

THE

S

SCALE

# RESOURCE

NEWS, REVIEWS, INFORMATION TO USE

*December/January 2024*

*Volume 10 No. 2*

*Let's Build  
Something!*

**Union Pacific SD60M from an American Models SD60  
NASG National Convention and Contest Winners  
Central Indiana Division / NMRA Train Show  
Historical Society Shadow Box Layout  
New Tracks - Modeling with Mentoring  
Welcome to 3D Resin Printing 101  
And So Much More...**



Published Bi Monthly

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**December/January 2024**

Volume 10 No. 2

*Owner / Publisher*  
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*Advertising Manager*  
**Jeb Kriigel**

Welcome to the online S 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

*Picture of the locomotive (Union Pacific SD60M from an American Models SD60 article) completed on Chris Steeb's 2023 National Farm Toy Show Display.*

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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.



# From the Publisher's Desk



We had our first measured snowfall a few days ago here in central Illinois. It's officially Winter!

In this issue, we recap the NASG National Convention which was held in Harrisburg, PA this past July. All the pictures we used were courtesy of Michael McConnell as Amy and I could not make the trip East. We did make the Danville, Indiana all gauge show which, for the second year in a row, featured a large room for O and S scale. There were more dealers and people than last year so it's growing which may be the future of O and/or S scale shows.

This issue is a bit larger as we wanted to reprint an article from *The O Scale Resource Magazine*, "3D Printing 101". This is based on a clinic I gave at the O Scale National Convention in Denver last June. In case you don't read *The O Scale Resource Magazine* or maybe need a quick refresher, here you go.

I know there will be more than a few of you looking at purchasing a 3D resin printer, and this guide will help you understand all the hype that manufacturers are putting out there. A fairly new trend I am seeing now is the push for speed in printing by using a new type of release film and thin resins. The standard film has been FEP or Fluorinated Ethylene Propylene. It is a polymer sheet that is used as a release film in most desktop resin 3D printers. The FEP sheet is installed at the bottom of the resin tank and acts as a mechanical barrier between the UV light source and the resin while allowing the light to pass through. It ensures smooth and precise printing by separating the printed object from the build plate.

As a result of this new trend, now we have many printers shipping with ACF or Anisotropic Conductive Film. It is a type of release film used in resin 3D printing. ACF is made of resins, such as thermoset epoxy resin, in which conductive particles are dispersed. It is designed to have a non-stick and smoother film surface for more efficient 3D printing

I have been watching many videos and reading reviews – the jury is still out. Yes, they are faster, but at what cost? Thinner resins, and loss of detail quality. It's a trade off.

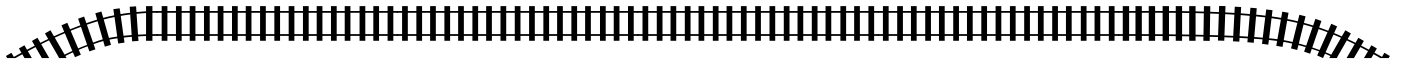
Anyway, if you are looking at a printer or maybe moving up, take a look and check out the video links as well as linked documentation in my article. This should answer many questions you may have before buying.

We want to wish you all a Happy Holiday Season, whatever you celebrate. In our case, Merry Christmas!

Happy Reading & Happy Modeling,

*Amy & Dan Dawdy*

# NEWS YOU CAN USE



Milwaukee "Long Rib" Box Car Kit by Smoky Mountain Model Works. Jim King is doing one more run of the MILW long-ribbed box car kits. Kit No. 64-B6 "Route of The Hiawathas" and "Route of The Electrified Olympian" decals included \$95 + shipping. The correct trucks for this car are available separately.

NOTES: Finishes can vary slightly, Freight Load not included, Crane is rigged with a hook.

[See their Website for more details.](#)



Announcing 2-6-6-2 and 2-6-6-2-T Mallets by P-B-L.

Production of these beautiful models will, like everything else in this world, be limited to the quantity that we know we can sell. In this case, around 125 pieces total. This number spread over 7 distinctively different versions or roughly 18 models of each version, although at this point some versions are in the 11 piece category.



Ca. Winter 1960-61 Jim King Collection

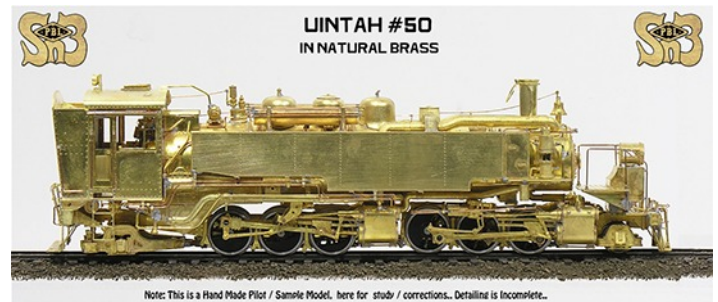
[See his Website site for all the details.](#)



Model Tech Studios LLC is offering a new portable crane for use in a warehouse, loading dock, wharf, engine facility, factory etc. Comes built up and finished.



Note: This is a Hand Made Pilot / Sample Model, here for stud / corrections... Detailing is Incomplete..



Note: This is a Hand Made Pilot / Sample Model, here for stud / corrections... Detailing is Incomplete..



Note: This is a Hand Made Pilot / Sample Model, here for stud / corrections... Detailing is Incomplete..

All models will have DCC decoders will be equipped with a "Customized for P-B-L" version of Soundtraxx 's newly released "Blunami" decoder which allows you to operate your model wirelessly,



via "Bluetooth", directly from your cell phone. If you have a 12-14 volt DC power supply and a cell phone, you can operate your model wirelessly! (NOTE: Your model will still operate just fine using a traditional DCC throttle.. Hand held or otherwise.. )

All models will have factory-installed crew and lights. "Foreground" weathering will be performed by Jimmy Booth for free on these engines (each modeler will be contacted to confirm that they indeed want that). Custom-lettering for your road name is available.

[See their Website for all the details.](#)



New models from Monster Model Works. Brick Utility Building. Based on a series of small brick and glass block utility buildings in Utica, Tira & Galena Ohio. Small and easy to build! Can be turned into all types of cool businesses.

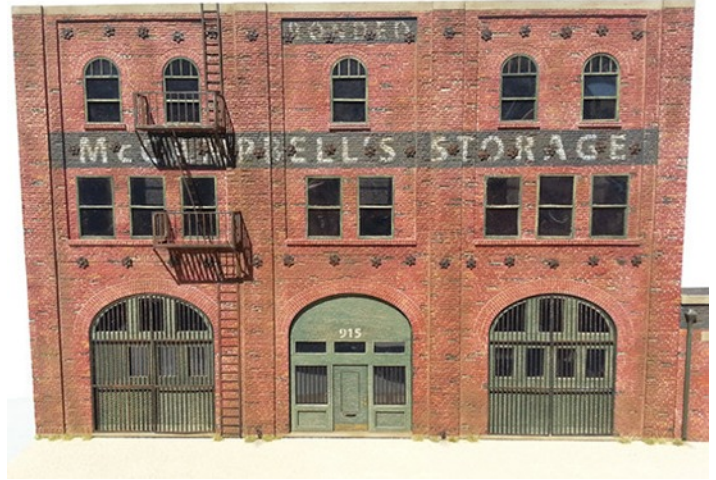


Gibson Body Co. Background Flat Kit. Based on the Gibson Body Co. located in Oshkosh, WI. The SOO Line ran right behind this building for years.



The S Scale Resource December/January 2024

McC Campbell's Storage Background Flat Kit. This background flat kit is 2" deep, perfect for tight areas on your layout. Can be up against the tracks or downtown. This kit can be added to our Bonded Warehouse & Storage Background Flat kit. In the real world, they are side by side.



[Check their Website for more models.](#)



ScaleTrains announces the arrival of their very first shipment of S-scale products. The new ScaleTrains S-Helper™ series model of the 2-Bay Peaked End Fishbelly Open Hopper was designed for value-conscious modelers and features a common detailed plastic body; metal handrails and grab irons; die-cast sprung metal trucks, wheels, and axles; as well as a detailed brake system. These cars are an example of progressive freight car design and were popular from 1937 through World War II.



[See their Website here.](#)



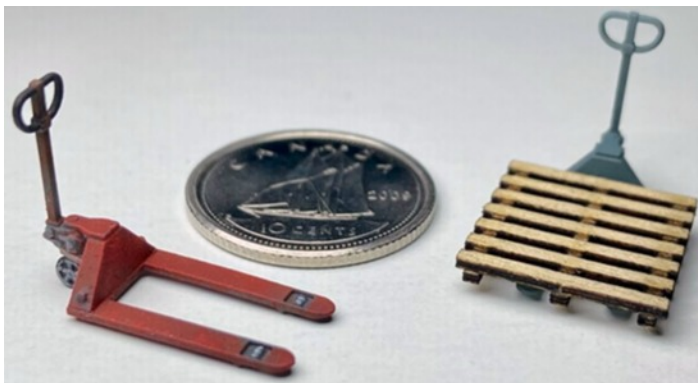


New Steeplecab by Jason's Brass Poles. Jason's Brass Poles custom built S scale Pacific Electric steeple cab with NWSL power truck and working trolley pole. \$150 plus \$8 S&H PayPal check or MO.



[Check his Facebook page here.](#)

New items from miniprints. Pallet Jacks (with ITLA Wood Pallets). A set of 2 miniature model pallet jacks PLUS ITLA wooden pallets for your model railroad layout.



Telephone Booth: 1 miniature model pay phone booth (including payphone). Unpainted 3d resin prints. Does not include led light or plastic 'glass'.

Twirlybird Helicopter Ride: A miniature model Twirlybird helicopter coin-operated kiddie ride for your model railroad layout.



Comes in two pieces; helicopter and base for easier painting. Model by Jay from JSKminiatures. Painted by mikehotrains. Unpainted 3d resin prints. Painting service is available.

[See their Website here.](#)

Also from Model Tech Studios LLC, Detail linear clutter #1, long-narrow clutter piles, pre aged. Over 6 inches of S Scale Industry linear clutter. By modelers request, it's long & narrow so it fits easily between tracks, alongside a building, or between stalls in an engine facility or any of those narrow or linear spaces.

Comes in 2 sections and can be cut apart shorter as well if needed.



[See their Website for more details.](#)





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**November, 2023 Sets**

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- TCP-054 Pullman Green
- TCP-225 Interior Cream
- TCP-226 Interior Pink
- TCP-227 Interior Light Tan
- TCP-228 Interior Light Green
- TCP-229 Interior Light Blue



10406: Metals Set, #1

- TCP-354 Galvanized Steel
- TCP-355 Dark Aluminum
- TCP-356 Semi-Matte Aluminum
- TCP-396 Metallic Burnt Iron
- TCP-412 Matte Steel
- TCP-774 Metallic Tin

**December, 2023 Set**

11012: CSX Set

- TCP-265 Y2k Scheme- Blue
- TCP-266 Y2k Scheme- Gray
- TCP-267 Y2k Scheme- Yellow
- TCP-289 Yn3 Scheme- Blue
- TCP-290 Yn3 Scheme- Yellow
- TCP-332 Beige (Cream)



**NEW SERIES- Paints for 3D-Printed  
& Cast Resin Objects**

November, 2023

- TCP-5014 Glossy, Sprayable Medium Purple
- TCP-5018 Glossy, Sprayable Light Gray
- TCP-5029 Glossy, Sprayable Red- Orange

December, 2023

- TCP-5010 Glossy, Sprayable Light Blue
- TCP-5028 Glossy, Sprayable Off-White
- TCP-5036 Glossy, Sprayable Cherry Red

Current, 2023

- TCP-5001 Glossy, Sprayable Medium Red
- TCP-5008 Glossy, Sprayable Medium Green
- TCP-5011 Glossy, Sprayable Medium Blue
- TCP-5026 Glossy, Sprayable Medium Brown

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

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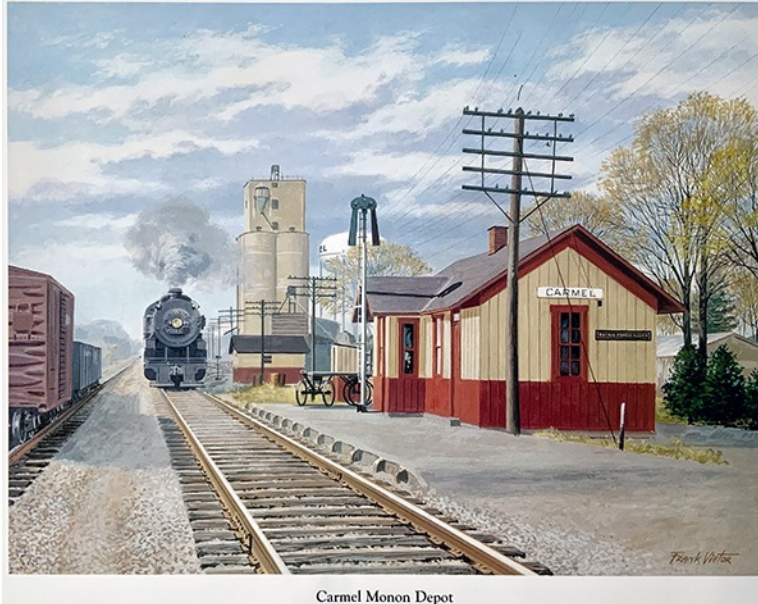
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# PROJECT REPORT - CARMEL, INDIANA



Carmel Monon Depot

## HISTORICAL SOCIETY SHADOW-BOX LAYOUT

By **Charles Malinowski**

*Email author by clicking on their name.*

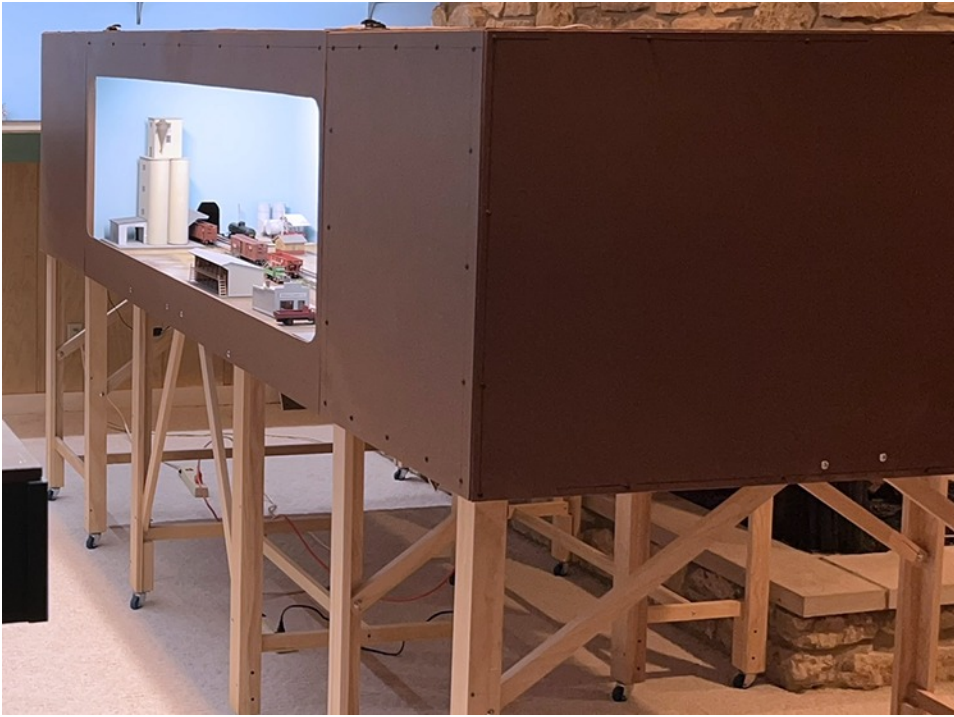
*Editors note: Although this is a hi-rail display built for reliability, we wanted to showcase it as Charles is not only a fine S scale modeler (we will feature his shelf layout in an upcoming issue), but to show how we as modelers can volunteer and help bring the hobby to others.*

In early 2020, I volunteered to build what I would describe as a “museum quality” layout for the Carmel Clay Township Historical Society. YES, Friends I volunteered! A group of CCHS volunteers did provide the Society with an O Gauge layout that was what we would consider well below “museum quality.”

My progress has been slow due to a combination of the reasons. The most recently is the CCHS decision to build a new 3 story museum in the heart of Downtown Carmel. This project forced a temporary relocation of Society’s pride-and-joy their 1882 Monon Railroad Depot that was to house the layout.



*A front view of the 10 x 4 foot layout.*



*An overall view of the 10 x 4 foot layout.*



*A behind-the-curtain view showing the power location and space for storing cleaning supplies and maybe additional rolling stock.*



My project goals were to provide a reasonably accurate of what Carmel would have looked like in the early 1930's, basing the project look and feel on the commissioned artwork shown at the beginning of this article.

Researching the locomotive depicted in the painting became my basis for the time period, mid-1930's, and fortunately I was able to acquire an American Flyer/Lionel 2-8-2 of the same class.

The layout is on wheels and is designed to be moved as needed with the limitation of the width of the main entrance that was/will be handicap accessible. No tools are need to connect the four sections together, wing-nuts and carriage bolts are used. Four wire automotive trailer wire was used as the track power bus, again no tools required for the Museum Staff to deal with.

During the construction I have had many fellow modelers help with benchwork, electrical issues, scratch building structures and scenery. Those modelers from O, HO and S Scales.

It was great to have Dan and Amy Dawdy visit the layout in my basement as it added a spark of energy to clean-up my construction mess and get a glimpse of what will come soon.

I look forward to reporting back to my friends at *The S Scale Resource Magazine* in early 2024 with a final project.

*Charles giving Amy the project update. This shot gives you an idea of the overall size of the 4-section layout.*





*S Scale brother Mick Hinkle scratch built the Depot from plans provided by the Carmel Historical Society.*

*Mick also built the livestock loading ramp that would have serviced the now-long-gone cattle ranches surrounding Carmel.*



*The Standard Oil of Indiana fuel tanks and cradles were 3D designed and printed at the local library. The loading dock was scratch built from Internet photos.*



*Typical of small town America in the 1930's, the team track provided coal service for both residential and commercial customers.*





*A bird' eye view of the layout. The Lumber Dealer was a very large operation in '0' and has been selectively compressed. The grain elevator (left) and grist mill (right) provide view blocks of the wall openings.*



*Here the grist mill provides a "bookend" for the North end of the layout that, when combined with South end grain elevator, provides frame for the viewer standing at the center of the layout that hopes to provide a glimpse of Carmel Indiana in the 1930's.*



# NASG NATIONAL CONVENTION AND CONTEST WINNERS

What follows are some of the scale winners in this years NASG National Convention which was held in Harrisburg, PA this past July. Amy and I could not make it this time so we have some great pictures from Michael McConnell. We wanted to wait until the NASG's *The Dispatch* was published before we published our version. Thank's to Michael for allowing us to print these.



*"1980s House Under Construction" Model by Scott Lister  
Winner: Craftsman Diorama  
Winner: The Frank Titman Best-of-Show Award*



*"Ulster & Delaware R.R. 4-4-0 #2" (scratchbuilt) Model by Simon Parent  
Winner: Steam Locomotive Scratch Built*





*"Kingston Consolidated R.R. Trolley #1" (Pennsylvania Heritage Models base model; full interior detailing)  
 Model by Willy Monaghan  
 Winner: Trolley / Interurban*



*"G&NR 40' Box Car" (Perma Bilt Jersey Central base model kit) Model by Scott Lister  
 Winner: Craftsman Freight Car*





*"Reading BMr/Bmp Baggage Mail Car" Model by Hugh Sinn  
Winner: Amateur Passenger Cars*



*"PRR Box Car" (Mainline Models incomplete kit base model) Model by William Monaghan  
Winner: Amateur Freight Cars*





*"PRR War Emergency Cabin Car Nx23" Model by Keith Thompson  
Winner: Freight Scratch Built*



*"Two-story Factory" Model by Chris Elliott  
Winner: Craftsman Structures*





*"Bobuscz Bobbin Works" Model by Buff Buffington  
Winner: Master Craftsman Structures*



*"Randy's Auto Repair" Model by Stephen Vaughan, Jr.  
Winner: Amateur Structures*



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*"Ulster & Delaware R.R. Rail Truck" Model by Fergus Monaghan  
Winner: Amateur Diesel & Electric*

## ON TO THE NASG NATIONAL CONVENTION



*Host Club managing the registration desk. Dave Heine, in the red shirt on the right behind the table, was the event's Treasurer.*





*The vender hall is open!*



*Pittsburgh S-Gaugers portable layout.*







*Scale Trains Display with unannounced Wide-Vision Caboose display.*



*Jamie Bothwell and Bill Morris*



*Hank Worrell and Mike Ferraro*





*Doug Peck of Port Line Hobbies*



*Jeff Wilson of Hoquat Hobbies*



*The banquet.*

To view more of the NASG convention and see the awards please go to:  
<https://www.nasg.org/Convention/2023/index.php>



# Central Indiana Division / NMRA Train Show



This past November Amy and I traveled down to the Central Indiana Division / NMRA Train Show. This is a large multi-scale/gauge show held at the beautiful Hendricks County Fairgrounds 4-H Conference Center, located at 1900 E. Main Street in Danville, IN.

For the second year in a row the 2023 Show highlighted O-S Scalars in an exclusive 2,000 square foot room for vendors, layouts, and socializing. There were more people than last year, and it will hopefully continue to grow with more S scale participation. We spent some time on Friday shooting some layouts for future publication and then set up our tables early Friday night.

Total attendance was over 1,200 and many people walked into the O and S scale space to check it out and to see bigger IS better!







*Above: Ken Zieska and Tom Lennon from the PSSW were here with all kinds of nice S scale stuff.  
Below: Matt Gaudynski of Des Plaines Hobbies has a few tables of sale items.*











*Above: Close up from the cornfields on Charles Malinowski's MR2GO!  
Below: Sunset brass is in the house.*







*Lots of projects to be had.*

*Charles Malinowski and his MR2GO!*



**See you  
all next  
year!**





# UNION PACIFIC SD60M FROM AN AMERICAN MODELS SD60

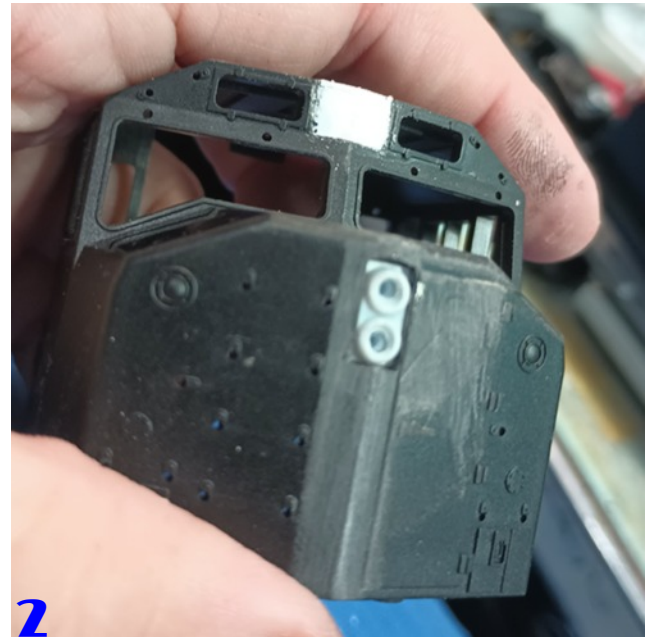
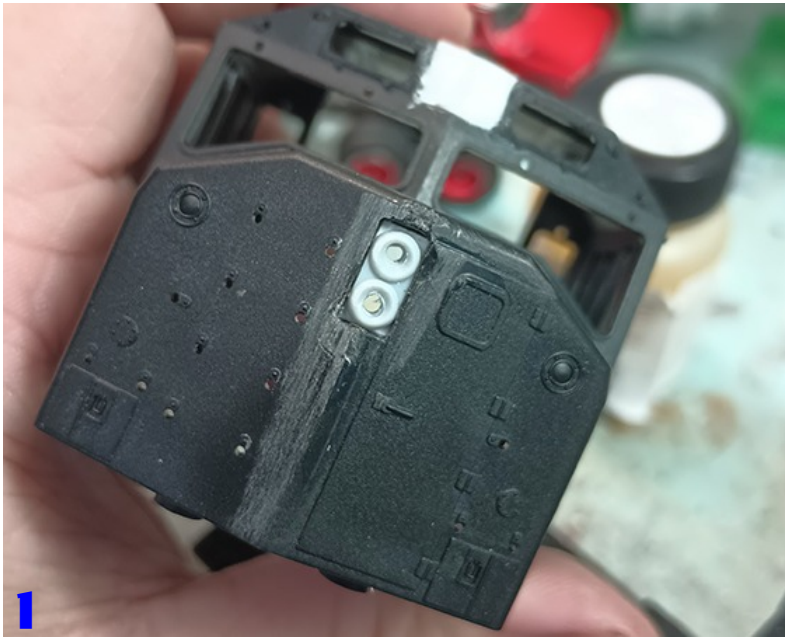
By **Tony Dixon**

*Email author by clicking on their name.*

Athern's blue box of S scale American Models is an excellent starting point for building custom locomotives, and their SD60 is no different when it comes to this. As a starting point, a Undecorated American Models SD60 with the wide cab for this unit was great. Along with detail parts from B.T.S., Des Plaines Hobbies, Shapeways, and custom 3D printed components, you get a beautiful finished piece.



Prototype photo by Matthew Griffin  
[RailPictures.Net](http://RailPictures.Net)



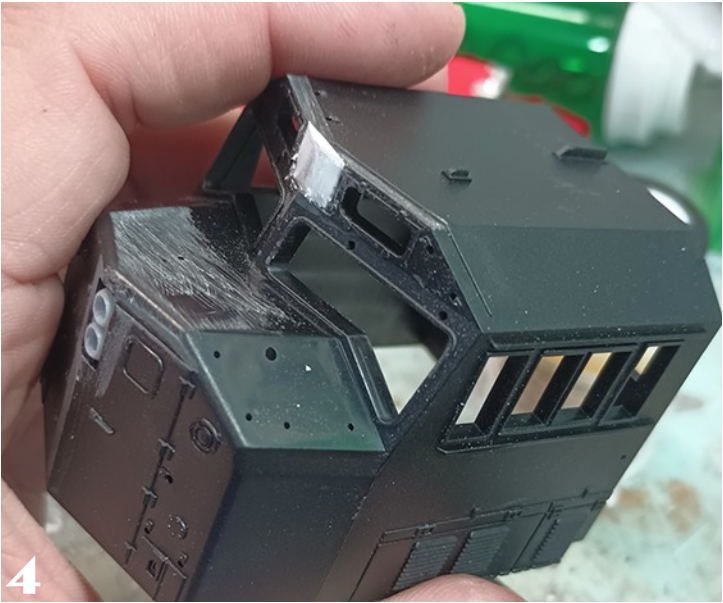
The starting step in this build was to relocate the headlight from between the number boards to the lower hood. In order to accomplish this, I started by shaving the factory headlight off then filling the hole with some styrene. After that, I cut a hole in the proper location sized to fit SSA-202 (S Scale America) headlight.

**(Pictures 1, 2 and 3)**

Next inline, I filled the rear number boards with some .060 styrene and sanded off the lower classification light locations after making sure all the holes were drilled the proper size and locations to fit the B.T.S. .02046 Diesel grab irons.

**(Picture 4 on next page)**





4

Moving on from the end of the long hood, I realized I had to fabricate the equipment cabinets that are located immediately behind the cab on the conductor's side of the cab (picture 5). With some styrene sheeting and strips, I was easily able to achieve this.

(Pictures 6, 7 and 8)



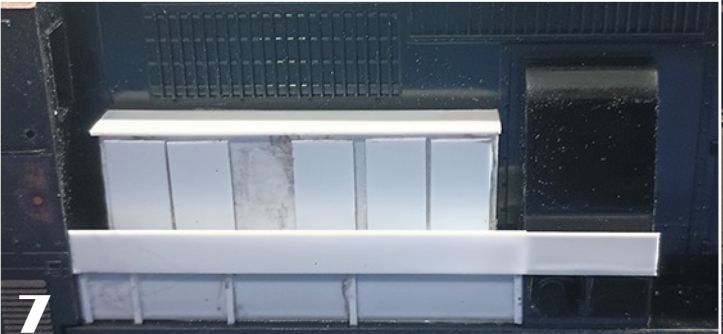
5



6

Here I dressed up the fuel tank using the fuel tank dress parts from Century Models on Shapeways. (<https://www.shapeways.com/product/2PSB5KQAP/emd-fuel-tank-components-1-64-s-scale?optionId=301447286&li=shops>)

(Picture 9 on next page)

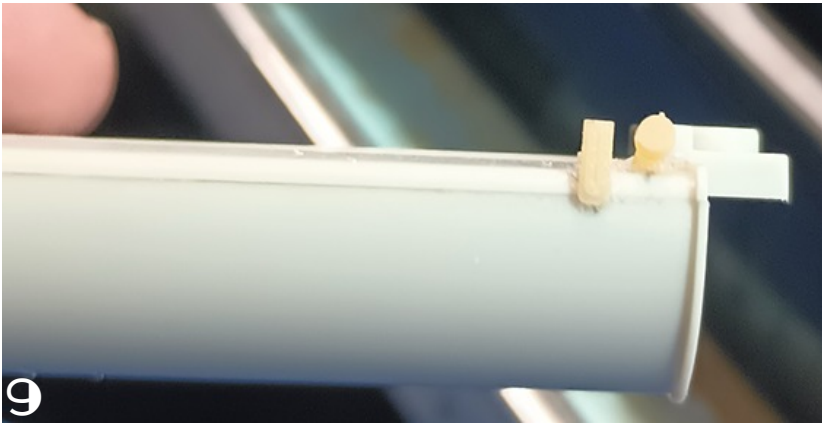


7



8





For the next step, I installed the B.T.S. grabs, pilot fillers with draft gear boxes from Lanes Trains on Shapeways. (<https://www.shapeways.com/product/KAVJZGBU6/american-models-s-scale-sd60-draft-gear?optionId=314373254&li=shops>), B.T.S. 02006 MU hoses upper mount with 1 hose set removed from each 4 hose set, and BTS 02301 air hose mount to each pilot.

(Pictures 10,11,12 and 13)





14

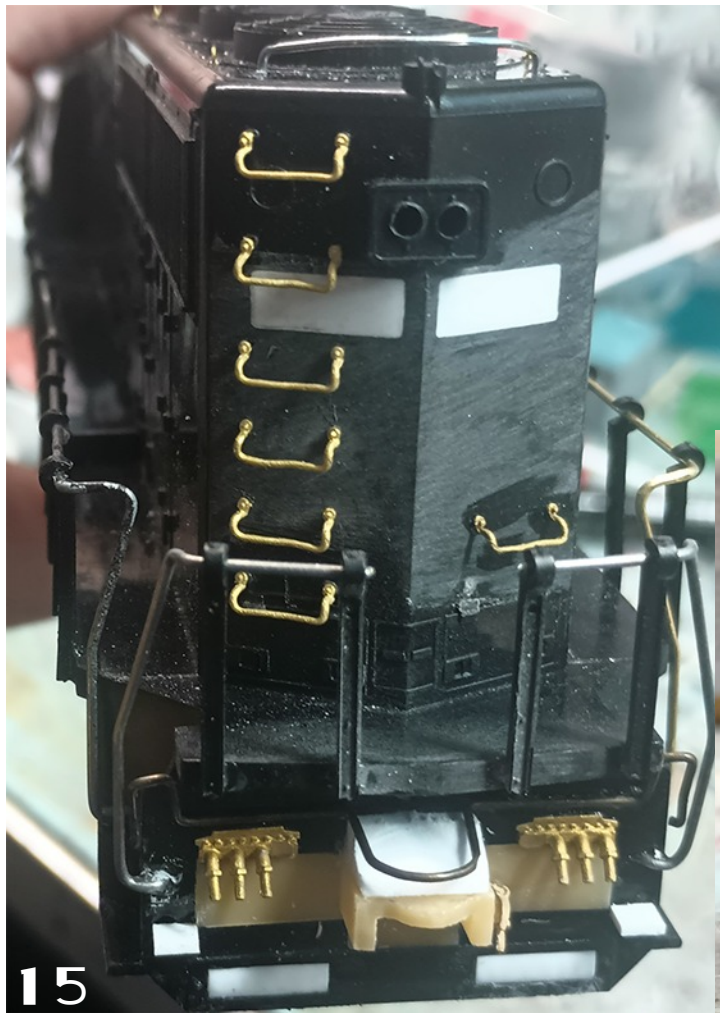


The rubber hoses will be fit and installed after the locomotive is painted. I had to shave off half of one of the doors at the tail end of the engineer's side of the long hood in order to install the handbrake in the proper location.

(Picture 14)

At this point, I added styrene to the top of the draft gear to fix the look of the pilots along with bending the uncoupling bars and gluing them in place. I also opted for bending my own handrails, although I did use the American Models stanchions that came with the locomotive.

(Pictures 15, 16 and 17)



15



16



17



18



Utilizing the wide cab and the additional equipment box behind the cab, I did need to fill a few factory holes and relocate a couple of stanchions, but that was simply done with a little bit of filler putty.

Before primer was applied, I installed a custom 3D printed antenna unit to the top of the cab along with B.T.S. 02025 lift rings to the roof of the long hood where they needed to be, along with the curved grab behind the rear fan on the rear of the long hood's roof and the sand filler hatches to the nose that are American Models parts for the SD60.

**(Picture 18)**

And SSA175 ditch lights from Des Plaines Hobbies got installed under the anti climbers above the American Models plow that came with the locomotive to which I added the grabs to the top of and notched to clear the air line hardware.

**(Picture 19)**

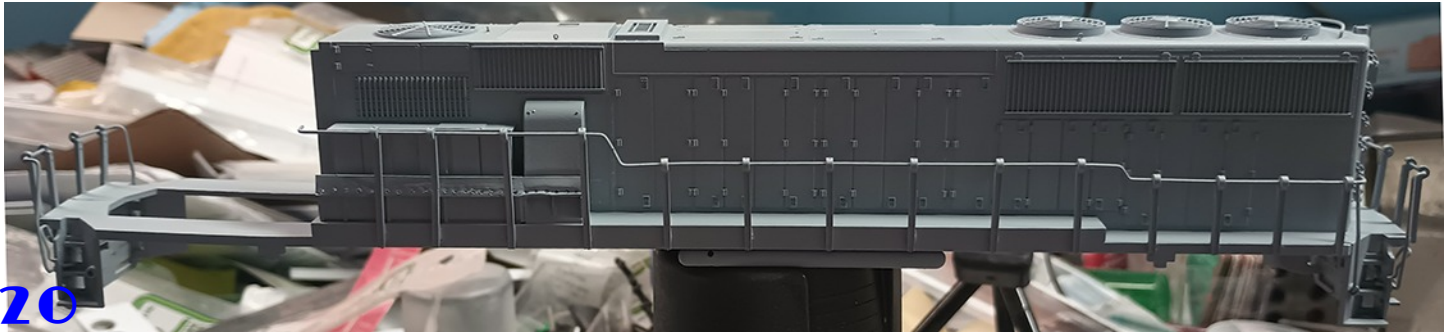


19



The next step for me was to lay a light coat of Rust-Oleum Light Grey automotive primer (Rattle can) to the cab, main body, truck side frames, fuel tank and plow in order to promote paint adhesion and give a consistent base color to lay the paint on. This step also allows you to see if there any defects that you feel need to be taken care of and add another light coat of primer before applying paint if needed.

(Pictures 20, 21, 22 and 23)



20



21



23

Before I forget, I did remove the factory coupler mounts from the American Models trucks in order to mount the couplers into the draft gear boxes I installed to the pilots but neglected to photograph.

(Pictures 24 and 25)



22



24





After laying the first coat of primer, I realized that the version of the locomotive that I was replicating had the sun visors installed on the cab, so I installed them at this point in time before laying a second coat of primer.

Once letting the primer cure for a day, the paint, Tru-Color UP armor yellow and harbor mist gray, was used applying the yellow first, then masking and applying the gray. Again allowing the paint to dry and cure for a day before proceeding.

(Pictures 26, 27, 28 and 29)



Proceeding along with the build we come to the point that I highly enjoyed – installing the decal set from Circus City Decals, and with lots of locomotive choices out there, I had Matt print the large flag version of 2466.

(Pictures 30, 31 and 32 on next page)

When applying the decals I choose Walthers Solvaset and then seal the painted components with Testors Dullcoat before dry fit assembly.

Once I have the locomotive dry assembled (no clear components), I paint the ends of the hand rails white and edges of the steps per prototype pictures and proceed to give it a light weathering using various flavors of





30



31



32

"Taco Sauce", or better known as Tamiya panel line accent, for the doors, fans, grills, louvers, and truck side frames.

I then apply a light coat of Tamiya weathering solutions rust to the trucks and ends of the fuel tank, with some heavier grime to the fuel tank where fuel

has been spilled along with doing a little additional detail paint for the details on the tank and around the windows on the cab.

The final bit of weathering was done with pastel chalks to the roof of the locomotive to resemble the soot trail from the stacks.

(Pictures 33, 34, 35, 36 ,37 and 38)



33



34



35



36



37





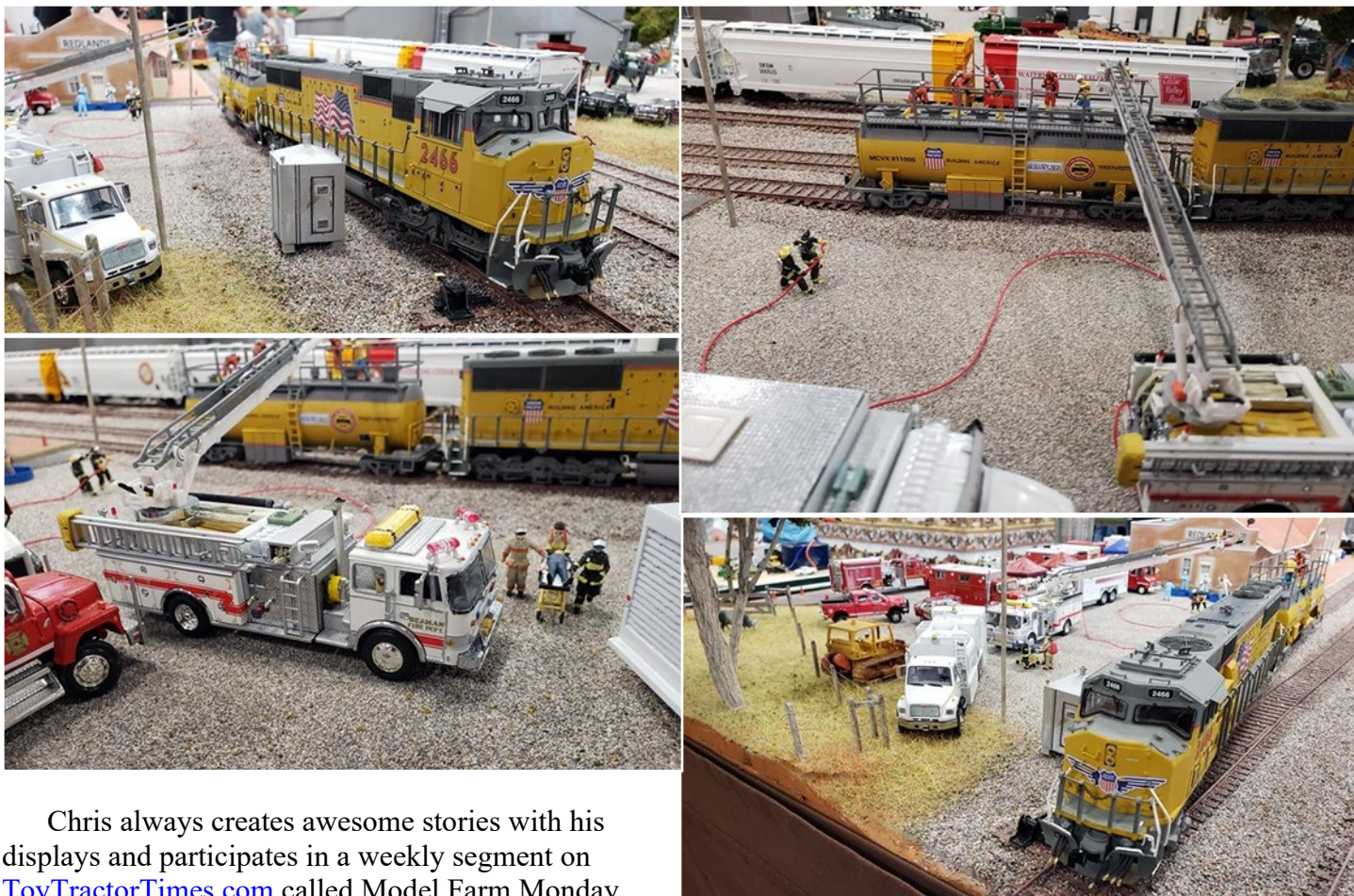
The following are pictures of the locomotive completed on Chris Steeb's 2023 National Farm Toy Show Display, and I have to congratulate Chris for his 2nd place win in the small scale adult division along with thanking him for these shots of the locomotive taken while on display during the competition from November 3 to 5 in Dyersville Iowa.

The locomotive was staged at the dry fertilizer plant delivering cars of fertilizer on Friday during the judging of the competition.

On Saturday it was staged on the other side of the display with a custom built Union Pacific hazmat training tank car that was participating in hazmat training for the local fire departments.







Chris always creates awesome stories with his displays and participates in a weekly segment on [ToyTractorTimes.com](http://ToyTractorTimes.com) called Model Farm Monday where he shares a display journal with story and pictures each week from his fictional town of Redlands Oklahoma.

## At **B.T.S.**, 2023 Means . . .

44 Years in the Hobby Business  
and 25 years in Manufacturing has created ...

184 HO Scale Kits,

113 S Scale Kits,

174 O Scale Kits,

5 TT Scale Kits,

And more than a few hundred Detail Parts.

Currently, there are over a dozen new kits in development for release this year!

Oh, yea, I recently published two **Military Crime Novels**. Writing #3 now.

Yep, I've been busy! Thanks for keeping me that way!!

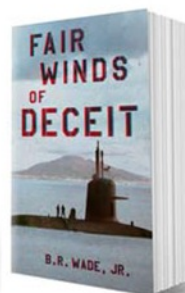
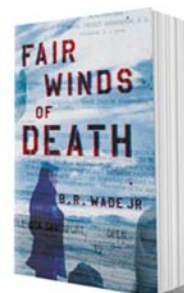
*Bill*

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# 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

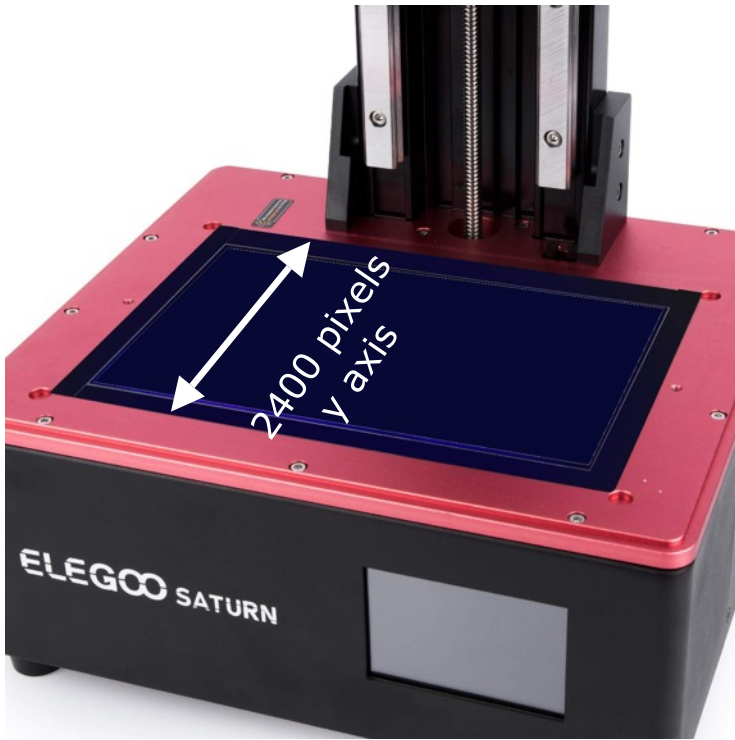
- Stereolithography (SLA) uses UV lasers as a light source to selectively cure a polymer resin.
- Digital light processing (DLP) uses a digital projector as a UV light source to cure a layer of resin.
- Liquid crystal display (LCD) uses an LCD display module for projecting specific light patterns.

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 ( $\mu\text{m}$ ) = 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.

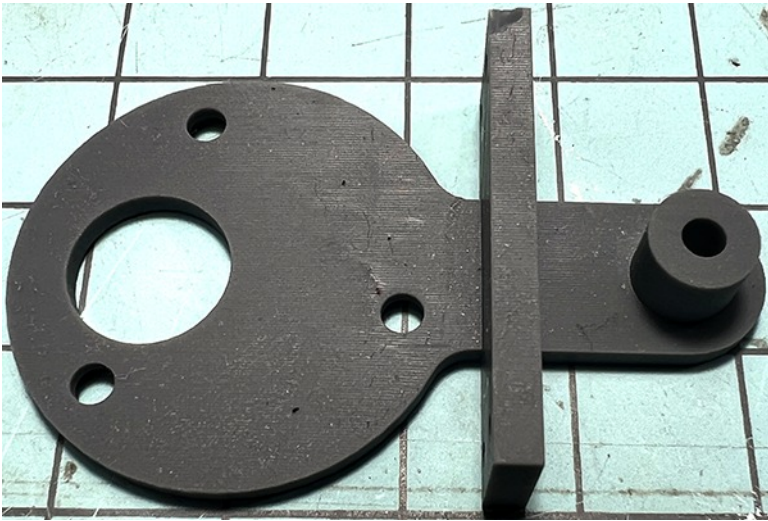
To start off, I would use a simple cheap regular gray resin. Get your bearings first, and understand the process before going out and using speciality resins.

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.

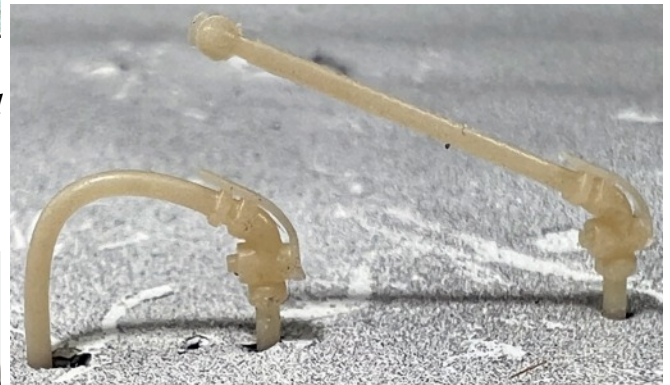
We needed a flexible resin for both Central Locomotive Works and Glenn Guerra's SW1 project to produce masters that could be used for lost wax castings.





*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?**

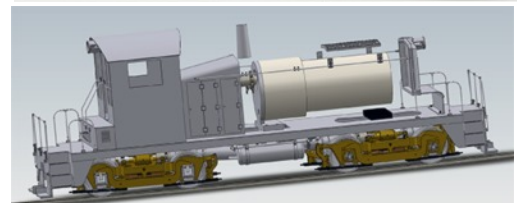
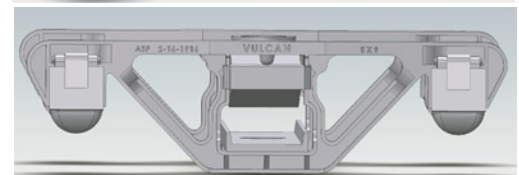
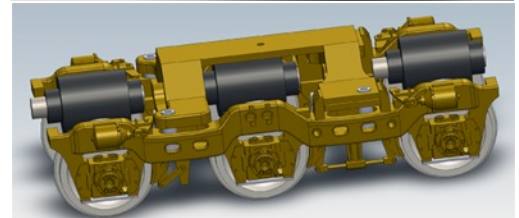
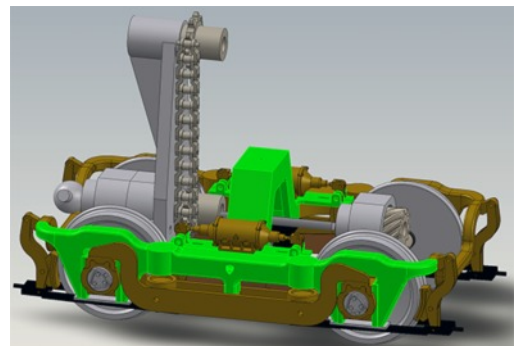
Almost... The last piece of the puzzle is a piece of software called a slicer. The model must be supported and aligned properly to print correctly.

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](#).

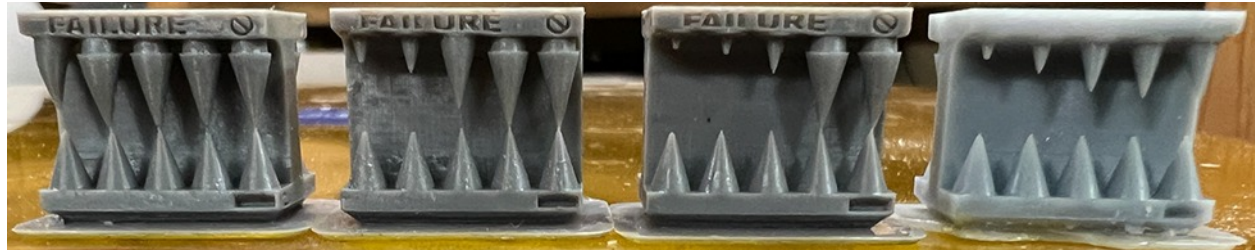
This test will dial in my exposure times and is easy to read. I can then use other test prints to tweak from there if I need to.

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.



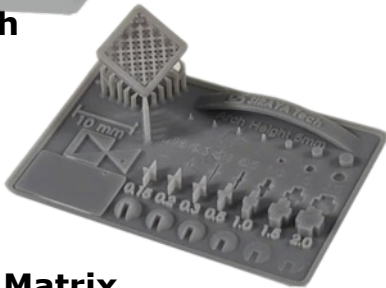
**Click on image for download Instructions**

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

### AmeraLabs Town



### Siraya Tech

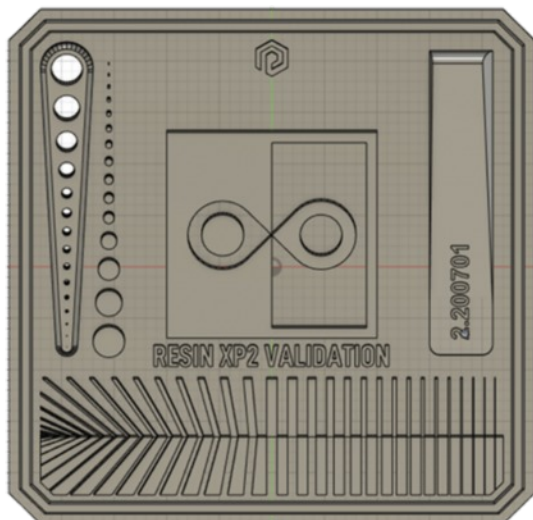


**I again want to remind you that many of the resins have the basic settings on their Website. Start there and then tweak as necessary.**

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  $\mu\text{m}$  or 0.05 mm, and for most things we print that is perfectly acceptable. 20  $\mu\text{m}$  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  $\mu\text{m}$ . If we drop that to 20  $\mu\text{m}$ , 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.

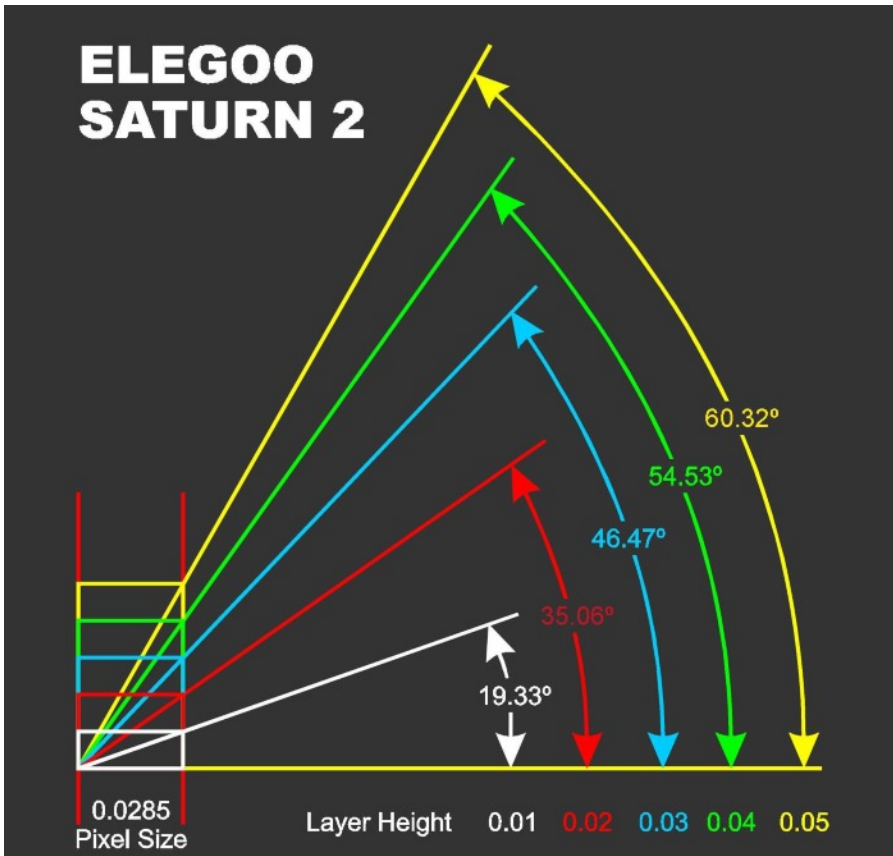
The calculation is ArcTan (layer height/pixelwidth)

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 $\mu$ 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](https://youtu.be/MU0Cq_bjhy4)

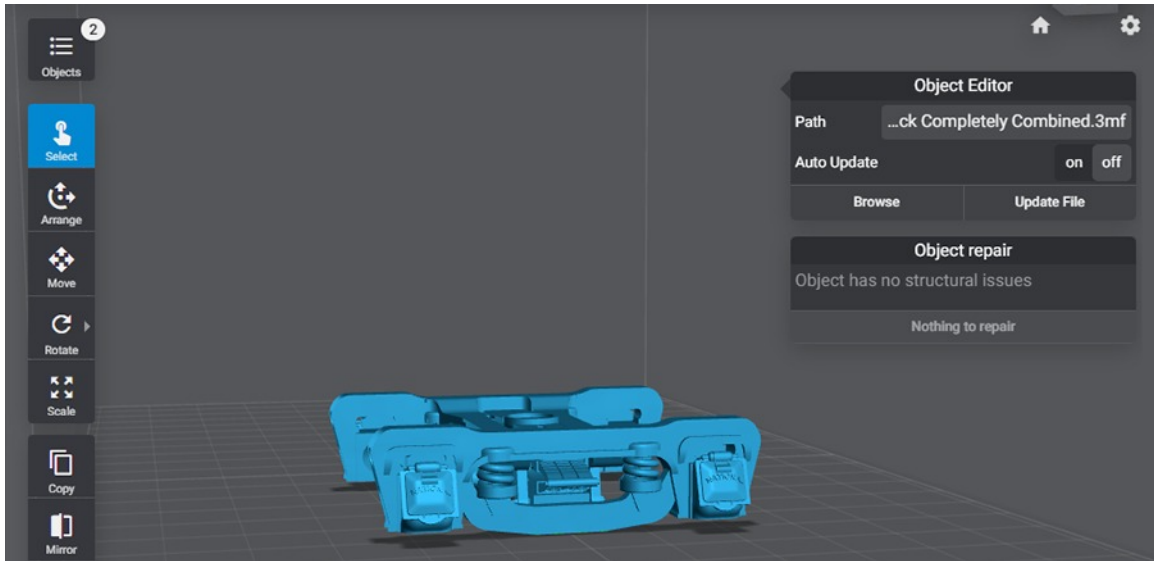


Let me go through my work flow. If you have been printing for awhile your flow may well be different than mine. There is no right/wrong way as long as the basics are done.

Let's use the Erie Express Trucks from Sarah Griessenböck as she states, "The triple bolster / spring 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!



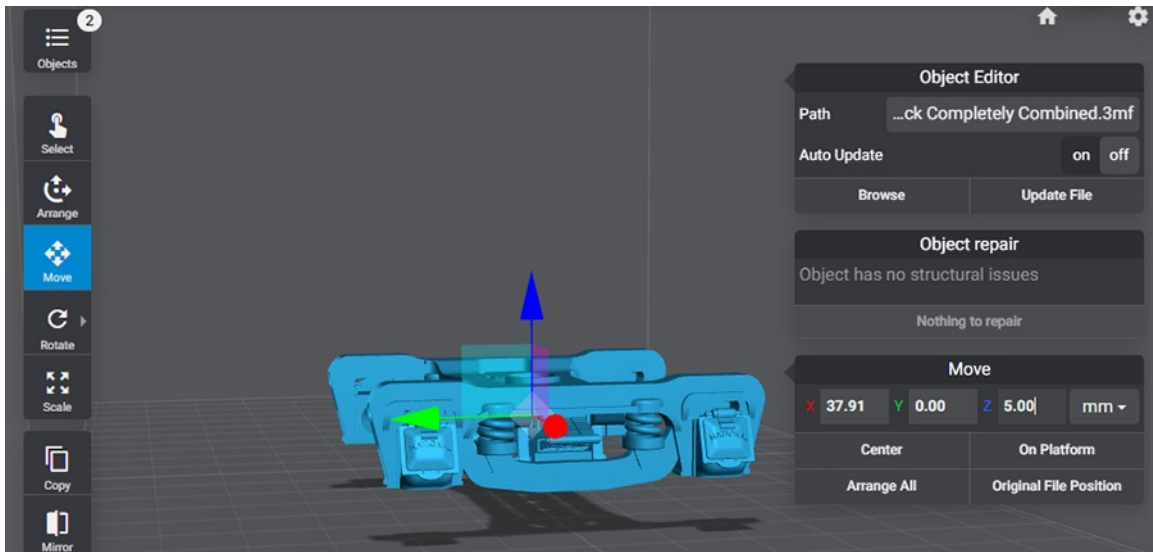
1



1) Here is the file opened in the slicer.

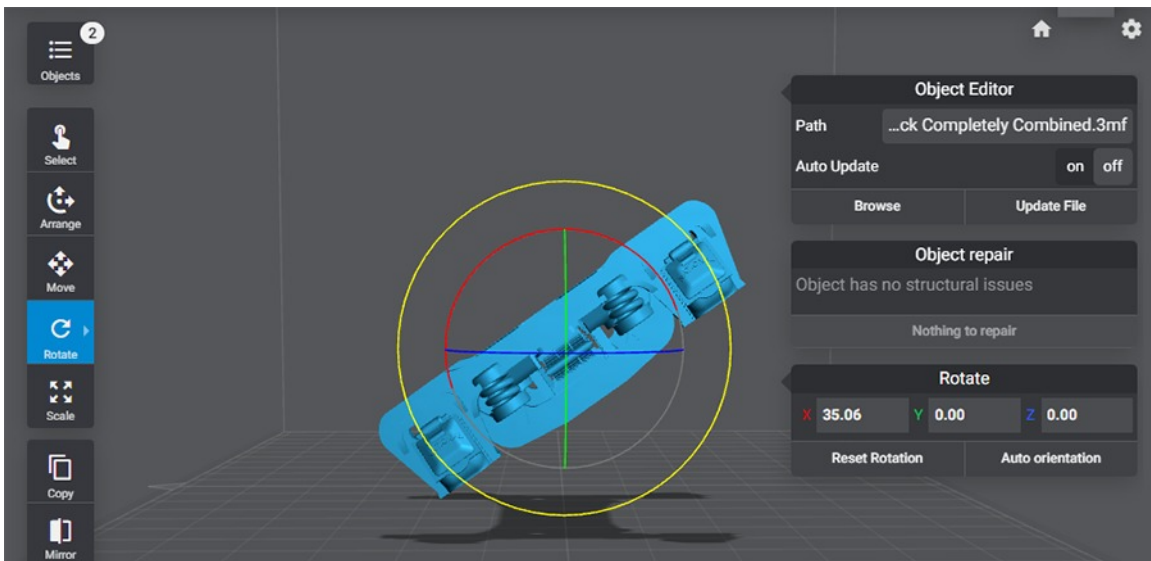
2) First thing I normally do is raise the part 5mm above the build plate. I do print some parts flat, but that really depends on the part.

2

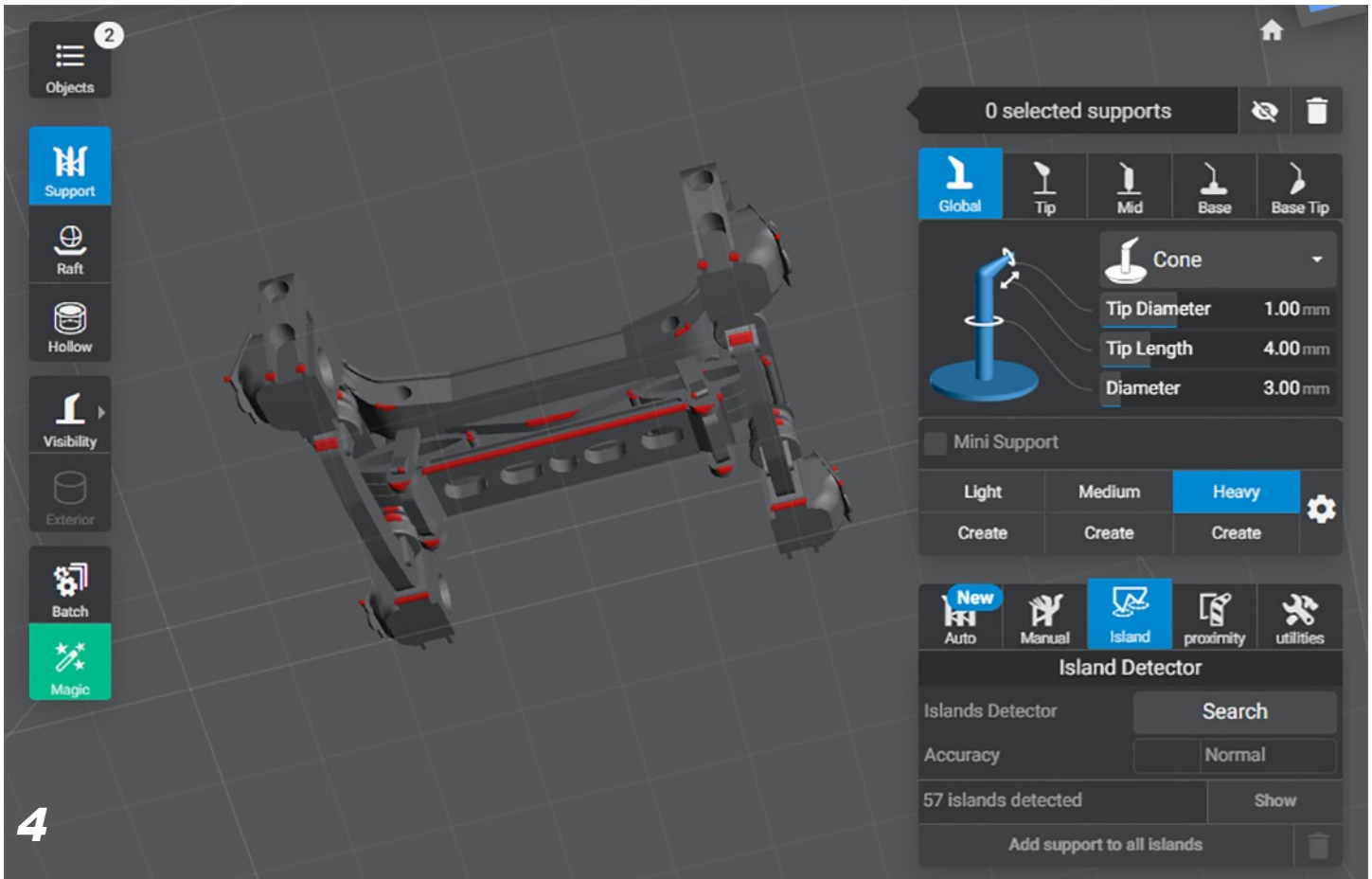


3) Using Saturn 2 and printing at  $20\ \mu\text{m}$ , the the ArcTan calculation comes out to 36.05 degrees so I rotate the print to that.

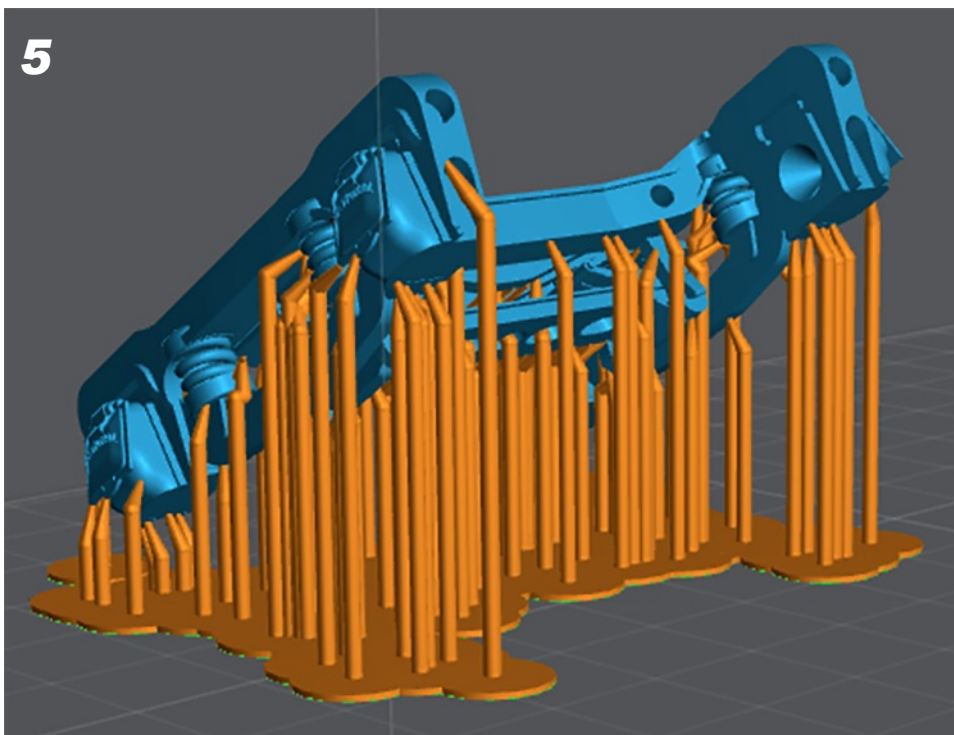
3







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.

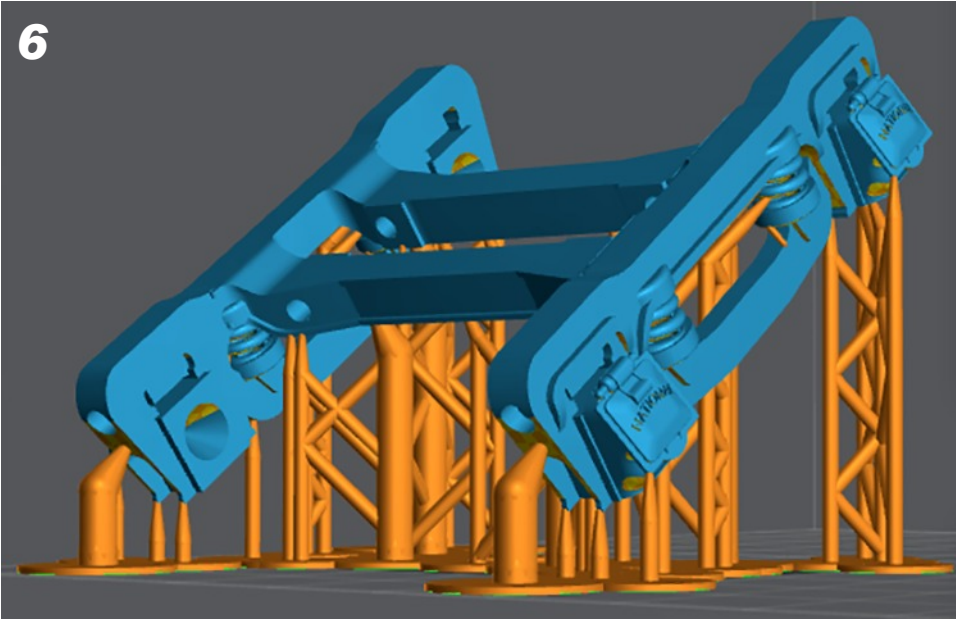


5) This is what the software came up with before adding bracing. Will this work? Probably, but then you need to think about clean up after the print. How easy will it be to remove all the supports that are inside the truck. Also the bottom of the truck, the first part to print, should have heavy supports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

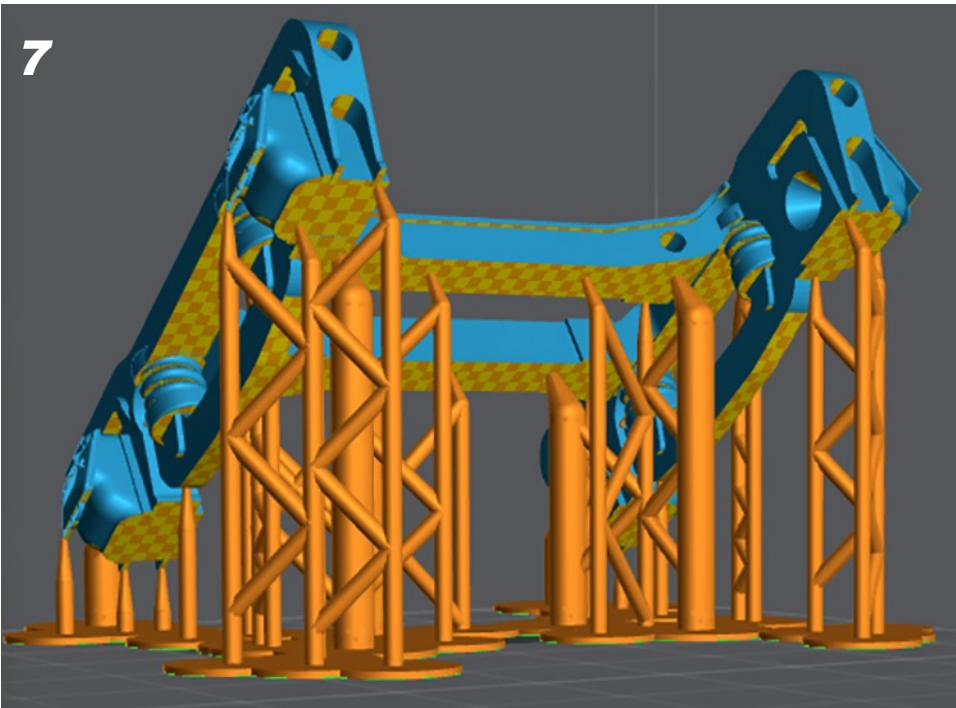
So option two is to go in and add supports manually using a mix of heavy, medium and even light supports as you think are needed.



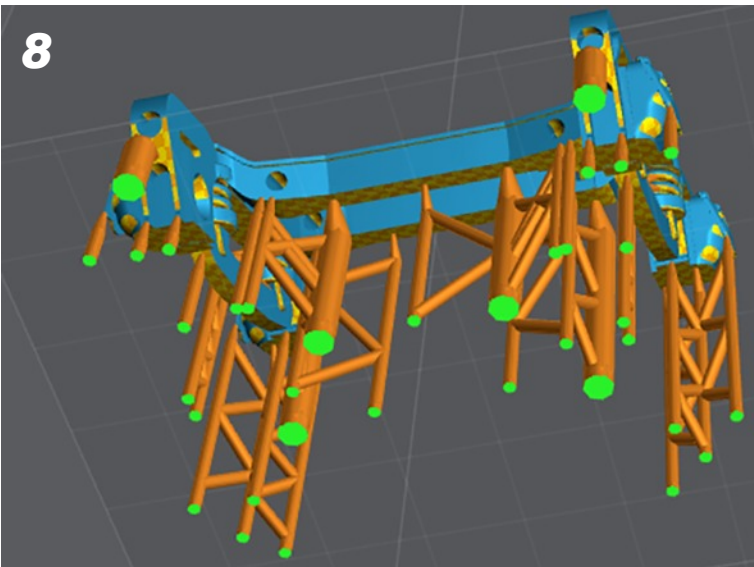
6



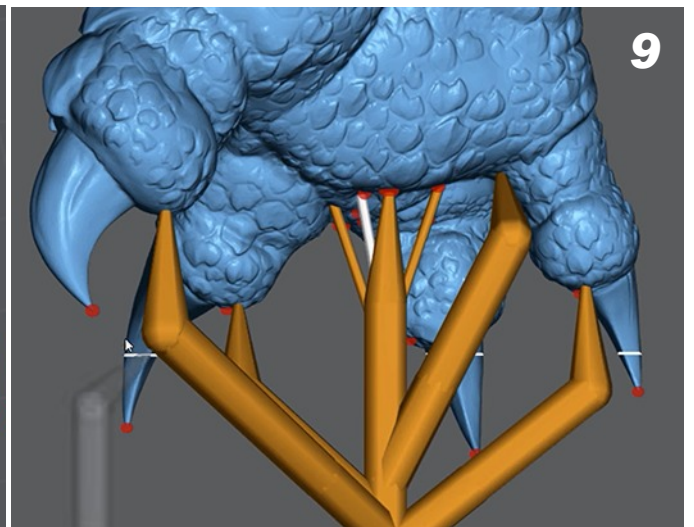
7



8



9

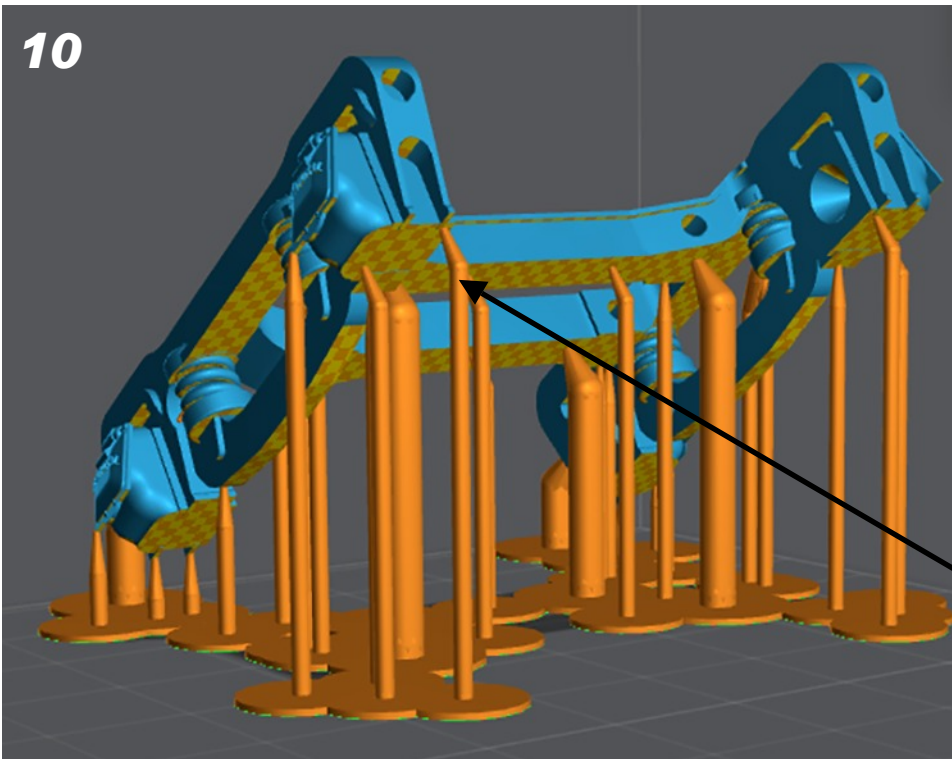


These three images show how I supported this print. Notice in image 6, the heavy supports toward the bottom and then image 7 and 8 where I used them again to support the bolster. (These have had bracing added.) It looks fine on paper, but printing will tell us for sure. Some people over brace and that's 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

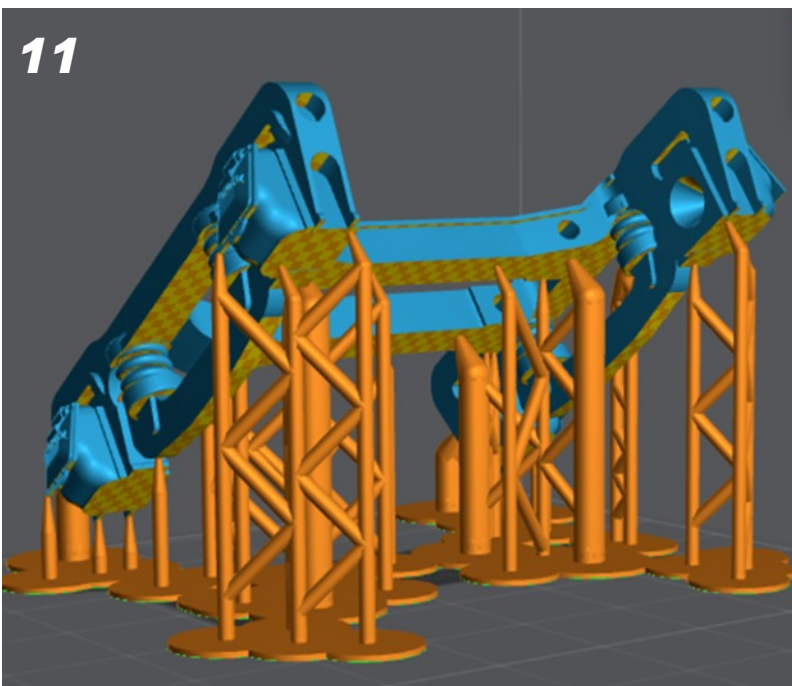


Real quick here so I don't confuse anyone, image 10 is after the supports, but before we add the bracing. A few previous images had the bracing showing. That's after all the supports are in place.

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.

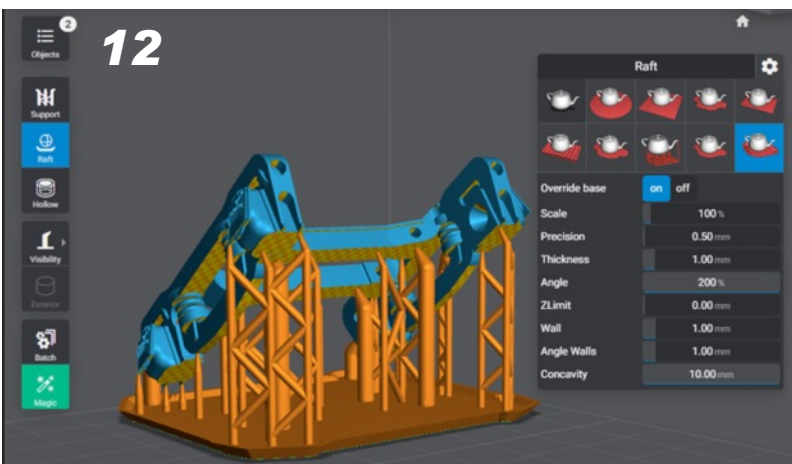
If this support were not braced it would move around as the Build plate moves up and down and possibly miss its target near the top. Image 11 shows how the slicer adds supports where they are needed.

11

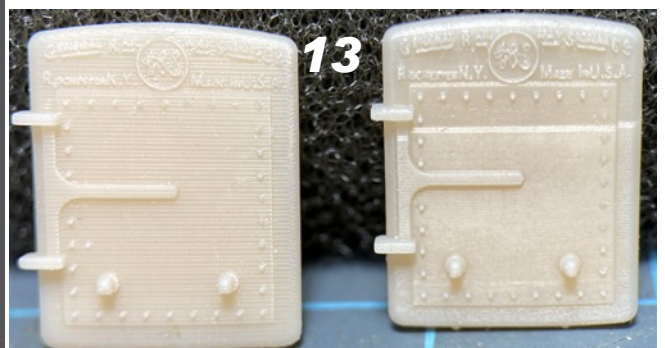


At this point, we could print but I like to add one last thing and that is a raft. Notice the bottom of the supports are just little circles attaching to the build plate. By adding a raft, as seen in image 12, we enclose all that area in making a much more stable base. There are many type of rafts, but 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

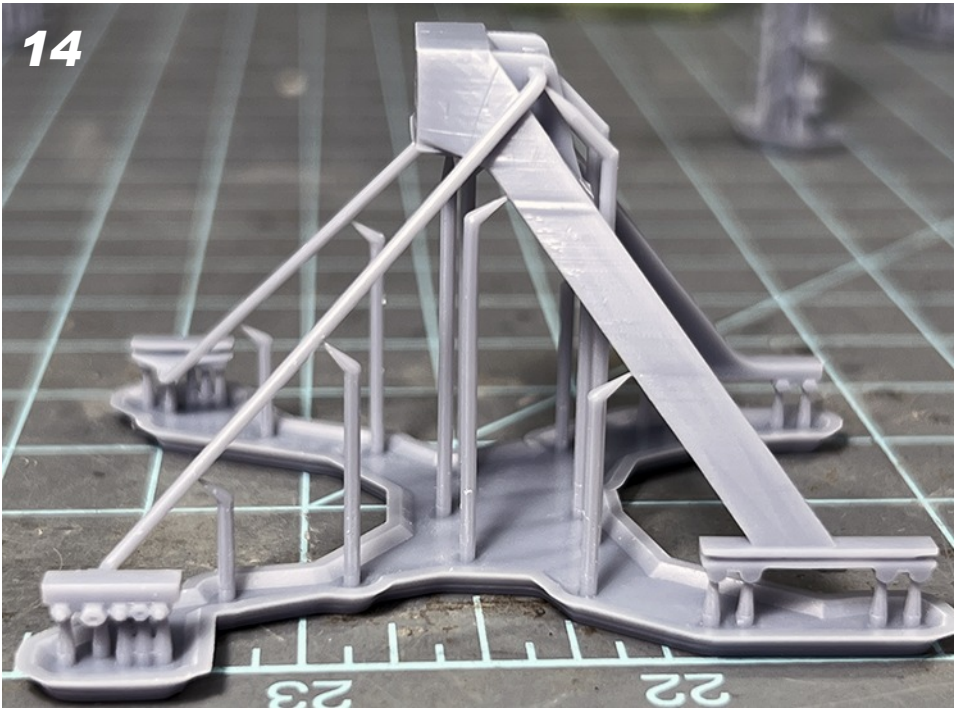


Still think that ArcTan stuff is not needed? Look at image 13 below. It does make a huge difference!





14



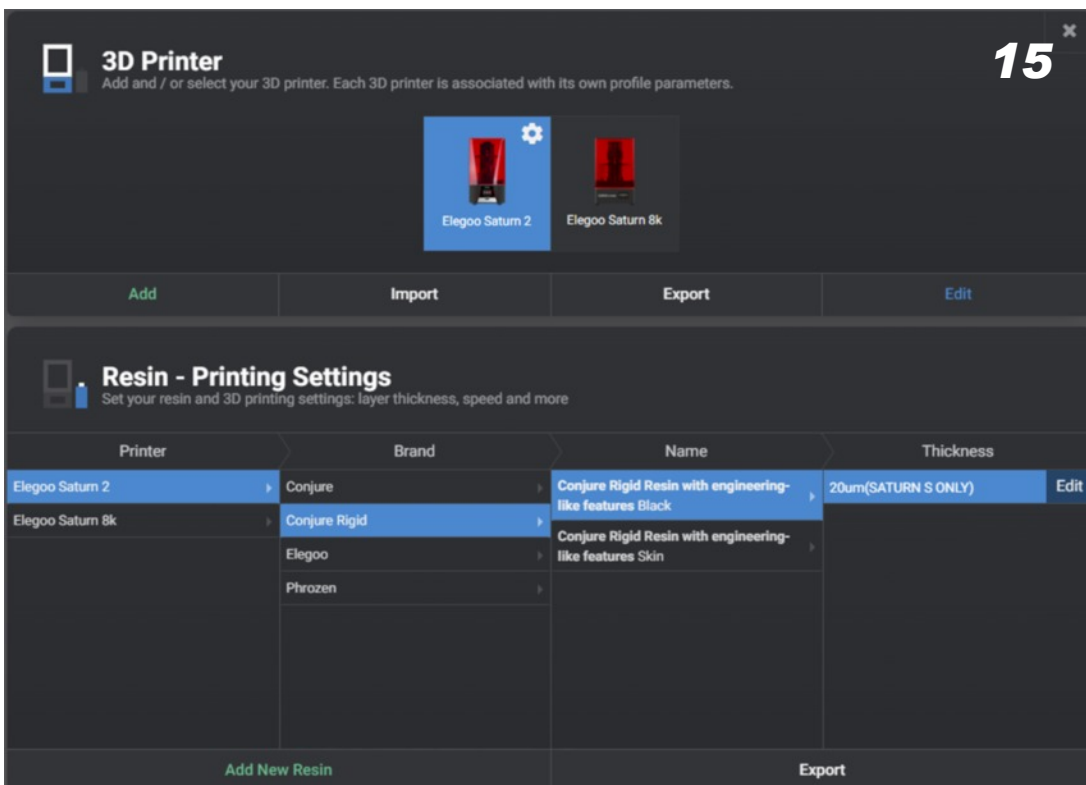
Early test print with modified raft.

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

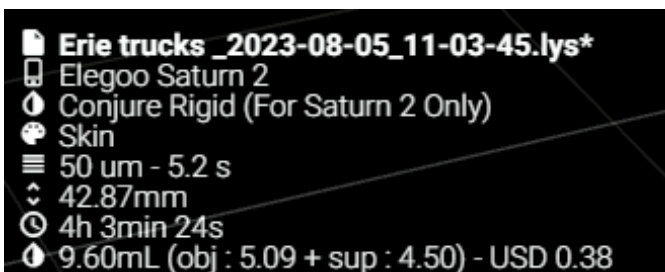
is set to a specific layer height. I can have a single resin with different profiles based on printer and layer height.

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.



15

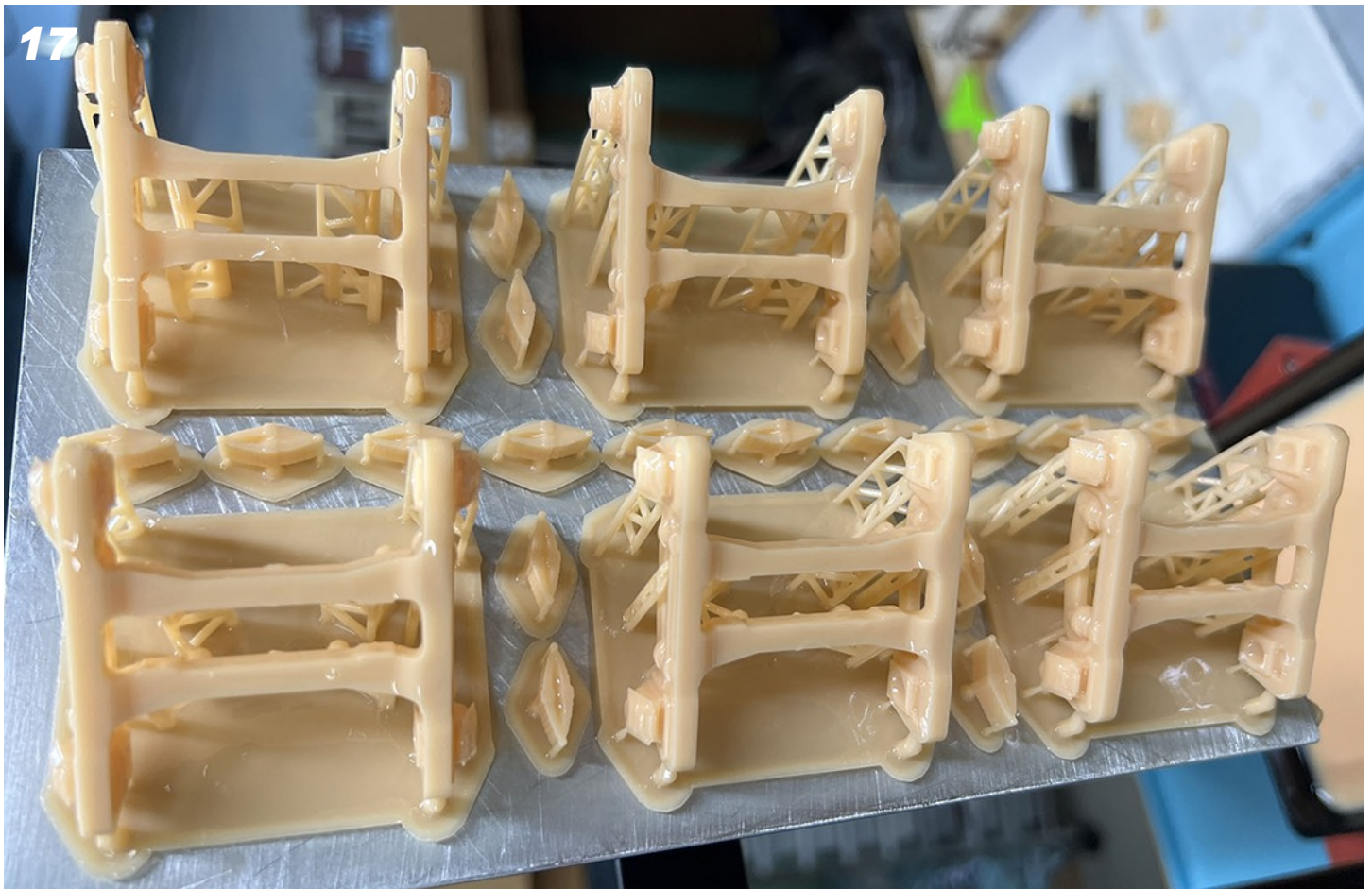
Let's take one more look at what the slicer has to say. We see the file name, the printer we selected and the resin information, and in this example, 50µm slices. It show the appropriate print time which can vary, but it's close. If you input your resin information for cost it will show how much resin 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 then 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/](https://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.

# NEW TRACKS MODELING

## “MY BUILD” Models Shown on the October 2023 Show

These are some of the photos modelers shared on our recent October 22, 2023 MY BUILD on our weekly Zoom Show. [You can see a video of the entire MY BUILD segment here.](#) Each of the participants has an email address included, and welcomes your contact.

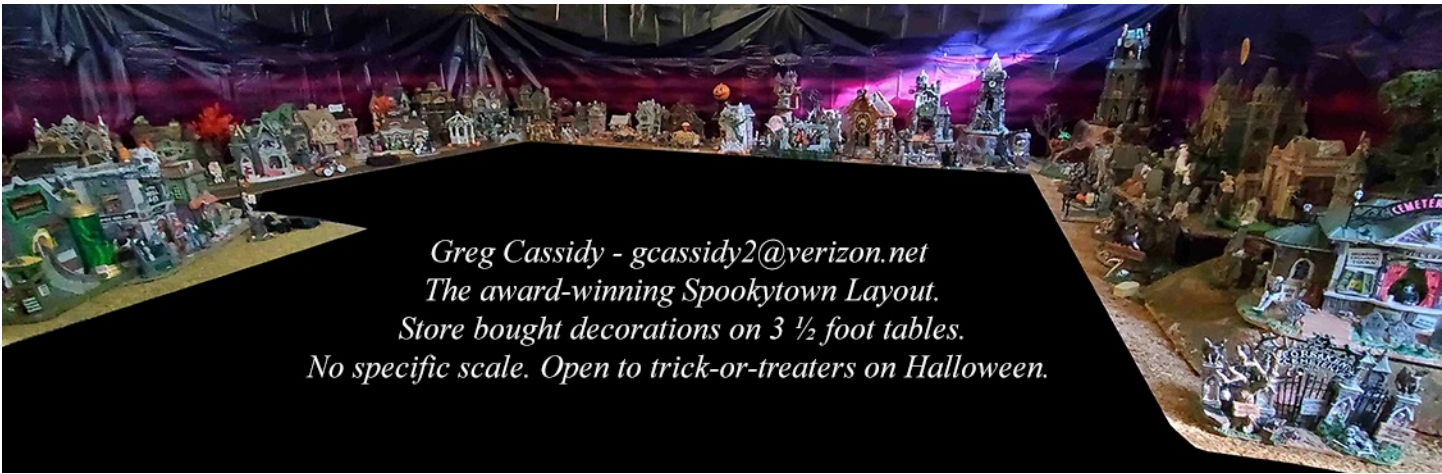


*Alex Belida - alex.belida@gmail.com - HO - I call the one shown above the abandoned “Devil’s Den Cafe” in my layout town of Eureka, in late 1890s Nevada. Scratchbuilt. Torn up roof made from used coffee filter paper. Coffee stirrer sticks for boards. Brown shoe polish & isopropyl alcohol stain. Woodland Scenics stuff around it.*



*Martin Brechbiel - martinwb@oscalemag.com - O scale - Clown*

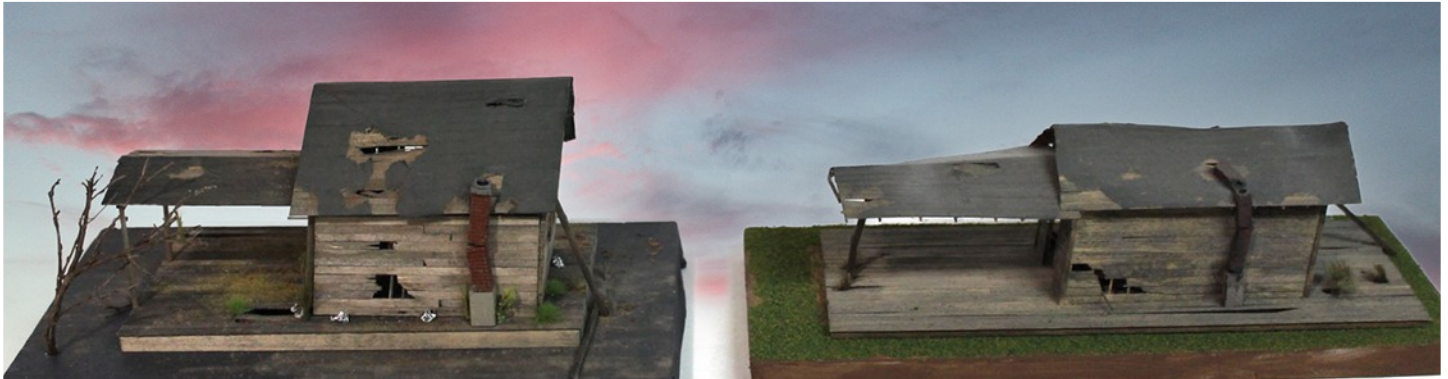




*Greg Cassidy - gcassidy2@verizon.net  
The award-winning Spookytown Layout.  
Store bought decorations on 3 1/2 foot tables.  
No specific scale. Open to trick-or-treaters on Halloween.*





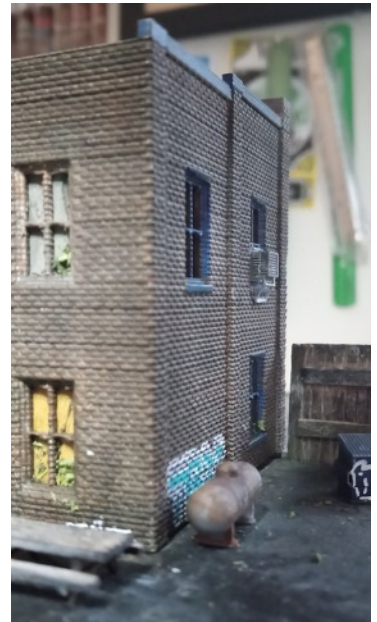


Bob Farquhar - bob.farquhar@sympatico.ca - Here are two pics of a dilapidated depot for the October My Build – one in HO scale and the other in S scale. Both were scratch built. Tissue paper was used for the roof.



Ron Walthers - HO scale - a Caroline Craftsman Kit Shotgun House which is currently out of stock. It is advertised as containing two kits, but when I purchased it a number of years ago, it had only one kit in the package. I bashed it a little, you will notice there is a freight door on one side of the building. The porch roof is collapsed and all the windows are boarded up. The siding is coming off on one side and the roof has a hole in it. The second is a BEST build along building. The photos are a little dark. The building is actually a lot lighter than the photos show. I did not take the photos in very good light. Again, the windows are boarded up or broken. Some of the shingles on top are missing (the tar paper underlayment is visible), and some of the siding is missing. It is overgrown with vines.





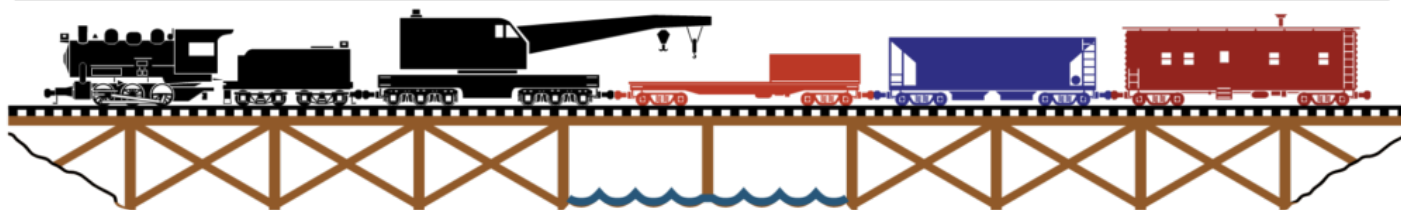
Mitch Lovelace - lovelacemitch@gmail.com - N scale - Now this isn't the big abandoned block build that I'm working on that goes with my other modular blocks... this is just an extra little something I put together in a late night/couldn't sleep night that I thought would be good for the theme. I started with the N scale model power brand "Mr and Mrs Digger's house"... I thought... I'm probably never going to use this, so why not try to make it scary LOL. So I chopped the awning off, made it drop, and weathered the living crap out of it. 😂

I made a really rudimentary diorama to put it on, so please forgive me for that. I just didn't want to sit it on a table. So this is just a little extra build I thought would be fitting and funny. All graffiti was done by hand. Lots of 3D parts.





# NEW TRACKS MODELING



By Contributing Editor Jim Kellow MMR

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



**Our Best Wishes for a Very Merry Christmas and a Happy and Prosperous New Year 2024**

I can't believe 2023 moved so fast. We have already finished with Thanksgiving, and are now looking forward to Christmas with our families and a great start to the 2024 New Year. All of us at New Tracks Modeling wish everyone a Happy Holiday season and a safe and prosperous New Year. Oh, almost forgot, We also wish all of you will have fun and success with every one of your modeling projects.

Jamie Stengle - Associated Press DALLAS - published an article about Greg Jein in the September 9, 2023 *Citrus County Florida Chronicle Newspaper*. One part really hit a nerve.

"Jein, who had an Oscar and Emmy nominated career making miniature models, was also a collector of costumes, props, scripts, artwork, photographs and models from the shows he loved. "He spent his entire lifetime in a movie industry at a time when practical effects and models were the way that magic happened," said Joshua Benesh, Heritage's chief strategy officer. "They (models) were the way that spaceships traveled through outer space. They were the way that aliens came and visited Earth. They were the way that catastrophes and disasters were depicted."

I immediately thought that models are also the way our imagination and creativity allows us to visualize real railroading. I believe the comments made in the article express how many model railroaders fondly remember railroad modeling from their youth. It is why many of us continue to build models today, and want to see railroad modeling continue into the future.

Younger and new modelers can definitely benefit from seeing the modeling of older modelers and learning how they were built. Older talented modelers owe it to less skilled and new modelers to teach them their skills. Please help pass on to future modelers your knowledge, skills, techniques, and memories whenever you can. I know our hobby needs it.

### **New Tracks Modeling Announcements**

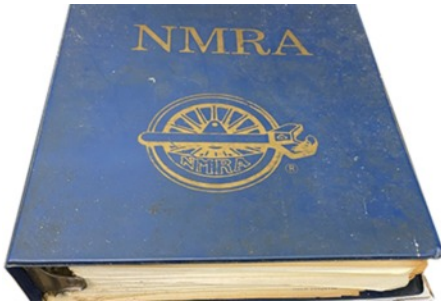
Please follow my [Facebook Page Jim Kellow MMR](#) for breaking news about New Tracks Modeling. Something new is always happening for modelers like you. Subscribe to our website [newtracksmodeling.com](http://newtracksmodeling.com) to get all the current information about our future Zoom and YouTube shows and get a weekly email with the log in links for our zoom shows. We currently have over 900 website subscribers and encourage you to join us.

**MENTOR DEFINITION: A TRUSTED COUNSELOR OR GUIDE**



Or you can join us live on our [YouTube channel, New Tracks Modeling](#), or watch the videos of our past shows. We have over 1,000 videos available and over 1,600 subscribers. All our shows are live with segments presented by a great variety of modelers, manufacturers, local clubs, organizations, and hobby shops. We hope you will join us and tell us how you like the shows and what you want to see. You are why we do these shows.

## Memories



Remember when we had books? How many of you have what I call the “Big Blue Book” published by the NMRA. I think I got mine back in the 1980s and used it daily when I was modeling.

Thank you NMRA for publishing and continually updating “The Big Blue Book” back when we had to actually touch and read from pieces of paper. I still refer to it from time to time.

## John Sacerdote receives the 2023 Bobbye Hall Award

John Sacerdote, the face of the Amherst Railway Society’s Railroad Hobby Show, is the 16th recipient of the Bobbye Hall award. This award was presented by the Model Railroad Industry Division of the Hobby Manufacturers Association in August, 2023 at the NMRA National Train Show in Texas.

The award recognizes individuals of organizations who have provided service to the model railroad hobby. It is given annually in memory of Bobbye Hall, the owner of Hall’s Hobby House in Dallas, Texas.

Congratulations John. You certainly deserve this award for all the effort and hard work you put into helping make the Amherst Railway Society’s Model Railroad Show a very successful part of our hobby, and for your work with bringing younger persons into our hobby.

## CatzPaw Innovations LLC Surprise



I will be writing about their new system for moving things other than Trains in the next issue of this magazine. This is the type of system I think I have been looking for to move my Motorcycle Club members and my farm equipment. Congratulations to CatzPaw for developing this system. Read more about the Company and their invention next month. I think you will be glad you did! Meanwhile, here is what I just got from the company.

CatzPaw Innovations LLC designed, 3D printed, and started selling a Big Foot figure in 2014. From the very first sale, customers have asked CatzPaw to make Big Foot move through the woods. They have spent the last nine (9) years trying to make that happen...

They are proud to announce the release of the InvisaTrax™ Transport System. A system that makes it possible to move things! Lots of things in the most popular scales.

CatzPaw has launched a Kickstarter campaign to fund the manufacture and distribution of the InvisaTrax™ Transport System. The Kickstarter ran through the month of October 2023. For more information about the Kickstarter campaign and InvisaTrax™, follow this link: <http://kck.st/3PGeB2m>

YouTube show video: [https://youtu.be/xkSbP3je0yo?si=Km\\_i7DiRkD7LqNvD](https://youtu.be/xkSbP3je0yo?si=Km_i7DiRkD7LqNvD)



## Dan Cohen's Contest Entry of a Scratchbuilt New Tracks Modeling sign at the Thousand Lakes Region NMRA Convention

Here is a 2 1/2 minute video about Dan Cohen's New Tracks Modeling sign. Learn how he built it, and how he entered in the Thousand Lakes Region Convention Contest in May 2023. Look at the video to see how his sign did in the Contest.

[https://drive.google.com/file/d/1L89lHC1hv\\_OqWuJj56e5HzaHRy9QXoEa/view?usp=drive\\_web](https://drive.google.com/file/d/1L89lHC1hv_OqWuJj56e5HzaHRy9QXoEa/view?usp=drive_web)

Great idea for a sign Dan. I want one! Thanks Dan for sharing the video. Anyone else do anything like this? Please let me know so it can be shared.

### Battery Power?

Steve Sherrill and his guests will tell you all about it.

Steve Sherrill began a new series on the September 27, 2023 New Tracks Modeling show on the installation and use of battery power for motive power operation.. He and his guests plan to show how to get started with basic battery power. Steve plans to use some very basic equipment to show how easily battery power can be used with DC, and DCC. If you plan to consider battery power in the future, don't miss Steve's presentations.

Based on feedback I received from viewers about Steve's first battery power segment, they are going to be a huge success. If you miss any of his live presentations, you can see them on our YouTube channel New Tracks Modeling. If you have any questions, contact Steve directly at:

[Steve.Sherrill@newtracksmodeling.com](mailto:Steve.Sherrill@newtracksmodeling.com).

**New Organizational Sponsors for New Tracks Modeling. Thank you to these new sponsors for their interest and financial support:**

[Brennan's Model Railroading](#)

[O Scale Central](#)

[National Association of S Gaugers](#)

[National Capital Trains](#)

[Mainline Hobby Supply](#)

[New Creations Victorian Railroad Buildings LLC](#)



Thank you for joining our New Tracks Modeling Sponsor team. Your financial support is greatly appreciated. We look forward to working with these organizations to promote modeling and mentoring in our great hobby.

Thanks to these organizations for their support of New Tracks Modeling:

Thanks to these organizations for including our Inaugural Scholarship Winner and the Announcement of the start of our Next Year's Scholarship program in their publications.

1. The [National Retail Hobby Store Association \(NRHSA\)](#) for inclusion in their Hobby Merchandiser October 2023 magazine.

2. The [National Model Railroad Association \(NMRA\)](#) for inclusion in their September/October E Bulletin.



We look forward to additional support for New Tracks Modeling and our Scholarship program in these and other organizations publications.

## New Tracks Modeling's Monthly Newspaper Column is Reaching a Potential New Model Railroading Audience.

In my last article I told you we are doing everything we can think of to promote railroad modeling, and mentoring. My October 6, 2023 article on Page A-4 of the Citrus County Chronicle newspaper talks about the importance of having a Mentor to learn about our Hobby.

Here is a link to the article. [https://www.chronicleonline.com/things\\_to\\_do/new-tracks-best-way-to-learn-a-hobby-find-a-mentor/article\\_7c224fff-dcba-55ab-b11c-de00e6bfb42.html](https://www.chronicleonline.com/things_to_do/new-tracks-best-way-to-learn-a-hobby-find-a-mentor/article_7c224fff-dcba-55ab-b11c-de00e6bfb42.html)

Wouldn't it be great to have articles by model railroaders in newspapers all over the country? What a boost this could give our hobby. What great past childhood memories of their model railroading, people might remember that would cause them to restart their participation in our great model railroad hobby?

I hope many of you will write articles for your own local newspaper. If your newspaper is like mine they will be glad to hear from you. It is up to all of us to spread the word about our fantastic hobby one newspaper at a time. If any of you get an article published please let me know so I can include you in a future article. Got a question or need help getting an idea to write about? email me: [jimkellow@newtracksmodeling.com](mailto:jimkellow@newtracksmodeling.com). Be glad to help you get the message out.

### New show Segments in New Tracks Modeling

#### 1. A monthly Series focusing on specific Model Railroad Scales: N Scale, HO scale, S Scale, O scale, O Gauge Hi-Rail, and G scale.

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 scratchbuild a model of ?? In (X) Scale?" Question mark (?) Scale can be G, O, O Hi-Rail, S, HO or N. So we decided to start a monthly segment on G, O, O Hi-Rail, S, HO, and N Scale hosted by knowledgeable talented modelers in each scale to try and have your questions answered and information given about what is possible and things a new modeler entering a scale might need to consider. One scale will be discussed 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 interviewed on a scale segment please contact the appropriate host. Their email addresses are shown below.

G Scale Modeling hosted by [Steve Bittinger](#) (11/29, 12/27)

Sponsored by [New Creations Victorian Railroad Buildings LLC](#)

O Scale Modeling hosted by [David Schultz](#) (11/15, 12/6).

Sponsored by [O Scale Central](#)

O Gauge Hi-Rail Modeling hosted by [Dennis Brennan](#) (11/15, 12/6)

Looking for a Sponsor for this Segment. Interested? Email me at

[Jimkellow@newtracksmodeling.com](mailto:Jimkellow@newtracksmodeling.com)

S Scale Modeling hosted by [Timothy Huebner](#) (11/1, 12/20)

Sponsored by [NASG](#)



MODEL TRAINS  
MAINLINE  
HOBBY SUPPLY





**HO scale Modeling hosted by Ed O'Rourke (11/8, 12/13)**  
Sponsored by [Mainline Hobby Supply](#)

**N Scale Modeling hosted by Clem Harris (11/8, 12/13)**  
Sponsored by [National Capital Trains](#)

After these 2023 shows we will evaluate our content based on viewers, reactions and comments. So, if you are interested in discussing something specific about one of these scales, please let the host know and tell him what you want to know and who you would like to hear from. It's up to you to help the host decide what these scale segments discuss and who are guests on the segments. Please subscribe to our website: [newtracksmodeling.com](http://newtracksmodeling.com) so you don't miss any of these discussions on our Zoom shows.

## **2. A Segment about "The Economics of the Model Railroading Market"**

This segment will be hosted by Bernie Kriger owner of National Capital Trains. The first monthly segment will be on our January 10, 2024 Zoom show. There are three pieces of the model railroading market. The modeler, the retailer, and the manufacturer/distributor. The economic issues facing each of these groups determines the health and viability of our hobby. Bernie has a long history of consulting with private companies on economic issues and as a retailer and modeler in our hobby. He is extremely well suited to host this monthly segment and try to keep us up to date about the issues facing our hobby.

Please contact Bernie with your questions, comments, and opinions about model railroading and specific areas you would like him to discuss. We know that Bernie will improve our knowledge of the hobby's economic situation and what we can expect in new products, pricing, distribution channels, and manufacturing technology. Bernie can be reached at [Bernie.Kriger@newtracksmodeling.com](mailto:Bernie.Kriger@newtracksmodeling.com).

## **3. A Segment: "Setting the Stage with Scenery"**

Starting in January 2024, Bob Geldmacher, Chief Scenery Clinician at Scenic Express, will be presenting a 15 minute segment twice a month about using scenery to set the stage and enhance our model railroads. As we all know, scenery plays a vital roll in creating the scenes that help to make our model railroading an art form. Bob will discuss a variety of products and demonstrate techniques that can help your scenery come alive. Please contact Bob with any suggestions about subjects you would like him to cover. You can reach him at: [geldy@aol.com](mailto:geldy@aol.com) or call at 410-926-4514.

## **4. What other new segments do you want on our Zoom shows?**

Well before we know it, 2024 will arrive. I am in the process of developing new segments for our Zoom shows and need your advice and ideas. What do you want to see? Please let me know. In the past, I have tried to provide every show segment suggested by a viewer and want to continue to do so. My email is: [jimkellow@newtracksmodeling.com](mailto:jimkellow@newtracksmodeling.com). I look forward to hearing from you.

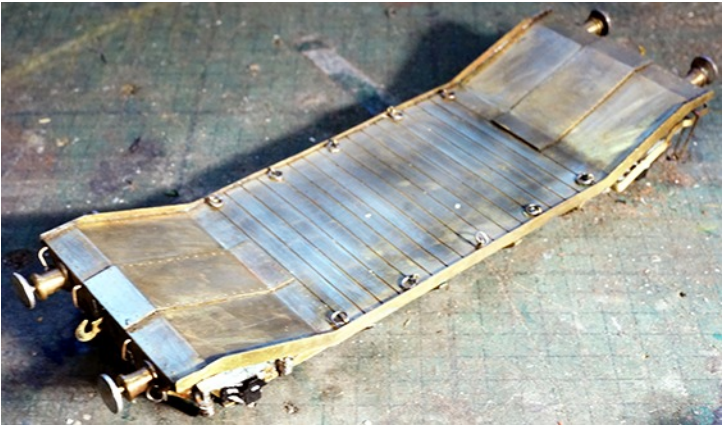


### **Now let's meet some Talented Modelers.**

This first S scale modeler lives in the UK and is a true craftsman. Please meet:

#### **[Jas Millham](#)**

I'm 83, a UK Resident so my time on this side of the pond is much the same as yours. When I was at secondary school in the early 1950's, I was taught the elements of woodwork and metalwork. I learned how to read a micrometer, do basic tin smithing with a soldering iron heated on a gas ring and lathe work on a machine powered by a canvas belt from a line shaft in the roof. My model railway was a second-hand Trix Twin set.



When I wanted something more realistic I had to make it myself as there was very little off the peg stuff at the time. I had, however, received some basic craft training at school. They don't teach that sort of thing now, I scratch built because there was no alternative. I worked as an electronics technician so wiring a layout was no problem.

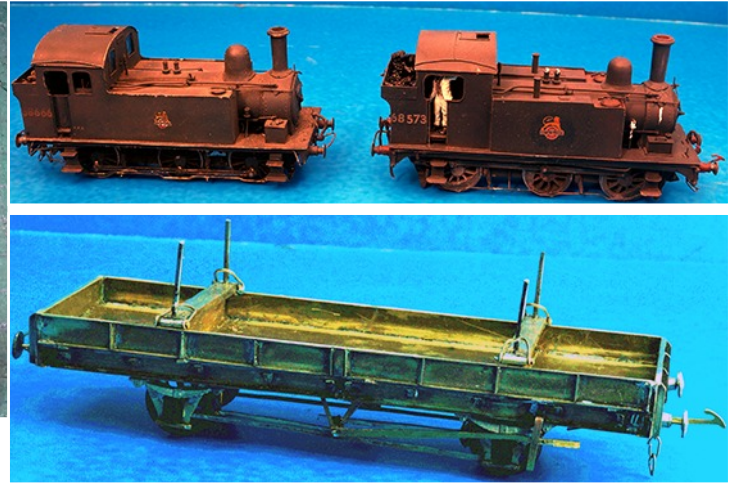
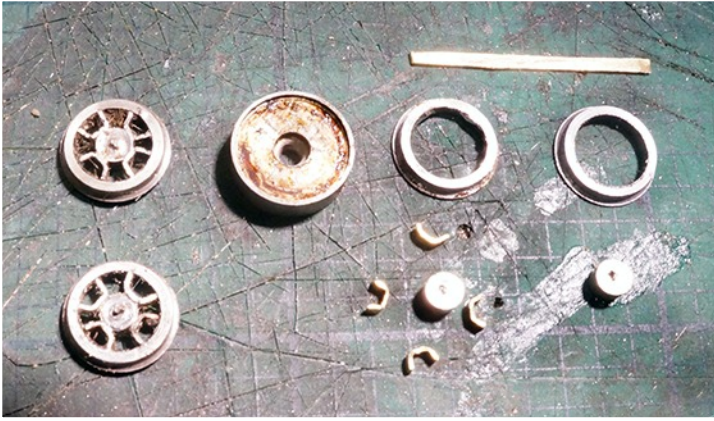
These days, almost all the members of my local club buy their models off the shelf, and run them on the club's 0 & 00 tail chaser layouts, I think there's only Eddie Carter and I who could build a loco from scratch, out of 100 members. I wrote up one of my locos for *The S Scale Resource*, when I took it to the club it didn't inspire others, it scared them.

- [What's On Your Workbench Today, April/May 2018](#)
- [What's On Your Workbench Today, August/September 2018](#)
- [The Chassis, February/March 2019](#)



*A view of Yaxbury station. Apart from the figures and road vehicles everything else, track, trains, signals & structures is scratch built. (Sky added by SSR)*





I was looked at as if I was some alien who'd just stepped out of a flying saucer! I often get other members come to me if they want to change a motor in a loco and the shafts are different diameters. Making a sleeve is beyond the skill of most of them. Oh well, it usually gets me a bottle of the red stuff.

As an S scale modeller in the UK, I scratch build because there's no alternative, there has never been any commercial S in the UK, at least that's spared us the ghastly track and wheel standards of American Flyer. We have some rescaled etches and some 3D printed items, but we have to be self reliant to a large extent, a lathe is a normal workshop item for an S scaler.

We have also lost suppliers of items needed by serious modellers. Eileen's Emporium shut up shop, they were the people you'd go to if you wanted 1mm x 1mm brass angle or the like, even getting brass and nickel silver sheet is getting difficult. I can still get K & S items, but if I need brass channel, I have to buy square tube and cut it in half with a slitting saw, most folk wouldn't have that option.

I think that on both sides of the pond ,most modellers these days buy their locos and stock off the shelf and concentrate on the layout and its scenics, with occasional use of "shake the box" kits. Hope this is of interest.

I hate to say it, but I agree with Jas' last statements. It is too bad that many model railroaders will never learn the skills that made our hobby what it is today or experience the thrill of being able to say: "I Built That!" Yep, "Too Too Bad".

Jas, thanks for your help and interest. You can contact Jas via email [Jas.Millham@newtracksmodeling.com](mailto:Jas.Millham@newtracksmodeling.com).

I met this next modeler on my Zoom show when he volunteered to host a monthly segment on his favorite scale which is N. He likes to model currently operating real railroad cars and locomotives. He is an excellent modeler and very knowledgeable about N scale. I love some of the realistic graffiti he creates. In real life he is an Amtrak Locomotive Engineer, and a member of the Brotherhood of Locomotive Engineers and Trainmen.



Please meet:

### **Clem Harris**

I had HO scale stuff as a kid. I managed to tear up the locomotive trying to do a Duke's of Hazard style jump with it. In a little fairness, I had a bunch of Duke's of Hazard toys at the time. I found N scale when I was about 10 or so. I started getting more stuff as a young adult.

About 10 years ago, I went a little crazy in N scale. I started getting some focus and modeling modern things.

How I learned how to build? I have asked a lot of questions of friends and guys in the club. From there, I went out and tried it.



Mentors in the hobby? There are two guys that are always my go to. Buzz Lenander, the President of the local N scale club, Adam Pinales. I've spent a ton of talking with him about paint work.



*This is a car I found while searching online. The message resonated with me. I was able to size the artwork down and make my own decals.*



*This is a car that I added graffiti to by hand to match the prototype.*



*This is one of my custom paint jobs I've done for myself. I see these Ferromex SD70ACes regularly. No one makes them in N scale yet...*



*I have a soft spot for preAmtrak trains. The glass was tinted using Tamiya's translucent green and blue to duplicate Solex glass. There are blinds in the windows and people in the seats. The lighting on this train set was a home brew lighting kit I made. It's toned way down to not be obnoxiously bright.*

How I'm helping mentor others: I have a page on Facebook that I've started, N Scale Shenanigans. It's been a bit of a display of what I'm doing, but with a list of parts, paints, decals, etc. of what I used on a particular project. Social media, with its ups and downs, has been a good way to connect with others in the hobby.



*This is one of my all time favorite weathering jobs I've done. I saw this locomotive in person and wanted to duplicate it in N scale. It has sound added also.*



Clem thanks so much for sharing some of your modeling with us. You can reach Clem at: [Clem.Harris@newtracksmodeling.com](mailto:Clem.Harris@newtracksmodeling.com)



The next modeler is an exciting modeler who wants to live in the model world he creates. I think a lot of us would like to live in our own created worlds! A 3D print of ourselves may be as close as we can get today. Who knows what the future may hold! Please meet:

### **António (Tony) Ferreira**

I would define myself as someone who likes to replicate a quasi-perfect world. A world where I would like to live in.

My introduction to the hobby was on my first birthday. My father gave me a Lonestar N gauge E8 loco and two cars. Later we switched to Marklin, and I still have a nice collection of Marklin HO models.



*Station, loco service and farm supply, buildings are scratch built, the farm supply was made with Walthers wall sections with plasticard slate overlays. Looking towards the station taken from the goods yard.*

I am a trial and error modeler, having gulped up all the magazines I could throughout my life. *Model Railroader*, *Continental Modeler*, *Railway Modeler*, just to name a few. I even had a huge collection of *Eisenbahn Courier* even though I can't read German, but I saw the pictures and learned from them.

I have always liked HO scale as I feel it is the perfect balance between what is “modellable” in terms of details, and layout size. Most recently, I started modelling in OO9 scale. Here you can get a lot of layout real-estate into a confined space. I am a member of the British OO9 society.



*The coal yard and industrial flats to hide the fiddle yard.*





*The bridges and my bogie car made from a Atlas die cast overscale tram car, heavily reworked by me.*



*Scratch built ventilated fruit wagon; scratch built with "heavy" weathering. The underframe is a Dundas underframe kit.*

My current layout, Gatffal, is my 5th layout, and my first in OO9. I have made three Marklin layouts in HO and one Canadian TH&B layout in HO scale, but due to various moves and a divorce, I never finished them totally.

My current layout, Gatffal, is a freelance railway set in Wales in the late 50's early 60's. The vale of Ivar Railway is a "Y" shaped line that links up with the BR ex-SR narrow gauge assuming they never where abandoned. This allows for run through operations that terminate at Gatffal. There is also a branch that runs to the coast and is used as a tourist line using open air coaches and has a limited fish van service. Freight traffic for the line includes fish, livestock and coal supplemented by general merchandise. Trains run from a three-road fiddle yard behind the coal yard station. Most buildings are plasticard overlay on styrene sheet, and the rolling

stock is a mix of ready to run and scratch built cars. All have a degree of light, medium or heavy weathering. At present, the layout is 90% done. I made good use of the Covid 19 pandemic to work on the layout. I live and work in Portugal, great vacation country.

I can be helpful to other modelers in weathering, landscaping, detailing and scratch building structures and rolling stock. Tony thanks so much for your help and Interest. Tony can be reached at: [Tony.Ferreira@newtracksmoeling.com](mailto:Tony.Ferreira@newtracksmoeling.com)

This next modeler started, like many of us, with a Lionel Train. I think most of us started with either American Flyer, Marx, or Lionel. I definitely remember my early Lionel days.





### Robert Helm

I started in the hobby very young. My first train was a Lionel in the late 1960s. Next, I began HO in 1973 and built my first layout at age 9. I stayed in HO and joined a local club at age 17 in Knoxville and modeled Southern and Clinchfield in the early 80s.

After college, I switched to N scale and modeled modern CSX in 1990 Clinchfield railroad. To become a prototype modeler, I researched the Clinchfield railfanning which later led to a book I wrote.

I'm self taught doing model building of cars and military vehicles, as well as trains, starting at age 9. To learn techniques, I read the books and magazines. In modern times, YouTube has a lot of great modelers that show techniques.

As an early prototype modeler I started modeling segments of actual scenes. I wrote about this for the layout op sig and prototype modelers groups. I wrote a paper on modeling segments that gave Tony Koester

his idea for layout design segments. I gave him the paper I wrote.

My advice to new modelers is to start with a modular club and build a module or group of modules of a prototype segment. Research the railroad you like and look to the prototype for answers. I looked at and visited a few famous layouts like Allen McClelland's V&O since he was an Appalachian modeler.



I have a Facebook blog for my current layout called [Virginia Southwestern Railway](#). I share modeling techniques including building, painting and weathering models. I also started a prototype email group, then later a Clinchfield Facebook group to share prototype information. It is a great time to get into model railroading. There is so much more available now than 40 years ago.



Bob thanks so much for your interest and ideas.

Bob can be reached at: [Robert.Helm@newtracksmodeling.com](mailto:Robert.Helm@newtracksmodeling.com).

Here is another modeler who started out playing with trains. Yep me too. My wife still tells her friends that's what I do. Some people just do not understand the difference between playing with trains versus running the railroad. Please meet:

### Bob Mitchell

As hobbyists/model builders, we all follow our passions to find unique ways to express ourselves and create miniature artifacts and worlds. But I think you'll agree, I've trod atypical, and, for me, unexpected paths.

In the 1950's, when dinosaurs ruled the Earth, most boys played with trains.

Prior to confronting cars & girls, I had a fairly respectable HO layout, with remote turnouts, a mountain, (a requirement in those days, for trains to pass through tunnels!), crusty lichen and dyed sawdust terrain, and several structures. (Spoiler alert:— structures, as a topic, will pop up again.)

I had some nascent sense of quality, at that pimply age, because I noted the Revell line of styrene structure kits. They were profoundly more sophisticated than, say, Plasticville USA, or, the Suydam wood/metal offerings of the times. I can't find my keys, but I recall indelibly the Revell Depot's cigarette machine, to which we'd adhere a realistic decal graphic. Take that, Plasticville!

Ambroid "1 of 5000" unique, detailed (for that primitive era) HO & O Scale rolling stock basswood kits: it was all about selling more glue! I loved 'em — or, was it the glue ?

Intermezzo...Decades pass: jobs, lovers, mortgage, lawn mowing...

I visited the magnificent Cincinnati Art Deco Terminal, converted to shops and boutiques. And a hobby shop! Entering that childhood haven, I was instantly re-addicted, after "going straight," (no more Ambroid glue) for many, many years.

I bought the preposterously-complicated SS Ltd. "Dorothy's House," a cardstock Rubik's Cube of a model kit. My fiancé was wondering why I wasn't coming to bed – I was in the basement with my



*Two Fine Scale Miniatures kits. I was very flattered when George Sellios informed Model Railroader magazine that he preferred if I did the product reviews of his models.*







*I built an HO resin Artitect model of a U-Boat for a friend, for a nautical museum model he built for his railroad.*



*That SS Ltd. 70's kit, the HO "Dinky Creek Bridge" was one of most challenging, time-consuming bridge kits ever conceived by mankind. I modified it a bit for Sn3.*

*Three S Scale ( 1:64 ) wood kits. I really enjoy fooling around with LED lighting.*



makeshift spray booth, painting the card and metal parts. PS: These two materials do not conjoin readily. That started an adult renaissance in structure-building.

I had no beef with spending five bucks on an Ambroid kit, or an Anderson Signal Tower, but when I first saw the Fine Scale Miniatures Freight House, at a brodingnagian thirty-five dollars, I halted in my tracks. Wisely, the proprietor of the hobby shop, Armand Mazzetti, promised to return my big investment, should I get cold feet. "Take it home, look it over. You won't be disappointed."

He was right. Akin to the Revell "evolution", George Sellios achieved a level of detail and fidelity that no Campbell kit could. Crikey, the tiny 1/87 toilet had turds in it!

Now, I enjoyed building Campbell kits, with superb directions and all that pre-cut sugar pine. Leo deserves a medal for inventing that gummed paper slit shingle machine. I ask ye: How many HO roofs are covered with Campbell shingles?!





*South River Modelworks HO kit built for a client.*

But weird genius George Sellios invented the wheel, pushed the envelope, and raised the bar significantly. I'm aware I'm gushing, but for me, (and it needs saying: countless other kit manufacturers) he was transcendent. A friend was dumb enough to try structure kit manufacturing. By then, I had a lot of kits under my (expanding) belt. In the spirit of friendship, and moxie, I offered to build, then write a product review, of his first humble offering.

Moxie? I'd start at the top: *Model Railroader* magazine, a substantial, erudite, compendium, not the advert-free pamphlet it is today. When they would expectedly reject me, I'd go down the line, to get the review published. Next to the *Obits* of the local paper?

Well, it had to be the hangover morning after the *MR* staff party, that they agreed to publish my review, and, would I work for them? To paraphrase: "I got my money for nothin', and my kits for free!". I did product reviews, some how-to's, and a few features; and Jim Hediger actually took me to lunch on *MR's* dime.

My day job, which I loved, was teaching High School kids photography and art, so I knew my way around a camera. But the magazine eventually convinced me 35mm slides just wouldn't cut it, when color separations for printing were needed. A 4x5 view camera, you know, with the black cloth, was inevitable. This camera, and its even larger 8x10 cousin, was portentous, as to my next "career".

I got to know many kit manufacturers, and became friends with Doug Foscale, Jimmy Deignan, and others. But, damnit, not a single one ever offered to bribe me for a positive review!



This is inexplicable to those many who operate magnificent artistic, layouts, but that desire never compelled me. At the workbench: should I begin building a layout, or put together another building? Guess which always won?

I would receive kits to review in all scales, which I really enjoyed. Each scale has its "Waterloo," wherein "a thing" is tough to replicate. In G Gauge, it may be a wrench; in Z it's an automobile. I encountered Z Gauge (1:220) via a dear Marklin friend, and was drawn to that scale's challenge. Could I do in Z what was effortless in HO?

"Up to my old tricks", I sent a review of a Z structure kit to Rob Kluz, Editor, et al, of *ZTrack* magazine. You can guess the rest. Shameless commerce: I have a hundred beautifully-weathered Z Scale structures I'd just love to sell.

In the nineties, a gal I dated gifted me a one-day artist workshop, teaching the Polaroid Transfer technique. To simplify, it subverts the old classic Polaroid peel-apart film technology, to produce arty, unique, photos.

I needed supplies for the class, notably, 35mm. color slides. I had many, of little buildings, from the early product reviews.

I can't over-exaggerate this: the resultant images, combining this transfer technique with the subject, the model buildings, was uncanny.



*These PBL styrene Sn3 rolling stock kits are incredibly accurate and highly-detailed.*

*I designed my own fantasy railroad, based on the New Haven, and sent my artwork to a pro waterslide decal maker.*



*My DVD, which I found recently for the grand sum of \$1.99 at a local hobby shop.*

I visited a gal in Manhattan, who was an Editor for *ARTnews* magazine, and I brought a few of these pictures, framed-up, with me, just to show her. We went to an art gallery in SoHo, and an employee approached me, upon which I asked if he's like to "see some photos." He agreed, and quickly brought them to the owner.

I'm voraciously editing out details, but I signed a contract, on the spot, (the Gallery takes 40%) which led to an entire career in the New York art world. I had One-Man shows, displayed my pictures in major museums, notably, The Whitney, and became, an artist! Unlike burned-out colleagues, I never wanted to leave my teaching gig, which was prescient, as 9/11 put an end to all that art stuff.

No regrets, Coyote — glad it happened, was fun to see my name in art magazines, and not unhappy that it ended. Plus, there's no more Polaroid.

I must attest to the terrific fun, and learning, I enjoyed from my involvement in the Fine Scale Model Railroad EXPO, an annual convocation of very-dedicated structure enthusiasts. What an event: bringing together the top builders, manufacturers, clinicians, and earnest students in a multi-day immersion. Indelible experiences, indeed.



To bring it on home, I discovered Sn3, and my sanity (alleged) was narrowly contained by building—you guessed it—dozens of S Scale structure kits during Covid quarantine Months.

Also, I'm a total car nut (all impractical Foreign convertibles) and r/c airplane builder/flyer.

Like most, I have no shortage of unbuilt kits, which will take several lifetimes to build.

To my layout-builder friends: don't give up on me! I have a loco, or two, some insanely-detailed Sn3 rolling stock, and I may, just may, exhume "too many" weathered S structures, languishing in boxes, and build some scenery. Hope springs eternal.

Thanks Bob for your help and interest. You can contact Bob at: [Bob.Mitchell@newtracksmodeling.com](mailto:Bob.Mitchell@newtracksmodeling.com).



Now you have heard from a variety of modelers on how they view enthusiasm in modeling. Do you agree with any of them? If so who? As for me, I have concluded that if we show enthusiasm in our modeling, we can have a positive reaction from viewers of our work and maybe, hopefully, have them gain more appreciation for modeling in our hobby and want to join us. My email is [jimkellow@newtracksmodeling.com](mailto:jimkellow@newtracksmodeling.com)

I'd love to find a modeler who likes what I like. It is getting rarer all the time to find one. Please meet a traction modeler who reminds me of my mentor, Harry Darst.

### **Don Yingling**

I'm now 74 years old. After high school, college and the Air Force, I started working at York Air Conditioning (later known as York International and the Johnson Controls). I served an 8,000 hour apprenticeship there and earned my Journeyman Electrician papers with the Commonwealth of Pennsylvania. I worked as an Industrial Maintenance Electrician. I "cut my teeth" on relay logic controlled machinery and progressed through NC and CNC equipment. Voltages ranged up to the 89,000 volt lines coming into the plant. I retired after 37½ years in July 2009.

I have been fascinated by trains my whole life. It all started when I was about 5 or 6 years old. My dad setup an American Flyer train set for Christmas. He put it on a 4' by 8', 3/4" plywood platform. The tree was at one end and a town on the other. I remember he had the rubber roadbed for the track. He had a number of Plasticville structures on it. He hand painted the roads and sidewalks. I remember watching him very carefully. The fascination really started. I remember going to a local hardware store in Hanover, PA, E.J.J. Gobrecht, and on their third floor was a huge Flyer layout with all the accessories there.

After a few years, Dad decided to get an HO set. It was an Athearn HI-F drive Sante Fe freight train. This he put on a 4' by 4' platform. So after a couple Christmases, I was allowed to set it up in the basement to play with it. That's where the learning really started. How they coupled, stayed on the track, etc.

In later years, I setup the train along with my Aurora Model Motoring slot cars. Complete with two railroad crossings. Of course, now the scenery started. I needed buildings, lichen trees and bushes, signs and even a crude scratch built traffic light. By now I'm about 12 or 13.

The scale switch. Huh? Yup, I went to N scale. I figured I could get more railroad on a 4' by 8' going this route. I had a completed layout, but it didn't run well. The early N scale engines did not run that well, plus I miscalculated my grades and was running 4%. UGH! That layout sat a lot.

Well, now it's time for high school, college and Uncle Sam, 4 year stint in the Air Force as a Security Policeman, then getting married.





When I got out of the service, I joined a local club, West York Society of Model Engineers. There is where I learned many skills and found that I had a knack for hand laying track and installing switch machines along with wiring it all up. Others did the scenery and structures. I was a member of this club from 1974 until the end. That was about 1998, I think.

Now I'm off to do what has been in the back of my mind for many years, TROLLEYS!!! Some tried to talk me out of it, but it was something not many were modeling.

So I gathered together everything I learned over the years, and the Codorus Valley Traction Company was born.

What my actual trigger for this was seeing an HO trolley module built by Bob Dietrich at an MER convention in Ft. Washington, PA. I looked at the sharp curves, the detail and what can be done in such a small space. I'M HOOKED!!!!

Working these modules as their own diorama and completing them before moving on is a great idea. You're not staring at a basement full of benchwork. So, the trolley modeling started. I've included some photos of my trolley modules. The park module is 20" wide by 48" long. The city module is 24" wide by 48" long. 2' by 8' space. Power is all DC.

My approach was doing kit and ready built structures, doing realistic streets that were light weight and no mess, different lighting methods and lots of people to bring it alive. I feel that I have done that, but not enough. As I show the modules, I feel like I have met that goal, but a model railroad is never finished.

At this point I asked Don:

1. Are the Trolleys ready to run items, kits, scratchbuilt or some combination?

*All the trolleys are ready to run. The buildings are kits. The overhead is scratch built.*







2. Do you draw power from the overhead wire? If so why? If not why not?

*The overhead is live. Plus voltage is on the overhead wire, minus voltage is on the common rail which is the left rail. The right rail is used for detection. The prototype applies power through the overhead wire, so why not the model? This also eliminates reverse loop wiring.*

3. Radius used for your HO curves?

*The loop on the park module is 7" radius. The city loop uses 8" and 9" radius.*

I learned so much from everyone I came in contact with at clubs, conventions and clinics. Now I am teaching or mentoring anyone willing to learn what I know. My biggest mentors are the members of the [East Penn Traction Club](#). I'm learning that I'm not the only one having problems getting things running. But once it's running, it's so satisfying.

A lot of trial and error went into learning all the aspects of the hobby. How do you get things done or made? Just get your hands dirty. You learn by doing and asking questions. There are no dumb questions. They are just a quest for more knowledge.

How can I help others? I guess my main expertise that is different from others is hand laying Richard Orr girder rail and stringing overhead wire. Also, constructing the modules in general to mate up with others. Now the fun can go portable and reach more people that would not ordinarily go to a train show.

Don, thanks so much for sharing your trolley modeling. I am also a trolley modeler thanks to someone just like you. It's nice to know you are providing your expertise to other potential trolley modelers. Talking with you brought back so many great memories for me. Thank you. To talk to Don, please contact him at: [Donald.Yingling@newtracksmodeling.com](mailto:Donald.Yingling@newtracksmodeling.com).

**You, the New Tracks Modeling team of volunteers and donors, help make New Tracks Modeling Zoom shows possible. Please continue your support.**

Thank you so very much for all the financial and volunteer support New Tracks Modeling is receiving for our Wednesday and Thursday shows. It is obvious to me that, you, the supporters who finance and the volunteers who produce the shows, make presentations, and do all the many jobs necessary to make our shows possible, are doing an outstanding job. I know this because of the favorable emails from viewers, the growth in the number of subscribers and viewers, and the interest shown for our programs by the model railroading community. It is all of you who make New Tracks Modeling the show it is today. Again, thank you all.





I truly hope each of you are as proud as I am of your contributions and achievements that are creating New Tracks Modeling as the modelers and mentoring place to be for current and future model railroaders. This is what sets us apart: “Mentors Helping Modelers Build”. I believe the great part is we are only getting started in helping the younger modelers develop into the modelers and mentors of tomorrow. With your continued help we have a lot more coming.

**Everyone can help fund our New Tracks Modeling Zoom shows out of pocket costs**

1. Please Donate to our New Tracks Modeling Patreon Account.

Donations to Patreon are not associated with our Scholarship program or personnel costs, but rather cover the out of pocket costs of just getting our Zoom and YouTube shows produced, to you, our website developed, etc. We have a Patreon account, [NewTracks Modeling](#), for your donations to help fund these costs. We hope you can make a financial contribution. Please press this link to donate to help pay for our New Tracks Modeling shows.

2. Monetize our YouTube New Tracks Modeling Videos.

We also have a monetized New Tracks Modeling YouTube account. If you watch the advertising YouTube places on our videos, we earn a little money from YouTube. Thank you in advance for your help in watching these advertisements to help us fund our Zoom shows.

Please visit and subscribe to our website, [newtracksmodeling.com](#), to get all the current information about our future Zoom and YouTube 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. By the way, we have almost 1,000 videos of our past shows on our YouTube channel for you to enjoy. They are all free! Don’t forget to check out the advertisements on each one. I hope you enjoy and learn something from each one.



**New Tracks Modeling “MY BUILD”: Sponsored by Model Railroad Resource LLC.**

Starting in January 2024, the "MY BUILD" segment within the New Tracks Modeling show on Zoom will take over the show once a month.

The main purpose of MY BUILD is to provide a platform for modelers to showcase their past and ongoing projects, highlight their achievements, and seek advice or assistance if needed. These segments are designed to be supportive and non-judgmental so modelers can help each other learn and develop their modeling skills.

Allowing the MY BUILD segment to take up more time in the monthly show will provide modelers with the opportunity to have more extensive and in-depth discussions about their projects.

Every viewer of New Tracks Modeling is encouraged to send in one or more photos of their modeling to the show's host, Chris Coarse, in advance of the next MY BUILD show. Chris then organizes these photos into a PowerPoint slide show. During the show, each participant is given the opportunity to discuss their slides. They can share valuable tips, demonstrate techniques, answer questions from the audience, and even pose their own questions. MY BUILD is designed to serve railroad modelers of all scales, gauges, and age groups.

To make things more exciting, some months MY BUILDS include challenges. These challenges typically revolve around seasonal themes and aim to encourage a diverse range of projects within the modeling community. Additionally, these challenge shows are open-ended enough to include a wide range of subjects. If you want to participate in our next monthly MY BUILD, send your model photos with a brief description and your name to Chris Coarse [atrailrunner130@hotmail.com](mailto:atrailrunner130@hotmail.com). Host Chris Coarse is the owner of [Conowingo Models](#).

*See the “MY BUILD” Models Shown on the October, 2023 Show in this issue.*



### New Tracks Modeling Build Alongs

Our Build Along Modeling experiences provide you a Personal Mentor and great discounted prices on the models you can BUILD ALONG with a modeler on the show. Join us on our weekly Zoom shows for a great learning experience that will help you improve your modeling and build some great models.

### Dylan Lambert Locomotive Works

Starting December 6, 2023, Earl Hackett will build Lambert Locomotive Works new Commuter Coach in HO scale as a Build Along on our Zoom shows December 6, 13, 20, and 27, 2023. A 20% discount on the model will be available to New Tracks Modeling viewers between November 10, and December 27, 2023. To get the discount, please use the code **NTRACK** when ordering. [More information about the Lambert Locomotive products is available on their website.](#)



### 2024 Build Along Modeling

Happy New Year and Very Successful Modeling to Everyone!

I can't believe this is my last article for *The S Scale Resource* magazine for another year. The next issue will be the

Seventh year for New Tracks Modeling articles. Time sure has passed so fast, but every article has been fun for me to write and hopefully helpful to you in improving your railroad modeling. Here is the start of our 2024 adventure.

### 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. There is a 20% discount on the HO and O Scale Lobster Boat and Lobster Shack kits, starting September 1, 2023 and ending February 15, 2024. To get the discount use the code: **NEWTRX**. [For more information about these and other products please visit their website.](#)

### AXM Paper Models

This next Build Along will provide something new for your model railroad as well as teaching you some new modeling skills and techniques using card. Starting January 24, 2024, Alfonso X Moreno, owner of the AXM Paper Space Scale Models website and self-taught designer of paper models in the Space Category,





will start the Build Along of his SpaceX Dragon in 1:48 scale. You can download the paper model of the SpaceX Dragon in 1:48 from his website: <https://axmpaperspacescalemodels.com/>

The photo shown is from the redesigned Dragon 2 model. The model used for this presentation is my prototype.

Alfonso said: “I design accurate scale replicas of real rockets and spacecrafts made out of paper, covering the Space Shuttle era and current rockets from around the world.

I am from Guayaquil, Ecuador, but lived in New York during my childhood. I still remember watching the Apollo missions in the early 70s, a time which influenced my passion for card modeling.

After all these years, my site has grown into a site that contains designs in scales of 1:144, 1:100 and 1:96. For the most part, the collection consists of Space Shuttle stacks in 1:144 scale for ALL the Shuttle missions. You can now download a Shuttle model for each mission! But my site not only covers Space Shuttle missions but other rocket models.”

Alfonso may be able to provide his card models in S Scale and O Scale if there is sufficient demand for these scales. If you are interested in models in these scales, please contact him directly at: [Alfonso.Moreno@newtracksmodeling.com](mailto:Alfonso.Moreno@newtracksmodeling.com).

“You can also download rockets representing other countries, Commercial rockets from USA and Space Stations including the International Space Station model. You can find models of the Atlas V, Delta IV, Antares, Falcon 9, Ariane 5, Vega, Soyuz and Progress vessels, India’s rockets and SpaceX Starships! It is my intention to also design the American rockets from the Early space age, like the Mercury, Atlas and Saturn V.

I have been very fortunate that my site and paper models have been widely accepted by the card modeling community. Through all these years, I have had many opportunities with Institutions to work in projects involving my paper models. I created the ISS children’s version for the Australian CSIRO’s kids magazine, “Pegaso” and “Krysaor” Cubesats for the Ecuadorian Space Agency (EXA), the SCanTestbed model for NASA’s Glenn Research Center, the Magnetospheric Multiscale (MMS) models for Goddard Space Flight Center, and many more.

In January 2020, which I consider the pinnacle of my paper model website achievements, I was invited to be part of the Boca Chica to Mars Event, which was held at the Brownsville Museum of Fine Arts in Texas, where my SpaceX paper models were exhibited for the public.



Follow me through my Blog and Twitter to get updates of my projects.

Although a few of my creations are not for free download, I try to give most of my models to the card modeling community for free; but in order to cover the expenses of paper, printer ink and other supplies for my designs and the time to design these models, a donation is appreciated.”

Please visit his website: <https://axmpaperspacescalemodels.com/>



### **[Brennan’s Model Railroading](https://www.brennansmodelrr.com/)**

Dennis Brennan’s company also sells ballast to his customers who say it is the best ballast they have ever seen for their O scale/gauge layouts. Starting January 31, 2024, Dennis will begin a Build Along of ballasting track using his ballast. To work on ballasting your track along with Dennis, you can order his ballast and get a 10% discount up to two weeks before the start of the Build Along by using the code word **NEWTRACKS** when ordering. <https://www.brennansmodelrr.com/>

## Ipswich Hobbies

Jack Dziadul, owner of Ipswich Hobbies, will build his Section House kit starting April 10, 2024 in a Build Along. The kit is available in N, HO, and O Scale for New Tracks Modelers.

Special Pricing for New Tracks Modeling Viewers:

1. Kit #6 N scale \$15 less 20% discount = \$12
2. Kit #5 HO scale \$25 less 20% discount = \$20
3. Kit #18 O scale \$45 less 20% discount = \$36
4. Shipping \$8.95 – Local pick-up option

Ordering the kit:

1. Discount code – **NEWTRACK** (good for one kit)
2. Discount start date March 6, 2024
3. Discount end date April 15, 2024

Please visit the Ipswich Hobbies for more information about the company and its products:

<https://ipswichhobbies.com/>

More Build Alongs to come in 2024... I hope you want to participate in all the Build Alongs. The modelers and manufacturers, who are making these events possible, do them to try to help you improve your skills and have more enjoyment and confidence in your modeling. They provide a true learning experience that have helped many modelers. So if you have been sitting on the sidelines for awhile, give railroad modeling a try with the help of a mentor.

I am looking for more modelers and manufacturers to be involved in future Build Along segments in 2024. Contact me if you are interested at: [jimkellow@newtracksmodeling.com](mailto:jimkellow@newtracksmodeling.com).

### **Watch Modelers Build Railroad Models**

These segments provide modelers the opportunity to build a model to demonstrate their modeling skills and techniques. Viewers can ask questions and learn from experienced modelers various facets of our hobby.

Upcoming 2023 and 2024 Show Segments:

December 6, 2023: Jeff Jordan will kit-bash a craftsman kit to represent a local Prototype structure.

December 27, 2023: Bob Geldmacher will discuss AI and its potential for model railroading. He will present specific examples for us to consider.

January 11, 2024: Keith Sampler will demonstrate how to use vacuum forming in model railroading. I have never tried this, have any of you?

These segments present modelers who want to share their modeling efforts and knowledge. They discuss their modeling techniques so others can benefit. These segments can be for one or more shows depending on the details included for the model building presentation.



## New Tracks Modeling Mentoring Scholarships Activities

Left: Greg Cassidy, Ethan Bernstein, and Bob Geldmacher at the New Tracks Modeling table at the Great Scale Model Train Show in Timonium, MD last October. Ethan was our 2023 Scholarship Winner. His Dad took the photo. Thanks Scott Gear for producing a great show.

Alan Rogers owner of New Creations Victorian Railroad Buildings, LLC attended the Southern Pacific Historical and Technical Society (SPH&TS) Convention in Bakersfield California on October 25-28, 2023 and displayed one of our Scholarship Banners at his table.

Alan sent me the following information about the event.

“New Creations Victorian Railroad Buildings, LLC was privileged to serve as a vendor at the SPH&TS convention in Bakersfield this past week. We also represented in our vendor space, Conowingo Models of Maryland and Train-Tech of the UK. The NewTracks Modeling Mentoring scholarship banner was also displayed there.

The show was very well organized and run by a cooperative team of people with many years experience. We were welcomed and treated very well during the entire event. The attendees exhibited very high quality models in the contests, with great attention to detail.



*On Sunday, Steve Sherrill took over the table, and ran one of his battery powered locomotives at our table.*



We plan to attend future events with this fine organization.”

Thanks guys for promoting New Tracks Modeling and our New Tracks Modeling Mentoring Scholarship program at these events.

Two things the New Tracks team and the model railroad community can do to help make our 2024/2025 Scholarship a success

## 1. Donate to the New Tracks Mentoring Inc. 501(c)(3) Florida Non-Profit Corporation for our Scholarship

Please join our donor list. Individual donors so far:



*Rick Barton. Greg Cassidy. George Sebastian-Coleman. Bob Davidson. Jim Kellow. Gary Kirby. LocoFi. Hank Primas. Ronald Przygodzki. Stuart Rankin. Travis Summit. Ronald Walters. Jeff Zibley, Sherri Johnson.*

The New Tracks Mentoring Inc grants Scholarship to qualified HS graduates 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. The Officers of the Corporation are: Jim Kellow MMR President, Bob Davidson Vice President, Phil Edholm Secretary, and Kevin Macomber Treasurer and Jeffery Joyner Attorney.

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, and hopefully exceed, that 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

Contribute to help us collect the Special Challenge Grant of \$1,000 which matches individual donations of \$80.00 or less.

An Anonymous donor to the Scholarship fund has made a \$1,000.00 donation challenge to New Tracks Scholarship donors. The challenger will match up to a maximum of \$1,000.00 of a pool of all public individual donations of \$80.00 or less made to the New Tracks Modeling Mentoring Scholarship between today and December 31, 2023. For your convenience, you can use our Zeffy account to make any size donation you want.

The New Tracks individual donors contributions will be recorded and shown each week on our Wednesday evening New Tracks Modeling Zoom show so we all can follow how close we are to achieving our Challenge Goal. All of your help in achieving this goal is greatly appreciated. Remember every \$1.00 donated to meet this specific challenge is really a \$2.00 donation to the scholarship fund.

### 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](mailto: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.

I am pleased to announce our first four Corporate BRASS donors are:

1. New Creations Victorian Railroad Buildings, LLC Owned by Alan Rogers
2. Brennan's Model Railroading owned by Dennis Brennan
3. Great Scale Model Train Show (GSMTS) owned by Scott Geare.
4. The Model Railroad Resource LLC owned by Daniel & Amy Dawdy

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.

## **2. Solicit/Mentor/Educate Applicants about 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, or need help completing your application please email us at: [NTMMS@newtracksmodeling.com](mailto:NTMMS@newtracksmodeling.com)

Helping applicants apply for our scholarships is one form of mentoring we can offer.

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 participation 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.

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](mailto:NTMMS@newtracksmodeling.com)

Help Show our Scholarship Banner at Events

Bob Davidson generously 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](mailto:bobdavidson@newtracksmodeling.com).

In addition to the banners, we can also provide handouts about the Scholarship program to local events we are not able to attend in person.

Look for New Tracks Modeling at any show you attend. We hope to be represented at as many shows as possible. If you want to take one of our Banners, or help man a table, or have us be a part of your table, contact Bob Davidson at: [bobdavidson@newtracksmodeling.com](mailto:bobdavidson@newtracksmodeling.com).

Remember, one of these years your 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 or pass out our handouts at shows around the Country last year. We are currently taking reservations for our banners for our second year's (2023-2024) Scholarship Program. To let us know if you can help show a banner please contact: Bob Davidson at: [bobdavidson@newtracksmodeling.com](mailto:bobdavidson@newtracksmodeling.com).

New Tracks Mentoring Inc, is the only organization, we are aware of, comprised solely of volunteers from the model railroad community who have created a nonprofit 501(c)(3) company whose sole purpose is to provide scholarships throughout the United States for the benefit of young modelers who are pursuing a STEAM education after High School graduation, in a college, university or accredited technical school.

The contributions and help by the current model railroad community can help the next generation of modelers provide the leadership and continue the traditions of our great hobby. For more scholarship information and to donate visit our website, [newtracksmodeling.com/scholarship](http://newtracksmodeling.com/scholarship).

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.





## Code 83

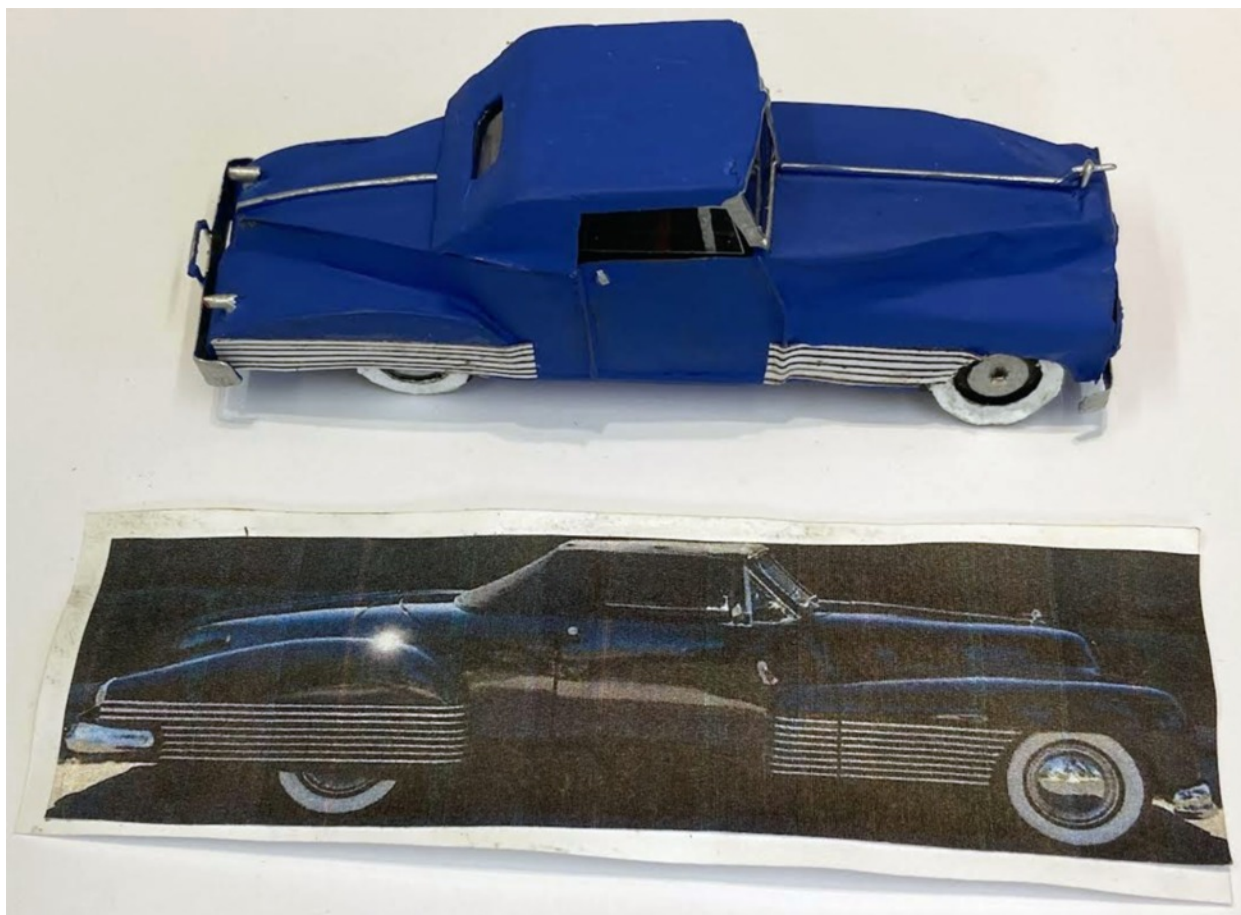
#6, #8, #10 Frogs

Switch Points and Guard Rails

Parts will be available the first week of June.  
Check our web site for details



New Tracks Modeling.com which  
provides a source for over  
300 railroad related items at  
RAILROAD ROMANS,  
ALPHABETS, SILHOUETTES,  
DINGBATS, TRAINS, PLANES  
AND AUTOMOBILES AND  
EVEN SOME SURPRISES.  
RAILFONTS.COM



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](http://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](mailto:jimkellow@newtracksmodeling.com)

Believe it or not I just finished my scratchbuilt in brass 1938 Buick "Y" concept car designed by Harley Earl. Based on how many mistakes I made it has become a major learning experience. Now onto the next learning experience.

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

# S SCALE SHOWS & MEETS

## S-scale Zoom Meeting

Every Tuesday at 8pm Eastern Standard US time.  
hosted by Ken Zieska or Bill Lane

[Zoom Link](#)



## 30th Annual Midwest Narrow Gauge Show March 21 to March 23, 2024

7600 W. South Range Rd, Salem, OH 44460  
Sponsored and organized by Portland Locomotive Works.

Website: [portlandlocomotiveworks.com](http://portlandlocomotiveworks.com)



## 2024 Sn3 Symposium May 2 to May 4, 2024

860 N Riverview, Mesa, AZ 85201  
Chairman Jim Spice and all of us on the organizing committee invite you to join us in Mesa, Arizona, May 2nd to 4th, 2024. We're hard at work preparing a full range of clinics, contests, layout tours, a swap meet and other activities to make this a highly entertaining and interesting meet.

Website: <https://sn3symposium.com/>



## Spring S Spree May 3 to May 4, 2024

Emidio & Sons Expo Center  
48 East Bath Road  
Cuyahoga Falls, Ohio  
Sponsored by the Cuyahoga Valley S Gauge Association

Website: [sspree.info](http://sspree.info)

## O Scale West - S West and Narrow Gauge West May 24-26, 2024

Hyatt Regency Santa Clara (San Francisco area)  
O Scale - S Scale - Narrow Gauge - West has been the premier two-rail O Scale, S Scale and Narrow Gauge (all scales) show held West of the Mississippi since its founding by Rod Miller in 1991. For 2024 we've changed the days for the show to Friday (May 24), Saturday (May 25), and Sunday (May 26), rather than the previous' years traditional days of Thursday, Friday and Saturday. We're hoping that this change will allow more people to attend without having to take Friday off. Plan to join us over the Memorial Day weekend in sunny California.

Website: [www.oscalewest.com](http://www.oscalewest.com)



## 2024 NASG Convention July 17 to July 20, 2024

The Susquehannock II Convention  
The Lehigh Valley S Gaugers are excited to bring to you the "S" event of the year. For the first time in the NASG's history, we will have the Convention in the same location as the 2023 one, but don't expect this to be just a "repeat" event. Stay tuned for what we have planned. The 2024 NASG Convention is slated to be held in Harrisburg, Pennsylvania Wednesday 17th of July, 2024 through Saturday 20th of July, 2024 at the Sheraton Harrisburg Hershey hotel, 4650 Lindle Road, Harrisburg, PA 17111. It is hosted by the Lehigh Valley S Gaugers club. Check back in later issues for more updates.

*The S Scale Resource Magazine* will be providing a free listing of upcoming events. This small, text only listing will include the Event, Date, Location, Type of Event, and Contact Information. [Click here](#) to email us with your information. Please remember we are a scale magazine and may not publish all events.







## The Model Railroad Resource LLC

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.

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Yes, we now have a Facebook page to help keep you up to date on new products and ideas. And, even in an on-line magazine, we sometimes have more pictures than we can use, so we'll post them on Facebook.