. RYM was RESIN with etched parts. Resin, and straighter and better fit than most styrene. I swear if I drilled the mounting holes, and folded the etched ladder I could have thrown it across the room and it would have landed in the holes. It would be unfair to compare anything to this ideal fantasy. Except it's not a fantasy, it really happened. So all you manufacturers and your excuses: somebody did it, so "why couldn't you?" is a legit question.

29. Opportunities to personalize it. Quirkiness is appealing to me too.

30. If you are going to include plans that would assist in any kind of assembly, print them to scale size. I've had to get enlarged copies made because the drawing I needed to use for assembly and measuring was printed in a random scale. Drop everything and make an enlarged copy. What a pain. I don't need everything drawn to scale, just the sub assemblies that need to be made on top of a scale drawing

31. I've always liked Campbell's instructions. Old school and very detailed — with 1 to 1 scale drawings where required.

32. Quality designed into the kit; instructions clearly stated and illustrated to the point anyone's mom or grandma could put the kit together, a phone number to call the manufacturer for tech support or advice if a problem is encountered.

33. Something that is easy to assemble with clear instructions and doesn't require a shopping list to complete it.

34. Intermountain if you can find them.

35. [Mihaly Csikszentmihalyi describes a state of process called "flow" and a great kit puts you in "flow"](#). Flow is a state where you are challenged, but not frustrated. The kit has good instructions, fits together well, and does not require 14 fingers, or \$800 worth of clamps. The close adherence to a prototype makes the goal of completing personally rewarding.

Naturally, each of us has a different state of flow, which (hopefully) moves us up the flow channel. Do a couple of Campbell kits, then tackle a South River Model Works beauty.

35. I don't understand all this talk about instructions... people use those for something other than fire starter???
LOL!
36. One that you finish
37. One that's finally dug out of the stack and built.
38. Sierra West lots and all of his examples
39. Fun to build, within your capabilities, can be tweaked a bit, and look just a little better than off the shelf pre-built products and have related kits that fit the theme.
40. Good instructions, parts which fit together without too much fiddling.
41. EZ to follow instructions with pictures on everything they tell you to do.
42. A great kit starts with a master built mold that will have parts lining up with little to no seam marks visible.
43. Good instructions with good illustrations, good material, good castings with nice details and enough lumber and roofing materials to actually finish the kit.
44. Painted examples.
45. Scale fidelity, smooth assembly, clear instructions are key. Options to personalize or show real variations are good. So are some figures to give a sense of scale.
46. Instructions with images and naming of parts is appreciated. Quality raw materials used for the kit.
- Accurate scaling of car and parts to prototype
 - Quality decals
47. Seamless (e.g. corner walls...) finished product.
- Easily able to convert walls and roof line into a low profile building.
48. Good prototype information, good instructions with good illustrations and drawings and components that fit together. If parts are really fragile, then extras.
49. Whether of an actual prototype or a freelanced kit, the instructions should be well organized, step-by-step with pictures or diagrams to assist the builder, should have an indexed list of parts, a list of tools needed along with recommendations on painting, detailing and weathering the designer did to build the kit. If a structure it needs to be designed in a compressed way to fit the majority of layouts.
50. I think the definition of a great kit changes with your skill and interests. Sheepscoot models, for instance, demand skill, time, and patience. There is an incredible beauty to the way they are even packaged. For me, it's enjoying the game of getting into the intricacies of the kit's design, and the satisfaction of taking the beautiful box of stuff into a beautiful model.
51. Instructions!
52. Walther's Cornerstone. All the Walther's cornerstone kits are great. They are well designed prototype buildings typical across US & Canada, they're easy to build, easy to paint, & look terrific when they are finished on a layout.
53. Well molded or cut parts and clear instructions do it for me.
54. It's a kit, that when you finish, you sit back and look at it and say, "That's a Great Kit".

55. A good kit for me allows for various possibilities of kitbashing... no instructions needed!
56. I would say, a) an attractive real thing to model and not to be overlooked, b) a good and easy to follow instruction
57. A great kit has great instructions, no way around it.
58. Have fun making it! I've never made a building kit. Perhaps in the future I'll have more time to concentrate on the detail of the kit, be it an engine shed or station. I tend to buy old Hornby O Gauge tinplate. I find it fun going to train shows and hunting out items. They go well with my Ace trains.
59. A great color photo of the finished kit on the box, clear step by step instructions. Parts that fit and diagram showing how complicated parts go together. Side bars or helpful hints on how to weather or add details. If you can learn a new technique or modeling trick while putting it together even better.
60. Well written rules and laser cut pieces that the designer actually assembled. Laser cut kits are supposed to be easier than "Craftsman" style kits. They should "test" fit together with very little (or even better, no) filing or trimming by the purchaser.
61. Clear instructions. Parts clearly identified in the instructions and either on the sprue or parts bag/part itself. Excellent customer support for when things go wrong. A great kit turns horrible if there are missing or malformed parts from the factory.

Lastly, and slightly more subjective due to scale and details included, is price point. If the kit is of something the targeted user is going to buy multiple of, a great kit should take that into consideration with its price. Take, for example, a unit coal train hopper. All things being possible, I'd rather spend \$2500.00 USD on 100 \$25 hopper kits than 25 \$100 kits. A hundred dollar great kit should be a unique structure, or a signature piece of rolling stock for which the target audience needs but a few, or just one.

A final thought that comes to mind under the heading of customer support is multimedia. In 2023 it is probably safe to say that the Internet is a primary source for generating sales for kit manufacturers. Why not, therefore, post construction videos for your kits? Either do it in-house or sponsor a build video by an experienced YouTube blogger?

62. Instructions, and having a variety of parts for customization without having to buy separate details.
63. The quality of parts and their fitment together. Well written instructions, eg, ease of comprehension. Easily understood diagrams.
64. The fit of the parts.
65. Something you want with a price reduction! Now that's a great kit!
66. Decent instructions, quality materials, and sections that fit like they should.
67. Well thought out and clearly written instructions, preferably with detailed illustrations or photographs.
68. Faithful to the prototype and not a great hassle to build.
69. Good clear instructions, well fitting parts, accuracy and of course good detail pieces. Quality decals as well.

After reviewing all the above comments, I came up with this conclusion.

What Makes a Kit Great?

Once a buyer has fallen in love with a kit and decides to buy it, I believe he is counting on the manufacturer to have personally researched, built, and finished their kit as shown in the advertisement. He also expects to be

provided with all the needed information and material to complete the kit, and counts on the manufacturer to have corrected any potential problems that might have been encountered in developing and test building the kit being sold.

Further, the buyer expects/wants:

1. Easy to read and understand construction instructions, with good quality photos or drawings, scale diagrams, where appropriate and possible, painting, weathering, and signage recommendations as well as historical and prototypical information about the model, if relevant.

While how to build the kit, may be “obvious” and less detailed instructions needed for the manufacturer and even modelers who have significant knowledge of the prototype and/or greater modeling experience, the need of less experienced modelers is that when they open the box, the instructions and prototypical information provided fully details the history and how to build the kit. Yes, there are kits that state that you are “on your own” in some aspects. However knowing that from the kit advertising is important.

2. There should be no missing parts in the kit. While that seems obvious, it seems to be a too frequent occurrence. Most manufacturers producing current production products will be responsive to quickly correcting this deficit when discovered. Those that are not, may be avoided in the future. All parts need to be well made of good quality material(s) that fit well according to instructions. Sources of parts not from the manufacturer need to be revealed either in the advertising, packaging exterior, or listed within the instructions. A corollary to this is that there should not be any unnecessary parts in box. It can be befuddling being confronted with parts not in the instructions or in the illustrations!

3. Ideas and options for making changes during construction to make the finished model unique to the builder are generally appreciated.

If a manufacturer’s kit fulfills these requirements, the buyer should be happy with a great kit and should become a repeat customer. Let me know if you agree or have other ideas. My email is jimkellow@newtracksmodeling.com.

Next, I wanted to get the opinion of a manufacturers. So I sent my conclusion about what modelers want to [Chris Course, the owner of Conowingo Models](#). Chris is the host of the My Build monthly segment on my Zoom show and has done several Build Alongs on the show using his own kits. Chris also attends many train shows and events around the country and talks to a lot of other manufacturers. Here are his comments about what modelers said they wanted.

“Jim, I read this yesterday and decided to think about it. If you’re looking for a direction, it can go in any of several directions.

If you’re looking for a manufacturer’s view, instructions are the toughest part of designing a kit. I update kit instructions when I get feedback from people having issues or perhaps I want to try something a little different to make things easier or perhaps more realistic. The latest instructions are on my website.

To go off on a tangent for a second, when I designed the tank car, I decided to use wire truss rods. They certainly look better than the threaded ones that are in the current rolling stock kits. It worked, so my next thought is to spread that concept to the rest of the rolling stock line. Initially, I decided to remove the thread out of the rolling stock kits. However, when I did the clinic at Amherst, I realized that I have to meet different skill levels and some people would try the thread over the wire and vice versa. The Amherst flat car kits only had the wire truss rods and they were a bit problematic for those at lower experience levels. So, the kits will be updated with both.

As far as parts are concerned, I’m a one-man shop and I do miss things when converting a pilot model into a production model. The best thing I can do when this happens is “own it”. This means being upfront and proactive in terms of fixing the kits that have already been sold. I do occasionally throw “you might want to try

this...” into instructions. I generally don’t offer suggestions about knocking down walls and adding a lean-to or anything like that. However, I do recommend getting certain products from other manufacturers. My main philosophy in this area is that I want for people to do unique things with these kits. I don’t want to see a hundred buildings that all look like the photos. I want for people to dig into their parts box and pull out something that’s collecting dust. Or perhaps scour their local hobby shop, train show or the Internet for ideas on how to make their model unique. Show us something completely different that we haven’t thought of before. Unfortunately, some kits are too specific in design and don’t allow for much customization.

If you’re looking for my prospective as a hobbyist/manufacturer, I look for unique things. The last year or two, I have been buying kits to learn things from them. I don’t want or intend to steal things from other manufacturers. For the most part, we all get along, encourage each other and want to see each other succeed. I don’t want to directly compete with someone over a very similar product. One example is the old style fire houses. There are a bunch of kits out there that all look the same. While I’d like to put out a fire house, the chances are very slim that I will ever produce one.

Back to the educational piece...

One kit that I bought a long time ago was the Detail Associates kit for Foothill Station. I don’t know the origins of the kit, but I know Howard Zane has one very similar that he built. I don’t think that it could exist in real life, due to the arrangement of the different levels and how they are compacted together. I also don’t think there’s no room for staircases on the inside. So, there’s a lesson there. One other takeaway was that I like the size and shape of the building. It’s a medium height, square building that’s about 13 scale feet wide, if I recall correctly. It’s a multi-level building that has doors at two different levels, which makes things interesting. There may eventually be a Conowingo Models building that carries out the flavor of that building, but it certainly won’t be a station. Thanks, Chris Coarse, ConowingoModels.”

I am inclined to take Chris’s comments as representative of serious small to medium sized manufacturers in our hobby. Please note that I differentiate serious manufacturers from hobby manufacturers. The difference, in my mind, is a hobby manufacturer may not have the same dedication in his kit production as a serious manufacturer who looks at his business as a very real part of his livelihood.

I must say, after reading Chris’s comments, I think manufacturers would be by and large in agreement with modelers about what makes a great kit. I also know, from my personal conversations with a lot of manufacturers the hardest part for them in producing a kit is writing the instructions.

With the importance of instructions noted by modelers, time and time again, this is the one area that I believe needs the most attention by manufacturers. It’s also really one that can be addressed.

With today’s technology there is no reason for kits to not have great fitting parts and castings, or for not taking extra care to include all the parts needed to build the model in the kit.

But instructions! That is a different story. It’s not just that it takes a lot of time to write them. It does and everyone knows it. Sometimes they may not be written by the manufacturer, but by the person who actually built the sample of the product to be sold. Nothing wrong with this as long as the manufacturer is sure following the instructions will enable a less skilled modeler to successfully, easily, build the model. I have found not every talented modeler can explain how he/she builds a model in sufficient detail to allow a less skilled modeler to have a successful building experience. Why does this happen? Because the modeler has built a lot of models and automatically assumes a lot of what he/she has learned from experience will also be known by other modelers, and this we all know is not necessarily true. It’s just hard for anyone to recognize sometimes, so it’s up to the manufacturer to catch any such issues.

I may be wrong, but I believe it takes a specific set of skills to write great instructions that modelers of all skill levels can use to successfully build a kit. So here is the area where what some manufacturers are producing as instructions may be falling short of what modelers need to successfully and easily build their kits. This is

evidenced to me by the high number of modeler's comments about instructions what should be included in them.

Is the solution the development in our hobby of professional instruction writers and/or education for the manufacturer about how to improve their instructions? Maybe we need the manufacturer to include a statement in each kit that he/she built their own test kit with the parts produced by the manufacturer and used the instructions provided in the kit. Nope, I am not sure such solutions will actually help improve instructions.

My conclusion is that we definitively need kits with great instructions if we are going to get more modelers building more kits so the manufacturers can make more money and continue to provide us new products. I don't have an easy answer, but maybe this is an area the NMRA should consider looking into as part of their Standards Programs? For today's modeler, this issue may be as important as to whether couplers matched up in the past. I definitely believe this is the one area where our small to medium sized manufacturers need help. I also believe this is the one area that can get more modelers building more models. Or, we can just let the market work to decide the continuation of each manufacturer's business, and let the buyer beware.

I hope every manufacturer reads these comments and takes another look at their instructions. What do you think? Modelers and manufacturers ideas are needed and welcome. My email is: jimkellow@newtracksmodeling.com

But wait. I wanted another voice heard from!

After I had written this article, as I mentioned previously, I was introduced to a free version of an Artificial Intelligence (AI) program called ChatGPT. I asked a question and the AI program gave me an answer. Here is the AI answer I got about the importance of kit instructions.

[This message has been generated by Nova - download it for free.](#)

“Having great kit instructions can play a significant role in a model railroader's decision to buy a kit from a specific manufacturer. Here are some reasons why:

1. Ease of assembly: One of the most obvious benefits of having great instructions is that they make the kit easier to assemble. If the instructions are clear and detailed, the model railroader will be able to follow them step-by-step, which will reduce frustration and make the experience more enjoyable.

2. Time savings: Clear and detailed instructions can also save time. If the instructions are easy to follow, the model railroader will be less likely to make mistakes that require backtracking and rework. They can move through the assembly process more quickly, which can be important if they have limited time to spend on the hobby.

3. Confidence: Well-written instructions can also give the model railroader confidence in the manufacturer and their products. If the instructions are clear and easy to follow, that can be a sign that the manufacturer cares about the experience of their customers and takes pride in the quality of their kits.

4. Repeat business: Finally, if a model railroader has a positive experience with a manufacturer's instructions, they may be more likely to buy from that manufacturer again in the future. They will remember that the instructions were clear and helpful, which can be a factor in their decision-making when it comes to purchasing future kits.”

Just an afterthought about generative AI

I read this AI article shortly after I finished writing this great kit article. I wondered if generative AI can help model railroad manufacturers prepare their kit instructions? I think it is worth looking into. If you get a chance, I recommend reading the total article. Here is a portion of it.

How will generative AI affect knowledge work?

Philip Moyer, Global VP, AI & Business Solutions at Google Cloud wrote in the July 2, 2023, *Geek Wire*.

“Generative AI can help an inexperienced writer turn a list of ideas into a coherent article, and with some skilled prompting and human revision, that article can still express a lot of personality and style. But an AI assistant is not going to replace skilled writers in the foreseeable future — though it might help many of them do their work more efficiently and happily.”

Then I asked ChatGPT what AI can currently do for model railroad manufacturers.

My Question to Chat GPT: Can generative AI write model railroad kit instructions?

ChatGPT answer:

“Yes, generative AI can potentially be used to write model railroad kit instructions. Given the proper training data and task-specific instructions, a generative AI model like ChatGPT can learn to generate text that resembles model railroad kit instructions. It can help provide step-by-step guidance on assembling the kit, explanations of different components, and troubleshooting tips.

However, it's important to note that the quality of the instructions generated by AI models can vary, and they may not always be perfect or completely error-free. Human review and input would still be necessary to ensure accuracy and clarity. Nonetheless, AI can still be a useful assistant in the process.”

Here is how one manufacturer, Dennis Brennan, develops his kit instructions

One idea that came to me was to find a model manufacturer who goes out of their way to provide instructions in their kits that will satisfy both the beginner and the most critical modeler. I believe one such manufacturer is Dennis Brennan who owns Brennan’s Model Railroading Company. I have had him read a draft of this article, and he is really enthusiastic about trying to offer help in the preparation of kit instructions. For more information about Dennis and his kit’s instructions, please view his July 20, 1023 New Tracks Modeling Lifestyle interview on my New Tracks Modeling YouTube channel.

<https://www.youtube.com/live/iNn4b6NxYGY?feature=share>

OK some of you know what is coming next! I asked and he has agreed to do a series of Segments on my Wednesday Zoom shows to illustrate how he lays out his instructions, decides if photos, diagrams, or full scale drawings, etc, are needed to better explain how the model should be built, etc. I am very impressed with the care Dennis takes and how he develops his instructions, and think you will be to. His professional background which includes having an Art degree from Rutgers University, being a well known professional photographer, author, and designer, combined with running a successful model railroading business make him well suited for presenting these show segments for us. I hope you enjoy and benefit from them.

So, starting later this year, he is going to conduct a series of segments on our Wednesday Zoom show to explain how he develops his instructions and to offer his help to other manufacturers. I hope his show segments draw a lot of interest from small and medium size manufacturers who want to make sure their instructions are as GREAT as possible. We shall see as they say, but at least we are trying to help improve kit instructions.

Your ideas are solicited, needed and very welcome to ensure these show segments truly serve the needs of current and future model manufacturers. My email is: jimkellow@newtracksmodeling.com. You can reach Dennis Brennan at: dennis.brennan@newtracksmodeling.com.

Creating Enthusiasm in Dioramas and Scenes

Yesterday I talked to Paul Pallansch, a Professional modeler who makes dioramas for museums. You will meet Paul in an upcoming New Tracks Modeling Wednesday Zoom show. He caused me to think about if our

dioramas or individual scenes are truly inspirational and as opportunities to convey our “enthusiasm” for model railroading to viewers through our modeling. But how do we convey “enthusiasm”? To me this will require taking our modeling to a different level. We can’t just strive for good enough, or even worry if our model will get a NMRA merit award or win a contest. Seems to me showing enthusiasm requires more of us.

We need to be able to take photos of our finished dioramas or scenes and ask if a viewer has trouble telling if the photo is of a real prototype or a model. Can we really say our model reflects a moment in time in a recognized location? Does the model tell a story to the viewer, or do they need a caption to explain what they are seeing. Does being able to answer these questions help us know if we are showing our enthusiasm for building the model? I am not sure. There may be even more to it? Yes, as you can tell, I am struggling to define modeling enthusiasm!

How do you look at and judge your finished modeling dioramas or scenes. Does your modeling convey enthusiasm? Do you believe conveying enthusiasm in our modeling makes us better modelers and maybe brings more people into modeling? If so, how do we define “modeling enthusiasm”? Please let me have your opinions and thoughts. My email is: jimkellow@newtracksmodeling.com

I will talk about this more in a future article after I receive your comments.

I asked two different AI answer engines, Who is Jim Kellow MMR.

ChatGPT said it never heard of him. Bing, the world’s first AI-powered answer engine said: *“Jim Kellow is a Master Model Railroader who holds all NMRA Achievement Program Awards (7th person in the world) and MMR #202. He is also the creator of New Tracks, a program that showcases and supports new and talented modelers in the hobby. He hosts online meetings and podcasts where he interviews featured modelers and shares tips and techniques. He is passionate about promoting the art and craft of model railroading.”*

Just goes to show the importance of the data included in an AI answer engine. Since I don’t know what data is included in them I have no idea about the completeness or accuracy of the answers they give. It appears that Bing includes more model railroad data than does ChatGPT. At least about me! But is it complete? Nope not even close. I guess magazines, including this one, and newspaper articles are not included in the imputed data. Lesson learned. Click to see the full answer and try it yourself. <https://sl.bing.net/fa1yXQZC2SW> (Only works in the newer Edge browser)

We changed our name but not our programs

Six years ago, I had a dream of getting more model railroaders building more models. Model railroading was seeing a significant decline in model building and I was concerned that modeling skills were being lost. My solution was to promote mentoring to pass along modeling skills and give confidence and encouragement to modelers that they could be successful in their model building efforts.

So six years ago I started writing articles in two model railroad magazines, *The S Scale Resource* and *The O Scale Resource*; then four years ago, added weakly Zoom shows; then this year, started a scholarship program. Now we have a Florida Non-Profit 501(c)(3) corporation and are looking forward to a significant expansion of our scholarships next year. We also started a monthly column in my local newspaper and want to expand into other local newspapers around the country.

Everything we have accomplished has been done with the help of many volunteers who love our hobby and believed in my dream. I could not have hoped for more from my original dream, and yet we still have other projects we are investigating. Being able to announce the winner of our inaugural scholarship later in this article is an example of why we are so committed to our dream and believe it is truly coming true. Another step we are taking is to change our name and volunteer management structure to better serve the modeling community.

New Tracks Modeling is our new name. We offer exciting digital opportunities to obtain mentoring to help you improve your modeling. You will meet talented modelers and manufacturers from all over the world who

will share their model building expertise and artistic advice. New Tracks Modeling is open to all modelers of all skill levels in any scale or gauge.

Our weekly shows are live every Wednesday evening at 7pm Eastern / 4pm Western on Zoom and YouTube. Other special shows include our Thursday evening Modeling Lifestyle series on our YouTube channel. By subscribing to our website, newtracksmodeling.com, you'll receive email notices containing links to all our presentations.

We also sponsor the New Tracks Modeling Mentoring Scholarship program. Complete information is on our website. To donate click on this link. <https://www.zeffy.com/en-US/donation-form/038439bf-a552-44e2-9b46-ef54aaa0e274>

We also write articles in this magazine and in *The S Scale Resource Magazine*. These articles started our New Tracks Modeling journey about six years ago and has helped our brand to continue to grow.

New Tracks Modeling New Management Structure

I have been very impressed with our current management team and the help and guidance they have provided, but with the growth of our viewership and activities, we need a more structured management system to make sure everything gets done, no one person is over stretched, and everyone gets the training and access to information they need.

So we are creating a set of Management Committees, made up of knowledgeable volunteers, who will focus on a particular area of our activities. These committees will all have a blueprint for their operations that is documented, so that the work is defined in such a way that it's not dependent on any one person's, but rather the team's abilities.

Each Committee Chairman has been appointed and existing volunteers assigned to their committee, but as always, we need more volunteers. Please take a look at the various Committees and if you see one you are interested in joining, please let the appropriate Committee Chairman know. Their emails are listed below. The Chairman can provide the needed leadership but they need volunteers to help them. So please consider giving a little of your time to help make this new system work. Thank you for your help.

1. Program Committee: Responsible for developing, reviewing, analyzing and suggesting CONTENT for the shows. This would address our need for feedback on what works and what doesn't, what should be added or removed. Operational procedures are developed and training of new committee volunteers provided.

Chairman: Jim Kellow Jimkellow@newtracksmodeling.com

2. Operations Committee: Specifically operates the RUNNING of the live presentations (Wednesday and Thursday) and training/assisting new committee volunteers and presenters. Works to enhance presentations and develops an operations manual for the shows.

Chairman: Phil Edholm Phil.Edholm@newtracksmodeling.com

3. Internet Presence Committee: Handles website and YouTube OPERATIONS and COORDINATION. Develops a repeatable, consistent standard so that our on-line presence, image, and brand for New Tracks Modeling can be enhanced and kept up to date in an easy fashion. Operational procedures are developed and training of new committee volunteers provided.

Chairman: Heck Meerhof Heck.Meerhof@newtracksmodeling.com

4. Executive Committee: Works to ensure that all committees operate effectively and that messaging is consistent. Approves any substantive changes to any audience interaction channels. Looks at and evaluates

return on investment (has a particular idea worked and are we seeing any positive results?) Operational procedures are developed and training of new committee volunteers provided.

Chairman: Jim Kellow Jimkellow@newtracksmodeling.com

5. New Tracks Scholarship Committee: New Tracks Mentoring, Inc. is staffed by unpaid volunteers who develop and implement management policies and procedures which implement the 501(c)(3) organization's fundraising, applicant solicitation and selection of applicants to receive scholarship funding. Operational procedures are developed and training of new volunteers provided.

Chairman: Bob Davidson Bob.Davidson@newtracksmodeling.com

6. NMRA Merit Award Committee: Approves and provides to any NMRA member the documentation for their clinic or other types of presentations on our Zoom shows for their use in documenting either the NMRA Author or Volunteer AP Certificates.

Chairman: Pat Rivard Patrick.Rivard@newtracksmodeling.com

7. Merchandise Committee: Develops and implements the New Tracks Modeling Merchandise Program.

Chairman: Hank Primas Henry.Primas@newtracksmodeling.com

Please follow my [Facebook Page, Jim Kellow MMR](#) for "Breaking News" about New Tracks Modeling. Something new is always happening for modelers like you.

Subscribe to our website newtracksmodeling.com to get all the current information about our future shows and weekly emails with the log in links for our zoom shows. Join us live on Zoom or on our YouTube channel New Tracks Modeling, or watch the videos of our past shows on our YouTube channel. We have almost 1,000 videos available.

New Tracks Modeling Monthly Newspaper Column is Helping Us Reach Out to a New Audience

In my last article, I told you I am doing everything I can think of to promote modeling and mentoring. I am writing newspaper articles and was published in the July 12 and August 9, 2023 edition of the *Citrus County Chronicle*. Some of you have asked me to show you my modeling. Well here is one of my scratchbuilt brass models in the July 12 article. ([Click here to view article](#))

Here is my Facebook post about it

"My July 12, 2023 article in the Citrus County Florida Chronicle newspaper. My model was built in the 1980s. The story I tell in the article is why I so miss going to the annual Chicago O Scale Event. So does my wife! She loved shopping in Chicago."

That is great, but I am looking for other local newspapers to carry my articles. Do you have any ideas?

New Tracks Modeling Mentoring Scholarships: Today's Modelers Made It Happen "Thank You"

New Tracks Modeling Mentoring Scholarship Awards Inaugural 2023/2024 Scholarship. Thanks to members of our modeling community, we've successfully raised enough money to pay for the first year of our New Tracks Modeling Mentoring Scholarship program. Even more exciting is that we received some very impressive applications from young modelers. Thanks to everyone who contributed to make all this happen, including all the organizations and businesses who supported our program. We had an update on the Status of

our Scholarship program on our June 28, 2023 New Tracks Modeling Zoom show. A video of the show is available on our YouTube channel New Tracks Modeling.

We had seven modelers submit applications, and while we could only award one scholarship this first year, we have encouraged all the applicants to reapply for next year's program.

Announcement of the New Tracks Modeling Mentoring Scholarship Winner for 2023/2024

To see this announcement live, please join us on our New Tracks Modeling show August 30, 2023 at 7pm Eastern Time. If you need a Zoom login link send me an email to: jimkellow@newtracksmodeling.com or you can watch it live or the video of the announcement later on our New Tracks Modeling YouTube Channel.

Bob Davidson, Chairman of the New Tracks Modeling Mentoring Scholarship Committee, and I are extremely pleased to introduce the winner of our \$1,000.00 2023/24 Scholarship:

Ethan P. Bernstein

Ethan has completed his sophomore year at Johns Hopkins university with a 3.74 GPA. He is an active member of the Baltimore, MD Area N-Track Club (BANTRAK). He writes:

"I am an N-Trak and T-Trak module owner and builder. I help with setup and teardown of layouts at local train shows, including the Great Scale Model Train Shows at Timonium, the Baltimore and Ohio Railroad Museum, and displays, and run trains for public viewing. I also frequently contribute to the club's monthly newsletter with modeling articles and reports from rail-fanning."

Ethan is a NMRA member where he serves on the Conformance and Inspection department specializing in N-scale equipment. He also writes reviews for the NMRA magazine. He is a talented modeler as evidenced by the two photos he included in his application:

For more information about Ethan, please read the short essay he included in his Scholarship application:

"A love of tiny things. I have always been drawn towards the smaller things in life - literally. When given the option of what to buy, I would always choose the smaller item, whether it was a pocket-sized dump truck over the rideable version, or the smaller scale train over the larger size.



My interests with tiny things directly correlate with my interests in machines and engineering, where I find the cool, most complex machines to be those that are the most compact, such as the workings of a diesel engine, where lots of different small parts are required to generate immense amounts of power. This love of "tiny things" was what called me to model railroading.

When I discovered model trains in elementary school, I was immediately enthralled by the ability of such a small electric engine to haul tens of freight cars, just like the real thing. I was also amazed by the detail that could be stuffed into such small models, and the compactness of the drive mechanisms inside the locomotives. I decided to pursue N-scale modeling, one of the smallest scales of model trains, with a proportion of 1:160, meaning a diesel locomotive that in real life is 72 feet long, is a mere 5.4 inches in N-scale.

To increase my knowledge base in the hobby, I purchased and subscribed to several model railroad magazines, went to model train shows, and even joined a local model train club, known as Baltimore Area N-Track, or, more commonly, BANTRAK.

I write articles for the club's monthly newsletter in which I describe how I constructed a certain model from scratch parts. For example, how to make a detailed, scale-sized model airplane or train car from cheap and



Entirely scratch built N-scale module except for vehicles, train cars, and bridge.



3D printed signal bridge with working lights (back of signal bridge in photo), 3D printed highway overpass, several kit-based structures, and lots of scratch built and kit-based scenery. All on my home N-scale layout depicting the CSX Capitol Subdivision in the present day.

readily available materials like matchsticks and paper, so that other members of the club could make similar models of their own or learn from the techniques I use when building a certain type of model or working with a certain material.

My love of tiny things and my desire to have a positive impact on those around me has guided my interests in materials science, and more specifically, nanomedicine. I discovered nanomedicine when I embarked on a research project my sophomore year, searching the Internet for a compelling topic until I finally found something which suited my interests: a tiny medical treatment with a huge impact.

Nanomedicine encompasses various forms of microscopic drug delivery platforms to treat various diseases and conditions. I was again captivated by another “tiny thing,” this one with the potential to cure a problem as widespread as cancer, and instantly knew nanomedicine was the right topic for me. I have been researching nanomedicine for three years, pursuing my passion for “tiny things” in a way that could greatly benefit others.

My nanomedicine research has guided me to the field of oncology, prompting me to learn about cancer physiology as well as the workings of different systems in the human body at a cellular level, expanding my ever-growing knowledge of super tiny things. In addition to my nanomedicine research, I have also begun investigating an even newer “tiny therapy” called immunotherapy, which, similar to nanomedicine, works at the microscopic level to fight diseases. At age eight, I would never have guessed that my new hobby of tiny model trains would lead me to later conduct research that could have a life-changing impact on people across the globe. Sometimes the most unexpected and impactful things in life are those that are the smallest.”

Thank you Ethan for submitting your application and sharing your model railroading experience and educational goals with us. I know that all of our model railroad community wishes you great success in your future education, your professional career, and your future model railroading. We believe you have a very bright future ahead of you and appreciate this opportunity to provide some financial help as you continue to work toward your goals. Best wishes in all your future endeavors.

To say I am proud and thankful for all the support and hard work put in by so many modelers who helped make our first year Scholarship program a great success is an understatement. However, I personally want to thank all the New Tracks Modeling volunteers whose hard work and dedication made this scholarship possible. Special thanks are given to our volunteer Scholarship Committee: Bob Davidson, Chairman, Jeff Jordan, attorney, and members Phil Edholm and Kevin Macomber. It goes without saying we also owe a debt of appreciation and thanks to the model railroaders whose financial contributions made it possible to reach our first year’s goals. Rick Barton, Chris Course, Greg Cassidy, Pat Rivard, Bob Davidson, Bill Grierson, Fr. Ron Walters, Jeff Zibley, David Menard, Greg Wart, Scott Geare, Dan & Amy Dawdy, Kevin Macomber, David Schultz, Jeff Zibley, Henry Primas, David Vaughn and Larry Price.

Finally, I want to thank the volunteers who exhibited our promotional banners around the country, and the organizations who allowed us free space at their events, including the Amherst Train Show, the Great Scale Model Train Show in Timonium, the O Scale National convention, the Association of Professional Model Makers, the National Retail Hobby Stores Association, the numerous local and regional events, and those organizations that publicly supported our efforts including local clubs and NMRA Regions and Divisions. Thank you all. We greatly appreciate the support from both the model railroad community and the broader hobby community including the Hobby Manufacturers Association, the National Retail Hobby Stores Association, and the Association of Professional Model Makers. Thank you all so very much.

New Tracks Modeling is the only volunteer group of model railroaders who, as far as we know, is offering a National STEAM scholarship program funded by volunteer donations from today’s model railroad community. We encourage local clubs and other organizations to join with us to expand our efforts.

We believe our young model railroaders deserve all the educational help we can give them so our hobby will continue to have outstanding leadership to guide our hobby into the future.

To learn more about volunteering to help us, and/or to donate to the 2024/2025 New Tracks Modeling Mentoring Scholarship, please visit newtracksmodeling.com/scholarship.

Your help will be greatly appreciated.

Last issue I thanked Atlas for their support and now, I want to thank the NMRA for their Facebook posts of support for New Tracks and our scholarship program. This Appeared on Facebook from the NMRA.

NMRA - National Model Railroad Association tagged you in a post.

Jim Kellow MMR and NMRA member, is looking for students interested in applying for a scholarship sponsored by his New Tracks Modeling shows. If you know someone, please share this with them. For more information on Jim's weekly shows or the scholarship, please use the QR code or visit <https://newtracksmodeling.com/scholarship>. #NMRAExperience #NMRAFamily

In addition, the other day I got the GSMTS, Timonium Show, report from Scott Geare, that he sends to all the show participants. Scott included the following comments about our Scholarship Program. Thank you Scott for your help and interest.

“ I write to all our exhibitors, whether or not you were present at our February 4th and 5th Great Scale Model Train Show (aka “The Timonium Show”).

“JIM KELLOW and the STEAM SCHOLARSHIP: You know what “STEM” stands for, don’t you? Of course you do: Science, Technology, Engineering and Math. That’s the current emphasis of the national educational agenda. But what does “STEAM” stand for? Same thing, with the addition of “ART.”

“Jim Kellow, himself a credentialed Master Modeler, has been working to establish a scholarship program for youth who are involved with serious modeling. Thus, he and his associates have established the “STEAM” scholarship program, which adds “ART” to the STEM program, making it “STEAM.” And indeed, what is model railroading, if not art, even “fine art?” (As Howard Zane would say).

Learn more, here: <https://newtracksmodeling.com/scholarship/>

Are you the parent or grand-parent of a kid who needs some financial help with college? Or do you know such a youngster? If that youngster is involved in model railroading or any modeling art, connect him or her with Jim’s scholarship program. You may also want to contribute to the fund yourself. I did.



Visit this web page: <https://newtracksmodeling.com/scholarship>”

Thank you Scott Geare for including New Tracks in your show and also in your show’s report which goes to all your vendors. We look forward to being in your future Timonium shows.

I am also pleased that the National Retail Hobby Stores Association (NRHSA) included New Tracks and our scholarship in their Monthly Magazine “Hobby Merchandiser”. Having the support of this association and local hobby stores is very important in helping to get our message out to potential applicants and donors.

What The New Tracks Team can do to Help Make our 2024/2025 Scholarship a Success: Donate to Our 2024/2025 Scholarship Program

The New Tracks Modeling Mentoring Scholarship (NTMMS) grants scholarships to qualified students who will be or are pursuing a STEAM (Science, Technology, Engineering, Arts or Math) program at a two-year or four-year college or university or an accredited technical school.

We have set a goal to grant at least \$4,000.00 in scholarships for the 2024-2025 academic year and are soliciting donations to help reach that ambitious goal. As a registered 501(c)(3) non-profit corporation, your donation to the scholarship is tax deductible as allowed by law.

There are several ways that you can donate to the New Tracks Modeling Mentoring Scholarship:

The simplest way for individuals or organizations to donate is to use the Zeffy platform. We have chosen Zeffy as they insure that 100% of your contribution will go to the scholarship. There are no processing or administrative fees. To use the Zeffy platform, please [click here](#). If you wish to make a contribution by check, make the check payable to New Tracks Mentoring, Inc., and mail it to:

New Tracks Modeling Mentoring Scholarship:
c/o Kevin Macomber
1140 Riverview Road
Dauphin, PA 17018

Corporate Donors

There are several tiers of donations available to companies who wish to support the New Tracks Modeling Mentoring Scholarship. All companies who donate at any of these levels will be eligible to have their logo and links on the scholarship page of the New Tracks Modeling web site for that annual cycle (one year cycle after the award of the previous year scholarship).

Companies that donate \$250 in any annual scholarship cycle will be identified as Brass Donors; Silver Donors will be recognized for a \$500 contribution, Gold Donors for a \$750 contribution and Platinum Donors for a \$1,000 contribution. Donors who contribute at least \$2,000 will be listed as a specific scholarship sponsor. Please contact us at ntms@newtracksmodeling.com to arrange for your corporate donations. Donate early to maximize your exposure. Remember, your contribution will help the young modelers who are the future of our hobby.

New Tracks Mentoring, Inc. is a private, non-profit 501(c)(3) corporation registered with the Florida Department of Agriculture & Consumer Services. A copy of the official registration and financial information may be obtained from the division of consumer services by calling toll-free 1-800-435-7352 within the state. Registration does not imply endorsement, approval, or recommendation by the state.

Applications for Our 2024/2025 Scholarship Program

We will begin accepting applications for the 2024-2025 academic year on January 1, 2024. Our goal is to award at least \$4,000.00 in scholarships for 2024-2025 (number and amount will be announced January 1, 2024). We recommend that interested applicants download a copy of the application for review even if you plan to apply on-line. If you have any questions, please email us at ntms@newtracksmodeling.com

Qualified applicants MUST meet the following criteria:

- Must currently be either a current high school senior or a high school graduate living in the United States.
- Are planning to or currently attending a two-year or four-year university, college or accredited technical school in academic year 2024-25 with an intent to pursue a degree in one of the STEAM fields.
- Have a current GPA of 3.0 or higher.
- Demonstrate in either a model railroading or other modeling youth activity program such as Youth in Model Railroading®, Scouts MRR program, 4H model railroading, MRR Youth clinics, active participant in building a home layout, or belong to an organized model railroad club. Participation in general modeling clubs and activities will also be considered.
- Write an essay of at least 500 words describing how their involvement in modeling and model railroading as a hobby has impacted their lives and benefited their education within one or more of the STEAM areas of academic pursuit.

- Demonstration of having designed and/or built models by submitting photos and descriptions of at least two models completed by the applicant.
- Provide two references to affirm applicant's involvement in railroad or other modeling activities. (NTMMS will be contacting any listed references, so please let them know ahead of time).

Please note: Scholarship funds will be disbursed directly to the Bursars Office of the school where the student will be attending. Any NTM staff member or relative is prohibited from applying for this scholarship.

Applications can be submitted on-line or by mail.

[Click here to download an application for review.](#)

On-Line Application will be available January 1, 2024.

Please note that you MUST have a Google Account to complete this on-line form as you will need to upload files.

If you have questions or need assistance, contact us here at: ntmms@newtracksmodeling.com

Help Notify Eligible Applicants

Bob Davidson donated three banners through his company, Exhibits And More, which will be shown at train shows and rail expos across the country.

Each banner is 3' wide and about 7' tall and has a QR code on it to link you directly to our website to get more information including the application to apply.

It's a retractable unit that is very easy to ship and set-up. So if you want one for your event, let Bob Davidson know at: bobdavidson@newtracksmodeling.com.

Look for New Tracks at any show you attend. We hope to be represented at as many shows as possible for our 2024/2025 program . If you want to take one of our banners, or help man a table, or have us be a part of your table, let Bob Davidson know at: bobdavidson@newtracksmodeling.com.

Remember, one of these years, your younger kids or grandkids may benefit from the New Tracks Modeling Mentoring Scholarship program that you helped start. I truly hope so. Thank you.

Thank you to everyone who helped us display the banners at shows around the country last year. We are currently taking reservations for our banners for our second year's (2023/2024) Scholarship Program. Let us know if you can help show a banner.

New Tracks is the only organization, we are aware of, comprised solely of volunteers from the model railroad community who have created a nonprofit company whose sole purpose is to provide scholarships throughout the United States for the benefit of young modelers who are pursuing their STEAM education after High School graduation, in a college, university or accredited technical school.

The Contributions and help by current model railroaders can help the next generation of modelers continue the traditions of our great hobby. For more information visit our website at newtracksmodeling.com/scholarship.

A New Series On Our Wednesday Shows: N, S, O, and G Scale Model Railroading Today

I have had many discussions with modelers who say things like: "What is Scale (X) all about? Does anyone really model in (X) Scale? Can I build a model of ?? in (X) Scale?". Scale can be G, O, S, or N. Never get asked such questions about riding on, live steam, HO, or Z scales. I'm not sure why.

So we decided to start a monthly segment on G, O, S, and N Scale hosted by knowledgeable talented modelers in each scale to try to have questions answered and information given about what is possible and things a new modeler entering those scales might need to consider. One of the scales will be featured each week each month starting in our November 2023 shows. Here are the dates and hosts for the November and December 2023 shows. If you have specific questions you want addressed, or a specific person you would like to see on a scale segment please contact the host for that Scale.

G Scale Steve Bittinger (11/29, 12/27) Steve.Bittinger@newtracksmodeling.com

O Scale David Schultz (11/15, 12/6). David.Schultz@newtracksmodeling.com

S Scale Timothy Huebner (11/1, 12/20) Timothy.Huebner@newtracksmodeling.com

N Scale Clem Harris (11/8, 12/13) Clem.Harris@newtracksmodeling.com

After these shows, we will reevaluate our approach based on the viewers' reactions and comments. So if you are interested in one of these scales, please let the host know and tell him what you want to know and who you would like him to interview. It's up to you where these scale segments go.

Agreement of Association Between New Tracks Modeling LLC and the New Model Railroad Museum of Hampton Roads Virginia (MRMHR)

On June 13, 2023, New Tracks Modeling LLC entered into its first Agreement of Association with any organization. We appreciate the MRMHR's interest and are looking forward to working with the Museum of Hampton Roads Virginia, and will be providing more information about the museum in future articles.

New Tracks Modeling is interested in entering into such agreements with other organizations for our mutual benefits. For additional information please contact me at: jimkellow@newtracksmodeling.com

This next segment is something I think all modelers should consider. I have to admit, until recently, I had never even thought about it! Have you?

Donate to Our New Tracks Modeling Patreon Account

As with any volunteer operated effort, there are always out of pocket costs that must be paid. These costs are not associated with our Scholarship program, but rather cover the out of pocket costs of just getting our Zoom and YouTube shows produced, our Website developed, etc. We have a [Patreon account, NewTracks Modeling](#), for your donations to help fund our shows. We hope you can make a financial contribution. Please click the link to donate to help pay for our NewTracks Modeling Shows.

New Tracks Modeling Build Alongs

Our Build Along Modeling experiences provide you with a personal mentor and great discounted prices on the models to be built. Join us on our weekly Zoom shows for a great learning experience that will help you improve your modeling. (See this month's Build Alongs in this issue.)

Wm. K. Walthers, Inc.

Starting September 6, 2023, Gary Shurgold MMR will build one of the Walthers Cornerstone Company House pkg(2) kits. Gary will be building and finishing the model using modeling techniques that make the completed structure appear to be made out of wood and stone not plastic. Gary's work is absolutely amazing!

Plus Walthers is offering New Tracks modelers who Build Along with Gary, a 30% discount on the kit starting August 1, 2023 and ending September 23, 2023. Please visit [Walthers website](#) during this period to order the kit. You will need to enter the code NTRACKS at check out to get the discount.



Dylan Lambert Locomotive Works

Starting October 4, 2023, Bill Davis will build Lambert Locomotive Works' new Commuter Coach shown below in HO scale. More details concerning price, discount for New Tracks modelers and ordering dates will be provided soon on our website.

Rail Tales Hobby Shop

Bret Jones, owner of Rail Tales Hobby Shop, informed me of an illness in his family that has required him to postpone his Build Along until later this year. Well, that time has come on October 11, 2023. More details will follow shortly. We are so pleased that Bret's family illness is over and he can join us.

New Tracks on Patreon

- Single Contributions
- Monthly Ongoing Contributions
- Direct payment to New Tracks less 5%

Brennan's Model Railroading

Starting November 1, 2023, Dennis Brennan will build his Electrical Substation kit. There will be a 10% discount for New Tracks Modeling modelers from October 1 to November 29, 2023. More details including ordering instructions will be provided soon on our website.

Frenchman River Model Works

Starting January 10, 2024 Frenchman River Model Works Build Along with Tom Farrell building two kits. A Lobster Boat and the Lobster Shack. (Include photos of both model). There is a 20% discount on the HO and O Scale Lobster Boat and Lobster Shack kits, starting September 1, 2023 and end's February 15, 2024. To get the discount use the code: NEWTRX. For more information about these and other products please visit their website: <https://frenchmanriver.com/>



More Build Alongs to Come

I hope you want to participate in all the "Build Alongs". The modelers and manufacturers, who are making these events possible, are doing them to try to help you improve your skills and have more enjoyment and

confidence in your modeling. They are true learning experiences that have helped many modelers. So if you have been sitting on the sidelines for awhile, give model building a try with the help of a Mentor.

I am looking for more modelers and manufacturers to be involved in future "Build Alongs" in 2024. Contact me if you are interested at: jimkellow@newtracksmodeling.com.



Click image to view Narrow Gauge Modeling Company's video introduction.

Modeling Lifestyle: A NEW Bi-Weekly YouTube Show Thursday evenings at 7pm EDT on our YouTube channel and sponsored by [Narrow Gauge Modeling Company](#) (NGMC).

New Tracks Modeling has started a new, bi-weekly live series called Modeling Lifestyles. It is available to watch live on our YouTube Channel, New Tracks Modeling. This is your opportunity to meet and chat with some of today's outstanding modelers and a few of their friends. You can see all of the interviews we have conducted so far on our YouTube channel, New Tracks Modeling.

For a complete list of the modelers and their friends who will be on our shows, please visit and subscribe to our website newtracksmodeling.com

Please also subscribe to our YouTube channel, New Tracks Modeling, and ring the bell to get prior notification of the shows and be able to join us live.

Weekly Wednesday Show Segments

Find your Mentor at Local CLUBS and NMRA DIVISIONS: A Bi-Weekly Segment about Local Organizations



Supported by the NMRA

This Bi-weekly Segment introduces local model railroading organizations where many of us have found mentors, modeling help, and met some really outstanding modelers. I credit these local organizations with providing much of my modeling education and believe such organizations can also help you.

Phil Edholm, a NMRA Division Superintendent of the NMRA PCR/Coast Division, which includes the San Francisco Bay Area down to Monterey in California, hosts this segment.

Every other week, these segments feature an NMRA Division or Local Club leader to discuss what activities they do, how they engage with members, how they recruit new members, and other topics. The focus is a discussion around what they have done that is successful and unique. The goal is to have actionable ideas come out to be used by other organization in their local activities.

Each time we try and identify a few key nuggets that all of us in model railroading leadership positions can use. Each segment is live streamed to our YouTube channel New Tracks Modeling. You can see all of the previous interviews on there.

If you ,or someone you know, is actively involved in an NMRA Division or a Local Club and you would like to discuss how your organization is thriving (or surviving) in the new world, please contact Phil Edholm at coastsup23@gmail.com or call 408-832-5618.



Let's Go To Our Local Modeling Hobby Store

A monthly segment with hobby store owners supported by the National Retail Hobby Stores Association (NRHSA).

“Local hobby shops need modelers and modelers need local hobby shops”. This segment shows just how true this statement is.

Mark Poggendorf, a NMRA member working on his MMR, a hobby manufacturer, and owner of Poggies Trains Hobby Shop, and a member of the National Retail Hobby Stores Association (NRHSA), started a monthly show segment concerning common issues facing hobby shops and modelers. The focus of these segments is on how both groups can work together for their mutual benefit and hopefully introduce the value of your local hobby store to help you become a more knowledgeable and more skilled model builder.

Mark's involvement in our hobby as a modeler, manufacturer and, hobby shop owner, who not only has a brick and mortar store in California but also attends, as a vendor, many of the train shows throughout the Country, makes him well suited to lead these discussions and provide insights into the problems and issues facing both the hobby shop industry and modelers. Who knows, you also may find a new source for your modeling products from this series.

If viewers have a hobby shop to recommend be on our show, or you are a hobby shop owner who is interested in being on our show, please let Mark know at Mark.Poggendorf@newtracksmodeling.com.

It's that time again for me to return to my workbench and start working on something that I fell in love with and just have to model. Happens all the time. My current project is a 1938 Buick "Y" model in brass.

While I am modeling, you can help New Tracks Modeling by:

1. Volunteering to help us produce and develop our New Tracks Modeling shows.
2. Making a contribution to our Patreon account, New Tracks Modeling, to help pay for our out of pocket cost to run our shows. Click here to [donate](#).
3. Subscribing for free to our YouTube Channel, New Tracks Modeling, and ringing the bell to get advance notices of our YouTube shows including our Modeling Lifestyle series. If the advertisements on our YouTube videos are of interest, please watch them so we can gain a little revenue to produce our shows.
4. Subscribing for free to our website: NewTracksModeling.com which provides login links to our Wednesday Zoom events and also provides information about what New Tracks you can travel with us.



5. Spreading the word about our New Tracks Modeling Mentoring Scholarship program to every young Model Railroaders you know or you meet. Get the word out. Details at our website: newtracksmodeling.com/scholarship

6. Subscribe for free to *The O Scale Resource* and *The S Scale Resource* online magazines so you don't miss any of my articles and also see some great modeling by various modelers who may become one of your mentors.

7. Writing me! I love getting your comments, suggestions, and modeling ideas. I so enjoy hearing from you and having a conversation. My email is: jimkellow@newtracksmodeling.com

Thank you again for reading this far. Till next time with more New Tracks Modeling, Happy Modeling!

Winner, Winner Chicken Dinner!!!!

Michael Culham from Moncton, New Brunswick is the winner of our drawing last month. Michael will receive the kit, "Jerry's Small Engine Repair" furnished by [Art Fahie at Bar Mills](#). We look forward to the build and pictures of the completed kit!



THE S RESOURCE
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ONLINE MAGAZINE
SCALE

Don't forget that we also publish The S Scale Resource Magazine on opposite months from The O Scale Resource Magazine. More articles that you may find useful along with a different New Tracks column.
Read free today!



NEW TRACKS MY BUILD

Martin Brechbiel - martinwb@oscalemag.com - O scale - Work car



NEW TRACKS MY BUILD

Chris Coarse - railrunner130@hotmail.com - O scale - From the New Tracks Build Along, Tom Yorke's White Front Grill work in progress. Still plenty to be done.



Gary Shurgold - gshurgold@gmail.com - HO Scale - Presumably a Jordan kit. Canadian National outside braced boxcar.



NEW TRACKS MY BUILD

Roy Warner - roywarners@gmail.com - Day and Night shots of the barn and a build of a Nissen hut.



Bob Davidson - y2kflstf@twcny.rr.com - HO scale- Scratchbuild of a Kentile Floors sign.



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www.oscaleresource.com www.sscaleresource.com

So, What Are You All Up To?

Please Email us your pictures and captions to photos@modelrailroadresource.com. And remember, a little bragging never hurt anyone!



Edwin, [E.G.F. Moolenaar](#), sent in some wonderful pictures of his weathering.

The first two pictures are an Overland O scale brass U50C diesel locomotive started to weather, this one is not finished yet. Next is an O scale brass camelback 0-6-0 locomotive also weathered this one from GEM Models.

Everything you see is on my layout, built by myself (rocks) and I hand laid every track.









O SCALE SHOWS & MEETS

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.](#)

Southern New England Model RR Club O Show September 23, 2023 9:30AM - 4:00PM

United Methodist Church, 161 Chestnut St. Gardner, MA Admission is free, children under 18 must be accompanied by an adult. Impressive 2-rail 65' x 40' scenic layout with 850' of double track mainline & functioning signal system! Dealers, ample free parking, food & beverages. Dealers: 8 foot tables \$15.00. Contact Adam Ferraro Phone: 508-713-1814; Email: sneshowchairman@snemrr.org
Web: <https://www.snemrr.org/index.html>

Strasburg 2 Rail Train Show October 14th, 2023

Strasburg Train Show: Two-rail swap meet at the Strasburg Fire Co, 203 W. Franklin St, Strasburg, Pennsylvania. 9 am-1 pm. Admission \$7, wives/children/military w. ID free, tables \$35 for first table, additional \$30 per. Great food, modular layout, clinics. Contact Richard Yoder EST evenings 484-256-4068 [Click here for info.](#)

Southwest O Scale Meet 2023 October 27th to the 29th, 2023

7301 Dutch Branch Rd, Ft Worth 76132
Fort Worth Academy Gym - rear of the school campus
Located within minutes of the Hadley / Ross / Walter layouts.

From the website, you can print a paper reservation form to mail by USPS or register online at:
<https://swoscalemeet.com/>

2023 Cleveland 2rail O Scale Meet Nov 4, 2023 9AM -2PM

6' tables \$47 \$50 after Oct 1st
Admission to all \$7
Friday night load in 1PM to 5PM 440-248-3055
Contact Sam Shumaker, 440-248-3055 or Email at j3a5436@gmail.com

2023 Danville Indiana Train Show O/S November 18, 2023 10AM - 3PM

This will be the 16th year that volunteers from the CID have put on this outstanding multi-scalegauge Train Show. The 2023 Show will highlight O-S Scalers in an exclusive 2,000 square foot room for vendors, layouts, and socializing. Last year we had 14 vendors with 32 sales tables dedicated to O-S Scale Trains. Make your plans early to attend. We expect to sell out the O-S Room. [Please download the O & S Vendor Invitation here](#) to secure your sales table.
NOTE: Please register and make payments to the CID contacts on the Vendor Flyer. S Scale Contact: Charles Malinowski, bmry1905@gmail.com, 317-730-3187 O Scale Contact: Eric Peterson, ericgpet@gmail.com, 904-607-7035

O Scale South 2024 Train Show Saturday, February 24, 2024 9am - 2pm

Cross of Life Lutheran Church, 1000 Hembree Road, Roswell, Georgia.
Admission: \$6.00 (your spouse and children free).
Tables \$30.00 each (includes admission).
On3, On30, On2, Proto:48, and 3-rail scale welcome.
Modular display and Layout tours available.
Contact [Dan Mason @daniel@masonlaw.us](mailto:Dan.Mason@masonlaw.us) or 770-337-5139 to reserve tables and information or <http://www.oscalesouth2024.com>.

O Scale March Meet March 14-17, 2024

Westin Lombard Yorktown Center
Lombard, IL
The March O Scale Meet is a 3 day gathering of vendors, customers, clinics, and fun held annually in March in the Chicagoland area. This is the Chicago O Scale train show you've heard of.
Website: <http://marchmeet.net/>
Email: ChicagoMeet@yahoo.com

Harrisburg All O Scale Meet

April 6th, 2024 9AM-3PM

Sponsored by: [Narrow Gauge Modeling Company](#)
New Hope Church
584 Colonial Club Drive, Harrisburg, Pa. 17112
[See the Facebook page for more information.](#)

Strasburg 2 Rail Train Show

April 13th, 2024

Strasburg Train Show: Two-rail swap meet at the Strasburg Fire Co, 203 W. Franklin St, Strasburg, Pennsylvania. 9 am-1 pm. Admission \$7, wives/children/military w. ID free, tables \$35 for first table, additional \$30 per. Great food, modular layout, clinics. Contact Richard Yoder EST evenings 484-256-4068 [Click here for info.](#)

Harrisburg Narrow O Summer Meet

June 7-8, 2024

Friday June 7, 11am to 6pm

Saturday June 8, 9am to 3pm

Sponsored by: [Narrow Gauge Modeling Company](#)
New Hope Church
584 Colonial Club Drive, Harrisburg, Pa. 17112
[See the Facebook page for more information.](#)

Strasburg 2 Rail Train Show

August 10th, 2024

Strasburg Train Show: Two-rail swap meet at the Strasburg Fire Co, 203 W. Franklin St, Strasburg, Pennsylvania. 9 am-1 pm. Admission \$7, wives/children/military w. ID free, tables \$35 for first table, additional \$30 per. Great food, modular layout, clinics. Contact Richard Yoder EST evenings 484-256-4068 [Click here for info.](#)

Strasburg 2 Rail Train Show

October 12th, 2024

Strasburg Train Show: Two-rail swap meet at the Strasburg Fire Co, 203 W. Franklin St, Strasburg, Pennsylvania. 9 am-1 pm. Admission \$7, wives/children/military w. ID free, tables \$35 for first table, additional \$30 per. Great food, modular layout, clinics. Contact Richard Yoder EST evenings 484-256-4068 [Click here for info.](#)

Grab Iron Ends (Nut/Bolt) and for modern cars, Grab Iron Ends (Rivet). These small parts will really dress up an older Athearn/Reynolds/AllNation car as well as some new cast cars and, of course, your own custom built equipment. The stem is .020 and designed for .015 wire. There are 17 parts per sprue and four sprues package.



Also our new double Nut/Bolt grab iron end used on many cabooses.



**Model Railroad Resource
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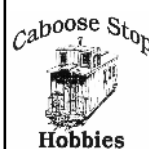
SHOWS & MEETS

March O Scale Meet
March 14-17, 2024

<https://marchmeet.net/WP/>
Ph. 414-322-8043



DEALERS



Caboose Stop Hobbies
301 Main St.
Cedar Falls, IA 50613
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Advertiser Index

All Aboard Trains	Pg. 4
All Nation Lines	Pg. 16
Allegheny Scale Models	Pg. 17
Along the Railroad by Howard Serig	Pg. 49
American Scale Models	Pg. 16
B.T.S.	Pg. 17
Berkshire Car Shop	Pg. 4
Berkshire Valley Models	Pg. 4
Central & Western HomaRoad Supply	Pg. 9
Cleveland Two Rail O Scale Meet	Pg. 9
Clover House	Pg. 3
Delta Models	Pg. 9
Des Plaines Hobbies	Pg. 49
Excelle Lubricants	Pg. 50
Get Real Productions	Pg. 99
Millhouse River	Pg. 4

Model Railroad Resource 3D	Pg. 8
Model Railroad Resource 3D	Pg. 105
New Tracks	Pg. 50
O Scale Turnouts	Pg. 4
Protocraft	Pg. 9
RailFonts.com	Pg. 3
RailFonts.com	Pg. 15
RailFonts.com	Pg. 3
Right-O-Way	Pg. 4
SoundTraxx	Pg. 3
Stevenson Preservation Lines	Pg. 4
Streamlined Backshop	Pg. 3
The Public Delivery Track	Pg. 17
The S Scale Resource Magazine	Pg. 95
Trainz	Pg. 16
Tru-Color Paint	Pg. 17
Wasatch Model Company	Pg. 4