

THE **O** RESOURCE

NEWS, REVIEWS, INFORMATION TO USE

Volume 6 No.6
July/August 2019

SCALE



**Canadian National Railways Sanmore Subdivision -
Construction Update
3D Part Design & Printing For O Scale Projects
The O Scale Resource State of O Scale Survey
Modifying an International Model Gon
2019 O Scale West Wrap Up
And So Much More!**

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July/August 2019
Volume 6 No. 6

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

Front Cover Photo

*CN 2508 is a modified MTH loco running on
Serge Lebel's Canadian National Railways
Sanmore Subdivision.*

Rear Cover Photo

See what's coming next month!

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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.



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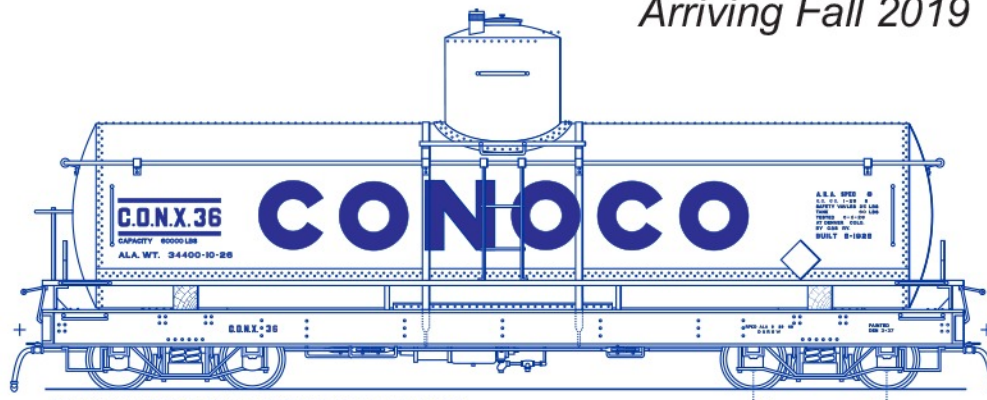
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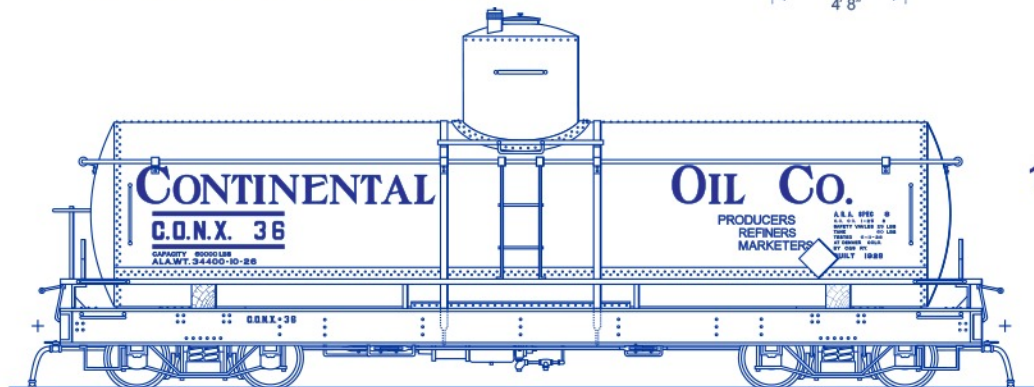
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1930's - 1946

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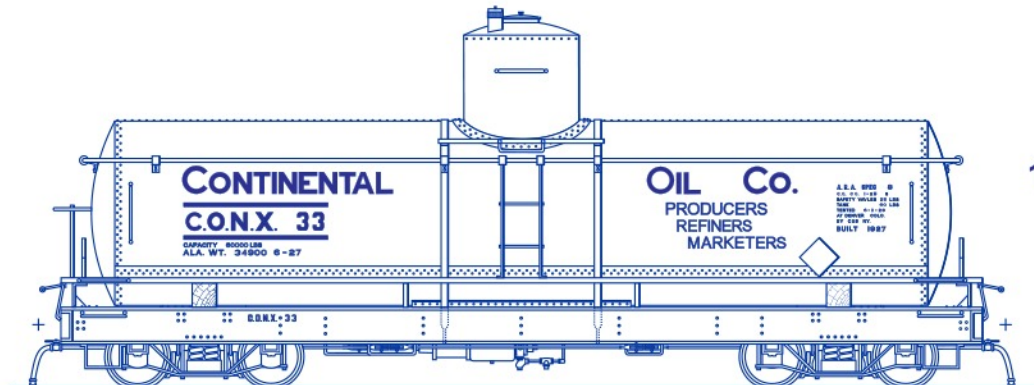


1926 - 1930's

Tank and frame painted black with white lettering



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1926 - 1930's

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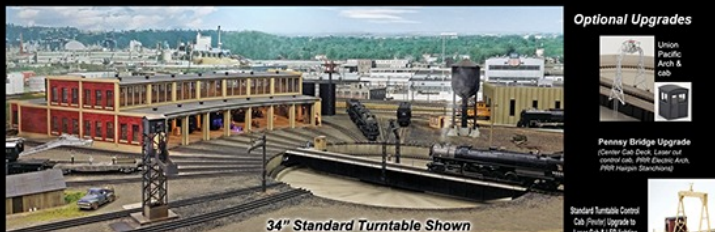
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From the Publisher's Desk



It's the end of June and time for Amy and two of her sisters and a niece to go on their annual quilt/wine drinking retreat. So I guess I'll help out and do this version of the Publishers Desk.

It's a large issue this time, maybe too large. The New Tracks article is very long, but filled with a lot of good information. I know cardstock modeling is not as widespread here in the States as overseas, but if you need a lot of buildings or background models, it's something to consider. People have said that these mentors don't model in O scale so why put them in the magazine. Well, look at our survey results in this issue. The vast majority of the respondents look elsewhere for inspiration such as model car, model aircraft and military modelers forums and YouTube videos. Scale is not specific to much of what we do which is why not all mentors are O scale specific. Don't be afraid to ask these people for suggestions and help. Also, check out the form to download a free cardstock container!

The O Scale Resource State of O Scale Survey results are presented in this issue. This is a cursory look at the results, and we will delve deeper into the data in upcoming issues. There were a few surprises compared to conventional wisdom so check it out and see what you think.

We traveled to O Scale West last month and had a great time. There were bargains as you will see in the wrap up article in this issue. Don't tell me O scale is too expensive after what I've seen at shows. Yes, you may have to build something, but that's part of the hobby. Other than buying and looking, it's nice to meet up with people you may not see if it weren't for shows like this.

Serge Lebel is back in this issue with an annual update for his Canadian National Railways, Sanmore Subdivision. His work is superb, and makes me want to get back into my train room and get to work. Serge is also working on a multi-part article on how he built his signaling system. Watch for that later this year.

After last month's article on modifying a Max Gray gondola, I have a new article in this issue on taking an International Models gon and making it presentable. These early Japanese imports were bare bones and I saw many at the Chicago March Meet for \$15. I decided to see what I could make out of this as it was based on an Erie car. I was given the car for nothing and put less than \$30 of extras into the build. I think it turned out great. Not a show piece, but a very respectable runner and there is nothing else like it around. Sometimes, you have to think outside the box!

Russ Briggs takes us through 3D modeling along with an offer of free castings for a lucky someone out there. Check out his article and then the New Tracks article for the contest.

OK, that's enough from me. Don't forget to sign up the upcoming [O & S Scale Midwest Show](#), formerly the Indianapolis O Scale Show in September. It's in the same place this year, but we switched to a Saturday/Sunday format. This change seemed like a no brainer with many of you working on Fridays, and hopefully more people will be able to attend. Please support this show, as well as the other O scale shows out there. If you don't they will go away.

Happy Reading & Happy Modeling,

Dan Dawdy

NEWS YOU CAN USE



Woodland is proud to present new Built-&-Ready® Landmark Structure® The Rustic Cabin. Whether you're looking for a getaway in the woods or a home with some country appeal, the Rustic Cabin is the perfect place to sit back and relax in a rocking chair.



The Rustic Cabin features old board and batten siding, a covered porch and shake shingle roof. Two rocking chairs on the porch provide a convenient location to watch a sunrise, and a milk can sits off to the side. Additional features include a pile of wood to prepare for cold nights, a woodstove pipe, a bent TV antenna, and an electric meter on the back of the cabin.

This Built-&-Ready Landmark Structure® comes with a pre-installed LED porch light made for use with the Just Plug® Lighting System.

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



Scott Mann from 3rd Rail/Sunset Models had some new announcements at O Scale West and is now taking reservations.

First up is the Southern Pacific MM-3 2-6-6-2. The two engines of this class, SP 3930 and 3931 were purchased second hand from the Verde Tunnel &

Smelter Railway of Arizona in 1943 and vacated in 1954 and 1951 respectively. They were never simplified, and remained Mallet-Compounds until the end working between Taylor (LA) Yard and Colton with heavy slow drags of cars between the yards.



The second is Western Pacific 206/209 2-6-6-2. They originally took on the Feather River Canyon run between Oroville and Portola, California. They then ran over the Northern California Extension between Keddie and Bieber until the end of steam.



Would you want to see this in O scale? Please Reserve – Estimated MSRP \$2500. [Check their Website](#) to reserve and [click here to sign up for their Email list to stay informed on new announcements.](#)



Richard Segal of [Right on Track Models](#) releases new products for O Scale Modelers

Right on Track Models, builders of scale laser cut wood model kits and custom structures, reintroduces a previously retired kit this month. Fully redesigned for

easy assembly. Model# O-20 Branch Line Depot
O/On30 Scale \$TBA with Free Shipping.



O scale 14" by 7 1/2" footprint. These kits feature precision laser cut wood, highly detailed styrene windows and doors. Complemented with easy to follow step by step color instructions.

Scheduled release Early July, Pre-orders Mid to Late June. [See their Website for more information.](#)

Dim, brighten, and turn on and off your lights from across the room with Evan Designs' remote control! Control a variety of lights with our two voltage packages: 3-12 volt and 12-19 volt. Each kit includes 1 remote and 1 receiver with the option to order multiple receivers or just extra receivers if you already have a remote. Prices range from \$10 to \$29.50.

Connect up to 30 LEDs to each receiver harness and use the same remote control for each harness! With four dimmer settings on our remote, changing your light settings - is simple and easy! [Check out their website](#) to learn more about this handy lighting accessory.



[Motrak Models](#) has some new items in O scale.



Sardine
Fisherman's Shack -
\$45.00 or a double
pack for \$80.00



The Doghouse set (2) -
\$5.00

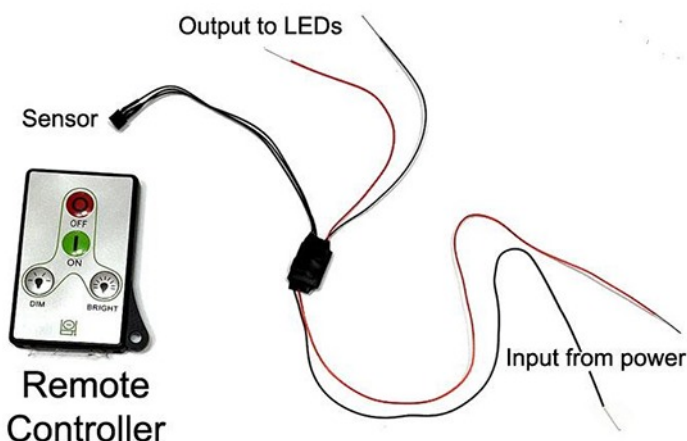
The Outhouses set (2) -
\$12.00

Station Benches - \$7.00

[See their Website for these and more.](#)



[Evan Designs has a Remote Control.](#)



Kevin Macomber of [Narrow Gauge Modeling Company](#) (Hubbardston, MA) has completed the acquisition of Tall Timber Short Lines from Northwest Short Line (Hamilton, MT), which ran for over two decades and ceased publication in 2008. Though there are commercial plans for the publication, a mechanism will be implemented with a historical organization to safeguard the master copies for modelers and researchers to use in future years. Both approaches will bring life back into the publication as well as ensure the vast wealth of information is not lost.



[Midwestern Model Works](#) has announced a new project: Bethgon High-Wall Gondola



This car will be made of brass with fully detailed ASF 100 ton trucks fully equipped with ball bearings and rolling journals. The undercarriage will be fully detailed. Rivets will be punched to assure an accurate appearance. There will be multiple versions made available in multiple paint schemes. Discussions with staff in Korea regarding the production of this car are currently taking place. We have sufficient numbers to proceed on this project, so a pilot model(s) will be forthcoming. Please contact us if you have interest in these cars. The reservation process will commence as soon as the discussions with my staff are final.

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



O Scale Hauler is VERY excited to announce our return in July 2019. The Locomotive Hauler and the Freight & Passenger Car Hauler is exactly the same dimensions so the parts are COMPLETELY compatible/ interchangeable with the Haulers you may have bought from us before (and they are still

white). The polyurethane foam will be EVEN BETTER than the previous foam! It has increased density, and more of a closed cell type foam than open cell type. We will still offer the 3/8" thick slotted wood bases of MDF and Particle Board, extra foam, and extra trays for purchase.

We used the Haulers when we moved from California to New Mexico to store and transport our entire train collection. The boxes took bit of a beating from the movers, but NONE of the trains inside suffered any damage. They are tough, and heavy duty providing great protection for your trains while making the packing/unpacking process very quick. Spend more time running trains at the club and less time taking them in and out of the boxes.



This is going to be a ONE TIME RUN!!...1 run and done! If you were on the fence before, or you need more, it's time to jump off and get your order in before they're gone. There's nothing comparable to the O Scale Hauler ANYWHERE!!!

Price is still TBD once the materials arrive.
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Website should be up by the time you see this, if not, please check back.



[Atlas](#) has announced a new 1/48 Scale O Quarter-ton Military Vehicle.

- Fully Detailed Ford F-250 XLT Models
- Steerable Front Axle
- Opening Doors, Hood and Tailgate

- Spring Suspension
- Engine and Underbody Detail
- Realistic Rubber Tires
- Combination plastic and die cast



Additional features for the Escort set: includes a Ford F-250 Super Cab and a F-250 Crew Cab in White. This set will include a Wonder Pole, High Pole, Back Rack Unit with Emergency Light, Oversized Load Sign and Crossbed Tool Box.

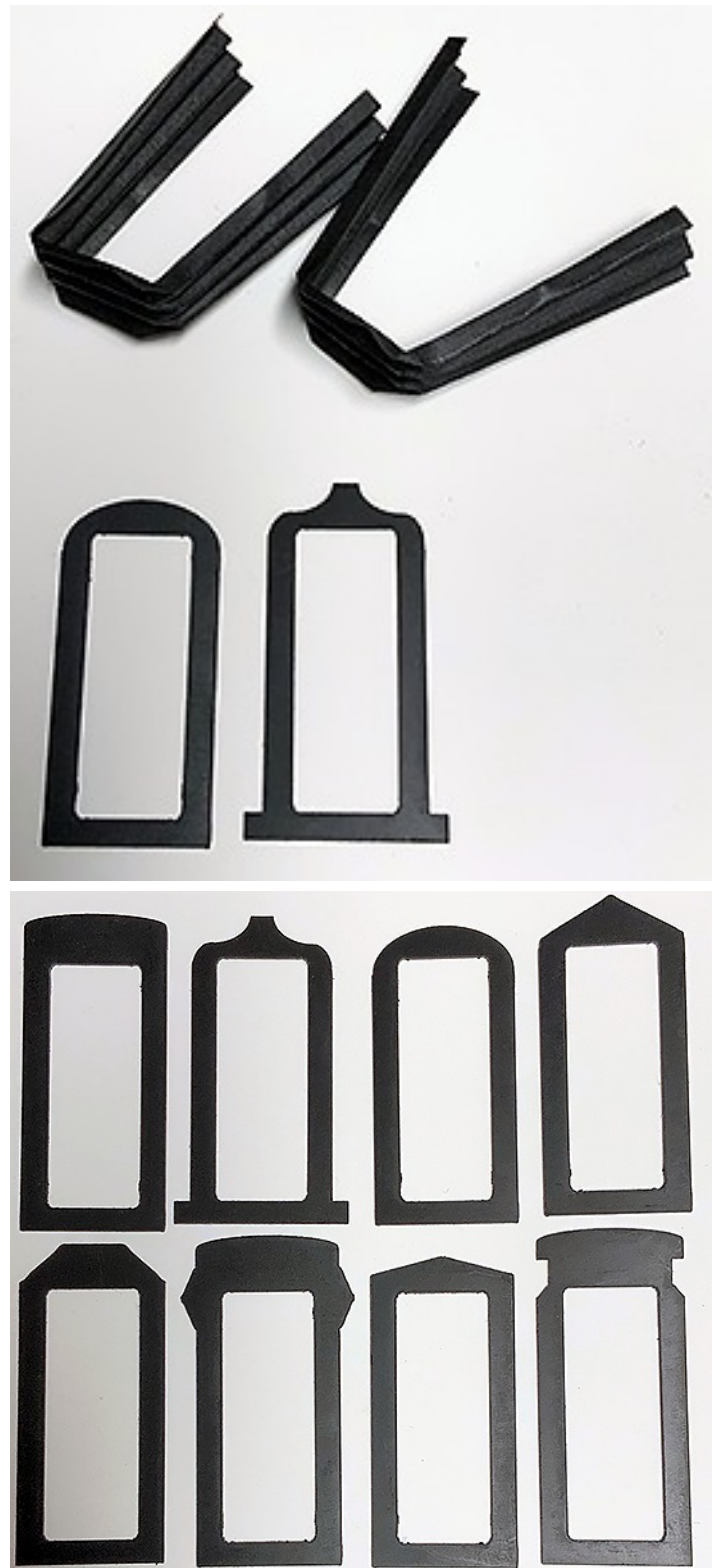
Also new paint schemes and road numbers for: Atlas Master® O Comet and Horizon Passenger Cars, Atlas Master® O X-29 Box Car, Atlas Master® O 89' 4" Flat Car, Atlas Master® O 3-Bay Cylindrical Hoppers, Atlas Master® O 6-Bay Cylindrical Hoppers, Atlas Master® O Articulated Auto Carrier and Atlas Master® O 53' 6" Wood Express Reefer .

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



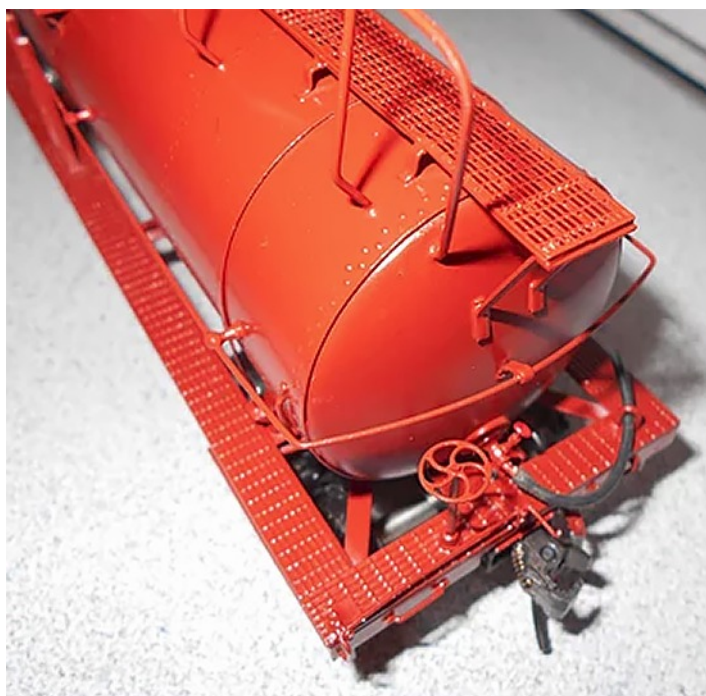
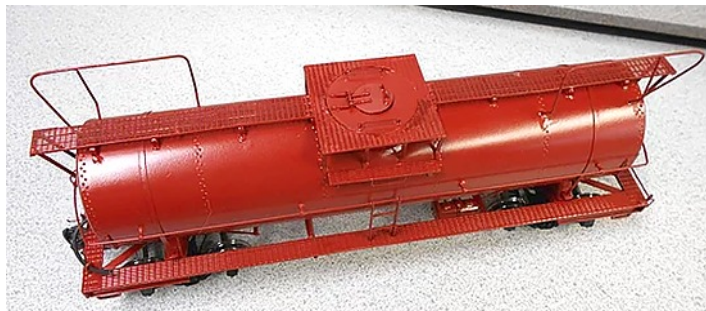
[Scale City Designs](#) has a new product release.

We have listened to our fellow passenger car modelers here at Scale City Designs! We have released our New Striker designs to update our famous Diaphragm Kits. We will have 8 new designs to help better replicate the Prototype model you are building. Each Kit will include 2 strikers and 2 bellows. We are keeping the price the same as our original, just \$7 for enough to do 1 passenger car, or if you want to install on the fleet, we offer a 6 pack of any design for just \$30. Search those prototype books and get your order in!




See these and all their fine products at:
<http://scalecitydesigns.com/scale-city-designs-fka-keil-line/passenger-car-details/diaphragm/>

[Delta Models](#) has a very special item available RTR in Brass. We are making 8 only 2 rail T&P tank cars. These are based on the USH 301 8000 gallon tank car and modified extensively. This is a great companion to the SCM 3rd rail 2-1-4 Texas. Can also be used behind the Max Gray 2-10-4 Texas imported in 1963 and again 1965.




These are very special T&P 8000 gallon water cars. Using Modified USH 301 tank cars constructed of brass and stainless steel roof walks. Has a 60" diameter flat top dome with a 24" dia working filler hatch. Brass trucks with working journal covers and roller bearing wheels - Westinghouse A brake detail - has 2 6 ft. Rubber filler hoses one at each end — custom painted MW brown with white lettering. This represents the last configuration in appliances and looks. The data used was a 1/4" scale plan that the late Joe Collias made for an article in the MPHS Eagle Vol 20 no 1 spring 1995.

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



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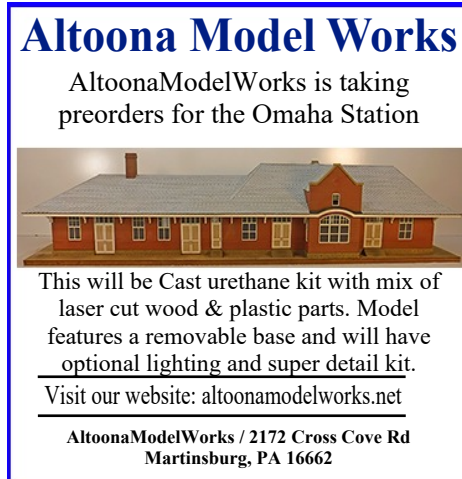
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THE O SCALE RESOURCE STATE OF O SCALE SURVEY

In the January/February issue of *The O Scale Resource* magazine we asked our readers to take our State of O Scale Survey. We received over 900 responses, which statistically, is fantastic! In this first cursory look, we'll show you the raw numbers, and then later in another article, we'll do some data mining and delve deeper into the results.

What is your age?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Less than 20 (B1) | 0 | 0.00% |
| 20 to 30 (B2) | 5 | 0.53% |
| 31 to 40 (B3) | 14 | 1.48% |
| 41 to 50 (B4) | 45 | 4.77% |
| 51 to 60 (B5) | 139 | 14.74% |
| 61 to 70 (B6) | 260 | 27.57% |
| Over 70 (B7) | 364 | 38.60% |
| No answer | 36 | 3.82% |
| Not completed or Not displayed | 80 | 8.48% |

At what age did you start/switch to O scale?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Less than 20 (AQ03A) | 185 | 19.62% |
| 20 to 30 (AQ03B) | 113 | 11.98% |
| 31 to 40 (AQ03C) | 139 | 14.74% |
| 41 to 50 (AQ03D) | 141 | 14.95% |
| 51 to 60 (AQ03E) | 137 | 14.53% |
| 61 to 70 (AQ03F) | 93 | 9.86% |
| Over 70 (AQ03G) | 23 | 2.44% |
| No answer | 32 | 3.39% |
| Not completed or Not displayed | 80 | 8.48% |

What gauge is your primary modeling done in?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| 1/4 inch US (AQ4A) | 414 | 43.90% |
| Three Rail (AQ4B) | 155 | 16.44% |
| 1/43 English (AQ4C) | 27 | 2.86% |
| P48 (AQ4D) | 56 | 5.94% |
| On3 (AQ4E) | 25 | 2.65% |
| On30 (AQ4F) | 91 | 9.65% |
| On2 (AQ4G) | 3 | 0.32% |
| Other | 60 | 6.36% |
| No answer | 32 | 3.39% |
| Not completed or Not displayed | 80 | 8.48% |

At what age did you start in the model railroad hobby?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Less than 20 (A1) | 702 | 74.44% |
| 20-30 (A2) | 62 | 6.57% |
| 31 to 40 (A3) | 30 | 3.18% |
| 41-50 (A4) | 8 | 0.85% |
| 51-60 (A5) | 10 | 1.06% |
| 61-70 (A6) | 11 | 1.17% |
| Over 70 (A7) | 2 | 0.21% |
| No answer | 38 | 4.03% |
| Not completed or Not displayed | 80 | 8.48% |

Did you start in O scale?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 294 | 31.18% |
| No (A2) | 539 | 57.16% |
| No answer | 30 | 3.18% |
| Not completed or Not displayed | 80 | 8.48% |

What scale did you start in?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| HO (A3) | 363 | 38.49% |
| N (A1) | 49 | 5.20% |
| S (A5) | 35 | 3.71% |
| TT (A2) | 3 | 0.32% |
| G (A6) | 0 | 0.00% |
| OO (A4) | 36 | 3.82% |
| Other | 44 | 4.67% |
| No answer | 8 | 0.85% |
| Not completed or Not displayed | 405 | 42.95% |

NOTE: A large number of “Not displayed” were Lionel which was a write in answer

Did your model railroad hobby go dormant during

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 550 | 58.32% |
| No (A2) | 286 | 30.33% |
| No answer | 27 | 2.86% |
| Not completed or Not displayed | 80 | 8.48% |

If your model railroad hobby went dormant, at what age did you pick up the hobby again?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Less than 20 (A1) | 9 | 0.95% |
| 20 to 30 (A2) | 139 | 14.74% |
| 31 to 40 (A3) | 130 | 13.79% |
| 41 to 50 (A4) | 132 | 14.00% |
| 51 to 60 (A5) | 75 | 7.95% |
| 61 to 70 (A6) | 48 | 5.09% |
| Over 70 (A7) | 9 | 0.95% |
| No answer | 6 | 0.64% |
| Not completed or Not displayed | 395 | 41.89% |

If your hobby went dormant and you picked it up again, what scale were you interested in at the time?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| N (A1) | 36 | 3.82% |
| TT (A2) | 1 | 0.11% |
| HO (A3) | 179 | 18.98% |
| OO (A4) | 7 | 0.74% |
| S (A5) | 15 | 1.59% |
| O (A6) | 271 | 28.74% |
| G (A7) | 12 | 1.27% |
| Other | 17 | 1.80% |
| No answer | 10 | 1.06% |
| Not completed or Not displayed | 395 | 41.89% |

NOTE: The large number of Not displayed were On30/On3 and 3Rail Scale which were written in.

If you came to O Scale from some other size, what was of interest to you in O Scale?

| Answer | Count | Percentage |
|------------------------------------|-------|------------|
| Model size (SQ001) | 552 | 58.54% |
| Detail of model (SQ002) | 497 | 52.70% |
| Availability of equipment (SQ003) | 144 | 15.27% |
| Availability of structures (SQ004) | 67 | 7.10% |
| Other modeler friends (SQ005) | 144 | 15.27% |
| Other | 137 | 14.53% |
| Not completed or Not displayed | 80 | 8.48% |

What other types of groups do you participate in?

| Answer | Count | Percentage |
|---------------------------------|-------|------------|
| NMRA (SQ001) | 183 | 19.41% |
| Historical Societies (SQ002) | 351 | 37.22% |
| Internet Forums (SQ003) | 361 | 38.28% |
| Facebook (SQ004) | 264 | 28.00% |
| Full Size Railroad Club (SQ005) | 111 | 11.77% |
| O Scale Kings (SQ006) | 83 | 8.80% |
| Fraternal Organizations (SQ007) | 57 | 6.04% |
| Not completed or Not displayed | 112 | 11.88% |

Is there an era that you are interested in and, if yes, what would it be?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Pre 1900 (A1) | 20 | 2.12% |
| 1900 to 1930 (A2) | 72 | 7.64% |
| 1930 to 1950 (A3) | 315 | 33.40% |
| 1950 to 1980 (A4) | 283 | 30.01% |
| 1980 to 2000 (A5) | 25 | 2.65% |
| 2000 to present (A6) | 31 | 3.29% |
| No preference (A7) | 67 | 7.10% |
| No answer | 18 | 1.91% |
| Not completed or Not displayed | 112 | 11.88% |

Where do you get information about the prototype railroads?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Model magazines (SQ001) | 678 | 71.90% |
| Historical societies (SQ002) | 546 | 57.90% |
| Railroad museums (SQ003) | 453 | 48.04% |
| Online searches (SQ004) | 709 | 75.19% |
| Personal observation (SQ005) | 471 | 49.95% |
| Books (SQ006) | 663 | 70.31% |
| Not completed or Not displayed | 112 | 11.88% |

Which of the following interest you in your modeling?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Building models (SQ001) | 657 | 69.67% |
| Prototype operations (SQ002) | 308 | 32.66% |
| Making scenery (SQ003) | 408 | 43.27% |
| Running the trains (SQ004) | 567 | 60.13% |
| Collecting models (SQ005) | 332 | 35.21% |
| Electronics (wiring) (SQ006) | 217 | 23.01% |
| Not completed or Not displayed | 112 | 11.88% |

Do you like to modify your models?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| I like to modify (A1) | 620 | 65.75% |
| I prefer no modifications (A2) | 188 | 19.94% |
| No answer | 23 | 2.44% |
| Not completed or Not displayed | 112 | 11.88% |

Other than buying ready to run models, do you:

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Kitbash (SQ001) | 506 | 53.66% |
| Scratch Build (SQ002) | 482 | 51.11% |
| Modify (SQ003) | 599 | 63.52% |
| Not completed or Not displayed | 112 | 11.88% |

Where do you purchase your building supplies?

| Answer | Count | Percentage |
|---|-------|------------|
| O Scale Resource Advertisers (SQ001) | 407 | 43.16% |
| On-Line Hobby Shops (SQ002) | 522 | 55.36% |
| Local Hobby Shops (SQ003) | 537 | 56.95% |
| Local Craft Stores i.e. Hobby Lobby, Michaels, etc. (SQ004) | 408 | 43.27% |
| Amazon (SQ005) | 171 | 18.13% |
| Train Shows (SQ006) | 542 | 57.48% |
| Direct from Manufacturer Websites (SQ007) | 448 | 47.51% |
| eBay (SQ008) | 473 | 50.16% |
| Not completed or Not displayed | 112 | 11.88% |

Do you primarily use a mobile electronic device or computer in your day to day life? Check all that apply.

| Answer | Count | Percentage |
|----------------------------------|-------|------------|
| Mobile Electronic Device (SQ001) | 480 | 50.90% |
| Computer (SQ002) | 720 | 76.35% |
| Not completed or Not displayed | 112 | 11.88% |

What type of device do you use?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Smart Phone (SQ001) | 473 | 50.16% |
| Tablet (SQ002) | 304 | 32.24% |
| Laptop Computer (SQ003) | 442 | 46.87% |
| Desktop Computer (SQ004) | 505 | 53.55% |
| Not completed or Not displayed | 112 | 11.88% |

Do you use your mobile electronic device or computer in your model railroad hobby?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 498 | 52.81% |
| No (A2) | 303 | 32.13% |
| No answer | 30 | 3.18% |
| Not completed or Not displayed | 112 | 11.88% |

How do you use your mobile electronic device or computer in your model railroad hobby?

| Answer | Count | Percentage |
|--|-------|------------|
| Communicating with modeler friends (SQ001) | 320 | 33.93% |
| Taking and sending photos (SQ002) | 342 | 36.27% |
| Looking up modeling information (SQ003) | 418 | 44.33% |
| Looking for prototype information (SQ004) | 389 | 41.25% |
| Reading magazines (SQ005) | 283 | 30.01% |
| Looking at auction sites (SQ006) | 284 | 30.12% |
| Running models (SQ007) | 93 | 9.86% |
| Programming DCC in models ie JMRI (SQ008) | 75 | 7.95% |
| Internet shopping (SQ009) | 380 | 40.30% |
| Not completed or Not displayed | 445 | 47.19% |

How do you stay in touch with the hobby?

| Answer | Count | Percentage |
|---|-------|------------|
| Internet Forums (SQ001) | 487 | 51.64% |
| FaceBook (SQ002) | 288 | 30.54% |
| Internet Groups (Yahoo, Google io, etc) (SQ003) | 322 | 34.15% |
| Magazines (Hard Copy subscription) (SQ004) | 582 | 61.72% |
| Magazines (On-line) (SQ005) | 581 | 61.61% |
| YouTube (SQ006) | 340 | 36.06% |
| Twitter (SQ007) | 8 | 0.85% |
| Attend Shows (SQ008) | 558 | 59.17% |
| Not completed or Not displayed | 112 | 11.88% |

Which modeling magazines to you regularly read?

| Answer | Count | Percentage |
|---|-------|------------|
| O Scale Resource (SQ001) | 701 | 74.34% |
| O Scale Trains (SQ002) | 356 | 37.75% |
| O Gauge Railroading (SQ003) | 199 | 21.10% |
| Model Railroader (SQ004) | 340 | 36.06% |
| Railroad Model Craftsman (SQ005) | 249 | 26.41% |
| Narrow Gauge and Short Line Gazette (SQ006) | 224 | 23.75% |
| The Gauge O Guild Gazette (SQ007) | 43 | 4.56% |
| Other | 205 | 21.74% |
| Not completed or Not displayed | 112 | 11.88% |

Where do you look for advice on modeling ideas?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Online videos (SQ002) | 504 | 53.45% |
| Magazine articles (SQ004) | 623 | 66.07% |
| Books (SQ005) | 497 | 52.70% |
| Other modelers (SQ003) | 491 | 52.07% |
| Not completed or Not displayed | 258 | 27.36% |

Do you get ideas from sources other than model railroading?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 614 | 65.11% |
| No (A2) | 182 | 19.30% |
| No answer | 35 | 3.71% |
| Not completed or Not displayed | 112 | 11.88% |

Do you get ideas and/or help from any of the following?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Model car hobby (SQ001) | 191 | 20.25% |
| Model airplane hobby (SQ002) | 193 | 20.47% |
| Model boat hobby (SQ003) | 117 | 12.41% |
| Wood working (SQ004) | 291 | 30.86% |
| Metal working (SQ005) | 259 | 27.47% |
| Other | 131 | 13.89% |
| Not completed or Not displayed | 112 | 11.88% |

NOTE: Military modelers scored high as a write in answer

How many manufacturers do you think make O Scale items?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Less than 10 (A1) | 49 | 5.20% |
| 20-30 (A2) | 198 | 21.00% |
| 30-40 (A3) | 133 | 14.10% |
| 40-50 (A4) | 108 | 11.45% |
| 50-60 (A5) | 68 | 7.21% |
| 60-70 (A6) | 34 | 3.61% |
| 70-80 (A7) | 22 | 2.33% |
| 80-90 (A8) | 10 | 1.06% |
| 90 -100 (A9) | 33 | 3.50% |
| More than 100 (A10) | 141 | 14.95% |
| No answer | 18 | 1.91% |
| Not completed or Not displayed | 129 | 13.68% |

Where do you purchase most of the items you use?

| Answer | Count | Percentage |
|--|-------|------------|
| Contact Manufacturer Direct (SQ001) | 350 | 37.12% |
| Hobby Stores (SQ002) | 422 | 44.75% |
| On-Line Stores (SQ003) | 575 | 60.98% |
| Internet Auctions (SQ004) | 354 | 37.54% |
| Train Shows (SQ005) | 477 | 50.58% |
| Buy/Trade with Friends (SQ006) | 179 | 18.98% |
| Internet Forums / Social Media (SQ008) | 132 | 14.00% |
| Other | 28 | 2.97% |
| Not completed or Not displayed | 129 | 13.68% |

Do you purchase a lot of pre owned equipment/structures?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 479 | 50.80% |
| No (A2) | 325 | 34.46% |
| No answer | 10 | 1.06% |
| Not completed or Not displayed | 129 | 13.68% |

Do you purchase pre owned equipment before seeing it?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 275 | 29.16% |
| No (A2) | 198 | 21.00% |
| No answer | 6 | 0.64% |
| Not completed or Not displayed | 464 | 49.20% |

Do you buy mostly ready to run models?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 481 | 51.01% |
| No (A2) | 323 | 34.25% |
| No answer | 10 | 1.06% |
| Not completed or Not displayed | 129 | 13.68% |

Do you enjoy building kits?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 696 | 73.81% |
| No (A2) | 103 | 10.92% |
| No answer | 15 | 1.59% |
| Not completed or Not displayed | 129 | 13.68% |

What type of kit do you enjoy building?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Motive Power (SQ001) | 270 | 28.63% |
| Rolling Stock (SQ002) | 524 | 55.57% |
| Buildings/Structures (SQ003) | 576 | 61.08% |
| Not completed or Not displayed | 248 | 26.30% |

Do you only build kits because a ready to run model or structure is not available?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 245 | 25.98% |
| No (A2) | 536 | 56.84% |
| No answer | 33 | 3.50% |
| Not completed or Not displayed | 129 | 13.68% |

If you are a two rail scale modeler, do you look at three rail models to convert them to two rail?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Yes (A1) | 345 | 36.59% |
| No (A2) | 330 | 34.99% |
| No answer | 139 | 14.74% |
| Not completed or Not displayed | 129 | 13.68% |

When looking at purchasing a new model what are your considerations?

| Answer | Count | Percentage |
|---|-------|------------|
| Prototype (SQ001) | 601 | 63.73% |
| Railroad name (SQ002) | 499 | 52.92% |
| Detail of model (SQ003) | 646 | 68.50% |
| Price of model (SQ004) | 641 | 67.97% |
| Material the model is made out of (SQ005) | 336 | 35.63% |
| Uniqueness / Availability (SQ006) | 325 | 34.46% |
| Other | 51 | 5.41% |
| Not completed or Not displayed | 129 | 13.68% |

Please rate the following in order of importance 1 = very important and 5 = not very important.

Prototype

| Answer | Count | Percentage |
|-----------|-------|------------|
| 1 (1) | 400 | 43.67% |
| 2 (2) | 145 | 15.83% |
| 3 (3) | 103 | 11.24% |
| 4 (4) | 53 | 5.79% |
| 5 (5) | 86 | 9.39% |
| No answer | 27 | 2.86% |

Railroad name

| Answer | Count | Percentage |
|-----------|-------|------------|
| 1 (1) | 304 | 33.48% |
| 2 (2) | 151 | 16.63% |
| 3 (3) | 127 | 13.99% |
| 4 (4) | 58 | 6.39% |
| 5 (5) | 139 | 15.31% |
| No answer | 35 | 3.71% |

Detail of model

| Answer | Count | Percentage |
|-----------|-------|------------|
| 1 (1) | 356 | 38.32% |
| 2 (2) | 235 | 25.30% |
| 3 (3) | 118 | 12.70% |
| 4 (4) | 55 | 5.92% |
| 5 (5) | 36 | 3.88% |
| No answer | 14 | 1.48% |

Please rate the following in order of importance 1 = very important and 5 = not very important.

Price of model

| Answer | Count | Percentage |
|-----------|-------|------------|
| 1 (1) | 275 | 29.83% |
| 2 (2) | 198 | 21.48% |
| 3 (3) | 200 | 21.69% |
| 4 (4) | 65 | 7.05% |
| 5 (5) | 55 | 5.97% |
| No answer | 21 | 2.23% |

Material the model is made out of

| Answer | Count | Percentage |
|-----------|-------|------------|
| 1 (1) | 125 | 14.03% |
| 2 (2) | 196 | 22.00% |
| 3 (3) | 217 | 24.35% |
| 4 (4) | 117 | 13.13% |
| 5 (5) | 107 | 12.01% |
| No answer | 52 | 5.51% |

Uniqueness / Availability

| Answer | Count | Percentage |
|-----------|-------|------------|
| 1 (1) | 152 | 17.82% |
| 2 (2) | 183 | 21.45% |
| 3 (3) | 191 | 22.39% |
| 4 (4) | 95 | 11.14% |
| 5 (5) | 103 | 12.08% |
| No answer | 90 | 9.54% |

How many train shows a year do you attend?

| Answer | Count | Percentage |
|---------------------|-------|------------|
| None (A1) | 116 | 12.30% |
| One (A2) | 116 | 12.30% |
| Two (A3) | 208 | 22.06% |
| Three (A4) | 156 | 16.54% |
| Four (A5) | 89 | 9.44% |
| Five (A6) | 47 | 4.98% |
| More than five (A7) | 75 | 7.95% |
| No answer | 7 | 0.74% |

If you do not attend O scale train shows, why not?

| Answer | Count | Percentage |
|--------------------------------|-------|------------|
| Family obligations (SQ001) | 106 | 11.24% |
| Cost of traveling (SQ002) | 237 | 25.13% |
| Cost of show admission (SQ003) | 47 | 4.98% |
| Cost of lodging (SQ004) | 142 | 15.06% |
| Don't have the time (SQ005) | 120 | 12.73% |
| Don't feel the need (SQ006) | 90 | 9.54% |
| Other | 133 | 14.10% |
| Not completed or Not displayed | 129 | 13.68% |

When deciding to travel to a train show what are your concerns?

| Answer | Count | Percentage |
|--|-------|------------|
| Distance to show (SQ001) | 624 | 66.17% |
| Cost of travel (SQ002) | 355 | 37.65% |
| Cost of lodging (SQ003) | 328 | 34.78% |
| Cost of show admission (SQ004) | 118 | 12.51% |
| Location of show (SQ005) | 448 | 47.51% |
| What to do while attending the show, i.e. clinics, presentations, etc. (SQ006) | 165 | 17.50% |
| What vendors will be at the show (SQ008) | 330 | 34.99% |
| Local model railroads/layouts open for viewing (SQ007) | 222 | 23.54% |
| Not completed or Not displayed | 129 | 13.68% |

In the next article, we'll start to really see what is going on as we begin to data mine as in the example below. We broke out the age group and then looked at the question "What other types of groups do you participate in?"

Under 20 through 50 year olds

| Answer | Count | Percentage |
|---------------------------------|-------|------------|
| NMRA (SQ001) | 14 | 21.88% |
| Historical Societies (SQ002) | 18 | 28.12% |
| Internet Forums (SQ003) | 36 | 56.25% |
| Facebook (SQ004) | 32 | 50.00% |
| Full Size Railroad Club (SQ005) | 10 | 15.62% |
| O Scale Kings (SQ006) | 2 | 3.12% |
| Fraternal Organizations (SQ007) | 4 | 6.25% |
| Not completed or Not displayed | 112 | 175.00% |

51 and older

| Answer | Count | Percentage |
|---------------------------------|-------|------------|
| NMRA (SQ001) | 168 | 22.02% |
| Historical Societies (SQ002) | 324 | 42.46% |
| Internet Forums (SQ003) | 316 | 41.42% |
| Facebook (SQ004) | 225 | 29.49% |
| Full Size Railroad Club (SQ005) | 98 | 12.84% |
| O Scale Kings (SQ006) | 80 | 10.48% |
| Fraternal Organizations (SQ007) | 51 | 6.68% |
| Not completed or Not displayed | 112 | 14.68% |

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2019 O Scale West



Set up Thursday and ready for the fun to begin!

Amy and I flew out to Santa Clara, CA on Thursday, May 23rd. We were supposed to have a non-stop flight out of Midway early in the morning. The day before Southwest canceled the flight and we ended up on a later flight with a 1 hour stop over in Las Vegas. As we were sitting waiting for the next group of passengers in Vegas, Jim Canter got on. What are the chances? His flight was delayed and he also got stuck in Vegas. Paul Hanson had driven out earlier and picked us all up at the airport. We got set up and were ready to go Friday morning.

It's nice to see people you have not seen since last year. Many of the people we meet don't make out out to Chicago or Indy. We had a great time and sales were good. As a side note, after the show we flew to Seattle to catch a cruise ship with my brother and his wife to Alaska. I only bring this up to reinforce Amy saying, "Don't buy anything, we can't carry it.". Luckily there was a UPS store in the hotel. Some deals were just too good to pass by! Let's take a quick look at the show and the people we met.

The photo below was the collection of C. O. Gibson which was also her last year. I bought a Boston & Main T1a from this collection last year but as stated above... not this year. Prices again were not listed and you had to ask, but they were doing some wheeling and dealing.



Rick Weil and his wife were selling building from the estate of the late Dr. Richard Miller. I believe his layout was featured in *Model Railroader* back in 2003. The buildings on the next page were stunning.



I have built two of these models myself, but Dr. Miller did a bit of kit bashing in his builds. These were fantastic builds, but unfortunately, or maybe fortunately for me, could not be shipped.





Looking for older models? This was the place.



William Louie had some great deals on kits he said he would never get around to building. I bought two Thomas tank cars, one being the six dome wine car. I bashed this kit in the [September/October 2017 issue of The O Scale Resource Magazine](#).

It generated the most comments of any build to date. Once Amy saw the kit, she ran over to Norm at Protocraft to pick out decals.





Norm Buckhart discussing world affairs at his table after Amy picked out her decals.



The two images at the left, and there were a lot more, are all kits that on Saturday went on sale for \$5.00 a piece! Don't tell me O Scale is too expensive. Go to shows, talk with and get to know people, and the deals will be there.





San Juan Models had a large booth featuring all their various lines.

The cabooses below are something new and will be made in the U.S.

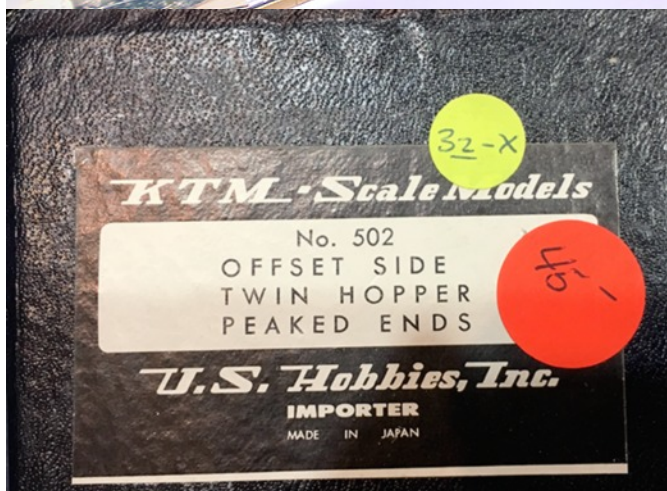
We'll have more on these new products in the months ahead.



Good friend Lee Marsh was showing his fantastic [SP GS-4/5 project](#).

It's on time and simply the most beautiful locomotive I have ever seen.

Lee was also showing some of his English models. Lee has a long and extremely successful track record with these, so he is no new comer to brass models.



My last score of the day. Four of these hoppers, mint in box and less per car than shown on this box. Time to start painting!

Canadian National Railways Sanmore Subdivision

Construction update – yet another year

By Serge Lebel



Goals – we all have them, but are we ever realistic with them? I guess that all depends on your own definition of a goal. For me, the goal is to have a finished operating layout in this lifetime. But I have to say that the bigger goal here is probably the same for all of us: having fun with our hobby.

I was self-employed for close to ten years, so I am used to being disciplined and have good time management. I always plan my projects months ahead of time and order all the parts and supplies so that when I get to work on something, I am not waiting on anything. But looking at my progress for the past year, one would argue that I did not do much. This is because I will only be showing you about 30% of what I have done, since most of the past year was spent on signalling the layout, which is something I will be discussing in a future article. But for now, here is what I have done...

I have now passed the three year mark working on my layout, which I started back in January, 2016. Sometimes I wonder if my progress is going at a normal rate, as there are no other modelers around me building layouts, so I have no benchmark to compare it to. This is the main reason why I love doing this progress report every year in the pages of *The O Scale Resource*. Those of you building a new layout can see what I am doing and be proud of your personal progress, as I am sure most of you are working at it much harder than I ever will.

The one positive thing about my progress is that it is right on schedule, according to the expectations I had set for myself. I figured it would take me three years to build up the benchwork and hand lay all my track. I am happy to announce this is now done and I could not be more satisfied with the result. I am now at the point where I am testing various materials for ballast. I live on the shore of the St. Lawrence gulf, and the beach is a five minute walk from my house. We have a lot of sand here, in various colors. See photos 1 through 4.



Photo 1

Photo below shows a test I did with beach sand for ballast.



Photo 2



Photo 3



Photo 4

Photo 5



Before building this layout, I had only built one small switching layout in O scale. Spiking rail by hand was not something I had done a lot of in the past, so I was generous in the amount of time I would allow for me to do such a large layout, not knowing what I was getting into. One major concern I had was how reliable the handlaid track would be and how well it would run. I had a small operations session with a couple of friends in April, and I must admit, I was surprised at how few issues we had. The operation lasted over 6 hours and we only had two derailments, one of which was caused by a counter rail on a turnout that came loose. But this was a good test for my trackwork, and I can now move forward with other projects. (Photo 5)

One thing that I have been trying to do other than track laying is to get more locomotives ready. This is all leading up to operations. But because I model Canadian prototypes, and because I use a lot of plastic models



Photo 6



Photo 7



Photo 8

from Atlas and MTH, I have a lot of time consuming modifications to do to the locos.

On top of that, I completely gut every locomotive and install Loksound L DCC decoders, custom lights, better speakers, and I make my own decals, which requires some time to design. Here are a few locos I modified and painted in the past year. (Photos 6 and 7)

CP Rail 8921 is an Atlas RDS15 which I did some cosmetics on. I filled up the long and short hood corners with putty, and made new holes on the short hood for headlights and cut out a nook for the brake wheel. (Photo 8)

I then built a new bulkhead out of styrene. I used the tip of 3mm leds to create the classification light lenses. (Photos 9 and 10)



Photo 9

For the long hood, I just added a few styrene parts to simulate the sand hatches and a small door. (Photo 11)



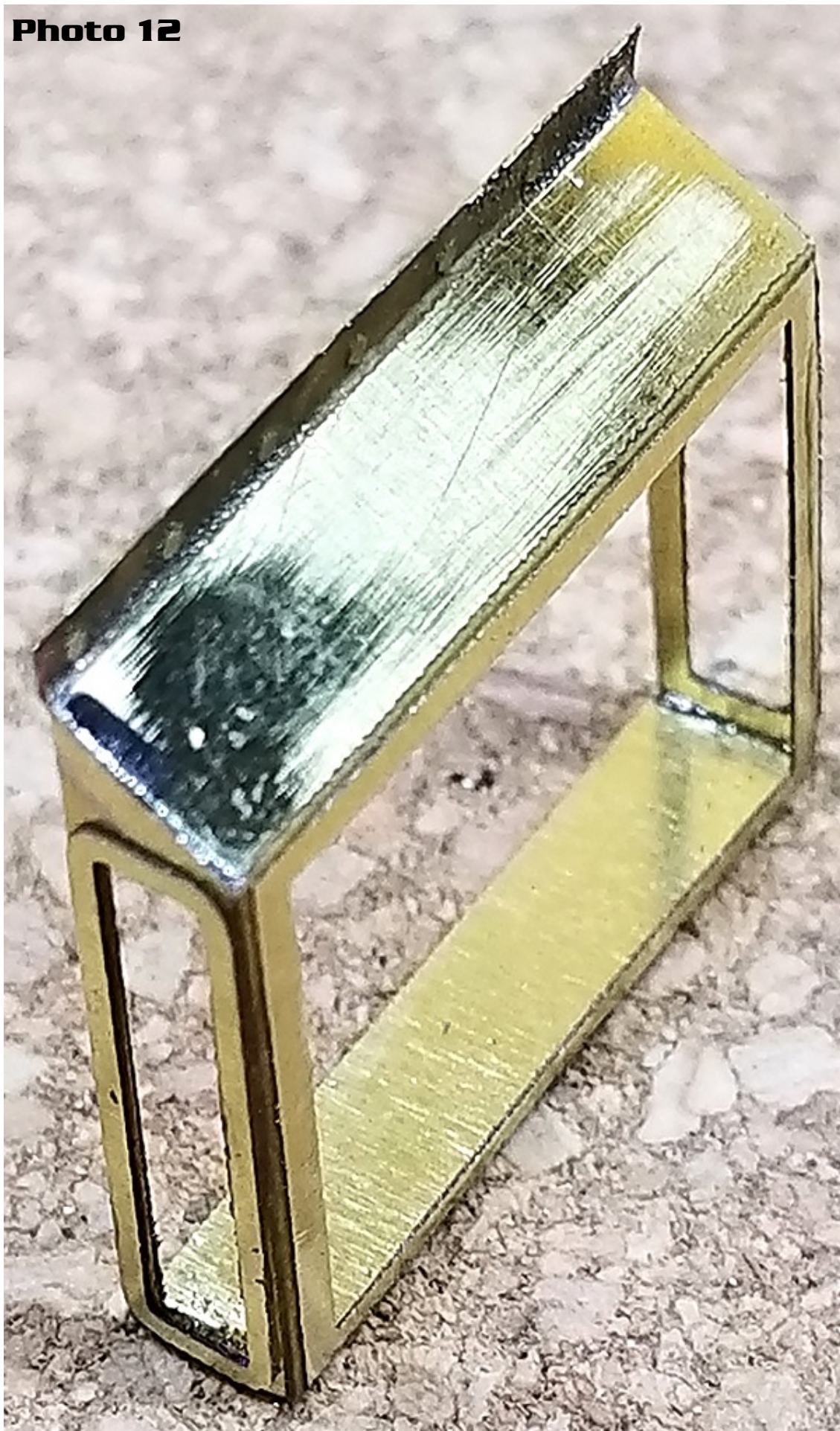
Photo 11



Photo 10

I custom made an etched brass all-weather window, custom ditch lights, then printed my decals on the Alps, and painted and weathered this loco... (Photo 12 next page)

Photo 12



CP Rail 4562 is also an Atlas model which I modified with a few detail parts, filled corners, made decals and painted/weathered the loco. (Photos 13, 14, 15 and 16)



Photo 13



Photo 14



Photo 15



Photo 16

Photo 17



CN 2508 is an MTH loco on which I cut the cab off and replaced it with a Caslo Shops comfort cab. Again, I added a bunch of small details, custom ditch lights, painted and weathered to taste. (Photos 17 and 18)

Other locos were weathered, and fitted with DCC. I still have 11 locos to finish for a total of 25 on the layout. I do not have a lot of locos and cars as I am not a collector. I only buy what I will run on the layout, and I don't want the layout to feel too cluttered. This is an operating layout, and I feel it is important to have a lot of free space for switching and running trains.

I also try to keep up with my cars, but since there are a lot more cars than locos, and because they can still

Photo 18



run on the layout without modifications, I am keeping some of that work for a later time when the layout is closer to being operational. All my cars need to be weathered, have Kadee couplers installed, Intermountain wheel sets modified with a resistor for the detection, and some stencilling and re-numbering is in order.

Photo 19



Photo 20

Fortunately, I don't have a lot of cars (about 125), so it should not be that big of a task.

One more thing I have been working on is my layout fascia. This is done at this phase of construction because it will be needed for the signal wiring bungalows, and for the eventual scenery. My fascia is simply 1/8 inch Masonite. I also use this for my wiring bungalows, so that all my wiring is grouped in sections, and easy to access if I need to work on it. (Photos 19, 20, 21 and 22)

So what did I spend all my time doing? Well, I have to admit that about 70% of my railroading time was spent on the research, design and testing of a fully operational detection and signalling system. I know this might sound a bit overboard, but I chose to scratchbuild my own signals, and build my own signal control system instead of purchasing an existing one. The main reason behind this is that I could not get all the features I wanted out of any one system. So I had to come up with my own system that would



Photo 21



Photo 22

give me just the options I needed and leave out all the extra stuff I did not want. Making your own signals has the advantage that you get exactly what you want.

I will not go into details on this subject because it will be the subject of my next article. Getting my signalling system done will probably require the better half of this new modeling year for me. It is a big project, but one that is worth every minute invested. To me, this is just as exciting and rewarding as doing my handlaid track.

I guess I would say that in the past 12 months, I have been very focused on getting closer to my goal of operating the layout. I am slowly realizing that as much as it is important to be organized and have strict work ethics, it is also important to have some fun in the process. This experience has opened my eyes and for my future plans, I will set up a small agenda of what I *have* to get done, and leave more free time for these impulsive projects, and even some time to operate the layout. This may not look like a lot, but for a single person working away from home a lot, I think I am doing okay. I guess it is a good thing that I started this project so young... I am not stressed for time and if all goes well, I will have a “completed” layout by the time I retire from the railroad in 12 years!

MODIFYING AN INTERNATIONAL MODEL GON

By Dan Dawdy

If you read, and hopefully you did, my last article in the [May/June 2019 issue of *The O Scale Resource Magazine*](#) “Modifying a Max Gray Mill Gon”, I end with “Next time, I’m going to take an even cheaper, much less desirable brass car and try to do the same thing.”

Well, here we go. You can’t get much cheaper than an International Model Company gon. International imported cars, and even a few locomotives, in the late 50s through the early 60s. The cars were iffy at best. No one seems to really want them and those that have them, well, they just sit. I saw at least four of these at this year’s [March Meet](#) at \$20.00 with a make offer sign!

I received mine free! At the [2018 O Scale West](#) show, I met a gentleman by the name of Dave Chidester. We had a few long talks and then he gave me this car shown in Pictures 1 through 4.



Picture 1



Picture 2

Well, the price was about right! I looked at this car and just shook my head. What was I going to do this this? I have always said I need more variety of cars on my layout, and being a bottom feeder is not all bad, but WOW.



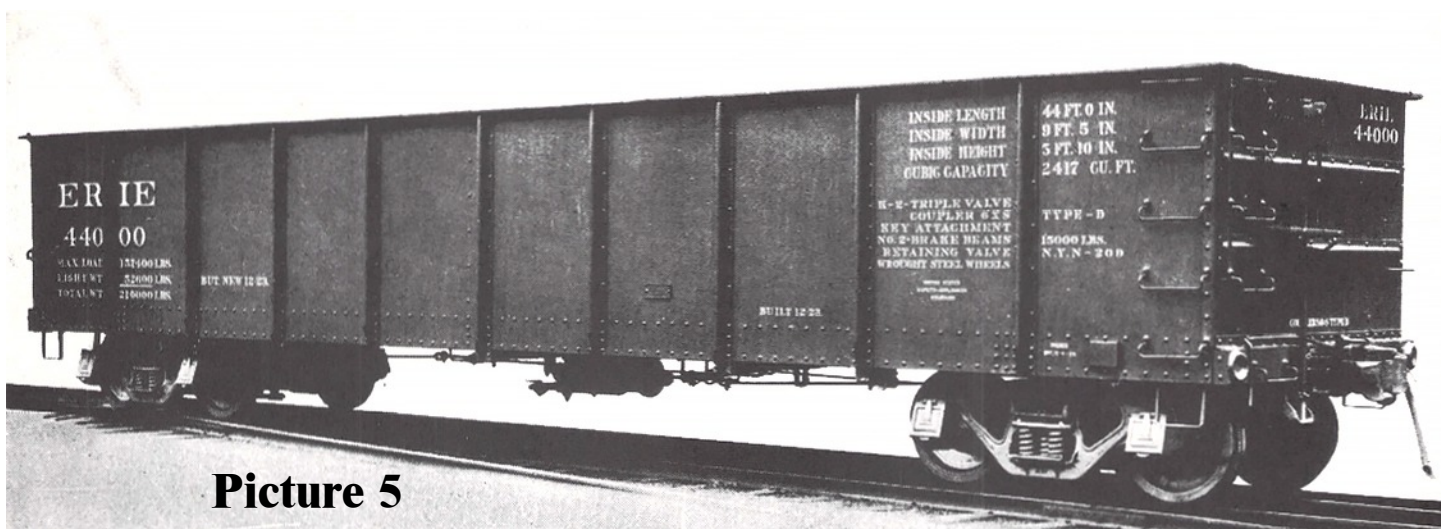
Picture 3



Picture 4

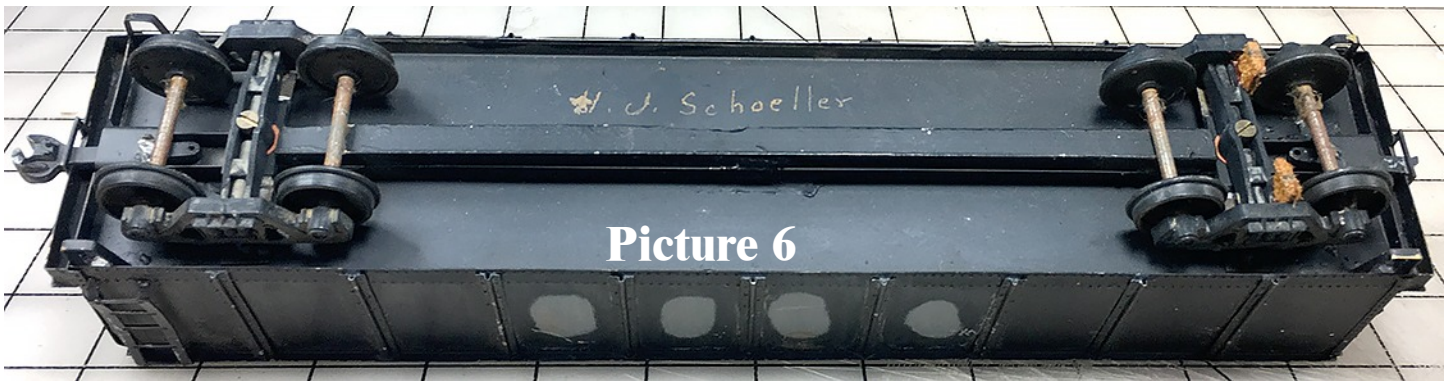
The previous owner whose name was scratched into the bottom made a track cleaning car out of this. This was as good a use as any I guess.

It had seen better days. After returning home, the car sat all summer and most of the winter. After doing the Max Gray mill gondola, I looked over and remembered this. I also remembered some promise to Dave that I would do something with it so apparently tossing it in the trash was not an option.



Picture 5

Well surprise, surprise, there was a prototype of this model. The Erie had these high sided drop bottom gons and Tom Dempsey and Glenn Guerra sent me scans of the car and plans from an old cyclopedia. Picture 5 on the previous page shows a builders photo of the car.



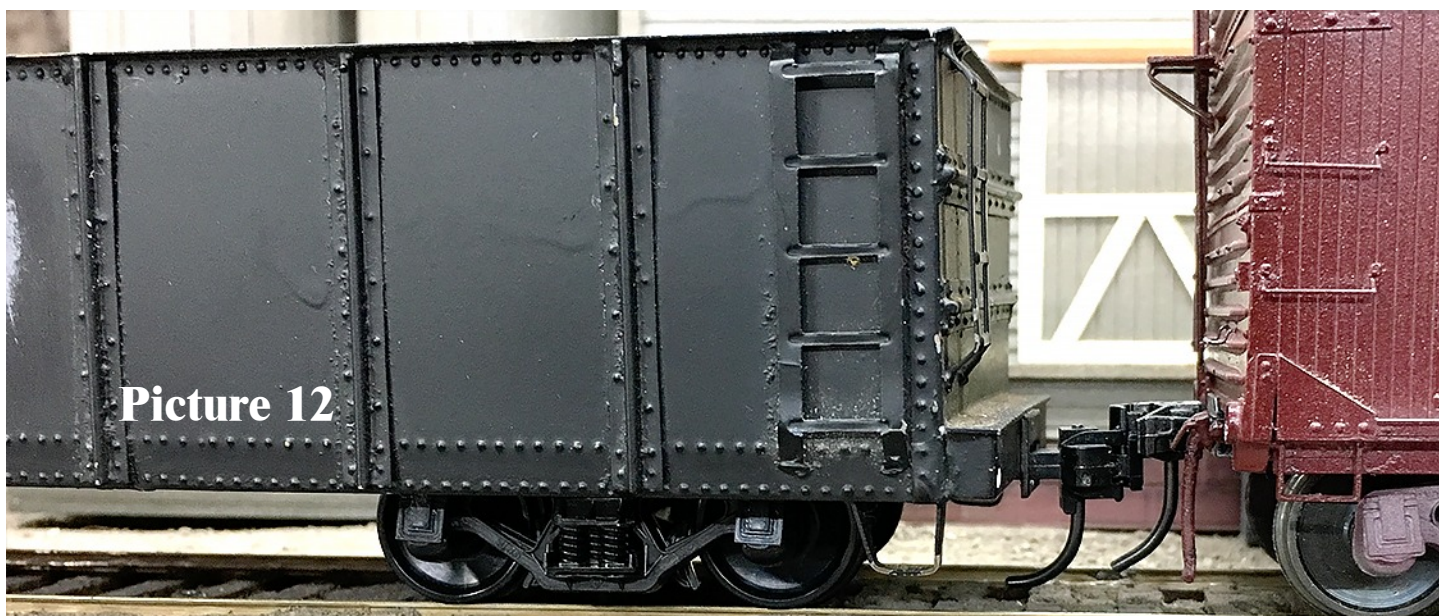
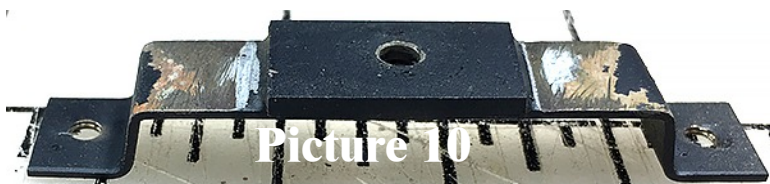
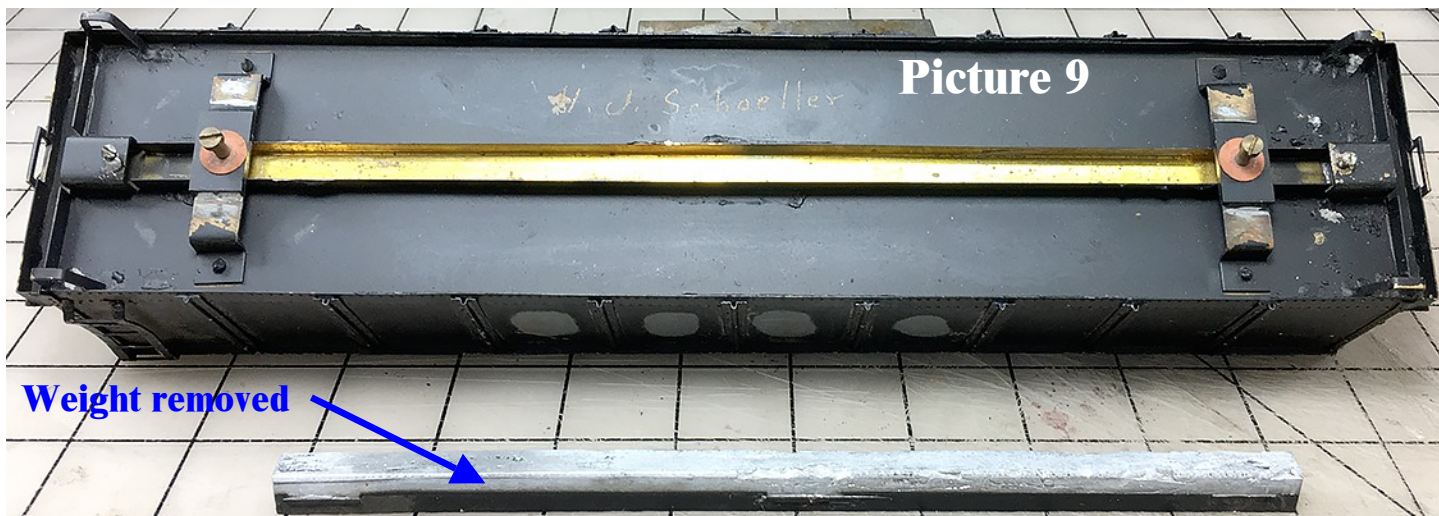
OK, challenge accepted! Let's see if we can make a respectable runner out of this. I say runner as it's not going to be a show piece, but I think I can do a lot and have another unusual car up and running.

Picture 6 shows the underside with all it's great detail...yeah, that was a funny! So everything on the bottom was going to go. Picture 7 shows the truck and bolster which would also have to go. Picture 8 shows the B end, and since this car did not have ladders or that brake system, they all had to go. Again, I am basing all of this on the Erie car I had pictures of.

Picture 9 on the following page shows what all I would be removing. The bolsters, Picture 10, did work, but were not exactly prototypical. There were screwed into the bottom of the car. The center sill had a weight that I removed. The coupler boxes and center sill needed to be unsoldered. I used a resistance soldering unit for this, but a small torch or iron would work as well.

I am guessing some of this car may have been worked on before as I can't believe all the extra holes on the bottom, but who knows. Picture 11 shows all the "detail" removed. None of this would be reused on the car.

I temporarily added a Kadee® coupler, as well as a set of Scale City bolsters and Intermountain trucks and lined the car up to see how far off I was going to be, Picture 12 shows, a lot. I decided to worry about that later. For now, I needed to strip the car.





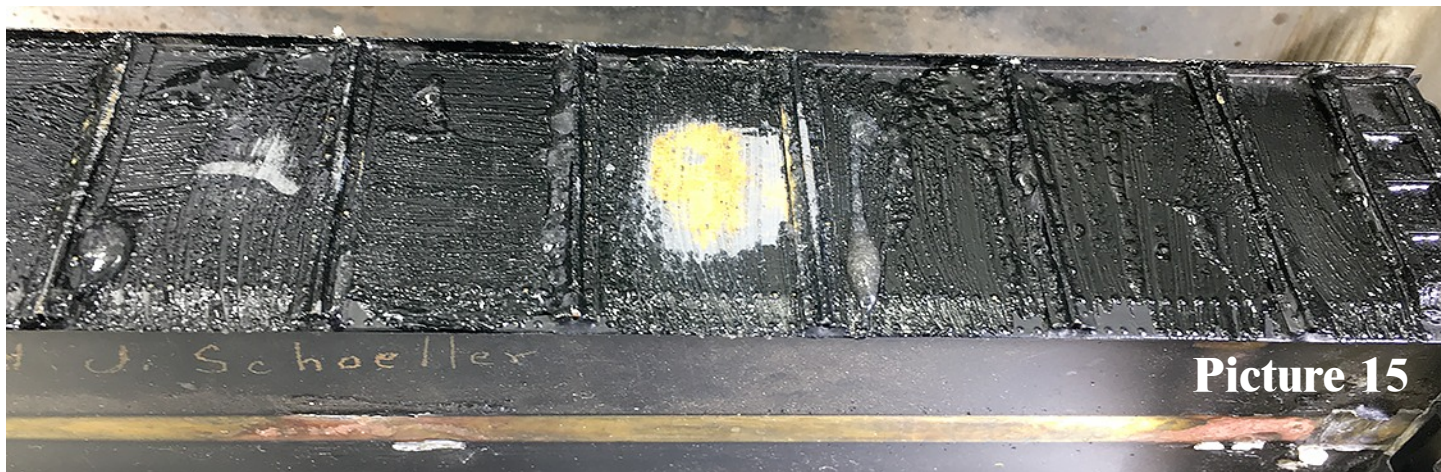
Picture 13

Picture 13 above shows my go-to brass stripper Rust-Oleum Aircraft Remover. *NOTE: This product is no longer available, back to lacquer thinner.* You MUST wear Nitrile gloves when working with this. It's water clean up but you really don't want to get this on your skin. If you use this in other jobs, remember it will eat plastic. This is for metal only. The last thing is cheap paint brushes. They must be natural-bristle with NO plastic handles, I found the ones above at my local ACE Hardware for 99 cents a piece. Cut the bristles down short as you'll be scrubbing with these. All of this was done inside my paint booth.



Picture 14

Pour a puddle of the Aircraft Remover in a metal or glass pan as shown in Picture 14. Dip the brush into the goo and “paint” the sides of the car.



Picture 15

The paint will begin to bubble and flake off almost at once. Keep brushing the car side, and every once in awhile, get another dab of Aircraft Remover. Finally, use a brass brush. Pictures 16 and 17, you can clean the rest. Now that we have a somewhat clean model, we can remove the rest of the soldered on items we don't want.

The ladders, stirrups and end brake were removed as shown in Picture 18 on the next page.



Picture 16



Picture 17



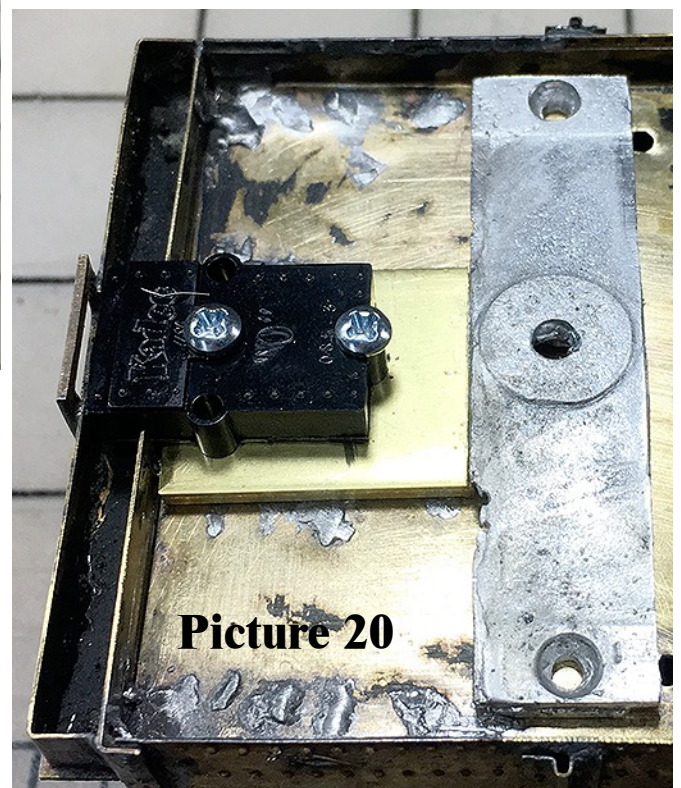
Picture 18



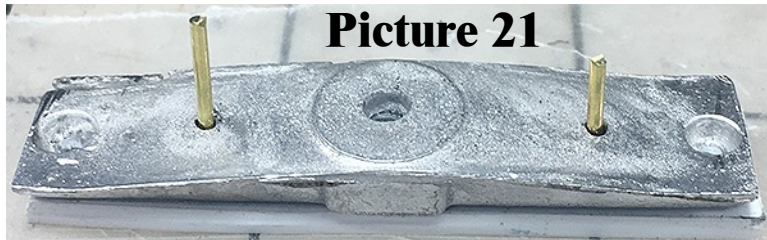
Picture 19 shows the cleaning of the old solder using a wick. The rest was filed down.

I knew the car sat too low, so had to think how I would handle this. At first, I thought the easiest

way was to add a new piece of .090 brass sheet to the underbody. That, however, would make the overhang of the sides almost even with the floor. After measuring, the coupler pad needed to be .90 to clear the rectangular hole for the coupler. You could remove that piece and replace with a better looking part, but in this build I wanted to use what I could of the car and/or parts on hand. I drilled and tapped 2/56 holes for the coupler, Picture 20, and then set the car on the bolsters and on the trucks to see where I was height wise.



The bolsters also need to be shimmed, so I used some styrene for that to get the height I needed as shown in



Picture 21

Picture 21. I used pins to help secure the bolster to the styrene and then used 5 minute epoxy to join the two. After doing this, I realized it was not needed as I would use screws through the bolsters to the floor. I sometimes get ahead of myself...

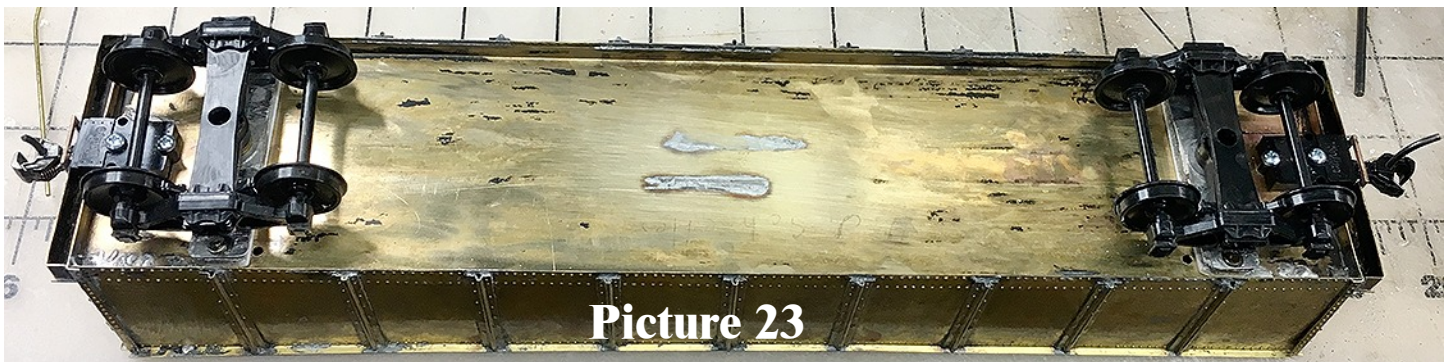
Now, this is a drop bottom gon, however, I had no intention of trying to model the doors on the

bottom and would run the car with a load, so the fact that I had screws coming up thorough the floor was not an issue. If you are so inclined to do the doors, have at it.



Picture 22

Picture 22 shows the height being spot on. I then went back and soldered the coupler pad to the floor of the car and drilled and tapped holes for the bolsters. Pictures 23 shows the completed trucks and couplers.



Picture 23

The center sill was made from C channel, which unfortunately, Special Shapes no longer makes. So to keep this simple, I used two I beams from Plastistruct glued to a piece of .10 styrene. (Picture 24) This would give the appearance of what I was looking for and I had the parts. Remember, I am doing this as cheaply as I can.

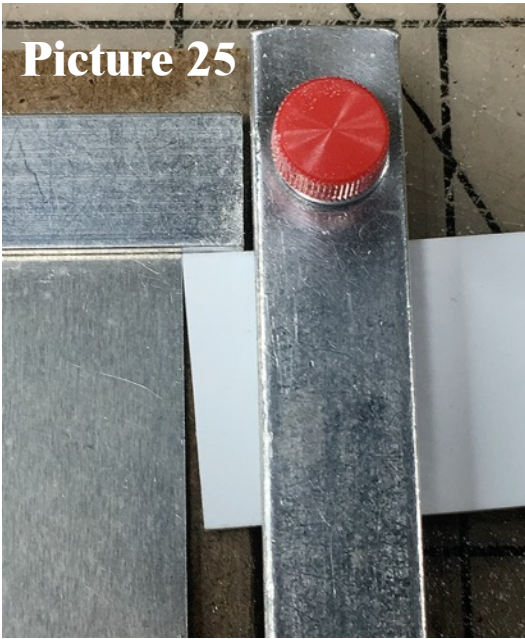
The length of this assembly fit between the bolsters and once I found the center line, it was epoxied in place.



Picture 24

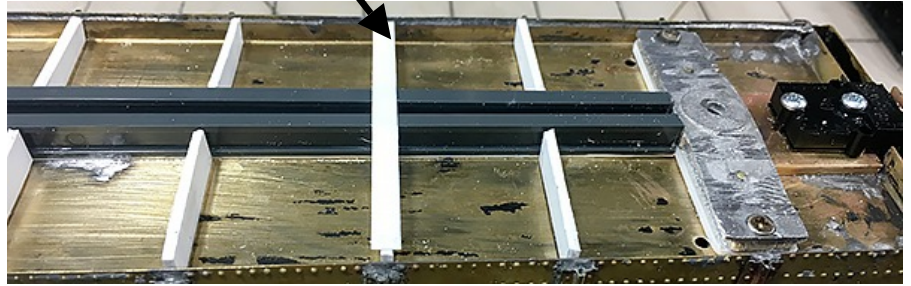
The next item was the support beams on the underbody. The car did not come with them, so I had to make my own. Again, being cheap, I used .60 styrene and formed these pieces. Once I got the right angle for these, I cut the rest using my Northwest Short Line Chopper as

Picture 25



shown in Picture 25. These were then epoxied to the bottom of the car as shown in Picture 26. After attaching all of these I added a .010 strip of styrene across one set of support beams on each end and over the center sill. (Picture 26A) I'll use Archer Transfers go over this. More on that after the brakes. Picture 27 shows the completed underbody to this point.

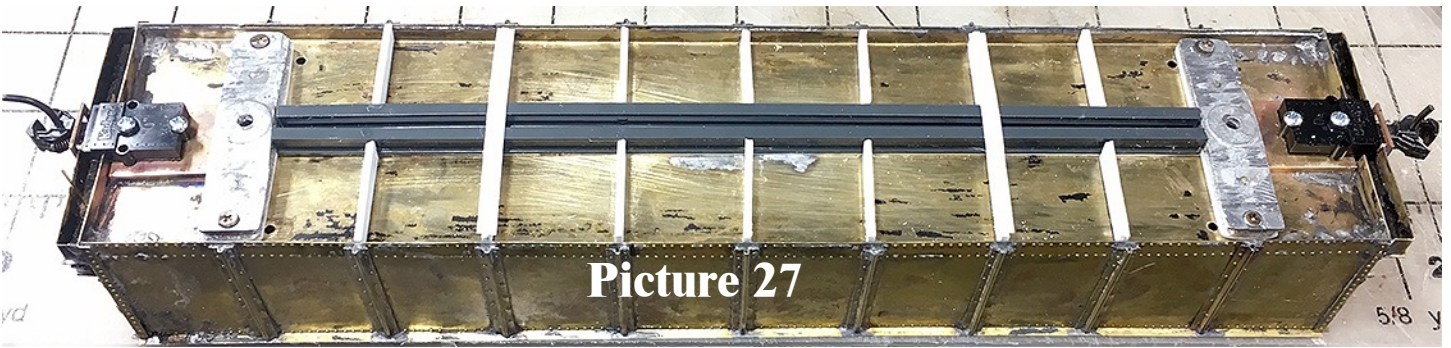
Picture 26A



Picture 26



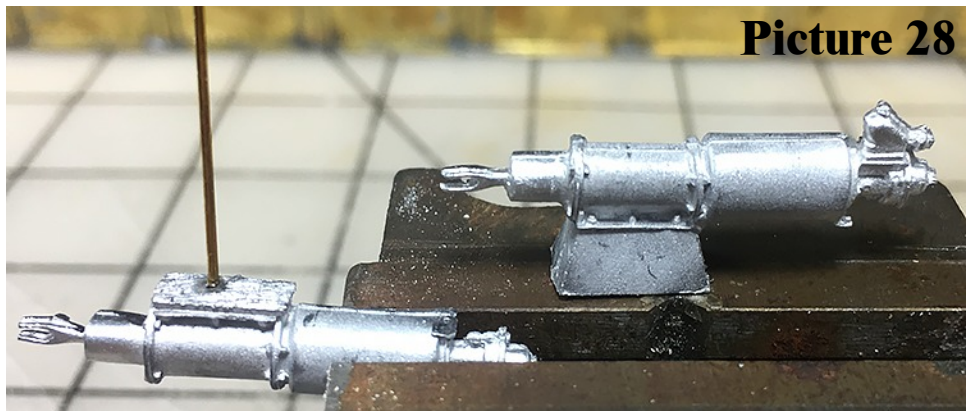
Picture 27

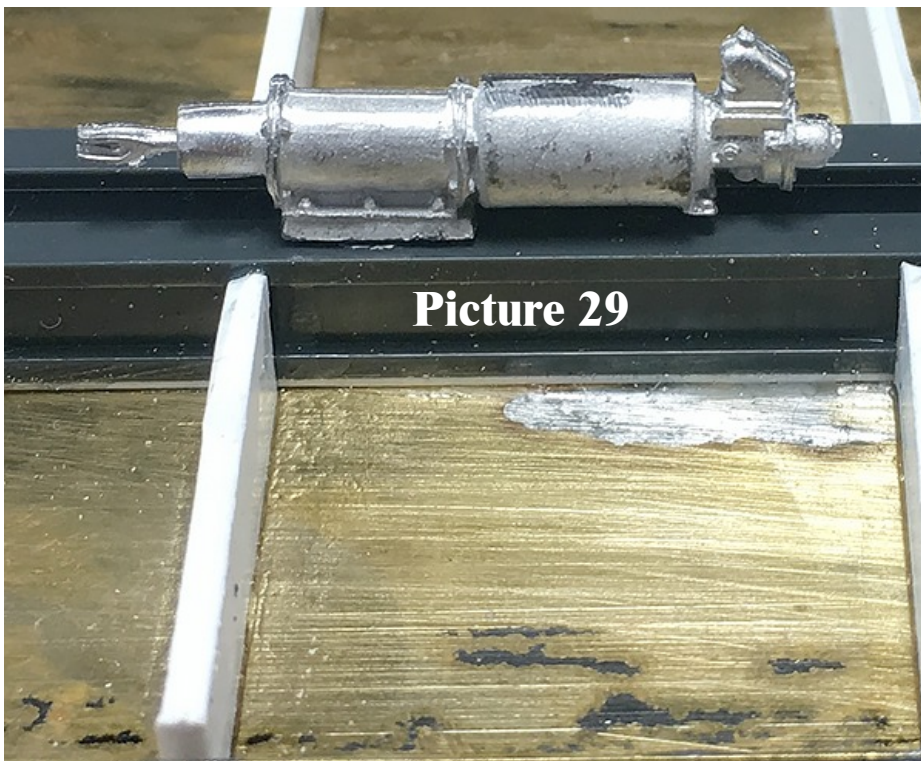


Next was the brake detail. I used a Scale City K brake cylinder (PN 48-337) and needed to modify it. Because this was a drop bottom car, the brake cylinder needed to be mounted on the center beam. Picture 28 shows the K brake cylinder as it comes on the right, and on the left, you can see that I cut the base off and drilled a hole and attached a piece of wire. The wire would go through the center beam to give the assembly better support. See Picture 29 on the next page.

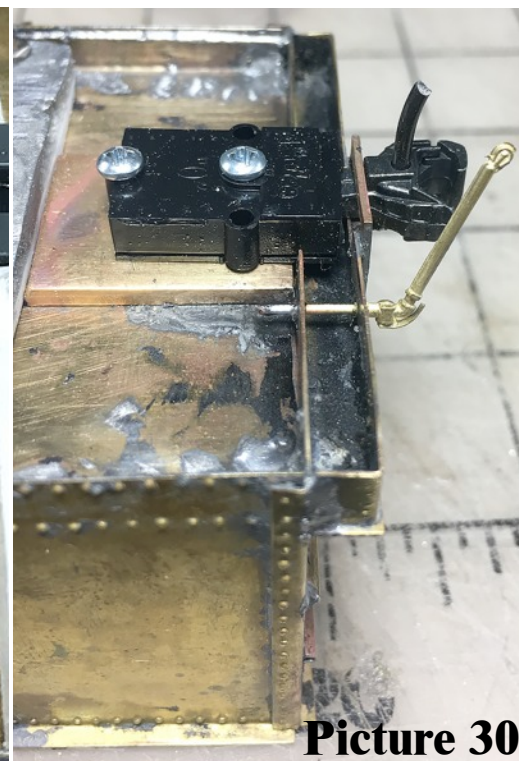
Now I just added the bits of wire and hangers to the underbody to represent a K brake system. Note that I did not have the right sizes of hangers so I used .020 styrene and

Picture 28

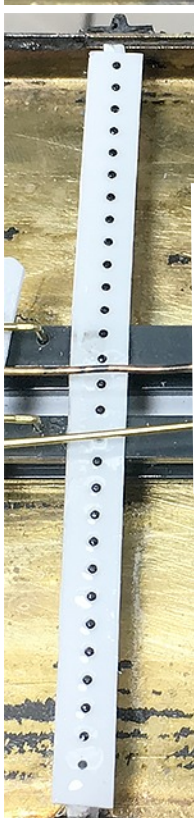




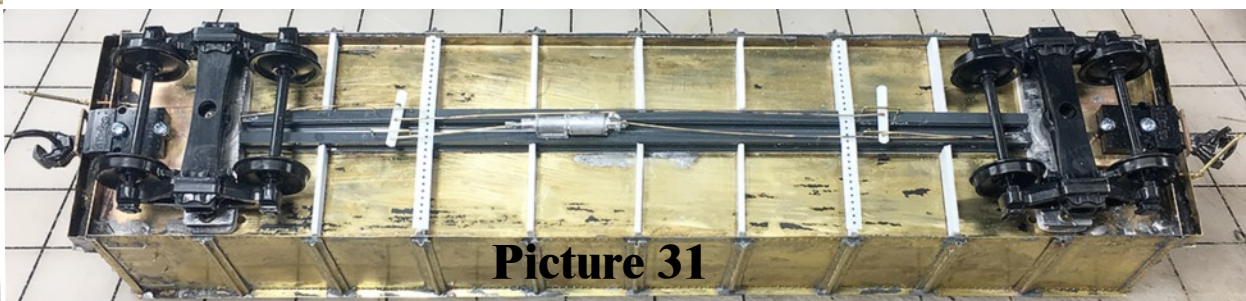
Picture 29



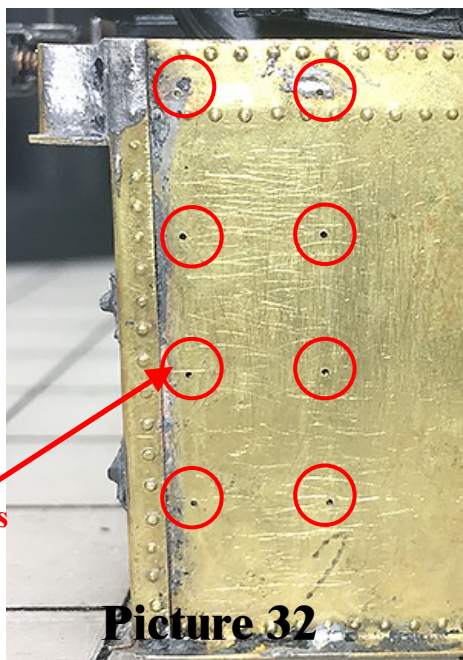
Picture 30



cut and sanded to shape. I did not run a train line on this model, but you could if you predrilled the support beams ahead of time. Picture 30 shows that I drilled through the car end and inserted a brass air hose and soldered in place. The finished underframe is shown below in Picture 31. Note the Archer Transfers rivet decals on the two support beams and picture at left.



Picture 31



**Number 78
holes for grabs**

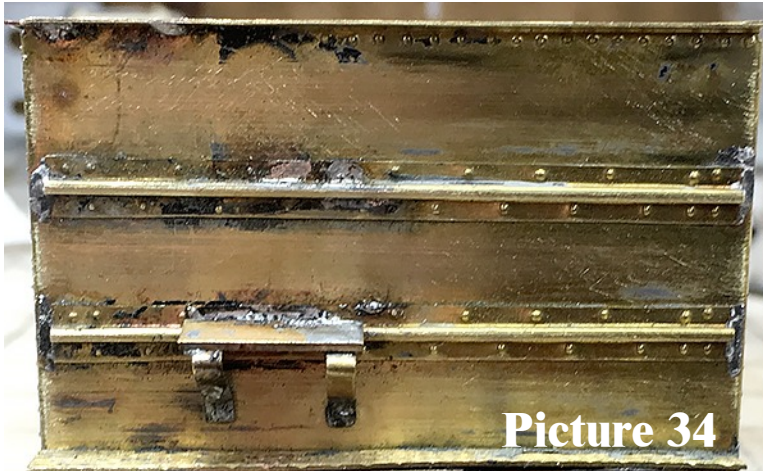
Picture 32

Now it's time for the outside of the car. Since this car did not have ladders, I needed to drill holes for the drop grabs on the ends and the right sides. Drilling holes for grabs and keeping them straight is a pain. I suggest you make a jig to lay over the car. I had such a jig leftover from a Mullet River boxcar I built. I have a bag of Northeastern Scale grabs, so using the jig I drilled #78 holes for them to be inserted. Pictures 32 and 33.



Picture 33

Now it's time to finish the B end of the car. I removed the brake wheel earlier so I need to add the Miner Ideal safety hand brake to the end. (Precision Scale #2009) The car dimensions were not exact, so some liberties were taken here. I moved the brake platform down a bit so the Miner brake would fit above as seen in Picture 34. I drilled a small hole in the bottom of the brake handle, Picture 35, and added the brake rod Picture 35.

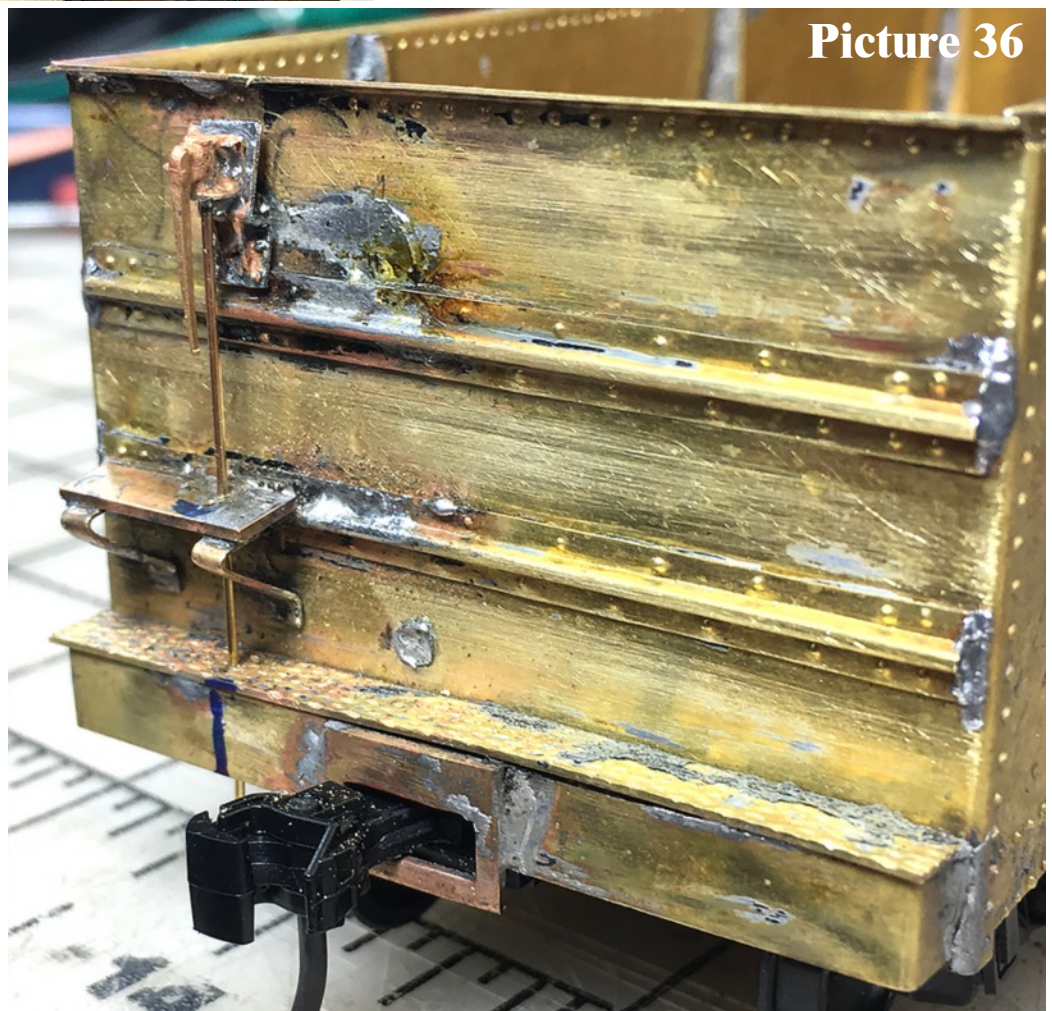


Picture 34

Picture 36 shows the final assembly. The prototype car did not have as wide a bottom lip so here I ran the brake rod through it which is prototypical, but not on this car. If you really wanted to, this piece could be removed and you could fabricate a new end bottom.



Picture 35



Picture 36

One last thing to show before painting. With the holes that were already in the bottom of the car and the screws I added coming up from the bottom, there was no way I would attempt to mimic the drop bottom doors. So I'll make a load for this later. See Picture 37 on next page. Cut levers were added at this time.

It was now onto cleanup and paint. Because of the mix of glues and styrene, I simply washed and scrubbed the car with Bar Keepers Friend®, rinsed it and then used Dawn Dish Soap to remove any grease.

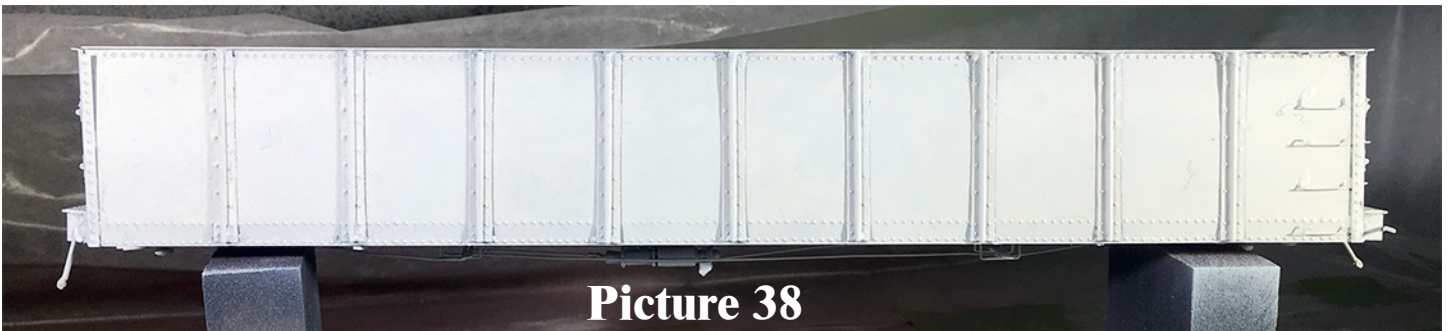
Picture 37



I used Scalecoat I MOW gray for the first coat, Picture 28, and then Scalecoat I Detail Black, Picture 29, using heat lamps attached to the sides of my paint booth for drying. I like to use the oven for this, but with styrene, I did not want to get too hot.

After painting, I sent a picture off to Glenn just show my progress. First thing he asked, "Where are the stirrups?". Well crap on toast... Since this not going to be a contest model, I went to my stash of Intermountain parts and cheated with a set of black stirrups. If I really wanted to strip the car, which I did not, I would have made them from wire but these would work. I simply epoxied them on and called it a day. Whichever way you do this, check

Picture 38

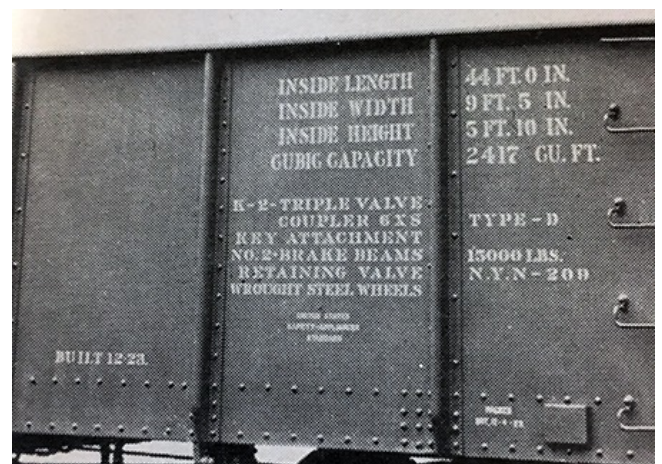


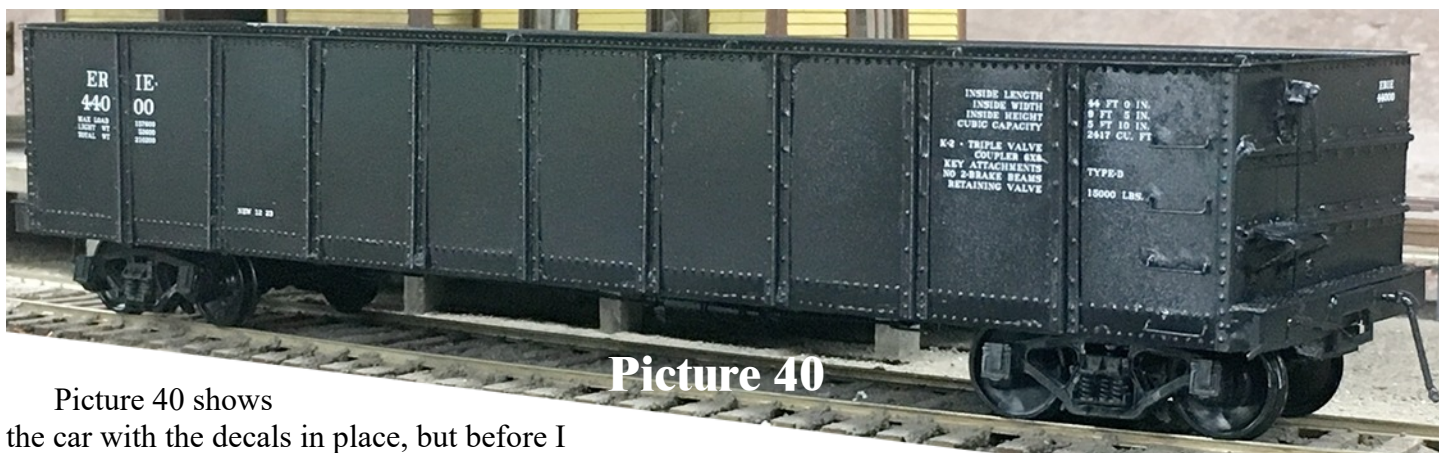
Picture 39



the swing of the truck first. There is not a lot of room, and I have seen kits that don't take the truck swing into account.

Using the pictures below of the prototype, I worked up a sheet of decals and sent it off to my decal guy, John Hagen at OBS-CALS and had them a week later.



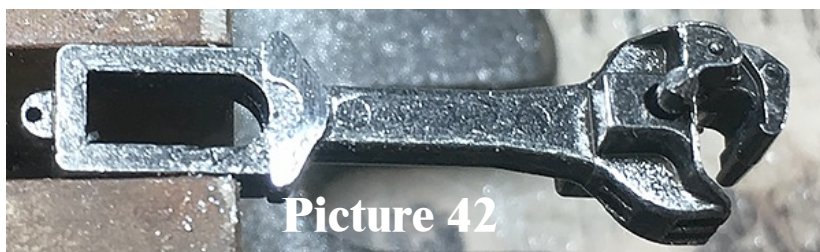


Picture 40

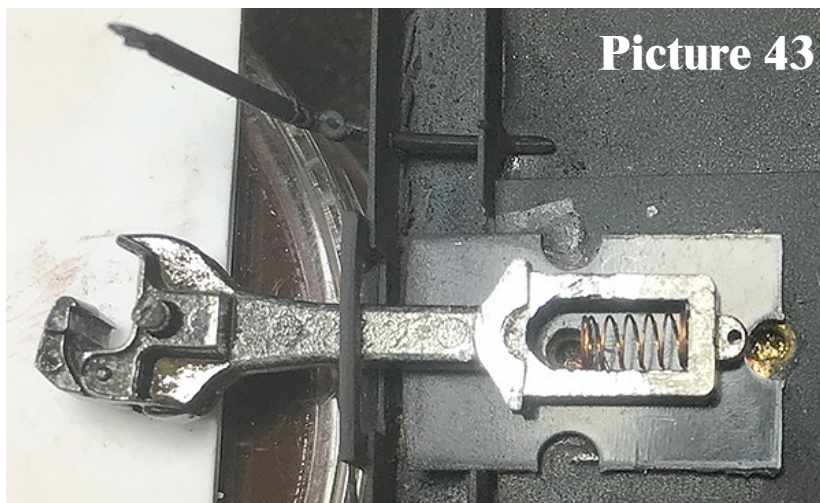
Picture 40 shows the car with the decals in place, but before I added the stirrups. Before weathering, I had to attach the couplers.



Picture 41

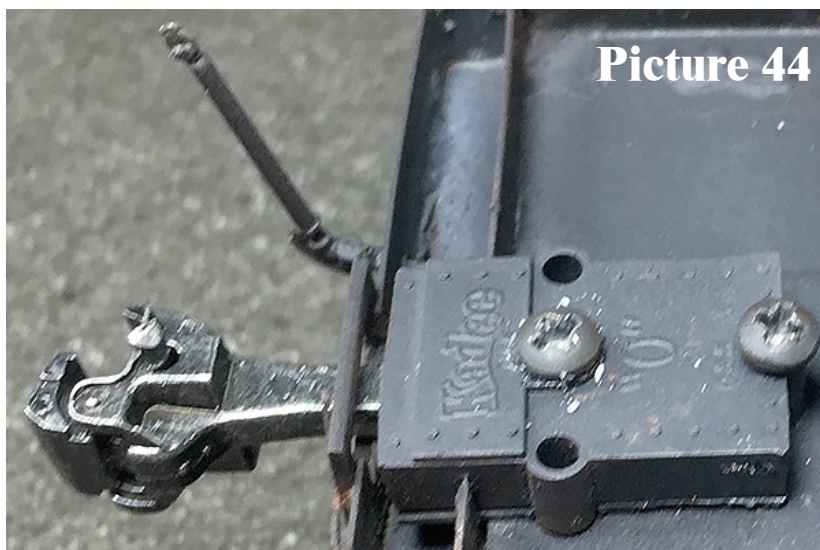


Picture 42



Picture 43

This was going to be a challenge. I use Kadee®'s for operations with the rest of my fleet. The pictures above show my convoluted way of installing them. Picture 41 shows the Kadee® cover with one screw to line it up. I used a bit of ACC to hold the cover in place or it would slide all around. Picture 42 shows I needed to file the lip on the coupler to fit through the end of the car. Picture 43 shows the coupler end propped up to the height of the car end so I could slide the assembly in place. I did have to trim the spring just a bit so it would not foul the first hole. I ran the screws through the Kadee® box and carefully screwed in place, Picture 44.



Picture 44



Picture 45

Weathering was done with PanPastels. A combination of blacks, rust and oranges. No real magic here, just play around till you are happy with the results. I could have done a better job at cleaning up the solder, but with a older beat up gon like this, it adds another layer of weathering. In fact, I used rust to highlight some of these imperfections. (Picture 45) Picture 46 shows the weathered car before I added the stirrups. Picture 47 shows the inside of the car. Next, I will make a load but I still needed weathering for the parts the load will not cover.

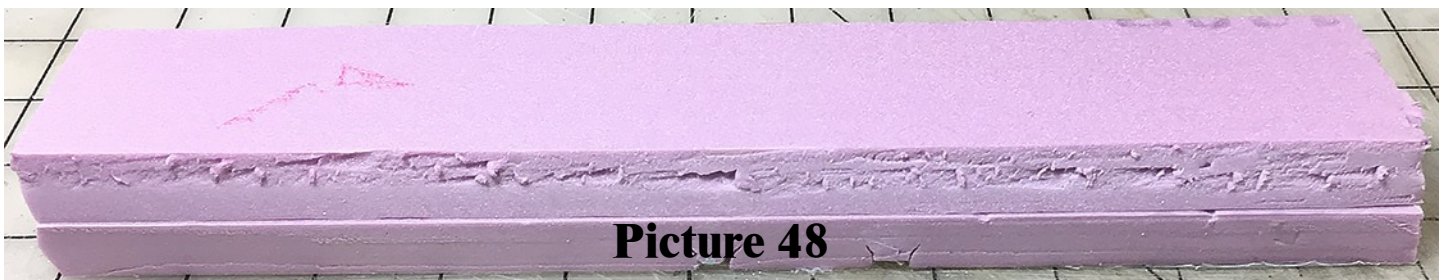


Picture 46

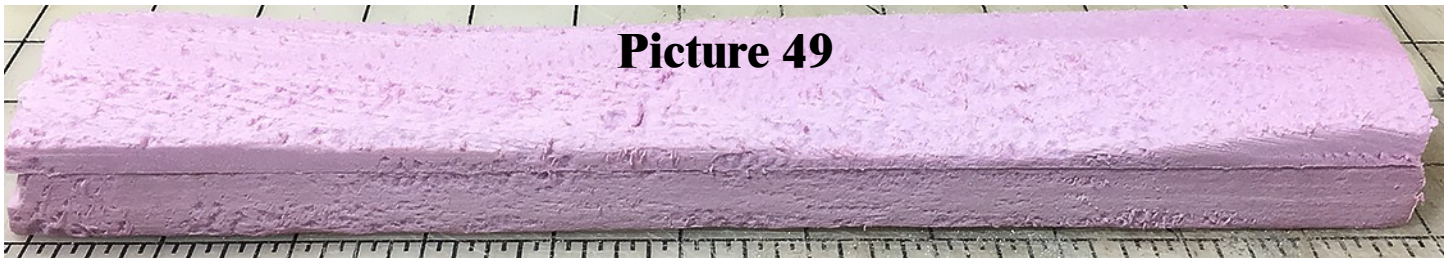


Picture 47

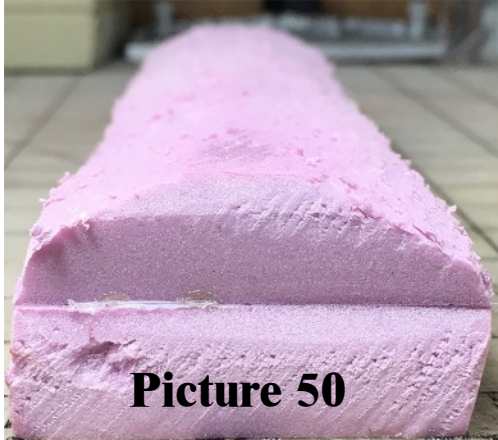
The load will be very simple. I started by cutting two pieces of pink foam to the side of the car interior and then gluing them together. (Picture 48) I needed two to get the height I wanted. Then, working with large files I shaped the unit with a slightly curved top as seen in Pictures 49 and 50 on next page.



Picture 48



Picture 49



Picture 50

I then painted the assembly with a cheap acrylic paint that was roughly the same color as the rock I was going to use. I have a 5 gallon pail of tailings from an area in the upper peninsula of Michigan that I sift through screening. This gives me four sizes for ballast, larger rip-rap and smaller sizes. It's dark red to black so the barn red to selected would be fine. (Picture 51)

When the paint was dry, I taped the sides and ends where I did not want the stones to attach and painted white glue (PVA) with a cheap brush as shown in Picture 52. I added the stones with the addition of "wet water" and let it dry, going back to cover the bare areas. (Picture 53) One helpful hint here for covering small bare areas was to use



Picture 51

Aleene's Clear Gel Tacky Glue. You can just apply small amounts to the areas you want to cover and apply the stone. It's thick enough the stones will not fall off and dries clear so you cannot see the glue.



Picture 52

Once all is dry, simply remove the tape from the sides and ends, check for any bare spots you may have missed and insert it into the car. Since this is a foam base, you can push the assembly into the car and not have to worry about the thin support bars on the inside sides of the car. Just push harder until you get the height and effect you want.



Picture 53

That pretty much completes this build. Is the car 100% accurate? No, but it will give you a good representation of a prototype car that you can't buy off the shelf. You could do much more than I did if you wanted, but for me, it will make a great addition to my fleet and nothing else I have looks like this. Best of all, it's a brass car, and even with the extra detail parts, I am well under \$40 for the entire project!

I want to apologize about the Aircraft Remover. When I wrote this I did not realize it was being pulled from the market. I still think it's safe IF used as directed but like many things modelers have used in the past it's gone now.







3D Printing Part Design and Printing For O Scale Projects

By Russ Briggs

The Technology and Materials

3D printing has been utilized for many purposes in recent years. The materials that parts are printed with have improved dramatically in the last few years. The 3D output file from the design software is uploaded to 3D printing vendors like Sculpteo, 3DHubs, Shapeways and others, then printed in the material specified. I use the vendor that can print in the material needed for the project being done.

Parts are being created for cell phone cases, robotics, drones, airplane models, etc. Most of those are printed in various types of plastic or resin depending on the strength and flexibility of the part needed.

From an industrial point of view, prototypes of a mechanical design are printed to get a working item in hand before it goes into final design and production. These can be printed in metals similar to aluminum using Selective Laser Melting (SLM) process. They can be large pieces and usually have a textured finish. Parts can also be printed in stainless steel, or bronze using Direct Metal Laser Sintering (DMLS)

Another use for 3D printing is in the design and making of intricate items like jewelry. Necklace pendants, earrings and rings are the most common. These pieces are not actually printed in metal. These parts are printed in wax or castable plastic first, then the printed parts go through the standard Lost Wax process we model railroaders are familiar with. Parts can be cast in brass, bronze or silver.

3D Printing of Parts for Models

Many modelers have scratch built a model using different materials to make the parts for the model. This involved creating making one-off parts by making a master, then a mold, then castings in metal or resin. Other parts were typically machined or fabricated out of brass.

Now the part desired can be designed using 3D software, then output as a 3D part. Unique parts can be made for scenery, cars, and locomotives. Scenery like fire hydrants, grates, chimneys etc, would be best done in 3D printed using a hard resin. Car parts can be done either in brass or resin. Locomotive parts could be brass castings like truck side frames, bolsters, or smaller parts like horns, bells, or marker lamps.



My New York Central Flexi-Van project uses 3D resin prints for the end platforms, turntables, 5th wheel pin keeper, brake equipment brackets and other details. Since I am building 8 of these, I needed to mass produce the parts needed rather than scratch build each one. 3D printing made more sense to me than making masters and casting in resin. I did, however, cast the trailer sides and end in resin. Side sills, bottom and top are laser cut styrene, as are the trailer roofs.

3D Parts Design and Printing Process

The design process I use for 3D printing is a normal engineering practice. Measurements were taken off an existing smaller scale model. Sketches were drawn of each part with measurements added after being converted to O Scale. Decimal values were used since the program uses that. Photos were used as reference also.

The part is drawn in the 3D program using the tools within it to the actual size it will be printed at. This process involves the use of several tools and techniques along with precision measurements. In the program lighting and a camera are added. This enables the best view of the part for making a rendering of it. The camera is focused on your part. I am able to turn and rotate the view to look at the part from all angles to see all the detail. The part is rendered with the software and you get a very detailed view of what the part looks like. See the following photos of concept and finished 3D printed parts.

The Flexi-Van spine car concept was totally designed in 3D. The turntable needed to fit properly onto the platform and be able to rotate. The steps needed to fasten to the platform also. Thus parts were made and an assembly 3D file made with all the parts put in place. All of the printed parts for this car were done in SLA resin.

When I am designing a part for a customer, multiple views of the part are rendered and sent. This helps in the review process to validate the design of the part to see if all details have been modeled correctly. Several parts were designed for a Santa Fe steam locomotive. These were 3D printed in wax, then cast as brass parts.

There are complete trolley car body models that have been 3D printed in semi-opaque white plastic. The result is a good model ready for assembly and paint.

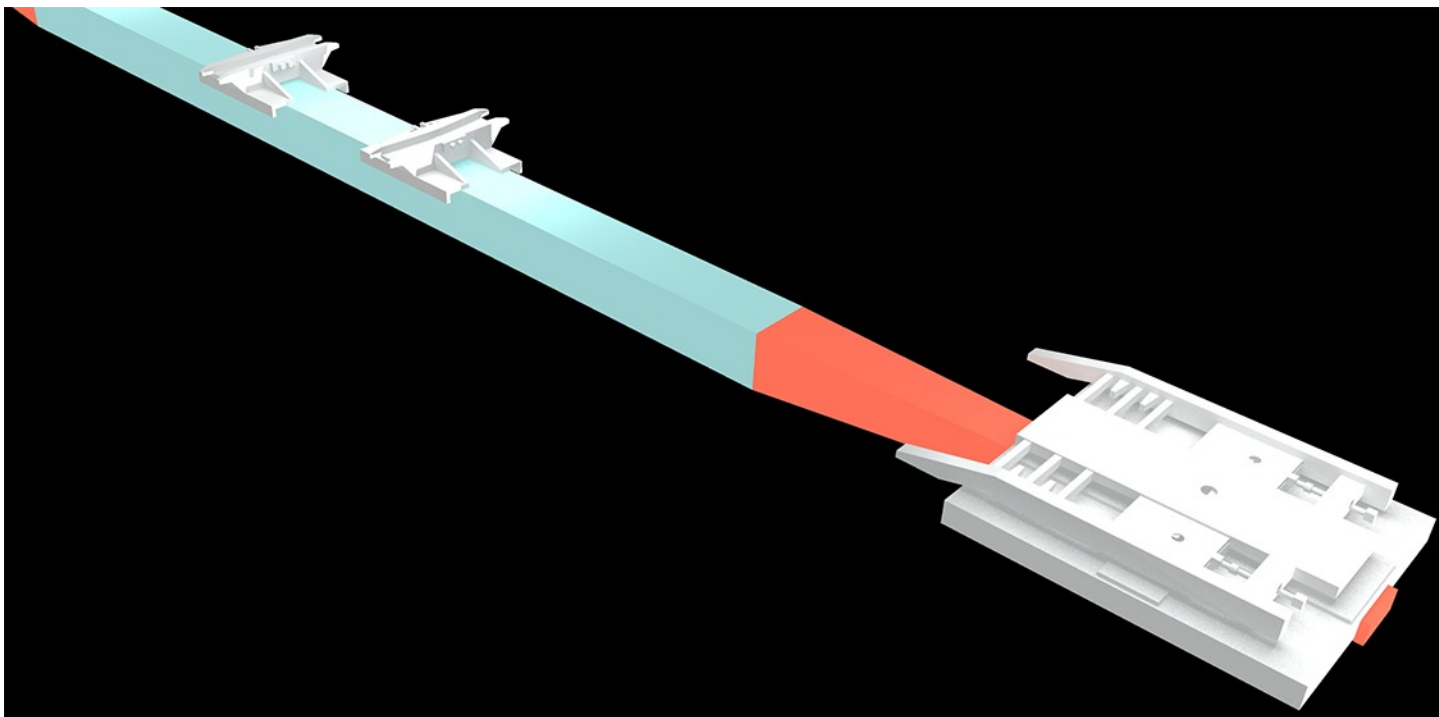
3D Printing Costs

The cost of a part depends on several things. The design process is one cost, the other is printing the part. The more complex a part is means it takes more time to draw. Thus it would cost more to develop the 3D model.

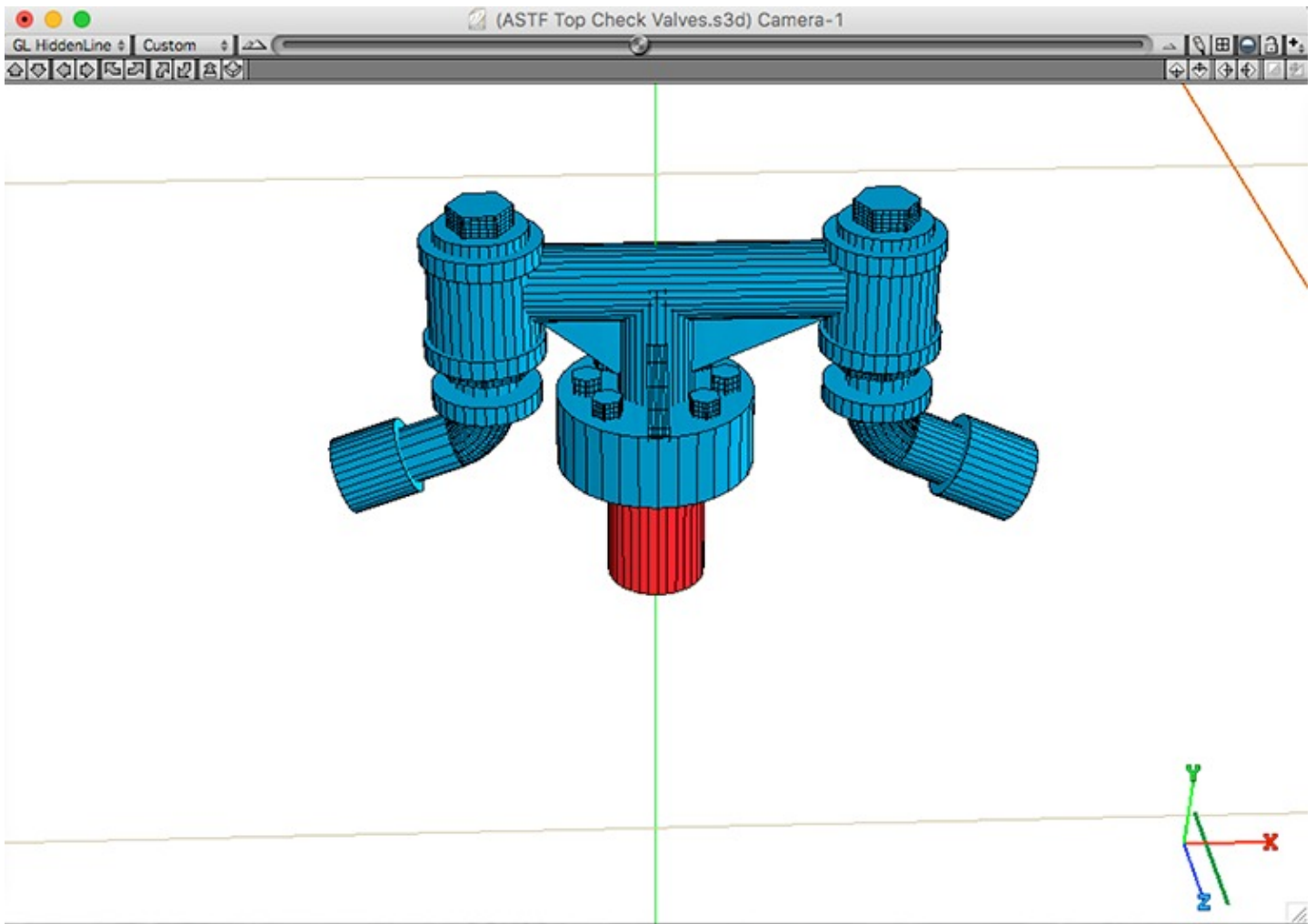
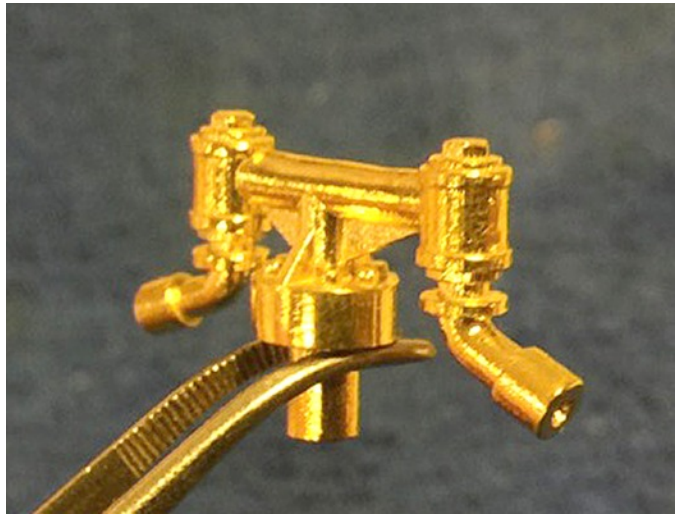
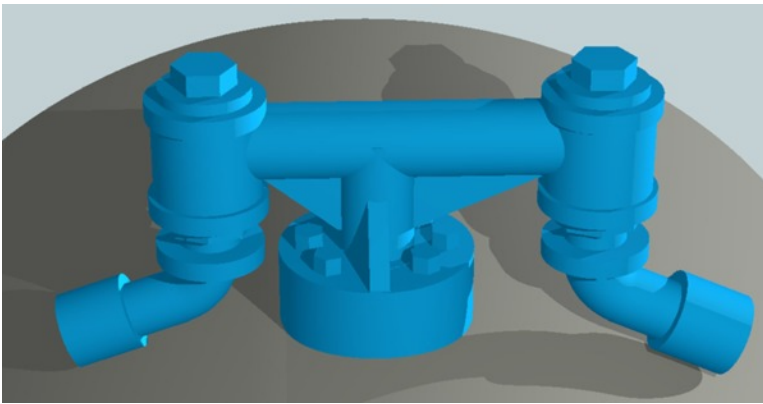
The 3D print costs depend on what material the part is printed with. Plastics are the least expensive, but have a rougher texture. Resins are more expensive but have a smooth finish. Aluminum and bronze are more expensive than plastics and resin. Lost wax brass/bronze/silver are more expensive, but give rugged detailed parts.

If you are ordering more than one part, some vendors have price breaks at 5 or 10 of an item. That pricing can cut the cost of a single part by 50 percent.

Please feel free to ask questions. Contact me at briggsar@gmail.com



Flexi-Van Spine Car



Check Valve

BACKSHOP SOLUTIONS

By Ross Dando

Have a modeling question for our experts? Please send your description of your modeling problem to backshopsolutions@oscaleresource.com.

Our first “Backshop Solutions” question comes from Charles Goodrich: “I have a question on how you added grease to the wheels of RI 82003 gondola in the recent [O Scale Resource Magazine](#). The detail looks great and typical of the transition era wheels.”

Well here it goes. (This article will cover the wheel sets only.) I hope I can explain my results in an order you can follow and obtain similar results. First thing to remember, if it doesn’t look right, give it a day and look it over again. This process is done in layers, and as they dry, they change gloss and color hue. Now to start, I have a disclaimer, I am shade color blind so I tend to add a lot of variation so I can see the color differences. If it looks over done to you, it’s okay, it’s my model and I like how it looks. With that out of the way, let’s model.



My work area.

The materials I use are made by AMMO by MIG ► <https://www.migjimenez.com/en/>

- Rust & Smoke Pigment Set
- Pigment Fixer
- Streaking Grime for DAK
- Fresh Engine Oil



Mask wheel



Painted wheel



Step 1: Grime

The first thing to do is clean your wheel sets and paint them with a dark brown or rust color. To protect the point of the axle where it rotates in the journal, I use a piece of tubing or insulation stripped off a larger gauge wire and press it on. For the wheel tread, I use rubber washers from the hardware store that fit on the wheel tread so they don't get painted during the color process. The washers are the ones used to seal your garden hose on the spigot. If you want to give the hardware store guys a hard time, ask them what aisle "wheel washers" are in. After they give you that crazy look, produce a wheel set and let the questions flow. Yeah, I get bored some weekends.

With the wheel set painted, they need a quick shot of satin to dull down the gloss so the pigments stick. It is important to do this step or the pigments will not stick. Trust me, I tried to cut this corner. I think Jim Kellow and Dan Dawdy cooked up this plan to have me tell you all the corners I have cut and the lessons I have learned the hard way.... in any case, apply satin. Remove the washers, but leave the axle tip covers on.



Step 2: Pigment one



Step 3: Pigment Fixer

I prepare my mixed pigments used to dust the wheels before I start. A note here, keep the stuff that drops. it tends to mix and become more seasoned. I mix all of the pigment colors to achieve a dark brown mix.

The first weathering step is the wheel face. I use a wash of Streaking Grime which is a grey to tone down the color of just the face of the wheel. I use a long bristle brush and wet down the wheel face. While the wash is still wet/damp, the pigment is applied with a short bristle brush and dabbed onto the wet wheel face. The wheel set is tapped lightly to remove loose pigment from the wheel faces. I add my first round of pigment and allow to dry.

Okay, this is where things get long and crazy. You may say that it's too much work and you don't think it is worth it. You may be right, but it is the process I have developed to get the results in the pictures. Have fun, when you think you are done, be happy!

After the first round dries, the real fun begins. You use the pigment brush to apply your pigment mix or the straight black pigment and tap off the wheel set. I do this several times to get the texture I want. I then hold the wheel set and use a third brush which is a short bristle to apply pigment fixer. Here it is tempting to wipe, but this is a step where you use time and patience. I dip the brush and allow a drop to hang. I go to the center of the wheel and allow the drop to touch the wheel. The pigment fixer will spread by capillary action. Don't rush, let the fixer run and spread. It looks wet, and you may need to add a bit more to get the whole face wet. I let this dry and repeat the process several times until I am happy with the look. You can vary the pigment color or mix used allowing the whole mess dry before going to the next application.

Once you are happy with the wheel face pigments, the next step is to add the wet grease or oil look. I use the Fresh Engine Oil to add small amounts to the area around the axle. You can add a little or a lot.

The final step is the backs of the wheels and the axle. The satin you applied may have been worn off a bit since you were handling the wheel set. I apply another coat to seal the wheel set.



Step 4: Tap off excess

Once things are dry, you can use your pigment brush and apply straight rust to the backs of the wheels and the axles. This should be a heavy coat. Do not touch the applied pigments. Go back to your spray booth, and using light pressure, apply a light coat of satin again.

These basic steps produce the effect you see in the pictures. I do this with the trucks disassembled, and while apart, I weather the truck side frames in a similar manner. The next trick is to reassemble the side frames and wheel sets without destroying the effects you have achieved. Amazingly, if you apply satin coats throughout the process, the finish is rather robust and can withstand the handling.

If you have further questions on this process please feel free to ask.

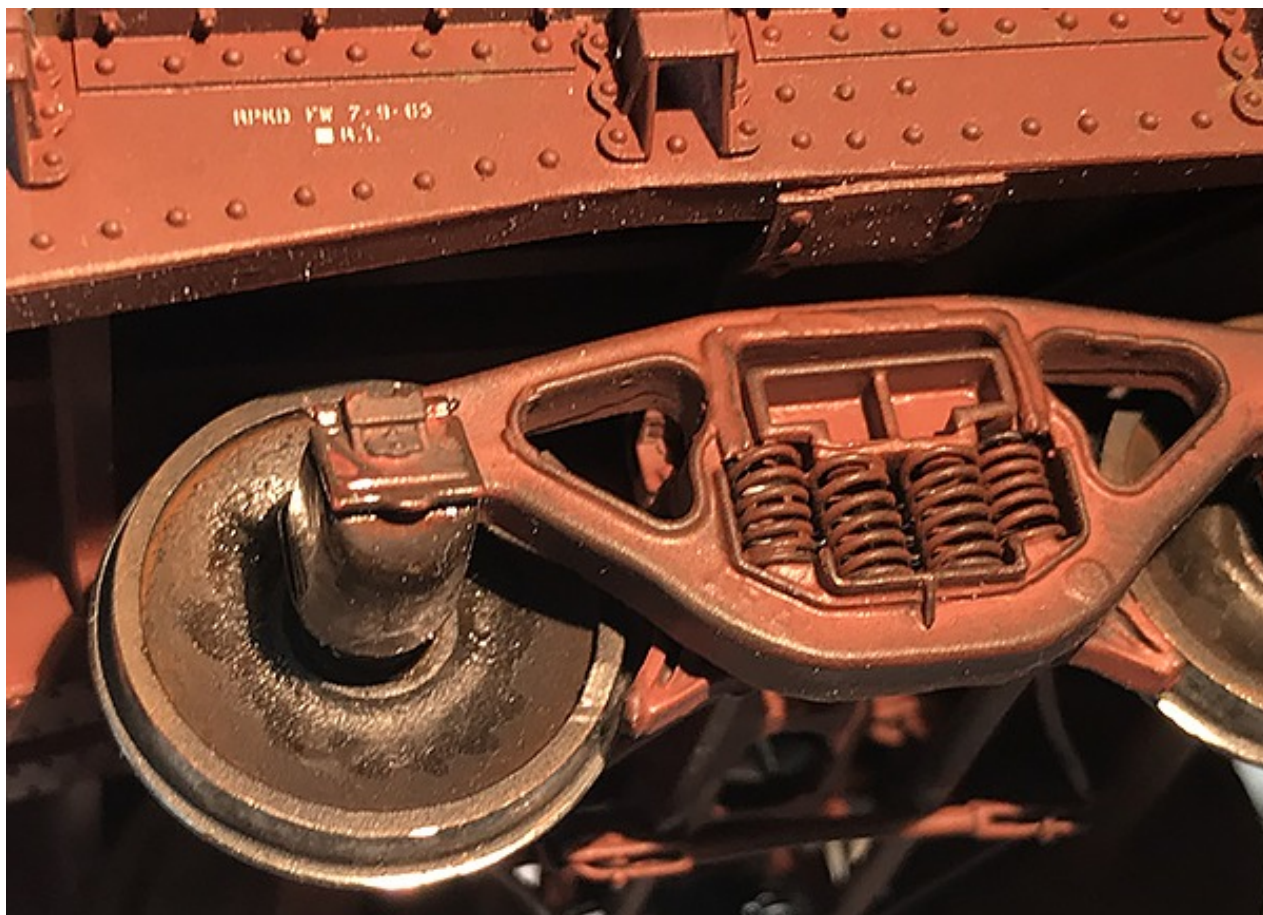
Happy modeling!



Step 5: Next pigment and fixer



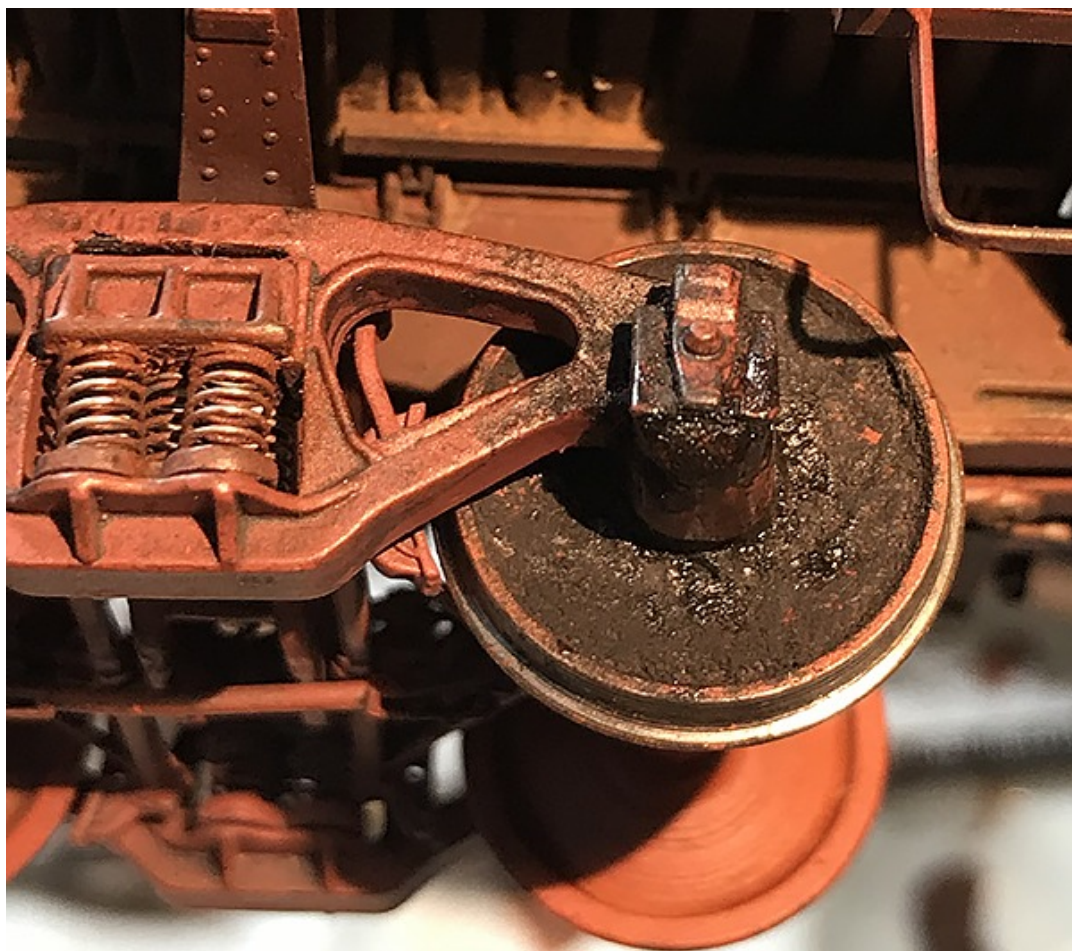
Step 6: Dark pigment



*Step 7:
Wet
fuel*



*Step 8:
More*



Step 9: More heavy



Step 10: Heavy



Step 11: Wet fuel



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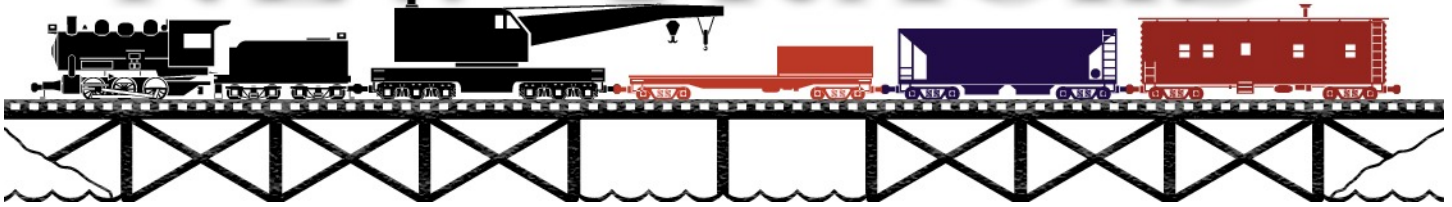
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NEW TRACKS



Mentor Definition: A Trusted Counselor or Guide

By Contrubiting Editor Jim Kellow MMR

My “Crazy Models”, Plus 3D Printing, and Manufacturers of Card Models and Knowledgeable Model Card Builders Who Can Be Your Mentor

New Inspirations for my model building, or as I call it “Crazy Modeling” can come from anywhere!

Some people may look at some of my scratch built models and say: “Is he off his meds?” or “Does he have too much time on his hands?” or “Is that all he has to do?”. I just call it my “Crazy Modeling. But it is also inspirational for me and I love the challenge of building something different. What would you call it?

Crazy project #1: Horse Drawn Railway Carriage

A British Modeler, Mr. Tony Cooke, posted a model of a horse drawn carriage on a Facebook page called Tramway Modeling. He was building it in 1/24 scale out of styrene. I decided to build a brass one in O Scale. Thank you Tony for your information and help. Tony said his model was based on a 1858 photo of a Railway carriage on the Oystermouth Tramroad, and gave some basic estimated dimensions of the prototype.

I googled Oystermouth Tramroad Horse Drawn Railway carriages and here is what I found.

“A Brief History Of The Railway” Here is an outline of the key moments in the history of The Swansea & Mumbles Railway.

Origins

During the Industrial Revolution, Swansea developed into an important centre and a seaport town. The Swansea & Mumbles Railway was formed so that lime produced from the Gower kilns and coal from the Clyne Valley could be transported to the wharfs at Swansea.

Early Days

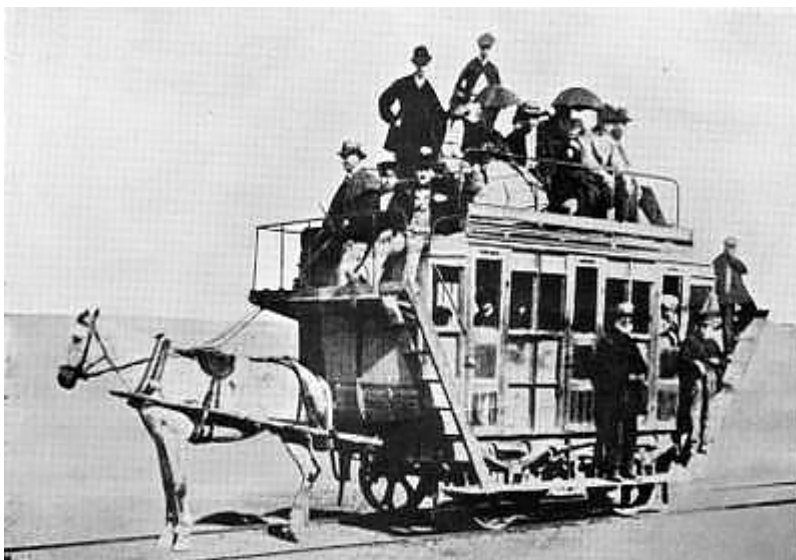
There was a growth of industry along the river Tawe during the 18th century and Swansea became famous for its Copper Industry. The Swansea & Mumbles Railway (or the Oystermouth Railroad as it was then known) was originally constructed as a mineral line and not as a passenger service.

Becoming the World’s First Passenger Service

In the year 1807, the Swansea & Mumbles Railway began to carry passengers. It was the first railway in the world to do so. The first passenger carriages were made from the mineral wagons used on the tramroad. The man responsible for this was Benjamin French, an initial shareholder in the railway.

Horse Power

Horse drawn trains remained on the Swansea & Mumbles Railway until 1896 (albeit intermittently with steam powered locomotives). The change from horse-drawn to steam trains did cause anxiety. It was thought that the idea of a noisy, speeding steam locomotive through the streets would frighten people and horses.



Full Steam Ahead

Steam trials took place on the Swansea & Mumbles Railway between 1878 and 1885 and also between 1892 and 1896. Three of the Swansea & Mumbles Railway steam trains were given names. They were called 'Crumlyn', 'Swansea' and 'Hampshire'.

Glory Years

In 1893, The Swansea & Mumbles Railway was extended to Southend. Previously the terminus was at Oystermouth. The extension to the Mumbles was completed in 1898. This made the Swansea & Mumbles Railway very popular with day trippers and tourists who visited the Mumbles Pier.

Electrification

The 1920's was the last decade when the Mumbles Train was hauled by steam locomotives. Steam locomotives ran on the railway until March 1st, 1929. Electric trains took over the following day.

The End of the Mumbles Tram

During the War

The Second World War (1939-1945) affected Swansea very badly. Heavy bombing raids known as 'The Blitz' caused chaos and severe damage to many buildings in the centre and suburbs. The Swansea & Mumbles Railway became an important form of transport during the war years. The electric powered trains were unaffected by petrol rationing.

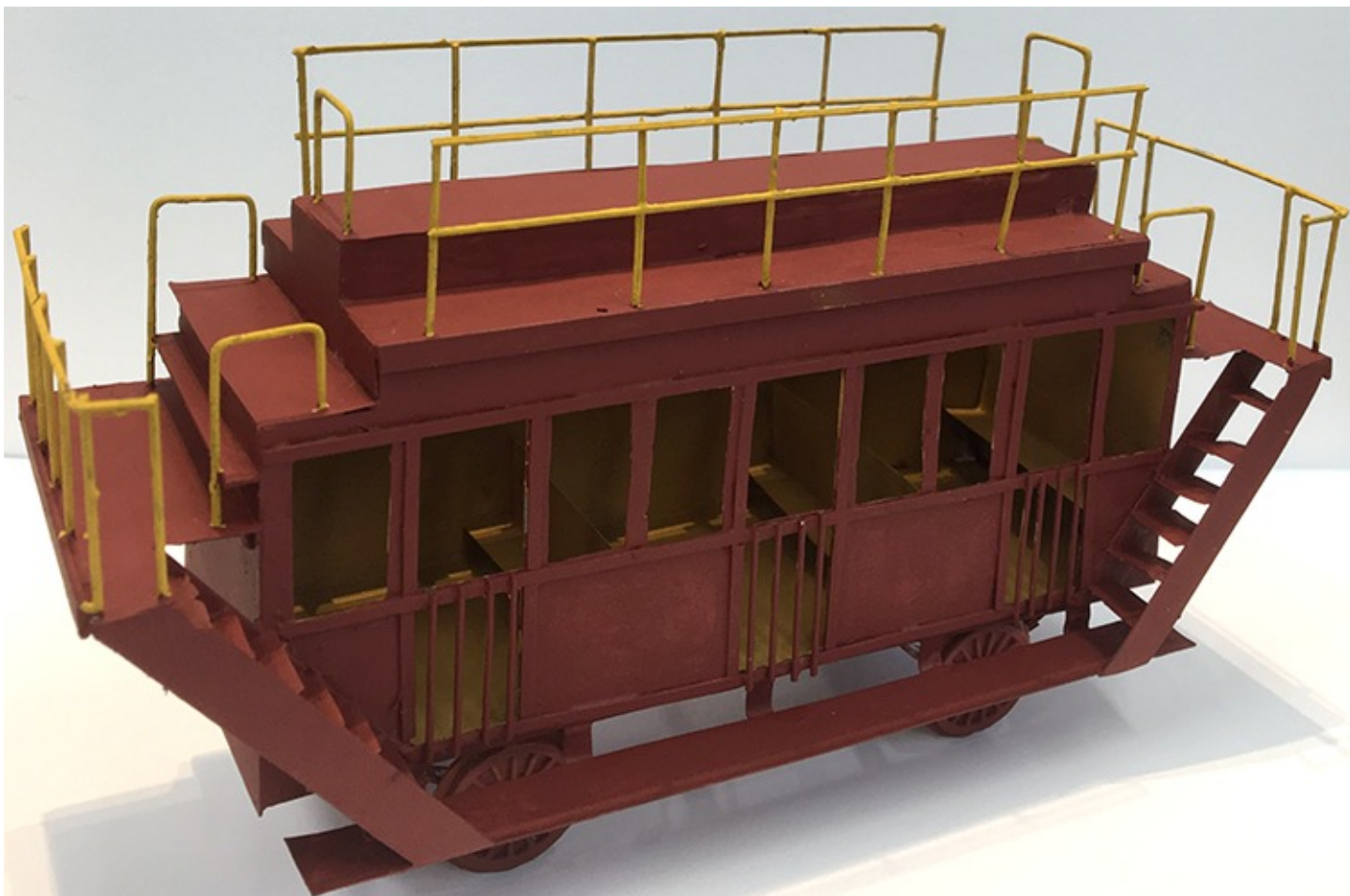
Goodbye to the Mumbles Railway

In October 1958, 90% of the shares of the Mumbles Railway Ltd. passed into the hands of the South Wales Transport Company (SWTC). The Swansea and Mumbles Railway finally closed on the 5th January 1960. The last train entered the Rutland Street terminus at 12:20 am."



Here is my model under construction. The roof is removable so I can detail the interior.

There are still some details to add, clean up to be done, some more filing here and there, and adding the wheels, paint, and some figures. I have had a lot of fun and challenges building this model, but that is what model building is all about. Thanks again Tony for the inspiration.



Crazy Project #2: 1930s Packard 740 Fleetwood Motor Car

I was writing one of my “New Tracks” articles on card modeling and found a company called “**Tin Soldier**”. I was impressed with their card models and am profiling the company later in this article. One of the card models I built in S Scale was their Ghost Car. I loved the look of the car and decided to not only build the Ghost car but to use the Tin Soldier Card design to build another type of 1930 Packard out of brass. I googled to find photos and based my model on a 1930 Packard 740

Fleetwood. I used the Tin Soldier Card model design and a prototype photo to start.

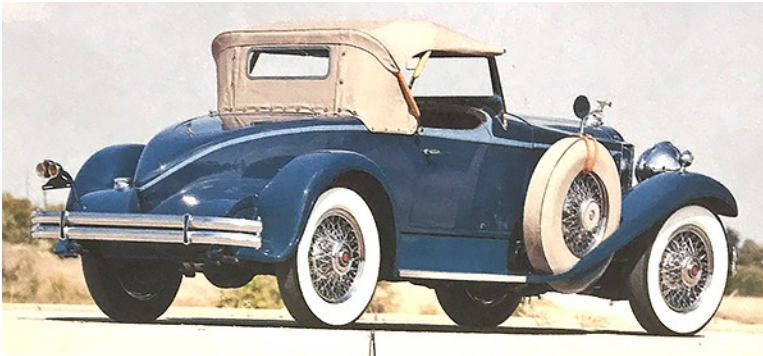
At left is a prototype photo of 1930 Packard 740 Fleetwood I used.



Here are several photos of my finished S Scale brass model. Wheels are made of Card and headlights made from basswood.



Note the “Louis Vuitton” seats and luggage covering. OK, maybe too much, but my wife says it is cute. I like it and doubt anyone has a model like this on their model railroad, so it gets classed as one of my Crazy Models. This is the second card model design I have used as the basis for making a brass model. This is another reason I love to see new card model designs. By the way, I am planning on doing another car in O Scale in brass, maybe a two door coupe!! Thank you Tin Soldier for the inspiration and design of a great model.



Above are photos of the 1930 Convertible prototype and my O scale brass model under construction. Next up is either a Rolls Royce or Bugatti.

At left is the finished brass O Scale model. The wheels made of Card and headlights made out of basswood. Driver is out for lunch.

I have not even mentioned my scratch built English Tram, or my horse drawn beer wagon, or stagecoach, or old West doctor's buggy, etc. All were great fun and experiences to build and certainly classified as Crazy Models. I consider having the time to build them one of my retirement benefits.

Anyone else out there building Crazy Models? Let me know and send a photo to JimKellow@oscaleresource.com. I will probably want to build one.

3D Printing! Have you tried it? What is it's future for your model building?

If 3D printing is going to play a significant role in our future model building, then we all need to become knowledgeable about the technology and become familiar with how it can be incorporated into our modeling. This is what got me interested in the subject of 3D printing. This is what I found.

How good 3D Printing is I think depends on who you talk to. I have heard both great comments, and less than satisfactory comments, about finished 3D parts. I had no personal experience with 3D printing as I started this project, and I still have very little.

But I know that it worked on a test project for me. There are discussions and clinics on 3D printing at various model railroad events. I also see many users of 3D printing on the model railroad and other types of modeling Facebook pages. Everyone has to be very impressed with the creativity and authenticity of some of these models. Items are being produced by 3D printing that might never have been made without this technology, primarily because of cost or difficulty in making them by other methods.

Obviously, there are many modelers who are very knowledgeable and experienced in 3D computer design and are available to do the computer design work for other modelers. Lastly, I found modelers who own their own 3D printing machines and others who contract the actual printing out to other firms depending on the part needed and the material used to print the part.

Based on what I have learned, I believe that if a modeler needs a specific part, there are people who have computer design backgrounds. They do design work for other modelers, and are able to design that modeler's part. Later in this article, I will profile one such person I have met, and who I believe you should meet.

I believe that as younger modelers with computer graphics and design skills enter the hobby of model railroading, 3D printing use will increase. I also think that as more modelers use 3D printed parts in their modeling, the use of 3D printing will increase.

As far as us older modelers who do not have computer design skills, all I can say is I tried and gave up. I just had too steep a learning curve to acquire all the needed computer skills. So I will use 3D printed parts that are designed for me by others and not try to design my own.

Also, while I know that some modelers have purchased their own 3D Printers, for my current needs for 3D parts (which is not that much), the cost for the equipment is just too much for me to spend. I can get a lot of parts printed for the \$1000.00 plus equipment cost. Not to mention the time it would take me to learn how to use the equipment.

3D printing is here now and I believe is going to become a greater influence in our model building. Take a look and see if it can help you. Please meet a 3D designer who may be able to help you find out.

Russ Briggs

History

Like many modelers, I was exposed to trains when I was in elementary school. My best friend's father had a Lionel layout in his basement, complete with heavy duty ZW transformer, and steam engines that smoked and whistled. He also had the aluminum passenger cars with the silhouette people in the windows. This is where I got my interest.

Also about that time my uncle said "If you can find my trains in the attic at your grandparents' house, you can have them". Well, much later I spotted a section of track under some suitcases as we were clearing out the attic. The trains were found and came home with me.

That pretty much decided my path into O Scale high rail. Having been a automobile kit builder in school, I learned how to work with plastic, paint, glue and decals. I built several O scale boxcars and put Lionel wheel sets under them. Never did I get to build a high-rail layout, instead used the Lionel trains under the Christmas tree. For about 3 years I was in HO and had a basic layout.

I came back to O Scale, but 2 rail this time, about 1980. Someone said to me "O Scale is nice and big, you can use a hammer on it". With that stuck in my head, a friend of mine, Jim, and I traded all our HO equipment at a hobby shop, who in turn gave each one of us a credit to purchase some O Scale. We both started layouts, his in his attic, mine in the basement.

Mentors

Several of my friends have been the best mentors anyone could ever ask for. Jim and I also had a good friend Tom who was in O Scale. He was a mechanic and engineer for Edaville Railroad and later Bay Colony. He helped build my first layout and showed me how he built track and used styrene to build and modify plastic cars.

About that same time, I met Steve Bartlett, who has been an O Scale modeler since the early 60's. He is a master builder of track and switches, who taught me how to properly build an entire switch from rail. This involved making points, spiking the rails in proper order, building frogs etc. He also is the one who has the most knowledge about electronics and model railroad wiring, and has advised me on several circuits used for lighting engines, reverse loops, powering a frog using a microswitch and more. Steve also was a locomotive engineer in my area. At his suggestion, I ended up taking the NORAC and safety exams; he and others trained me to be a brakeman, engineer trainee and finally qualified as an engineer. Full scale railroading has certainly helped in modeling in O Scale.

One of my other mentors was Rick, who I hired as a freelance artist to help out with artwork and graphics at work. He was an illustrator, and had learned 3D computer software on a Macintosh. With this software he taught me how to use the tools, how to render the 3D models etc. With that knowledge, I drew 3D scenes of mechanical equipment and rendered them for training manuals.

Graphic Arts and Drawing for O Scale Models

While I was haunting the hobby shop, the owner knew I was a graphic artist and asked me to help draw the artwork for photo milling 2 foot gauge engines in brass. His etcher instructed me over the phone how he needed the artwork done. This led to doing other projects using the brass photomilling for cabooses, passenger cars and locomotives.

Being a graphic artist and draftsman has its use in model railroading. Understanding scale and proper drawing techniques for me was the foundation for building models. I have used these skills to do artwork for custom decorated Weaver freight cars, and for my own models.

Custom Artwork for Decals Services

I am offering my services to draw custom decals for O Scale Modelers. All artwork is newly drawn to scale on a 8.5 x 11 sheet and digitally printed. Railroad Heralds, lettering, striping and signs are a few examples of what can be drawn. Multiple colors can be printed, often color over color.

The NYC Flexi-Van project required black on the spine car, the trailers required a yellow background with black lettering, and white with red lettering. There were no decals available in O scale, thus the artwork was done for the project. (See photo below)



3D Printed Parts for O Scale Models

Eventually 3D was moving beyond just visual renderings and animation. 3D printing became a proven technology that engineers and architects could use to visualize parts and structures. I bought my own title of the software to see if could build 3D parts for models and get them 3D printed. The software now could output a few formats that 3D printers require. The software could do all I needed and very accurately also.

Several parts were needed for the New York Central Flexi-Van spine car and 40 foot trailers project. 3D models were designed and drawn for the end platforms, turntables, 5th Wheel pin keeper, brake equipment brackets and other details. These were 3D printed in a hard resin. The detail is quite good and the parts durable.

Modeler's Disappointment with Quality of 3D Printed Parts

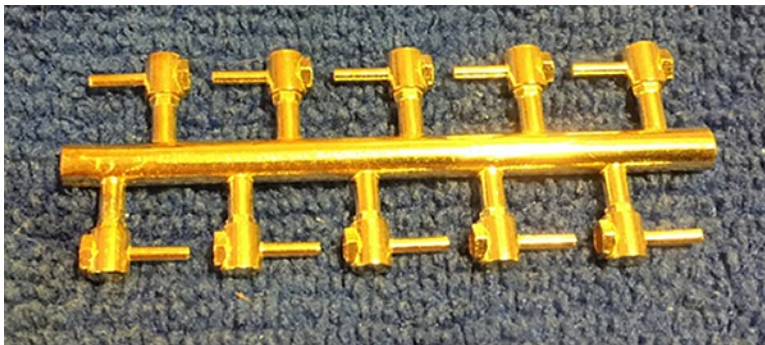
There are several budget 3D printers that fuse plastic from a spool on to a base, then building the part layer by layer. To be blunt, the quality and resolution is horrible for detailed to scale parts we hope for. These parts have a rough finish with raised line across the part.

The best non-metal 3D printed parts are high resolution plastic and resins. Shapeways, 3D Hubs, Sculpteo and others offer these better materials.

The 3D Printing Design and Printing Process

Once the 3D model of the part is drawn and rendered in the computer, the print file is exported. Then that print file is uploaded to the appropriate vendor depending if the part is to be a brass casting or 3D resin print. Depending on what material is wanted, I use a few different vendors. At that time, the vendor quotes the price for the parts.

Unique parts can be made for scenery, buildings, cars, and locomotives. Scenery like fire hydrants, grates, chimneys etc, would be best done with 3D printing using a hard resin. Car parts can be done either in brass or resin. Locomotive parts could be brass castings or resin.



How The Modeler Would Request 3D Printed Parts

I am offering my services to create the 3D design files and have the parts printed for just about any part a modeler would want.

The O or S scale modeler would contact me with the idea of what part is wanted and what material the part is to be printed with. The modeler would submit photos and/or plans, or a sketch with measurements.

The part that is desired is drawn in the 3D modeling software, and several renders of it showing different views are sent back to the modeler to review. Once the renders are approved, then the part is uploaded to the 3D Printer. At that time, the printer inspects the file and gives a price that varies if a resin part is wanted or a brass casting. Brass parts are 3D printed in a hard wax, then they go to a foundry and are cast with the lost wax process.

There are two costs for the modeler. One is the design time and the other is the 3D printing costs. The design time to create a part depends on the complexity of the part and how long it takes to build it in 3D.

Contest for a Free 3D Printed Part

In our conversations, I suggested to Russ that he offer a Contest Drawing to win a free 3D printed part and he agreed.

Modelers should submit an idea that they have for a 3D printed part to Russ at <http://modelrailroadresource.com/Contests/Briggs.shtml>

It can be any part for a car, locomotive, or scenic item whatever comes to mind. The limit on free printing cost for the part will be \$50. If the parts are small, several could be printed within that amount. For larger parts the \$50.00 can be used as a credit with the modeler paying any additional cost. Russ will not charge the winner for his design time. Must be submitted by August 15th, 2019.

The contestant's part request will be evaluated by Russ for usefulness, functionality, and current availability, and a winner with the best part idea that might benefit the most modelers will be selected and notified. Then the modeler would provide the sketch/photos/plans of the item to be designed and printed. Modelers whose parts are not selected will be notified and options discussed for them to get them the needed part.

I think this is a fantastic offer for all of us who have thought about using 3D parts, but have not yet tried the technology. I look forward to seeing the winner's part and finding out about his/her 3D printing experience. Thanks Russ for offering to do this and for helping me get a better understanding of 3D printing. Please show your appreciation to Russ by entering his contest drawing. You may also contact Russ at briggsar@gmail.com.

Well that's it for the time being with my 3D printing education. I want to learn more and encourage others to contact me with their 3D experiences and capabilities at JimKellow@oscaleresource.com. I wish everyone good luck going down these "New Tracks".

Now I want to turn to another focus for this article which is card modeling. Enjoy, I hope you learn some valuable tips.

Card Modeling

This is my third and final, at least for the time being, card article. I have learned a lot while working on these articles, met some great people, and gained a definite interest in how card modeling can save me money and provide some interesting and motivational new model building opportunities for my model railroad. I plan to stay in touch with the manufacturers and card designers I have profiled and watch for new designers who come onto the market. Two of my main sources of this information will continue to be various Facebook pages on card modeling, and more importantly, referrals from you, my readers. I find a lot of people, designers, and manufacturers from your referrals. The two Facebook Pages I am currently following are: [Model Rail Buildings - Mostly Card & Paper](#) and Papermodelers.com.

I hope you have enjoyed these card articles and learned a little about card modeling from some really talented mentors, designers, and manufacturers, who can help you improve your skills.

I would greatly appreciate seeing some of your card models and will certainly share your work in a future "New Tracks" article. Just send me a photo with a caption to JimKellow@oscaleresource.com.

Now please meet some manufacturers, who I suggest you check out, and some very talented card modeler, who could become your mentor.

Manufacturers

Kraft Trains

I was going through my emails the other day and found one that suggested I go to the Kraft Trains website and check out the O Scale containers they offer modelers free to download and print on Card. Naturally, I checked out the site.

What I found was much more than a website to download card container models, but more of a place for modelers to get free information on a wide variety of model railroad subjects. I decided to contact the Canadian owner of the site, Charles Kraft. Here is what I found out. Welcome to KraftTrains.com

As their web site states:

"At KraftTrains.com our goal is to provide free information to all model railroaders about model trains and the hobby. Learn how to build your own model railway and enjoy your model railroad for many years to come. Build your own building and structures from scratch with printable PDF templates files for your model train set. Make your own model trees for your model train set layout. Make lakes & rivers for a well detailed model railroad. Making hills & Mountains for a great landscape. Laying out grass & bushes for a vibrant look. Building model train set layout tables designs for a sturdy & well built table designs and more."

Charles Kraft told me: "Here is a link to all the paper models of all scales:

www.krafttrains.com/design_your_own_buildings%20.htm All you have to do is like the picture of the model you're interested in and select the download PDF button in the page to download the PDF file"

Here is the link for the O scale containers

[www.krafttrains.com/Paper_Struchers_for_Trains/O/Containers-\(O\)/O_Containers.htm](http://www.krafttrains.com/Paper_Struchers_for_Trains/O/Containers-(O)/O_Containers.htm)

Charles Kraft also told me the reason he started the site was: “When I was a kid, I remember buying paper castle modeling kits and building them with my father. As I got older and began working on my own projects, I became frustrated at the lack of cost-effective models that were available in stores so I began researching more inexpensive methods online and came across paper templates. Recalling all the great memories I had made with my dad when I was young, I thought this would be the perfect route. Starting the Kraft Trains website was a tool that allowed me to keep all my favorite models in one spot as well as share them with others who may be looking to broaden their model railroading experience without breaking the bank.

As for the future of Kraft Trains, I am in the process of adding new O Scale, N Scale and HO Scale models and furthering the topics I share. A select few of the models I put out may be adjusted (by altering your print size percentage before printing) to fit other scale sizes, however, I do not plan to specifically introduce any S Scale models due to my lack of knowledge on that particular subject. Additional features I plan to implement in the distant future are an online store as well as making available some free 3D printing file downloads for O, N, and HO Scale. I am looking forward to hearing all of your valuable feedback so I can further expand and improve my website.”

After talking with Charles, I decided to build some of the containers. It was a very nice easy build. I put a bottom on my models to give them more strength. There is no question that this site can easily and very cheaply provide all the containers any of us may need on our modern model railroads. It is a really great resource. Also check out the O Scale vending machines. I have not seen anything like these before.

Special “New Tracks” Container

Then I asked Charles if he could make a “New Tracks” container as a special offer for my readers. He immediately agreed and this is the special signage that will appear on the “New Tracks” container.



These containers will be available to readers who email to this address and ask for one to download. [Click here to request the New Tracks container](#) Thanks Charles for making these special containers available. I hope my readers enjoy getting them.

I really appreciate modelers telling me about web sites like Kraft Trains which are really providing modeling tips and mentoring tools for novice or even in some cases more experienced modelers to use to improve their modeling techniques and gain confidence in their modeling skills. Thanks Charles for making your website available. I am glad I found you and I think others will be too.

You can contact Charles at krafttrains@rogers.com.

Other Card Designers and Manufacturers You Should Take a Look at For Modeling Opportunities

Kingsway Models

This site is another referral from a modeler. The owner, John Howe, told me: “The only items specifically for 1/43 O scale are the ones on this page of the website kingswaymodels.com/page21.htm”

John also told me: “With the free downloadable kits which are 1/76 scale if printed to 118% then they would be suitable for 1/64; or printed at 177% would be suitable for 1/43. *By the way they can also be scaled to 1/48 by printing 158.33% I am told.*

In both cases, the prints would go beyond the page probably resulting in four sheets being (partially) used for each full A4 sheet. These could then be glued to a backing card (lining up the joins) and be assembled, although it is likely that the difference in the proportionate thickness of the material, would require some adjustments.”

Please note John’s specific comments about scaling his models. Jim thanks for your email. “All the kits are designed for printing to an A4 format, using the area of each sheet as efficiently as possible. Rescaling a 1/76 (the scale most of my kits are designed in) to 1/64 increases the print area by approximately 20%. Essentially then the kit would require a complete redesign distributing the (larger by 20%) parts on the sheet(s), and increasing the number of sheets required. For some large parts it may mean that the part has to be subdivided (and suitable joining pieces added).

You can see the effect of such a rescaling by printing some of the free downloadable kits at 119% yourself (The exact figure is actually 118.75%) You will inevitably find that some of the printed area runs outside the page and is printed on a separate sheet. For the downloadable kits, it would be possible for you to glue the parts together on a card backing and work from there.

I suspect that you may be from America(?) where I understand that the commonly used page size is different (do you call it 'letter size' or similar). This will add a further complication...

A further problem in rescaling kits is caused by the thickness of the card used when building. Mine are designed for use with a 1.4mm thick mounting board. Rescaling a print will change this dimension and affect the accuracy of the fit when assembling.

Note that I have some kits at 1/43 scale (see page <http://www.kingswaymodels.com/page21.htm>), which is the British 'O Scale'. This equates to 7mm per foot. The 1/4" scale you mention equates to approx 6mm per foot.

Note that apart from the free downloadable kits, I do not sell downloads, just hard copy card kits.” John Howe.

Take a look at his web site at <http://www.kingswaymodels.com/> and don’t hesitate to ask John questions at info@smartdesign-u-need.com . He was most responsive and helpful to me.

Aw: Website Schreiber-Bogen Aue-Verlag

I found this site through another modelers referral. I emailed asking about their card models and this was the reply from Aue-Verlag@web.de:

Dear Sir, this is only legal if you buy one kit, then you can rescale it once, then you have to throw away the original kit. It must be for sure that per one kit bought only one kit is rescaled and assembled.
Regards, Thomas Gauger”

For more information visit their web site <http://www.aue-verlag.de/> or Email info@auc-verlag.de Take a look at their web site to see the models they provide. You may find some you need for your modeling. Thomas was very responsive to me and I appreciate being told by several modelers to contact him about his card models.

Train Help

Again I had a modeler suggest I contact this company. I sent them a email and received this information.

O scale backdrop plans are available from this site <http://www.oscalebuildings.com/>

Corflute is an excellent material to use for constructing the O scale buildings. It is very strong and inexpensive. Most DIY stores sell big sheets. Other stores like art supply shops and discount stores also stock it. Corflute is the material used on many real estate signs. It is similar to foam board. Extra card or corflute can be glued behind or inside the structure to add extra strength. This is optional and usually not necessary.

Also an extra copy of the plans can be printed out. That way doors and windows can be cut out and a second copy glued behind the original to give a more 3D effect. Also, parts of doors and windows can be cut out so that they appear to be partly open. Again this is optional and can add to the 3D effect. There are so many possibilities. The plans are photo-realistic and don't require weathering unless railroaders want to touch up edges with a paint brush, or spray the models with a matt varnish for extra protection. Again optional. I hope this helps. Regards. Picture”

I looked at the plans and believe they will be helpful to me in my future modeling. Take a look. Also Adele was most responsive and helpful when I contacted him, so if you have questions please contact him at Adele@oscaleresource.com. By the way, Picture told me he is willing to expand the O Scale offerings if the O Scale demand justified the expansion.

Freestone Model Accessories

Again a referral from another modeler. Their reply to my email about S and O Scale models is shown below:

“Thank you for your enquiry. In principal any of our own brands of card kits - Prototype Models, Howard Scenics, Bilteezi, Mainstreet - are suitable for reproduction in other scales. However, we do not maintain digital images of most of them (this is gradually changing as we undertake re-design and re-print operations) and therefore it would be a matter of using available kits and photocopying to the desired size.

There would not be a problem in most cases for producing 'S' Scale versions, and as there are no commercial card kit products available for that scale, this would not infringe any of our copyrights - as long as it was not being done on a commercial / resale basis (i.e. normally each person wanting such a kit would purchase a 'OO' version and produced copies, at their own expense, and for their own use only) Similarly there would not be an issue with enlargements to 'O' scale, except for our Prototype range, where we do have some 'O' kits, and others are (hopefully, if I don't die first!!!) expected based on existing designs. Because these are not actually available now, I do not have a problem with customers producing their own scaled-up versions from 'OO' kits they have purchased in the same way as above.

The greatest difficulty in producing enlarged versions would be associated with the Bilteezi range: The sheet size of the 'OO' range is already larger than most commercial photocopiers can handle (sheets are approx 12" x 20" so bigger than A3), and of course, enlargements would be correspondingly even bigger, but that can be overcome by cutting up the original sheets into manageable pieces - more of a fiddle, but arguably well worth the effort!

I hope this is of some use to you, and I wish you well with your articles Regards Jerry Freestone”

Take a look at their website at <http://www.freestonemodel.co.uk/>. Jerry was most responsive and helpful to me. I suggest you consult him if you are interested in enlarging his models to either S or O Scale.

Smart Design U Need



Brian Taylor, the owner of Smart Design was most helpful. In response to my email he replied:

“Here is some information on me and Smart Models. I hope this is ok for you. If you need anything else let me know.

I was a freelance graphic designer and I hadn't been near a model railway for thirty odd years until my young nephew got interested in them. So after about a year of taking him to exhibitions I rekindled my own interest and joined a railway club. I started helping with some of the club's work making buildings, since one of the things I did as graphic designer was 3D digital architectural models. And I thought it wasn't a great step from 3D models to flattening, printing and putting them on card to turn them into actual physical models. So, I started doing some of these for the layouts and people liked them. I started marketing them and it snowballed, taking over all the work I used to do as a freelance graphic designer and turning into what I now do full time.

When I got back into the hobby, I looked at what was available and I thought it was all either very nice and very expensive or very cheap and not so nice. So, I figured there was room for a cheap but good looking alternative. I try to produce something that's really good quality, that stands up as a representation of a real building, but that is also very cost effective, because the model railway is a very expensive hobby and people need to save their money where they can these days. The models are designed to be printed on regular domestic inkjet printers and then you just stick that paper on to the various thickness of cardboard that are required. They all come with a very detailed set of instructions and you just need to follow them step by step to assemble the kit. And the beauty of this is that you buy the kit once and you can print it out as many times as you want, whether you want lots of the same kit or if you made a mistake and need to print it out again. I also put lots of options into the kit, so you can build it in lots of different ways. The kits are all designed in OO scale (1/76) at high resolution and because they are digital they can then be scaled to any size I want.

I also try to encourage the younger modelers, because there's a thought that modeling is an old man's hobby, due to the quantity of retired and older folks that are trying to do it, but if you don't encourage the younger into the hobby then eventually the hobby is going to disappear.

In conclusion I'd like to say that Smart Models aim is provide exhibition quality model buildings that that can be built by people with little or no modeling experience at a price that will fit any pocket. Brian Taylor “

I encourage you to visit this website at <http://www.smartmodels.co.uk/> and contact Brian at Brian.Taylor@oscaleresource.com. I built their free model of a signal tower in 1/43 and enjoyed building it very much. Guess what name I put on it? Thanks Brian for your help and a great model. By the way I still have to detail the interior. Just found some photos I plan to use as a guide for this detailing.



Individuals who may be Your Mentors

In my first card article I profiled David Rarig and his exceptional card models. I have since found out that one of David's friends, Paul Egri, is a card designer and exceptional computer image manipulator, or Kitbasher as he calls himself, that provides David with many of the card model designs he builds. What luck to find such a gifted card designer/kitbasher who is willing to mentor all of us on how to go from a photo to a complete card model design, or take another designer's model and either change it for your own personal model or use it with other images to make a completely different card model suitable for a specific place on your model railroad.



Please meet: Paul Egri

First let me introduce myself. My name is Paul Egri I live in Pittsburgh, PA. I have been a model railroader from the age of 5, first with American Flyer and then at age 12 to HO because AF turnouts were too expensive. I remember when models of HO were affordable. I could afford turnouts and have a yard to store my equipment.

I had my own layout for years that was patterned after the Buffalo Creek and Gauley. A broken water pipe destroyed the layout. My family was growing with 6 children so I knew I couldn't rebuild. A fellow model railroader asked me to plan a railroad for him which included most of the features in my old layout, but

was much bigger. This union developed into a life long friendship from 1981 to 4 years ago when he passed away. This left me without a railroad to run on or even the tools to build one.

I needed to look for another way to stay involved with model railroading that would not require me to invest in a complete workshop so I would have the tools I used to use that my friend had. I discovered card modeling. This really fit into my background and interest in architecture and structures, and did not require a huge investment.

At the time, I was using Model Builder to make building flats for my friends layout. The old version of MB had a tendency to crash quite



often, some times having to be reloaded from the CD. This happened to me and when I tried to reload the program I found I had damaged the CD and could no longer use the program.

I had already also been using MS Paint for windows 7 to make signage and billboards so I knew how to do screen shots and use the cut and paste features. Therefore, I decided to try and use it for designing buildings. Here is one of my early attempts which was built from one of the free buildings on the [Illinois DNR Historic Preservation Division website](#).

You asked about creating a building from a photo. This entire building was created from one photo found on [textures.com](#).

I consider myself more of an advanced kitbasher than a scratch builder. Art Curren was one of my favorite authors and I did many kitbash projects using plastic buildings. That experience carries over to my paper models



This is a feature I call Kitbashing with paper models. It can be done with any graphics program that has a cut and paste feature. I use Paint for Windows 10. This is one of the most basic graphic programs available and is already installed on all windows computers. I started with a [Jensen Drug Store](#) from the Illinois DNR Historic Preservation Division website as it is a nice building, but too large for most model railroads. So I set out to kitbash them into smaller structures. Both of these buildings were done with the same drug store in the building titled Jensen remake.

I imported windows from Halls for more contrast. If you follow the cutting diagram you will see how I turned a 2 story building into a 3 story building. You can add as many floors as you like. Mulligans stays with the 2 story and is bashed much the same way. I fabricated the back wall from a ghost sign I found on the Internet. There was enough clean green brick in the sign, about 1 inch x 1/2 inch, that I could combine copies to complete a rear wall. Next, I rearranged the lettering where it looked best. If you know how to replace siding such as brick to wood, even more variations can be done from a few buildings, or an

entire layout of building can be made. I hope this urges more people to try kitbashing with card. I really believe you will enjoy your experience and have some beautiful unique structures, at a very cheap price, for your model railroad.

When I first met Paul, I knew immediately he had skills I did not have but wanted to get. So I asked him if he would consider becoming a mentor for readers if my “New Tracks” series of articles by helping them to create the special one of a kind structure they wanted for their model railroad. He jumped at the opportunity. I am therefore pleased to announce that his new Mentoring program.

Paul Egri Special, One of a Kind, Structure Design Mentoring

If you want to have a specific structure on your model railroad, all you need is a photo or a link to an Internet site where the structure can be found, and know the modeling scale for the final structure you want to build. If you have this information, Paul can help you produce the card structure you want for your model railroad. He will also be your mentor to help you through any problems or issues you encounter along the way. It doesn't get any better than this!

Paul wants to make sure everyone knows the type of photo he needs and his method for what he considers kitbashing the photo. He asked me to include the following information to clarify his offer of assistance.

“Again I consider myself more of a kitbasher than a scratch builder. A statement was made about making buildings from photographs that has to be cleared up. Although I do make buildings from photos, the photos

have to be very selective they must be straight on views without any distortion in order to be of use with MS Paint. Other programs have the ability to remove this distortion, but not MS Paint. I insist on using Paint because it is a very simple program with very few steps to learn, so I am using the KISS principle here. There are many other programs that are much better than Paint, and if you already know them, use them instead. What I will be showing will still be useful and much can be applied to the other programs. I don't recreate prototype buildings because finding enough photos for a project like that is almost impossible. However, I do kitbash with photos. I will try to take you through the design process for my REA building using a single photo found on Textures.com. "

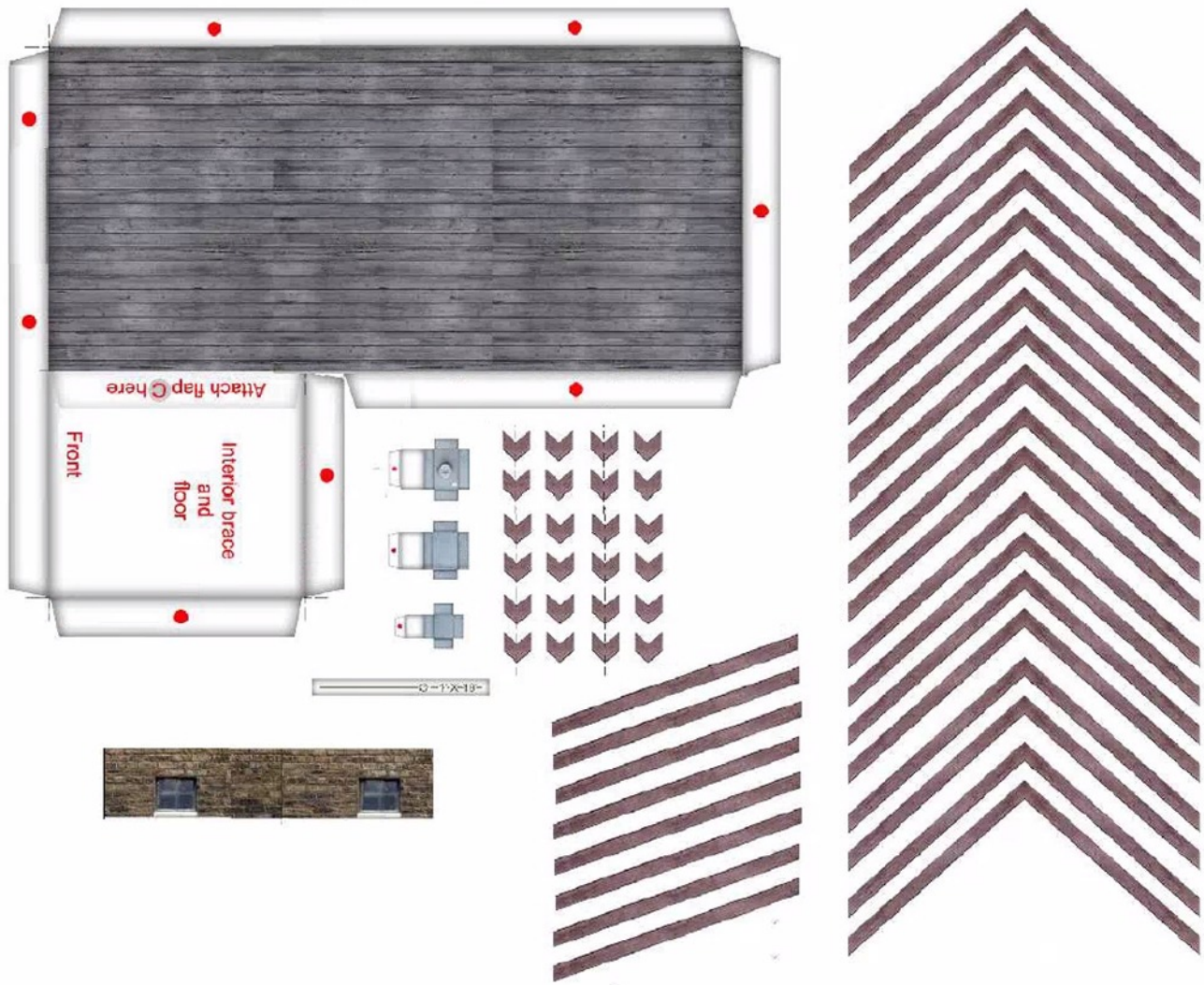
Thank you so much Paul for your offer of mentoring help. To contact Paul please email him at Paul.Egri@oscaleresource.com.

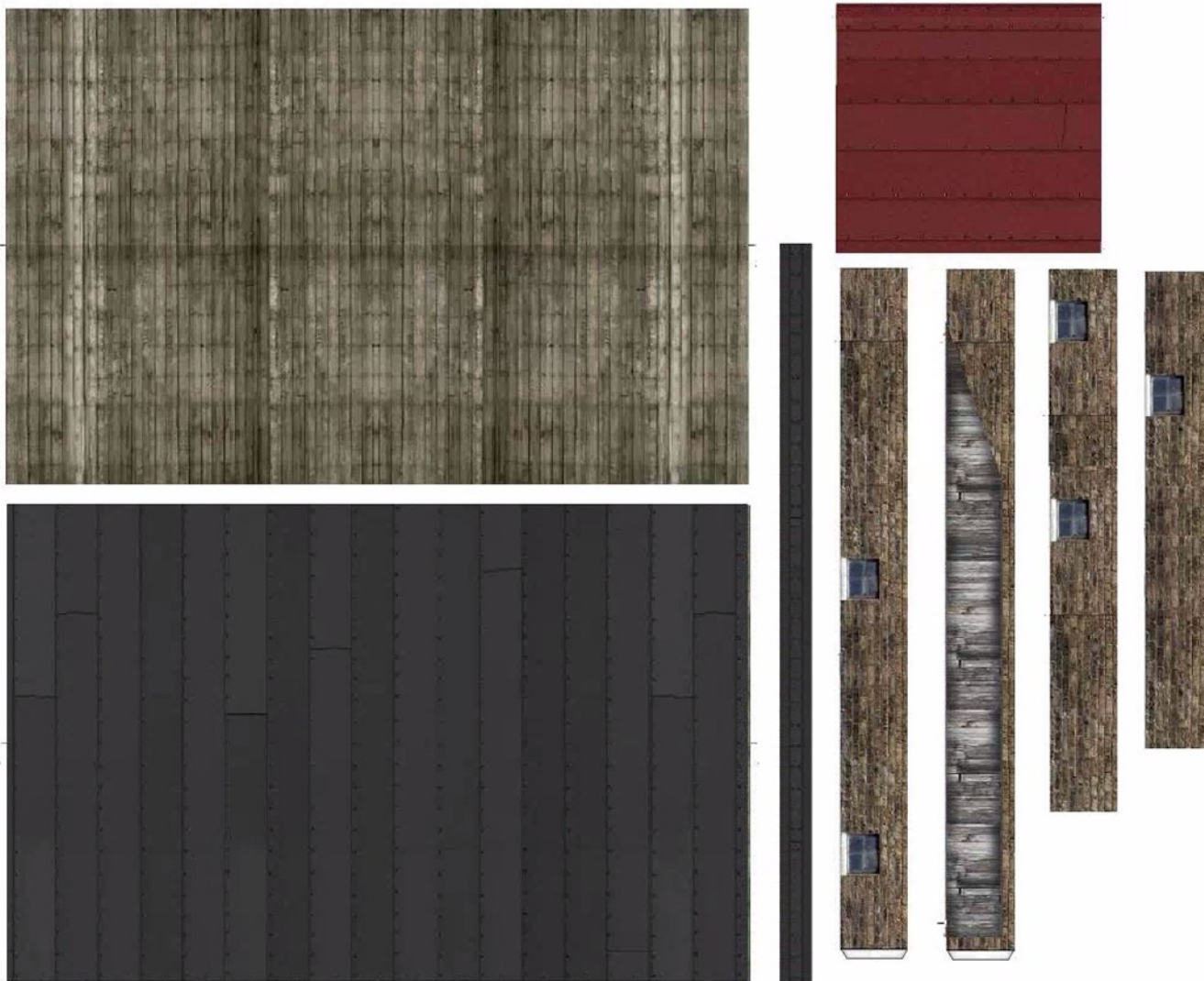
Once you have the structure designed, if you need help in its construction, please look at the various mentors I am profiling here and those I have profiled in my other card articles over the past year. I am sure you can find the construction help you need. Good luck to all of you going down these "New Tracks" with Paul.

The following four images were sent by Paul with a percentage for O scale. We needed to reduce these to fit in the magazine, so if you want to print in O Scale they need to be enlarged 267.8%. I based this on the 1'x10' guide shown on the image below. You may want to play around with that percentage, but it's very close to where you need to be.









Roger Pattenden

I emailed Roger after being told about his card models by another modeler. Yes, I talk to a lot of various modelers all over the world who tell me about what they are building and who they suggest I need to meet. Thanks to you all. I am really glad I met Roger. He replied to my inquiry:

“My models are printed and bound in booklets. All at different scales, such that St Paul’s for instance and a much smaller building such as Rosslyn Chapel both fit on an A4 baseboards and end up roughly the same size, with the component parts fitting on six pages of card.

I’m an old man now and winding down. I don’t have a company, it’s always been just me. Building card models all my life. Even as a youngster, my mother wasn’t allowed to throw out any cereal packets or card packaging, as I would turn them into ships, buildings, vehicles, all sorts. I later benefited from an Art School training in Graphic Design. That was in the 1960’s when everything was done by hand, before computers that could handle graphics were introduced. When I started designing architectural models for publication, they were simple line drawings to be coloured in, as colour printing would have made them too expensive. The only other published card models that I had come across were Micromodels, published in London. It wasn’t until the coming of the Internet that I discovered a whole world of

modelling. Many publishers and many enthusiasts. As a result, I met up with several modellers in the UK. We used to exhibit at various IPMS model shows with a table full of card models, which were much admired.

After a professional career doing something completely different, I've worked in a large High School in West London for the last 20 years, now part time, as a Technician in the woodwork rooms. I've run several after school model making clubs, successfully introducing many youngsters to modelling. Incidentally, a great resource for that sort of thing is the [Canon Papercraft](http://www.canonpapercraft.com) site, with dozens of free downloadable models of all sorts.

Most of my published models are of places of interest where there's a ready market, a shop and lots of visitors. All just as a sideline. You can see all about my models at www.heritage-models.co.uk “

I liked what I saw and learned some fascinating history. Take a look. Thanks Roger for your interest I know I can learn a lot from you.

Roger is easy to talk with so if you have a question about his work I am sure he will be helpful. Contact him at Roger.Pattenden@oscaleresource.com.

David Watson. (Dean Park Station)

Welcome to Dean Park Station.



A class 40 awaits to depart Platform 3 of Dean Park while an Intercity HST arrives in the background.

This fictional OO Gauge layout is set in Scotland in the mid 1980's during the transitional period between the BR Blue and the sectorisation liveries of British Rail. The Digitally Command Controlled (DCC) continuous run layout is situated in the attic and measures 25ft by 11ft. The station side of the layout measures 15ft by 2ft 8in and is one quarter of the actual layout. I also have a large off scene storage yard. The layout is controlled by the ESU ECO Command Station.

How it all started: My fascination with model railways started long before the first train ran at Dean Park in late 2012. In fact I can trace my interest back to the early 1980's, when I got a Hornby HST set for Christmas. I had 'toy train' layouts in my parental home, before losing interest in my mid teens. My

passion for models railways started to return in my early 30's and was sparked alight again in 2010, when instead of spending the day shopping with my fiancé, I nipped off to the Model Rail Scotland exhibition at the SECC in Glasgow. I was struck by how far the hobby had progressed since the 1990's and I came out of the exhibition hall thinking "I can do that". The rest, as they say is history!

Layout Setting

The layout you see is based in the central belt of Scotland, with a number of loose references to Edinburgh Waverly station, which I traveled to as a child on family day trips, then used daily as a student while studying in Edinburgh in the 1990's. Edinburgh Waverley station, the Waverley tunnels and gardens hold a special affinity with me. When looking for inspiration for the layout I immediately focused on these areas. I chose to model the 1980's into the 90's as this is what I remember as a young lad. I also couldn't resist the opportunity to model



A disused and over grown siding adjacent to the main lines is slowly being reclaimed by nature.



A Scotrail Class 47 rounds the curve at the Signal and Telecommunications Training Facility.

Scotrail Class 47's on push/pull Expresses. Once I'd set my mind on the era, I spent another six months planning it in my head before sketching out track plans to see what would give me the most enjoyment while retaining a Waverley feel.

Construction

Being an attic layout, fluctuations in temperatures have to be considered when selecting the materials that make up the fabric of the layout. After doing some research I decided to go for 12mm Birch Ply for the main baseboards, which are supported every 600mm by softwood batons. These batons are in turn screwed into the trusses of the attic. The upper baseboard sections are formed by 9mm Ply, which sit on 45x45mm square Pine columns. I would advise everyone starting a layout to try and get the baseboards done correctly first time. I get lots of comments on my YouTube videos of how smoothly the trains run. This is in part due to the baseboards being level and true from the start.

Track and Signaling

The station has six platforms, with No's 1, 4 and 5 terminating platforms and No's 2, 3 and 6 through platforms. The station is fed from the west by four tracks, which appear though Waverley styled tunnels and

from the east by three lines which appear from under a road bridge. All platforms can be accessed from the west of the station and all lines have access to the upper mainlines and Traction Maintenance Depot (under



Class 47/7 "Sir Walter Scot" arrives out of tunnel into Dean Park Station.

construction) via inclines at both ends of the layout. I have attempted to make the track work as realistic as possible within the space available, whilst at the same time allowing for enjoyable operation of the layout.

Track is Peco Streamline Code 100. Turnouts are Peco Streamline Electrofrog, with live frogs. All points, (which number over 40 on the layout) are fitted with Peco PL10E point motors with PL-13 Accessory switches or PL-15 Twin Micro-switches. I have also fitted some Capacitor Discharge Units (CDU) to aid reliable point work operation. All points are controlled via a dedicated 15V AC supply linked back to two master control panels, one for each side of the layout.

The track at the station is laid on 1/16" cork, while the upper mainline is set on 1/8" cork to allow a more prototypical ballast shoulder to be modeled. The track is ballasted with Woodland Scenics Medium Grey Blend ballast. I ballast in the traditional way, using a PVA/water mix with a drop of washing up liquid to allow better flow of the mixture into dampened ballast. Once set, the ballast is weathered through an airbrush with Railmatch enamels in Sleeper Grime, Roof Dirt, black for Oil spills and some rust shades too. Sleeper Grime is a real favourite of mine, giving me just to correct shade for the rail sides and tops of the sleepers. I use photographs of real track from my local station and nearby mainline as a reference when weathering my track. One lower line and both upper high speed mainlines are electrified with Dapol MK3 OHLE masts. These sit on 4mm blocks of plastic card to give more realistic clearance for locomotive Pantographs. I may at some point in the future add over head wires, but I am concerned that this will hinder track cleaning and maintenance and also be extremely expensive to do.

The whole layout is fully signaled using the excellent CR signals range. The 2, 3 and 4 aspect colour signals work very well with the Heathcote IRDASC4 and Mas Sequencer boards which I mount under the base board. The Heathcote boards are connected in sequence and are also linked to turnout operation using route indicator

feathers, giving automated signaling, just like the real thing! The signals and boards are powered by a 12v DC supply.

Scenery

Scalescenes products feature heavily at the station. The tunnels, retaining walls, platforms, station roof, station building and the blocks of flats all make use of Scalescenes kits, or textured papers. I find this medium is a great way to get into kit bashing or scratch building because if you make a mistake it's quick to print off another sheet and try again! I mount my textured paper on to 1 or 2mm grey board, fixed in place with an even covering of 3M Spray Mount adhesive. Prior to fixing papers on to card, I give each sheet of brickwork a good coat of Ghiant Inkjet Matte Fix. This makes it more resistant to moisture and protects against UV light. The real focal point of the station is the large curved roof. This is made up from six Scalescenes R005a kits built together, spanning a width of 425mm and covering a length of 1.5 metres. When I was planning the station layout, it was the span width that determined everything that followed, even down to the widths of the platforms!

I have adapted some of the Scalescenes kits to suit my space, including the heavily modified Station building with a fully detailed and furnished interior. However, my real pride and joy is the scratch built Waverley signal box at the west end of the station. Using plans given to me by a fellow modeler, I set about making a 1/76 scale of this now defunct Scottish railway landmark

The road bridge at the east end features a level crossing with flashing barrier lights, complete with an annoying siren! This is made up of an Express models kit. The road is painted with Woodland Scenic tarmac paint, finished off with road markings from Modelrailwayscenery.com, along with some etched drain covers, road signage, LED street lighting and other accessories to complete the scene. I'm very proud of how this scene came together. It took weeks of planning to ensure everything could be built, painted, wired up and installed in the correct order.

All trees, bushes, undergrowth, static grass and scatters in and around the station are a mixture of Woodland Scenics, Mininatur and Noch products. Station figures are from Bachmann Scenecraft and platform furniture is a mix of ready to plant, kit and scratch built items.

I enjoy adding the small details to a scene. Whether it be speed restriction signs, rusty lengths of rail, abandoned pallets by the side of the track or advertising billboards at the station, I find that these details just add to the atmosphere of a scene. Cable trunking, by Ten Commandments is present throughout the layout, as are Relay boxes, dummy point motors, point heaters, as well as orange tubing which run under the tracks to link up cables to feed the signals etc. A more unusual addition is the water stand pipes with hoses on Platform 6 to refill the HST hauled MK3 tanks before they head south to London Kings Cross or north to Aberdeen.

YouTube

When starting out on my model rail adventure I needed to learn some new skills. I found YouTube invaluable from the start and it remains my first port of call when trying to find out new modelling techniques. I decided to set up my own channel to share my ideas, catalogue my own progress and hopefully inspire others to 'have a go'. Making and uploading videos is great fun, and although my channel is relatively new, I have gained thousands of followers and got to know many fellow enthusiasts.

Rolling Stock

The traction and rolling stock is all ready to run products from Hornby, Bachmann and Heljan which has been detailed, with a handful being sound fitted. I run a wide selection of diesel/electric and some AC electric traction, with a focus on locos that would have been operating in and around Scotland in the mid 1980's - early 90's. I also have some steam locomotives which make an appearance on special rail tours from time to time. Traction includes a number of Hornby's excellent HST sets. I have a large number of Bachmann Class 47's, which along with the Intercity 125, is my favourite locomotive.

Scottish based Type 2's also feature with Heljan Class 26 and Class 27 locos. I also have a soft spot for BR's Large logo livery, which is seen on a Class 37 and Class 47. DMU's range from a Class 101, a Class 107 in Orange and Black Strathclyde livery to a Lima Class 156 Super Sprinter unit.

I am always thinking of the next part of the layout, so at the moment, I am focusing on the Traction Maintenance Depot side of the layout. Follow all my progress so far on my [Dean Park Station YouTube Channel](#). Please contact David at David.Watson@oscaleresource.com.

Nicholas Ham

As a modeler, I would say I'm mostly a freelance card modeler. I would also say I am an autistic modeler, Asperger's mainly, which has a positive impact on me as a modeler and the amount of work I put into the hobby.



Nicholas Ham selfie. I suppose the important thing about this is just showing people who I really am and what I look like. And yes, I am 30 years old, even if I don't look it! I don't really take many photos of myself in all honesty.

My history in the hobby goes back to my youth and influence from my Father, who was a railway modeler for some time in his teen years. I really got my first taste of model railways when I was twelve at Christmas in 2000 with a Virgin Trains 125 set, which failed! I then went to having a Graham Farish intercity set and a standard loop. I always had a passion for railways and returned to it when I was 18. I basically was looking around a toy shop for something to get my youngest cousin who was 6 and spotted a Hornby HST train pack and couldn't stop thinking about it. Eventually I noticed a special offer from Argos at the time for a Hornby train set with the original track mat and two add on packs with a station which I got, and had to carry on the bus all the way home!

Eventually I did make a modest size baseboard with a standard oval on it a year later. Some months afterwards I went to Liverpool with my family and went to Hattons. When I was there, I saw a Hornby select digital controller for just £35 as it had no box. I set it up and started using it for analogue for some time until getting a Hornby class 08 Shunter with a digital chip around February of 2008. After playing around with it and finding it easier than analogue, I went onto building up a collection of locomotives. By late 2008, I was studying Digital Art and Design on a foundation degree and used the extra money I was getting in maintenance grants towards building up a medium sized layout based on a Peco Set track plan. By early 2011, I took it apart and begun making a small diesel/electric depot. In 2011 – 2012, I had gone onto my final year of Illustration at Plymouth. During this time I continued building up a strong collection of diesels and rolling stock in between studying. When I came back for the weekend and days off, I worked on my depot layout, but felt it wasn't right in a way. After finishing university, I abandoned the depot layout and went back to basics of tail chasers with four running lines and four long loops for holding trains.

I mainly learned how to build with help from my father, who had worked for Coca Cola as an engineer for many years, as he had done a lot of building work before becoming an engineer. He mainly helped me with building the frames on earlier layouts. Eventually, I found out about ready made baseboards for railways and took to buying some with one being hand made by myself and my father. I also learned a lot from reading modelling magazines and books regarding model railways as well as some things, like electrics, from my father. Most of the work on my layout such as tracks, scenery are things I learnt myself from both books, modelling magazines, DVD's alongside in depth research on the internet.

Most of my learning has been by trial and error. I did have some mentoring from my father in regards to some of the basics of railway modelling. Yet most of it has all been down to trial and error. I tend to use OO gauge or 1:76 scale. My reason for choosing this scale is mostly down to the level of detail and availability of things in this scale, such as locomotives and rolling stock etc. I had tried N gauge in the past, but

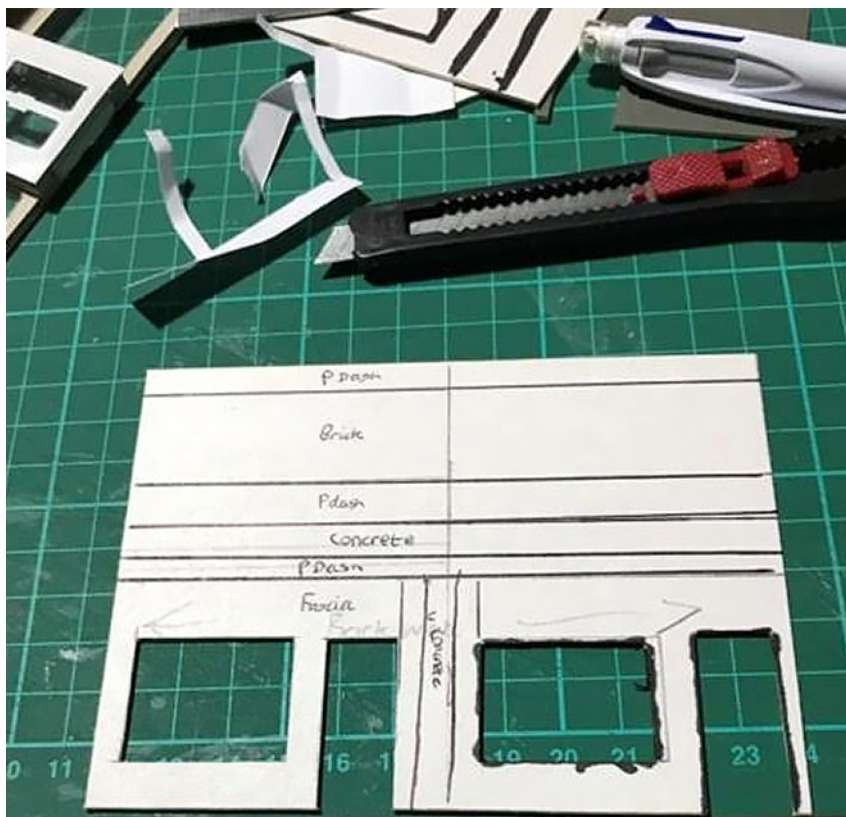


never found it easy to work with and too fiddly.

My main interest would have to be scenery and creating structures. The other one is operating trains at slow speeds and observing the detail of each carriage or wagon as they slowly pass over me. The other interest I have is weathering models and adding extra detail, whether it be giving a shiny looking wagon a wash or grime or making a que of customers waiting in a takeaway!

I think I would be of help to other modelers with possibly the scenic side of modelling and how one can go onto having that extra little bit of detail on a layout. One way I did help was with a younger modeller who was depicting a model farm building on fire, using real fire! They asked me how I would go about doing such an affect and I was able to give them a simple step by step method using weathering powders and how it would make such a thing more life like and realistic. Better than sticking a match to a card building!

A real sign of the times here! One would never get away with having a tobacco company name on a shop these days!" This is one I took the other day as a Work In Progress (WIP) of two shops I made for kitbashing the Scalescenes High Street Kit. The signs are custom made using Adobe programs. I would say the important thing with this one is how simple it is to modify card kits to what the modeller is after.



Following are a few photos taken of my layout. At the moment, I'm in the midst of rebuilding the scenery and getting it back in operation. Only because it was all dismantled whilst I was redecorating my room, where my layout stays. Most of the scenery shown got damaged and thus had to be rebuilt. Of course, I will be posting more photos of my layout and the work being done as I progress with it.

"Nothing like getting back to basics" This is one I took yesterday of a scratch built building, based on the real building in Wolverhampton. The important thing in this one is just how easy it is scratch building with just a scale ruler and Google street view.



The executive treatment being shown here as an Intercity 125 HST with pic and mix liveries It creeps along the up mainline towards Birmingham with a Penzance to Glasgow Cross Country service". I took this photo two years ago. What's important about this one is how far I have progressed in building my layout. The ballast in this photo has since been removed and replaced with finer grade ballast. At the time I was having a lot of derailments because of the ballast.



"Here we might get a new front wall". This was another Work In Progress photo I took two years ago whilst working on two terraced houses that would later become a corner filler on my layout. The important thing about this one is how simple but effective just a figure or two can be on making a cameo scene for a model railway.



"Two gun powder chicken dishes!" This photo was one I took in 2015 when I was building my original High Street. What's important about this is how a basic interior can make a building look more like reality than just having it blank, and also how lighting can show off the detail of a building interior.



I asked Nicholas several questions about how he designed his own buildings. Here are his answers.

When I did say High Street, I should have mentioned it is a card kit from scalescenes.com that can be found here: <https://scalescenes.com/product/t005-low-relief-high-street/>.

The buildings are ones which can be built individually with various shop fascias.

The way I design my own buildings and shop signs are mostly down to my skills as a graphic designer, even though I got a degree in illustration! The

Now these are the real flying bananas on the railway!" This is a shot I had taken in 2016 of some Network Rail IOA waggons that I just about finished weathering. The weathering process was nothing more than spraying them with a mix grime colours, mostly browns and blacks, for the outer sides and a mix of light and dark rust colours on the inside. After they were covered in a coat of grime on the outside, I took to wiping as much off with cotton buds and white spirit, leaving with dirt and grime build up around the ribs of the waggons and steps. The insides were left to dry before taking to them with wet and dry paper rubbed up and down to give each of them a worked in look and feel from loading and unloading of loose ballast and other materials. I think what's important about this one is how weathering doesn't have to be precise overall, but takes the plastic look off a model.

way I design my own buildings is quite straightforward. I basically start off with a search on Google and Flickr for UK shops and places around the UK, such as the West Midlands and other places. When I find a building or a shop that looked of interest, I went onto Google maps and did a search for either the street or area where that building is located. Then I would do a street view look at both the building in particular or area and take a simple screen shot on my computer. Having got a screen shot of the building or street, I just printed it off and took to using a scale ruler from modelscene or other company. I would start off by getting a scale measurement of the building overall and drawing up loosely on paper, then moving onto repeating the process for all the additional details like windows and other features of that building. After drawing a rough outline on paper, I just scan it onto my computer. The process would then be a matter of cleaning it up using Adobe Photoshop. After that, it is just a matter of printing and pasting to mountboard or similar and building it up using texture sheets from places like scalescenes.com or [scalemodelsenery](https://scalemodelsenery.com).

Most of my work for both my modelling and art and design work is done by using Adobe Photoshop and Adobe Indesign. These are two programs I have been taught how to use whilst I was studying and use them a lot.

As for things like the signage, some of branded ones were made by simple searching on Google until finding a site called [Logopedia](https://logopedia.com). After saving a particular sign or logo, I would alter it's size to fit within a set size for a shop fascia, which was set to scale by simply measuring the shop sign base from the scalescenes high street kit and other signage kits I have. I used this as a base and after making some branded signs like British Gas Showroom and Midland Electric Board before making my own custom signage. This was again done by thorough research on the internet for things like tobacco companies logos and newsagents signs of the 1980s and similar as a start. After scaling it to fit my template, I used what I found as a guide and made the signage similar to those which would have been on a shop. The newsagents sign was nothing more than using a tobacco

company logo and colours followed by using standard fonts on a computer for the shop name. My most recent ones, for a bakery and DIY shop, were created by researching for fonts used in shop signage. After making them, I would use a set of brushes within Photoshop to add some basic weathering and faded look to them.

I understand that's a lot I've mentioned here, but I thought I should mention how I went about making buildings and shop fronts in detail and the way I have gone about them. Of course, I have to thank having Asperger's for what I have done and continue to do. Mainly because I am very determined to ensure as much precision and accuracy in my creative work and modelling work. If you believe I can help you with your modeling, please contact me at Nicholas.Ham@oscaleresource.com.



John Tabler

I started with an HO-scale train set for Christmas, sometime around 1968. I had a couple of 4'x8' layouts, and began some crude scratch-building efforts. The bug never really left me, but after starting college, with little room or time for a layout, my hobby became focused on scratch-building structures. With each one I built I learned more, and the structures got better. My motivation for scratch-building, at least at first, was a desire to own some of the craftsman kits I was seeing in the magazines. As a college student, they were too expensive, so I learned to replicate them rather than buy them. Acquiring a stash of old magazines, I was really drawn to the E.L. Moore series of articles. Eventually I came to enjoy scratch-building just for the fun of it, and so that I could have structures that were not available otherwise. I would still rather scratch-build than work on a kit, though I do enjoy that too. I also have developed a fondness for cardstock structures. I have built many kits from companies such as Clever Models, and even designed several of my own. It's like scratch-building, but with a

printer. I also like the economy of card-stock as a building media.

While I've also built in Z, N, S (1/64" Hot Wheels dioramas for my son), O, 1/2" (doll house scale, for my daughter), and 1:22.5 (G scale), I've stuck mostly with HO scale, because I like the "detail threshold". I like to build detailed models, and I find that HO provides the right balance of appearance to time spent on detail and structure interiors.

Early on, I really enjoyed the electrical part of the hobby, and my early layouts had as much control and wiring as I could jam into them. I loved remote turnout control, and DC block wiring. These days, with a PhD in Electrical Engineering, and 25+ years designing microelectronics for things that most people use on a daily basis (cell phones, USB chargers, game consoles, etc), I have lost that fascination and I prefer the simplest wiring possible. DCC, and manual turnout control in all but otherwise inaccessible locations. An exception is my son's N-scale layout, where reaching in can result in broken details, so all turnouts are remotely controlled.

I really like building to satisfy a specific need. On the layout I was involved with in California, I built historically researched models to represent Fort Ord, Cannery Row, and the sugar beet loader at Sargent, CA. Tony Thompson took some good photos of one of the four beet loaders that I built.

<http://modelingthesp.blogspot.com/2017/01/a-beet-loader-model.html>

A recent move from Silicon Valley to a small town in Texas has had an impact on my modeling focus. I had been involved in a very active private layout which had been designed specifically for prototypical operations. The members of the group had constructed everything, even the building that housed the layout. The group started with a temporary layout, named the R&D, built from mostly existing modules. R&D stood for Rawhide & Duct-tape, but also Research and Development, and it was a laboratory of sorts, used to refine the concept and design of the final layout.

More about that group and layout here:

<https://southernpacificcoastdivisionmontereybranch.com/>

Some sections of the original R&D temporary layout even earned 15 minutes of fame, when they were used in the final season of the TV series Mythbusters.

Being part of that group gave me the opportunity to operate on some well-known northern California layouts. I came into the group expecting to not really like operations at all, and expected I would go back to scratch-building. Instead, I found that operations is at least as interesting as any other aspect of the hobby. The lessons learned from the R&D 1.0 and 2.0 are a blessing, as without them, I would surely build a layout that would not hold my interest. Now that I have an empty 20'x40' building in which to build a layout, I must remember:

- 1) planning for operations is essential to designing my model railroad
- 2) less IS more
- 3) the beauty of building on a narrow shelf, and two decks
- 4) the importance of finding other modelers and forming a cohesive group to help support a large layout

The move to Texas has essentially transformed me in to a lone-wolf modeler, at least for now. I do work with my son on his N-scale and G-scale layouts, but that is more construction oriented then operations at the moment. The G-scale is a work in progress, as my back and the weather allow, and we are adding an extension to the N-scale for staging.

Pending installation of HVAC in the train building, I am ready to launch into construction of a layout representing part of the Louisville & Nashville EK division, around 1956-57. It will center around the town of Winchester, KY, where there was a yard at Patio, and an interchange with the C&O. I have a rough plan for this layout, which is, without apologies, stolen almost directly from the bench-work for the R&D Southern Pacific Coast Division Monterey Branch layout.

Everything on that page is scratch-built, with the exception of the DJH Mikado, and the Classic Miniatures Queen Anne. The lumber yard is a good example of an early model (25+ years ago) that I scratch-built from an ad for Campbell Scale Models Seaz Sash and Door. It is built from artist mat board, scored to represent planks, and given some color variations with colored pencils. Here are some examples of my work:

Mostly paper:

<http://jthorns.com/mrr/Mobil.html>

<http://jthorns.com/mrr/ModBak.html>

A couple Clever Models kits

<http://jthorns.com/mrr/Clever.html>

Classic Miniatures Queen Anne kit with interior

http://jthorns.com/mrr/new_models.html

Gavin Rose

I'm from the Eastern coast of the UK. I Left there in 1976 when I enlisted into the British Army serving mainly as helicopter crew for most of those years. I Retired in 1999 and had have many jobs since, not only that but since then I have lived in several areas of the England and, for a couple of years, Wales. I currently live in what is known as 'The Black Country', to the west of Birmingham, West Midlands, UK.

I was first introduced to model railways at the age of about 7, with a large (second hand) layout on the living room floor on Christmas morning, Triang / Hornby Dublo 2 rail, with trains hurtling around at break neck speeds.



Things improved over the next few years, sisters moved out we had a spare bedroom which became a modelling room. Being in the North East of England and my father remembering the trains before the nationalisation of the UK's rail network, I was weaned on to the London North Eastern Railway (LNER) with its apple green or garter blue express locomotives and teak coaching stock, with him often taking me down to watch a steam hauled special running through the local station on the main line into Hull.

Next came the teens, and initially model railways waned and aircraft modelling came to the fore, then came 'girls!' Modelling stopped, followed closely by me joining the armed forces, for a good number of years, I had a couple of

dabbles with layouts, nothing much until I had space to make my previous model 'Rosedale Abbey, Circa 1929' which took most of the early nineteen nineties to build.

This lasted for some years before a house move, and some years later a life style change (divorce) ended that model and marked another break, this interval in my modelling lasted about 15 years, until the flickering of thoughts of the hobby started to grow into a fire. The most recent model, Trinity Dock Street Bridge, which is four and a half years into the build, and not quite completed yet.





As you see I don't rush my modelling, I believe the hobby is a pastime, and I use it to pass time, finding it very therapeutic and a great stress buster, too, which has been scientifically proven!

I like to make my models look as realistic as I can, within limits of space, cost and my skills. To this end I will research my subject to the 'N'th degree, I may not model exact locations, but will try to use specific items from within the area modelled, be it buildings, signals, line side furniture and rolling stock, although I am sure some really keen (rivet counting) enthusiasts may pull me up on mistakes here and there, it has happened already!



Basing my model on an actual location, but not copying exactly, allows for a few changes to hide inaccuracies against the prototype, but hopefully giving a sense of looking 'right'. I'm a big believer in having it look right, again referring to photographs to compare where I can.

Also, I'm a firm advocate in that there has to be a reason for the railway to be in the first place, building a narrative that runs alongside the modelling, influencing the model as I build. Again, this is aided by a research in books and, nowadays, on the Internet. Looking at what I have built so far, seen in the photographs, my main enjoyment in the hobby is the scenic side of things, looking for realism and trying to portray a time, era and place in time.

With there being few kits of the buildings, furniture, etc that I want to model on the market, scratch building has had to be a big part of my modelling, that and some adaptation of kits, etc. Very, very, little is straight 'out of the box', and what gets some sort of modification and is weathered suit!

Please feel free to ask questions, make suggestions or submit ideas, I always welcome other people's thoughts and criticism, as I find this helps to put things right and I'm not too proud to take it all on. To contact me please email me to Gavin.Rose@oscaleresource.com.

My skills have been mainly self taught, looking at photos and trying to get ideas from stuff that I have read, initially in the modelling press, and more recently off the web. I have used the old technique of trial and error, and there has been an awful lot of the latter, especially with the latest model. If something goes wrong, I try to rectify it as best as possible, or cover it up (weathering is a wonderful thing), otherwise it is start again, as was the case with the whole of the latest model after about 6 months!

To this end, sometimes I do things slightly differently to other modellers, to varying results, but I normally get what I need eventually, again all that trial and error, and learning as I go along.

How would I like to help people? Anywhere I can, from research to the actual modelling. At shows I always tell the viewers that I am there to entertain, inform and inspire the people paying good money to visit the exhibition. I have folders with me showing how I completed this, how I made this look like that and how you can make simple changes to kits, and out of the box items to give them some form of uniqueness. I would like to do the same on this media.

I'm a very big believer in that there is no such thing as a stupid (genuine) question! If I don't know an answer I will no doubt know someone who will. If you think I can help with your modeling please contact me at: Gavin.Rose@oscaleresource.com.

Neil Colley

I truly love to meet skilled model builders in all scales and all types of model building. I never know what I can learn or where I can find another one of my Crazy Models. So when I saw some of Neil's card model airplanes I was fascinated and amazed at his modeling skills. Take a look.

Ever since I could remember, the bug bit me when I saw Air Jamaica Boeing 727s flying into the airport Kingston Jamaica in the early 70s. These beautiful steel birds was a sight to behold to a 3-4 year old (so my mom told me). Then she made it worse by letting me go near the local airstrips seeing the Cessna 150s and 172s doing touch and go. So now at 48, I am still this child inside with that wonder and amazement of the rich history of flight. I realize I have lived a full life so far, father, film editor, worked for a few years as an aircraft mechanic and even had fun flying RC aircraft with the local flying club.

About 10 years ago I was looking at some model aircraft online and came across some card models, I did a double take because I found it hard to believe the pictures I was looking at were card models! The more I



looked into this, the more intrigued I got and found the website: [Papermodelers](#). With tentative steps I tried my hand building a fiddlers green model and a model from Marek (109E-4). Seeing that I could make a flat sheet of paper become a 3-D model got me hooked! To know I could pay online, download, print, cut and glue and have as many models as available online was phenomenal! I tentatively posted my first builds online and got immense encouragement from others in the forums on my builds.

that they take paper modeling to another level is an understatement. I wanted to know their secrets, and it was great when they shared. I guess this has a lot to do with lack of availability of plastic kits back then (cold war times), and this I suspect made their paper model art very realistic. The many competitions and model displays I see held over there keeps them fine tuning their skills. I do feel that in the past few decades it has become a



more accessible to the “West”, and no doubt we have a lot we can learn as we enjoy this artform. The one thing I learned that was key is PATIENCE.. and it’s totally ok to make mistakes, A LOT of MISTAKES.

Remember everyone likes posting their successful builds and not their failures!

I first started building 1:50 scale and as time went by, I was amazed by the details of the larger scale models, so I switched to 1:33 scale, (besides...it’s easier to build at larger scales with my huge fingers). So here are a few things I learned along the way:



1. Join a card model forum. Many are found on Facebook and even have their own website. The amount of support and tips and encouragement (and critiques) is limitless on your journey to a great hobby.

2. There are kits at many levels and complexity, please start with simple kits, and realize that the time it takes to build each model varies. I love fiddlers green and similar model designers that create kits with a level of simplicity and yet produce fairly great models. A Halinski Kit is at the other end of the spectrum, very complicated, but can be very realistic when completed

3. It took me over 10 years to get to a point where I feel comfortable with building, and I



am still learning from my polish friends, so BE PATIENT. Mistakes will be made (that's how you learn)

4. Enjoy your build. Don't be hard on yourself.

5. learn about your glues, I have used the full spectrum, from the school white glue to the "superglue" using a little glue goes a long way, only time, mistakes and experience will let you be comfortable with creating good models.

6. Support the designers, many of their products can be found at: <https://ecardmodels.com/>

I can be found on the Facebook forums, feel free to link me or contact me by email at Neil.Colley@oscaleresource.com. Happy modeling

Stay tuned I think I just found one of my next Crazy Model efforts!

Doug Coster

Stage 1. My parents bought me a train train set when I was maybe 7-8. As I was an only child and



lived in a small town, I pretty much did everything myself. It was just set up on a big flat board that my father made. Later on, a high school friend bought some N scale American, and I acquired some of that, but never built any layouts. After I finished school, other things captured my interests, and I didn't touch model railways again for about 15 years.

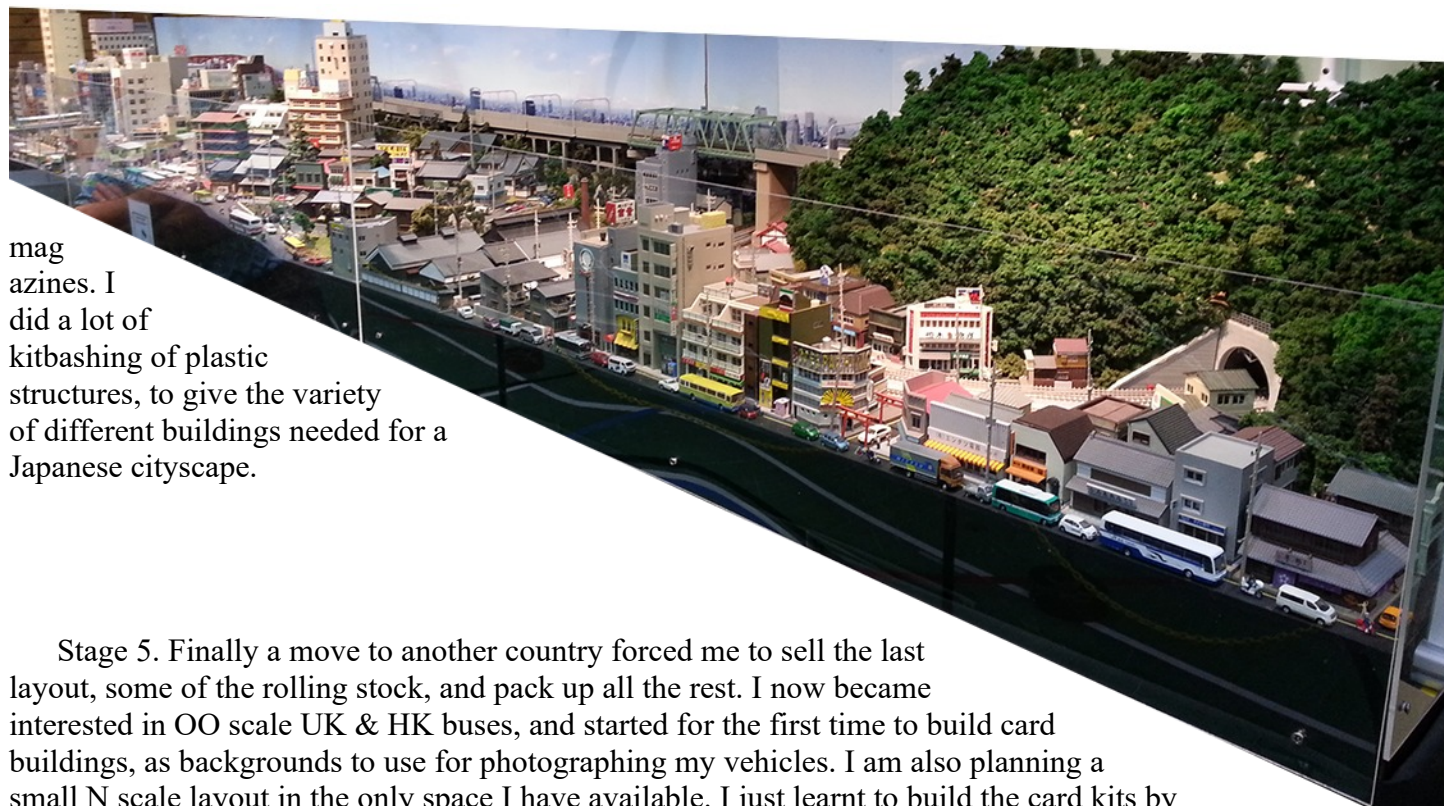
Stage 2. While on a holiday (actually a honeymoon!!), I visited a narrow gauge preserved railway, and when I got home, I thought about a small shed in the backyard where I could build something like that! But the plans turned into HO American, and I was always a fan of the Southern Pacific. At this stage I joined a local club, and started running my growing collection there.



Stage 3. However as the club was mainly Australian prototype oriented, my repainting and kitbashing efforts were not appreciated, so I started buying Australian trains as well. These gradually overtook the American stuff, both in collecting, running and kitbashing. I also started planning to build an Australian HO layout.

Stage 4. However, one day I was in a local hobby shop and I saw they had a heap of Japanese N scale on sale. I remembered from a previous club where a member used to run bullet trains on their N scale layout, and was always impressed with them, so I bought everything that was on sale. Having nowhere to run them, I decided to convert the half built HO layout to N scale. This ended up being an exhibition layout and the first I had actually ever built! Not knowing anything about Japan or having ever been there, it wasn't very good, and had a lot of generic US based buildings and other scenery items on it. After visiting Japan for the first time, the layout was quickly scrapped and I started again. By

this stage, I had sold off most of the US and Australian HO rolling stock. Over a period of 12-15 years I built three more Japanese layouts, all of them winning awards at exhibitions, and being featured in international



magazines. I did a lot of kitbashing of plastic structures, to give the variety of different buildings needed for a Japanese cityscape.

Stage 5. Finally a move to another country forced me to sell the last layout, some of the rolling stock, and pack up all the rest. I now became interested in OO scale UK & HK buses, and started for the first time to build card buildings, as backgrounds to use for photographing my vehicles. I am also planning a small N scale layout in the only space I have available. I just learnt to build the card kits by buying them and starting to build, it was just trial and error, but with adequate instructions, I found no



problems. I think this is the best advice for new builders - make sure you follow the instructions correctly. This does not work for Superquick buildings though, as their instructions are almost non-existent and the quality and

details of their product very poor. The best ready-to-build card kits are by Metcalf. I have also built kits from Kingsway Models, which are supplied printed on card, but you have to cut out yourself. I also have done a lot from Model Railway Scenery and Scalescenes, which you download, and print yourself. I consider Scalescenes to be the best. I would like to see larger style 3-4 storey houses available, rather than the standard 2-up 2-down that most manufacturers provide. If you think I can help your modeling please contact me at Doug.Coster@oscaleresource.com.

Marco Balk

Got an invitation from Jim, asking to explain my thoughts concerning card modeling. Thank you very much Jim, but I must admit that I am still a newbie (still learning) in the hobby, although I am a model railroader for some 45 years by now. So, to start with, I am Marco Balk, I live in Maassluis in The Netherlands (yes, across the Big Pond or as you used to say “The Old World”) which is actually not far away from Delfshaven where some 400 years ago the famous Pilgrim Fathers started their journey with The Mayflower towards The New World. This proves also that I am interested in history, and I am especially interested in industrial architecture.



Okay, I had been modelling in H0 up to 2010, built a North German theme based 3 deck layout with a helix and lots, really lots of rolling stock until....I became familiar with a model railway club actually nearby who, amongst other layouts, started building an English 00 gauge layout, which was quite new to me. Two men were already constructing it, and since I was familiar with scenery, I became number three. Had I known beforehand what I should encounter, I might have hesitated.

Back in 2010 there was hardly anything available concerning kits for 00-gauge houses, apart from the Ratio/Wills plastic kits and the Metcalfe cardmodels, which are common models. Like in the USA and elsewhere, local builders used local available materials (various kinds of stone & timber and/or a combination of these), and for our South England based model railway we too were looking for typical structures of the region. Eventually I came up with the idea of searching the WorldWideWeb (www) for structures that could be made with card. The advantage of card models are 1) cheap, 2) easy to build and 3) easy to replace when skills developed. For me personally, it is very difficult to part with models that took long to build, where as card models are cheap, and when not of use anymore can be disposed of without much emotions.

So pictures of houses were looked for in the time frame of the 1930's up to the 1960's. Lots of websites were visited and lots of ideas came up too, but where to start and how? Looks familiar doesn't it? So to start with, after a visit in 2012 of the town of Hastings (Sussex) an idea popped up to model the local fishermen's huts. Standing on the pebble stone beach these 2 and 3 story huts were constructed from local timber, tarred to withstand the spells of nature and used for storage of nets and gears. Photos were taken, estimates of lengths and heights were calculated and later, much later, at home the first models were constructed for our beach-next-to-the-railway. It immediately became clear that, to withstand the spells of nature, these structures had to be built solid to withstand the hands of visitors on our Exhibition days, so building started with a shell of 4 mm plywood as per a couple of drawings. Glued together, these



*A simple hut from plastic with a paper roof (Scalescenes).
Necessary? No. Fun: Yes!*



structures were sturdy and after the glue had dried, the walls were clad with thin cardboard strips to represent weatherboarding, each was layer cut to size and glued 1/3 on top of each other. After drying, the corners were clad with vertical “planks” and the roofs as per the same method. Doors were added, together with thin card hinges. Then painting (walls dark brown and roofs dark grey), and as a final detail, some weathering with powders. In the end, I came up with some 20 huts for the beach.

Well, that was fun!

This simple method led to a certain skill-improvement: I dared to go for something more difficult – a model a cardboard house. Now remember, of course I had kit-bashed and scratch-built a lot of houses in plastic but never ever a cardboard model. How would it look? Well, see numbers. 1 to 3 above and start modelling, if you don’t like the result, just throw it away and start over again. (I don’t see you guys do that with a rare FSM-kit of a couple of hundred bucks !!) And this was the beginning of a very satisfactory part of my hobby, looking for the real thing, imagining how it would look like as a model, drawing scale building plans of the actual model and constructing mock-ups to check if everything was looking fine. At the end of 2013, a row of houses was constructed as per a series of photos of Folkestone (Kent) Fishstreet, a quay scene just fit for our model harbour. The problem however was that it took quite long time to model a single house, mostly 2 to 3 months, so when we had to build a small town on our layout we had to speed up a bit, or decrease our “needs” (read: redesigning our initial targets). We then decided to diminish the detailing of structures from front to backdrop. So with this idea in mind, we did continue with card modelling for the next rows of our little harbour town, but used card kits that were available in the www.

I would like to direct you to a couple of websites that might be of use to you when you, eventually, get the feeling that card modeling is just the thing for you! Don’t hesitate but give it go! So here are some: <https://scalescenescenes.com>: The website is divided for easy choice of Townscenes (housing and public housing); Railscenes (stations/depots, goods sheds, signalboxes etc.); Dockscenes (for everything maritime) and the Scratchbuilders Yard. Now that’s something to check carefully! John has made a huge effort to issue a lot of textures of bricks, stones, timber, rendering, metals and pavement. These kits can be ordered in his webshop and after the process of payment, you will receive an email with a password, enabling you to download the files you just paid for. Save them on your computer, on a USB stick or whatever device since you pay them once but may use them for eternity ! And, as a bonus, John has additional information on his website how much to multiply or to divide the document in order to print in 0-scale, S-scale or even T-scale (1:440). John has his own Facebook page on which you can post the results of his designs (look for Scalescenescenes Modellers Group) and you can subscribe to a newsletter. Welcome in the 21st Century!

<http://clevermodels.squarespace.com>: Does it need any further explanation? Most models are in 0, and the website is very useful for your first cardmodel. A lot of choices available for a fair price.

<http://www.smartmodels.co.uk>: Same idea, other designs. Where as Scalescenes offer a more generic British approach, Smartmodels offer a North British industrial design. Imagine smoking chimneys, coalmines, hard labour in factories and crowded towns. Texture sheets available too.

<https://www.3dk.ca>: Scottish based models, available in different scales and textures.

<https://purplebob.co.uk>: Cardmodels only in 7 mm (Scale 0) ! Most have relief for backgrounds

And now for something completely different: <http://www.zelmeroz.com/canesig/index.html>: Australian Narrow Gauge in O, separate page for papermodels in HO and O. This is a special website about rural sugar cane narrow gauge railways, starting from rolling stock up to depots & sheds and finally very interesting features like watertanks, outhouses and additional information on pdf-files. Direct download and save it on your computer for multiple printing over a longer period of happy modelling.

OK, so far this is all about obtaining models from the Internet (either to be paid or for free) and building them on your workbench. The problem we immediately encountered was that the structures did not meet our expectations, so to speak. They are lacking detail: the walls and roofs are flat, and thus we had to add detail. In this regard I have to admit that 2 books were influential for me:

1) *Cottage Modelling for Pendon* by Chris Pilton

2) *Modelling with Plastic Structure Kits* by Iain Rice

In the first book, I read about modelling in foamboard and adding roofs with card and paper. The author explains in detail how he builds terrific models for the Pendon Museum. [I wrote an article about the Pendon Museum that appeared in the May/June 2019 issue of *The O Scale Resource* online magazine](#) but beware: One model can take up easily a couple of years to build ! (I asked Marco to explain this later in this article.)



Combining plastic, card and paper in one layout. This is the fictive Newman Town station I modelled for a friend.

The platforms, the flashing upon the canopies and the buildings are card and paper (Scalescenes), the canopy is plastic (Dapol/former Airfix) and the asbestos roofs are plastic too (Wills). This is a British Railway / Southern Railway theme. That's an O2 with Gate Stock on the right, and ex-SECR Birdcage Coaches on the left.

In the second book, Iain describes how he does design a model structure and what is important for the proper looks. He is using Wills (plastic) Craftmans' Kits (00-gauge), but you can use his expertise to model likewise in other materials too.

So a combination of modelling methods described in these books led to a different approach to card modelling, at least for me. I'll show you some examples how you can improve the looks of your cardmodels. First of all, the roofs supplied are rather flat-looking, uniform I'd say. You can of course buy packs of shingles and glue them on top to obtain some relief, but Rule no. 1 (Cheap!) applies so we go for the scratchbuilding option. As per the

Pendon-method, I opted for strips of card to produce tiles in scale 1:76 of 3 x 4 mm each. Each row of tiles above is overlapping the row beneath by 2 mm, so essentially I produce strips of 5 mm height, of which the bottom 3 mm is the tile and the top 2 mm is the overlap. I know guys who cut and glue them individually on the roof base, but Rule no. 2 (Easy to build) implies that strips of tiles of these dimensions are cut lengthwise and then the tiles are partially separated with a small scissors (the bottom 3 mm only !!). I can advise you to cut a

couple of strips directly to speed up the process; I usually cut some 10 at a time before my hands get shaky and my vision troubled, and I need a wee dram to cure the disease.

Now, starting at the edge of the roof gluing the strip with PVA, and apply another string of glue on the top 2 mm of that same strip, enabling the second strip on top of that, and so on. You get the picture? At the top of the roof, we stop applying strips and start with the roof on the other side of the building, repeating the schedule as mentioned. At the end of the process, you'll have a full relië roof with individual looking tiles, quite different from those delivered with the kit! When you have built up enough confidence, start by cutting pieces of card (tiles) away thus making a damaged roof. Leaving tiles away, or fallen down halfway, the still existent roof for a neglected approach. It's as simple as that. And finally you may paint it all as you desire (greyish-blue for slates, reddish-orange for clay-tiles) plus the weathering as a final step, but not before you have add the roof flashing to prevent rainwater leaking through the ridges and gaps still hidden in your self-constructed roof. You may use the roof-flashing from Scalesscenes (in its Scratchbuild section), very conveniently pre-issued in different roof-angles, so just cut to size and sparingly glue them around chimneys etc. The real thing is where to look at for a realistic look of your building!

Now, when you have built up enough confidence we go forward to step two: the detailing of external walls with card & paper.

For weatherboarding, I use the same method with strips as for the roofs, since the overlap of the top board is almost identical. However, the corners of the building and the openings for windows and doors are different because of vertical planking, so you have to cut narrow strips of card too.

For brick or stone detail, we can use the Scalesscenes textures (I do anyway), but it's up to you of course. What I normally do when a wall has to be clad is using a different texture than provided, cut it roughly to size, spread the glue evenly and press the wall(part) on top of it, and leave it until the glue has dried. In the first few seconds you can make corrections, but eventually you will tear the paper apart, so you must be quick! When openings for doors and windows must be applied, after drying carefully cut (with a sharp knife !) a cross within the opening on the back side of the wall, and then flap the paper to the inside of the wall, glue it and leave to dry.

Lintels for window and doorways are provided by Scalesscenes too, just print and cut to size. Don't forget the sills on the outside, in reality they are not only useful for the flowerbeds, but prevent the rain creeping underneath your window frames as well ! Again, look in reality for a realistic look. It just takes a couple of trial and errors, but once you understand how things work out, it's a detail you won't forget! Chimneys can be made accordingly, just a square base of card, clad with the texture.

For sharp corners carefully roll the blunt edge of your knife along a steel ruler on the inside of the card/paper, so the texture on the outside (the visible side) will not be damaged.

Spilled glue can be easily removed when still wet, just use the knife or a small screwdriver and wipe it away without pressure on the texture. It's better to wipe two or three times this way, than trying to wipe only once and you will end up with a damaged surface. Guess how I know...

For small details, or even for applying the strips of card on the roof or walls, I often use fine pointed tweezers. The sort they use in hospitals are the best (certainly a different approach to one man's hobby !!), but you may want to invest in a couple of them when you visit a local exhibition. Mine have lasted for over a decade now and they are still not worn.

The same applies for knives. You would not expect it, but card and paper will tear your knives blunt. Normally after cutting an A4 size of card to strips I'll switch blades. The problem is that after a while your cutting isn't clean enough, causing tearing of the paper and, as a result, a damaged texture. So, it's better switch



knives regularly to enable a smooth cut and a better finish of your model.

OK, that's it so far. Just try and be not afraid to make mistakes (I did!). The more you practise, the more the experience and the more the fun ! And guess what: that's what modelling is all about! You may check my Facebook page (and leave a comment) :

<https://www.facebook.com/marco.balk.12> My albums are open to public and you may copy my images for personal use. If you want to use them commercially or otherwise, please ask permission. Thank you, good luck with cardmodelling & happy modelling in general! Marco Balk



After talking with Marco, I asked him to comment specifically about the [Pendon Museum](#), which I have profiled in a previous "New Tracks" article in this magazine.

Hello Jim,

Recently you wondered why it took Pendon so long to build a model. Well, I have a couple of photographs which show the tremendous detail that goes into them. But building a model is only part of the process !

First of all, a suitable building is sought after.

Secondly, the current owners must give permission to enter their property and measure up their house or stable.

Thirdly, the rough drawing (with principal dimensions) is translated into a building plan. Eventually a second measurement on location is needed. Then a mock-up is created in exactly 4mm to the foot (00 gauge or 1:76).

After that, the "building committee" will decide whether or not the building is appropriate for the period and the location on the Pendon layout.

And after permission is given by the committee, the builder will start to build, one wall at a time.

The whole process of scribing the foamboard is described in the book "Modelling for Pendon" which I can advise you to buy. It is full of ideas and a lot of history how old buildings were built in



reality, and how to model them in various scales. After reading, you will definitely understand why it takes so



long and very much appreciate all the efforts the builders have taken to show the various models on the current Pendon layout.

Marco's roof building methods

Image 1A: a strip of card, divided into sections. The upper part is 2 mm high and 4 mm width; this part is used for the overlapping of the strips. The lower part is the "tile", 3 mm high and 4 mm width. I always measure and draw lines on an A4 piece of card, so multiple strips can be cut at once and used as desired. Using a copier will make enough prints to build roofs for all your model buildings, but beware: in reality certain areas tiles or slates had different dimensions. Always check what was used in history on the buildings you plan to build.

Image 2A: With a small scissor I cut the lower 3 mm to "issue" the tiles. The strip will warp but with some care you can straighten that out.

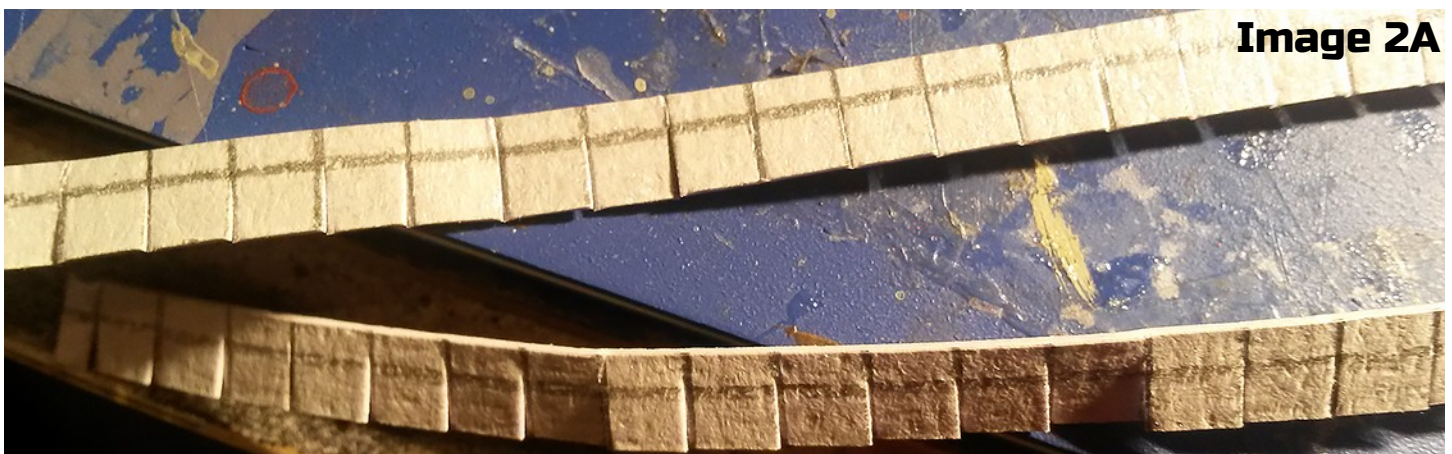


Image 3A: The first strip is cut to length (always allow some overlap on all sides of your roof, like in reality. The strip is glued with tiny dots of cardglue or PVA to the bottom of your roof. Make sure it sits tight and straight (draw lines on your roof base as a guideline). After that I will put a string of glue upon the



overlapping 2 mm of the bottom section.

Image 4A: Several strips have been attached on the roof base and overlapping each other. You can cut off tiny pieces of the tiles as if some tiles are damaged. The image shows the method of overlapping, this way the rain will run off the roof and not into the gaps...



Image 5A One side of the roof completed. The ridge will be modelled later. First we'll model the other half of the roof.

2nd part of modelling with card strips.

Image 1B: The other half of the roof is modelled too. You can clearly identify each individual tile. Now it's the time to decide whether these are plain clay tiles or slate! I have decided to paint them various tones of grey to represent grey. In the end, I'll weather them with powders too.



Image 2B: After painting the roof flashing will be added. These are from Scalescenes from it's Scratchbuilding section, I cannot recommend it enough !! This paper strip of lead flashing is for a 35 degree roof; on the pdf various degrees are preprinted. Just cut out, cut to length and with a tiny tweezers and sparingly glue add them to the edges and around chimneys.

Image 3 3B: The roof flashing applied on the



edge of the roof, towards the outer wall.

Image 4B: The roof finished, but before final weathering. The ridge tiles of this (Ancorton Models-) kit were lasercut and just applied on the roof. I'll show you a scratchbuild example later on.

Image 5B: The porch was built up the same way. Remember to paint the underside of the tiles too !

Image 4B



Image 5B



3rd part of modelling with card (Next Page)

Image 1C: The "Master" which is drawn once and copied endlessly. I use a light grey piece of thick paper. After copying a light grey copy will emerge from your copy machine. If you will use anything darker as a "Master" the lines will disappear on your copies (plus it will consume more black ink!).

Image 2C: The strips are cut from the copy of the "Master". Always cut with a sharp blade. Switch blades after each page being cut, otherwise it will eventually tear the paper and not cut through.

Image 3C: Paper tiles attached to the roof base. Other than with card strips, paper strips should be glued with as little glue as possible. It is very hard to wipe excess glue away and you may damage the strips.

Image 5C: The roof of my kitbashed cottage. This again is an Ancorton Models lasercut wood & paper kit. The lasercut stones were awful (in my opinion!) and the walls were covered

up with Scalescenes Limewashed Stone (yes, it's Scratchbuild section again). The brick strips ditto and the windows are brass from Scalelink.

Image 5C: Almost finished! The ridge tiles were cut individually and attached overlapping each other. After the glue dried, the ridge was painted in light brown/orange. The rain pipes were included in the kit and attached



Image 1C

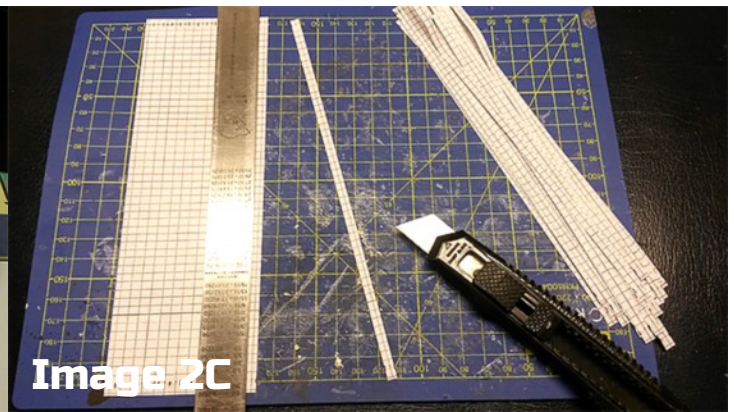


Image 2C

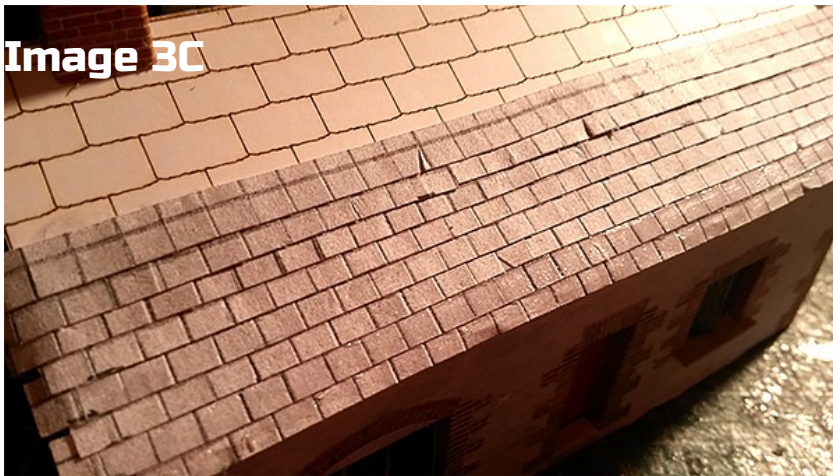


Image 3C

to the walls with tiny strips of paper, painted dark silver. The blue in the picture is the cutting mat, I presume.

The colour of the roof is grey (slates are ranging from light grey to blue/gray, depending where it is from). And I still have to weather it, which will be done just before it is attached on it's final location on the layout. So this is just a base colour. The individual tiles will be enhanced with powders.

Those brass windows are from Scale Link. It's range is enormous, they also have models in 0 scale (1:43.5 / 1:45). Check the military range too.

Thanks Marco. If any of your readers think I can help with their modeling please contact me at Marco.Balk@oscaleresource.com.

Well, that's it for this "New Tracks" article. I hope you enjoyed it and learned a little more about card modeling that will help your model building. I have about 40 modeling emails to answer, and after that I really need to spend some modeling time at my workbench. Thank you for reading this far. Good luck with your model building.



Image 4C



Image 5C

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Oddity

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

By Dan Dawdy

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

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



Talk about odd...

ATSF 5511 (SD45-2B) After an accident, this SD45-2 was returned to service, but missing something. Waste not, want not!

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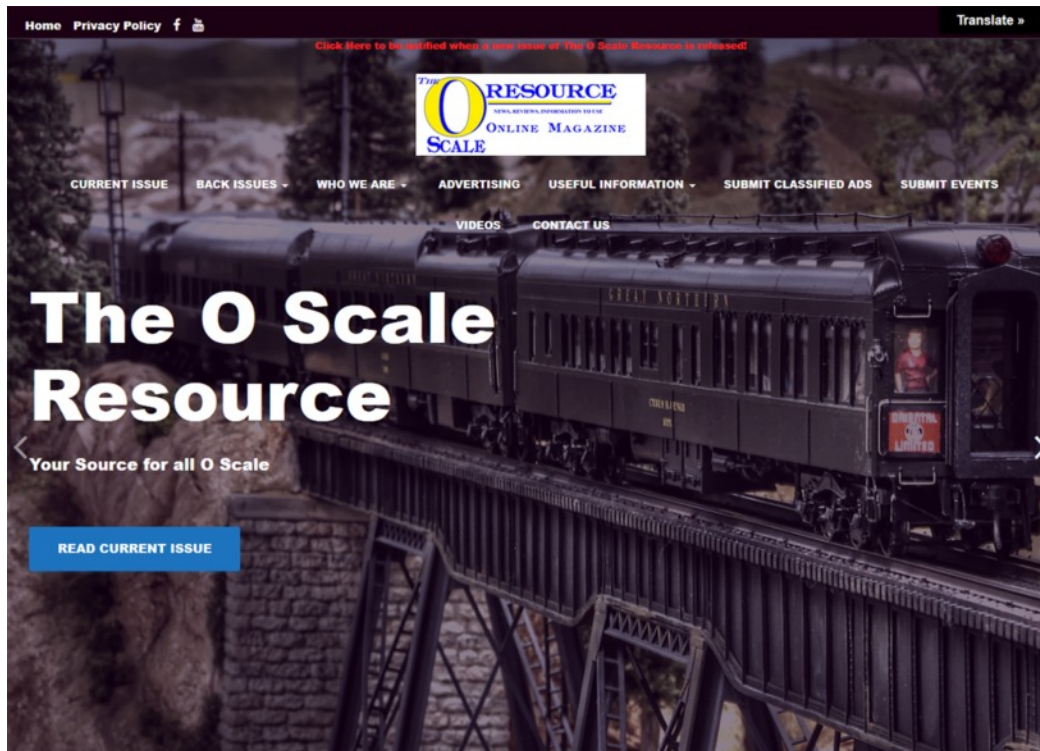
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Friday, October 25 - Saturday, October 26

The Northside Christian Church

2526 NW 122nd Street, Oklahoma City, OK 73120

All O Scale 2-Rail & 3 Rail (Scale Compatible) and Narrow Gauge (All Scales) modelers and dealers are cordially invited to this combined meet. Contact: George Wallace H: 405-751-7649, C: 405-818-2277.

e-mail: thudchief1@sbcglobal.net

website: www.oscalesw.com



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