New Tracks - Computerize Your Model Railroad
Bill Morrison's Morrison-Mathews Railroad
Building a Trackside Shed
Home Made Ground Signals
Farm Factor Figures
Baldwin Babyface
Shows, Meets and so much more...

Our
7th Year
Anniversary
Issue

O&S Scale Midwest Show

It's September! Time to kick off your modeling season!

THE BEST OF O SCALE AND S SCALE IN ONE SHOW
SEPTEMBER 17-19, 2021

WYNDHAM INDIANAPOLIS WEST 2544 EXECUTIVE DR. INDIANAPOLIS, IN

DEALER SETUP
Friday 4pm - 9pm
Saturday 7:30am - 9am

SHOW TIMES
Saturday 9am - 5pm
Sunday 9am - 2pm

Room Rate $125.00* per night (until 8/21/20) Reference O/S Scale Show when calling
*Based on availability
317-248-2481 / 877-361-4511

MEET OLD FRIENDS AND MAKE NEW ONES

Please print clearly – Detach and return lower portion with payment

---

Name: _____
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Make checks payable to: Model Railroad Resource LLC

Mail registration form to: 407 East Chippewa St
Dwight, IL 60420

Or register and pay online at:

Early Registration through May 31st $20.00 $_____
Registration after May 31st $25.00 $_____
(Both days included)

\# Of 8 ft. Tables _____ $50.00 ea/$60 after 8/1/21 $_____

○ Scale vendor   ○ S Scale vendor   ○ No preference

Number of add'l registrants _____ @ $20 each until May 31st $_____
$25 after May 31st

(Please list below/Use back if needed/Spouse/Children 15 and under free)

Name: _____

Name: _____

TOTAL AMOUNT ENCLOSED: $_____

Electrical needed? Yes ○   **(No refunds after 8/20/21)**
(Subject to availability)

OSCALEMIDWEST.COM OR SSCALEMIDWEST.COM
Contact info@oscalemidwest.com or call 815-584-1577 with any questions

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

Front Cover Photo

Chris Monje's build of Motrak Models Trackside Shed

BILL OF LADING

The Model Railroad Resource, LLC publishes *The O Scale Resource* and *The S Scale Resource*. Be sure to look at both of our magazines. There are many articles in our magazines that are not scale specific and will be of interest to you. Click the magazine title in this announcement to see the magazine.

From the Publisher's Desk

We've Changed!

OK, now that I have your attention… First off, we have a new Website. https://sscaleresource.com/ that went live a few days ago. It has faster navigation with a cleaner look. All back issues are now running on our new HTML5 platform and, of course, downloading the PDF is still an option.

We have discontinued the Adobe Flash version of the magazine and are using HTML5 which will allow us to embed content which will work across all platforms with no browser plug-ins needed. The new magazine menu shown on the next page gives you more selections on how you can read and download.

One small issue will be the links within the magazine pointing to back issues may not work until we update them. If you hover over the link you will see the issue date. You can then go to the back issue page and select the magazine you want. We'll be updating those back links as soon as we can.

Above: Sample page from the last issue of The S Scale Resource Magazine on the new platform.

Below: The menu bar, condensed, so we can label it and show you what the buttons do.

HOME takes you to our new bookshelf where you can select any issue.

Magnifier for page view.

Thumbnail view for viewing all the pages.

Bookmark pages for later reference.

Auto Flip.

Go to first page.

Move back one page.

Move ahead one page.

Go to last page.

Share on social media.

Print.

Download PDF.

Full screen.

Highlight and copy text from a page(s)
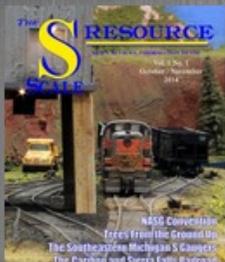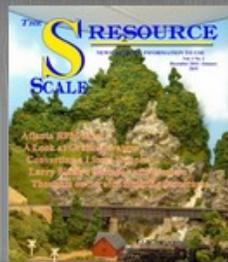
Volume 1 No. 1	Volume 1 No. 2	Volume 1 No. 3	Volume 1 No. 4
Volume 1 No. 5	Volume 1 No. 6	Volume 2 No. 1	Volume 2 No. 2
Volume 2 No. 3	Volume 2 No. 4	Volume 2 No. 5	Volume 2 No. 6
Volume 3 No. 1	Volume 3 No. 2	Volume 3 No. 3	Volume 3 No. 4
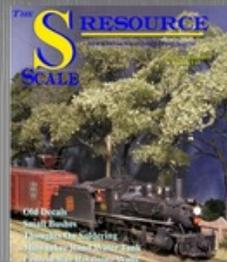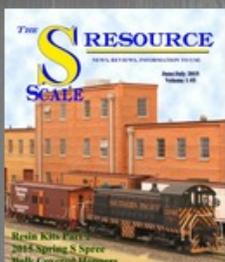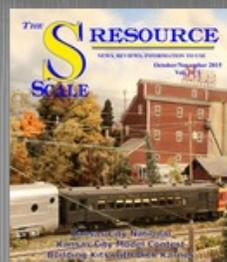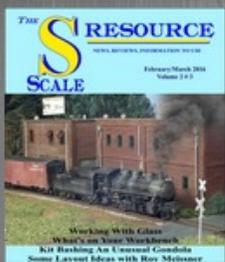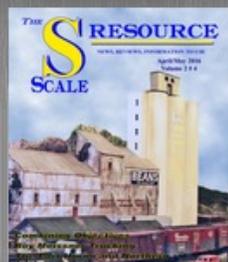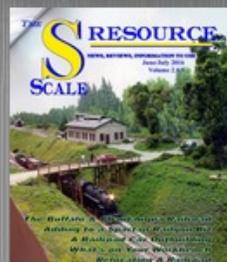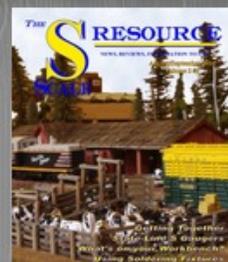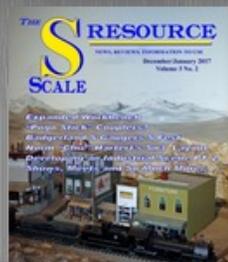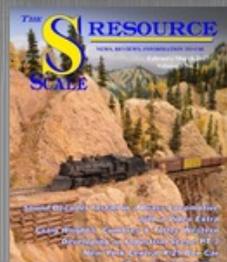
The S Scale Resource Magazine

1 - 16 / 36

New bookcase contains all our back and current issues. Select an issue and begin reading. NOTE: to arrange the magazines in order, you need to click the NAME in the upper right corner. By clicking once, you will start with oldest magazine. If you click again, you will see the newest issue first. The DATE sort will not function properly because of the way the magazines were loaded.

And, we are starting our 8th year of publishing *The S Scale Resource Magazine*! Thank you to all who have helped and contributed. Please keep the contributions coming. Layouts, workbench photos, tips and anything else to do with scale S.

NEWS YOU CAN USE

New from S Scale Track Works is a #4 Frog in code 100 rail. This frog compliments our #6 and #8 frogs also in code 100 rail. The number 4 frog can also be used to make a #6 three way turnout. Use two #6 frogs for each direction and the #4 frog for where they cross in the middle.

The photo is of a wax part that was sent to the foundry to be cast in nickel silver. As you read this, the wax parts are at the foundry being cast. Finished parts will be available around the middle of October Check our website at sscaletrackworks.com for an update.

———⊂○⊃———

Lines West has a new Milwaukee Road Thrall caboose 1956 as built w/louvers-S scale unpainted.

Includes the following;

- 1970's detailed body shell, roof, platforms with endrails and underframe w/cushion draft gear designed for Kadee 148 couplers
- Drop center MILW design trucks
- AB brake set
- Now with free standing grab irons formed as part of the body shell.

They also have an as built 1956 version. See their Website for full details.

Tichy Train Group has many new S scale decals.

You may click here to go to their Web page and select by Car Type, Private Owner, Railroad and Data Sets. Most sets are $5.00 and a six pack is available for $25.00.

They also have many other S scale parts and details!

———⊂○⊃———

Smoky Mountain Model Works, Inc. has announced they are redesigning their collection of Sn2 trucks thanks to the recent acquisition of an in-house industrial-grade 3D-printer. They are redesigning their collection of Sn2 trucks thanks to the recent acquisition of an in-house industrial-grade 3D-printer. Their "Common", "Swing Motion" and J&S passenger trucks are affected. The drawing shows the "Common" truck. Price remains the same at $18 per pair.

Also a Barber Stabilized S-2-A 70 Ton Truck with 1940 Casting Date "Kit No. 64-TK-Barber S-2-A 70 Ton" $32/pr

See their Website for more information.

Bill Morrison's Morrison-Mathews Railroad

By Amy Dawdy   **Photos by Bill Morrison**

Bill got started in model railroading in 1954 when his Grandfather bought him an American Flyer set consisting of a 307 Atlantic, a log car and a caboose. He recalls spending a lot of time playing with it until it was stored in his Grandparent's basement. The set was stored when he went away to college. Bill's Grandfather took it down to the basement and there it sat until he passed away. That is when Bill discovered he still had the set. Family, career, etc. put model railroading on hold until he retired. Cleaning out the garage, Bill once again discovered the set, and "the rest is history". He hasn't stopped since.

After retiring from CAL-FIRE, Bill said he was "re-inspired", and he brought down the set from the attic and just planned on fixing it for old time's sake. It snowballed from there. Since S scale was his first scale, he just decided to stay with it, but he also dabbles in HO and On30.

The current layout was inspired by Bill attempting to re-create the layout he lost on November 8, 2018 due to the Camp Fire in Paradise, California. That layout had 30+ Flyer locomotives (fully restored), numerous cars, buildings, etc. This layout is going to be a bit larger, and a little better planned out as Bill says he has "lived and learned". The layout was created using Anyrail 6, the best program he has found yet that is so accurate, and he has very little "spare" track left! The layout is Legacy (the S gauge lines) and DCS from MTH. Also being used is an old AF 30B to run the trains that are older flyers. Bill told us he has started collecting older ones to replace the ones lost, but is finding it difficult to find older Flyers in reasonable shape for restoration.

With the exception of the On30 line on the layout which will be modeled after the old narrow gauge "Slim Princess" that used to run up the Owens Valley near his hometown, Bill does not model a specific location or railroad; but does try to model real areas, mainly where he grew up in Big Pine, California – naming bridges and mines after the ones around his hometown.

The layout is set in the late 1940 - 1950's on the On30 line, but is more modern on the larger two S gauge lines. Bill is using a combination of foam and paper maché for scenery, and is incorporating photo backgrounds from William at "Train Junkies". The first wall has been completed as you can see in the photos.

Bill's favorite part of the layout is the A line, because that is all that is completed, but said that as things change and are completed, his favorite parts will probably change as well. He enjoys building small 1/64 buildings, and making the electronics, lights, etc. Best of all, he always enjoys running trains at the end of the day just "because he can"!

Let's take a look at the build in progress.

OPERATING SYSEMS

A LINE   B LINE

LEGACY

MANL

DCS

A LINE MAIN YARD

B LINE SPUR

B LINE MAIN YARD

A LINE

A LINE SPUR

B LINE

B LINE TURN-OUT

M-M RAILROAD

EUREKA VALLEY LINE

EUREKA VALLEY
TURN-OUT

Saturday, February 8, 2020 9:27:14 AM – M-M Railroad control board 2 – 1 (1, 1)

Saturday, February 8, 2020 9:27:14 AM – M-M Railroad control board 2 – 2 (1, 2)

ElectroMotive
THE NEXT GENERATION OF PROGRESS
2012

1949

2012

SANTA FE

3438

CALIFORNIA ZEPHYR

MONTGOMERY

HLCX

UNION PACIFIC

4779

ATSF

SOO LINE
51975

Thanks, Bill, for sharing your layout with our readers.

Building a Trackside Shed

By Chris Monje

The modest Motrak Models shed is four walls with detailing opportunities. This photo sequence illustrates how the kit was built. Click here for a link to this kit.

Photo 1

The Micromark magnetic gluing jig in this picture is a flat reference surface ideal for getting square corners. (Photo 1)

For small structures like this, the jig isn't as important, but still convenient. Here two walls are square in the upper left corner of the jig, and two walls are laid flat to show how interlocking tabs align corners.

Magnets secure the walls as the glue dries. It's best to leave it overnight or at least several hours. Including overnight dry time for glue and paint, it can take about three days assembly time for even a small kit.. (Photo 2)
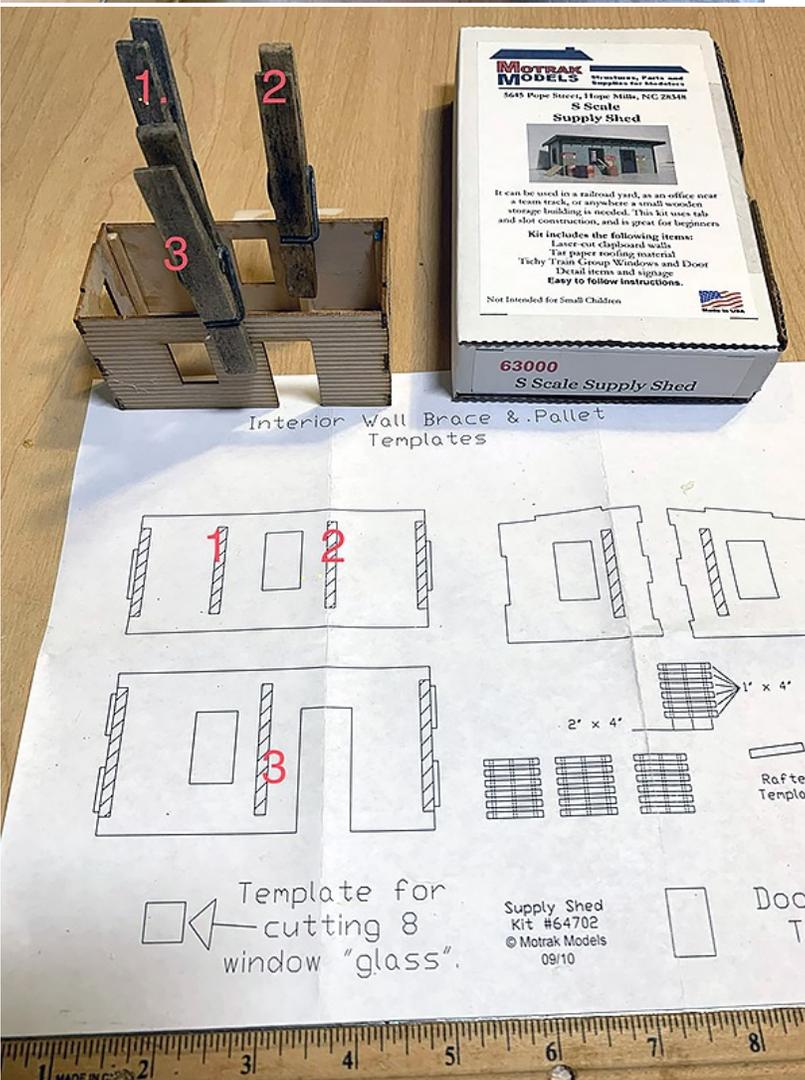
The instructions include a template for positioning reinforcements on the interior walls. Here three clothespins are numbered showing corresponding positioning on the template . (Photo 3)

sprue clippers used on window tops, then file smooths cut, windows remain on sprue for painting

Photo 4

It's best to leave windows on the sprue for painting. The top sprue connections are cut with sprue cutters. The windows are pushed away from the sprue for priming the window top. A razor blade is just as good for the window frames, but for delicate details sprue cutters are preferable. The file is used to smooth the window top. (Photo 4)

The kit is laid out for spray painting on cardboard. The kit includes four trash cans that are placed on nails. Wood strips are held with double stick tape. The can of Rust-O-Leum® is labeled "Professional", but I used it anyway. (Photo 5)

Photo 5
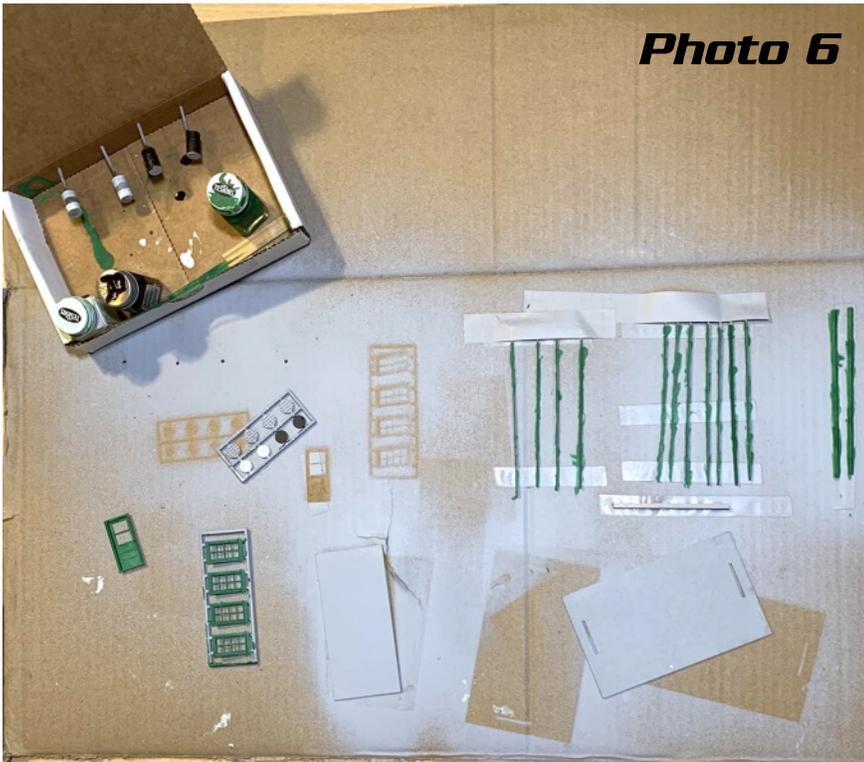
Photo 6

Grey spray primer has been applied, Testor's brush painting is next. The nails for the trash cans have been moved from vertical to horizontal for brush painting. Testor's is usually better thinned. Testor's is okay here, but would make rivets disappear on trains.

It turned out that I didn't need to paint the wood strips green. I forgot the instructions said some of the strips are for pallets. (Photo 6)

Photo 7

Yellow paint is dry, and the edges are smoothed before green wooden L corner trim is applied. (Photo 7)

Two darkening agents are shown here, one of linseed oil and brown shoe dye, and one of alcohol and india ink. It's easy to overdo the weathering, but structures like this are more forgiving than model trains. If things get too dark, wipe off ! In this picture, there's no linseed oil mix to the right of the door . (Photo 8)

Photo 8

Photo 9

Left: Windows and corner trim have been added, using super glue. One change I made is to not have the 2x6 rafters with open ends . Instead, I closed the roof edge using Evergreen S scale 2x6's. I've had real world experience replacing rafters that had end rot from weather. The change simplified kit construction. (Photo 9)

Below: A three light LED strip is also added to the underside of the roof. One of the lights is underneath exterior overhang. A blob of gorilla glue provides strain relief to the soldered connections. This upside down view also shows wooden reinforcement to the base. (Photo 10)

Photo 10

Photo 11

Left: Lighting also necessitates a base that does not leak light. Here, the original card stock floor has been trimmed to make room for the wood reinforcement. A piece of .06" styrene is the full size building floor. There's a hole in the floor for the wire. It is being painted with Testor's "rubber", a warm black, an ideal interior color. Lighting adds over an hour to construction time in this example. (Photo 11)

Below: Finally, roll roofing is simulated by cutting three foot strips of 600 grit sandpaper, attached with wood glue. This also took almost an hour, and chalk weathering was added. (Photo 12)

Photo 12

Completed build with lichen, ground foam, and Woodland Scenics field grass give the diminutive shed a "settled in" look. The shed also hides a module seam .

Baldwin Babyface
(BLW DR-4-4-1500 A-unit CNJ)

By Johannis Likos

Initial Idea

Few months ago a member of a local O gauge club asked me if I could design and 3D-print for him the body of a rare vintage cab diesel, so that it could fit on the motorized underframe of an FA-2 unit or alternatively of an RF-16 A-unit.

But then I realized that there could be demand for that type of engine also in the S scale community. Being myself new in the S scale community and having just few models of known manufacturers, such as SHS, MTH, AM and Lionel AF, I figured maybe I could contribute somehow in my own way. My aim is to satisfy the needs of the average railroad modeler with limited budget in a niche market. So, this is my first project in 1:64 and waiting for critics from the S scale community.

Original Prototype

I focused specifically on the Baldwin DR-4-4-1500 A-unit called "Babyface" due to the peculiar shape of the cab nose. It is about a 4-axled cab diesel locomotive operated then by CNJ, NYC and MP. Not having original blueprints from that era, I searched through the published media and online historical societies. After a thorough research in various archives, I noticed that this locomotive type, after its factory delivery, has been modified over the years during repeated maintenance improvements in the workshops. Such an example is the

repositioning of some venting grilles and the direction of the horns. The painting scheme has also changed even if the road numbers remained until withdrawn from operational service.

Information Sources

For further reading and about technical specifications see this useful links:

https://en.wikipedia.org/wiki/Baldwin_DR-4-4-15

The following useful links help in more accurate painting and detailing:

http://www.trainweb.org/willstrainart/Train_Art_files/CR/cnjdr4-4-150072-79.gif
http://www.trainweb.org/willstrainart/Train_Art_files/CR/cnjdr4-4-15g.gif
http://www.trainweb.org/willstrainart/Train_Art_files/CR/nycdr4-4-15.gif

Market Situation

The availability of this engine type on the model market has been investigated, too. Most of the few available models are made out of brass with high precision in top quality for high-end collectors, but unfortunately, only in O and HO scale. My intention is to enrich the variety of S scale engines and in the same time to offer an alternative to the low-end modelers.

Design Tool

This model was designed with OpenSCAD with a programmatical approach, allowing the defining and the re-scaling of complicated geometrical shapes in thousands of code lines. By the way, this software can be freely downloaded from openscad.org with plenty of online instructions and tutorials. For example, Fusion 360 and TinkerCAD could be further model design alternatives.
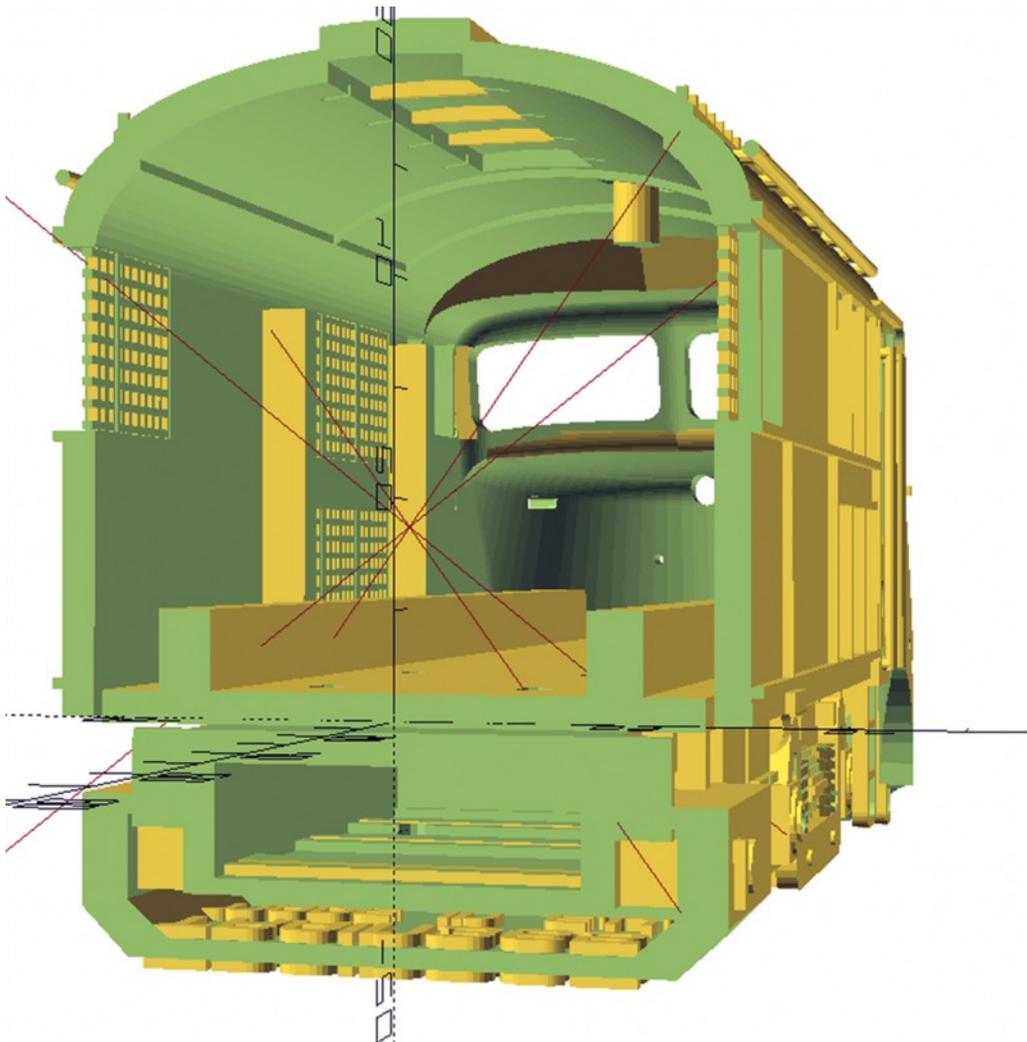
My apology if I am not a rivet counter. So, I tried to design the details as close as possible compared to the original, but it is still not perfect, and it never will be. Low budget solutions require the acceptance of compromises when it gets too complicated. The cut view and the cross section show the interior space, the complex shape and the delicate details. The wall thickness can be gradually adjusted based on the desired model scale in order to avoid a fragile body.
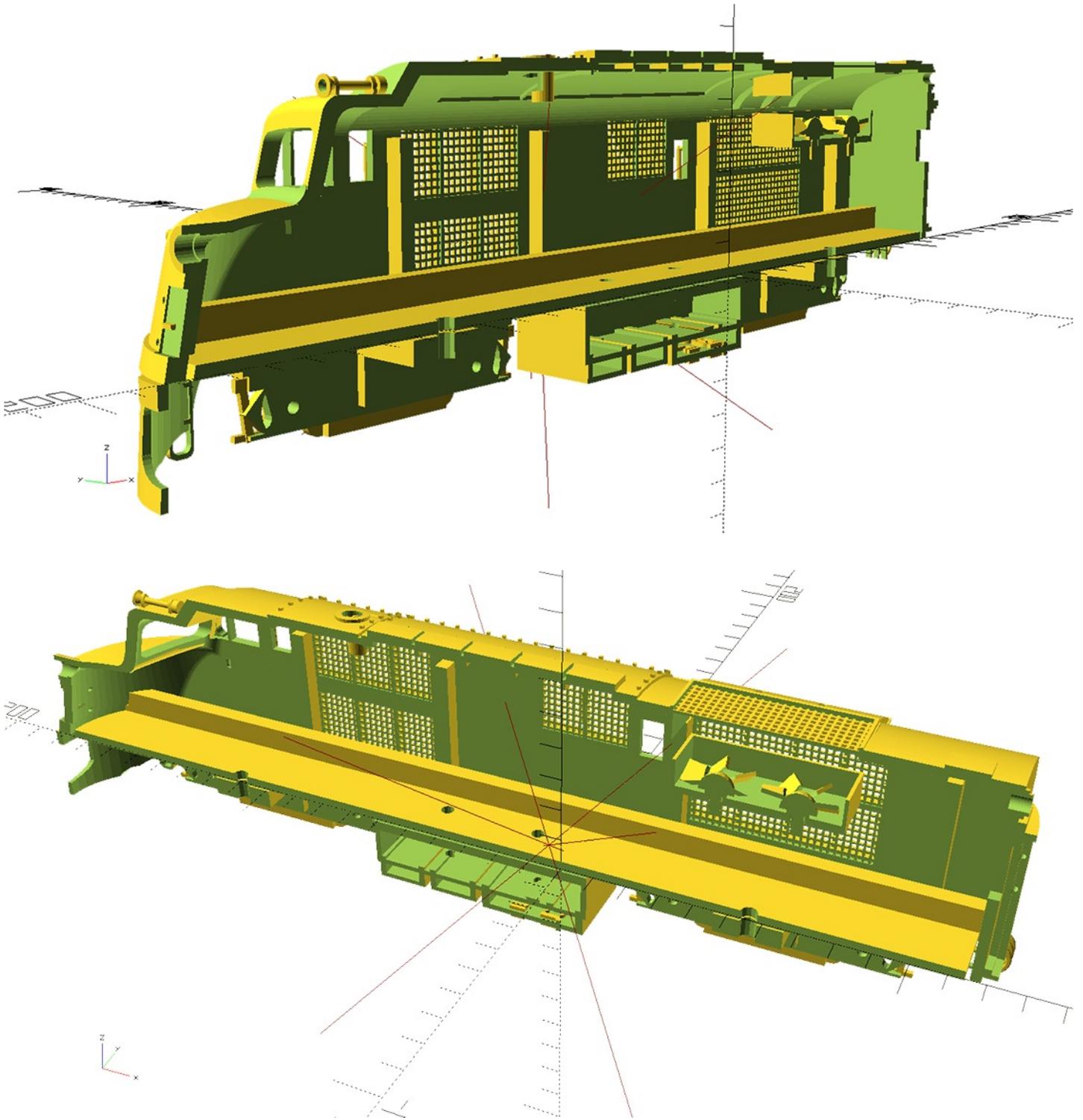
Slicing Tools

I combine multiple software for different tasks as explained below.

To inspect a fully designed model, registered users can upload the massive STL file on TinkerCAD server and rotate the model in any direction. The outlining of excessed and recessed surface areas is impressive in how they are presented in TinkerCAD environment.
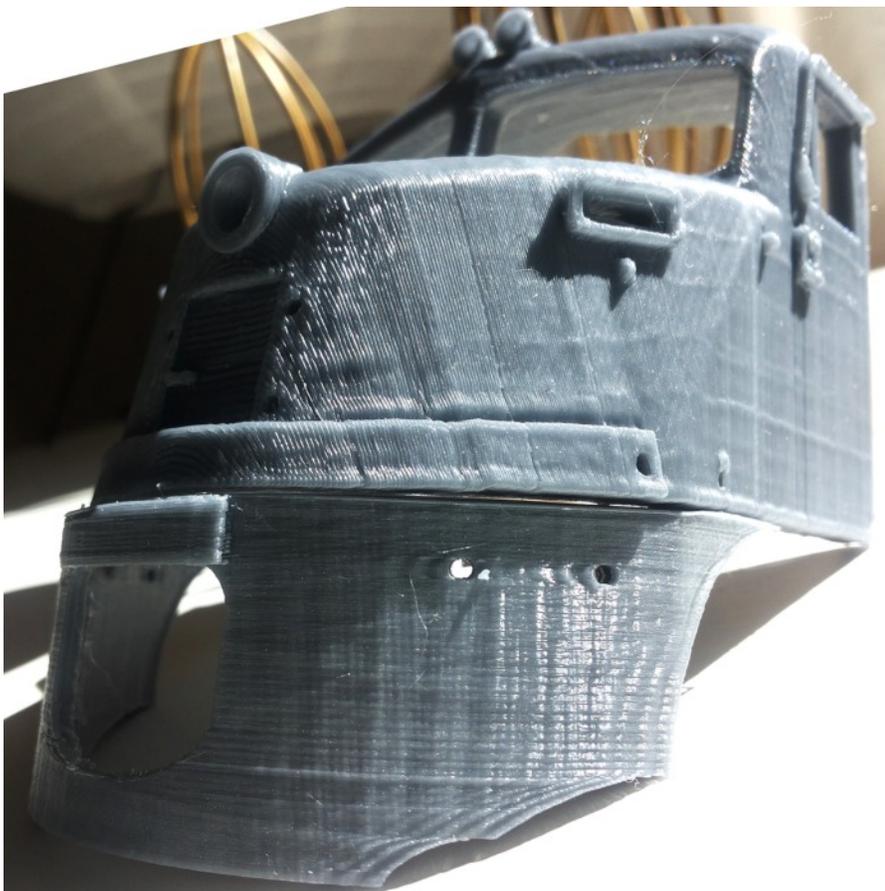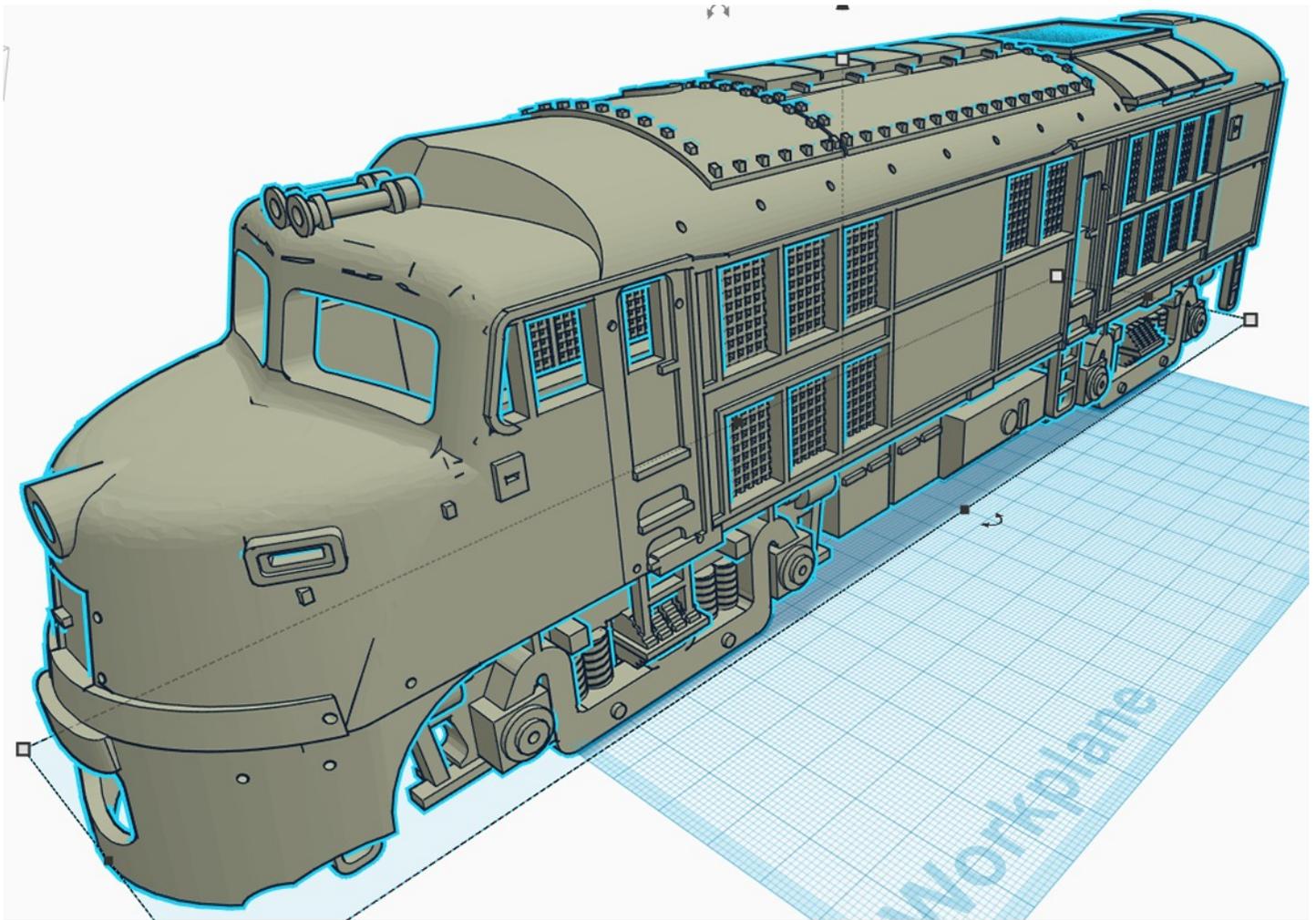
For cutting the body in suitable slices I use Slic3r software. The body has been sliced in several sections for optimal 3D printing result while avoiding support material, which is rather difficult and time-consuming to remove.

The whole model to be 3D printed consists of several smaller STL files.

For re-scaling and for preparing the G-code, file I use Cura software. In Cura, the parts can be scaled-up for O and G scale or scaled-down for H0 and N scale, but the wall thickness and the filament consumption should be taken in consideration while changing dimensions. See picture on next page.

Printing Tools

The locomotive parts, such as body, pilot, frame, fans, prime mover, tank and trucks, have been test printed with my own affordable Creality-compatible DIY 3D printer while using off-the-shelf non-toxic PLA filament. Sometimes, I have the possibility to use the UltiMaker 3D printer of a local public library with much smoother surface quality. Another option would be for the future a resin 3D printer, but for that, I should set up a well ventilated workspace in my basement when handling all kind of hazardous solvents and other chemicals. If not printing the body in a single piece, the printed body sections and other parts should be sanded before using Gorilla super glue. The spraying of a thin primer layer is also recommended for better surface protection of the body, frame, tank and trucks.

External Components

In addition to the 3D printed parts required, there are also 3rd party spare parts, such as…

    a. Wheelsets either AF with plastic wheels for hi-rail or NWSL metal scale wheels

    b. Mechanism either frame from American Models FA-2 or Stanton drives, which have to be tested yet and adjusted

    c. Couplers either for scale from Kadee (#802) or for hi-rail from American Models (CPL605)

    d. Functional headlights need bulbs and wires or a LED circuit.

Variable Results

I made several variations of the designed model for variable scales including S scale (1/64). Some variations are suitable for static display on a diorama while others could be operational on the layout. On the above photo, can be seen a set of undecorated A-A-units pulling few AM tank cars on SHS-tracks.

A. Model variations with structural modifications:

a. Undecorated with details and holes for handrails. On the surface of the body are ready holes for attaching handrails. (Unfortunately no photo-etched parts available for S scale).
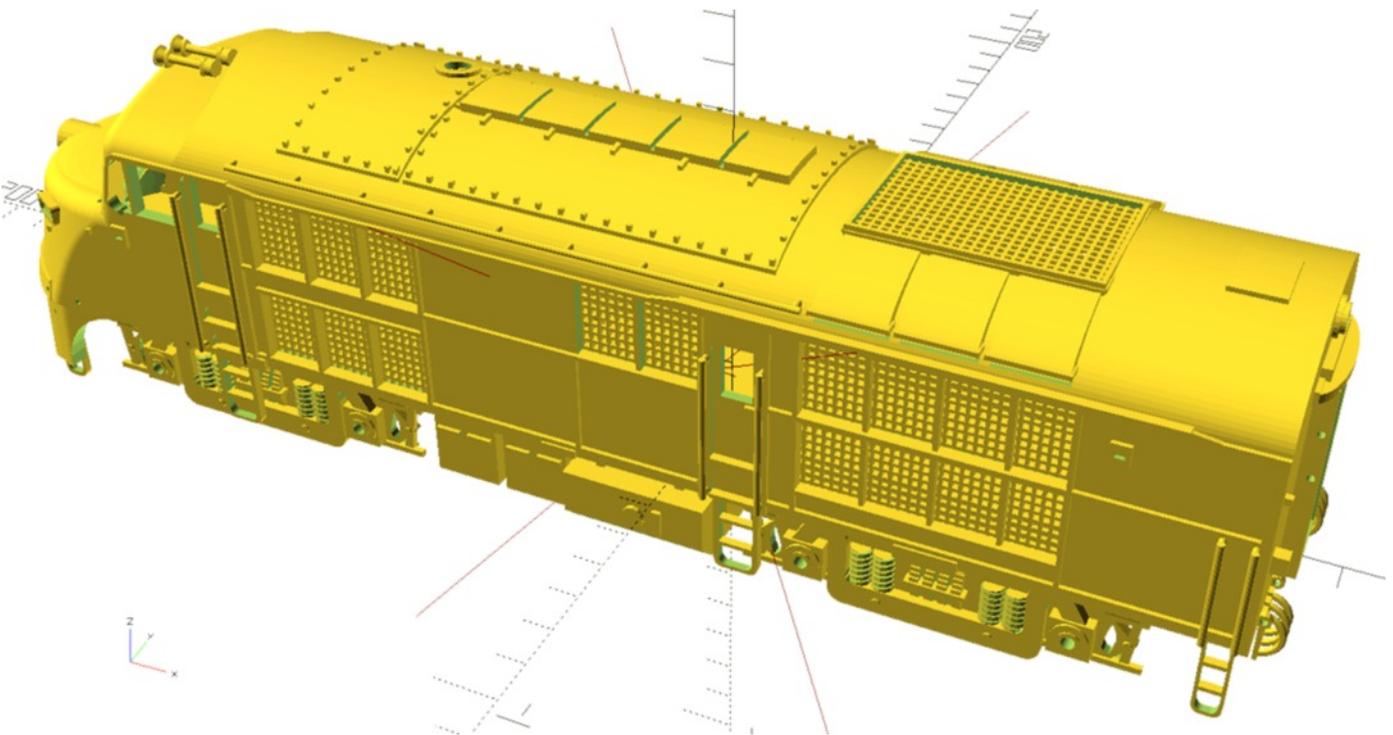
b. Undecorated stripped off (without roof covers, no doors and no venting grilles, useful for maintenance shed, workshop or scrap yard) with wrecked prime mover either inside the body or lifted by a crane.
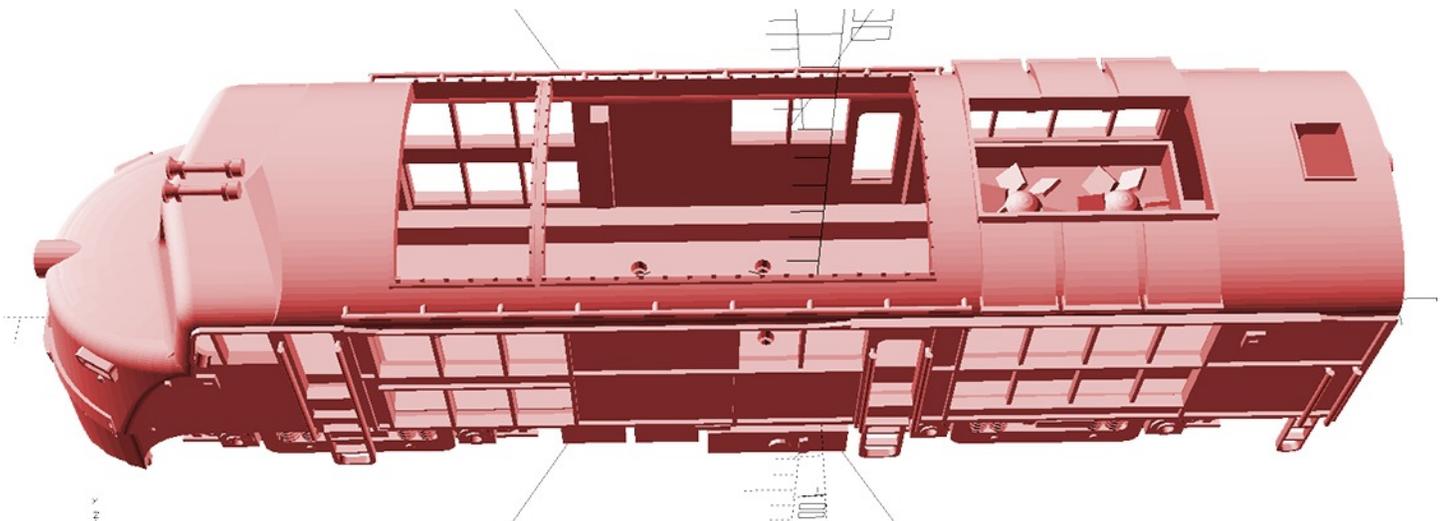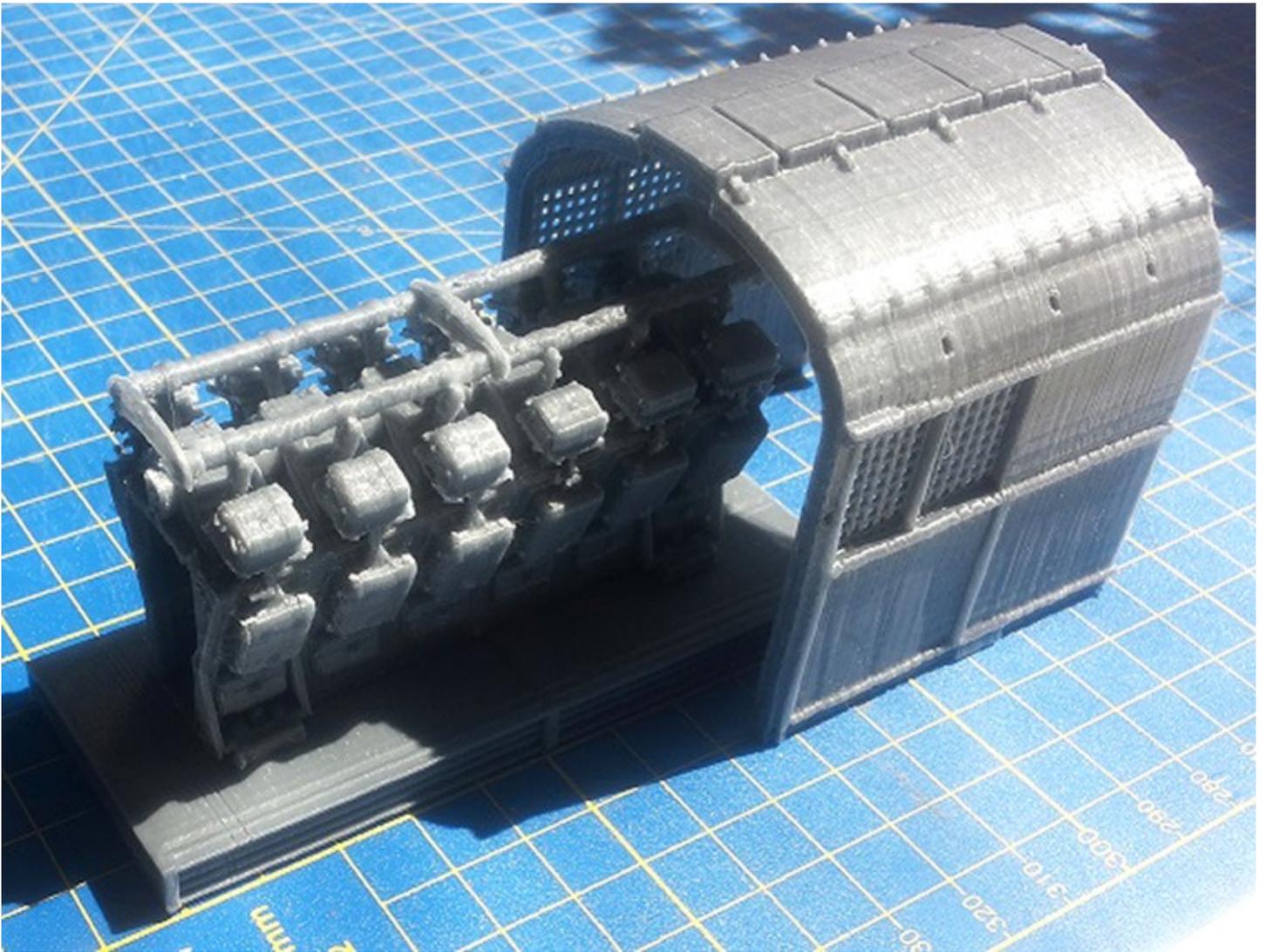
c. Hi-rail dummy model can be equipped with AM couplers (CPL605) and Lionel AF wheelsets.

d. Scale dummy model can be equipped with Kadee #802 couplers, NWSL wheelsets and headlight wiring.

e. Scale powered model can be equipped with Kadee #802 couplers, Stanton drives and headlight wiring.

B. Painting variations, which require also decals and lettering/numbering:

    a. Unpainted.

    b. Painted in plain green color (CNJ).

    c. Painted in green color with yellow stripes (CNJ).

    d. Painted in blue and orange color (CNJ).

    e. Painted in blue with beige stripe (MP).

    f. Painted in the colors of an imaginary private railroad.

Distribution and Delivery

Producing the parts on another high-quality 3D printer requires extra time, but it is not impossible. Overseas shipping expenses and customs must be taken to account. On special request, the STL files can be sent, where conditions are negotiable. For the moment, Shapeways and other distribution platforms for printed models are out of discussing due to tight business conditions and the strict technical requirements to comply with.

Future

Some derived projects could be as follows:

A. The feasibility study for the Baldwin DR-6-4-1000, specifically the C&NW #5000 A-unit with integrated baggage compartment in three painting variations, has been completed for further detailed design activities to be started soon. This model requires much wider curves and longer switches on the layout.

B. There are plans for the B-unit of the and Baldwin DR-4-4-1500, but also for the double end cab DR-6-4-2000 with 6-wheel-trucks in S scale. Everything depends on demand, on special requests and on other project priorities.

HOME MADE GROUND SIGNALS AND SEARCHLIGHT SIGNALS IN S SCALE

By Trevor Gibbs

ERSATZ GROUND SIGNALS

Model Railroads in general need some form of signaling system although many of us install them or put dummies in place. Here is an ultra cheap method of representing ground signals, on your layout.

On my railway, I had the need for a "fouling peg" system which could be readily seen by visiting operators yet look as though they are meant to be there. The seeds of this idea were sown when my wife bought me a set of Lifelike dummy signals for my HO layout which included a couple of ground signals. However, these were fairly fragile and one spectacular derailment broke two of them when one of my visitor operators threw the wrong turnout under a moving train.

I needed a few "fouling peg" type signals anyway for other areas on my layout so I took the idea to make my own, but needed something a little more forgiving of such mistakes. Searching around the scrap box, I came up with a few spare Kadee coupler pockets (not too necessary when you have Athearn cars and I believe that many S Scale modelers use "HO Scale" couplers) and some scraps of styrene which many of us should have. Cutting down the pocket to approximate size, I simply backed it up with a piece of .020" styrene and glued it onto a styrene base. A dab of white and black paint with a yellow dab where the lens would be to represent "Caution" and voila one ground signal.

Since making these I have drilled out the yellow area very carefully with a 3mm drill and used a 3mm bidirectional LED with only two leads, not three. To me it makes an acceptable ground signal and by using it in S Scale, it should be an even finer scale version.
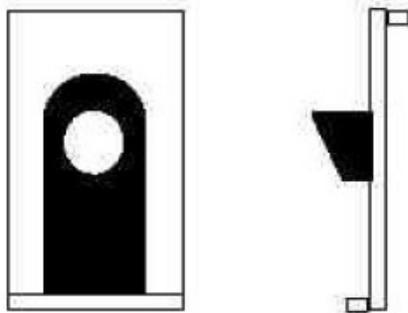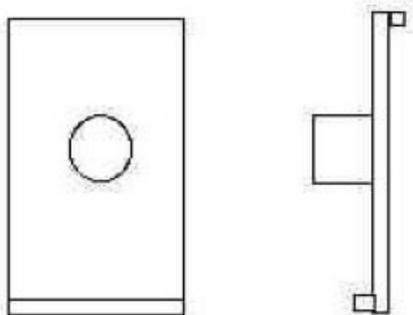
.020" Styrene Base

Showing the cuts necessary on the Kadee pocket
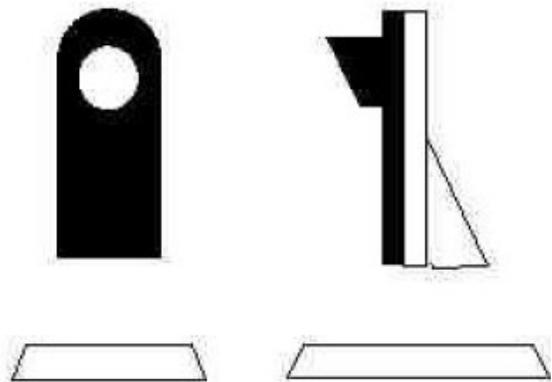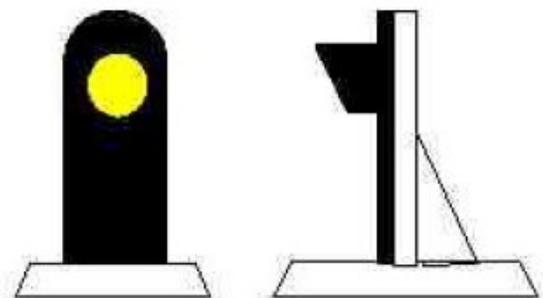
THE SIGNALS APPLIED TO THE LAYOUT

The top photo shows two Ground Signals with a Searchlight Signal between the two Vans all displaying Red. The section of track that the CN Van has just traversed is also the same length of track that is used for scale speed measurement at the front of the layout as referred to in the previous issue on Scale Speed

SEARCHLIGHT SIGNALS

The bottom photo shows the same area with the ground signal in the foreground in Caution mode. By feeding in AC as per the circuit diagram, please see Figure 1 on next page, the mixture of Red and Green flashed at 60 cycles per second (50 cycles here in Australia) provide the eye with a suitable mix to provide what WE perceive as being Yellow. Generally speaking, I do not use the inner tracks as a double mainline but rather as part of a yard. Because speeds are lower in yard areas, Red and Yellow are sufficient indications for these lights to provide and I have saved the provision of a switch, which is a saving on room on the control panel.

I have also made some Searchlight Signals for my layout to control my mainline action. They are basic as I

have not made base power boxes for them nor fitted them with ladders... yet!! The nutshell is that I have an operating signal and it is a hobby. As it is, I have a number of ladders, kindly bought by my brother, and I will make those boxes from layers of styrene. Adjusted to S Scale, the process looks like this below.

COMPONENTS OF A MODEL RAIL SIGNAL

Pt.1

TARGET DISK
3mm hole
1/2" diameter
.005" styrene

3mm BIDIRECTIONAL LED

3/16" BRASS TUBE

1K RESISTOR

Two lengths of wire to suit your situation

Cut a small notch into the tube to allow the wire to pass through

Bend the LONGER of the two wires into a loop which fits over the tube

Cut the SHORTER of the two Leads and solder a length of wire to it.

Solder the resistor to the BOTTOM of the tube

Solder the LED to the Pole near the level of the hole. When it is cool, you can poke the wire through the hole...

Place the Target over the LED and you have your signal

This is for a Left Hand signal common in Australia, New Zealand, Italy, France and Britain. You would reverse it for other applications.

Paint a Visor the Top of the LED when you paint the Signal and Voila.

Figure 1

Switch selects either RED or Yellow through AC

A C Input

Being an electrician by trade, I try to keep my wiring tasks relatively simple. I could have used a 555 timer to send a high frequency oscillation through the LED, but have found conventional AC frequencies enough to excite the Green and Red colors to produce an acceptable Yellow or Caution signal.

I have a double switch going through diodes so one way it gets half wave in one direction and reverses for the LED which has the green one working. By bypassing the diodes with an AC selection, I get the green/red mix which is a close enough yellow!

Figure 2

Switch 1 selects Red/Green

Switch 2 bypasses and feeds AC to diode

A C Input
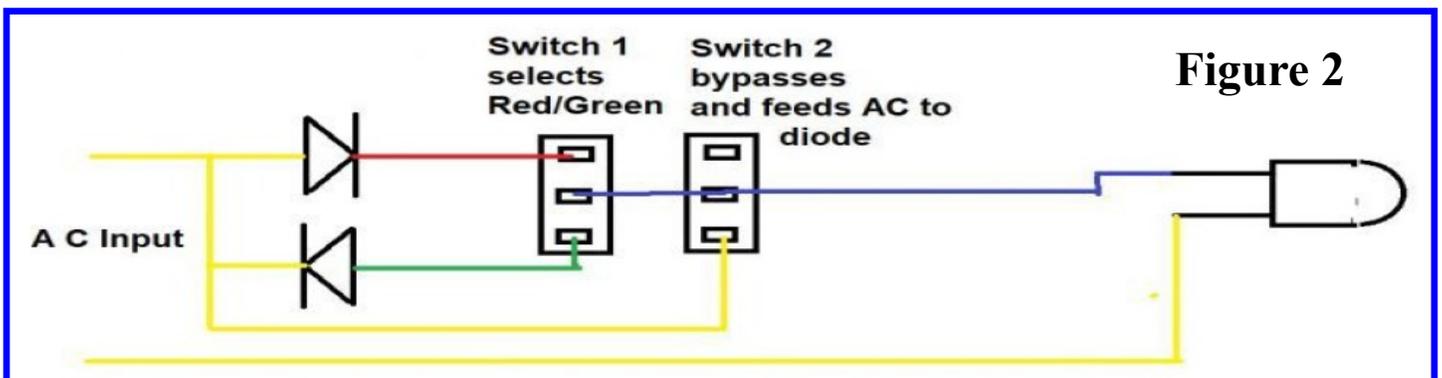
I should have used a three position rotary with a similar control circuit. This would have meant that I would have had Red, Yellow and Green for all of my signals, but my control panel would have been a tighter squeeze to fit those switches in. I could also have tried integrated circuits to get the frequency of the green/red alternation up and interlock my signals as well. But to me, it seemed more trouble than it was worth and as much as possible, I am a believer in the KISS principle. The circuit diagram is Figure 2 on previous page.

The ground signals close up at the "West" end of the yard - in real life it is actually at the East end but it did initially face West.

For yard signals I simply either select Red or Yellow with one switch as the yard should be an "approach with care" situation rather than a full speed green. so it has worked OK. There is no reason why you could not just use Red and Green combinations to control train movements as occurs on many European Layouts. Two 1N4004 diodes should be more than sufficient to control the wave power needed by all your signals within a medium sized layout. Also, although I have not shown it, do not forget to couple a 1K resistor to protect the LEDs.

The photos I have used do not do the signals quite the justice they deserve with their indications. This is due to the camera taking its image faster than the human eye and is showing a mix of the red, green, yellow and the natural color of the LED having AC pumped through it... to us the colors look OK ... which is what matters!

A double signal for the "intermediate stations" . The bottom signal only uses the Red/Yellow aspect given it is only used for local movements.

Farm Factor Figures

By Ken Zieska, Pines and Prairies S Scale

In past issues of the S Resource Magazine, we have seen examples of parts and kits from the Farm Modeler market we can use to enhance our S Scale Model Railroad. You may say, I don't need any tractors or grain bins on my layout, but I am sure you will need great looking figures to populate your scenes. I purchased samples of the 1/64th Delva Figures from Farm Factor 3D and was not disappointed. We were happy when Farm Factor 3D signed up to display at the 2020 NASG Convention, and happier yet when they offered to supply figures to support our workshop on painting scale figures. Sadly, the 2020 Convention needed to be cancelled; however, if we return to Minnesota, I am sure we can count on Farm Factor 3D's participation, but I wanted to share news of theses figures with you.

It is not difficult to add great looking figures such as this to your railroad. The figures are sold and packaged individually for $5.00 each. The figures are 3D printed and have only very small bumps from the 3D printing process which are easily smoothed with an emery board or small file before painting. I washed the figures in a grease cutting dish soap to remove any grease that I may have put on them from handling. When they were dry, I gave them a very light coat of rattle can grey primer to give a nice surface to paint with the craft paints.

I let the primer for a day to dry then sat down to paint. I had a selection of acrylic craft paints that I bought from a local craft shop. Each color is less than $1.00, so I bought a nice variety. Wondering which colors to purchase, just look in your clothes closets before shopping and you have it made. These colors mix well so a selection of basic colors, a fleshy color, some browns, grey and blacks will give you enough colors to paint a whole town of people.

Squirt little puddles of paint on around a small plate, now you have your pallet! Have a small container of water to keep your brush damp which keeps your coats of paint "thin". Have a paper towel handy to clean your brush between colors. You do not need an expensive paint brush, just a small one where the bristles come to a nice point. A toothpick is also a nice paint application tool if you want to add a button or dab or mustard stain on a shirt. Select the first color you are going to apply. Wet the brush and wipe it on the towel so it is just damp. Dip the end into the small puddle of paint you have on the plate, wipe the brush on the plate to remove excess paint, remember we want thin coats, then apply it to the figure. If you think the blue you used for the jeans looks too new, just put a small drop of blue in the middle of the plate and slowly mix in a little dab of black or grey to change the shade. Before you know it, you will have figures in new, faded and dirty blue jeans on your layout. The same technique will add color and variety to any apparel your people are wearing.

Let the colors dry for a day or two then give them some texture. A tried and true method of doing this is diluted India Ink, but much simpler is to make dirty water by adding a few drops of dark grey or black to water and creating a weathering wash. Dab this dirty water solution to your figures and let it collect in the wrinkles to add texture. If you do too much, just wipe it off and try again. Most of the inexpensive paints will dry flat so you do not need to spray them with a dull varnish, and the paint is durable enough to stand up to life on the layout.

Here are some photos of their 1/64th Delva figures. Looking closely, you will see incredible detail in the human features and the clothing. Won't these look great adding the feeling of activity to your railroad?
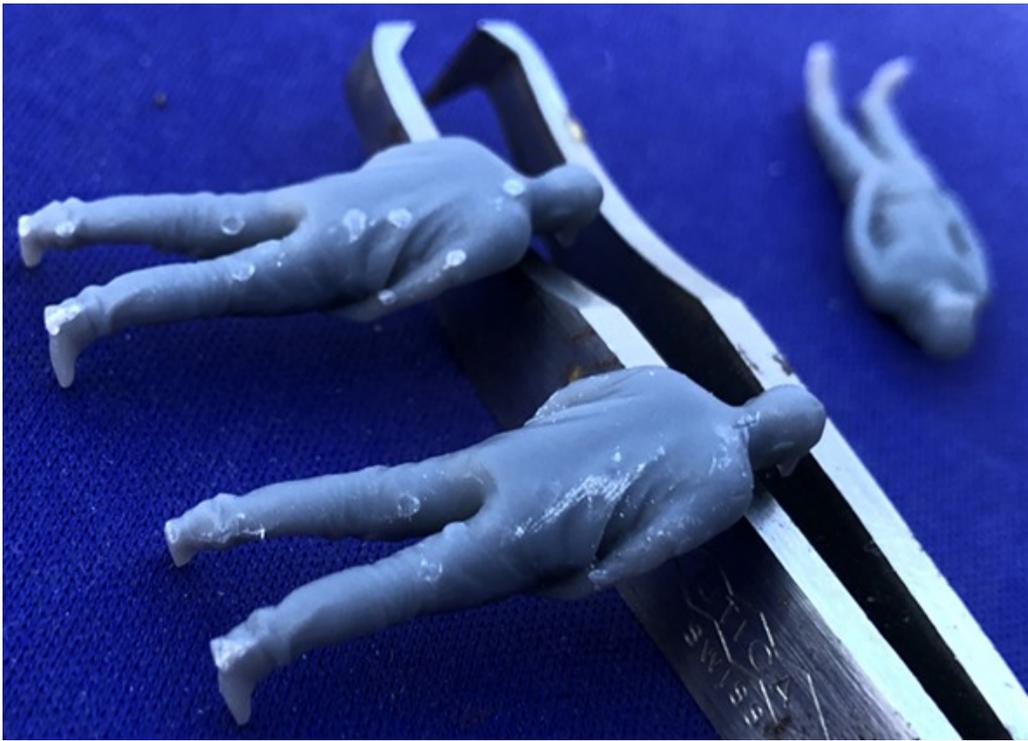
The figures have very fine bumps from the 3D printing process which are easily removed with a sanding stick or file.

Upper right: The figures invite you to get creative, this guy is on the way to a BBQ.

Lower right: Shading and washing with different shades really brings out the great features.

The figures are exceptionally well printed. Notice the detail in the clothes, the facial features and excellent proportions. OK… some of us no longer have body proportions like this anymore.

So here might be more accurate proportions, excellent detail in the clothing and facial features.

There are 9 different figure styles to choose from, individually painting them allows you to duplicate and spread them through your scene.

Farm factor also offers accurately 3 D printed cows for your rural scene.

A few fun hours on the back porch and I have a small crowd to add to my railroad.

A couple of the fellas just hanging out waiting for the arrival of the MHRR local's arrival. This is a Hidden River Models kit. Hidden Rivers Models was featured in a past issue of The S Scale Resource Magazine.

Setting up a workspace to paint figures is easy, just an old plastic plate, a selection of colors, water and a brush and you are ready to go. Yes, this is an old Ertl Farm figure, not a nicely detailed but with a nice coat of paint he will add interest to the scene.

It is important to have a brush that will form a nice sharp point.

The "pallet". I use small dowels of wood and double back tape to make holders when I paint. Each bottle of paint is less than a dollar.
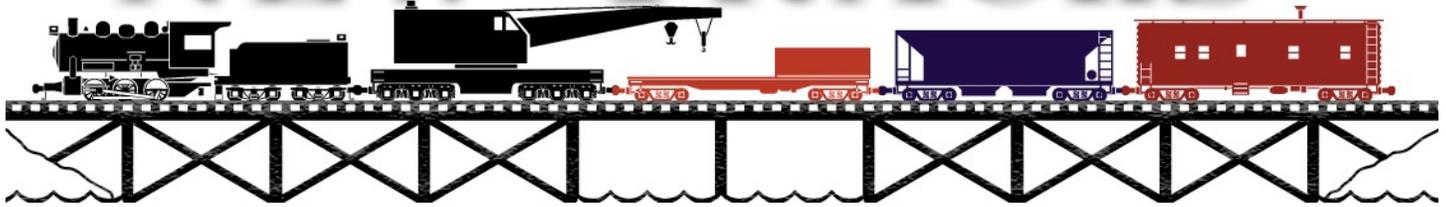
Mentor Definition: A Trusted Counselor or Guide

By Contributing Editor Jim Kellow MMR

Computerize Your Model Railroad
But First, "New Tracks Meetup" Announcement

"New Tracks Meetup" is presenting its second virtual "Zoom Train Show"with outstanding vendors on Saturday November 21, 2020 at 1:00 p.m. EST.

If you missed our first Train Show, you owe it to yourself to not miss this unique opportunity to visit with some truly talented and creative model manufacturers.

This Train Show is breaking new uncharted ground for my "New Tracks" series. I owe thanks to my Zoom Co-host and Technical Advisor Dylan Lambert, of Lambert Locomotive Works, for his help and to several other modelers and vendors who gave me great advice and encouragement to do this.

Modelers and vendors haven't been to a train show recently or plan on going to one anytime soon, so we are having another Virtual Zoom Train Show that will bring outstanding vendors and modelers, in all scales, from around the world together. Many of the vendors you will meet have previously been profiled in my "New Tracks" series. I hope you will support this effort by participating in this unique opportunity.

If you are new to the Zoom video conferencing technology, all you have to do is download the Zoom app to your computer, Android device, iPhone or iPad and then click on the log in link to the "New Tracks Meetup Train Show".

The log in link will be available on my Facebook page Jim Kellow MMR. It can't be any easier to attend a train show.

Please also go to my Facebook page, Jim Kellow MMR to get current information about the Train Show event, including the list of vendors you can meet and talk with. Best of all, you can participate from wherever you are, for free, either from your computer, tablet, or cell phone.

My goal for this event is for vendors to reach potential customers worldwide, and to have modelers find vendors and products that can help them in their model building efforts and buy from these vendors. It's a win-win for both vendors and modelers. Best of all, more modelers will become model builders.

How will this event work? The vendors will talk about their products and prices. Participants can ask questions through the Zoom chat function or by email directly to the vendor, and of course, buy on the spot or later if they can only watch the recorded video of the event.

The video will be posted on my Jim Kellow MMR Facebook page for one month after the event. All buyer's purchases will be made directly with each vendor. There will also be an open discussion period at the end for questions/answers, comments, and ideas for future shows by all participants and vendors.

Please let me know at JimKellow@sscaleresource.com if you have any questions or comments.

I look forward to your input, suggestions and, most importantly learning, that you enjoyed this event and it was helpful to your modeling. Thanks in advance for your support and participation. Click on the log in link a little before 1:00 p.m. EST on November 21, 2020 to participate. I look forward to seeing you.

In addition to the train show information, you can also find out what else is going on, in the MY BUILD segments, and who are the featured modelers scheduled to appear on my regularly scheduled twice weekly Zoom "New Tracks Meetup" on my Facebook Page: Jim Kellow MMR. I look forward to meeting you, seeing your models, discussing modeling with the featured modelers, and learning how we all can become better modelers.

Next, I want to discuss how some modelers are using computerization to operate their model railroads. I think you will find this interesting and maybe even inspiring.

> I really wish I could have found S Scale modelers for this article. The truth is, I tried and did not have success. I was told over and over again that not many modelers in the USA, in any scale, have implemented computerization of their model railroads. Therefore, since modelers in all scales can do what the modelers I profiled here have accomplished, I hope you learn a little about what you can do, and benefit from their experiences and offers of help. If you are a S Scale modeler using any type of computer assisted system in your operation, I would like to hear from you so I can share your experience in a future article on this subject.
> My email is JimKellow@sscaleresource.com.

Computerize your Model Railroad

Imagine walking into your model railroad room, turning on the lights and pressing a start button on your computer. Your railroad comes to life. You can be a part of its operation as much, or as little, as you want.

The first scheduled train starts, second train starts, and so on, switches are thrown for each train's selected route, when needed, signals change when needed, lights and sounds and animated scenes come on and off as scheduled.

A train starts up a mountain. It's weight is measured, and if it needs a helper engine to climb the mountain it stops. A second engine at the roundhouse starts up, travels to the rear of the train, couples up, exchanges whistle signals with the lead engine, and the train starts up again. As it climbs the mountain, it changes speed based on the grade. All this time, all the other trains and accessories are still operating on schedule, and all you have done was press a button, watch and enjoy.

Or, imagine you walk into a museum and there is only one person there with the model railroad. You ask if you can see it operate. He presses a button on a computer and six different trains start on schedule, slow down as needed for the terrain, and stop at designated stations, blow their whistles as required, and move around the layout just as the real railroad would have operated in 1909. Meanwhile, you get the benefit of hearing the volunteer tell you about the real towns, stations, and beautiful scenes you are watching the trains pass through.

Welcome to, not what could be in the future, but what is two actual examples of model railroading operations that exist in the USA today using off the shelf software you can purchase.

Is computerization of our model railroads to this level of technology for everyone? Probably not, but for some modelers and organizations, the computer is replacing the crew historically needed to operate a railroad with only one person who can operate one of the trains on the layout as much as he wants while the computer operates the rest of the layout. Wow. I had no idea the software was available that could make this level of operation possible.

I recently had a modeler tell me that he would not be interested in model railroading if he could not computerize his model railroad. He also told me no one should be a NMRA MMR unless they were skilled in the use of computerization for controlling a model railroad.

Since I don't have a PC, and only use an iPad and a iPhone and can, most of the time, do email, word and Zoom, with help, I might as well give up my MMR! I don't agree, but to each his own.

But wait a minute, what if he is having more fun with his way of operating his railroad than I am? Maybe I should see what this computer stuff is all about. Maybe I should see if current technology can help me better enjoy this hobby.

No sooner had I written a post on Facebook asking for modeler's help in identifying what computer programs are available and who was using them, than I immediately got comments saying forget about computerization as it is bad for the hobby.

OK, I understand that some modelers may think computerization of their model railroad is not for them. But I really encourage you to read about what I discovered, as you may learn something new that you can use and will enhance your enjoyment of operating your model railroad.

NOTE: While I cannot say that the software I included in this article is all that is available, it is all that modelers told me they were using. If you are using another software or know someone who is, please let me know so I can contact them and add to my knowledge about model railroad computerization and update this article.

After getting pro and con responses, and having modelers talk about writing their own code using JMRI, a free open source program on the Internet, or ADAFRUIT Industries free program, or the NMRA LCC, various brands of DCC, Bruce Chubb's C/MRI, Arduinos to run signal systems and to control random lighting effects in buildings, TrainTraxx.com, Raspberry Pi, Train Brain, 'RailMaster' software, and being told "for unleashing the full power of PC control the Hornby 'eLink' is placed in between the PC and the layout", from obviously very knowledgeable and talented modelers, I frankly got totally confused.

I got so lost in the forest, I could not see the trees and knew I just had a lot to learn. I was about ready to give up trying to write this article.

But then I decided to talk to the modeler who originally contacted me, tell him my feelings and ask for his help. He immediately suggested I contact Freiwald Software Company, and one of his friends in Australia who used their software.

I did, and after talking to the company and his friend, decided to concentrate on the Freiwald Software for this article. This is not an endorsement, but I think I can at least explain to you what I believe is the current state of the art in computerization for model railroaders and off the shelf software that I "might" be able to tackle. I will leave for later, or to others to discuss other ways to write your own programs or use other technologies.

Freiwald Software Company

I talked to the company owner, Mr. Juergen Freiwald, who I found easy to talk with, and he even said things in a way I could understand.

His website https://www.freiwald.com/pages/index.html provides a lot of information and is very informative. I encourage you to check it out. After looking it over, I asked Juergen some questions.

Q: Tell me about your company's software products for model railroaders.

A: Freiwald Software provides professional software for computers running Microsoft Windows for model railroad computer control.

Q: Why should model railroaders implement your software? What additional operational capabilities does your software provide to model railroaders?

A: Our software allows a modeler to operate model railroads in a way that cannot be achieved by one single human operator by hand.

Q: Many modelers are not very computer literate so how difficult is it to install?

A: Installation has been made as easy as it can be made on modern Windows computers. However, model railroad computer control, requires certain knowledge in the handling of computer programs in general, as well as technical affinity and basic knowledge in the digital control of model trains in particular.

Q: What size model railroad do I need to benefit from your software?

A: The size does not matter. If you want to control more than one running train at the same time without the risk of collisions you will benefit from our software.

Q: Can any scale benefit from your software?

A: Our software is not scale specific.

Q: If I need help, do you provide help in the installation and operation?

A: Our software comes with complete and comprehensive documentation; an online support forum with more than 20,000 members and answers for questions via our email support.

Q: I live in the USA, is there someplace I can go and see your software in operation?

A: There are several museums and exhibition layouts, which use our software. The probably best known is Gulliver's Gate located at Times Square, New York. (Note: I tried to contact them but was told by a friend the Organization filed for bankruptcy and was not currently in business.). I did find another museum and have profiled that museum later in this article.

Q: Can you recommend a model railroader who uses your software who I can talk with and profile as part of this article ?

A: That's difficult, because as a matter of principle we never uncover contact addresses of our users. But if you place an inquiry in our forum www.freiwald.com/forum, you should be able to get in contact with model railroaders in the USA, and perhaps some exhibition layouts we are not even aware of. Not all users tell us what they do with our software. In our forum, there are several thousand users from the USA. There should be several, whom you can get in contact with. NOTE: Through some friends, I was able to find two modelers: one in the USA and the other in Australia that I have profiled in this article.

Q: Are photos available of model railroads using the software?

A: We have distributed a number of photos of exhibition layouts on our website www.freiwald.com. However, these may not be able to be used without the owners's approval. But these pictures at least give an impression. Otherwise, we only have pictures that we have received with the promise that they will only be used confidentially. But in our forum www.freiwald.com/forum, there will be probably many people who will happily share some of their photos with you. Our forum is the best reference and source for anything.

Q Next I asked about the software:

A The software has been completely developed by Freiwald Software. It is available since Version 1, was published in November 1995.

The modelers I talked with who use the software had nothing but great things to say about it and, based on what I heard, the software is really outstanding and is what one modeler told me is a "force multiplier" and "enhances" your model railroad operation.

But probably not for me to use as I am not very computer literate, as you can tell, and only have a relatively small layout which uses regular DC and home built controllers with diodes, and WWII rheostats to run up to two trolleys at a time, with a controller in each hand. Please, stop laughing and read on.

But for others, this software is something to investigate further. I have tried to tell you about two modelers and one museum in such a way that you can get a good feel about how this kind of software can enhance your operation. Now let's talk with these Freiwald Software users.

Darren Johns (aka: Dazzy Jay) - Australia Modeler

I found Darren through the modeler who originally got me interested in this subject. Darren, aka Dazzy Jay has installed and used the Freiwald Software for some time and has a YouTube Channel called, Model Railroad Techniques, you can visit to learn about his experiences. Also, he told me that he will help anyone who is considering computerizing his model railroad.

While I was writing this article, I showed Darren an early draft to make sure I was saying what he and other modelers were actually accomplishing with computerization of their model railroads. Darren not only gave me his comments on the draft, he also wrote a piece on Imagine that I believe captures his model railroad.

Imagine this, you want to run an operations session on your miniature transportation system, but due to the current restrictions you don't want to risk operators coming to your home. This is no problem as you have set up your DCC railroad to be flexible. With a click of a few buttons you can send pre staged trains to any location on your transportation system ready for shunting.

If you are like me, seeing only one train travelling over your railroad maybe a bit boring, but you have set up trains to run automatically to create bridge traffic. This includes all prototypical bell, horn and lights activations on the locomotive and pre staged stopping locations such as stations. These trains will never collide with the collision avoidance measures built into the railroad. Once you conduct your manual shunting moves at the various industries and sort your paperwork, you send this train back to the yard…but this time you want to control this train manually. This is no issue, you easily set that train to semi-automatic control. This allows you the use the hand controllers to control the train: speed and functions, etc. With semi-automatic control, if the engineer does not stop at a red signal, the computer takes over the train to stop it thus avoiding collisions. Once back at the yard, your train goes through an uncoupling move utilizing Kadee Electro magnets uncoupling the locomotives from the rest of the train. The locomotive then automatically parks itself in a round house or other facility. You are now free to shunt this train.

Does this sound exciting, but daunting to set up computer control? This software is available now its called TrainController. Please see a link below to my YouTube channel where I have showcased the software's capabilities. Furthermore, you can download the software and use its full functionality connected 'live' to your miniature transportation system before deciding to buy it.

If computer control is not your thing, but you want some help with DCC. I can work with you to design the DCC hardware architecture and teach you the basics to create your miniature transportation system.

Please meet Dazzy Jay (a really great mate from Australia). I am so glad I found him.

Darren Johns grew up in South Australia, where he became a rail fan with his Grandfather from a young age with the then SAR & AN-South Australian & Australian National Railways. Darren has been a model railroader for 30+ years. He is currently working on his third layout: The Fallen Log Railway, which is a freelance railroad predominately modelling Eras 1-3 European locomotives and rolling stock. Darren posts weekly how-to and product review videos on his YouTube channel, Model Railroad Techniques and can often be found on Facebook at modelrailroadtechniques.

He said he models in HO Scale as it is the most widely available for European railways. Plus, his father and grandfather modeled in HO.

I asked if he had any mentors. He told me: "During my modelling journey, I have been blessed enough to have several mentors who have helped me immeasurably, by passing on their knowledge and expertise to give me the skills in this great hobby of ours. Two gentlemen in particular are always too willing to assist me with any question I may have. One other gentleman I have never personally met, but met him on the TrainController Software Forum. TrainController is a German based (I believe to be ultimate model railroad software). In the past several years, I have conversed, via email, with him several times a week (sometimes daily). He has helped me immeasurably and asked nothing in return.

The other gentleman who helped me only lives a 30 minute drive from me; we often talk model railroading. My ultimate mentor in model railroading is Josef Brandtl, I have never met this gentleman, but his modelling is second to none.

Of late I have been getting into American craftsman kits, eg: Carolina Craftsman Kits and Railroad Kits. I have interviewed on my channel several gentlemen in this space such as Stephen Milley from Rail Scale, Jeff Grove of CCK and Ron Klaiss from Mine Mount Models. I have been asked, "Why American craftsman kits on a European layout?". Well.....the architecture is very similar to Europe, plus if I like the look of something, I will model it. I watch A LOT of YouTube of late on making and weathering these models. I have even made some videos on these aspects.

Why did I computerize?

I have a large layout and live in a small rural town South of Adelaide, South Australia, Australia. I do not have any crew members that can come and help me run my railway. So the logical solution was to have a computer controlled railroad. Why TrainController (TC)? Whilst thumbing through a book by Josef Brandl, I saw one of the layouts he built was run by a computer, TC, so I downloaded the free version and gave it a go. WOW that is all that I can say. Software designer Juergan Freiwald coined the phrase "perfectly control model railways". This is particularly true with this software. There is so much you can do with this; well beyond the scope of this short passage of text. The main reason I went for this is that I can control my whole railroad from a central location. TC is a program that you build the basics eg: track plan, which are called switchboards with all your track elements on it, eg: switches/turnouts (depending what part of the world you are in). Next you add all the blocks which are detected via current sensing modules that talk with the PC. This is the basis of how TC knows where a train is at any given location and then, in turn, adopts collision avoidance measures.

You can then keep adding other computer code to the program to do a myriad of other functions like setting your schedules where you present up journeys for the train to travel. These schedules can link in with other schedules to send trains where ever you want them. I set up the schedules to link in with my operations system. I have set these schedules to run automatically from point A to point B where the train is then shunted. Or I can manually run trains from point A to point B and they shunt the wagons out as per the waybills. I build in this flexibility depending on the amount of operators I have. The possibilities are endless with what you can do with TC. Another huge consideration is the amount of wiring is limited because you do not have to wire physical traditional control panels. Additional pros are talked about above.

Cons would be you need to have some computer skills to set this up. Having said that, Freiwald has developed an awesome forum where everyone is willing to help. The program is very expensive.(well worth it though) and you need PCs. You need to buy a lot of electronics to detect blocks and control the turnouts/points.

After I read his comments I asked him several questions.

1. What if I have a small railroad? Would this software help me? How?

My Fallen Log Railway fits in a 30 feet by 30 feet structure. It is a G shaped layout. I have never measured the mainline track. I probably should do this. The current layout has taken 12 years to get to where it is. Labour of love. I have changed the control system 3 times since this, which meant it has been rewired twice. I will never to that again as it's too time consuming.

Definitely, you can use the software to control turnout/switches via the PC monitor. As discussed before, this limits the amount of wiring required to a physical control panel. If automation is your thing, TrainController (TC) can be used for a myriad of tasks such as setting up grade crossing gates, PC controlled layout lighting and realistic signaling that can all be controlled from TC. You could set the layout fully automatic scheduling if you want to show friends the layout with minimal input by you if you are entertaining.

2. *Ball park cost for software and all the electronics to computerize your model railroad?*

This is dependent on size of layout and software architecture. Eg: S88N or LocoNet. I use S88N as it is a cheaper option and TC will do all the heavy lifting regarding collision avoidance and train detection. I use either Digikeijs or Liffinski Datem Technica (LDT) which are both European companies. S88N protocol is an older standard, but used widely still in Europe. If you wanted to stay with USA products, Digitrax is supported by TC. I personally love Roco which is an Austrian Brand. I believe it is a better system, in particular updating firmware in the command station and hand controllers.

Cost:

Digikeijs turnout/switch control. DR4018 controls 8 turnouts = 37 Euros= $42 USD (approx.) LDT are a similar price. Therefore $5.25 per turnout. My layout has approximately 148 turnouts. I use predominately Tortoise and DCC concepts turnout motors. In my staging yards, which are hidden, I use Roco above board solenoids to change the turnouts.

Occupancy Detection:

I would conservatively have 195 isolated occupancy blocks controlled by the above companies detection units. They cost around 54 Euros ($61 USD) and control 16 separate blocks. Therefore, $3.80 USD per block. This is a tricky one to talk about with out a track plan in mind. I have a lot of blocks because I run so much automatic operations. If you want very accurate stopping distances you need a lot of blocks to track the train. But my layout is very large by Australian Standards..\

Software:

Train controller costs $799 USD for the gold version which is the highest level of control. Bronze at the entry level is $164 USD and Silver in the middle $529USD. So the software is expensive. You can add other software plug ins to this, such as Smart Hand, which is basically a network interface that uses a mobile phone or tablet to control the trains or the turnouts. I use Smart Hand on a wireless wifi network in my layout room to control the layout via 5 PCs which includes 1 PC that is the 'main PC' and is effectively the dispatcher's panel. I have a PC in each of the main shunting type areas. Eg: Belair Yard (main yard), Harbor area, Nancy (alpine area) and Barham (suburban area) and then the dispatcher's PC that can control the whole layout.

I use my 'soft switchboards' to move turnouts and start schedules and activate other functions. To run trains, I still use my proprietary controllers of my DCC system which is a Roco Z21.

There are other plug ins such as Animator (free) that you can use your own photographs of locos and rolling stock to use as icons with in TC. There is another plug in called Collections (not sure on price) where you can select from a myriad of photos to select to use as icons. I have this for my European stock. There are many USA pictures for you to use.

Software differences:

This text below is copy and pasted from TC website:

The following variants of TrainController™ are available
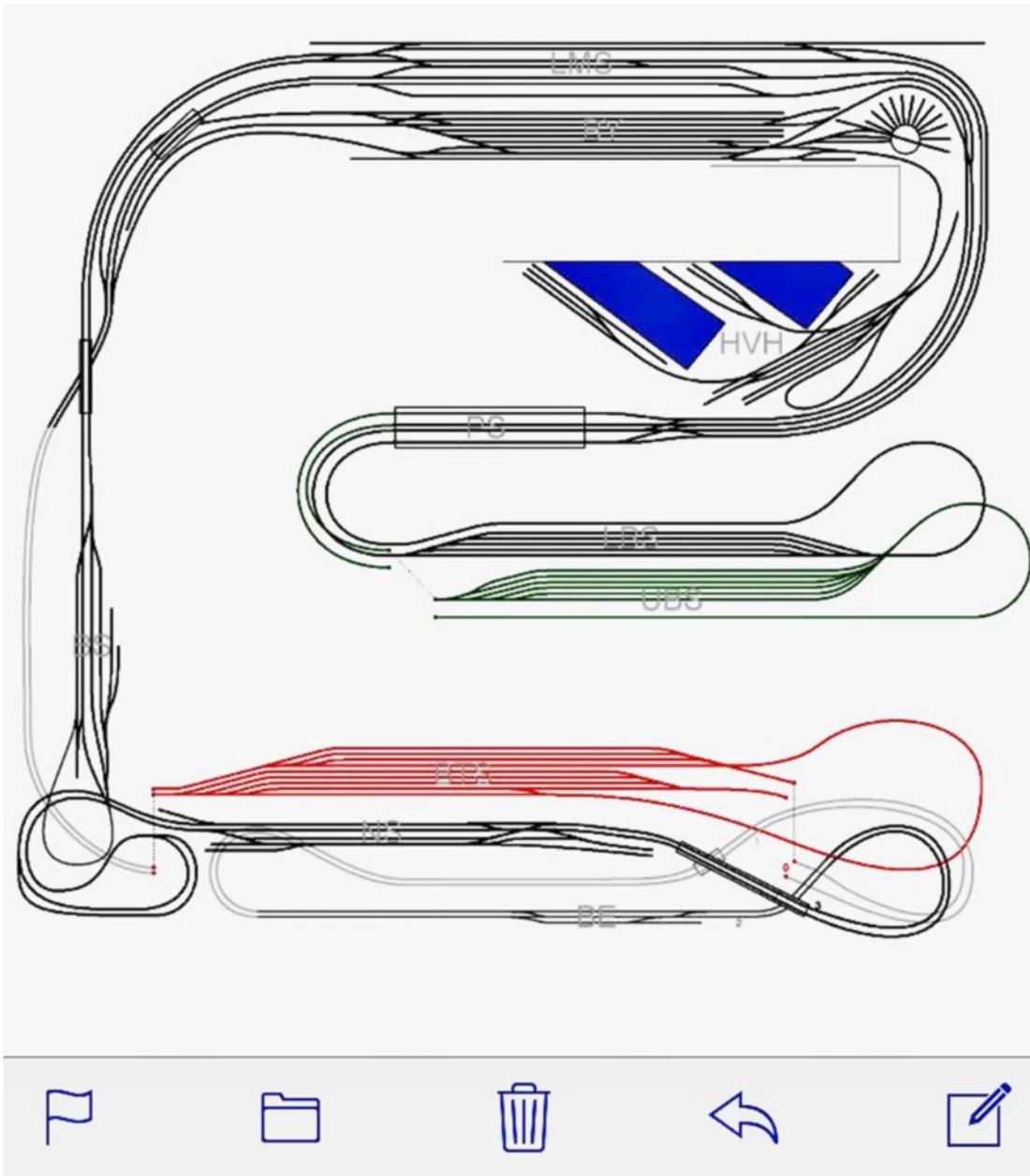
TrainController™ Bronze offers a cost-effective entry into model railroad computer control. It is well suited for users who are looking for an easy to use program that covers reliably the standard tasks of model railroad control, such as switchboard operation, routes, block securing, hidden yard control or shuttle trains.

TrainController™ Bronze also provides an excellent entry for model railroaders, who still have little experience with model railroad computer control. The features are focused on the essential functions. This makes it easier, in particular at the beginning, to distinguish the basic functions from the advanced.

TrainController™ Silver is the successor to the legendary program – TrainController™ 5. It addresses users with high demands, and also users who are not reluctant to puzzle to accomplish individual goals. TrainController™ 5 was already the leader among the programs for model train control. This position is strengthened further by TrainController™ Silver.

TrainController™ Gold is the ultimate control program for model railroads. It combines maximum functionality with simple operation, maximum convenience with most efficient way of working. TrainController™ Gold is the choice of professionals and users with highest demands that want to control like the professionals. Even the largest model railroad layouts can be efficiently and conveniently managed. Their block and route system can be configured in a few days! But also less experienced users can accomplish ambitious tasks easily and with little effort with TrainController™ Gold. In TrainController™ Gold, virtually all essential requirements are considered, that have been collected from users of earlier versions of TrainController™ in the recent years. TrainController™ Gold is not only ahead of similar programs by several years, we even claim that currently there is no comparable program on the market!

3. *How about some photos of your Dad's and Grand Dad's layouts?*

Sorry I don't have these. They are on the old slides and never been bought across digitally..

4.   What about switching at point A and B? Is that computerized, or do you have to have control panels at each Point and do switching manually?

Switch at A and B would still be done by the operator via TrainController (TC). I use my 'soft control panels' eg: using the mouse on each of the 5 PCs that run my railroad. If you don't have a PC in your layout room, you could use a tablet that shows the switchboard that can be operated by a touch screen or stylus. So let me try to explain this a little better. Train starts at point A, depending on how many operators I have on any given OPS session or their experience on my layout. If I have only me or 1 other operator, the layout will be switched to Automatic. Which means a waiting train is started via a button on the TC switchboard. All turnouts are switched automatically and train control is all done by the TC, including collision avoidance and all starting and stopping of trains at red signals. The train then goes through to point B and the schedule terminates. Then train is then shunted manually via the operator as per the waybill and switch-list system.

Alternatively, semi manual (as I call it) is where a waiting train is set on its journey via a button on the TCs switchboard, as on the above system. The difference here is that the operator starts and stops the train at a red signal. I have built in via TC that if an operator does not stop a train at a red signal the system TC will take over the train and stop it so the train doesn't collide with another superior train.

5. Software controls trains from point A to B and from B to A. Also controls switches along those routes and signals and makes sure trains do not collide. What else can it do?

This is where TC can get complicated…What would you like it to do?

5A. Will it control switching pickups and drop offs along a route between points A and B? Will it also control animation scenes on RR? Will it also control sound module in buildings or scenes on RR? I guess what I am asking is will it also control non trains or routing items on a RR?

Yes, you would set up schedules A-B to C and beyond if required. You would just link the schedules together. You can link any number of schedule sequences together.

Yes, regarding the animated scenes. I use Kadee electromagnets with relays so I can't see why you couldn't use other animations using a decoder to turn them on and off using TC. I know of modelers controlling cranes and all sorts. As long as it can be connected to a decoder of some sort, you can control just about anything I would think.

6.   What does "Need some computer skills" mean? How much skill is required?

If you have basic to moderate PC skills with windows. That is an important point as TrainController is only for PCs at this point. A good understanding of this program is required to justify or load in all the data needed to run get the railroad running, eg: each turnout has a DCC address that needs to be added to TC so the system can activate the turnout. The same as loading in the addresses into the blocks so they activate when a current drawing stock on it, eg: loco or rolling stock with resistor wheels sets. The instructions within TC are ordinary at best. S88N is easy to follow as they are daisy chained together so module #1 (occupancy detection) has addresses 1-16, module #2 is addresses 17-32 and so on. Turnout decoders are a little different as you set a base address, eg: 100, so an 8 input decoder would have address range from 100-107 etc. Very similar to setting a DCC address for a locomotive .

But you break each component and justify the switchboard as you go. Eg Step 1 draw your track plan, step 2 put in turnout addresses, step 3 put in occupancy addresses. Then the sky is the limit where you go from here regarding automation etc, eg: setting up schedules. But these 3 steps will get you up and running trains. Which is very important.

7.   What is next for your RR?

That is a great question I am in the process of building my harbor, Harold Victor Harbor, which is named after my grandfather. When this track work is finalized, I will be having a 'Golden Spike' ceremony as the all the track work will be practically completed. After that, the layout room needs a really good clean and I want to run some trains. This has not been done over the whole layout for some 12-18 months due to scenery work etc. For an upcoming video series, I will be doing a harbor side diorama that will fit into my harbor. I will be using Nickerson Landing and Eagles Landing by Carolina Craftsman Kits. (Side note I have interviewed Jeff Grove before..great bloke.) and the lighthouse will be Epsillion by Bruce Nickerson, Seaport Model Works. This will take me some time yet.

8. What is size of your RR?

Fallen Log Railway is 30x30 feet. Not sure how long the main line is..I should measure it one day. I will send photos once I get home in the next few days.

Last question. I am starting with zero knowledge of computerization of a model railroad. Is there anything else you would like to tell model railroaders about the subject and your experience with your modeling that I have failed to ask?

Darren said: "Keep it all simple, do the basics, master those, and then build the PC architecture as your experience/confidence grows. Just give it a go, this aspect of the hobby is mind blowing."

Thanks Darren for your help. You can contact him with questions or comments at Darren.Johns@sscaleresource.com.

By the way, when Darren and I talked by Skype the first time, he told me he can help modelers get started with their automatic computerized control system if they are having problems. Specifically he said: ". Imagine this: You want to run an operations session on your miniature transportation system, but due to the current restrictions, you don't want to risk operators coming to your home. This is no problem as you have set up your DCC railroad to be flexible. With a click of a few buttons you can send pre staged trains to any location on your transportation system ready for shunting.

He continued: If you are like me, seeing only one train traveling over your railroad is a bit boring, but you have set up trains to run automatically to create bridge traffic. This includes all prototypical bell, horn and lights activations on the locomotive and pre staged stopping locations such as stations. These trains will never collide with the collision avoidance measures built into the railroad. Once you conduct your manual shunting moves at the various industries and sort your paperwork you send this train back to the yard…but this time you want to control this train manually. This is no issue, you easily set that train to semi-automatic control. This allows you the use the hand controllers to control the train: speed and functions etc. With semi-automatic control if the engineer does not stop at a red signal the computer takes over the train to stop it thus avoiding collisions. Once back at the yard, your train goes through an uncoupling move utilizing Kadee Electro magnets uncoupling the locomotives from the rest of the train. The locomotive then automatically parks itself in a round house or other facility. You are now free to shunt this train.

Does this sound exciting, but daunting to set up computer control? This software is available now. It is called TrainController. Please see a link below to YouTube channel where I have shown the software's capabilities. Furthermore, you can download the software and use its full functionality connected 'live' to your miniature transportation system before deciding to buy it.

If computer control is not your thing, but you want some help with DCC.   I can work with you to design the DCC hardware architecture and teach you the basics to create your miniature transportation system.

YouTube: http://www.youtube.com/c/ModelRailroadTechniques
Website: www.modelrailroadtechniques.com
Patreon: www.patreon.com/modelrailroadtechniques.

Facebook – https://www.facebook.com/modelrailroadtechniques/
Instagram: https://www.instagram.com/modelrailroadtechniques/

Now let's meet some other Model Railroaders who use the Freiwald Software:

To find USA modelers, I announced on my July 1, 2020 Zoom Meetup (Note: A video of this Meetup is available on Jim Kellow MMR Facebook page) that I was looking for USA modelers and organizations to talk with about using the software. Jack Dziadul gave me several referrals. Please meet Jack's friends:

Bill Gaver. Heritage Park Railroad Museum, Model Railroad.

NOTE: Jack Dziadul sent me a video of the Heritage Park Railroad Museum Model Railroad. I hope you will view it as it is not only a model railroad, but a piece of history caught in the year 1909. The area is Wakefield New Hampshire and the Railroad is the Boston and Maine (B&M).

To my mind, what this club is recreating is how life was in the early years of the 20th Century in New England. I put it in a par with the Pendon Museum in England that I wrote about in a previous "New Tracks" article. As I said in that article: "WOW WOW". Here is another "WOW WOW". Please look at the video as photos do not do the model railroad justice, although they do show the modeling skill and dedication of the Club members.

The Heritage Park Railroad Museum has a website that provides more information I hope all of you will look at it and, if possible, plan a trip to visit the Museum. The Freight House Layout is part of the Heritage Park Railroad Museum. The museum is owned by the Town of Wakefield, NH. It is built and operated by volunteers.

Please see the hand out that the Museum provides describing its computerization of the model railroad. This is how Bill Graver described the Computer operation to me:

"We use the software to control a 1909 era HO scale model railroad depicting the five villages of Wakefield; namely, Union, Sanbornville, Wakefield, East Wakefield, and North Wakefield.

Two of our Heritage Park Freight House Model Railroad Crew members are the best source for the information you seek. It was Chris Oliver, whose magnificent Donner Pass HO scale model railroad operated with the Freiwald Software, who recommended and volunteered to automate the Heritage Park layout powered with NCE by adding the operating software to the freight house B&M layout. (Note: you will see Chris' layout later in this article.). Chris was very ably assisted by Rich Breton, a multi-talented member of our crew, who is also a superb photographer. Together, they would be an excellent pair to offer you background and commentary re: Freiwald software, as well as answer."

I found the President, Rich Breton, is very knowledgeable about the historic aspect, the electronics, and the Freiwald software used on the layout. He was also very helpful in providing photos of the layout and answering my many questions. He then referred me to Chris Oliver for more detailed information about the computerization.

Chris told me: "I will explain why I think the layout was computerized. After visiting my layout in April 2017, Rich Breton introduced himself and described the Freight House layout. He asked if I would provide a demonstration to the others involved with the museum layout. The fact that I alone (using Train Controller Gold (TC) software) was able to operate my layout (about 15 - 20 to 40 car trains,) including dispatching, track authority, protection, train signals, sounds and lights (i.e. blow each road crossing and tunnels) generated great excitement."

He continued: "Prior to TC, the museum would have a single train running from return loop to return loop. The only automation was automatic turnout switching when the train was in the return loops. Visitors like to watch trains moving. One train repeating the same sequence without any other sounds or trains didn't maintain

visitor's interest (or donations). After Rich described the layout and his goal to dramatically increase visitor enthusiasm and retention. I knew I could help."

We chose Freiwald Software because I know it. Back in 2007, it was because I wanted a product that provided a complete solution. The only other offering I could find at the time was "roll-your-own" using JMRI Panel Pro. At the time, it was easy decision. TC offered a plug-and-play capability. JMRI didn't.

We both use the current release of TC Gold and +SmartHand software modules. Freiwald provides minor updates free of charge. Major new releases sometimes require an upgrade fee. For us the cost was not a major factor; about $850US for both modules. They offer a Bronze (reduced features) version for $164US.

Also you need to factor in the cost of a Windows type PC. Anything less than 10 years old should be acceptable.

Installation: If you're capable of maintaining your own PC (Installing and configuring software), you will probably be successful. TC has two modes. First you must enter the Edit mode. In this mode, you use a Drop and or Drag method to "draw" a logical map of your layout's track. Next you need to connect and describe the sensors (Block Occupancy), locomotives and turnouts. (DCC and or LocoNet using USB adapters are most common in the US.)

The museum already had NCE DCC control with all turnouts powered and DCC controlled. Reliable switched and controlled (DCC, LocoNet,) turnouts is key to automation and operational happiness. TC can see using trains using occupancy sensors (current, photocell, magnetic). Each defined block needs 1 or more sensors. In the case of the museum, I installed the software and created a basic track map with two blocks as Rich connected the computer to the NCE command station and installed 4 RR-CirKits track sensors. I then demonstrated basic control of two trains including opposing meets using a passing siding.

TC allows us to automate the complete layout environment. I call it realism. As an example, My layout lighting is controlled by TC, (built-in Fast Clock and Time-Table.) Each locomotive's horsepower, speed limits, vehicle weight, acceleration and braking abilities are all configured and used to enhance the realism of operations. This capability does not rely on DCC decoder momentum settings. TC can simulate the effects of grades. "The operator (or TC) drive the train. TC drives the realism."

Training: Learning to operate with TC is not very difficult. If you a comfortable using a smart phone or iPad, you can do it. If that scares you, then TC is not for you. Some volunteers needed only a few hours of hands on training. Other took a few days.

Getting the most out of TC takes time. After 10+ years, I'm still learning. For me, that's part of fun. Freiwald maintains an online forum (20,000 members) that is a great resource for new and experienced users. There are now many YouTube video tutorials as well.

To me, it's just like becoming proficient at any other aspect of model railroading. My first attempts didn't always look great. They provide the opportunity to learn and improve. I come back into the hobby with high-tech background. Others bring other skills. We all have our interests. My workbench now has a computer, a laser cutter and a 3D printer. 20 years ago, it didn't. It's a great hobby.

There is no question in my mind that the use of the software program to operate the railroad allows the club to offer visitors a great look at the Historical Realistic Operation of the railroad that would be very difficult, if not impossible, to do if volunteers had to operate each train. This enables the club to operate the railroad for public viewing without the need for having to schedule a lot of club members to run the Railroad for each public viewing. Normally, we have only one or sometimes two members when open. The second member runs the 1950's Lionel layout and welcomes guests.

View of Sanbornville Railroad Station on HO scale 1909 Boston & Maine model railroad with background photo of Moose Mountain.

View of Sanbornville Freight House on HO scale Boston & Maine model railroad located in Union NH.

Southbound Boston & Maine mixed freight crossing Union Meadows causeway in Union, NH

Northbound Boston & Maine Railroad passenger train making a scheduled stop at the busy East Wakefield station.

Northbound Boston & Maine Railroad passenger train making a flag stop at Mathews station in North Wakefield, NH. This is one of the five villages modeled on the HO scale 1909 Boston & Maine Railroad at Heritage Park Railroad Museum located in Union, NH.

Heritage Park Railroad Museum / Layout Description

The layout overall size is 14 x 33 feet including the staging area. It is DCC (NCE) and uses Freiwald Train Controller software to automatically run up to six trains following realistic schedules. The layout height is 54". The structures are scratch-built based on historic photographs and B&M documentation. The scenery is 100% complete. Handicap accessible.

1909 Boston & Maine Layout Description: This HO scale model railroad accurately represents the five villages of Wakefield, NH as they were in 1909. This museum layout features historically accurate scratch-built structures and highly detailed scenes depicting what life was like at the turn of the century. The track plan, motive power, and rolling stock were designed and built based on research from the B&M archives located at UMass-Lowell. The layout features photo backdrops, elaborate realistic scenery, with generous scenery to track-work ratio for a life-like viewing experience. Up to six trains run per schedule with a computerized automated control system. The layout is housed in a restored 1875 B&M freight house with other railroad, model railroad, and industry displays, including a late 1950's vintage operating Lionel O-gauge layout. Heritage Park Railroad Museum also has full size equipment on display, including a 1902 Russell Snowplow, 1950's era B&M caboose, B&M wooden water tower, and a restored 1911 B&M passenger station.

For more information please contact Bill Graver, Rich Burton or Chris Oliver. Thanks Bill, Rich, and Chris. I appreciate your help and love the railroad your Club is building

NOTE: If your community has a museum or club activity that is capturing the community's history through model railroading, please let me know. I think there may be more railroads like this one and I would certainly like to know about them for a future article. What a special way to preserve a moment of our history.

I am so honored to be able to introduce Chris Oliver to you. I would love to see his fantastic model railroad in operation. I am sure you will too. Please meet Chris :

Chris Oliver (USA Modeler)

I've been using Train Controller (TC) software for about ten years. My current layout is an HO scale continuous climb multi-level filling a 34 x 48 foot area. It's an early 1950s representation of the SP mainline from Colfax east up and thru Donner Pass down to Truckee, CA with visible staging loops (7 Tracks ea.) at each end. The Main is about a 1000 ft run all double track and signaled like the prototype. I typically run 20ish trains. All operations are preformed using TC. I've been working on this project for 8 years.

Chris Oliver's. Model Railroad BIO:

I've had a passion for railroad history and modeling railroads since childhood. I grow up in New England during the 1960s/70s so the Boston and Main and MBTA commuter trains fueled my early interest. As a teenager, my desire to add working signals to my 4x8 ft plywood "layout" lead me towards a carrier in Digital Electronics just as microprocessors and Personal Computers were emerging. Not long after completing a 6-month Trade School "Computer Technician" course. I entered the industry. Good fortune stuck in 1981; I joined a start-up, developing computer networking technology. Today, we all just call it the Internet.

Work and young life consumed all my time, so it wasn't until 1996 and the advent of DCC that sparked a renewed desire to attempt another layout. I began construction of a HO scale freelanced modular design. Basically it was a double track oval with 2 crossovers, a small yard and lots and lots of blue foam-board. My real interest was learning about DCC. I purchased a System One (NCE forbearer) and quickly realized operating a model RR had entered a new era.

A move to a new home in 2000 led to an around-the-walls multi-level HO scale layout based on the Maine Central Mountain Sub from North Conway, NH up thru Crawford Notch (New England for pass) towards Vermont. Once the layout was up and running, it didn't long before my first "cornfield meet.". The reality is one person can safely operate only one train. I began a search for a solution.

Fast forward to 2007 – another move and a new layout (N scale due to space limits). From day one I planned to allow full automation of operations. I used this layout as a leaning environment. I leaned a lot mostly using the Internet and trial and error. Today there is much more available online to help in implementing automation.

2012: We move again (the last time). Please see the presentation I gave in 2017 on my current Donner Pass layout.

Until I joined the NMRA Seacoast Division in late 2016, I'd always been a loner as far a model trains went. Since then, I've met many skilled modelers and have hosted a great many visits to my current Donner Pass layout here in New Hampshire. I've also "evangelized" the use of automation to bring what I call scaled realism to our layouts. I was asked by a local railroad museum to help automate their HO scale layout. I've been volunteering with several other highly skilled model builders since 2017. My modeling skills are improving. My strengths are in using technology; using computer-based tools. I "scratch build" using Fusion360 software, a laser cutter, 3D printer and an airbrush.

Click for Layout description. Please see PowerPoint presentation I gave in 2018 on model RR automation.

An Introduction to
Model Railroad Automation
Using a PC, DCC, & Occupancy Sensors
V1.1 4APR2018
Chris Oliver
DonnerPassMRR@gmail.com

What is Automation?
  •Insert SW-PC between you and your Layout

Automation vs. **Myths**
  •Run multiple trains stress-free
  •Dispatcher's "CTC-like" Panel
  •Prototype Signal Aspects
  •Sounds, Lighting, Other Effects
  •Realistic operations achievable
  •Too complicated
  •Too expensive
  •Need resistors on all cars
  •Can't run trains manually
  •Won't work with my layout   (Point-to-Point, Modular, ???)
  •What else?

Automation Software
  •JMRI "PanelPro & DispatcherPro"
        •Internet   http://JMRI.ORG
        •Open source (Free) Java based (PC or MAC) "Building Blocks"
        •Requires more effort - technical skills - provides tools not solutions

  •RR & Co. "Train Controller"
        •**Egmating, Germany**   http://www.freiwald.com/
        •Proprietary ($140 - 700) PC/Win only -   Highly integrated application
        •Easy for beginners - very capable for experienced users – 15K users
        •Free download – 30 day trail - includes a simulator
        •Forum and YouTube tutorials   http://rudysmodelrailway.wordpress.com

Simple Rules: Blocks, Routes and Trains
 •**BLOCKS** are physical places and logical containers
      •Can be any length: 1+ **contiguous** sections of track: **NO TURNOUTS**
      •Each BLOCK **needs a sensor** to show **occupancy** = *"Something fouling"*
      •3 Logical States: Not Reserved, Reserved, Current Block
  •**ROUTES** are logical links that connect BLOCKS
      •Turnouts provide 1+n ROUTES ("paths") between BLOCKS
      •ROUTES may include occupancy sensors. **Not required** – Enhance capability
  •**TRAINS** = **ENGINES** (>=0) + **CARS** (>=0)
      •ENGINES **can** move
      •CARS **need** ENGINES to move
      •TRAINS **reserve** and **occupy** and **release** BLOCKS
      •TRAINS **reserve** and **traverse** ROUTES

Occupancy Sensors "Block Detectors"
 •Sensors tell **When** and **Where**: "Only things that matter!"
      •**When** a **TRAIN** enters a **BLOCK** or **ROUTE** = **Trigger** actions and or timers
      •**Where** something is: **BLOCK**(s) or **ROUTE**(s) = **Condition** = True or False
 •DCC **occupancy** easily detected by sensing current flow.
      •These are **area** sensors.   1 per isolated section of track.
      •Require **something** across the rails that consumes power. (>5ma Load)
 •Most DCC providers (NCE, Digitrax, ESU …) offer occupancy sensors.
 •RR-CirKits provides a comprehensive set of easy to use products.
      •RR-Cirkits,Inc   http://www.rr-cirkits.com/   **Waxhaw, NC**

Tips for Success
 •Pick your SW and HW first.
 •Create a "track diagram."   Use Simulator.   Connect PC to your DCC system.
 •Add Block Occupancy Sensing using "*LocoNet*" or similar.
      •1 per each isolated track section contained in each BLOCK.
      •1 per turnout group (Interlocking) if using CTC signaling – Optional but useful
      •Create a "*calibration block*" and use it - **Profile Loco's speed map first**.
 •**Test and fix everything - Improve reliability!**
      •Track, Turnouts, Trains, Wiring, etc.
      •Install DCC circuit breakers to isolate "short-circuits."
      •Use **isolated** DCC **power** control to turnouts motors.
      •Consider "*Frog Juicers*" to power Turnout Frogs.
      •Automate more if you like (Sounds, lights, ????)
 •Sit back, run your railroad   - Remind visitors, "***Don't touch the track. Please.***"

        Thanks Chris for a very informative and thoughtful presentation of your model railroad and computerization. You can reach Chris at Chris.Oliver@sscaleresource.com.

      Well that's it for this time. I truly hope this article has gotten you thinking about what computerization could do for your enjoyment of operating your model railroad. If it has, then I accomplished my goal. Please don't forget to check out my Facebook page Jim Kellow MMR so we can stay in touch between articles and you can find the log in Links to Zoom "New Tracks Meetup" every Wednesday and Saturday evening at 7:00 p.m. EST and our "New Tracks Meetup Train Show" November 21, 2020 at 1:00 p.m. EST.   See you then.

      Thanks for reading this far. Time for me to get back to my workbench and build something. Good luck with your model building and going down some "New Tracks".

WHAT'S ON YOUR WORKBENCH?

Andrew Suk says: I'm modeling an EMD Second Generation GP40. The prototype is the current WAMX 4040, in service with Eastern Idaho Rail Road. The engine was originally built as PC3154. It was one of two GP40's used by EIRR that were painted with a 20 year anniversary banner. Eastern Idaho Rail Road is a short line operating on the old Union Pacific Yellowstone branch. The construction is mostly styrene and 3D prints from Bob Frascella's design.

The S Scale Resource Magazine (Dec/Jan 2019) had an article by Bob titled, "Building Second Generation EMD Diesel Locomotives in S Scale." After reading Bob's article, I decided to give it a go.

The trucks are American Models and the motor and drive system are from North West Short Lines. Detail parts are a combination of 3D prints from Shapeways/Century Models, and traditional details from BTS and Des Plaines Hobbies SSA parts. I also utilized some 3D prints of ditch lights and Salem air filters from AS3D. I've wired and installed a Tsunami2 decoder and current keeper, for DCC operations.

While I still have a lot of detail work to finish, it seemed like an appropriate time to submit a few pix and let you know that an S Scale GP40 DOES exist.
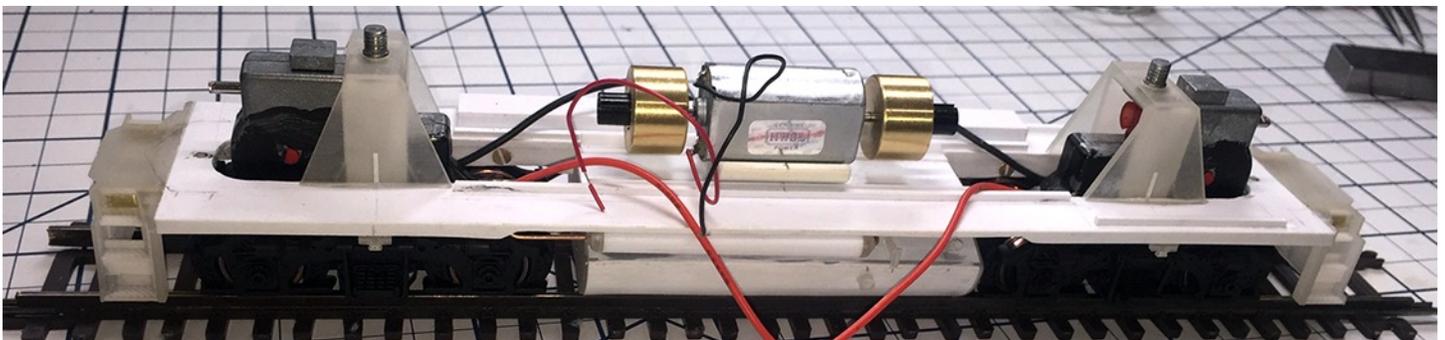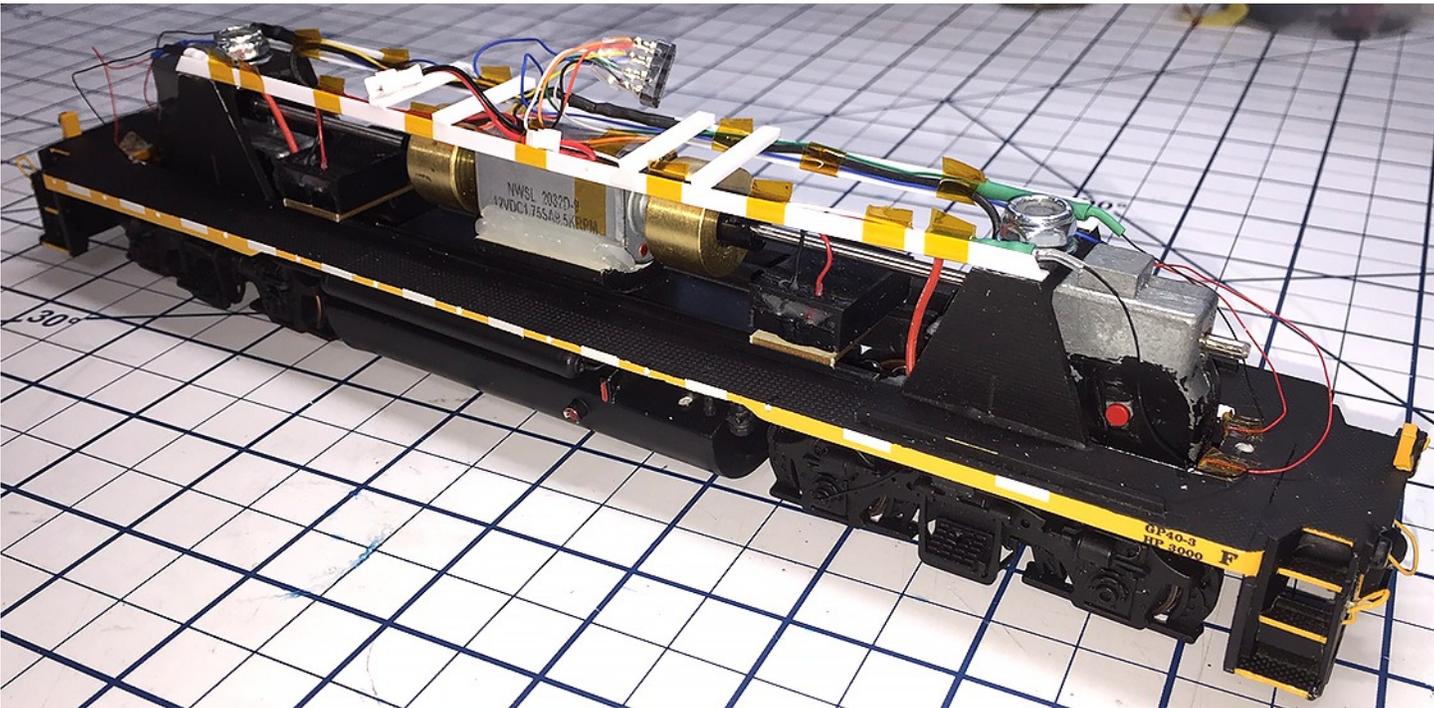
This series shows our readers what other modelers are working on, and we need your help to make it successful. All that's needed is a simple snapshot of what your workbench looks like and the project on it. Send us a picture or two along with a short description of what you are working on so we can share it here. If it's a project under construction, send it in. Repair job, send it in. Completed project, send it in. Send your pictures and descriptions to daniel@modelrailroadresource.com

S SCALE SHOWS & MEETS

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

S-FEST 2020
An Annual Midwest S-gauge & S-scale Event
November 6th through November 8th, 2020
Four Points by Sheraton
5311 S. Howell
Milwaukee WI
Hosted by Badgerland-S-Gaugers
Website: trainweb.org/bsg/events/sfest.htm

CANCELED

O Scale, S Scale, Narrow Gauge West
May 28-30, 2021
Hyatt Regency, Santa Clara
5101 Great America Parkway
Santa Clara, California
O Scale – S Scale – Narrow Gauge West is the largest 2-rail O scale convention west of the Mississippi, the largest S scale convention west of the Mississippi.
Email: info@oscalewest.com
Website: https://www.oscalewest.com/

2021 NASG Convention
August 3rd through 7th, 2021
Buffalo, NY
The 2021 NASG CanAm Convention will be held in Buffalo NY, August 3-7 at the Buffalo Marriott Niagara in nearby Amherst. The city of Buffalo has undergone a stunning revival in recent years with its downtown Art Deco architecture, its lakeside setting, and its extensive rail facilities. Mark it on your calendar as a "must-attend" and watch for further details in future issues of the S Scale Resource.

O & S Scale Midwest Show
September 17-19 2021
Indianapolis, Indiana

It's September! Time to kick off your modeling season. Come enjoy the O & S Scale Midwest Show.

Early Registration through May 31, 2021 $20.00

Registration after May 31, 2021 $25.00

This is a dedicated 2 rail O Scale and S Scale show; however, we encourage and welcome the many modelers and collectors from the 3 rail and high rail side of the hobby to attend. There are many aspects of the hobby, including building, scenery and more that applies to any scale. Moreover, this show is a great place to get inspired while meeting old friends and making new ones!
Website: oscalemidwest.com/

CLASSIFIED LISTINGS

MANUFACTURERS   DEALERS   PRE OWNED

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