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Model Railroad Hobbyist | October 2017 | #92

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(Updated 09/29/17)

Front cover: Terence Boardman takes a stock blue box Athearn 57' reefer and upgrades it to look extremely realistic in this month's cover story.

ISSN 2152-7423

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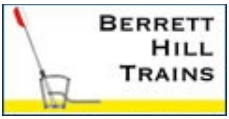

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Scene and photography by Ken J Johnson
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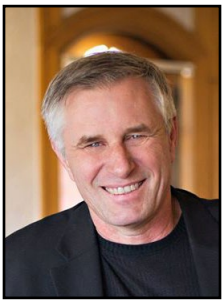

ASSISTANT EDITOR

editorial

Don Hanley

Develop a passion for the hobby

Have you ever wondered why some individuals succeed and other don't? It's passion.

I have two activities I enjoy: woodworking and model railroading. They intersect during the benchwork phase, but that is about it. I love designing and building furniture as much as I love designing and building models. I have a passion for both.

I can spend hours building a piece of furniture, hours building a structure, or hours modeling a piece of rolling stock. I often lose track of time and my wife asks me if I got lost! In a way, I did.

Passion and interest are similar, but not exactly the same. Webster defines passion as "a strong feeling or emotion" but defines interest as "liking something."

There are hundreds if not thousands of different things that people can be passionate about, and in varying degrees. For us in the hobby it can range from the armchair modeler to the modeler who must have every nut and bolt correctly modeled. On a

scale of 1 to 10 with 1 being the armchair modeler, and the 10 an every nut and bolt modeler, I am probably about an 8.

We come into this world naked and totally dependent on others. Everything we think, know, and love has been learned. I also believe passion is learned, too.

When I first became interested in model railroading, I didn't focus on a particular road, I just liked trains. I grew up along the mainline of the PRR during the Penn Central days.

When Conrail was formed they began routing the Erie Lackawanna trains down the PRR main. I began seeing EL equipment go by and I was fascinated by the slate, maroon, and yellow locomotives. The more I saw them, the more interested I became with this fallen flag railroad.

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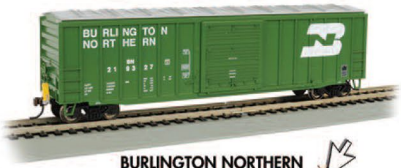

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This led me on a journey of learning more about the EL and its predecessors, the Erie and the Lackawanna railroads. As the journey progressed, more fascinated I became by the Erie and the 1950s era. Over time, this learning led to a passion for the road and the era.

Do all model railroaders have the same degree of passion that I have?

Of course not, and that's OK. It's best we not be offended when we run into modelers who don't have has much passion as we do – and likewise we should not be offended by modelers who have a higher degree of passion than we do.

Some like to call the most passionate rivet counters. If you develop a particular passion for the hobby, you too may become the rivet counter without realizing it! Encourage those who have less passion than you to work on developing their passion.

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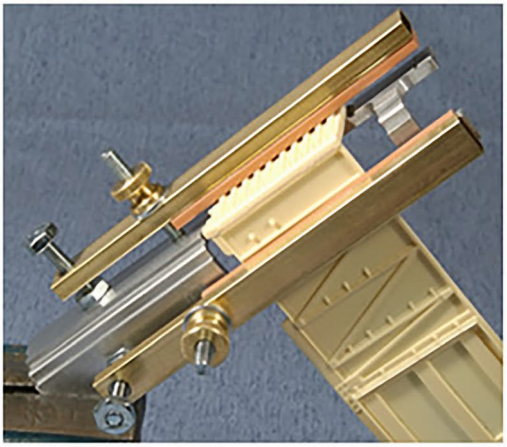

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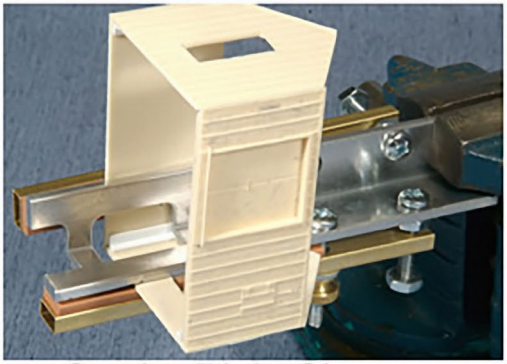

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ASSIST EDITOR'S THOUGHTS | 4

The degree of passion that you have for the hobby often corresponds to whether or not you have a layout. The lower your passion for the hobby, the less likely you are to have a layout. Those with a high degree of passion are more likely to have a layout that is closer to being completed, with scenery.

And those with the highest levels of passion often have the greatest level of detail on their layout. Do I have evidence to support this? No. It's just what I have concluded from talking with different modelers over the years.

Looking ahead, I would say the future of our hobby depends a lot on those who have passion for the hobby, and for teaching or mentoring those who are just starting in model railroading.

I would even say how long a modeler stays with the hobby depends on how much interaction they have with those possessing higher levels of passion. Those of us a higher level of passion need to interact and mentor those who are not as passionate!

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ENTRY DEADLINE: January 31, 2018

Goal: Design the "starting position" for a sectional home layout design using TOMA.*

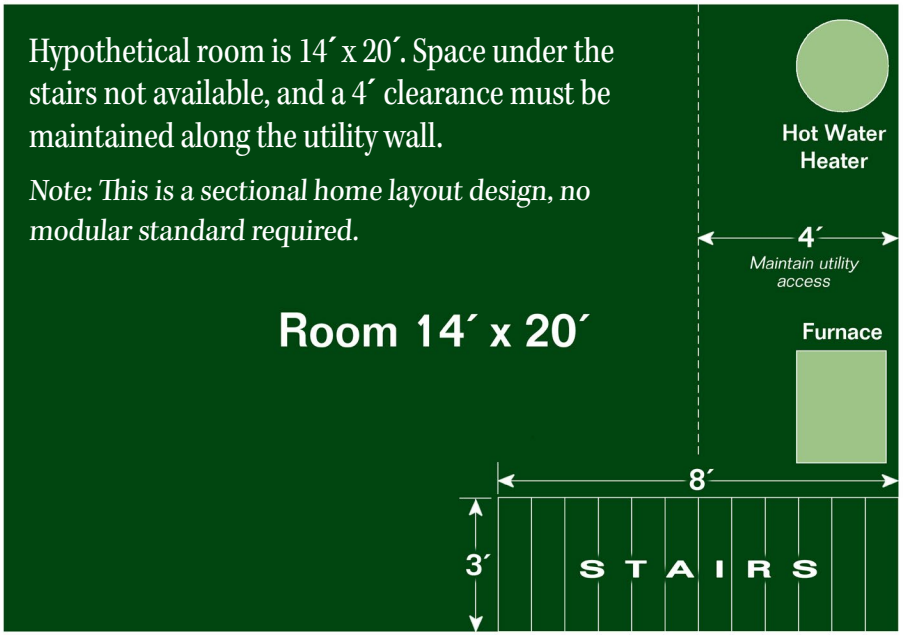
GRAND PRIZE: $1000, plus get published as an MRH cover story

First Prize: $750; Second Prize: $500; Third Prize: $350; First, Second, and Third prize also get published.

Honorable mentions: $100 each, publishing at editors' discretion.

Hypothetical room is 14′ x 20′. Space under the stairs not available, and a 4′ clearance must be maintained along the utility wall.

Note: This is a sectional home layout design, no modular standard required.



*For reference, see the July 2017 MRH Editorial, "TOMA with a twist".

CONTEST RULES

- Modules can be any size or shape but must fit up the stairs and through the door at the top of the stairs (80" tall and 30" wide) without damage or pinching your fingers.
- Scale: From Z to O, using any track gauge.
- Design the "starting position" for layout construction phase 1 – we want to see one or two TOMA module sections that can be completely finished and configured for an operating session. Show and tell how staging would work. Tell a brief backstory of the line and how it operates.
- Your TOMA modules need to have some form of temporary staging, either singled-ended staging off one/both ends, or double ended staging connected to both ends of the modules, which would also allow continuous running if desired.
- Don't waste your time drawing and describing a detailed room-filling layout. Rough in outlines of the other modules, that is, the "ending position." Just sketch simple boxes and lines to show how the modules will fit in the room. Bonus points awarded for explaining – in words, sketches or both – a phased module construction progress plan.
- Modules can follow a standard or not. Custom sections okay.
- Module support method / height up to you, but please describe.
- Innovative or creative approaches get extra points: please describe and illustrate if possible.
- Include a cost estimate for the starting position. There is no need to actually build anything, this is a design contest only.
- This contest is ***all about getting started***. People who can get that far will be able to fill in the rest with their own imagination.
- All submissions must be publishable. If the submission is not formatted to be ready for publication, it will be disqualified. Take the time to be complete, provide captions, and to describe things completely in your text. See the MRH submission guidelines for more information.

SUBMIT ENTRY (Choose "Contest Entry")

LAST ISSUE'S RATINGS

The five top-rated articles in the September 2017 issue of *Model Railroad Hobbyist* are:

4.8 Imagineering: The human touch
4.8 Minimalist weathering, part 1
4.8 Getting Real: Shortline roundhouse area
4.8 What's Neat: St. Louis RPM, ...
4.7 Making more realistic signs

Issue overall: **4.5**

Please rate the articles! Click the reader comments button on each article and select the star rating you think each article deserves. Thanks! ■

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Questions and Answers

Boxcar red

Q. Are there any craft paints such as come from Michaels or Hobby Lobby that come close to the color boxcar red? I have an old project that I would like to finish, an old On3 wood reefer kit. It's been put together for a few years and is half-painted.

—JackH

A. Marc: I tested craft paints on plastic models and found they do not respond well to any handling. I did a small test on doors and the paint scratched too easily for my liking, so I wonder what it would do on a boxcar. I want to try it with a primer to see if this made any difference, but have not gotten around to it. As to boxcar red, there should be something close enough. But would it take decals without issue?

Manofkountry: I have used craft paints on many models. The secret is to use a primer and then a coat of Testors Dullcote (or

any clear matte) to protect the finish. Prep for decals with a coat of clear gloss, followed by Dullcote after the decals are dry. I have had no issues. As far as a color for boxcar red, a little experimenting may be needed. To 15 ml of your selected craft paint, add the mix below. Don't mix different brands! They may not mix very well. Good luck.

- **15 ml Liquitex acrylic medium ($0.95)**
- **2.5 ml flow aid ($0.23)**
- **Yield: 32.5 ml of paint ($1.54 per bottle or ~5 cents / ml)**

1. "Boxcar red" varied markedly from one railroad to another. On the Rio Grande Southern #0402 at Knott's Berry Farm in Southern California, it is a sun-bleached barn red. Union Pacific's "Special Oxide Red" tends to a warmer tone, and other railroads used a brown tone. *John Garaty photo*

Diluting the pigment with acrylic base will generally result in muted colors if you further mix the resulting homemade paints using this formula. The trick is to blend your final color using the full-strength craft acrylics first, and then add the acrylic medium. Avoid mixing the custom-mixed paints together unless muddy colors are the goal.

For more information on using these paints, get the *Model Railroad Hobbyist Acrylic Painting Guide,* which is available for download free to *MRH* subscribers at mrhmag.com/subscribers-only/painting/acrylics. The guide includes paint formulas to match the defunct Floquil/PollyScale paint line.

There's more: Find out how JackH solved his problem, and read about using acrylics, mixing paint, and prototype painting practices in the complete thread at mrhmag.com/node/30787.

Front couplers on steam

Q. **1. Many of my friends here in the UK use Bachmann, BLI, AMS and MMI products and an issue has been raised about working knuckle couplers on the front of locos. All the above manufacturers fit non-working couplers at the correct height, which is no good for switching. Does anyone know of a simple fix for this problem? Some of the guys use the Bachmann standard of HO knuckles set at the HO height whereas some of us use Kadee On3 knuckles set at On3 height. This problem affects not only the On30 guys but everyone who operates steam locos, whatever scale.**

2. My personal experiments show that it is not the only issue. There is also the problem that the tail (trip pin) of the couplers on the cars fouls the bars on the pilot.

—Loconuts

A. Ed.: If you are not using magnetic uncoupling, simply cut off the trip pin that hangs below the knuckle, and your interference problem is solved. You will have to cut off the trip pins on all the cars.

Warflight: Though they are plastic, Kadee does a swallow-tail shank coupler that is On30 height. I managed to find a standard HO swallow-tail coupler that was metal that I use for my Model Power 0-4-0T switcher. It works beautifully for switching. The

2. Neil Erickson addressed his working-coupler problem: "The pilot comes off the loco easily enough and I could open up the coupler pocket enough to insert a Kadee box but it looked a little strange. Maybe some diamond plate over the top would be OK, or I may cut off the trip pin and push it back as far as possible." *Neil Erickson photo*

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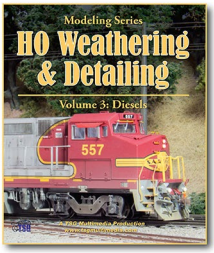

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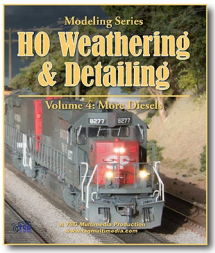

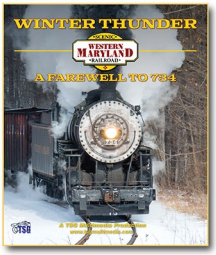

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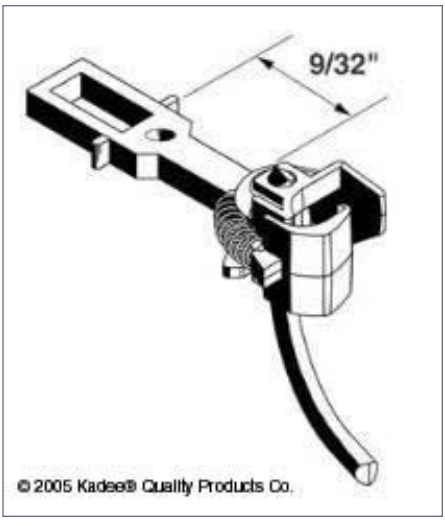

3. The narrow shank of the now-discontinued Kadee #4 allows mounting the coupler in restricted spaces. *Kadee photo*

0-4-0T is such a short engine that the front coupler doesn't really need that swivel.

Russ Bellinis: In the past, I used a Kadee #4 on the front of engines [3]. They were an old coupler design that used an oddball centering coil spring in the shank, but they also had a hole drilled just in front of the coupler spring box that fit a 00 screw. I took the standard #4 coupler, cut the spring holder off, and then just fastened them in with a 00-92 screw. Unfortunately, Kadee discontinued the #4 coupler.

Kadee website: "The #4 coupler is discontinued. Kadee's replacement is most often a #148 coupler with #213 sleeve. The replacement may not work in all scenarios."

4. On30 kits and ready-to-run equipment are not consistent in coupler height. The Kadee #815 coupler height gauge allows modelers to mount couplers at a consistent height with a minimum of measuring. *Kadee photo*

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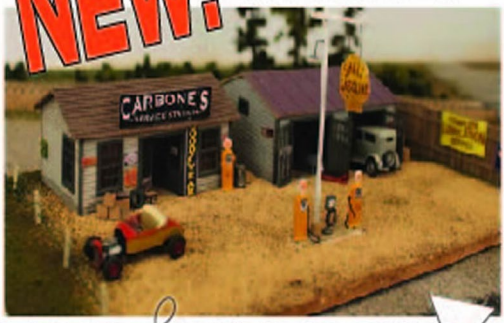

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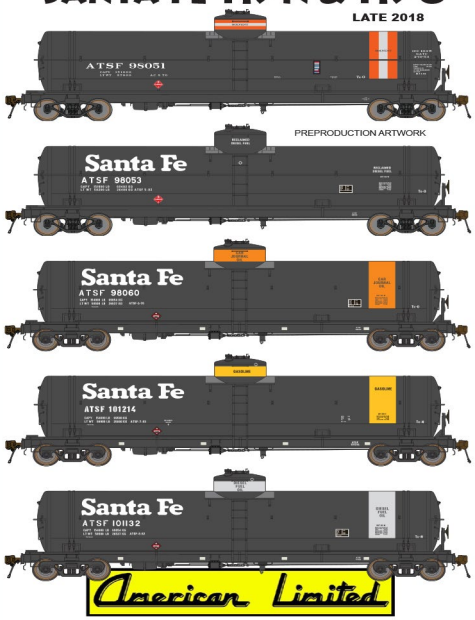

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Graham L.: I see #4 couplers at swap meets and occasionally in train hobby stores. We old-timers may have a few in stock at home.

JC Shall: I'd like to see them sell the model with two pilots: one "to scale," and the other with a box that will accept a Kadee coupler at the right height. Doesn't seem like an unreasonable request as the steamers often come with extra parts and details.

Brent Ciccone: Sounds like you are working in On30. Bachmann sells a replacement pilot for the 2-6-0 that has a working coupler. It might be possible to make it fit on other locomotives. Search eBay for these. I have a package that I haven't installed yet so I can't comment on how well they work.

Look at: kadee.com/htmbord/On3_On30pl.htm.

See the thread at mrhmag.com/node/30512.

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5. Basswood and colored pencils or markers allow creating a one-of-a-kind foundation. *Jack Dziadul photo*

TIPS

Cheap foundations for your structures

Every structure needs a foundation. You can avoid the hassle of pouring, carving, or buying a plaster foundation by using scrap basswood to create a simple brick, block, or stone foundation. Use a fine- point marker to draw stones, then color with various gray or brown tone colored pencils. A hard lead 8H pencil or a scriber can be used to create indented lines.

—Jack Dziadul

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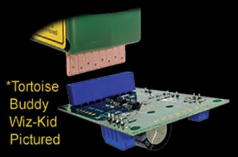

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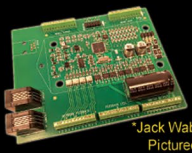

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DCC IMPULSES
column

Bruce Petrarca MMR

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RailPro makes things easy

This summer I was in Utah and had the opportunity to meet Lee Nicholas and run some trains on his Utah Colorado Western HO layout [1]. This layout has been featured in many magazine spreads over the years and is a true collection of eye candy.

Lee and I spent several hours together one Saturday afternoon, discussing lots of things, ranging from sugar beets to his operating methodology, to the Golden Spike National Historic Site, which is just a few miles west of Lee's place.

When the discussion turned to command control systems, Lee expressed his disinterest in DCC. He has become a strong advocate of the RailPro system and he was happy to show me why. After spending some time running and consisting locos on Lee's layout, I was impressed enough to consider devoting a column or two to the concept.

After witnessing Lee's enthusiasm and seeing some folks operate on his layout, I decided to dig deeper into the RailPro system. So, I spent a fair amount of time on the phone and via

email with Tim Ring (of MRH advertiser Ring Engineering), the inventor and manufacturer of RailPro.

Prior to these discussions, I had seen the RailPro system advertised and had obliquely noted its existence. I had chalked it up as another option in the simplistic toy trains world. What I saw at Lee's showed me I had seriously underestimated the product.

Here's what I've learned so far. Understand, I'm gathering a lot of information and know that I don't have all the answers now. But I'm working on it.

What is RailPro?

Tim Ring conceived of RailPro after spending many hours trying to speed match two DCC-equipped locos. In frustration, he said, "There has to be a better way."

1. Operating signals on Lee Nicholas' Utah Colorado Western HO layout. *Bruce Petrarca photo*

2. RailPro HC-2 hand controller puts your loco's functions at your fingers, with lots of graphics to make operations easier. *Ring Engineering photo*

RailPro is a complete control system with handheld cabs [2] where everything in the system communicates with everything else by radio. Since the communication is wireless, the track may be used for power or power can come from a battery, making the loco independent from whatever is on the track.

I'm going to perpetuate the terminology that has evolved in this column: the handheld units simulate the functions within a loco cab, so I'll call them cabs.

So, I followed my own advice and worked on running a few locos and setting up some consists to start getting a feel for the cab and its ergonomics.

How does the system control your locos and layout?

Let's first look at how it works.

All units connect to each other by a duplex (bi-directional) radio link. So, the module in a loco can know what is happening anywhere on the system. The communication protocol is not DCC, even though the cab looks and feels as if it were.

RailPro develops a radio-based network between all the devices registered on the system and lets them talk amongst themselves. This radio link is in the 2.4 GHz band. Ring Engineering developed their own radio system so as not to be tethered to the protocols, delays, and uniqueness of the pre-existing radio systems. Because RailPro developed their radio system from the ground up, Tim reports that there has never been a documented case of interference with their systems.

So, in the simplest system, a command starts from the cab and gets delivered to the loco module. There, the loco module [3] will activate the lights, motion, and sound.

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3. Each loco will need a module to control the motor and lights. If the module has a "S" suffix, it also includes sound. Here is the LM-3S sound loco module. *Ring Engineering photo*

What modifications must be made to the loco?

A "RailPro loco module" (Ring Engineering's term) needs to be installed into the loco to control the motor and lights and create the desired sounds. To facilitate the installation, the RailPro loco modules have a 9-pin JST connector on them wired the same way that many DCC decoders are. The sound version, as shown in [3], has a separate connector on the other end (right in the photo) for speaker connection and other items. The LM3-S is about the same size as DCC decoders designed with the 9-pin JST connector, mostly aimed at HO gauge locos.

Anybody who has installed a DCC decoder will be immediately familiar with the process.

A DCC-style adapter harness will allow the LM-3S to plug into many locos that don't have the 9-pin connector installed. DCC manufacturers have harnesses available that will go from the 9-pin

to 8-pin NMRA standard or the 21-pin plug that is becoming popular. For hardwired installations, I recommend installing a 9-pin receptacle in the locomotive and plugging the module into that.

What is the radio range?

The range from the cab to the loco is about 100 feet (30 meters). However, this is not terribly important, as the system is designed for walk-around control of smaller scale locos, where you are close to your loco.

The PWR-56 [4] power supplies can be configured as a repeater to assure full coverage for system-wide commands throughout your entire layout.

How do locos run on track power?

That depends upon how you connect the loco module [3].

If you connect the input (red and black leads) to the track pick-ups, the loco can be powered by power from the track: DC or DCC. For the locos to operate properly, the track needs to be at full voltage at all times. The RailPro system includes a power module [4] that supplies enough power for a dozen or so HO gauge locos: 4 amps (56 watts). The track voltage from this module is about 14 volts.

Thus, a member of a DCC club could have a RailPro system for their home layout and take their RailPro equipped loco and RailPro cab to their club and run. When configured to run via RailPro radio, the loco would be drawing power from the DCC track, but not responding to, nor interfering with, the DCC operation for the other locos.

Address conflicts wouldn't matter, because the address information is being carried by each RailPro system for its assigned locos. Even if two members showed up with two RailPro locos

4. RailPro PWR-56 Power Supply module supplies track power (with short circuit protection) and a radio repeater. *Ring Engineering photo*

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running on the exact same number but on different systems, there would be no issue. The RailPro system is smart enough to keep them separate.

Currently, the RailPro loco modules will not respond to DCC. That will change soon, perhaps before this column gets published. Soon, the user will be able to select whether the loco module responds to RailPro radio signals or DCC and, if DCC, what address (1 to 9999).

RailPro locos getting their power from the track can suffer from intermittent operation due to power dropouts from things like dirty track, dead frogs, etc. There is nothing magical about the system that will overcome these weaknesses in trackwork and wiring.

How about battery power?

A secondary method of providing power to run the loco and the loco module is to use battery power (10 to 18 volts), applied to the red and black leads. Now the loco can be 100% dead rail or can run on active rails with any sort of power on them, if the track pickups are not connected to the motor or the loco module. If the rail pickups are not connected, neither system cares what is running the other.

What about computer control?

Computer control is the thing that makes the RailPro system perk. New software and sounds are downloaded from their site to your system. Computer control makes the setup a breeze. An on-screen cab can control a RailPro loco.

To have computer control, your computer needs to speak RailPro radio.

This is accomplished with a module [5] that plugs into a USB port on your computer and talks to the RailPro radio network.

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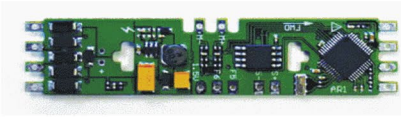

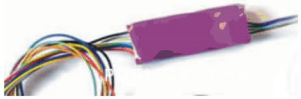

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The RailPro software was written to be operating system independent. However, the current version available is designed for Windows machines. From what I learned, there might be an Apple OS X or iOS version in the future.

How about consisting?

Consisting, breaking up consists, hostling. Those are all part of operations. This is where RailPro really shines, much to my surprise. And they don't require any fancy, special cab to happen. The HC-2 or a computer will suffice.

Considering that speed matching under DCC is what drove Tim to create the system, one might expect it to be the center-point of operations.

For locos to run well in a consist, their throttle response needs to be pretty closely matched. At least that's the theory. Well, with RailPro, throw that theory out the window. There is a video on their web site (ringengineering.com/RailProVideosPage.htm)

5. RailPro CI-1 computer interface module plugs into a computer USB port and talks to the network, allowing control or updates from the computer. *Ring Engineering photo*

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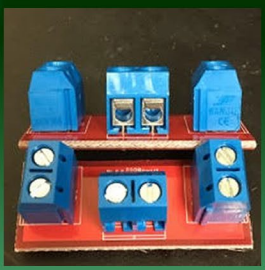

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which shows two diesel locos running together. One is an Athearn FP series (120 + SMPH) loco and the other a Kato SD90 (80 SMPH) loco. The consist has the faster loco in the rear of the normal direction of operation. Except for a few seconds of motor calibration (done automatically), which should be done for any loco while being established on the system, nothing special was done before consisting. Following the steps detailed on the video, the locos ran just fine together.

How? Why?

The RailPro radio system is the reason. When the "go" command was issued from the cab, both locos began to move. Since the rear loco was starting to push the front loco, the front loco could tell the trailing loco to slow down until they were running well together.

RailPro allows the lead loco to use the radio network to throttle all the following locos independently so that the consist runs smoothly. Just like the prototypes do.

Finally, someone is offering an easy-to-consist system that allows virtually any loco to consist with any another without special speed matching.

Will the components become obsolete?

Yes, all electronics do. But . . . the RailPro is engineered to keep that wolf away from the door for as long as possible. As long as the hardware in a specific RailPro unit is capable of a new task, the software can be downloaded to adapt the hardware to it.

All software is downloadable from the Ring Engineering site to the various modules comprising the system. So, the end user can keep his RailPro products working with the latest software. And there is no programming track needed. The updates are all done by radio.

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Since sounds are downloaded similarly, a loco module can have its "voice" changed at will, and much less expensively than the hardware for "loadable" DCC decoders.

How do I get started?

Ring Engineering has a starter kit [6], which includes a cab and a power supply with a power adapter and cord. This kit plus a loco module [3] (LM-3 - silent - or LM-3S - sound) will get you started with power on the rails, a cab, and a loco controller.

More economically, one can purchase a loco module [3] and the computer interface [5] and run trains from existing track power (DCC or DC at full voltage), using a cab on the screen of your

6. The RailPro starter kit. *Ring Engineering photo*

computer. Yes, the computer can be a Windows tablet, as long as it has a USB port.

Many folks who are in a DCC club get an HC-2 [2] cab and a LM-3 or LM-3S [3], allowing them to run a loco on the club's layout.

How sophisticated can it get?

The RailPro system has AM-1 series stationary decoders. These little guys have inputs for switches and outputs to control lights, LEDs, or motors. There is even an AM-1S [7] unit with sound. So, it would be possible to control the spout on a water tower with a motor and have the AM-1S match the motion with the sounds of filling a tender. You can even use your own photos for screen icons.

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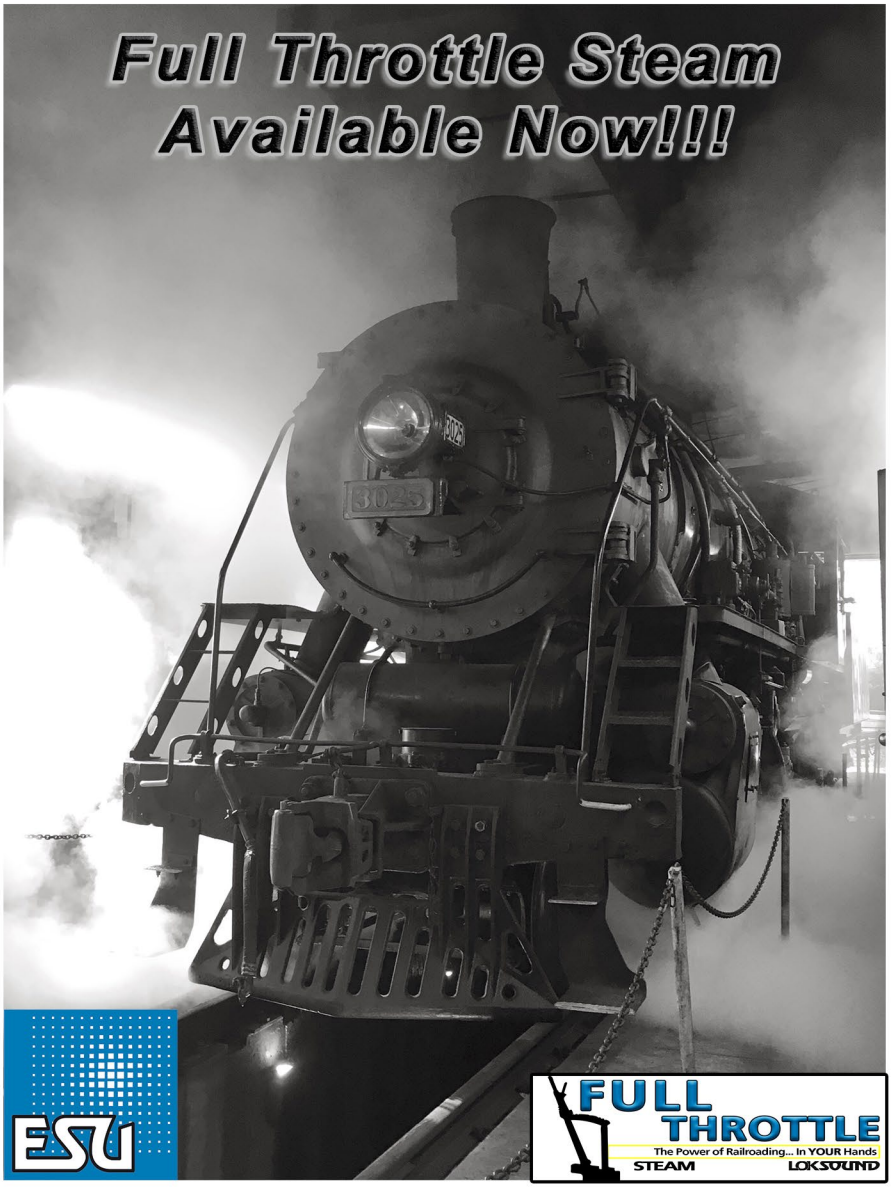

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Advanced modelers with electronics talent might run their RailPro locos from a battery that is being charged from the track while the train is running.

As I discussed in my May 2017 column (mrhmag.com/magazine/mrh2017-05/dcc-impulses), an advanced installation might include a switch to select between track power and battery power. When married with the forthcoming RailPro or DCC choice in the decoder, the loco could run on:

Track DCC

Track DC with RailPro control

Battery power with RailPro control

If folks are interested, I'll look at spending some time with the system and report from personal experience in a future column.

7. AM-1S auxiliary decoder with sound for sophisticated scenes. *Ring Engineering photo*

Hopefully, this introduction will stir some creative juices amongst some of you.

Please share your ideas with us all. Just click on the Reader Feedback icon at the beginning or the end of the column. While you are there, I encourage you to rate the column. "Awesome" is always appreciated. Thanks.

Until next month, I wish you green boards in all your endeavors. ☑

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Jason Quinn's weathered freight cars, DCC firmware update, and Jeff Otto's handlaid track jigs ...

This month we learn the process of downloading firmware from the Digitrax website to update the DCS240 command station and our 402 radio throttles. We meet Dennis Norris as he shows prototype video footage from the '80s and '90s around St. Louis. Jason Quinn shows us three newly weathered Tangent X58 boxcars and explains the process of weathering models by referring to prototype photos. Jeff Otto from Oak Hill Model Railroad Track Supply stopped by to build a few turnouts and straight track sections using his track jigs – then we apply them to an operating layout module and build some scenery.

▶ PHOTOS AND VIDEO OF SUPERB MODELS

Digitrax DCC firmware update

1. (Above) Thomas Hiel walks us through the process of updating my Digitrax DCS 240 with new firmware downloaded from the Digitrax website. These updates are designed improve the performance of the DCC command stations and radio throttles.

Disconnect the command station LocoNet connectors to isolate the system before performing the downloads.

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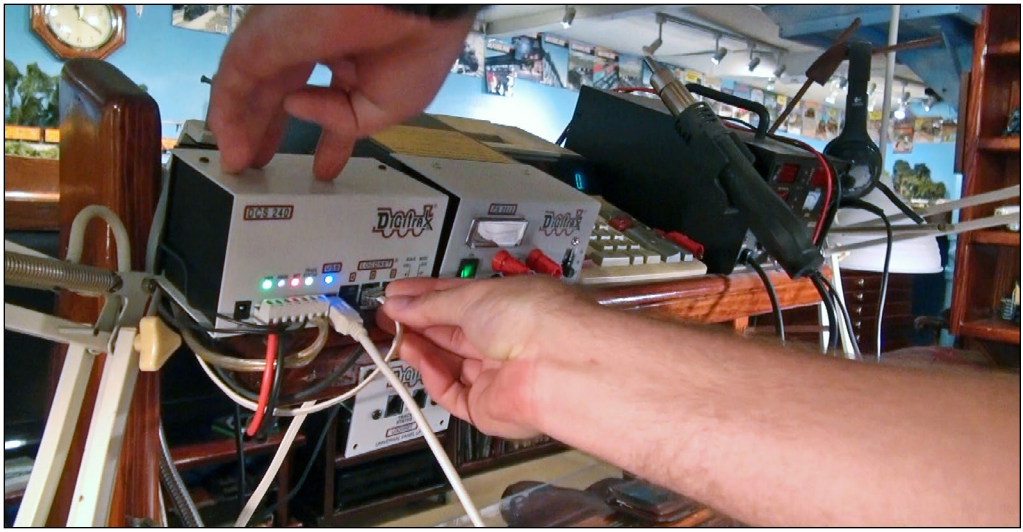

2. Plug a USB cable into the front of the DCS240 and run it to a USB port on your computer. Thomas used the Digitrax website to familiarize himself with their written instructions on the process.

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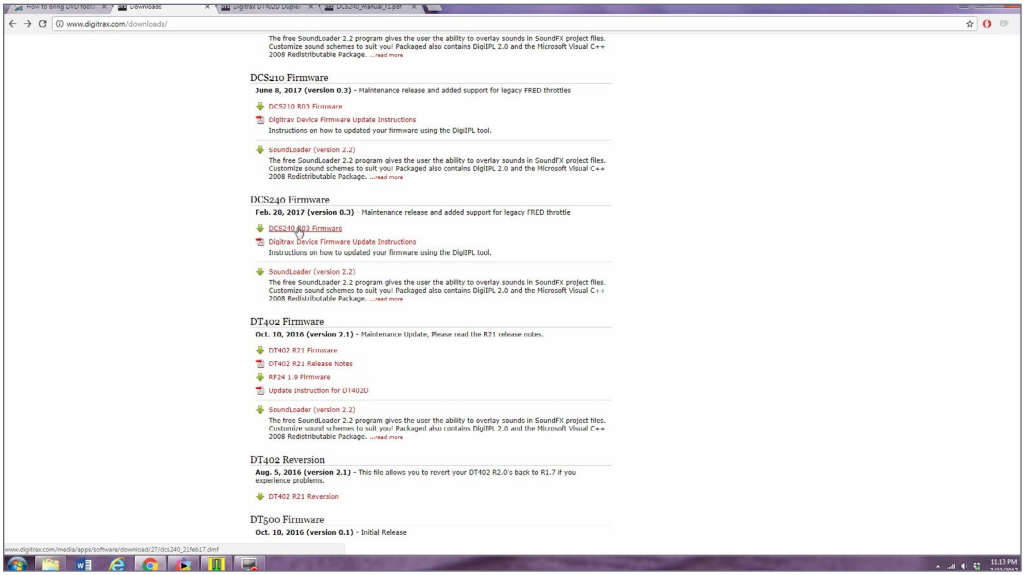

3. Thomas then downloaded the Digitrax DCS240 update files to the computer and named it digi1 File. It is ready to be loaded in to the command station.

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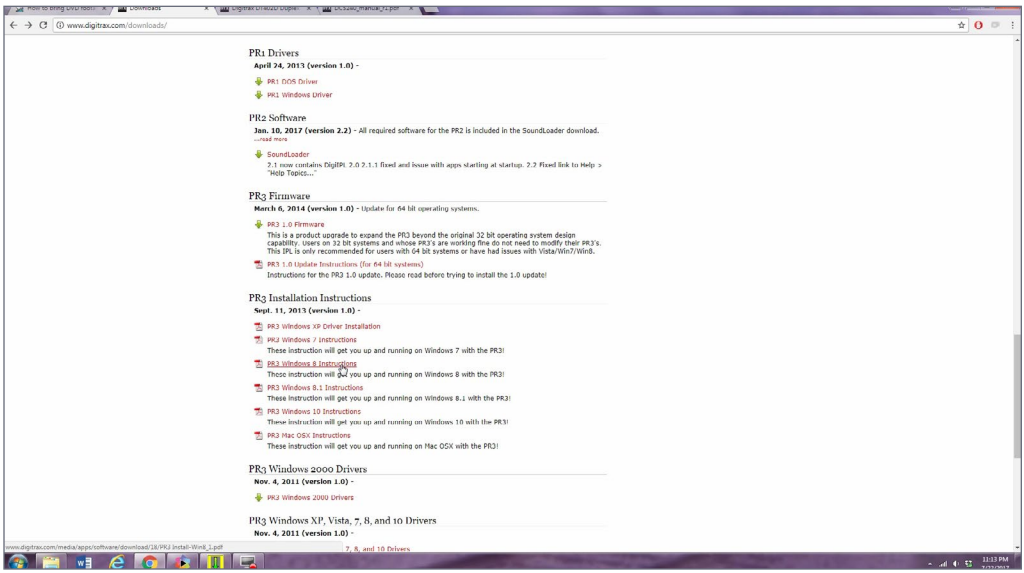

4. He checked the computer's devices and printers to make sure the DCS240 was recognized as a connected device. If your computer does not recognize or find the drivers for the DCS240, they can be downloaded from the Digitrax website. The drivers file is the PR3 found on the website.

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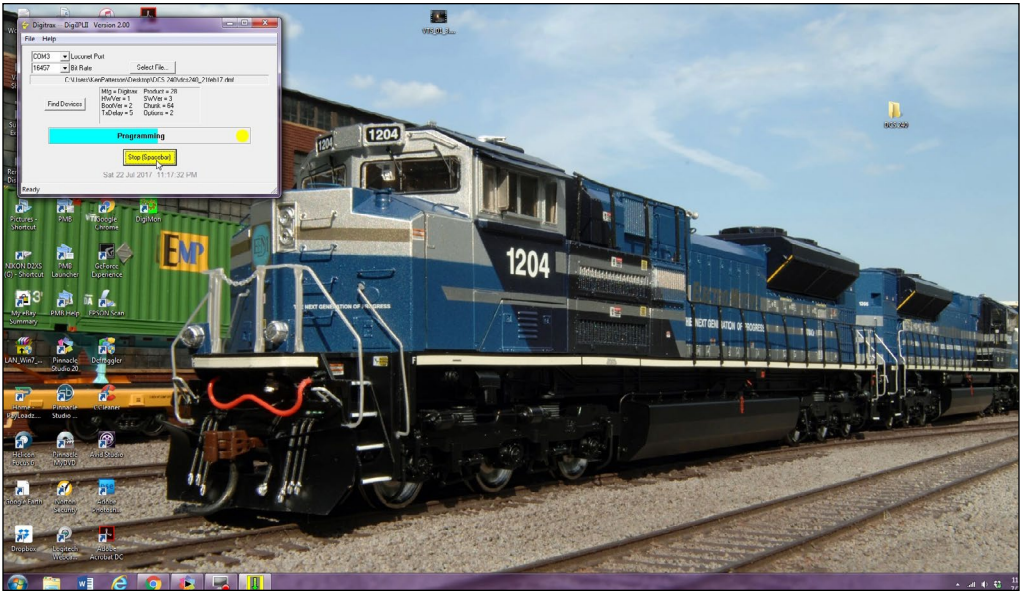

5. Thomas then checked which com port the computer identified as being connected to the DCS240. In this case it is Com Port 3. Then he hit "start" and the new DCS240 files were sent to the command station. This screen capture shows the green download bar moving as the system is updated. The lights on the front of the command station all flash during this process. When the firmware update is a success, they stop flashing, the command station beeps, and a green icon is displayed on the computer screen.

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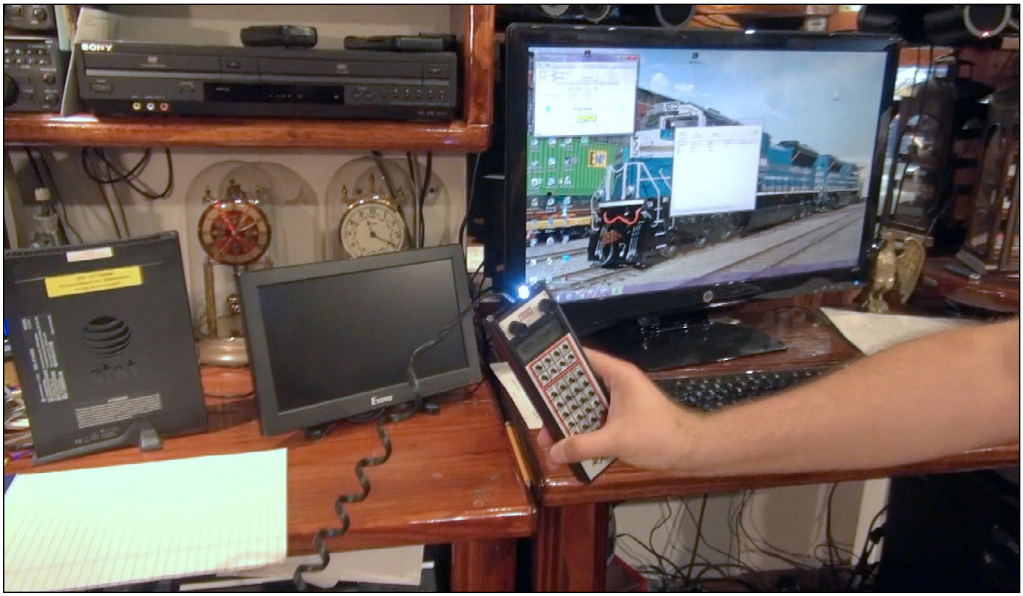

6. Thomas repeated the process to load the new firmware into the Digitrax DT402 radio hand-held throttles. The throttle is connected to the command station to receive the download update. The light on top of the throttle will flash during this process. After the firmware was updated, my DCS240 performed flawlessly while operating trains and utilizing all the function buttons on the throttle. Watch the video to view and understand the process in real time as Thomas takes us through the sequence of events for a successful firmware update.

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Jason Quinn's weathered Tangent freight cars

7. Jason Quinn came by to share his techniques to weather three of the Tangent X58 boxcars just introduced. Jason used prototype photos from Tangent's website as references to weather the models. The class X58 boxcars were built between 1964 and 1966 and the Pennsylvania Railroad manufactured 2565 cars.

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8-10. This ex-Lehigh Valley freight car came patched-out for Conrail. Imitating the prototype photo from the Tangent website, Jason washed the side of the car with thinned brown enamel. He then added dark rust to the sides of the car with raw umber oil paint. Raw sienna oils were used to create lighter rust, creating a blend softening the edges of the heavy rust. Jason washed gray over the bright silver roof to tone it down, and followed up with raw umber oils to make the heavy dark rust. He then followed this with burnt sienna, blending the burnt sienna and raw umber around the edges and feathering it out into a rust bleed. The process is relatively easy and the finished result looks amazing.

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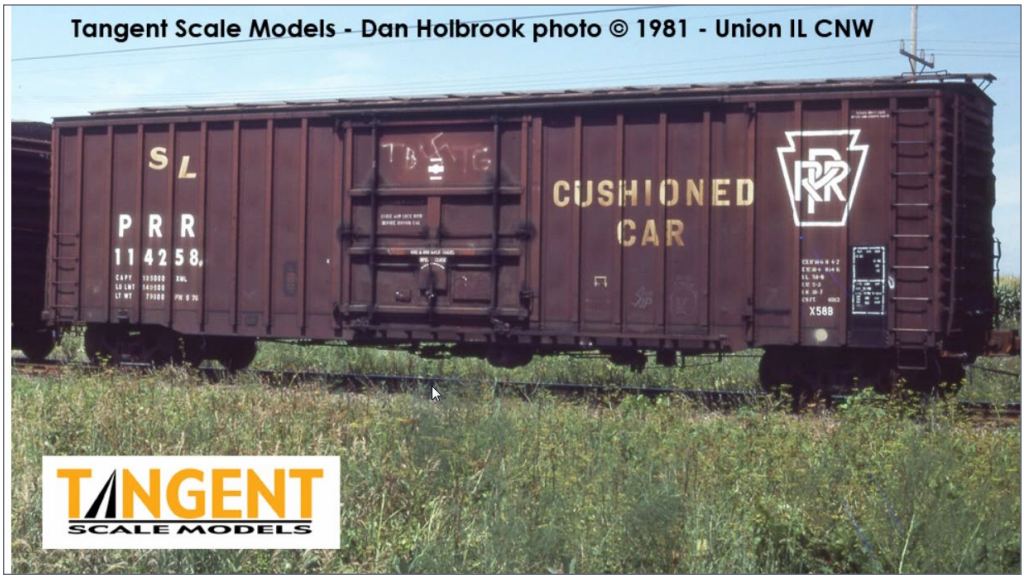
Tangent Scale Models - Dan Holbrook photo © 1981 - Union IL CNW
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11-13. (Left top and bottom) For the PRR X58 boxcar, Jason again used prototype photos from Tangent's site as a guide to blending PanPastels to weather the car. He used black, raw umber, earth, and burnt sienna, working these colors around the sides of the freight car and replicating the weathering patterns on the prototype boxcar. He then used a wet toothpick to clean off the lettering. The roof was painted with oil paints in the same manner as the white Lehigh Valley/PC box car.

14. (Above) Jason weathered this Penn Central X58 boxcar with PanPastels using the same colors as on the PRR car. His model differs from the prototype in that he chose not to fade the P in the logo to a faded pink, leaving it a more pronounced shade of red.

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15-16. An old friend from the Midwest Valley Modelers layout, Dennis Norris, came by one evening to share with me prototype videos that he shot in the '80s and '90s. I realized the prototype runbys I was watching were rich in modeling ideas, so I sat down with him at the table as the cameras rolled and he explained the various DVDs he produced over the years. Dennis railfanned the NS a lot during the '80s and then videotaped runbys on the Chicago and North Western during the UP merger. In this month's video, you can enjoy eight clips from his DVDs. This is a screen capture shot of a locomotive blowing fire through its stack. Thank you, Dennis, for sharing railroad history in this archive of video.

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Jeff Otto hand-lays track using jigs

17. For layout construction, this month we work with Jeff Otto of Oak Hill Model Railroad Track Supply, using his jigs to manufacture turnouts and straight track which we then apply to a module in a track pattern using prototype standards. A double crossover plus a #6 turnout and a double-track mainline are built and assembled using Jeff's templates. In the past, Jeff has shown us how to build turnouts using his templates but we have never used the finished trackwork in a real layout construction scenario. That is exactly what we do this month. We started with a base of 2-inch foam that is 8 feet long and about 18 inches wide. I put down 1-inch masking tape to represent where the track would be placed on the diorama.

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18. I added an additional layer of foam to strengthen the scene, gluing this with Great Stuff Adhesive foam, and placed weights on top of the layers while the adhesive expanded and cured. Jeff is assembling straight sections of track using his jig, placing ties in the grooves, lining up the tie plates, and gluing them to the ties with CA glue.

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19. (Above) Here are the ties in the jig. The tie plates fit into the jig, which ensures accurate positioning of the tie plates on the ties when the rail is placed in position. This ensures perfectly gauged track. This is the slowest step in the process.

20. (Top right) While Jeff assembled his trackwork, I carved the topography into the foam with a chainsaw and a Stanley Surform plane. It took me about 45 minutes to make an area for a railroad crossing and roads that will parallel the tracks. After the carving was done, I sealed the foam with a coat of brown latex paint.

21. (Bottom right) The double crossover track template is used to make the track formation to the left in this photo. All of it is held together with PC board ties for strength. The crossties are attached to the rail with Pliobond contact cement.

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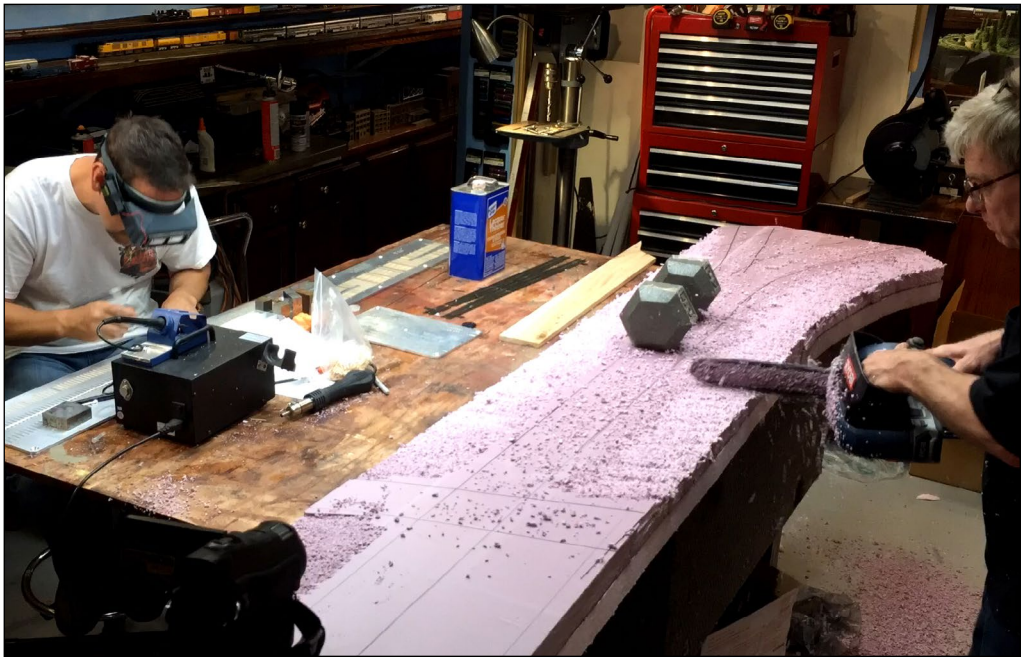

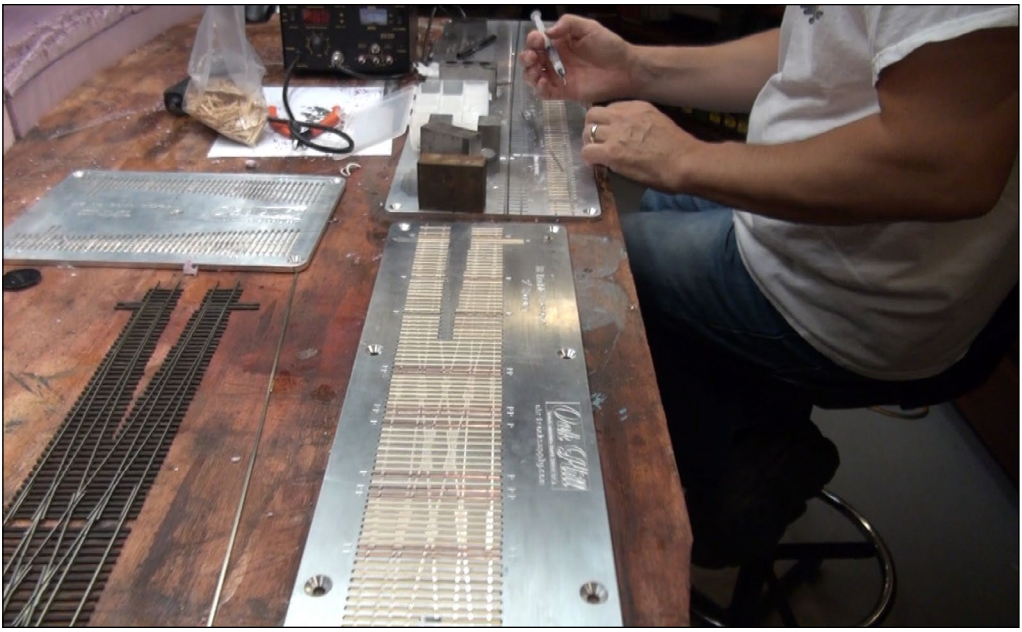

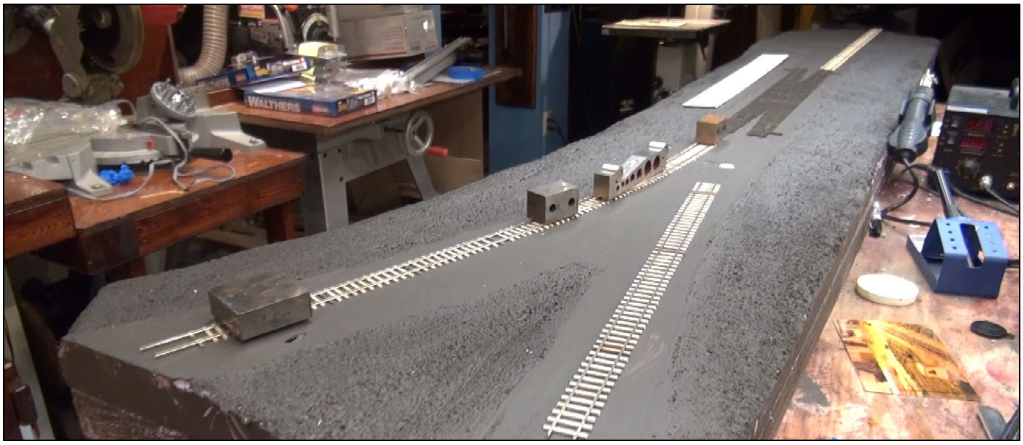

22. We positioned the track as each piece was assembled. We colored the ties with dark walnut stain and the sides of the rail with Rustoleum Camouflage Brown paint.

23. Once all the track was built, I glued things into position with Liquid Nails adhesive. This glue takes about three hours to set up, giving us plenty of time to line things up perfectly. After the glue cured, we ran a locomotive through the scene as a test before ballasting and finishing the scenery.

24. I took the diorama outside and let it sit in the hot sun for about an hour to see if expansion of the rail would cause problems. The diorama's temperature reached 140 degrees and the track held up well with no distortion to the rail – I knew then I could use this scene to produce outdoor photography and video with no problems, and the scene was worthy of an effort to do some prototypical-looking scenery and roads.

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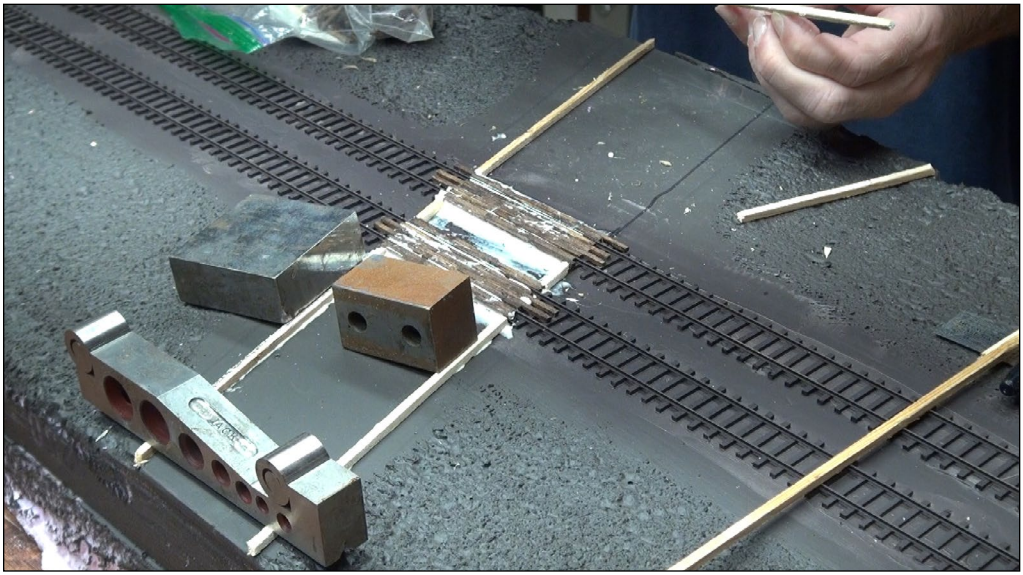

25. I made a wood railroad crossing with scale railroad ties. The ties were laid in a thick bed of wood glue. When this was dry, I sanded the tops of the wood ties flush with the railhead, forming a smooth railroad crossing for our scale automobiles. I made wood forms and glued these to the foam. These forms will contain the latex cement patch mix while it sets up and cures flush with the top of the forms, creating smooth cement roads about 25 scale feet across.

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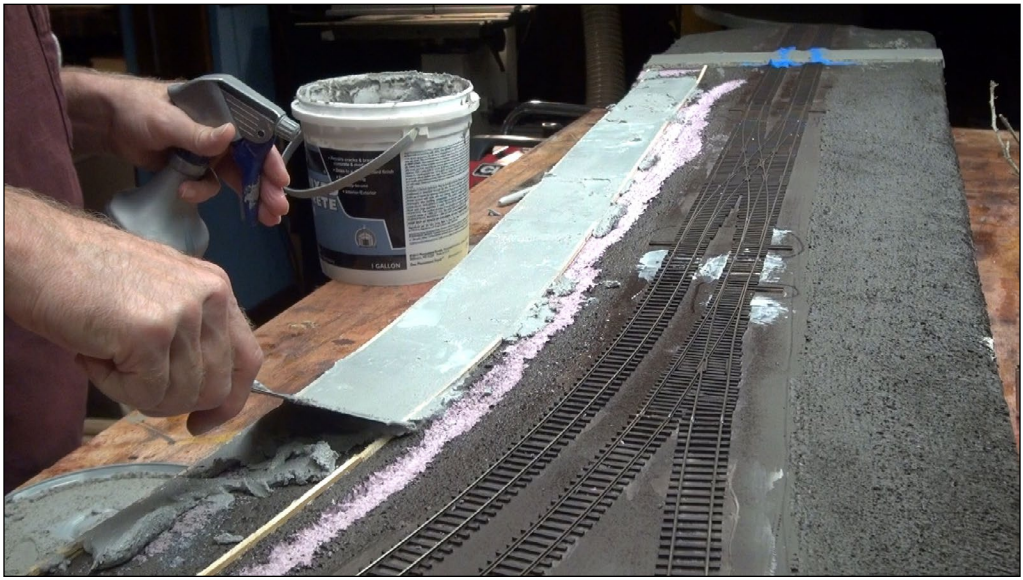

26. I got a little carried away with the road-building process and made a long road to parallel the tracks. I used water and a putty knife to draw the cement smooth between the wooden forms. These roads took two days to set up before I could go back and patch any cracks from shrinkage as the cement dried.

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27. I did final carving around the track to form the ballast line topography. I then sealed the exposed pink foam with brown latex paint.

28. I applied backyard dirt and ballast to the scene, working the ballast into the trackwork with an artists brush. I also built up an eight-foot ballast shoulder along the edge of the cement road so cars would have room to pull over to the side.

29. After adding medium green ground foam and building a limestone service road along the tracks, I sprayed three bottles of Woodland Scenics Scenic Cement over the diorama to glue all the scenery into place rock hard. I did tend to the turnouts while the glue set up, making sure the points would not be glued into place.

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30. I ran power feed wires from the rails in 10 places, through the foam to a groove in the bottom of the foam. I also ran a blue bus wire under the diorama. This you can see in the groove in this photo. Once all the power feed wires from the rails were soldered to the blue main wire, I filled the groove with Great Stuff Foam, permanently sealing the wires into the scene. Now the diorama can be powered to produce video runbys.

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31. I cleaned the glue out of the switch points and ran a track cleaner pad along the tops of the rails. The track was almost complete but I want to power the K frogs and bent-rail frogs at a later date. The roads still need to have lines applied, and I need to install some nice crossing gates.

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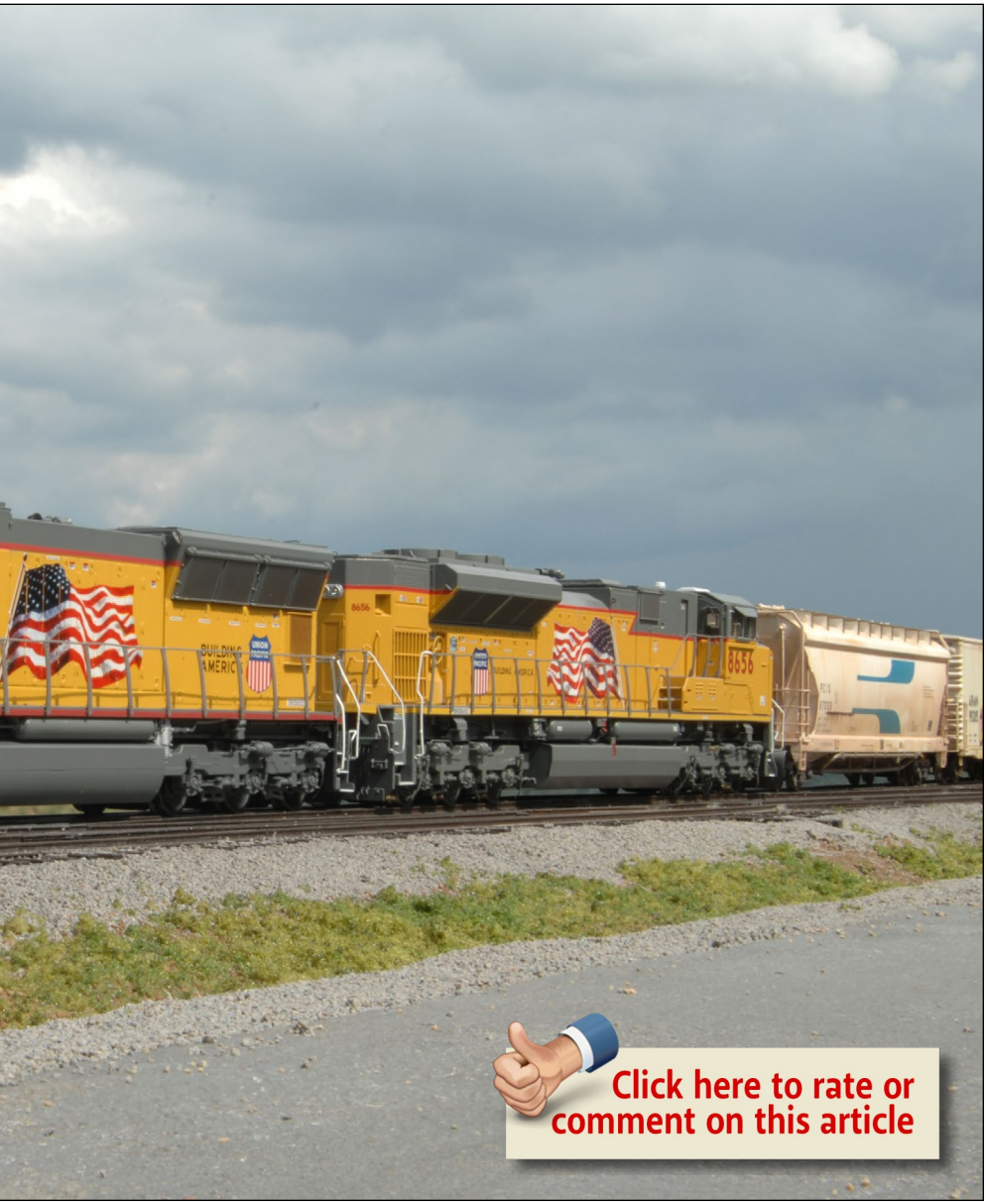
32. I ran trains outside on the diorama for this month's video. Here is some modern Union Pacific power photographed on the new diorama. The rail and track profile look just right. ☑



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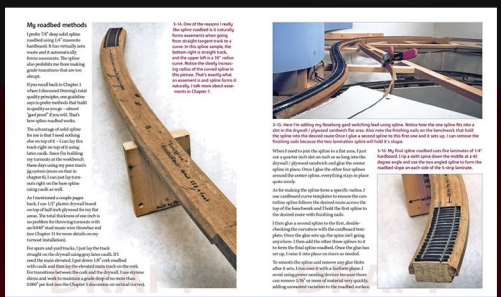

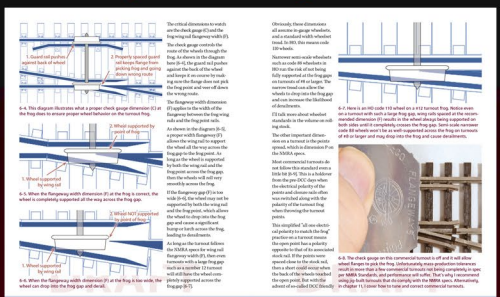

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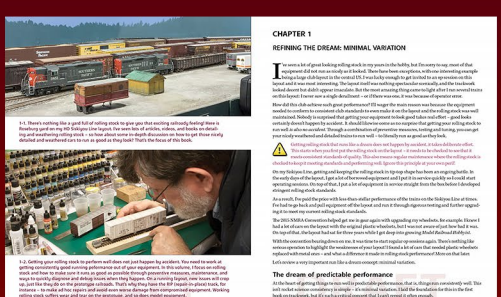

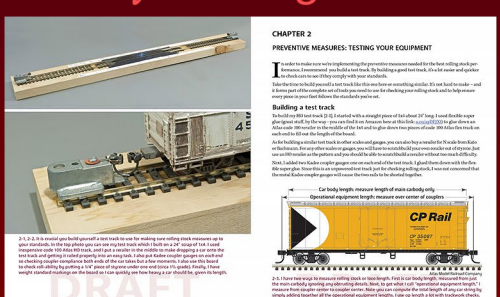

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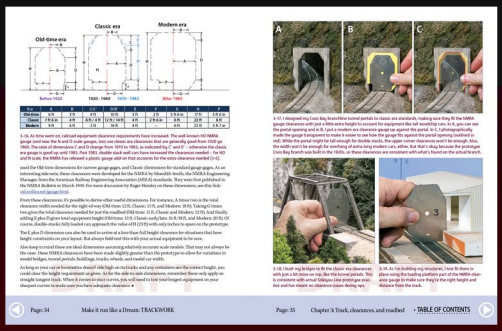

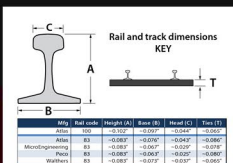

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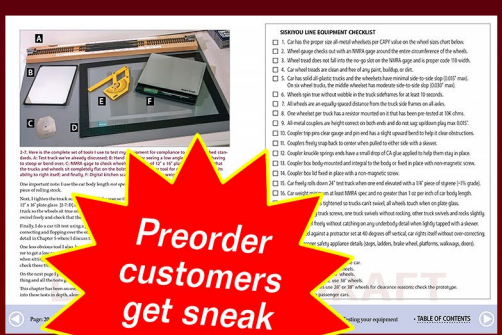

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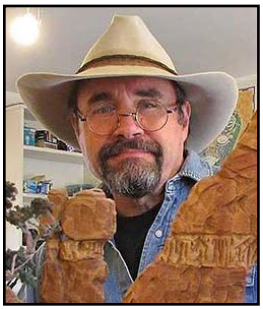

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Dave Meek

A New Home for Thunder Mesa

Since the very beginning, my On30 Thunder Mesa Mining Company layout has been designed and built with an eye towards entertainment. I've always wanted something with a certain charm and appeal that could be appreciated by a wide audience, even beyond the fraternity of model railroad hobbyists. Many visitors to the layout have remarked that it reminds them of a theme park experience and that's no accident. As I wrote in my very first *MRH* column; with its lights, sounds, scenery and effects, Thunder Mesa is a model railroad designed to function as an immersive themed environment. Its purpose is to amuse, inform, and delight. [1]

Earlier this year, events began to align that would make it possible for me to present the TMMC in a showcase where it could be better appreciated by the public at large. We sold our old farmhouse in rural Arizona, and bought a new, modern house, closer to work and better schools. Naturally this meant that the railroad would have to move, and at first our house-hunting wish-list included a new space for the railroad too. But then

I happened upon a large studio space for rent in the nearby historic mining camp of Jerome, AZ, where I was struck by a sudden moment of inspiration. [2] I make my living as a commercial artist and designer, sort of a freelance imagineer, and I have long dreamed of having an open studio that was alive with

1. This scene on the On30 Thunder Mesa Mining Co. model railroad greets guests who visit Thunder Mesa Studio in Jerome, AZ. The layout has always been designed with entertainment in mind.

2. High on the slopes of Cleopatra Hill is the fabled mining camp of Jerome, AZ, where copper was king and narrow gauge trains once chuffed along mountain ledges. The Old High School Art Center in Jerome is the new home of the Thunder Mesa Mining Co.

kinetic energy, and stuffed to the rafters with colorful artworks, wondrous models, gadgets, gizmos, memorabilia, and, of course, trains. A workshop, studio, showcase, and gallery all in one, where I could bring all of my various projects and interests together. Jerome, I realized, with its long history of mining and

railroads and its more recent status as an artist's enclave and tourism destination, would be the perfect place for what I had in mind.

Thunder Mesa Studio

The dream has grown into a real place called Thunder Mesa Studio, located in what was once the library of the Old Jerome High School; an historic building complete with original wood floors and slate chalkboards still in place. Not so much a commercial enterprise as a labor of love, the studio will always be a work in progress. Now, after several months and a great deal of work, the entire showcase, including the railroad, is finally ready to receive guests.

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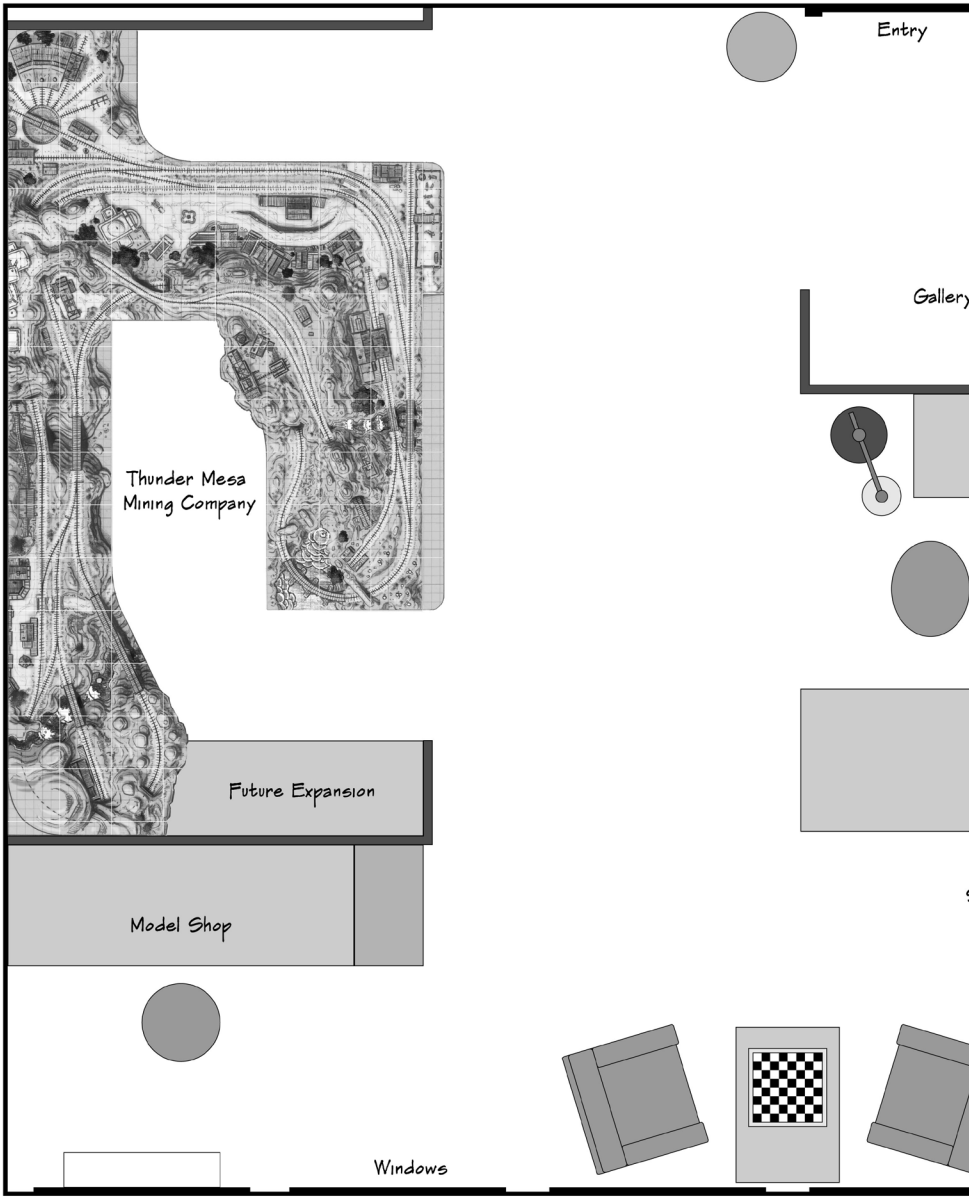
To make that happen, I had to carefully plan and prepare the new space before completely disassembling and moving a mid-sized model railroad that was never meant to be portable (along with all of my studio equipment, modeling tools, supplies, and furnishings). Fortunately, I had a little time to get it all done, and the combined prep-work and move took about three months from start to finish, roughly from the end of February until late May, 2017.

The new studio space is about 462 square feet, a little more than twice the size of the old 15-foot-square outbuilding that previously housed the TMMC. Plenty of room for the railroad as it currently exists and for all the other various work and display spaces that I wanted to include. I had a very theatrical presentation for the railroad in mind, almost like a stage, and I burned through a lot of pixels, pencils, and paper trying to get the plan just right. [3]

In the end, the prep-work took much more time than the actual move, with the lion's share being devoted to the construction and painting of new backdrops.

Boundaries for a miniature world

Since I had a lot more space to work with at the new studio, I felt it was important to set up boundaries for the miniature world of Thunder Mesa. Some might ask, "Why not just expand the layout to fill the entire space?" Believe me, that temptation is always strong. However, I have chosen to keep the layout at something close to its somewhat modest, pre-move footprint of about 132 square feet. This footprint allows for a bit of future expansion while still keeping things manageable. I feel that if the layout was to grow too much bigger it would begin to lose its charm, along with its narrow gauge, short-line feel. The TMMC is not supposed to be a big railroad after all, just a short mining line in



3. The floorplan for the new studio and layout space. The layout was positioned as a focal point for maximum visual

the canyons. Then there is the fact that I need the studio to be a workspace and display space for other projects too. All of that, plus the desire to see the layout finished within my lifetime, led me to the decision to keep things on the smaller side. As it is, the layout now occupies a little less than a third of the studio's floor space.

Still, I wanted to showcase the layout for maximum visual impact and that meant defining a space that would draw guests into the story of Thunder Mesa. Shakespeare once wrote, "All the world's a stage," and that may be true, but in the case of the TMMC, I have taken the aphorism quite literally. The new space for the railroad was designed and built much like a performance venue, with a clearly defined rectangular space where the on-stage features of the layout could easily be seen and enjoyed by guests and operators alike. [4]

Practically speaking, this meant building a couple of partition walls that would both define the space of the layout, and act as supports for the backdrops. Since I am renting my studio space, I had to build partitions that were both sturdy and easily removable should the need arise. Once again taking a cue from the theater, the partitions were designed and built very much like theatrical scenery flats, using dimensional 1" x 2" lumber, plywood corner cleats, and smooth Masonite panels. [5] Each of the resulting partition walls measures eight feet tall by eight feet wide, and they are

impact, and to make the most of existing walls and track lighting fixtures.

attached to the existing walls with removable cleats. The 15.5' long rear wall of the layout space utilizes the existing drywall which, after some sanding, smoothing, and priming, allows for a dramatic 8' high backdrop behind the layout. Unfortunately, the removable nature of the side panels meant that curved backdrop corners would be impractical, so I did my best to work with the right-angles in the sky. Once the panels were built, installed, and primed, it was time to begin the actual backdrop painting..

Some tips on backdrop painting

In Imagineering, scenic painting, or what we model railroader's call, "backdrop painting," is a highly specialized skill. There are many people who are much better at it than I am, and I only know just enough to be dangerous. My artistic specialties are

4. Here you can see the stage-like presentation of the railroad at Thunder Mesa Studio. The brass chains keep wayward guests from wandering back into unfinished portions of the layout.

5. One of the side partition walls under construction. Here, one 4x8′ flat is stacked atop another, making a wall that is 8x8′ square. The flats were made with a simple 1x2″ framework, strengthened at the joints with plywood cleats and then surfaced with 1/8″ thick tempered Masonite. The bottom flat has not yet been surfaced in order to allow access to the supporting braces. Unfortunately, part of the historic slate chalkboard had to be covered by backdrop but great care was taken to prevent any damage.

concept and character, so working on something at this scale was a challenge. The backdrops for the TMMC cover about 188 square-feet, and that took a lot of paint. I worked on it daily for a more than two weeks in four- to six-hour stretches. As it stands, I'm pleased with the final results, and can offer a few tips if you have a backdrop project of your own to tackle.

- Take an acrylic painting class at your local community college or rec center. This is really the best advice I can offer to those who have asked me about backdrop painting. If you have no artistic background, a course like this will introduce you to the materials and fundamental skills you'll need.

6. I gave myself plenty of room to work by completely prepping the space and finishing the backdrop painting before the layout was installed. I learned this lesson the hard way by not doing it in the TMMC's previous location. Coved corners would have been impractical due to the removable nature of the backdrops in this rented space, so I did my best to work with the right angles in the sky.

7. Careful measurements were taken to ensure that painted elements on the backdrop would mesh with sight lines on the modeled scenery. The big thunderstorm is visible above the mesa from several viewpoints on the layout.

- Paint the backdrop before the layout is installed. This might seem like a no-brainer, but it's certainly a lesson I learned the hard way. In its old location, I had built the layout first and then attempted to add a backdrop – a less-than-fun experience. This time around I had a chance to do it right and thoroughly prep the space before moving the layout in. [6]

- Mix up lots of paint. Artist's acrylic paint and common household latex paint are mostly intermixable and share many handling characteristics in common. My practice is to create the colors I need with acrylics and paint them on 1" x 1" chips of white posterboard. I label these colors, then take them to my local home center to have them matched and mixed up by the quart or gallon in interior flat latex. I don't do this for every single color, just for the ones I know I will need a lot of. For example, in addition to the two values of blue used in the sky (which I bought by the gallon), I had quarts mixed up for the light, medium, and dark shades of sandstone.

- Use the same base color as your modeled scenery. Raw sienna is the long established "red-rock" base color on the TMMC, and served as the base for all the various sandstone shades I had mixed up for the backdrop. If you don't know what your scenery base color is, break off a small piece and have it color matched. This will ensure that your backdrop colors harmonize with the modeled scenery.

- Plan for where the modeled terrain meets the backdrop. Before starting to paint, I took careful measurements on the layout and sketched in where modeled elements would meet or block parts of the backdrop. The dramatic thunderstorm for example, was positioned to be visible from behind the mesa at several points for maximum effect. [7]

- Pick a light source and stick with it. This is extremely important. Where is the sun in your miniature world? What time of day is it? Does the light come from the left, right, or directly above? I have seen backdrops where the light direction is inconsistent, and it destroys the illusion. On the TMMC, I have decided that it is mid-afternoon on a pleasant spring day, and

the light is always high and from the left. This also carries over into how I position the track lights above the layout so the lighting on the backdrop and modeled scenery match as much as is practical. [8]

- Do use atmospheric perspective. Do not use mathematical perspective. The correct use of mathematical one-point or two-point perspective in a painting or drawing can add amazing depth and realism to a scene. However, it should not, in my view, be used on a scenic backdrop where a modeled area is viewed from multiple angles. The reason is simple. When not viewed from the perfect angle, the modeled scenery will no longer match the painted perspective and the optical illusion falls apart. A better solution is to use atmospheric perspective, an effect that is quite easy to achieve by overlapping elements

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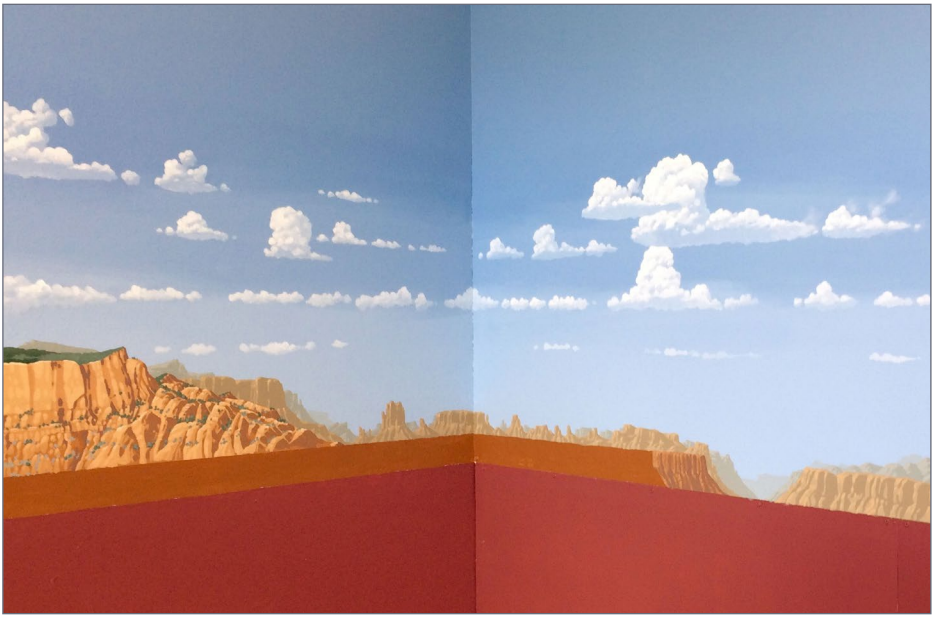
as they recede in size, and adding more of the light sky color for distant objects. Simply stated, the more sky color you add to the mix, the farther away something will appear. [9]

8. Wherever you look on the backdrop the light is depicted as coming from high on the left. Wherever possible, the overhead track lighting has been positioned to light the layout from the same direction. Keeping the direction of light consistent goes a long way toward creating more believable scenes.



9. In this corner of the backdrop you can see how atmospheric perspective was used to make some landforms seem more distant. This is a simple matter of overlapping things as they recede in size and adding more sky color to the mix the farther away you wish an object appear. Unlike mathematical perspective, this trick works when viewed from any angle

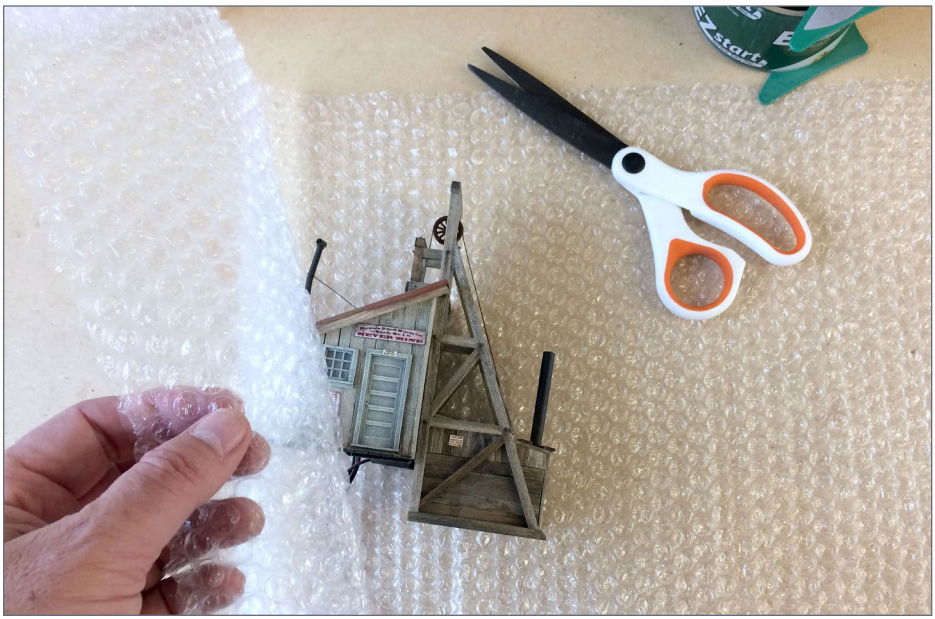
Moving the empire

The TMMC was never meant to be portable. Fortunately though, I did give some vague thought to the idea of having to move the railroad someday. When that day finally arrived, I'm pleased to report that disassembling and moving the empire went about as smoothly as I could possibly have hoped.

The layout benchwork breaks down into four somewhat manageable chunks. Those are held together by ¼" bolts, and the

supporting legs and shelving units below decks are also easily unscrewed and removed for transport. The larger sections require two people to lift and move and, when turned sideways, can just be squeezed through a 3' wide doorway.

The new studio is just across the valley from my old house where the layout was originally built. Thankfully, I didn't have to rush to get everything moved. I took my time, carefully removing and packing-up all of the structures, rolling stock, figures, and other small, fragile details. None of the structures are permanently



10. After being removed from the layout, structures and other delicate details were wrapped in bubble wrap before being packed in boxes for the trip to the new studio. Whenever possible, items of rolling stock were packed back into their original boxes for the move. Upon unpacking, amazingly little damage was found to have occurred.

11. With the bolts removed and these two sections separated, you can see how the rail joints are flush with the section edges. The rail joiners slide all the way back onto the rails and will be slipped back into place over the rail joints when everything is reassembled and realigned. Here you can also see what everything looks like when all of the structures and details have been removed.

affixed to the layout; most are simply aligned with small pins or woodblocks. Most figures also have pins installed in their bases that hold them in place on the foam scenery. [10]

The DCC wiring bus that runs below the layout disconnects at each section using common household twist-on wire connectors. The 9V DC bus for lighting and accessories is similarly broken up into sections and all wiring was carefully labeled before anything was moved or disassembled.

Wherever possible, the track joints between sections are kept simple and flush, and I'm happy to report that everything realigned without too much drama after moving. The trick with flush rail joints at sections is to slide the rail joiners all the way back onto the rails on one side, then, once the sections are rejoined and the rails are realigned, simply slide the joiners back into place to secure the connection. [11]

I didn't want to transport the layout sections in the open bed of my pickup truck since the wind at highway speeds would have done great damage to the scenery. When moving day finally arrived,

12. It's been a whirlwind few months, but operations are returning to normal in Thunder Mesa. Now that the move to the new studio is complete and the backdrop is in place, I'm looking forward to getting back to the scenery, structure, and rolling stock projects that make this great hobby so enjoyable.

we rented an enclosed moving van and tucked the sections safely inside. With the help of a couple of friends, the actual move was completed in just a few hours. To my great relief, everything arrived at the new studio space without significant damage.

Back on track

With the layout sections delivered to the new studio, it was time to put everything back together and get it all running again. This was accomplished in less time than I expected, even though I wound up replacing some wiring and a short section of track and roadbed that had given me some problems in the past. Today, the trains are running again on Thunder Mesa and all of the lights, sounds, and other effects are functioning as they should. [12]

If you would like to visit the layout in person, Thunder Mesa Studio now hosts an Open Studio & Train Day on the first Saturday of each month. The public is invited to come up to Jerome and enjoy the railroad and other attractions on offer. Studio visits are also available by appointment, schedule permitting. For more information on visiting the layout, please see the Thunder Mesa Studio website: thundermesa.studio.

All in all, it's been a very eventful few months here in Thunder Mesa Country, designing a new layout space for public viewing and imagineering a move for the layout. I hope my experiences will help you along the way with some of your own projects, and I hope you'll drop by for a visit sometime as the story of Thunder Mesa continues to unfold. ☑

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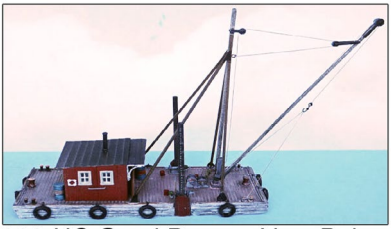

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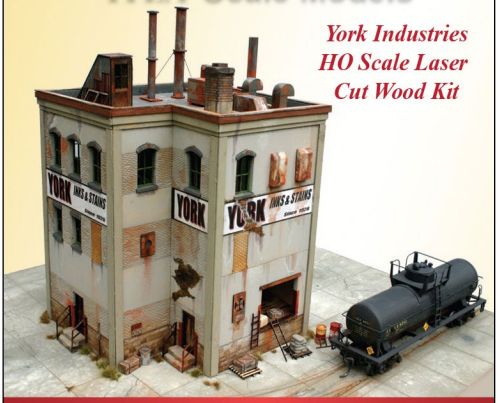

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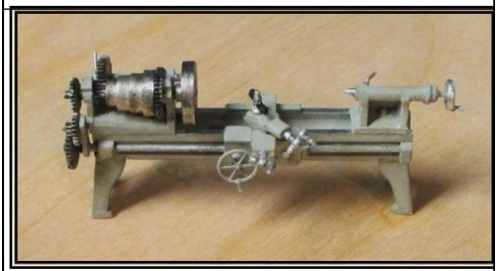

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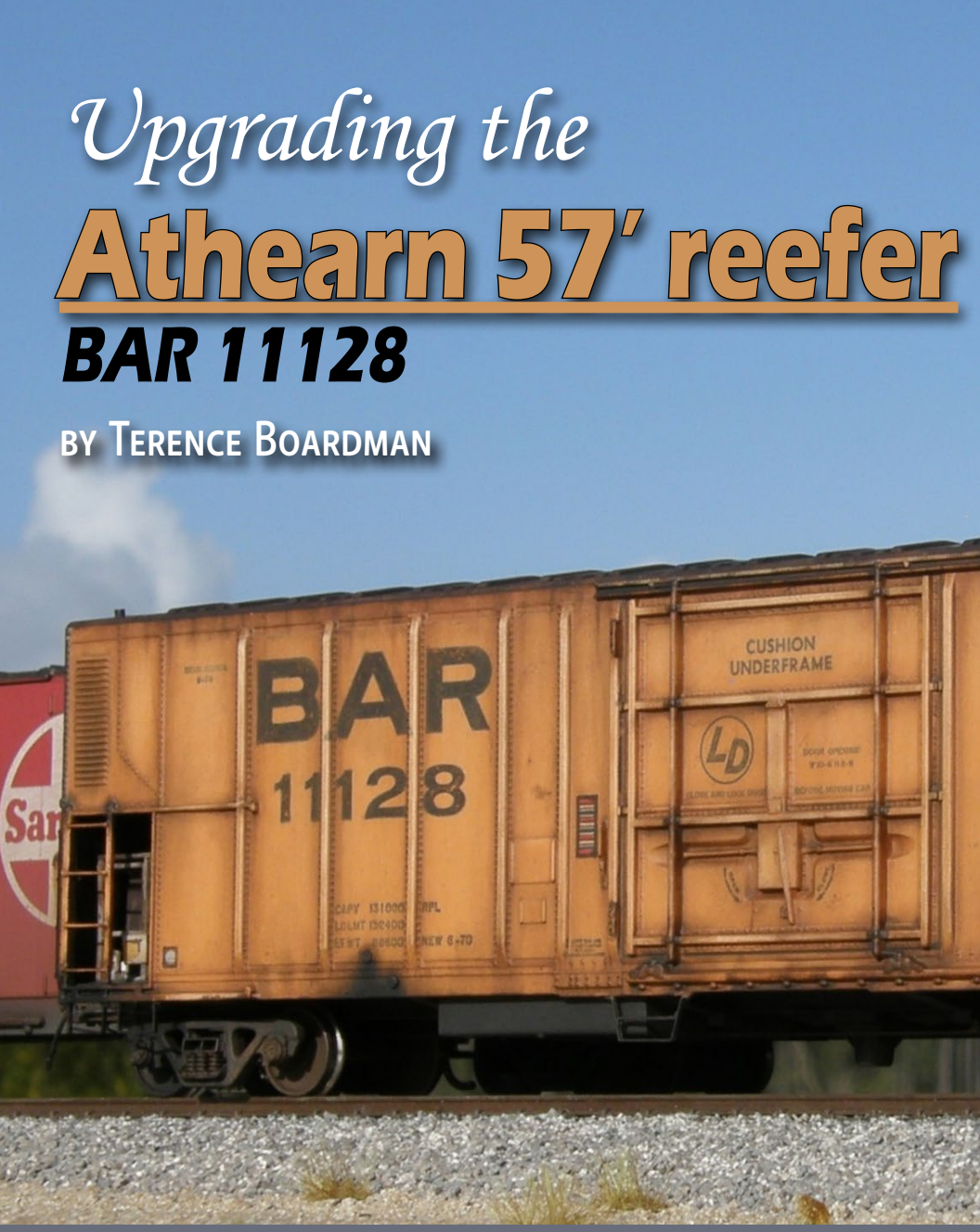
Upgrading the
Athearn 57' reefer
BAR 11128

BY TERENCE BOARDMAN



Detailing and weathering freight cars with oil paints ...

The finished model – you would never know it started as a blue-box Athearn car!

I HAVE ALWAYS WANTED TO DETAIL AND WEATHER a BAR 57' reefer. The faded orange colors and grime on some of the prototype photos I have seen were just begging to be modeled. I also wanted a car with the maintenance access door missing to show the refrigeration unit inside as a nice extra detail feature.

This was perfect timing as THE RUST BUCKET forum was having a weathering challenge to detail and weather an old shake-the-box kit, so I jumped in and went to work.

I started with an old HO scale Athearn blue-box model. As you might expect, it needed work. It's a typical model of its era: broken steps, couplers not at the correct height or falling off and 30-year-old detailing with only one separately applied part, the brake wheel [1].

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1. The original Athearn blue-box model, complete with some broken stirrup steps.

Preparing the blue-box shell

I started by washing the shell thoroughly first with soapy water. Then I cut off all the stirrup steps.

I removed the solid molded-on screens [2] by drilling rows of holes and cutting them out with a small piece of hacksaw blade. I trimmed the edges and corners of the openings with a sharp knife, and sanded them smooth with a sanding stick. Finally, I shaved off the molded-on ladders with a chisel blade.

I lightly sanded the cut-down spots to smooth them out.

Applying the paint fade

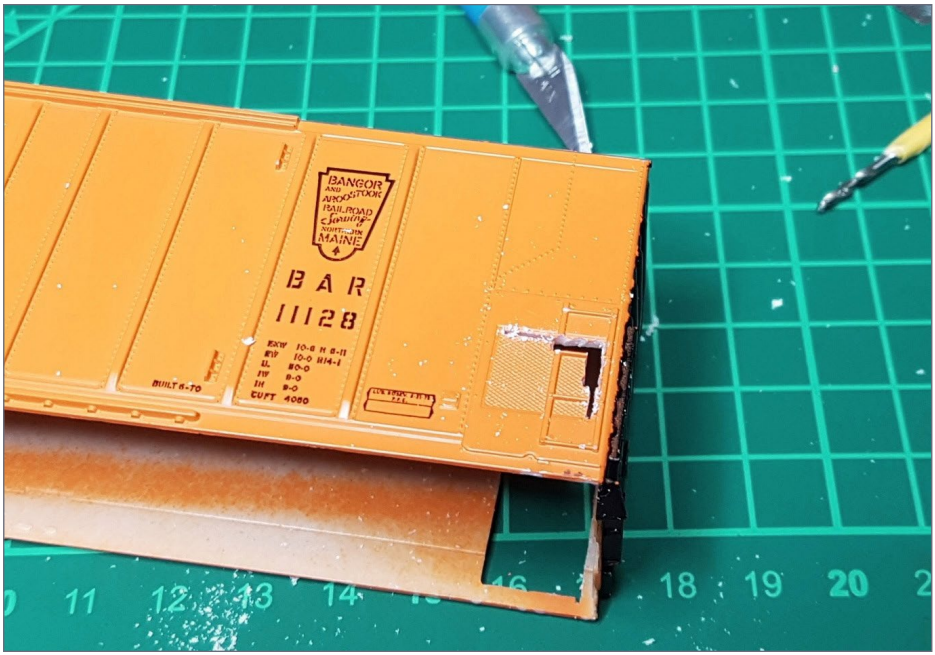
I matched the factory orange with a mix of acrylic paint (orange, white, and yellow), then brush-painted the cut and trimmed areas.

I also painted some ExactRail four-rung ladders with the same orange. I painted more ladders than needed because they are finely detailed parts. I have broken them during the modeling process before, and learned that trying to color-match later is a tedious task.

I hit the roof next with a light sanding using 1200-grit sandpaper. I painted it with a medium-gray acrylic using a wide flat soft brush. Getting rid of the metallic silver look is necessary for the later steps [3].

Next, I did a primary fade of the orange using Winton oil paints.

I mixed up a pale orange color and applied the oil paint (unthinned) liberally to the model [4, 5]. I then used a large



2. I cut off the molded-on screens from the car body shell.

3. I painted the roof a medium-gray color, and also matched the orange on the new ladders to be added.

4. Applying a fade coat of oil paint to the model. Note that I apply the paint straight, and do not thin it.

5. Progressing along with applying the faded orange oil paint to the car sides.

clean "dry" soft brush to move the paint around and remove any excess, wiping the brush clean on a lint-free dry cloth often. Note: I do not thin the oil paint during any of my weathering process.

Remember to add a coat of the fade color to the side steps too. Note: Different brands of oil paint can go on and work differently, so I recommend practicing on a cheap model first.

Once the sides were complete and I was happy with the oil paint fade appearance, I cleaned off the oil paint from the large BAR letters with a worn out brush. I also cleaned off the other small lettering and heralds with a toothpick, as these were always black in the prototype photos – so the pale orange over these has to go. The beauty of using oil paint is it gives you a lot of working time. [6].

6. I cleaned the fade paint off the lettering with an old worn-out brush and/or a toothpick.

Adding the screen mesh

After the primary fade was dry (about four days), it was time to add the screen on the other side of the car. I cut the screen from very fine brass mesh with scissors.

I did the final sizing on the mesh screen using a diamond hone to sand it down precisely for a snug fit [7]. (I find this diamond hone works well to size etched metal parts too.)

After gluing the screen in place with CA, I colored the mesh black with a Sharpie permanent marker pen. I prefer this over paint, as I do not want to add any thickness to the fine wire or possibly clog the holes with paint.

Doing the secondary fade

Now for the secondary fade, to simulate where the sun did more damage to the paint.

I mixed up an even lighter pale orange and applied it where I needed it with a small brush. I took a larger dry brush and worked the paint around, removing any excess, wiping the brush clean often on a clean dry cloth. I used downward strokes toward the end of the process to simulate the random faint streaks from rain.

By using paint and a brush, there is less uniformity, whereas using an airbrush for fades looks too uniform for this effect, I feel. [8, 9]

Next, I applied a highlight fade on the ribs with the very pale orange [10].

7. I used a diamond hone to get the screen mesh to final size for a precise fit into the hole in the car body.

8. Using an even lighter shade of orange, I added sun fade to the center of the panels.

9. Using a second dry brush, I smoothed-out the fade effect to soften it.

With all the fade complete, it still looked a little crude and rough around the edges [11], but adding a grime layer later blended the whole thing together so it turns out just right.

Once I had faded both sides, I left it to dry for a few more days (you definitely learn patience when working with oil paints).

Now, on to the roof. I applied some patches of light gray acrylic to represent oxidizing of the galvanized steel roof.

Next, I added some oil paint rust onto these lighter patches. I used the end of the brush to stipple the rust on as hundreds of little dots [12]. I did the first layer of rust with a mix of two parts Winton Burnt Sienna and one part Winton Burnt Umber.

When that was dry, I added a second layer of rust more to the centre of the patches using a reverse color ratio: two parts Winton Burnt Umber and one part Winton Burnt Sienna.

10. I also used the very light orange to highlight the ribs.

11. The second lighter fade layer is done. It still looks a bit rough, but we will fix that with the grime weathering coming up.

12. I applied a very light gray acrylic paint in small patches to represent oxidization of the roof, and then I added the oil paint rust on top of the very light gray.

After the primary and secondary fade were nice and dry, I gave the shell a good coat of flat clear lacquer. I like to do this to seal in what I have already done, and to give the next step an even, smooth finish to work on. This flat clear coat also protects any previously painted edges from wearing off during the next step of grime with oil paints.

I found if I don't coat the first oil paint layers with clear lacquer, the next layers of oil paint actually soften the layers underneath. Then any brushing or wiping with a rag can cause the primary and secondary fade to come off, especially on protruding edges.

Adding the grime layer

After studying the grime on real BAR reefers cars in prototype photos, I mixed up a grime color oil paint. I chose a dark gray with some rust-orange color added. This will darken the orange sides of the car [13].

13. I started adding a darker gray/orange grime color to the car to match what I saw in prototype photos. The left part of the car has the grime layer added and then mostly removed, the door area shows the grime layer before I removed most of it with a rag and/or dry brush.

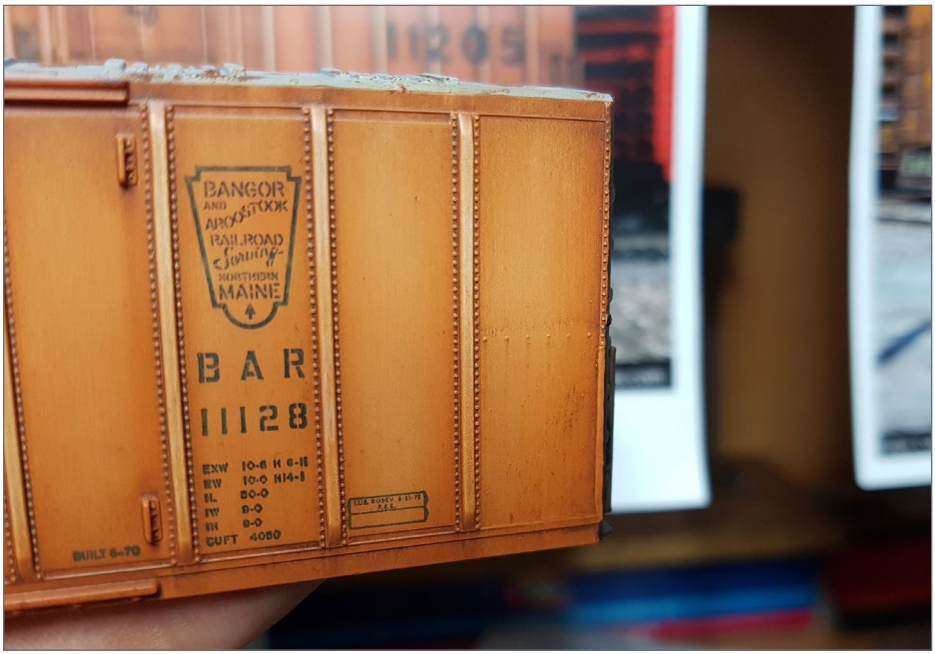
14. Here I have added the grime layer to most of the right side. Next, I will remove most of it with a rag and/or dry brush. Oil paints make this add-then-mostly-remove process very easy to do.

15. I am now removing most of the grime layer on the right side.

I applied this first grime layer using a similar method used with the fades. I laid it on thick, then worked it off with a soft cloth and with a dry clean soft brush, cleaning the brush regularly [14, 15].

As before, I used downward strokes toward the end of the process to create some nice random streaks. You can see that the downward strokes of the dry-brush removal process can produce some nice effects in the oil paint, like grime running off the bottom of the rivets [16].

Now I applied the same grime treatment on the roof [17]. In hindsight, I probably should have gone a tad darker on the roof. A more gray/brown rather than gray/orange for the grime on the roof might have been better.



16. Notice the subtle downward streaking you can get with the oil paints.

17. I applied the same paint-then-mostly-remove process with the grime paint to the roof.

With the first layer of grime complete, I checked the result against the prototype photos for reference, [18] and I also checked how the roof was coming [19]. I decided the roof needed to be darker, so I used a darker shade on the roof. Once I had done that, I let the grime weathering layer dry for a few more days.

Other improvements

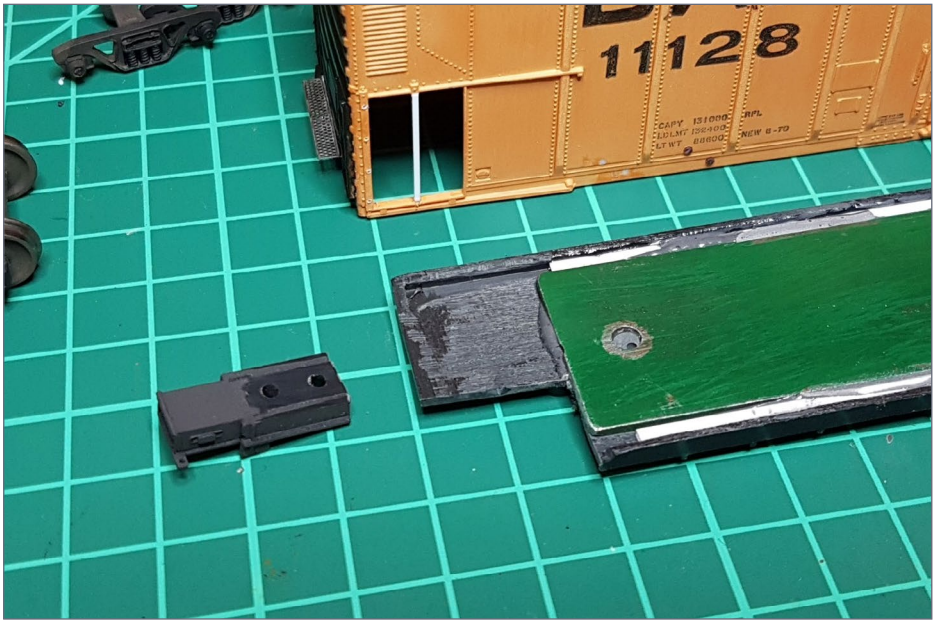
I made other improvements to this blue-box car as well.

I added a vertical support for the ladder rungs across the refrigerator unit screen opening [20].

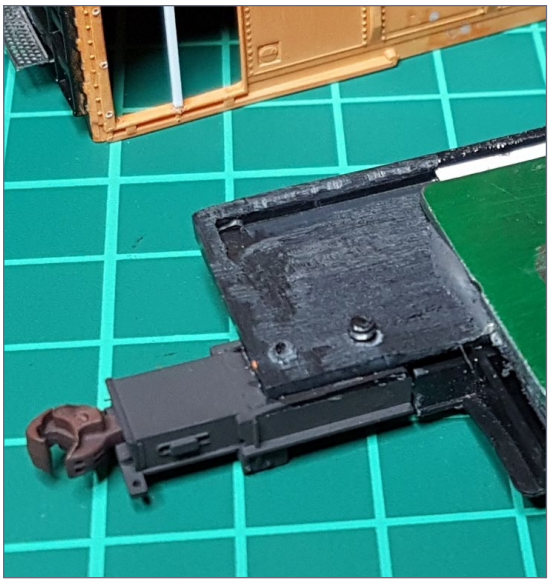
For the floor of the model, I cut about 15mm off the end of the metal weight (painted green). I also cut out the entire corner of the floor off near the opening, as it was too high and stuck up into view [20].

18. I compared my progress so far with some prototype photos – it's starting to get there!

19. I also checked to see how the roof is coming along.



20. I added a vertical ladder support to the screen opening, and I cut a corner off the floor because it stuck up into the opening.



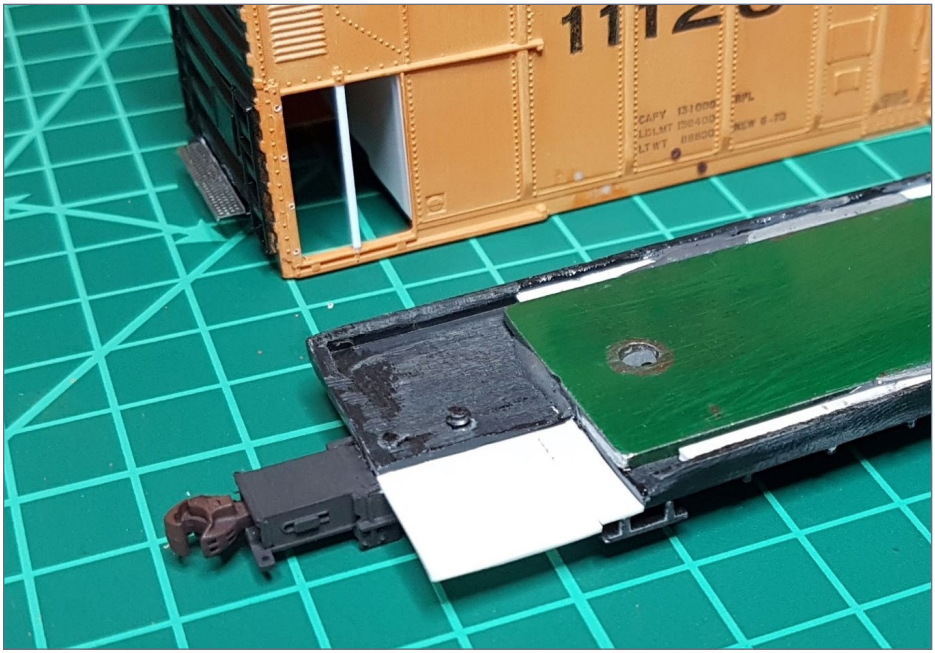
21. I installed Moloco draft gear boxes and installed Kadee #158 scale-head couplers.

I installed Moloco draft gear boxes with Kadee #158 metal scale-head couplers [21].

Finally, I cut and glued in a piece of 0.020" styrene sheet in place to be the new floor in the cut-off corner. I bent the outer edge of the styrene closest the opening down a bit to be flush with the edge of the opening [22].

Next was to make the internal wall from 0.040" styrene sheet and glue it into the main body of the reefer, keeping it flush with the edge of the opening.

Now for the main attraction detail: the refrigeration unit. I looked at hundreds of photos for these types of reefers from



22. I added new floor with 0.020" styrene. I bent the front edge down slightly to line up with the bottom of the screen opening.

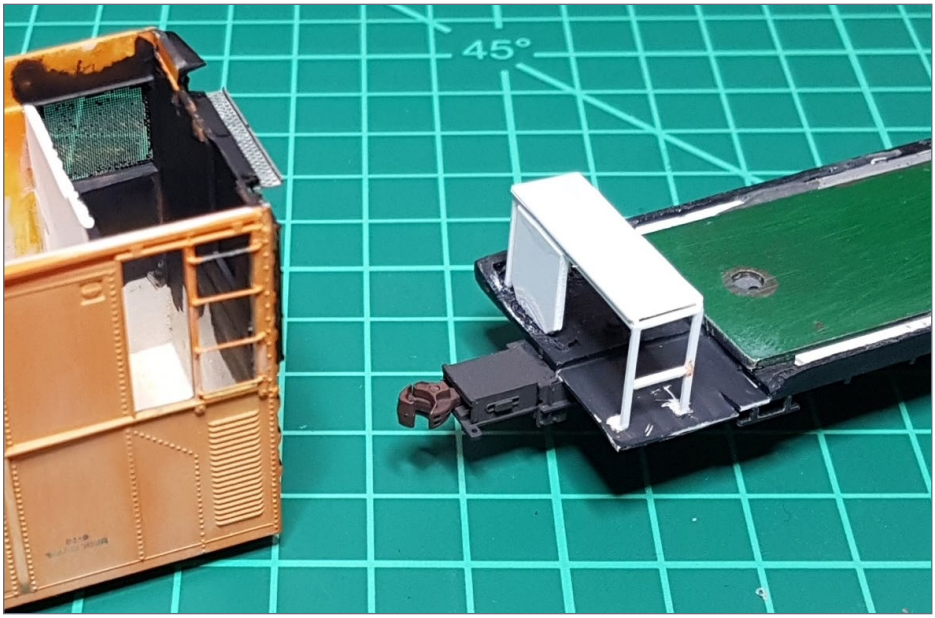
23. I fabricated a refrigerator unit to show in the opening using some scraps of styrene.

many different railroads. I found lots of photos with the screen door open, and many with the door completely missing as I wanted to model.

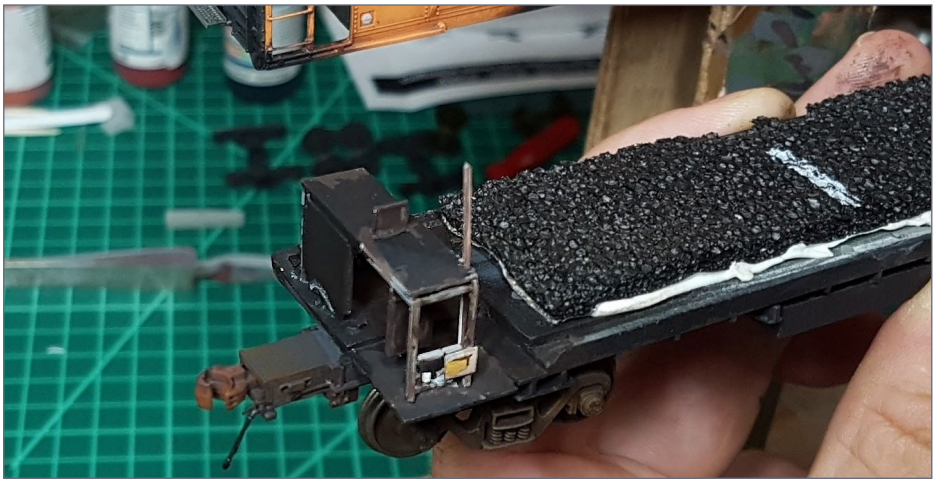
There are many different types of refrigeration units visible in the photos, but not really with enough detail to make an accurate replica. So I just made up something that looks like what was visible in the majority of the photos.

I started with a basic rectangle and added a few bits of detail and some pipes. It ended up being simple but effective, I think. I used the height of the rungs and the width of the ladder as reference to estimate the size of the unit.

I added a little grime color with acrylic paint and then applied a bit of weathering powder after it was dry to finish it off. [23, 24, 25]



24. Here is a view from the other side of my "freelanced" refrigerator unit under construction with bits of styrene.



25. Here is the finished and painted "freelanced" refrigeration unit.

26. I completely redid the underbody detail on this car.

I completed the draft gear boxes by adding the air hose supplied by Moloco [25]. I also added some self-adhesive sound-deadening on top of the metal weight and to the inside walls of the car. This adds a little extra weight to the car for better stability and also stops it from sounding like a hollow plastic box when rolling on the layout.

For the underside of the car, I removed the original Athearn details.

I used a good reference photo of a reefer on its side as a guide. I installed a cylinder from an old tank car, and added the other brake components in the correct locations using a Moloco brake appliance kit. I added some rods and piping from 0.015" piano wire. To finish it off, I painted it all with flat-black from a rattle can then added some grime and rust with acrylic paints [26].

For the remaining car body details, I added a Kadee modern brake wheel. I glued Plano etched metal end platforms straight on top of the dismal original ones.

I also attached Detail Associates 6418 stirrup steps. I found the bottom edge of the car was too thin to drill holes for the stirrup steps, so I cut grooves on the inside edge and laid the pin of the steps in the groves, then added the glue. These steps have a very fine and accurate profile, making them very fragile, which is why I added them last.

Finally, I used a grimy dark color oil paint to weather these recently applied details and to blend them into the end of the car.

Finishing touches

The sides of the car needed more grime, and needed to be a bit darker.

I sparingly applied a little more dark grime oil paint. I worked it into place using a dry soft brush similar to what I had done with the roof to get it darker.

After it all dried for a few days, I sealed it with another layer of Tamiya flat clear.

Once the flat clear had dried, I took the car out into the sun to look it over and get a good color reference. I decided to add a bit of weathering powder for to increase the grime and blend in certain places.

With the car complete, I added a final coat of Tamiya flat clear. I always coat with a clear lacquer before using powders so it has a uniform surface with some "tooth."

I also check and make sure there are no fingerprints on the model when using powders. I'm sure the guy who invented using powder to identify fingerprints at a crime scene discovered the concept when weathering his model trains!

With the car done, I did a final comparison with the prototype photos [27].

27. The final comparison of the finished car with prototype reference photos.

I took the finished model out into the sun on my diorama for some realistic closeup photos. I prefer morning sun, as it lights up the trucks, wheels and other details under the car nicely.

Sometimes a bit of cloud cover that reduces the harsh brightness of the sun produces the best shots. I always stay aware of the camera-to-car-to-sun angle so it doesn't produce any glare off the surface of the model.

I use an Olympus SP 560UZ camera , I set it on SUPER MACRO most of the time and take lots of photos from many angles to ensure I have got the best shot, nothing else high-tech, just straighten and crop the photos that have the right stuff. [28, 29, 30, 31, 32].

28. A closeup on the finished model showing the missing screen area and the exposed refrigeration unit.

And a big thanks to the guys at THE RUST BUCKET forum for lots of good weathering tips, constructive criticism and encouragement.

Be sure to check out my other weathering projects at THE WEATHERING SHOP (theweatheringshop.com/terence.html).

29. The finished model under a cloudy sky. It's hard to believe this started as an Athearn blue-box kit!

30. The finished model from the other side with a bit more sun.

31. The other side of the car with the screen in place.

32. A closeup of the grime and the streaks along the bottom and from the roof

PARTS LIST

- Exactrail: 4 rung steps
- Exactrail: 100-ton trucks with .088" 33 inch wheels
- Detail Associates: #6418 stirrup steps
- Plano: #11278 coupler platforms , underframe not used
- Clover House: 3788 #40 brass mesh screen
- 0.015" piano wire for the rungs of the ladder and brake rigging
- Kadee: Modern Brake wheel
- Kadee: #158 couplers with the trip pin removed
- Moloco: DG 0408 coupler box and hose
- Moloco: CA 0302 brake appliance details
- Evergreen Styrene:
  0.022" x 0.022" strip for legs of the refrigeration unit frame
  0.020" sheet for the floor and top of the refrigeration unit frame
  0.040" sheet for the internal wall
- Tamiya TS80 flat clear (final protective coat) ☑

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Terence Boardman

Terence works as an Electrical Supervisor on big construction projects around the country.

He developed his skills with electricity at a young age, working out how to run two separate trains on one track on his model railroad at about age 14. At 48, he re-entered the hobby after doing some painting/weathering of Warhammer models with his kids. He found some of his old trains and thought he would try some weathering on them, when he stumbled across photos of amazing model trains on The Weathering Shop. He was hooked.

He is married, and has four children. The family lives in Australia on the Sunshine Coast Hinterland.

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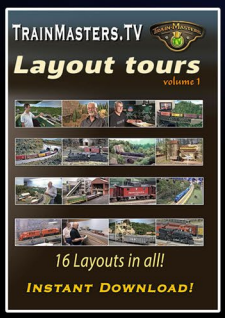

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YES, IT'S A MODEL

compiled by
DON HANLEY

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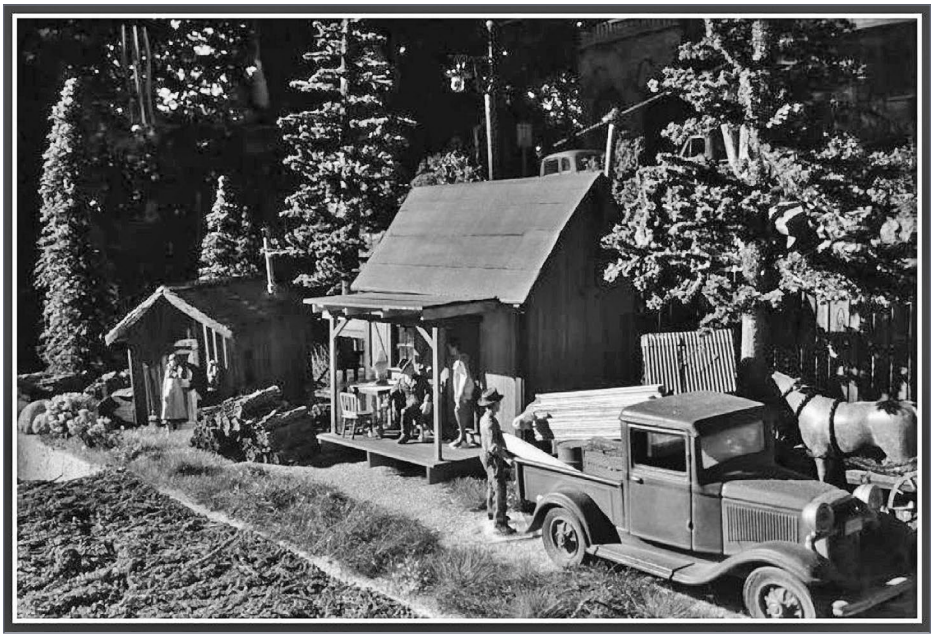
1. This New Haven switcher approaches a street crossing while working a maintenance-deferred branch. The model is a Proto2000 SW1200, custom painted and detailed for the New Haven, circa 1968. Michael Horton took this photo with his iPad.

MRH'S MONTHLY PHOTO ALBUM

2. This is the American Legion hall, and DiMone's Bait & Tackle on Ted DiMone's layout. This model was inspired by the upper level of Dover Plains township in upper New York state. As the story goes, a hamlet of homesteaders took possession of this site during the start of the Depression and leased some of the land for use by the township. The structures are Rich White plaster castings models, painted with acrylics, Hunterline stains, and PanPastels.



3. This is a model of the lower level of "Oniontown" made by Ted Dimone. Located in upstate NY, the site is inhabited by a group of farmers that lost everything when the Great Depression hit. The far-left model is a Rusty Rails, resin kit, painted with acrylics and weathered with PanPastels. Figures are also from Rusty Rails. The main structure is a BTS (Better than Scratch) model: Greely's Place. Ted added extra details, and painted it with markers and PanPastels. Ted used Dr. Ben's pigments for rust effects. All scenic materials are from Scenic Express.

3. The Scene is named "Mill Creek Crossing." Tom Orlando's picture is of the local freight delivery of cardboard boxes to Ody's Feed and Grain. The spur is HO scale with code 100 rail, trees that are twisted wire and the ground cover is shredded real leaves.

The scene is a part of a large layout, South Detroit to Pittsburg, and everything in between. This picture (northern Pennsylvania) is dedicated to the grain industry!

Ody's Feed and Grain is named after the author's pup, Ody, who just recently passed.

The entire scene is built on medium density foam masking tape and latex paint along with various different scenic materials. Walthers road crossing and buildings and scratchbuilt items make up most of the scene.

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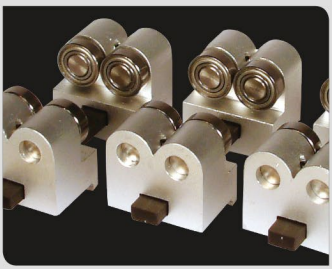

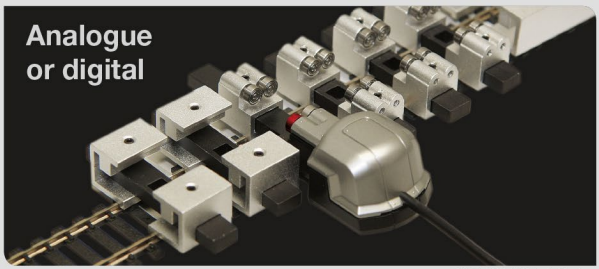

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ALLAGASH FREIGHT CAR ROSTER PHOTO ALBUM

BY MIKE CONFALONE

Keep moving forward: filling out your roster is not only fun, it's good therapy ...

ADDING FINISHED AND WEATHERED CARS TO your roster can not only raise the realism of your model railroad to new levels, but it can be one of the most enjoyable and relaxing aspects of the hobby. For me, it has turned out to be darned good therapy.

Adding cars to my roster by weathering them and putting them in service has allowed me to get back into the hobby after six or seven months away.

1. (previous page) A pair of plug-door boxcars spotted in the yard at Andover, ME. Both models started as plain brown cars. After an initial application of Dullcote, I highlighted the weld seams and the ladder areas with black PanPastels. Note the varied tones in the panels between the weld seams. This effect was done simply by using some red and rust tone pastels in between the seams. The WP car also has some rust streaks applied with artists oils and turpentine.

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After years of intense building and operation on my proto-freelanced Allagash Railway, I took some time off because of some personal family issues. It wasn't a choice I wanted to make, but one I had to make.

Most of us go through the typical fluctuations in interest, ability, time and budget over the course of our model railroad "careers." But sometimes we go through personal problems or challenges in our family life that take us away from the hobby.

Sometimes the toughest thing to do when you've "been away" is to finally get back into the hobby again. Where do you start? For me, I wanted to reconnect with the railroad, especially the artistic side of things. But, I needed to keep things simple.

Filling out my roster by weathering freight cars seemed like just the ticket. It has enabled me to get my feet wet again, and immerse myself in the artistic part of the hobby, something I love very much.

My good friend and fellow modeler, Neil Schofield, has always said "there's nothing like weathering a freight car. You get instant gratification. It is relaxing and it gives you a sense of accomplishment in a couple of hours, without taking on a huge project." I finally started listening to him!

This may sound strange coming from a guy who has produced a whole lot of content over the years, including a popular two-part video series for TrainMasters TV and *MRH* on weathering freight cars and locomotives. Interestingly, since the release of the videos (Spring 2016), I actually hadn't weathered a thing!

The Allagash is a big railroad with hundreds of freight cars. I knew one day I'd have to seriously tackle the problem. Too many

2. Again at Andover, this Maine Central boxcar started out bright orange. I used a wide application of rust and brown pastels to bring down the orange on the car. Next was highlighting the inside of the ribs (both sides) using a very small brush and a grimy black/gray tone. After this, I cleaned the rib surfaces with a pencil eraser. To represent rust, I applied a bit of full strength artists oils to the ladders and at the bottom of a few ribs. Note the dark tones around the door latches – a simple application of dark gray pastels did the trick.

3. This New York Central ACF covered hopper is a favorite of mine. My first step was to carefully color the weld seams with grimy black pastels, being careful to stay on the seams and not stray too much on the body of the car. I accented the gap between the bottom sill and the carbody with the same pastel. I used artists oils to represent rust on the top of the car, and on the ladder weld seams. I applied some white artists oil streaks around the NYC logo.

unweathered freight cars have been running through finished scenes of great-looking scenery and structures supported by high-resolution photo backdrops. This became especially noticeable at operating sessions.

As I started to regain interest and passion for the hobby, I figured there was no better time to tackle filling out the freight car fleet with weathered cars.

So I set up the workbench, got out the PanPastels and artist oils, sorted the brushes and got busy. I actually had to relearn some of the same techniques I had demoed on the videos, but it all came back quickly. It is a bit like riding a bike.

Interestingly, I find that I'm cranking out better stuff now than when I did the video! I'm not rushing now. I'm taking my time and enjoying it, something I didn't necessarily do in the past.

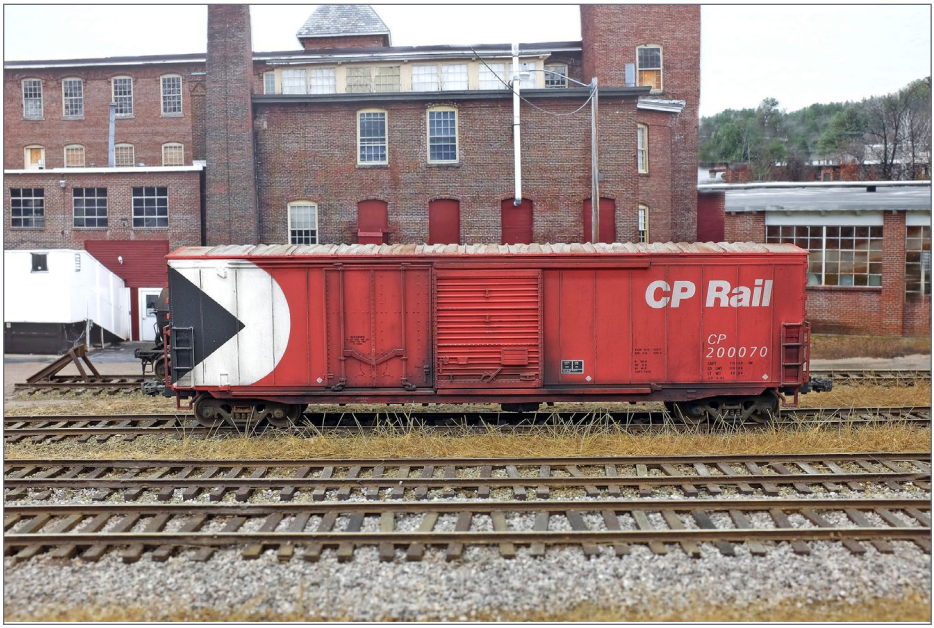
This change of attitude is important for me, because with literally hundreds of cars to weather, there might be pressure to complete them assembly line-style. For me, this would be a very bad idea.

4. This CN newsprint car is a great example of how effective PanPastels can be. Note the extreme contrast between the nearly black weld seams and the lighter oxide red panels. I used bright red, rust and brown pastels to vary the tones in each panel. Also notice the black pastel treatment around the door tracks and ladders.

5. This Railbox car, spotted in the yard at New Sharon, is a good example of a light-to-moderate weathering job. No specific weathering effect stands out, but you know it has been weathered. I brushed the entire car with rust-colored pastels with a wide, soft blending brush in order to take the bright yellow down to a more subtle shade, being careful not to overdo it. Then I highlighted the inside of each rib with gray or brown pastels. Finally, I applied tiny bits of dark brown artists oils on the ladders and on a rib or two.

The last thing I need right now is added pressure or stress, so I am approaching each car with the goal of enjoying each brush stroke and really watching each car come to life. At the same time I'm learning that the time spent weathering is value added – the model railroad's bar gets raised just a bit higher every time I complete a car and put it back on the layout.

Building the railroad and everything that goes with it is a major undertaking. I've been at it for over 10 years now and I'm fortunate that the Allagash is about 85% scenicked and fully operational. That is the result of a real drive to not only create



6. Here is a CP Rail combination-door boxcar at Andover. Not much is done beyond the usual weld seams and ladder treatment with black pastel. Notice the variation in intensity of weathering along the bottom sill and around the bottom corners of the doors.

something great, but to do it quickly. In other words, I've been full-on, all the time.

I'm in the process of re-wiring myself a bit, and along with that comes the realization that I don't want to work at that pace any more. I simply can't. So I'm looking at this freight car weathering project as a long-term thing. I don't have to get everything weathered in a few months. I can work on this for years and not rush.

So, for those of you who are in that frantic build-out process, whether it's lumber and screws, trackwork and scenery, or

planning operations, consider taking a break from what can sometimes seem like an overwhelming uphill battle.

Sit at the workbench and bring some freight cars to life with weathering. It can bring instant gratification, build confidence and raise the bar for your other modeling endeavors. This in turn will inspire you to do something that Walt Disney once famously said – "Keep Moving Forward."

The following are a sampling of some of the cars I weathered during the summer of 2017. All of the techniques used are demonstrated step-by-step in my Weathering Series, which is available

7. Here is an Airslide hopper, photographed at Madrid Yard. The weathering is discreet. This view from above shows how I highlighted the sides of the ribs with black pastels. I also used some brown pastels at the bottom of the car and several rust tones on the roof. I used an oil wash to highlight the hatch detail. I intentionally left most of the panels clean. This is typical of several prototype photos I studied.

at the MRH Store as a DVD or downloadable video at store. mrhmag.com/store/p118/dwnld/weather-like-pro-v1.

By the way: you don't need an airbrush to get these results. A set of PanPastels, a few tubes of artists oils and some brushes are all you need.

If you do have an airbrush, you can use it to apply Testors Dullcote full strength as discussed in the videos. If not, then you can use the spray can version of Dullcote and get the same results.

Happy weathering! ☑

8. This is about as subtle a weathering job as I've ever done! I highlighted the weld seams, but just barely. I dragged a bit of earth tone pastel down the car in a few places to represent grain spillage. This down-low view gives a good view of how I handle the trucks on all of my models. I paint the wheels brown, then apply earth and rust tone pastels to the wheels and truck side frames to give a uniform gray/brown look that blends with the roadbed.

9, 10. Here is a before and after comparison of a Kadee 50' PS-1 boxcar lettered for the D&H. Bright yellow can be difficult to subdue, and this was perhaps the most challenging of any of the cars featured in this photo album. I started with a broad application of a pale yellow pastel mixed with a light earth tone. This toned down the bright yellow paint. After a second application of Dullcote, I began applying layers of rust-colored pastels and rust-colored artists oils, applying Dullcote after each step in the process. I then applied darker pastel tones to the sill, ladders and around the doors.

11. (Top) This Maine Central box car was also a challenge. The car was a dark spruce green to start. The key here was to lighten or fade that dark, deep green. I did so by mixing a light green pastel with some earth tone pastel to create a greenish/gray color. I applied this to the panels in several stages, and between coats of Dullcote. I highlighted the weld seams with black pastels and finally applied rust-toned artists oils at the top of the car and on the door. I used turpentine to drag some of the oils down to streak over the old MEC logo.

12. (Left bottom) This Santa Fe boxcar demonstrates the ability of PanPastel materials to completely change the color of a car. The original color was a deep red/maroon. By using various rust and red tones of pastel, I changed the color of the car, essentially fading it. I cleaned up the lettering and herald with a pencil eraser before applying artists oils along the roof line, with some streaking into the herald with turpentine. I darkened the ladders and sill with gray or black pastels.

13. (Above) A bird's eye view of the roof weathering for the Santa Fe and Maine Central boxcars. With a painted roof, the key is to fade the color so it is a bit lighter than the sides of the car.

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14, 15. Another total recolor! This Accurail Conrail boxcar was deep maroon. I applied several layers of rust and red-toned pastels to put years of time on the car. For the roof, I varied the panels from nearly new to heavily rusted, using various tones of artists oils. On the cleaner panels, I brushed on light gray pastel to give the metal a chalky look.

16. (Above top) At first glance it looks like this car wasn't even weathered. But the out-of-the-box version was deep green with bright yellow markings. I applied a light overall coating of rust-toned pastel to bring the green down and to make the yellow a bit richer. I also highlighted the sides of the ribs and the door track and applied just a bit of artists oil color to the door.

17. (Above bottom) This Penn Central hopper, spotted in the yard at New Sharon, demonstrates a good way to handle ribs. The surface of the ribs is the original color of the car. I brushed a custom mix of greenish/brown pastel over the entire car, then cleaned the surface of the ribs with a pencil eraser. I also cleaned the lettering with the eraser to bring it back to full bright white. This view also shows the treatment of the trucks, and if you look closely you can see that the junction where the ribs meet the bottom of the car is darker – I applied some dark gray pastel here.

18. This Conrail hopper is a good example of a light gray car with light weathering. I carefully highlighted the two weld seams (this is a little tricky on a car with a curved side). I applied a few streaks of rust pastel toward the top, and a simple dusting of the underframe and discharge bays. Note the highlighting of the ladder weld seams – I did this with a black oil wash.

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19. This New Orleans Public Belt box car was an interesting subject. Being a recent build (late 1970s) and with me modeling 1984, the weathering needed to be on the light side. Posed at the paper mill at New Portland, NOPB 3556 doesn't really look weathered at all, aside from the subtle rib highlighting. But the key to this car is the fade of the orange. The out-of-the-box car was a much deeper and brighter orange. To bring that color down, I actually used a peach-colored pastel, applied very lightly and broadly with my soft blending brush. It was just enough to take the edge off that freshly painted look. Then I cleaned up the NOPB logo with the trusty pencil eraser, applied some artists oils to the ladders, and the car was good to go.

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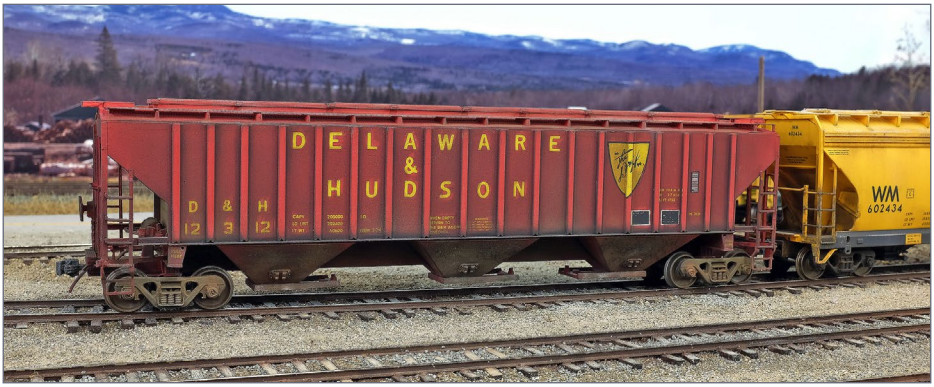

20, 21. (Left top and bottom) I have a large fleet of Allagash pulpwood cars, and it was about time I did something to make them look right. I used black pastel to highlight the seams between the side of the car and the top deck, as well as the area around the ladders. I stippled some artists oil onto the surface of the bulkheads, and then stippled some brown pastel into the oils to represent old rust. The deck of the pulpwood flat is most visible when the car is being run as an empty. After a basic application of earth tone pastels to the deck surface, I applied full strength white glue to the deck surface and then lightly sprinkled bark shavings that I had prepared ahead of time. I pressed the shavings into the glue and let it set up. After it dried, I added a few stray pieces of pulpwood, leaving them loose so they can be removed when the car runs as a load using removable pulpwood loads.

22. (Above) This Intermountain covered hopper was custom painted and decaled. The original color was a bright candy apple red. To take this way down, I used a broad, soft blending brush to apply grimy black pastel to the entire car. I used my trusty pencil eraser to bring back the lettering, some of the D&H shield and the front surface of the ribs, similar to the PC hopper. This photo illustrates the greasy-black pastel application at the bottom of the ribs along the entire length of the car, and the rusty/brown tone of the wheels and trucks, also achieved with PanPastels.

23. This Central of Georgia PS-2 covered hopper was one of the heavier weathering jobs. I used beige-colored artists oils and turpentine to create the staining and streaking down the sides of the car. I did the routine highlighting of the rib sides with dark brown and other earth tones. After the typical dusting of the trucks with the pastels, I dry-brushed full-strength beige artists oils onto the surface of the side frames. I achieved the roof weathering with a combination of stippled artists oils in varying rust tones.

24. Here is another example of quick and easy weathering on this Allagash 40' boxcar. After the initial application of Dullcote, I simply highlighted the weld seams, ladder and

door area with black Pan Pastel. I added a bit of earth tone pastel around the bottom of the door to represent grain spillage. Finally I used rust-tone artists oils and turpentine to create the minor streaking across the Allagash herald.

25. This Reading hopper is a great example of a very heavily weathered car. You shouldn't have many of these in your fleet, because by the time they get to looking like this, their days are numbered. To achieve this result, I applied several layers of artists oils and PanPastels, with multiple applications of Dullcote between each step in the process. Note the heavily rusted area on the roof. I achieved this by stippling various artists oil rust tones, and then stippling over the oils with dark brown and rust pastels. Note the difference in the color of the wheels compared to the truck side frames. I used slightly different colors of PanPastel to achieve this effect.

26. Here is another example of a car that is lightly weathered. The original color was dark chocolate brown. Using brown and rust-tone pastels and a broad, soft blending brush, I was able to lighten the car significantly. After cleaning up the lettering with a pencil eraser, I went back and lightly stippled some brown artist oils on the lettering, per a prototype photo I was using as a guide.

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27. This Allagash woodchip hopper is an example of a bit of luck. After applying the usual assortment of earth- and rust-tone PanPastels, and highlighting the sides of the ribs, I just wasn't pleased with the results. I was applying a final coat of Dullcote and about to call it a day when I had an idea. As I was cleaning the airbrush with lacquer thinner, I began to spray the car with the thinner under high pressure (40 psi). The lacquer thinner washed off some of the pastels in an interesting pattern and also caused the paint to peel and crack. I don't recommend doing this unless you are willing to accept the risk that the lacquer thinner might damage your car. But sometimes happy accidents yield interesting results.

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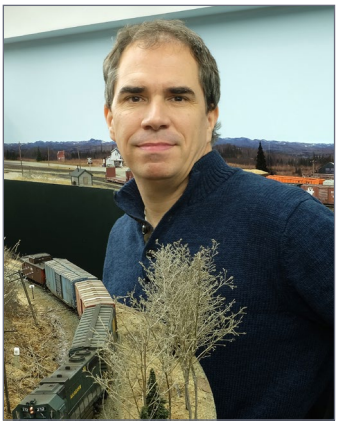
MIKE CONFALONE



Mike Confalone grew up in Smithtown, NY, and got into model railroading at age 10 or 11. Like many young teens, he joined the local model railroad club and got his first glimpse of model railroading on a large scale.

College in the mid 1980s took him away from the hobby for a while, but railfaning became a favorite pastime.

Mike publishes a Northeastern prototype railroading magazine called *Railroad Explorer* (railroadexplorer.com), and has published six books on prototype railroading.

Today, Mike's proto-freelanced, under-construction Allagash Railway occupies a 58' x 24' space – his entire basement and the former two-car garage. Mike loves all aspects of model railroading, from benchwork on up, but his specialty is scenery and weathering. He also enjoys the challenge of prototypical operations.

Besides the trains, he and Susan love to garden and landscape their wooded two-acre property in southern New Hampshire. He also plays a mean guitar, but his Fender and Marshall-fueled rock-band gigging days are over, at least for now!

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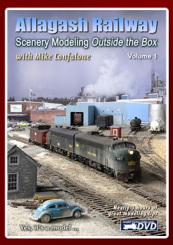

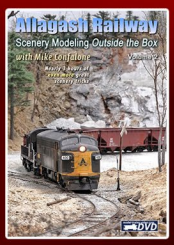

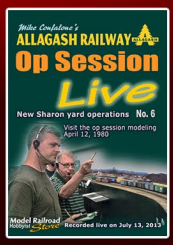

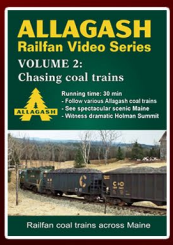

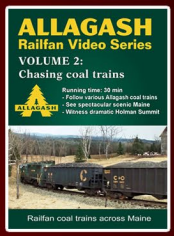

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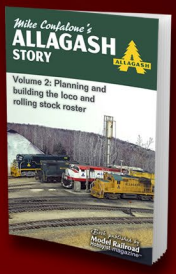

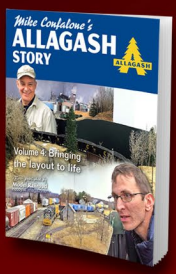

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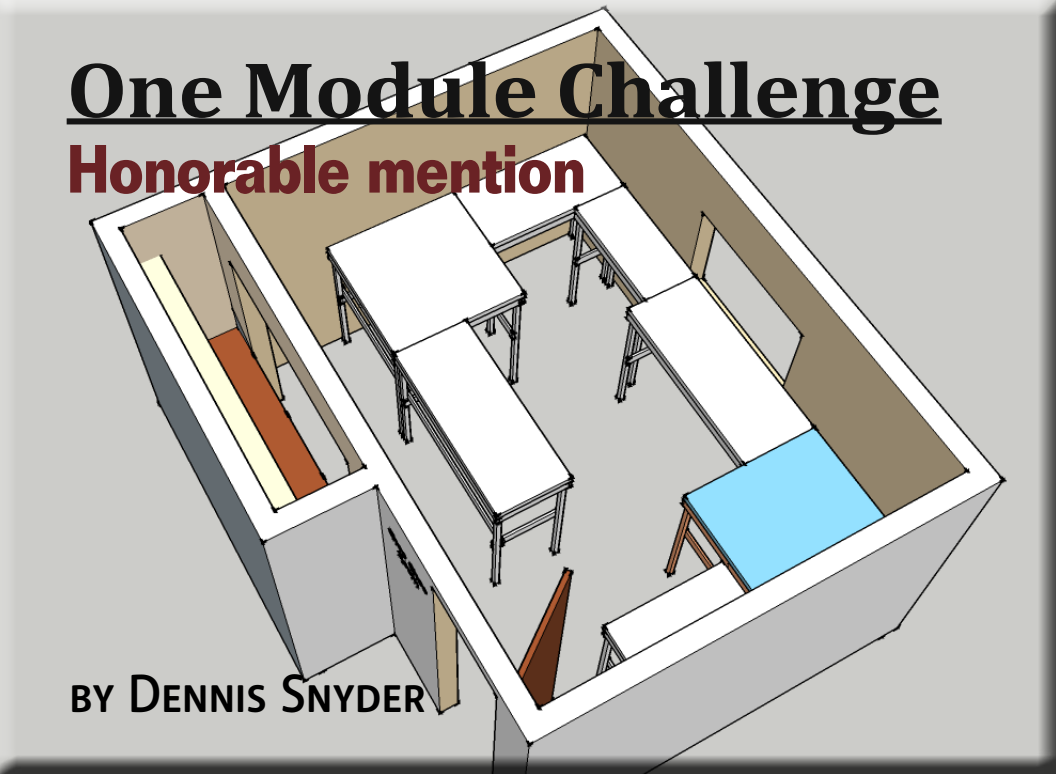
One Module Challenge

Honorable mention



BY DENNIS SNYDER

1954 AT&SF in N-scale: Custom lightweight segments made to fit the space available ...

I HAVE TO ADMIT THAT I SKIPPED OVER THE CONTEST in its first couple of years. However, my wife has been making noises about "down-sizing" and moving closer to the grandkids. This made me think.

The answer was right here: a modular layout for a reasonable 10x14-foot room. Make it N-gauge and I could have all the railroading I could want.

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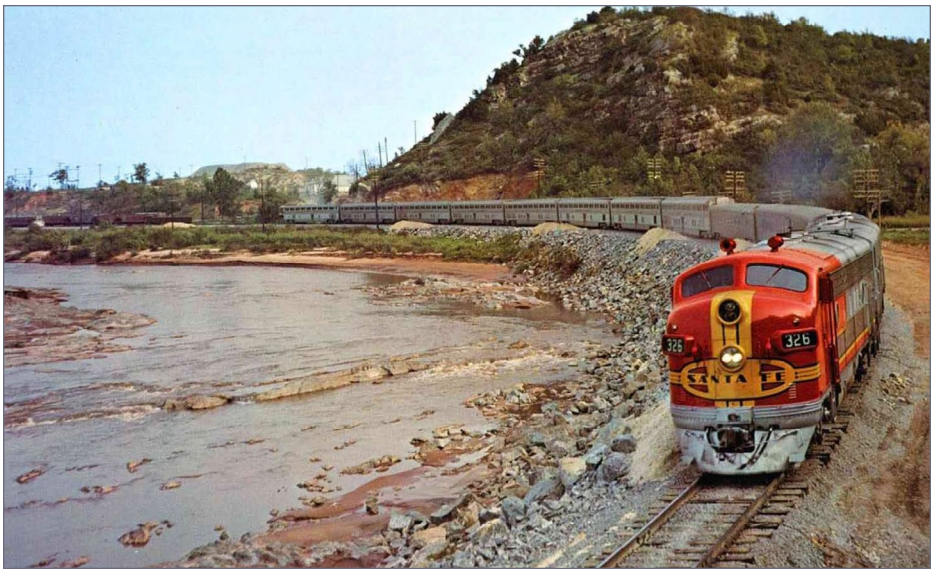
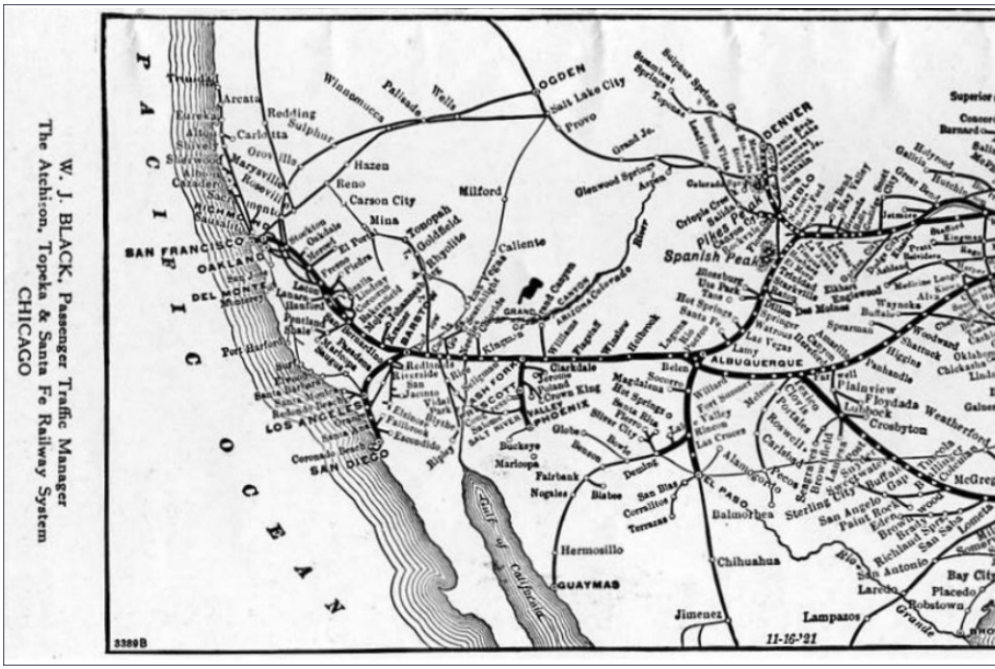
Growing up in San Diego County, I loved to watch the AT&SF passenger trains in their warbonnet paint running along the coast. When I was younger, my Dad set up a small 4x4-foot train table with a narrow shelf running around my bedroom. One of my first and favorite engines was an Athearn AT&SF F7 with its warbonnet paint and rubber-band drive. Later, I was thrilled when I had the opportunity to ride the Santa Fe during my Air Force leaves. I always wanted to get another F7 but my wife would wisely remind me that they weren't available in my steam-only 1929-era time frame. This would be my opportunity.



1. The AT&SF El Capitan makes a demonstration run on the Surf Line between Los Angeles and San Diego in 1956

2. AT&SF F7A #347C s painted in the classic Warbonnet scheme.

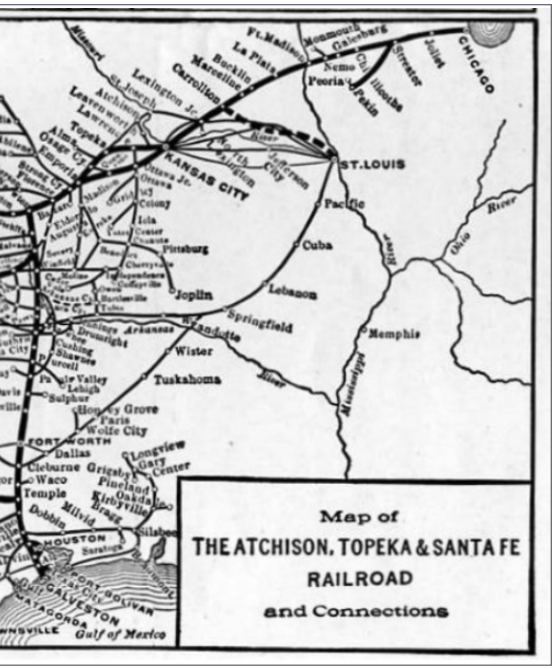


3. AT&SF system map.

1954 was a great time of growth and prosperity between wars, steam was still running strongly, and so were those beautiful diesels. The line between San Diego and Pasadena offers a lot of interesting scenery and action.

Modules

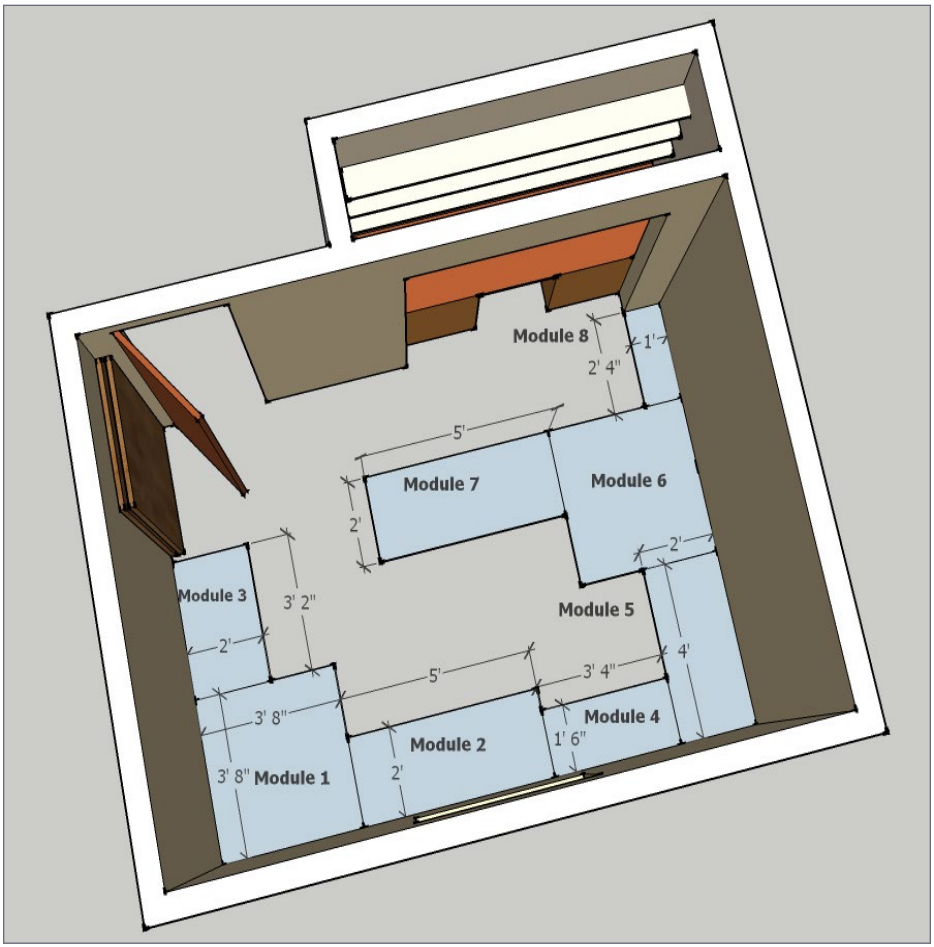
I like to watch my trains run and I tend to operate mostly by myself – a typical lone wolf. This means the layout needs loops at the end modules. I picked 44-inch square modules for the ends as they should provide enough room for an 11- or 12-inch radius N-scale loops. I can reach almost any point on them easily. My present HO CRRR layout is a walk-in folded dogbone. By offsetting it from the walls by 24 inches, I can easily access any part of the layout. What I learned is that a 24-inch aisle means side-stepping. This works for the back of the layout, since I only go there for installation and maintenance. For the main aisles, I found that moving around is much easier with a minimum 30-inch aisle width.



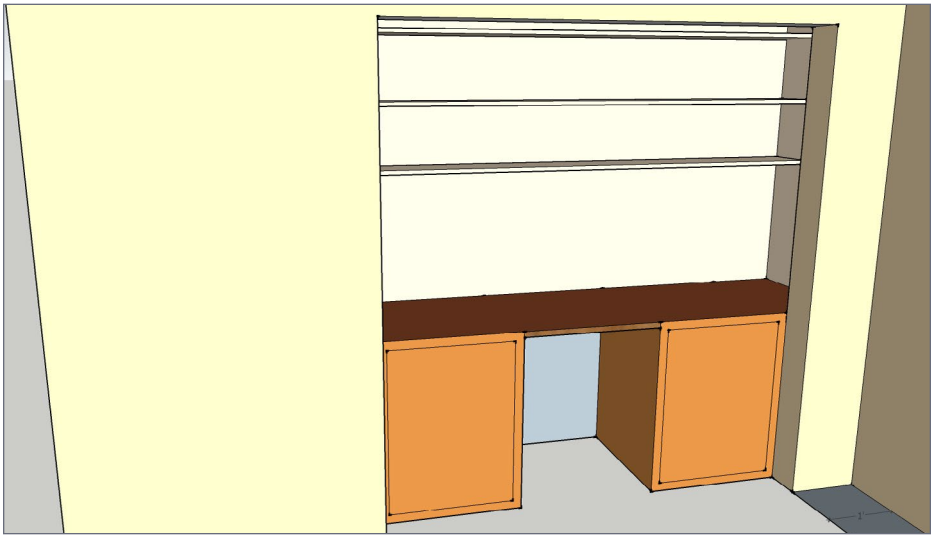
In figure 4, I lay out eight modules that fully utilize the contest room and provide adequate people lanes. Of these, five of the modules are different. Modules 1 and 6 are identical in size and construction. Modules 2 and 7 are both 24x60 inches.

Notice that the doors are missing on the closet. Since

I anticipate that this would be "THE" Choo-Choo Room (as my wife calls it), I can remove the closet doors and make the closet my workshop. I'll store the closet doors behind the entry door. The desk pedestals become bins for tools, kits, and so on. The desktop will be a 2x8-foot piece of plywood. Three shelves above the desk will complete the workshop [5]. The space below the modules will be for added storage.



4. Module arrangement, with closet workshop.



5. Shelves, bin pedestals, and a 2x8-foot plywood surface make up the workbench.

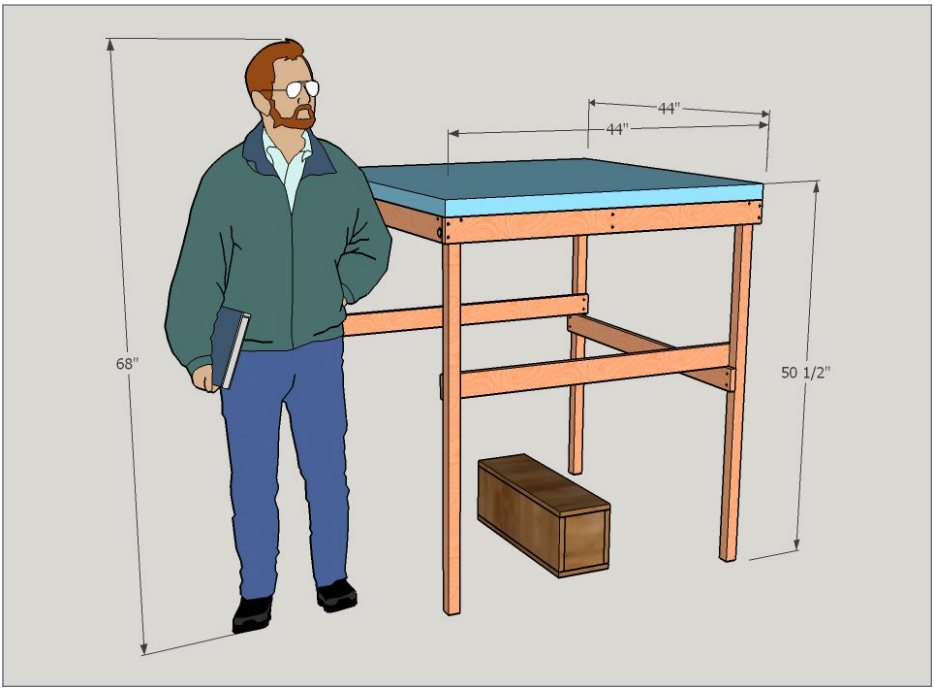
Later, I will show a track plan to fit within these constraints. I know I want to model the Santa Fe coastal route between San Diego and Pasadena, through the Del Mar area. This will be Module 2. I love yards, turntables, and roundhouses. I think Module 6 will be perfect for that. We will see what else happens as the creative juices flow.

Modules 2 and 3 will initially provide staging for Module 1. I could lay the track on 1x12-inch boards but I would have to make a special set of legs and braces to support them at table height. By building Module 2 and Module 3 for the final layout, I can avoid that extra cost and effort. My module construction methods are simple enough to warrant building them early. Train staging is simply track laid on top of Modules 2 and 3 until development reaches that module. Modules 4, 5, 6, 7 and 8 are all made with the same construction methods.

Module

Module 1 is 44 inches square and 50½ inches high. I am 5-foot-8 and this makes a nice viewing and working height for me and most visitors [6]. The remaining modules will be no greater than 24 inches wide because that is the width of the 2-inch thick EPS (Expanded Polystyrene) builders foam I intend to use for my layout table top.

The second practical reason for this choice is the 2x8-foot sheets fit easily into my small SUV. You will find this foam in blue, pink and white at local building stores. I have found no practical difference in using either pink or blue foam. I prefer the denser blue and pink foam for the table tops and



6. A module slightly more than four feet high is good for both construction ease, and viewing.

the cheaper white foam for building scenery layers above the table top.

If you intend to carve rocks into your foam scenery, stick with the pink or blue foam. Note that this white foam is not the same product as the cheaper low-density beaded foam (also EPS) used in coolers or packing materials. However, it is cheaper than the more dense pink or blue foam. The white foam's properties are very similar to Woodland Scenics foam products.

Frame

The first layout that I built followed the traditions of a ¾-inch plywood base and 2x4 supports. It was sturdy alright, but it took two men and a boy to get it out of the basement. I built my next layout on a frame with a 2-inch EPS foam top. I found this a lot easier to move and to work on. Making holes in the top for track and lighting wiring was as easy as driving a long Phillips screwdriver through the foam.

I started with 1x3-inch pine framing and 2x2-inch supports. It was hard to find good wood that was flat, not full of knots, and didn't warp. Instead of using more 1x3-inch pine, I finished those modules by cutting 3-inch wide strips from ¾-inch CDX plywood. This was much more stable and rigid, but it took a little different construction method. The 2x24-inch blue/pink foam top was very stable and rigid, even with only the perimeter support of the frames.

I recommend using ¾x3-inch CDX plywood strips on these module frames and supports. Cut the 3-inch strips from either 4x8-foot panels of ¾-inch plywood, or use 4x4-foot panels. The 4x4 panels usually cost more per square foot than 4x8 panels.

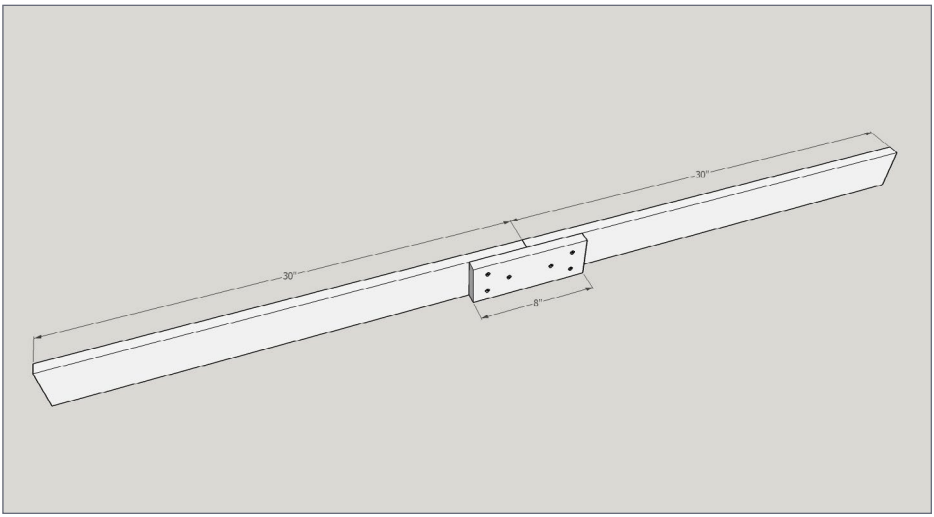
The longest sides of two modules in my plan are 60 inches, which is too long for lumber cut from the 4-foot square panels. If you use the 4x4 panels, you can cut two ¾x3x30-inch side

frames, make a butt joint, and reinforce it with a ¾x3x8-inch lap piece on the back of the assembly [7]. A 4-foot wide panel will give you 15 3-inch strips with very little waste. I plan to add hardboard fascia to my layout. For better facing, at a much higher price, you can use cabinet grade plywood instead of the CDX.

It is very easy to cut these panels on a panel saw but most people don't have one of these in their garage. With the help of a second person, you can use a table or radial arm saw to cut these strips. The last alternative is use a circular saw. No matter which saw you use, put on safety glasses and invest in a good plywood saw blade for smoother cuts.

Cutting frame strips to size

I found a nifty, free trial app that optimized limited board cutting for up to 100 pieces, or 14 different cuts. There is a paid version that will do more, but my occasional hobby work



7. If cutting lumber from square plywood panels, you will need to make butt Joints for 60-inch frames.

usually stays within those limits. The program is "1D Stock Cutter" at 1d-solutions.com/product.html. It works great if you are a cutting a lot of wood strips. Input the number of raw pieces you have and their lengths.

Add the number and lengths of the pieces that you want to cut for your project and it will quickly calculate the most efficient use of your wood. The good news is I can cut all of my modules with one sheet of 4x8 one 4x4 panel of CDX plywood.

The 1D Stock Cutter program saves a lot of wasted stock. Figures 8 and 9 show the two resulting screens of 1D Stock Cutter. I copied my Consolidated Strip List to the program's "Pieces to Cut Out" table. To keep within the 14 different cut limit, I didn't enter the 2 48" pieces. That much I can do in my head. The 'Stock Material to Use' is my 48" and 96" long strips that I cut from the panels. I set the Max number to meet or exceed my expected panel usage.

At this point, I hit the Run button and the program filled in the Cutting Layouts. The 'Mult" column indicates how many strips are to be cut to the lengths indicated in the 'Pieces to Cut Out' column.

Figure 9 is a graphical representation of the 'Pieces to Cut Out.' There is very little waste. The 'Use' column of the 'Stock Material to Use' table in Figure 6 indicates that it used 12 of the 96" strips and 15 of the 48" strips.

Module construction

Figure 10 shows general module construction. The cross supports are only used in Modules 1 and 6. The 24-inch foam is rigid enough that it doesn't need additional support. Figure 11 details the cross support dimensions. Cut the slot with a band saw or a coping saw and make two cross supports for each module, 1 and 6. Lock them together as shown. Each corner of

the frame strips has 2½x2½-inch triangular supports [11] cut from a 1x3-inch pine board. Pine holds screws much better than plywood end grain.

1D Stock Cutter 3.11 - D:\OneDrive\RR\MRH Contest\Article\Modules.tsk (Trial mode)

PIECES to CUT OUT

Size	Q'ty	Left	Mark
60	4	0	
58.5	2	0	
46.5	1	0	
44	4	0	
40	2	0	
42.5	10	0	
38.5	1	0	
38	2	0	
36.5	1	0	
28	2	0	
26.5	1	0	
22.5	12	0	
16.5	8	0	
10.5	4	0	

STOCK MATERIAL to USE — Range — TASK: Modules

Size	Max	Use	Cost
96	30	12	1.25
48	16	15	0
3648	46	27	37.5

Stock | Run | Settings | View | Data | Track

Total Utilization 95.50 %
Total Waste 80
Total Length 1776
Total Cost 13.75

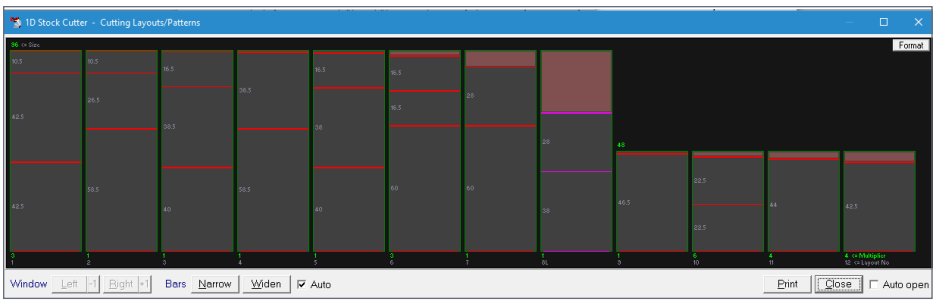
CUTTING LAYOUTS (12) — Cuts 24

No	Mult	Size	Offcut	Pieces to cut out
1	3	96	0.11	42.5 *2 10.5
2	1	96	0.11	58.5 26.5 10.5
3	1	96	0.61	40 38.5 16.5
4	1	96	0.74	58.5 36.5
5	1	96	1.11	40 38 16.5
6	3	96	2.61	60 16.5 *2
7	1	96	7.74	60 28
8L	1	96	29.74	38 28
9	1	48	1.37	46.5
10	6	48	2.74	22.5 *2
11	4	48	3.87	44
12	4	48	5.37	42.5

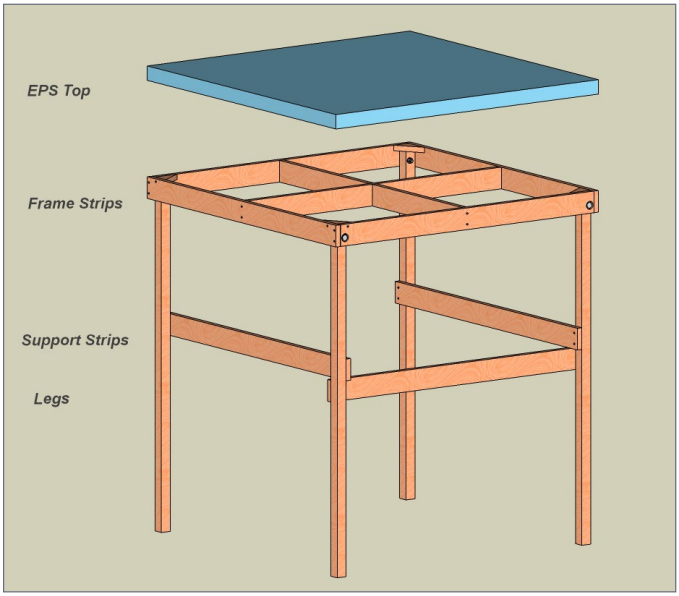
Sequence | Format

1762 | 54 | 0 | Comments | ? | Exit

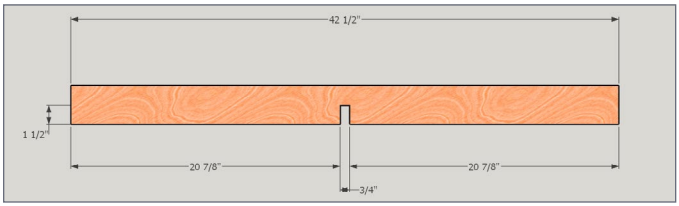
8. 1D Stock Cutter table results.

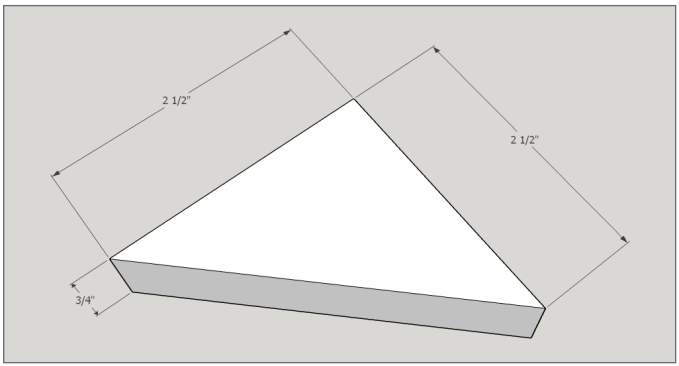


9. 1D Stock Cutter graphical results.



10. General module assembly.



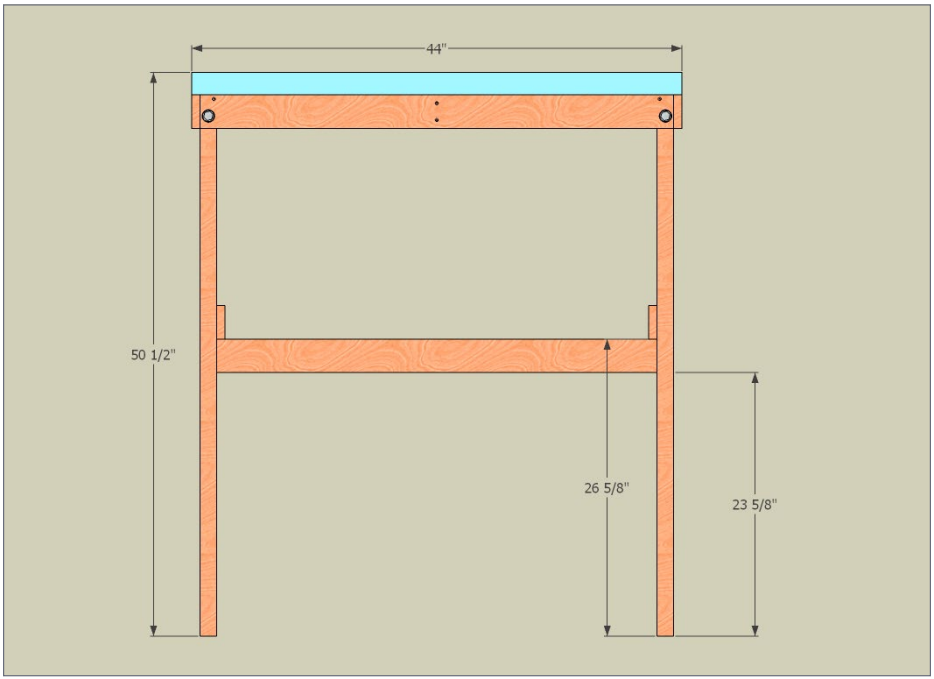


11. Cross and corner supports.

I only placed the lower support frame strips on three sides. I find that this arrangement is quite stable and the open side makes under-module access much easier. And, this open area is usable for storage.

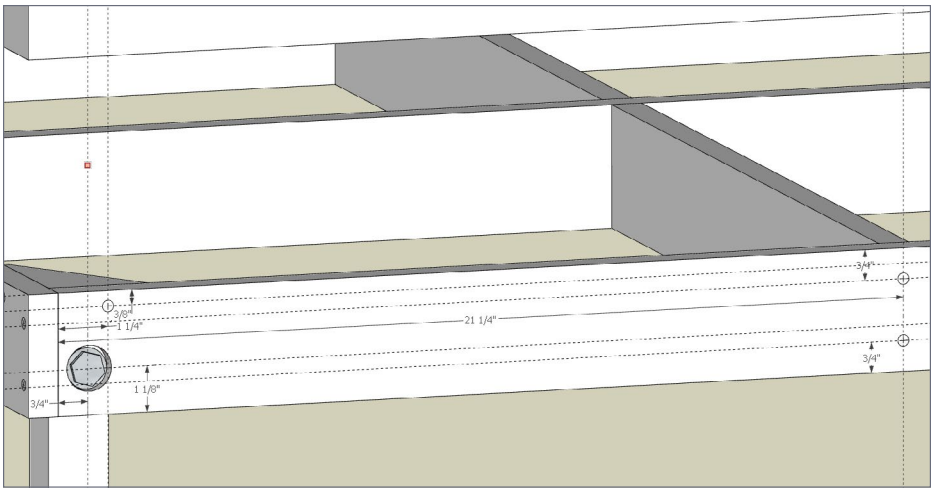
Figures 13 and 14 give vital dimensions for screwing and bolting the module assembly together. All screws are #6 wallboard screws. These are relatively inexpensive and work well in wood. Predrill all of the holes and countersink the heads. On my first modules, I only drove the screws in as far as my power drill would screw them. Later, when I added fascia boards, I had to remove each screw, countersink the hole and then replace the screw.

Note that each module has a triangular brace with two screws. These braces are solid pine and give added strength in holding

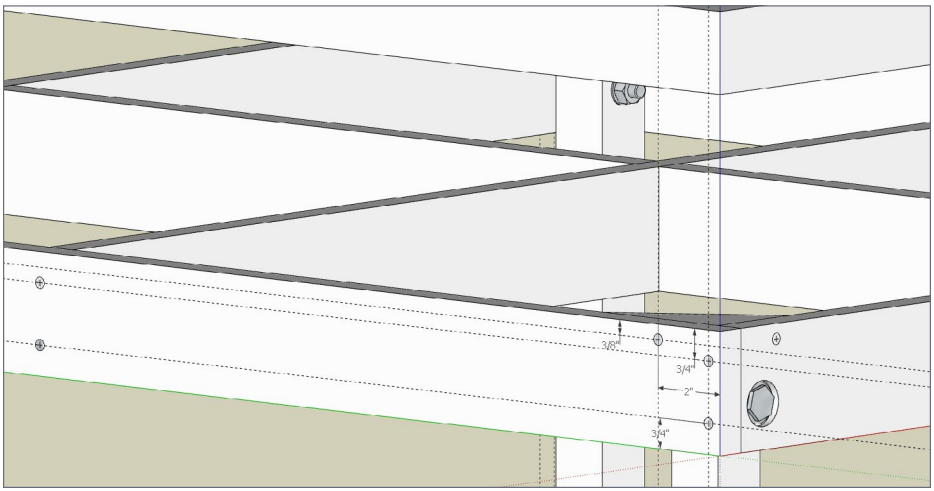


12. Overall module 1 dimensions.

the modules together. End-grain screwing of plywood is not a reliable joint. You can glue all plywood to plywood joints and the triangular pieces for added strength. I didn't and haven't had a problem, yet.



13. Assembly details – 1.



14. Assembly details – 2.

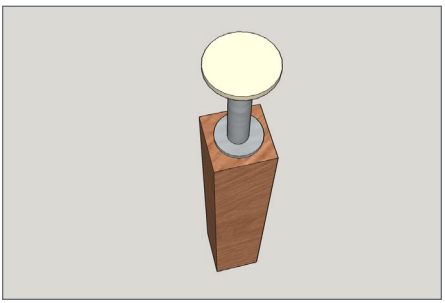
Countersink the bolt heads but not the nuts. This allows the modules to butt tightly against each other.

Module support

Before attaching the legs and the support frame strips, you need to decide if you wish to use floor levelers as shown in [15]. Mounting these on the bottom of the legs allows adjusting the leg length to compensate for uneven floors. Drill one end of each leg and drive the Tee nut into the hole. Then screw in the "foot." See [16]. These levelers are available with metal or nylon bottoms. If you think you will use these on nice flooring, I recommend nylon. You can replace the nylon feet with the appropriate bolt for a cheaper alternative for less-sensitive floors.

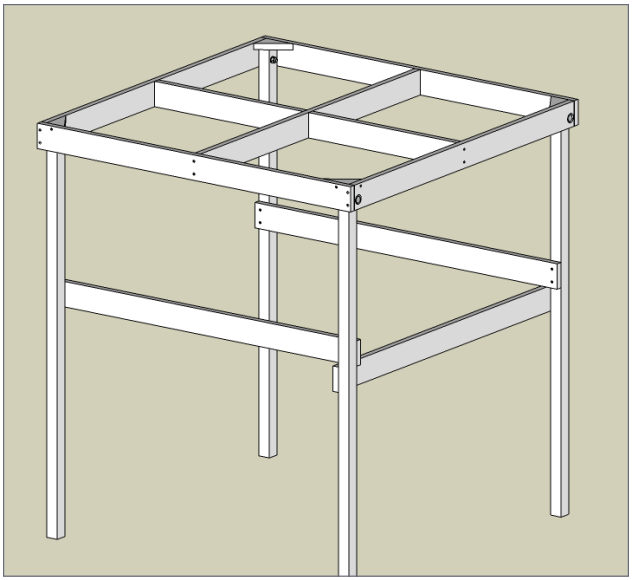
After installing the levelers, clamp the legs into position on the inverted module top and drill a 5/16" hole as indicated in [13] and [14]. Ensure the top of the leg is flush with the bottom of the triangular brace. Counter sink the hole the depth of a 5/16-inch bolt head and washer. Assemble the bolt with washers on each end, and a 5/16-inch nut. Attach the frame support strips to the front and back legs with #6 countersunk screws. I make these all one assembly. Glue them if you want additional strength. Add the side to side support to the back set of legs. Set the module right side up and it is almost complete. See [17].

15. Floor levelers.

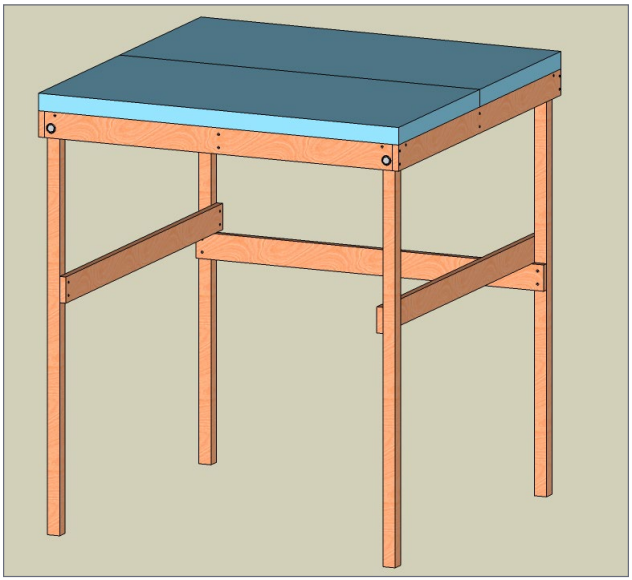


16. Leveler assembly.

For Modules 1 and 6, I cut two pieces of 44-inch long foam from my 2x8-foot sheet. Save the scraps for scenery building. Cut 4 inches off the long side of one of the foam sheets and then glue



17. Basic module.



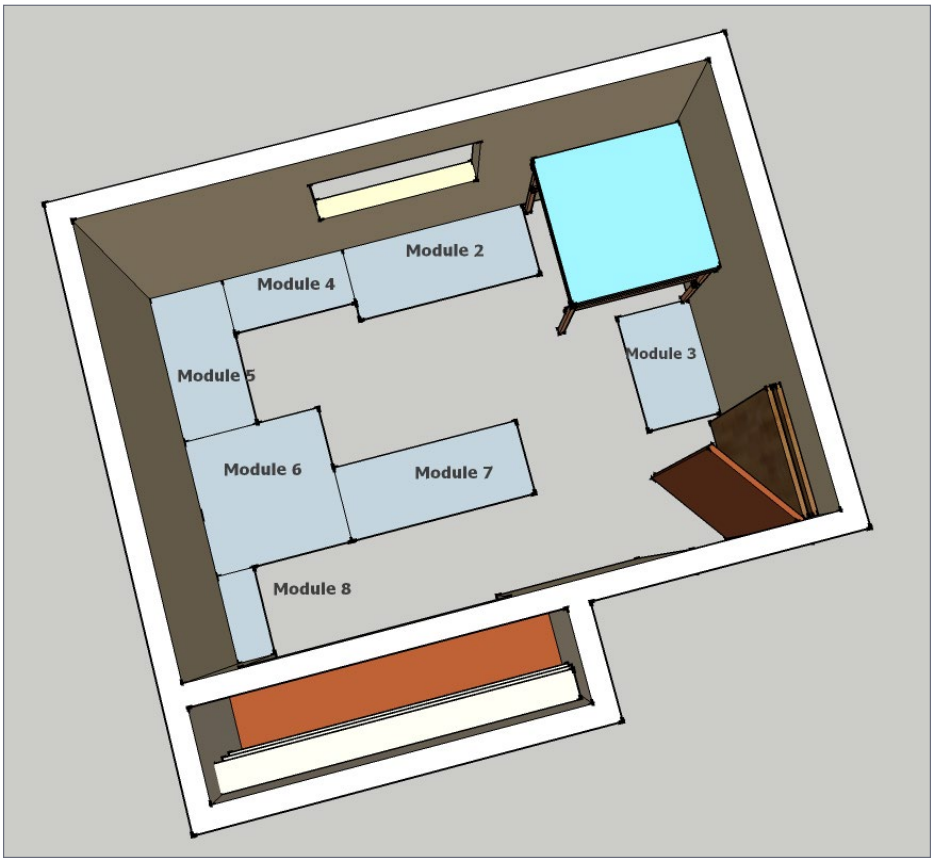
18. Finished Modules 1 and 6.

the pieces to each other and to the module top with project glue. I glue the EPS pieces from left to right just to avoid having to look at the joint until I eventually add my fascia. The finished Module 1 is shown in [18].

Now for the real fun

Stage 1

Stage 1 starts with Module 1. This sits in the corner with the support opening facing out. Because of its depth, it is best to lay track and scenery from the back to the front. At this point,

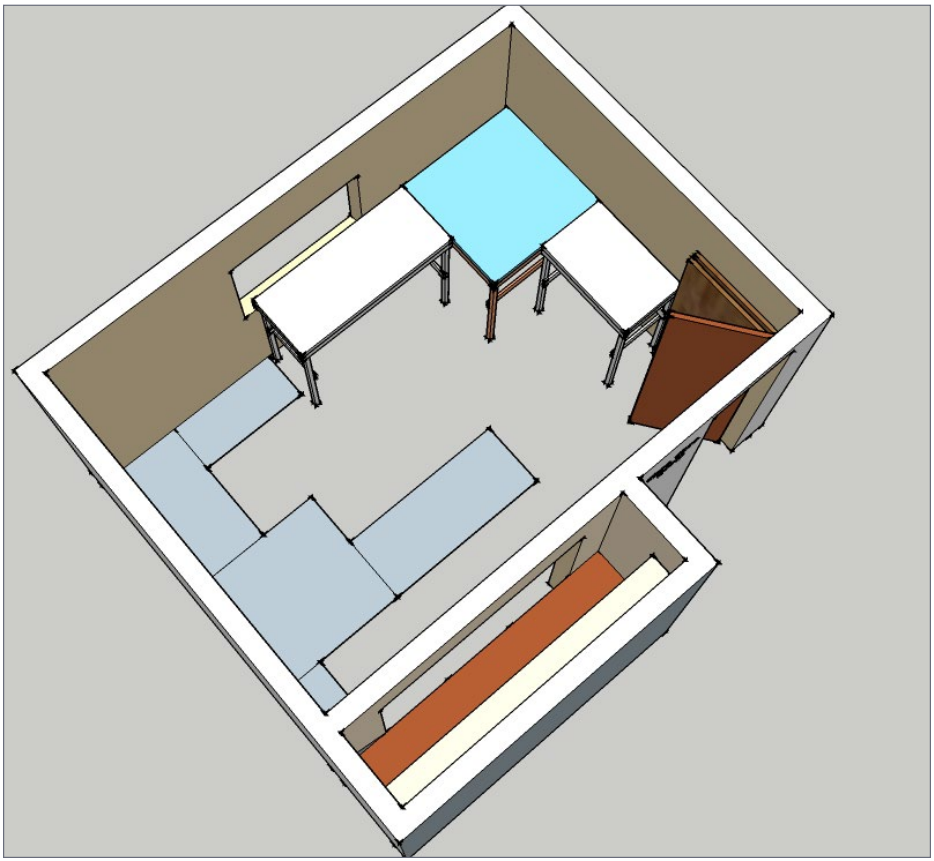


19. Stage one.

it is easy to work the back of the module scenery by moving the module away from the wall. I have found that I can moderately lean on the center portion and reach without any problems. I wouldn't recommend climbing on it though. I don't plan to run any tunnels on the back tracks unless I can come up with a lift-off mountain.

Stage 2

When I believe that I have completed all of the difficult track and scenery work against the walls, I will start Stage 2, which

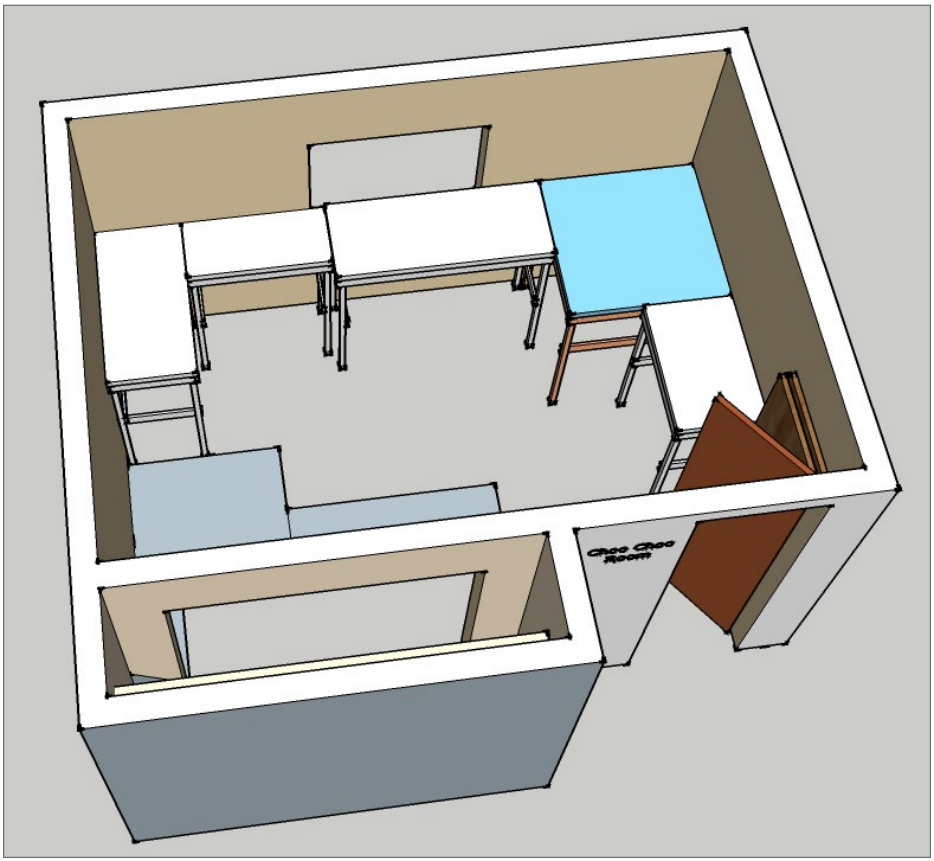


20. Stage 2.

adds Modules 2 and 3. Place these modules adjacent to Module 1 and adjust the floor levelers until the tops are the same height. Then clamp the modules together to hold them in place. Check for level across the tops. Drill through adjacent walls and bolt them together with a bolt, washer and Tee-nut. Remove the clamps and you have a 3 module assembly. See [20].

Stage 3

As the track work and scenery progress, add the remaining stages one-by-one. Or, go on a building streak in the shop and

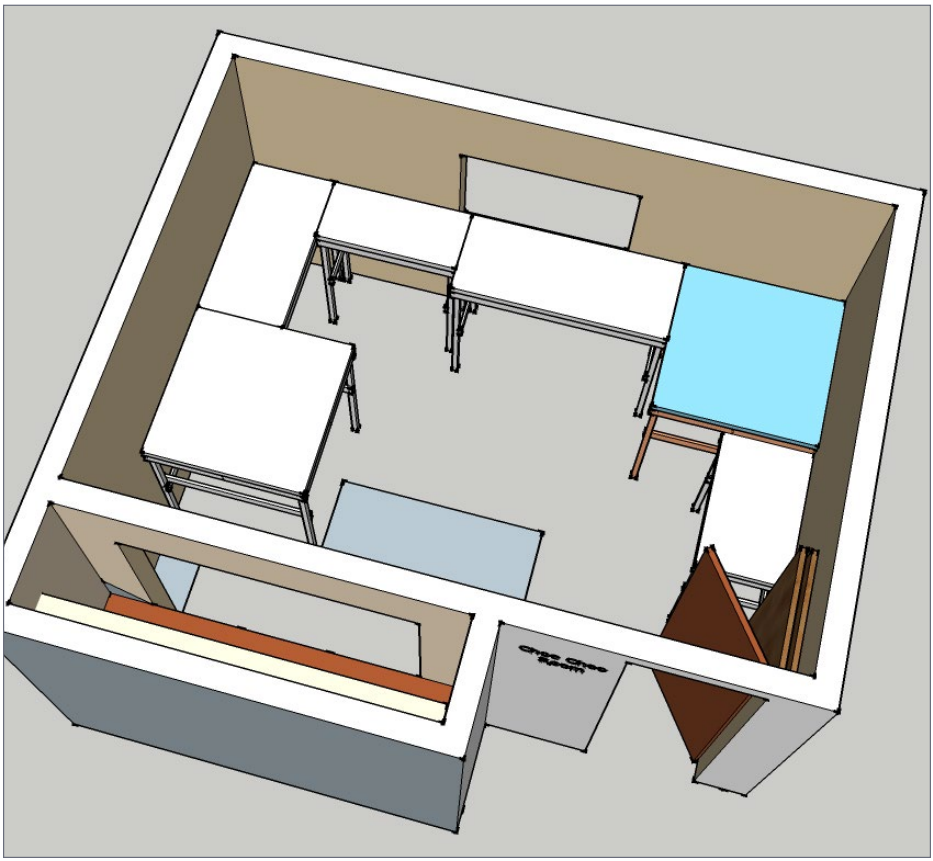


21. Stage 3.

build the rest of them all at once. Once you get the hang of the construction, they go together rapidly. I would add Modules 4 and 5 in Stage 3 [21]. Module 4 is less than 2 feet deep to accommodate those 30-inch-minimum people aisles. Notice that the frame support strips are all against the wall to allow access underneath the modules.

Stage 4

Adding Module 6 is an exciting step as it has room for a loop at the other end of the layout for long, continuous runs. This

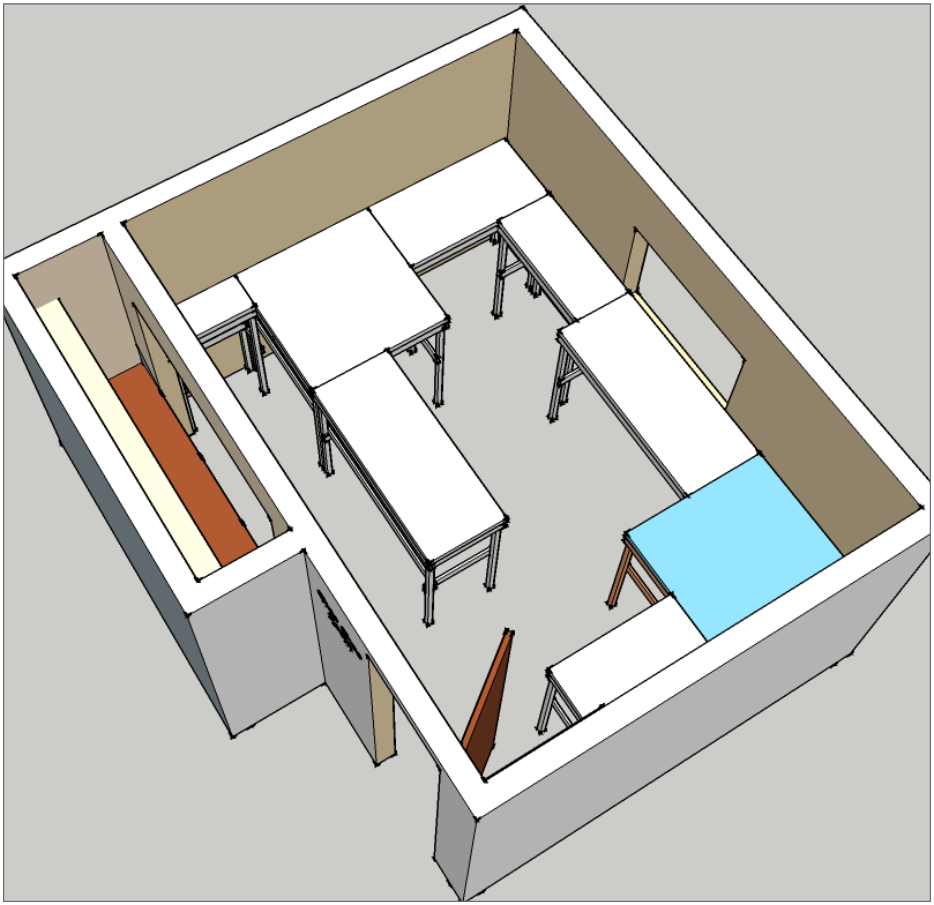


22. Stage 4.

module is identical to Module 1. Unlike Module 1, I can easily access all points on this module from three sides.

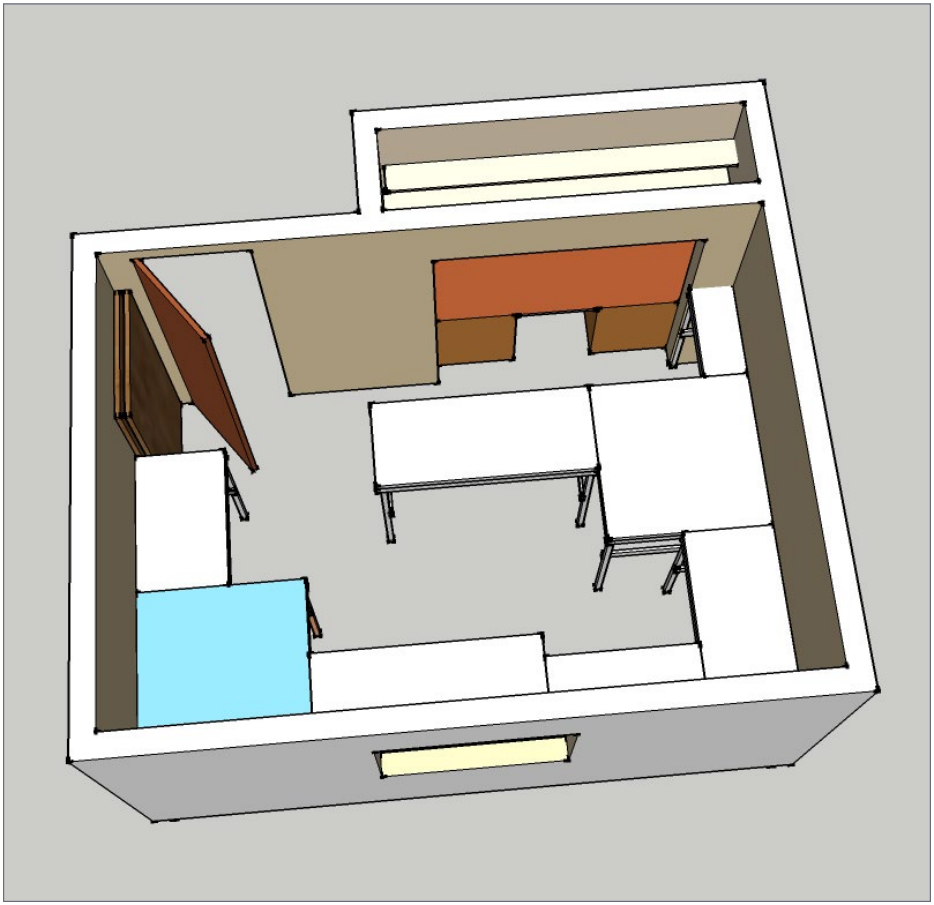
Stage 5 – Completion

This is the final stage, the addition of Module 7, the main yard. I have included a look at Module 8 as I think it is valuable for extra storage of cars and engines and its size allows an ideal

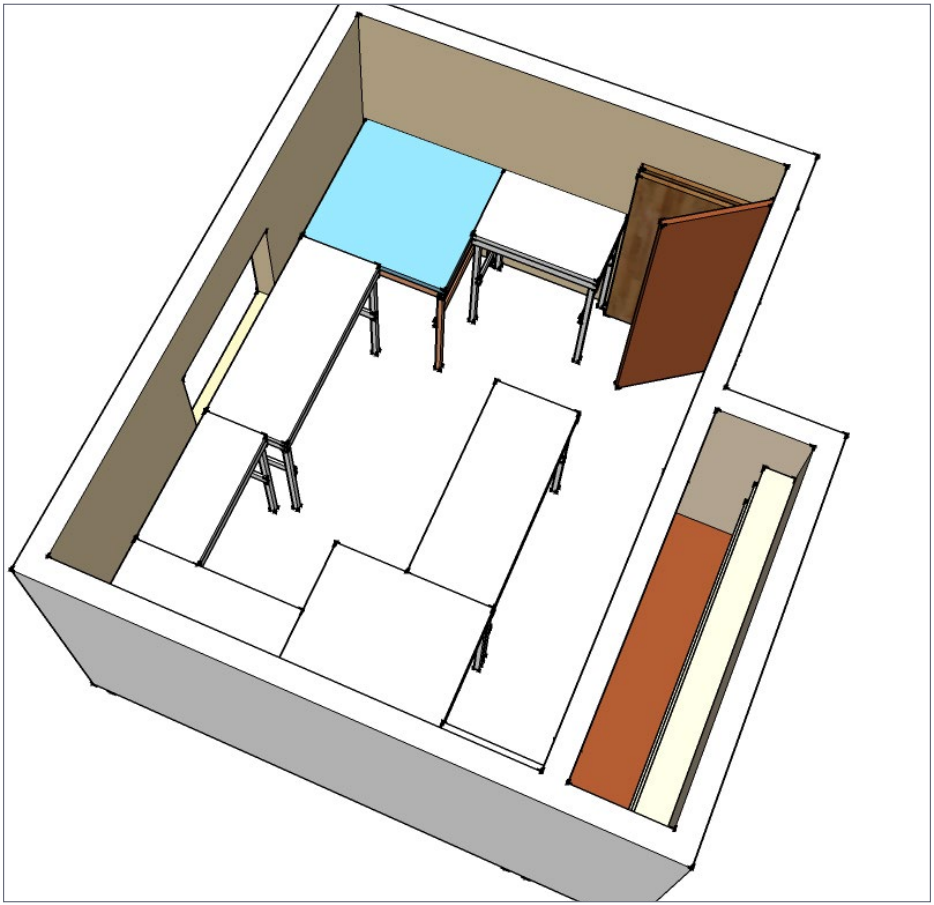


23. Stage 5, view 1.

book shelf underneath. I will make that decision when I get to it. For now, I am showing it as a standard module design. Figures 24 through 28 show my completed "Choo Choo room."



24. Stage 5, view 2.



25. Stage 5, view 3.

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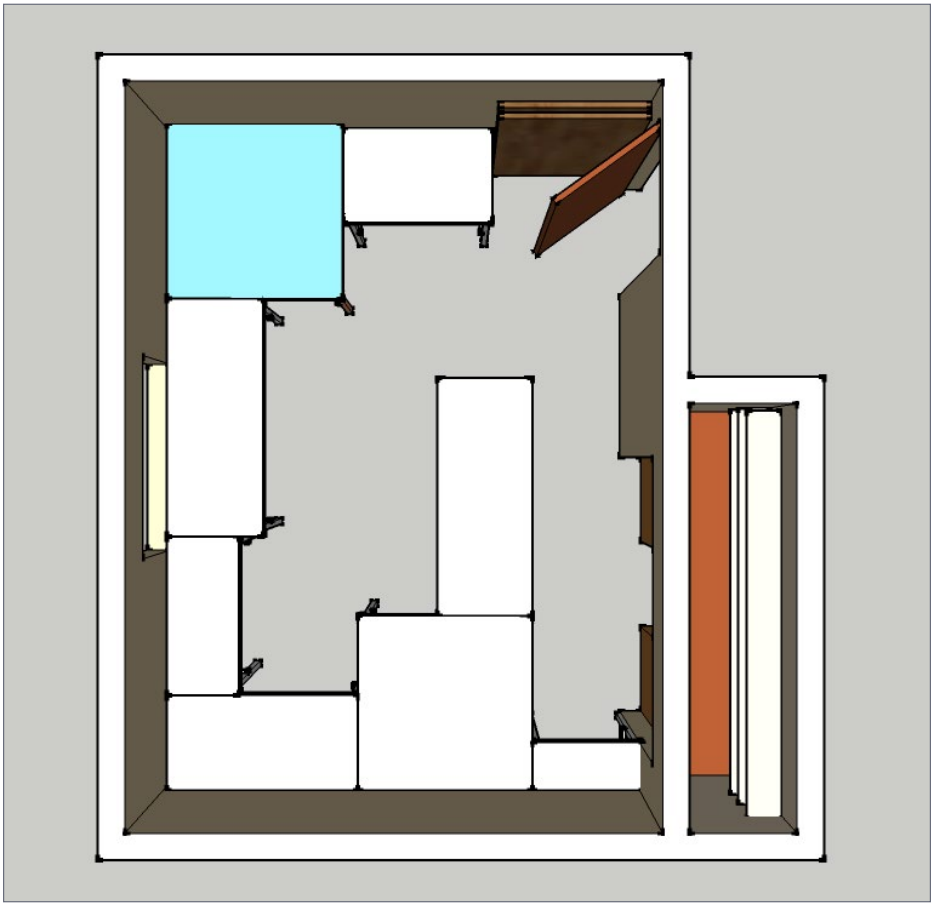

26. Stage 5, view 4.

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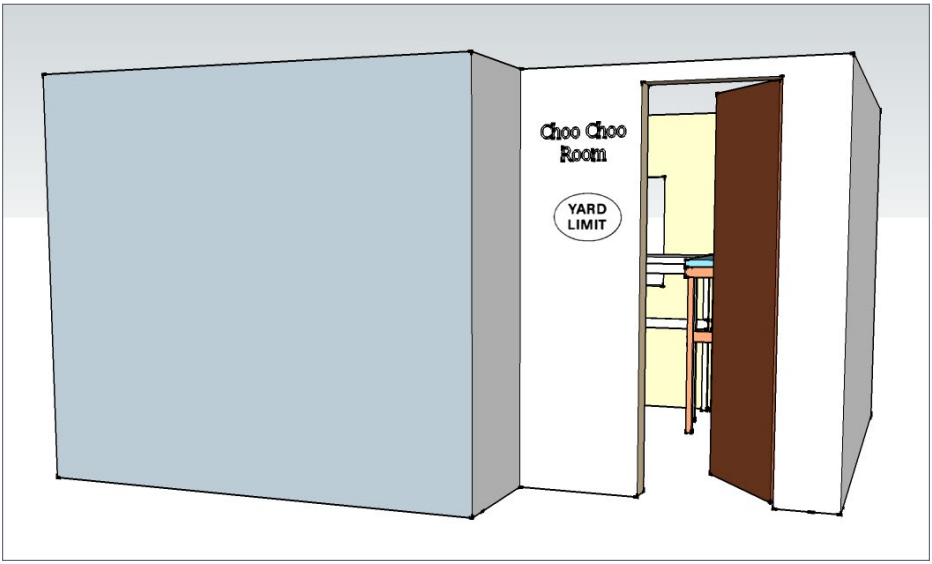


27. Choo Choo room.

Cost to build

Now is the time to figure how much it will cost to pay the piper. I got the material costs from my two favorite supply stores, Ace Hardware and Home Depot.

I can build a cost table from the materials I intend to use. My designs use the same hardware pieces for each module so I only need to calculate once. Stage 1, Module 1 is not connected to the other modules so I did not add the connecting hardware cost.

Earlier, I figured each module's wood sizes. Now I can use that data to figure how much each module cost. Add to this a couple of tubes of Liquid Nails Project Glue (it's foam safe) to hold the foam to the frames. I am not sure how many it will take – 2 to 4 is my estimate.

Material Costs								
Bulk Materials								
Material	Store	Size	Quantity	Type	Cost	Unit Cost	Unit	Note
CDX Plywood	Home Depot	3/4"x4'x8'	1	Panel	$ 41.98	$ 0.009	sq in	
CDX Plywood	Home Depot	3/4"4'x4'	1	Panel	$ 32.98	$ 0.014	sq in	
2"x2" Pine	Home Depot	8'	1	Board	$ 1.92	$ 0.020	in	
1"x3" WhiteWood	Home Depot	8'	1	Board	$ 4.78	$ 0.002	in	
2" EPS Foam	Home Depot	2'x8'	1	Sheet	$ 22.25	$ 0.010	sq in	
Common to all modules								
Material	Store	Size	Quantity	Type	Cost	Unit Cost	Unit	Note
#6 Dry Wall Screws	Ace	5/16" x 2"	130	Box	$ 8.29	$ 0.06	each	
Bolts	Ace	5/16" x 2-1/2"	1	Bolt	$ 0.43	$ 0.43	each	
Washers	Ace	5/16"	1	Washer	$ 0.12	$ 0.12	each	
Nut	Ace	5/16"	1	Nut	$ 0.23	$ 0.23	each	
Furniture leveling screws Nylon non-swiveling	Ace	1/4x20x1"	1	Leveler	$ 1.00	$ 1.00	each	
Tee Nuts	Ace	1/4"	1	Nut	$ 0.33	$ 0.33	each	
Tee-nuts	Ace	1/4"	1	Nut	$ 0.33	$ 0.33	each	*All modules except #1*
Hex head bolts	Ace	1/4"	1	Bolt	$ 0.23	$ 0.23	each	*All modules except #1*
Washer	Ace	1/4"	1	Washer	$ 0.10	$ 0.10	each	*All modules except #1*
Liquid Nails Project Glue	Home Depot	10 oz.	1	Tube	$ 1.83	$ 1.83	each	

Table 1: Material Costs

Cost per Module				
Common Hardware Cost per Module				
Material	Size	Quantity	Unit Cost	Cost
#6 Wood Screws	5/16" x 2"	36	$ 0.06	$ 2.30
Bolts	5/16" x 2-1/2"	4	$ 0.43	$ 1.72
Washers	5/16"	4	$ 0.12	$ 0.48
Nut	5/16"	4	$ 0.23	$ 0.92
Furniture leveling screws Nylon non-swiveling	1/4x20x1"	4	$ 1.00	$ 4.00
Tee Nuts	1/4"	4	$ 0.33	$ 1.32
			Hardware Cost	$ 10.74
Modules 2-8 = Connecting Hardware				
Tee-nuts	1/4"	2	$ 0.33	$ 0.66
Hex head bolts	1/4"	2	$ 0.23	$ 0.46
Washer	1/4"	2	$ 0.10	$ 0.20
			Hardware Cost	$ 1.32

Table 2: Hardware Cost per Module

Material	Size 1 (in.)	Size 2 (in.)	Quantity	Measurement	Unit Cost	Cost	Total
Module 1							
CDX	3	44	2	264	$ 0.01	$ 2.41	
CDX	3	42.5	2	255	$ 0.01	$ 2.32	
CDX	3	42.5	3	255	$ 0.01	$ 2.32	
WhiteWood	2.5	2.5	4	5	$ 0.00	$ 0.01	
EPS	44	44	1	3872	$ 0.01	$ 37.39	
Legs	1	47.5	4	95	$ 0.02	$ 1.90	
Hardware			1			$ 10.74	$ 57.09
					Total Module Cost		
Module 2							
Frame strip	3	38	2	228	$ 0.01	$ 2.08	
Frame strip	3	22.5	2	135	$ 0.01	$ 1.23	
Support strip	3	22.5	2	135	$ 0.01	$ 1.23	
Support strip	60	36.5	1	4380	$ 0.01	$ 42.30	
WhiteWood	2.5	2.5	4	5	$ 0.00	$ 0.01	
EPS	60	24	1	1440	$ 0.01	$ 13.91	
Legs	1	47.5	4	95	$ 0.02	$ 1.90	
Hardware			1			$ 10.74	
Connectors			1			$ 1.32	$ 74.71
					Total Module Cost		
Module 3							
Frame strip	3	38	2	228	$ 0.01	$ 2.08	
Frame strip	3	22.5	2	135	$ 0.01	$ 1.23	
Support strip	3	22.5	1	135	$ 0.01	$ 1.23	
Support strip	38	36.5	2	2774	$ 0.01	$ 26.79	
WhiteWood	2.5	2.5	4	5	$ 0.00	$ 0.01	
EPS	38	24	1	912	$ 0.01	$ 8.81	
Legs	1	47.5	4	190	$ 0.02	$ 3.80	
Hardware			1	0		$ 10.74	
Connectors			1			$ 1.32	$ 56.00
					Total Module Cost		
Module 4							
Frame strip	3	40	2	240	$ 0.01	$ 2.19	
Frame strip	3	16.5	2	99	$ 0.01	$ 0.90	
Support strip	3	16.5	2	99	$ 0.01	$ 0.90	
Support strip	60	38.5	1	4620	$ 0.01	$ 44.62	
WhiteWood	2.5	2.5	4	5	$ 0.00	$ 0.01	
EPS	40	18	1	720	$ 0.01	$ 6.95	
Legs	1	47.5	4	95	$ 0.02	$ 1.90	
Hardware			1			$ 10.74	
Connectors			1			$ 1.32	$ 69.53
					Total Module Cost		
Module 5							
Frame strip	3	48	2	288	$ 0.01	$ 2.62	
Frame strip	3	22.5	2	135	$ 0.01	$ 1.23	
Support strip	3	46.5	1	279	$ 0.01	$ 2.54	
Support strip	60	22.5	2	2700	$ 0.01	$ 26.07	
WhiteWood	2.5	2.5	4	5	$ 0.00	$ 0.01	
EPS	48	24	1	1152	$ 0.01	$ 11.13	
Legs	1	47.5	4	95	$ 0.02	$ 1.90	
Hardware			1			$ 10.74	
Connectors			1			$ 1.32	
					Total Module Cost		$ 57.56
Module 6 = Module 1							
					Total Module Cost		$ 57.09
Module 7 = Module 2							
					Total Module Cost		$ 74.71
					Total Layout Cost		$ 446.68

Table 3: Total Module Costs

The Plan

Stage 1 and 2 Track Plan

With the modules and the room planned, now I want to plan the track. I am starting with Modules 1, 2 and 3 to see how the track will transition from one module to another [28].

With Module 1, I have a loop for continuous running until I build up the rest of my empire. Module 3 is my staging yard. On module 2, the trains can reverse their direction [29].

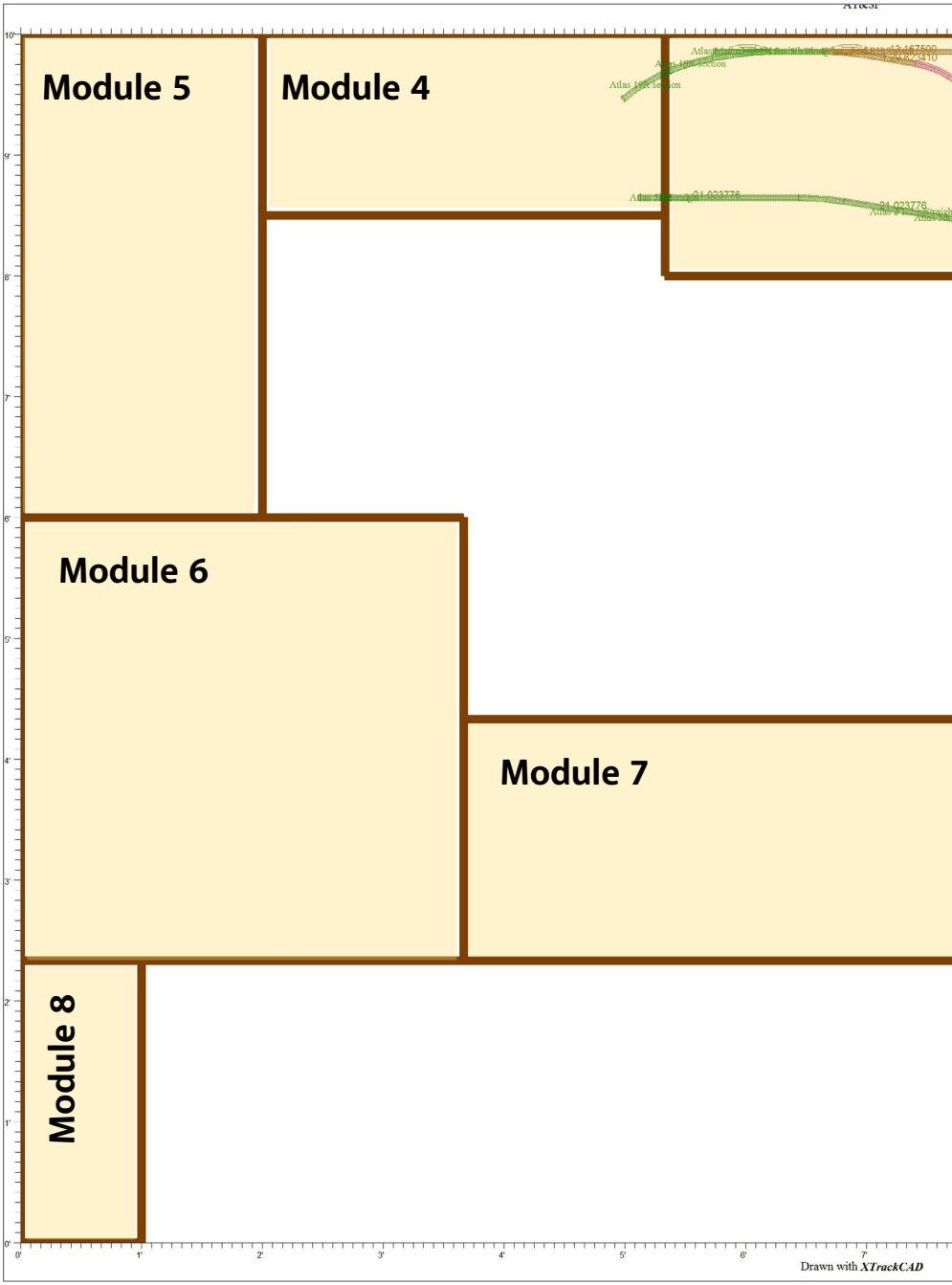
Stage 1 and 2	
Pieces	Part
32	Atlas 2501 5in Straight
7	Atlas 2510 9 3/4R full section
7	Atlas 2511 9 3/4R half section
8	Atlas 2520 11R full section
4	Atlas 2526 19R section
2	Atlas 2536 Bumper Track
3	Atlas 2701 Remote Std #4 RH Switch
2	Atlas 2704 Remote #6 LH Switch
3	Atlas 2705 Remote #6 RH Switch
1	Atlas 2706 Manual #6 LH Switch
1	Atlas 2707 Manual #6 RH Switch
1	Atlas 2751 Custom Std #4 RH Switch
2	Atlas XXX 1 1/4in Straight
10	Atlas XXX 2 1/2in Straight
1	72.516040 N Flex Track

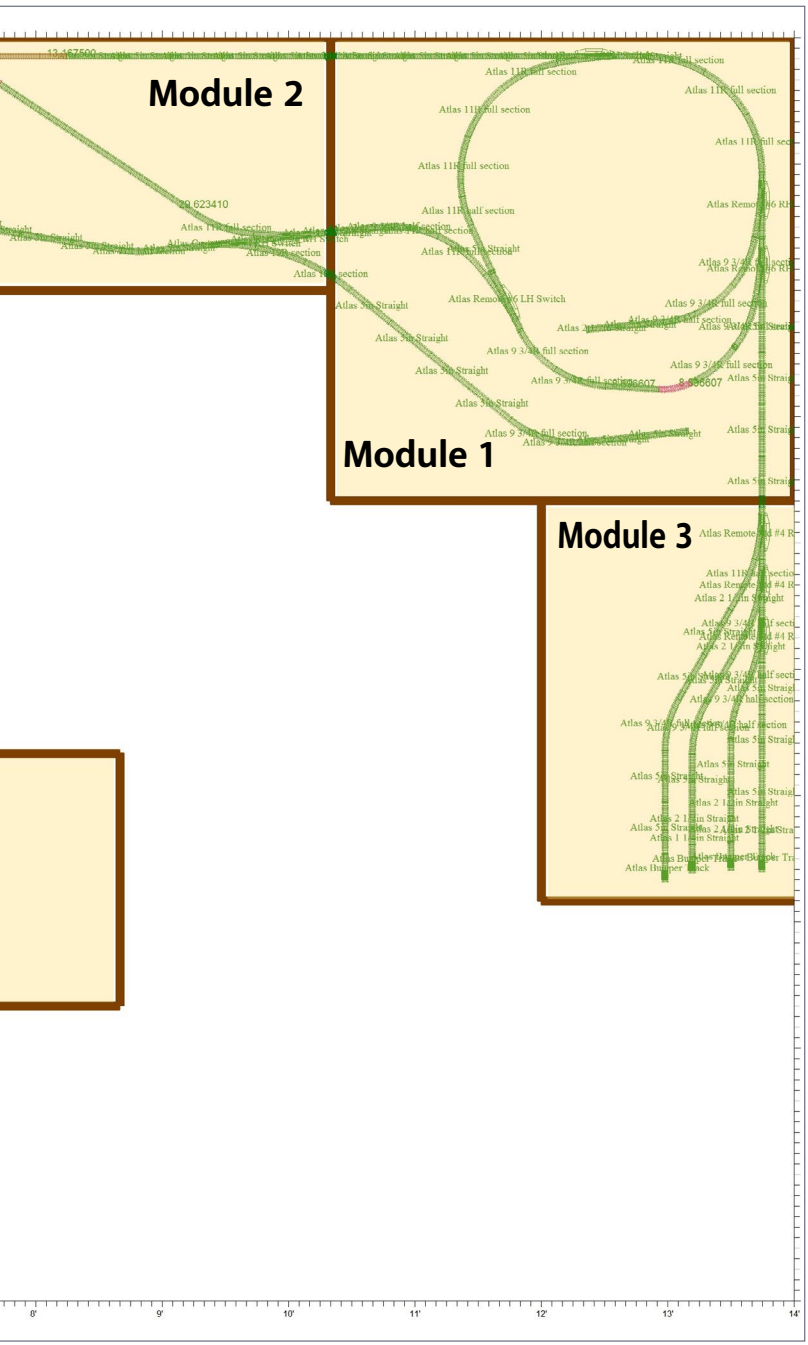
Table 4: Stage 1 and 2 Track Inventory

I managed to put in a reversing figure 8 without an obvious figure 8. I always like running with the ability to turn about and come from the other direction [30].

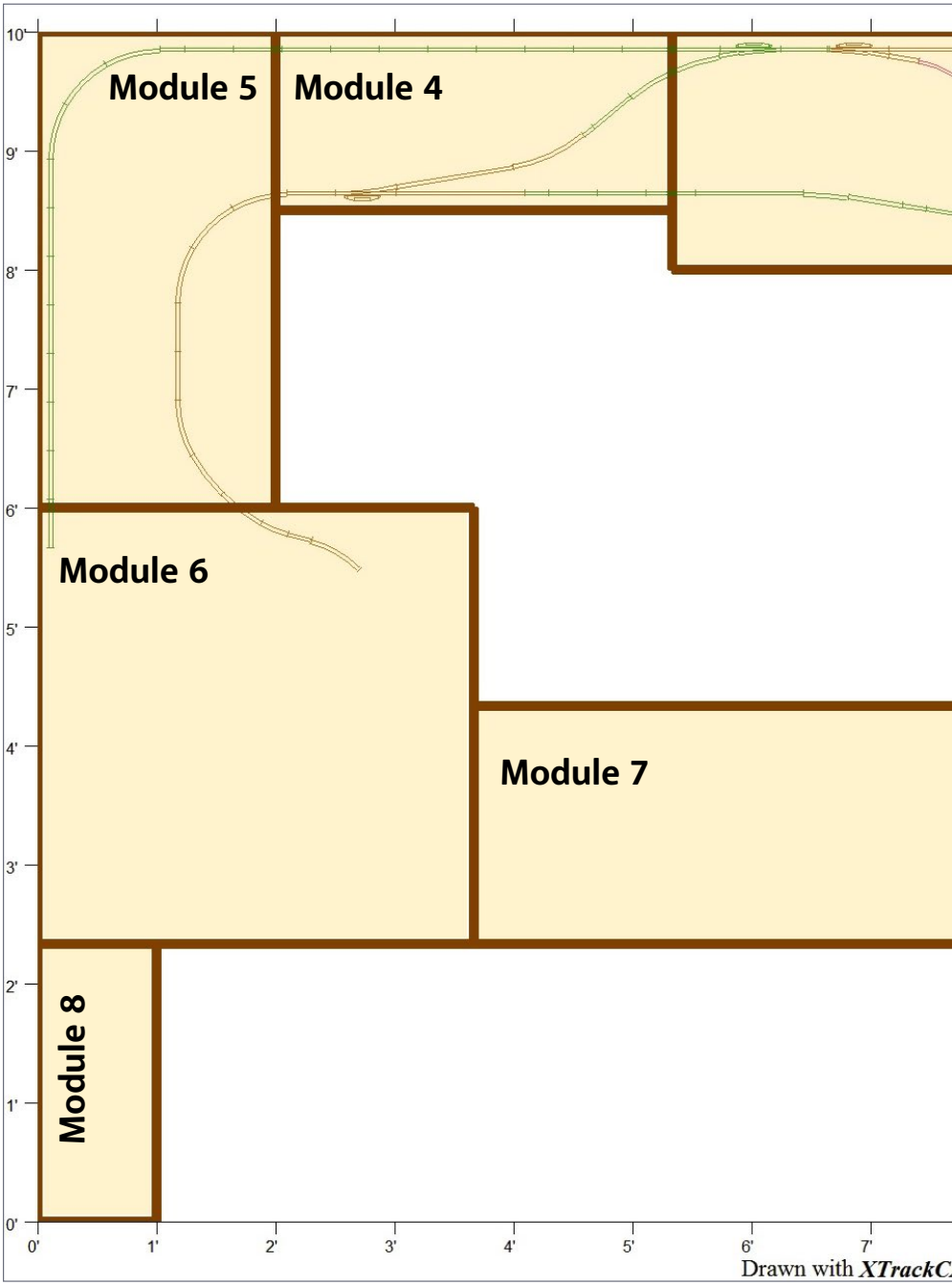
Finally, we add the yard, turntable and staging. The layout design is complete [31]. ☑

Track plans on the following pages ...


Module 5
Module 4
Module 6
Module 7
Module 8
Drawn with XTrackCAD



28. Stage 1 and 2.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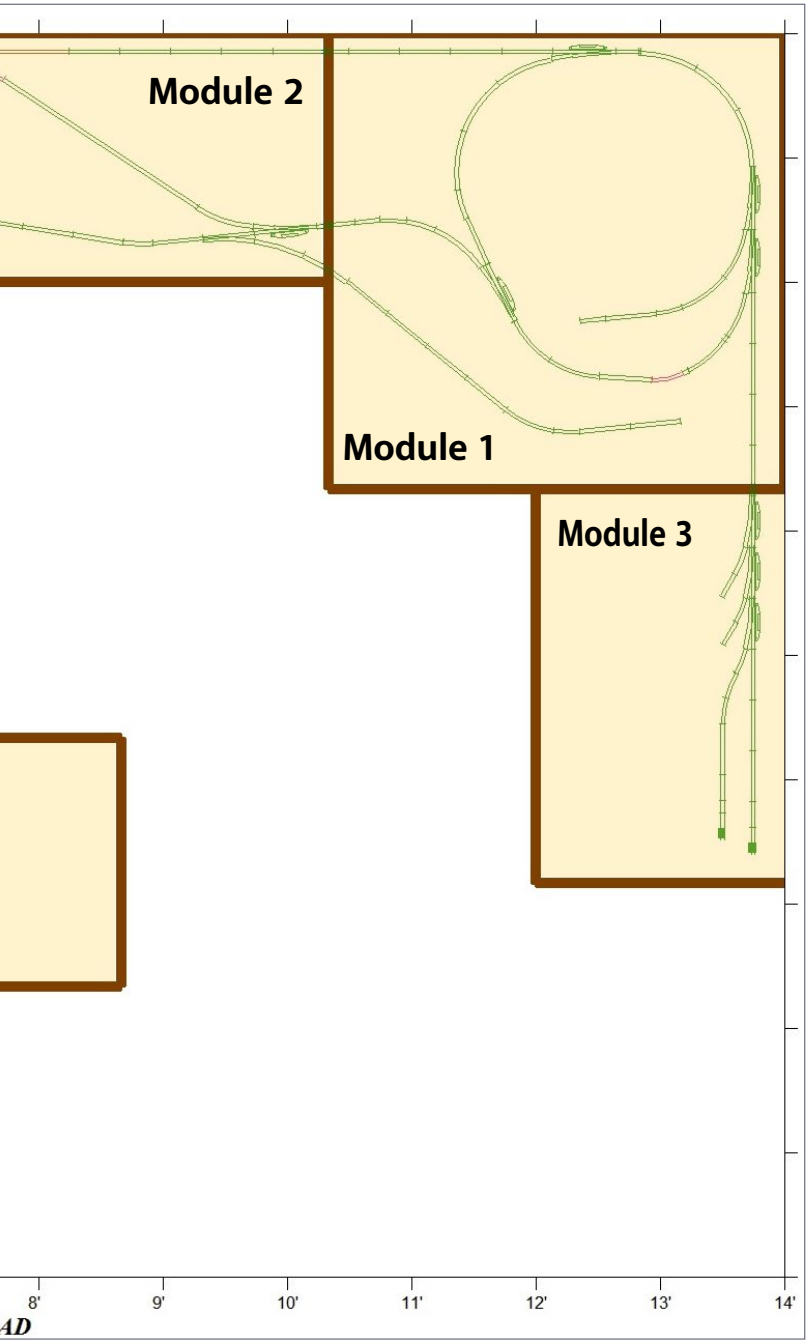
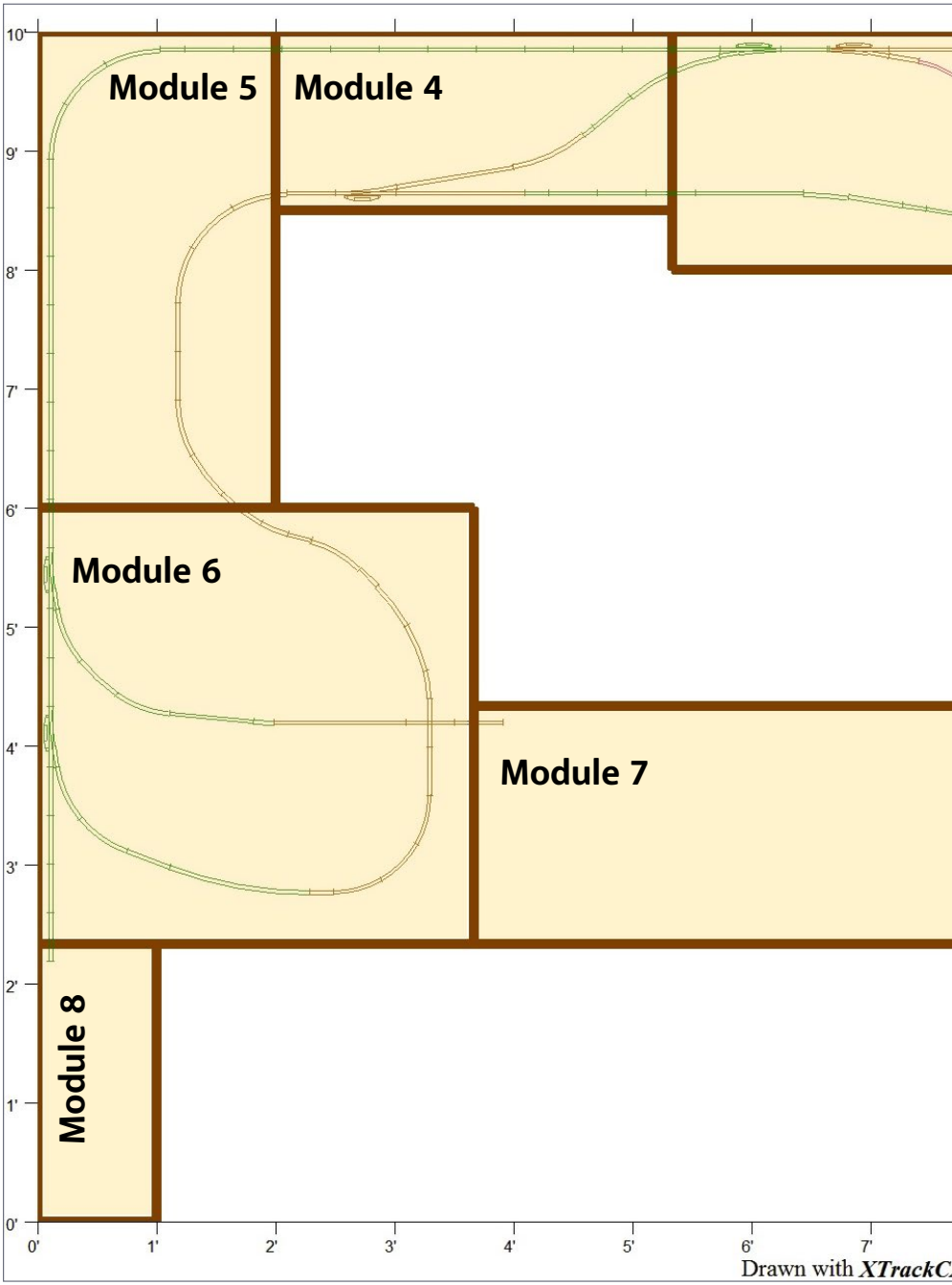


29. Stage 3.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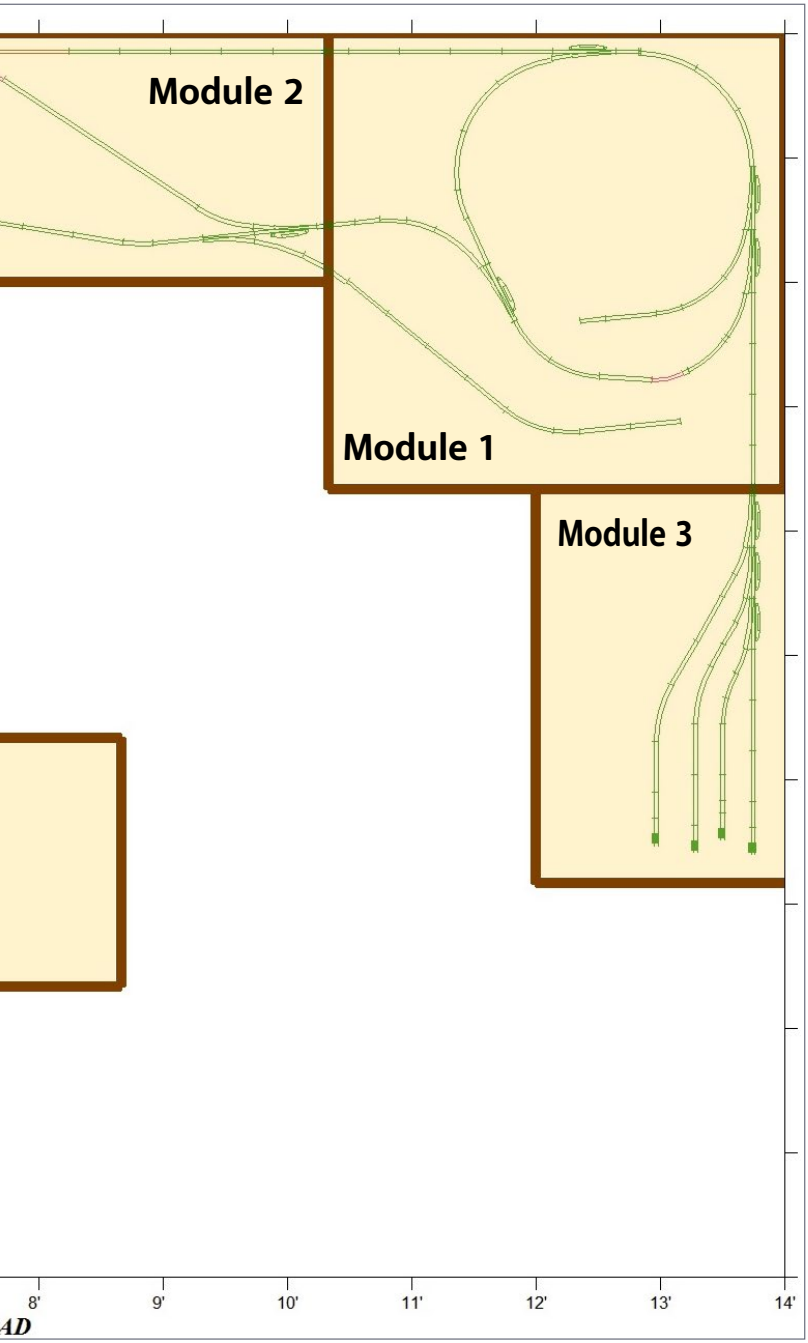
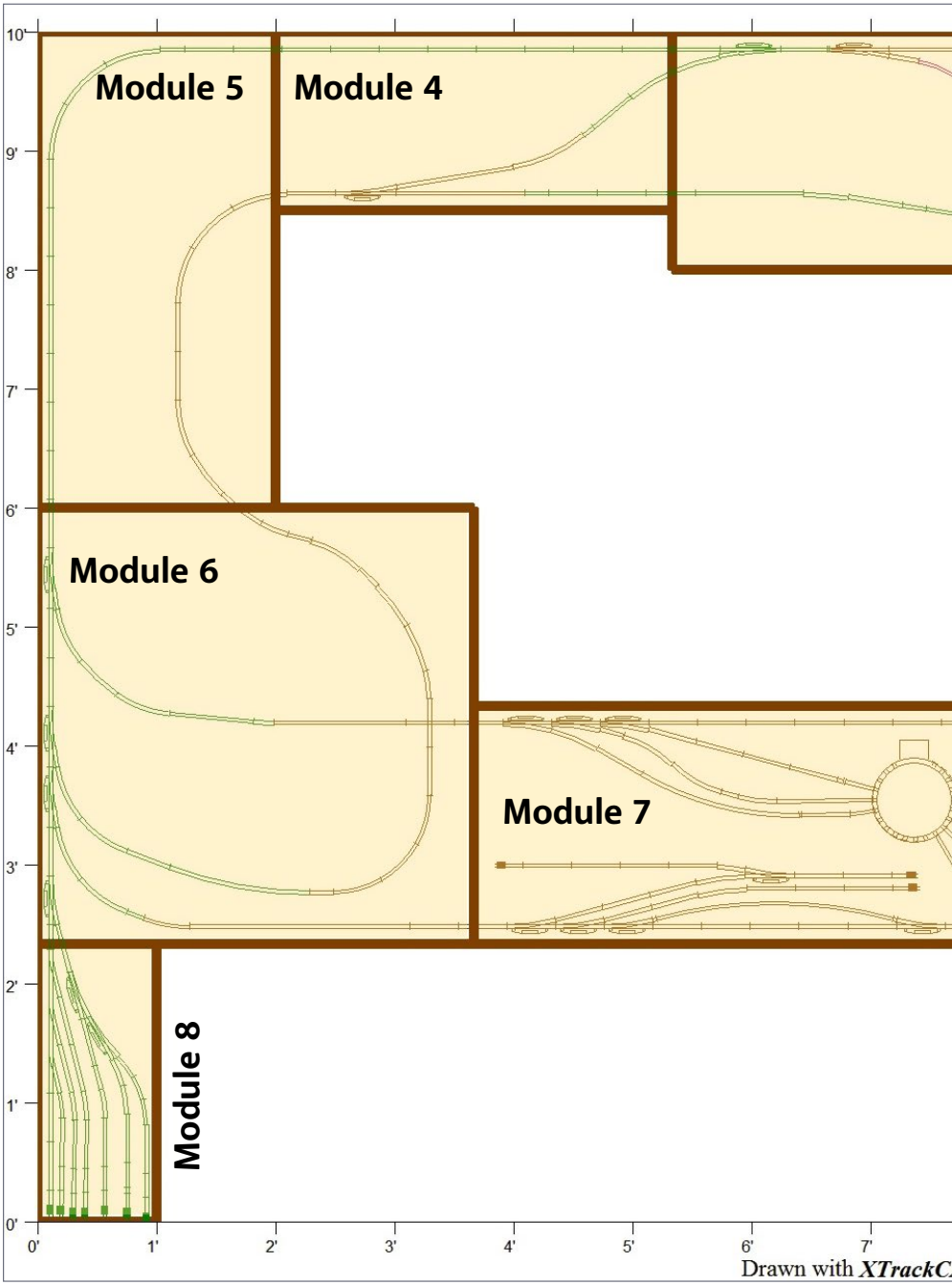


30. Stage 4.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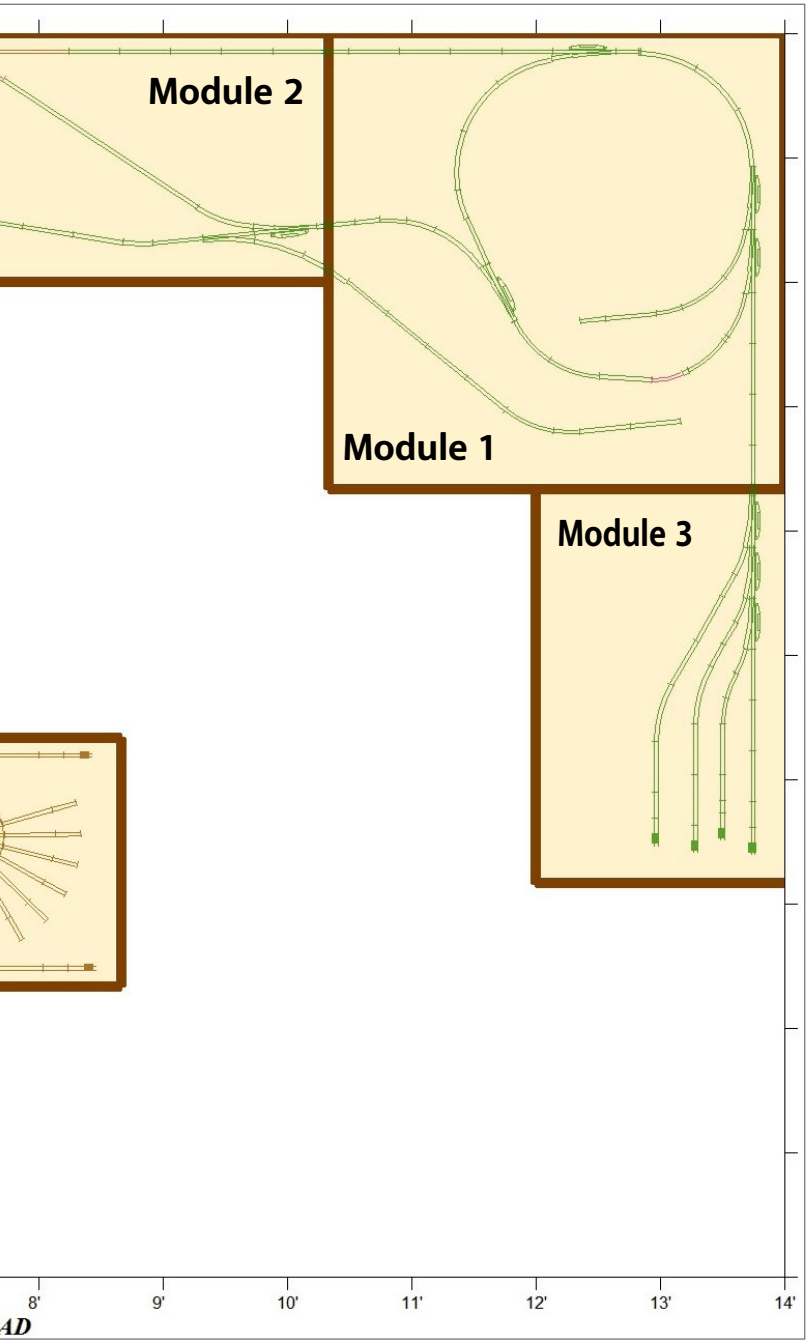
Drawn with XTrackC



31. Stage 5.

Dennis Snyder

Dennis built his first model, a Stanley Steamer, when he was 8. After that he was hooked and worked to earn money to buy more models. At 11, he bought a small Fleischman train set with his earnings and his Dad set up a 4x4 table in the corner of his bedroom. Not having the money to buy kits, he started his first scratchbuilding projects using card stock and balsa sheets. Linn Westcott's *How to Wire Your Model Railroad* (first edition) led to a life-long interest and career in electronics. In college, he worked for Balboa Scale Models, drawing the plans for their wooden car kits.

Like many others, he took a long hiatus from the hobby to do a hitch in the Air Force, worked as a design engineer, and raised two children. As an engineer, Dennis was internationally published with over 20 technical articles, and a book chapter.

Living in Colorado Springs, with Angie, his wife of 40 years, it is only natural that he would build his proto free-lanced 1920s Central Rockies Rail Road based on the scenery and railroads of the Rockies. The CRRR is a DCC controlled, 8x17 foot, dual gauge HO and HOn3 layout. Dennis is also active in the NMRA at the local and regional levels. His love of trains skipped a generation and has reemerged in his granddaughter Sophie who loves to visit Caboose. ■

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Minimalist WEATHERING

By Joe Fugate

PART 2

Follow along, step-by-step!

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1. Weathering darker colored cars such as this one requires a bit different approach than what I showed in part 1 for lighter-colored cars, especially for minimalist weathering. Here in part 2, I go over what is different for black and darker-colored rolling stock.

LAST TIME I DISCUSSED THE PROCESS USED FOR DOING more light weathering on lighter-colored cars. Now it's time to

Weathering nearly-new to moderately used dark-colored rolling stock for TMTV's TOMA project layout ...

tackle some darker colored cars – in this case, I'm doing a couple of black tank cars.

To reiterate, these cars are all modern equipment donated to the TrainMasters TV TOMA layout project by Atlas. Since the TOMA project layout models the modern-day Vermont Railway of 2017, weathering modern cars was a fun change from the usual weathering projects I do for my 1980s-era Siskiyou Line.

One important concept that's true on all kinds of weathering projects, be they light or dark in color: apply weathering in multiple layers. The most realistic weathering comes from building it up slowly in layers. Trying to slap on your weathering in one single layer – even on a minimally weathered darker car – almost never gives a very realistic result.

Ok, on to minimally weathering some black cars!

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STEP 1: START WITH REFERENCE PHOTOS

2. I'm doing these two black Atlas tank cars, GATX 58981 and GATX 58987.

I always recommend getting prototype reference photos when you're weathering anything. Otherwise, it's easy to overdo it – plus I will

STEP 1: Start with reference photos

Continued...

tend to "make up" weathering patterns that are not natural, causing realism to suffer.

I went online looking for some photos of prototype black tank cars to use for reference. I wanted a car in the same general category as the Atlas GATX model, but I did not need to find this exact car.

I found what I was looking for here with these black tank car photos [3, 4] by Mark Earnest. You can find these photos online here: alaskarails.org/sf/other-cars/se-tanks.html.

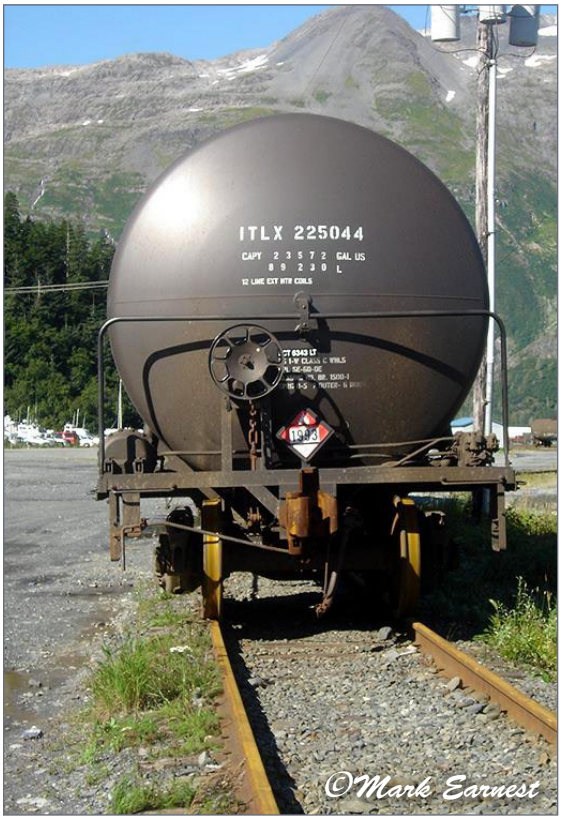
Before getting started, I studied the photos a bit. Notice the tank car side seams exhibit a lighter-color, the cars have a general coating of tan grime, and the lettering on the first car has some rust fade. I like emphasizing the seams and applying the general grime coat, but I'm going to go light on the lettering rust fade and keep the lettering white, more like the second photo. Finally, the trucks and wheels are a dirty brown with a hint of rust in the top photo, but more of cool gray without any rust in the bottom photo.

You can pick and choose weathering affects from photos as I'm doing here, and add a touch of freelancing to your weathering.

3, 4. I found these black tank car photos online, and they're in the ballpark of what I'm looking for: moderately dirty. I like the look with the seams standing out, but I don't want the lettering on my car to have quite as much rust fade – I prefer the whiter lettering in the bottom photo. *Mark Earnest photos*

STEP 1: START WITH REFERENCE PHOTOS

CONTINUED...



5. Notice this end-on shot that clearly shows the wheel splatter on the end of the car. I want to duplicate this effect on my tank cars.
Mark Earnest photo

It also pays to take notice of the car ends, especially on tank cars where the end is very visible. I found a prototype photo of a black tank car end that clearly shows the wheel splatter [5]. This is also an effect I want to duplicate.

STEP 2: ~~COAT WITH A FLAT SPRAY?~~ *NOPE!*

As before, I skip this common first step on many of my weathering projects, especially with minimalist weathering.

The dulling spray roughens the surface of the car ever-so-slightly, making the weathering effect more likely to spread beyond where want it. On a more grungy car that's fine, but on a minimally weathered car, working on a rougher surface makes it all to easy to accidentally overdo the weathering.

On lighter-colored weathering projects as shown in part 1, I prefer to apply a shadow highlighting wash first, *then* give the car its first coat of flat spray to fix the shadow wash in place. On darker cars, I do the same thing, but I reverse the colors – I use lighter colors on the *darker* car to bring out the details and I just call it *highlighting*.

And of course, once I'm done applying all my weathering, I'll give the car a final flat spray to protect the weathering and fix it in place.

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STEP 2: ADDING A HIGHLIGHT WASH (THE *REAL* STEP 2)

6. I make my tan "highlighting wash" by putting 10 drops of tan model paint per 1 milliliter of HP thinner. See the text for details.

Because our models are much smaller than the prototype and they're under dimmer indoor lighting, the details do not "pop" like the details do outdoors. This is especially true of darker cars. The details tend to just disappear into the murky darkness of the dark paint.

Adding a light-color highlighting wash really helps bring out the details on darker cars. With these black tank cars, I can see from the prototype photos the highlighting color I need – a light tan "coffee with creamer" color.

As before, I use Createx High-Performance Reducer (reducer is automotive painter terminology for thinner) or my own HP thinner formula as the solvent for making the wash.

For this lighter wash, I put ten drops of tan model paint (Vallejo Game Air 72.762 Earth in this case) to 1 milliliter (ml) of HP

STEP 2: ADDING A HIGHLIGHT WASH *CONTINUED...*

thinner. I mix up 10-20ml of the wash and store it in a small dropper bottle [6].

Note: If you compare this formula to part 1's black shadow wash, you will notice it uses a lot more color. I find the lighter wash on a darker car needs more color concentration than a black shadow wash on a light car to have the same effect.

I start with GATX 58987 and go around the car dabbing the highlight wash on the seams using a small brush and letting it flow on [7]. If I want the wash to flow on in a more subtle way, I have found it helps to first coat the area I'm working on with HP thinner using a broad ½" brush.

In this case, I used the wash straight on the seams without pre-applying thinner.

7. I start by highlighting the seams with the light tan wash.

STEP 2: ADDING A HIGHLIGHT WASH CONTINUED...

8. After the wash set up a bit but still damp, I used a Q-tip soaked in thinner to limit the wash mainly to the seams

Once the wash had started to set up but was still damp, I used a Q-tip dipped in HP thinner to remove any excess tan highlighting wash that had spread out onto the tank body [8]. My goal is to emphasize mainly the seams with the wash.

While waiting for the wash on the seams of the tank to set up, I applied more highlighting wash to the dome platform area, ladders, [9] and to the underbody [10].

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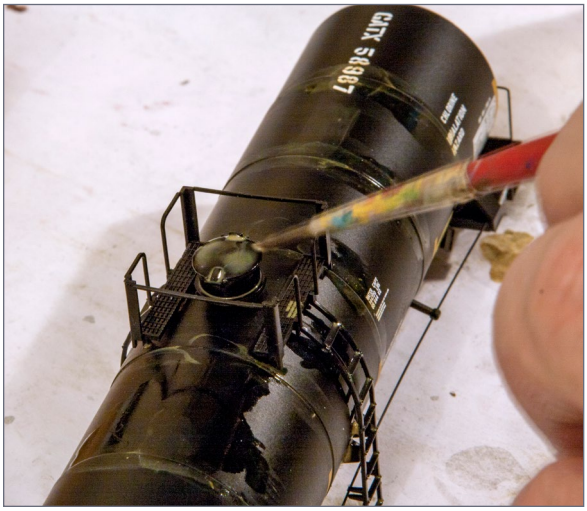
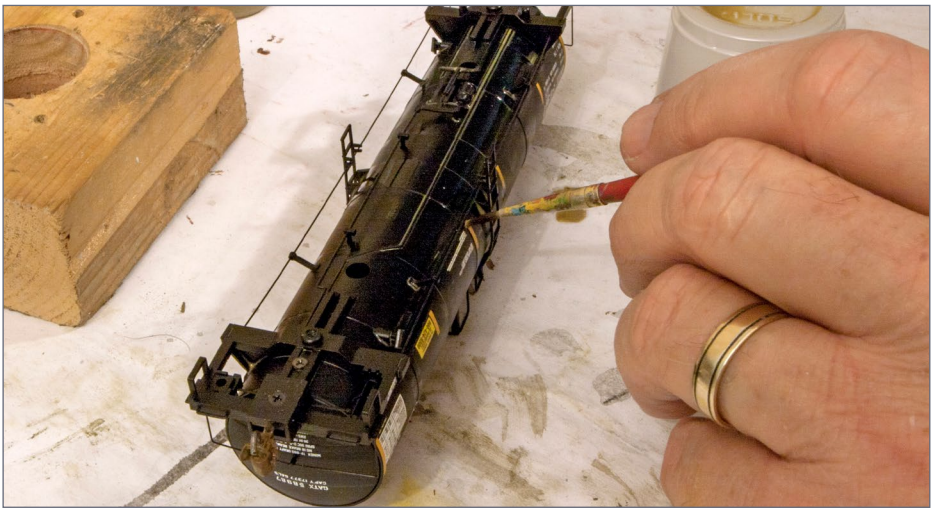


9. While waiting for the seams wash to set up, I added the highlight wash to the dome, platform area, and ladders.



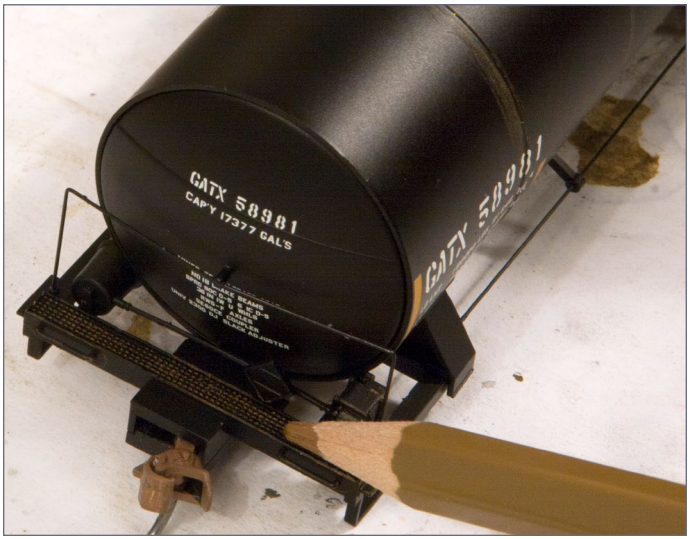
10. I also turned the car over and applied the highlighting wash to the underbody. Notice I'm using the bottom of a small plastic cup as a palette for the wash.

STEP 2B: HIGHLIGHTING WITH A COLORED PENCIL

As an alternative way of highlighting, I decided to use a Prismacolor Clay Yellow colored pencil to do some of the highlighting on GATX 58981. (My set of 48 Prismacolor pencils came from Amazon: a.co/gOUyXq1).

I use the colored pencil to mark the seams on the tank car [11]. I also use the pencil to highlight the tank platform grids on the ends and around the dome [12]. The colored pencil is very precise, unlike the highlighting wash. The wash goes to low places and ridges, while the pencil is perfect for highlighting raised areas and edges.

11. I used a Prismacolor Clay Yellow colored pencil to highlight the seams on GATX 58981.



12. I also use the Clay Yellow colored pencil to highlight the ridges on the end platforms and the dome platform.

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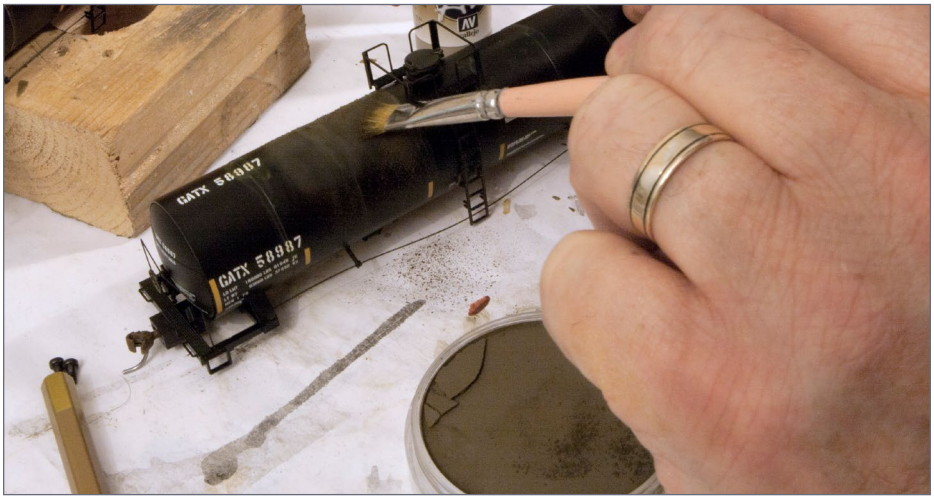
STEP 3: ADDING A LAYER OF GRIME

Once I was done with the basic highlighting process, I moved to applying a layer of dark dusty grime using PanPastels. I wanted a color that is brown and not too light, because I want the tank to look dull and dirty, but still dark in color. I chose Raw Umber Shade as the color to use [13].

I brushed the PanPastel powder on GATX 58987 and covered the entire tank body [14]. I left this first car as-is because I wanted a more dirty car [15].

13. Once the highlighting wash on GATX 58987 was dry, I got out some Raw Umber to give the car a general dark dirty color.



14. I applied the umber PanPastel powder to the entire tank body with a ½" brush.

15. I wanted GATX 58987 to be a dirtier car, so I left the powder application as-is.

STEP 3: ADDING A LAYER OF GRIME *CONTINUED...*

Moving on to the second car, GATX 58981, I did the same thing with the dirt powder. Next, I took a ¾" wide clean brush, dipped it in thinner, and removed most of the thinner so the brush was just damp. Using this brush, I removed about half of the powder color on GATX 58981, allowing the seams to stand out and to smooth out the grime layer, making it more subtle. This acts to blend the seam highlighting with the car grime and make it look more natural [16].

16. For GATX 58981 I came in with a clean slightly damp 3/4" brush and removed about half of the PanPastel, allowing the colored pencil highlight on the seams to show through. I also wanted this car to look consistently grimy, but not dirty.

STEP 4: WEATHERING THE CAR END

On tank cars, the flipped-up dirt from the wheels shows very well, so I wanted to make sure to model that with the weathering.

To do that I dipped a small round brush in thinner, removed most of the thinner with a paper towel, and then dipped the damp brush in the umber PanPastel. I dabbed the color onto the car ends [17], attempting to replicate the splatter pattern seen in the prototype photo [5].

To finish up, I hit each car with a flat dulling spray (Rustoleum Dead Flat as discussed in part 1) and set them aside to dry.

17. Using a small round brush made slightly damp with thinner, I applied some umber PanPastel to the car end in a splatter pattern to represent wheel splatter as seen in the prototype photo [5].

STEP 6: WEATHERING THE COUPLERS AND TRUCKS

For the couplers, trucks, and wheel weathering, I followed the same process used in part 1.

18. (Above) Here is the finished GATX 58981, lightly weathered and ready for service. Also see the lead photo [1] for another view.

19, 20. (Right top and bottom) Here is GATX 58987, which I wanted to be a dirtier than 58981. While it's clearly grimy, it's far from rustbucket level. It's what I would call "hard-working dirty". As long as a car is moderately dirty but not starting to rust-up or have the paint flaking off, I still consider it minimalist weathering. It represents a car that's still early in its service life or has been rebuilt-as new. It may be well on its way to accumulating road grime, but its paint job is still intact.

That completes the weathering on these two darker cars. The main trick with weathering darker cars is to think in reverse – you *lighten a dark car* with weathering, while you *darken a light car* with weathering.

Instead of emphasizing the shadows, on a dark car you're highlighting seams and raised areas with lighter-colors. And on both kinds of cars, you apply grime to dirty-up various areas using prototype photos as your guide. ☑

Modeling CHESTER DEPOT

BY MIKE TYLICK MMR

1. This is my favorite angle view of the finished Chester Depot. I find it difficult to tell how short the station side walls really are. Follow along as I describe how I build this station.

A kitbashed station inspired by a true story on a prototype line ...

ALTHOUGH THE NARROW GAUGE CHESTER AND Becket Railway reached the Boston and Albany mainline at Hamden Lower Mill in the 1890s. It wasn't until World War I that the dual-gauge track reached Chester Village. Corundum and mica were

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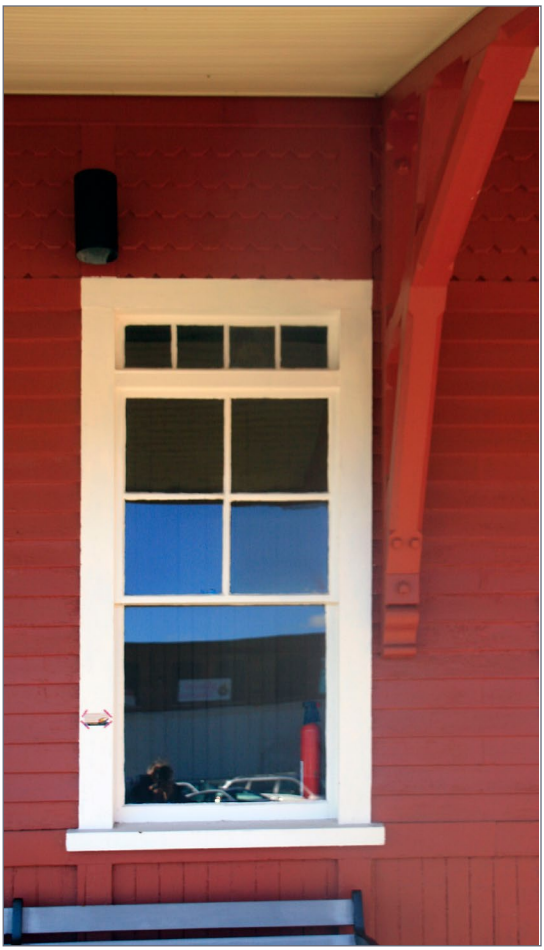
always processed at Lower Mill, but granite and lumber were previously trans-loaded for finishing at Springfield. With the completion of a stone cutter and sawmill at Hampden Upper Mills in the Village, the C&B extended its track to serve them, leaving the mainline at the depot to serve the new industries. Although still sound, the original station, completed in 1841[1] by the Western Railroad[2], was no longer adequate to the task.

2. The prototype Walpole, MA station, which inspired this freelanced model, is still in daily use by commuters and the CSX Signal Department. At one time this was a major junction of several through routes.

[1] This station is now a railroad museum. It is one of the very few remaining original structures along the line.
[2] The Boston and Albany Railroad was the result of a merger of the Boston and Worcester Railroad and the Western Railroad, which ran from Worcester west to Albany. The B&A was leased by the New York Central in 1899.

In addition to a telegrapher's bay and tower, an additional waiting room and face lift were added in 1924.

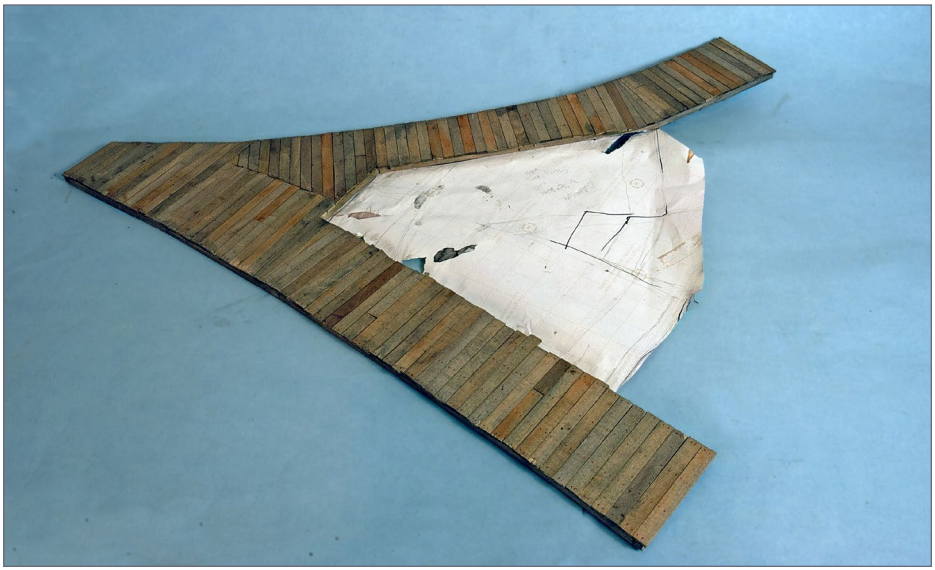
As advertised in the movies, all of this is "based on a true story" and conveniently fit operations on our F scale portable model railway. While you are ferreting through local history books to separate fact from fiction, I'll describe the construction of our F scale model. Techniques are not much different than those I've used in the smaller scales, but everything becomes easier and looks better in large scale. Probably the biggest problem is to find enough space on the workbench.



The track was laid before the station was started and the layout was in Steve Morrill's basement, so it was necessary to trace a template to work from. Although newsprint and butcher paper are nice, those were not available at the time. Steve had a brainstorm and we used the

3. Window detail on the Walpole, MA station. I based my casements on these windows.

back side of Christmas wrapping paper. The paper was carefully pinned in place and a rubbing of the rails was made with a carpenter's pencil. The platform foundation is being built right over the template using ¼"-square basswood. I am already starting to sketch ideas on the paper.



4. Both platforms are situated on curves, so the base must be made up from short straight pieces. I built the platform from 3/32" x 3/8" wood. I find it easier to make the planks oversized and trim them later with a sprue cutter, so I leave a small overhang over the foundation. Rather than attempting to buy the correct size and amount of stripwood, I used Midwest Models basswood sheets of varying thickness and cut the correct width on a Micro-Mark table saw. Always buy about twice as much wood as you think you will need – any leftover pieces will come in handy down the road!

All wood is pre-stained with uneven washes of Raw Umber and Burnt Sienna acrylic paint, followed by an overall wash of India Ink and alcohol.

Other than some miniature materials for doll houses, there is not nearly the selection of F scale parts as there are for HO or even O scale. I've scratchbuilt windows in the past, but laser cutters make short work of complicated shapes like these. Jim Mooney was kind enough to cut these for me from 1/16" aircraft plywood.

It is not as difficult to find friends with laser cutters as you may think. If you supply the artwork, even having them cut by commercial cutters is not expensive. With a little time spent examining how these are drawn for kits, and a little more time learning Corel Draw basics, you can soon be designing your own windows and doors. Building each window from parts gives each the imperfections of a handmade item and it's a snap to paint the sash a different color than the frame with individual parts.

I took the window detailing from *Model Railroader* drawings of two junction stations – Walpole, Massachusetts (September, 1967) and New Albany, Indiana (November, 1969). For shades, I used bits of manila envelope. Frank Czybyrt gave me the idea for the shade pulls: short lengths of lamp wire strands with blobs of Elmer's glue on the end. I made the doorknobs from bits of styrene strip and rod.

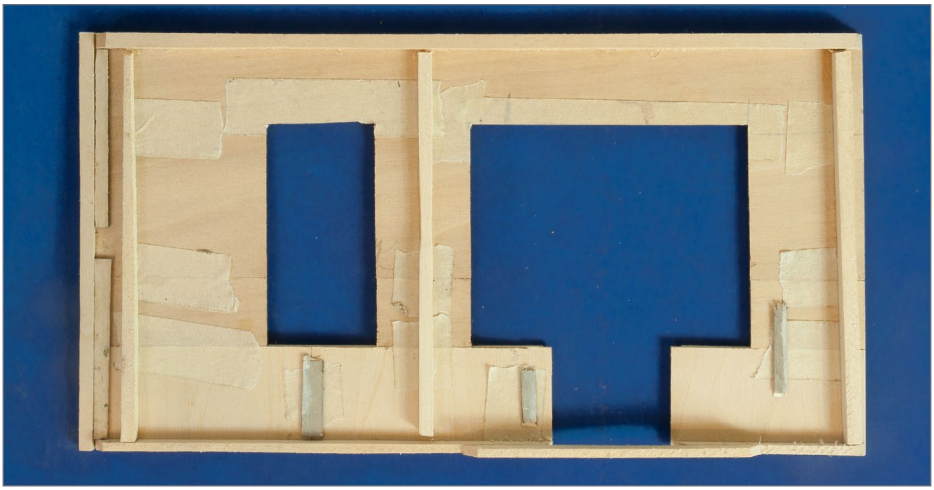
I made the waiting room walls from 3/16" clapboard siding, with 1/8" scribed siding for the wainscoting. Styrene may have been faster and easier, but F scale is large enough to really show off the texture of the wood.

I primed both sides of the wall with Walmart enamel sprays to prevent warping. Quaker Grey and White paint by Delta Ceramcoat and Folk Art Old Ivy craft paints were used to paint the building. It is not a coincidence that these are the same colors presently used on the prototype Chester depot.

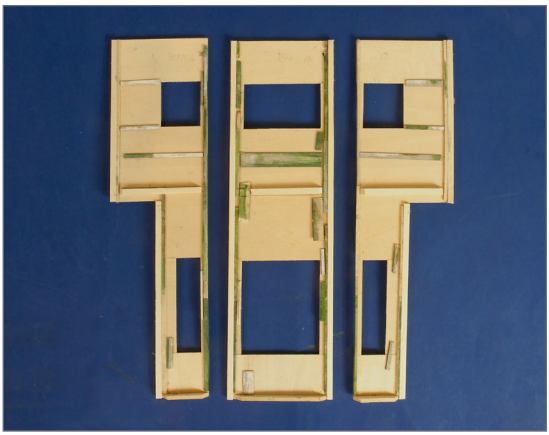
I painted the interior with Delta White and Raw Sienna. The artwork is printed from Google Images, the wainscoting drawing

with a black marker. The interior is quite busy but one never knows exactly what will be seen.

For the station tower, I did a close copy of the prototype at Walpole, Mass. The first floor is recessed so the tower can be set into the building.



5. Here is the back side of the wall. Masking tape is used to hold the wall sections together until the bracing is added. Note the "jumper" brace behind the door opening.

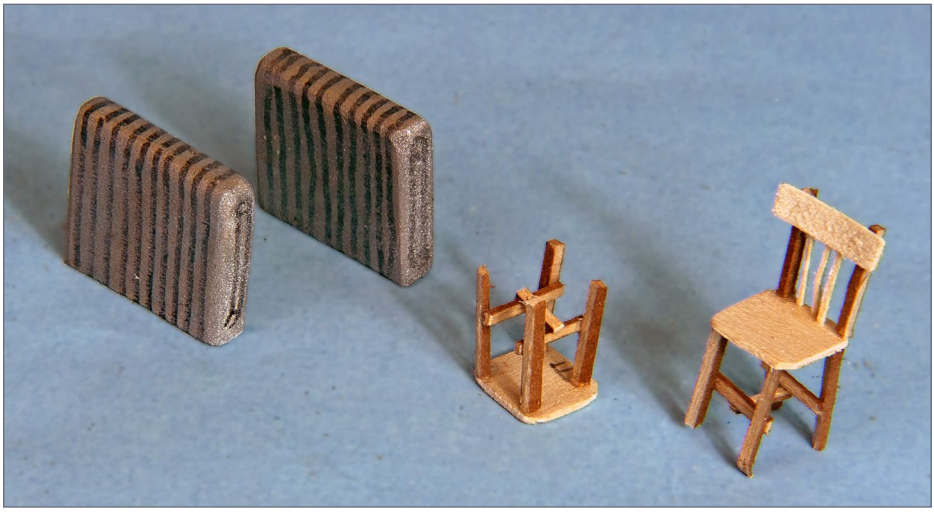


6. The back side of the operator's tower is built in much the same way as the depot walls.

7. Interior detail shows up very well in F scale, so it is worth adding some. The desk and office equipment is made from bits of wood and paper. Shapes are approximate but some paint helps reinforce the reality. Pencils are bits of yellow wire insulation.

8. Desk from the side visible from the windows. Wires are bits of thread and can be seen from the outside.

9. I built the waiting room benches from scraps of wood and added simple felt-tip pen detailing. Small newspapers are taken from various kits, scanned and resized to F scale.



10. I built the radiators and chairs the same way. Fortunately, waiting rooms do not have a great deal of furniture.

11. A view of the C&B wing of the depot under construction.

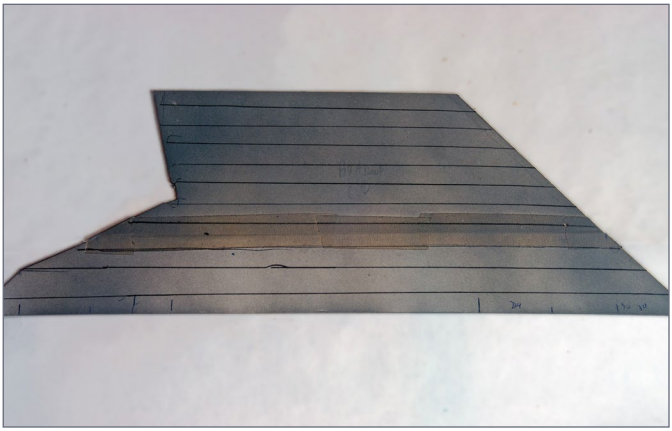
12. One wing and the tower are glued to the platform, being very careful of curve clearances.

13. Showing the interior of the assembly. I cut out "Paper doll" figures and glued them to the interior. Actual F scale figures are quite expensive and not well seen inside.

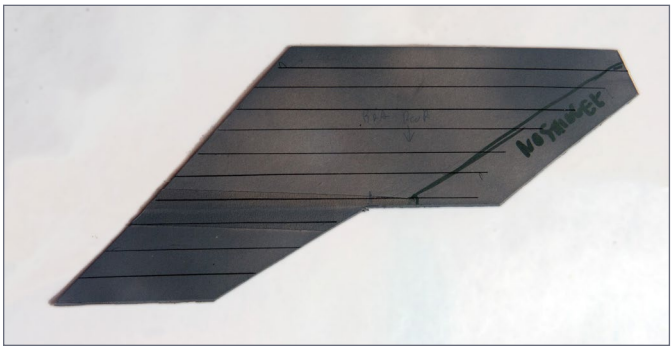
14. Another view of the assembly.

15. And yet another view showing the interior and the paper doll figures.

16. At this point, both wings are installed. Much to my surprise, my calculations were correct, and everything fit on the first try! I attribute this to the more to the greater tolerances of building in the larger scales than to my modeling abilities.



17. The roof patterns were developed on paper by trial and error to fit the tower. The lower platform side of the roof is cut at a different angle than the upper roof. Although the slope differences are considerable, the angle is appears to be almost identical. The roofs are cut from inexpensive illustration board. Masking tape is used as a hinge to align the upper and lower roofs. Both sides are sprayed with gray primer to inhibit warping. The parallel lines are drawn as a reference for aligning the shingle courses – they are not at the edges of each course.



18. The inner roof has a cutaway to fit its mate. I was observant enough to realize that all four of the hip roof ends are identical, so I was able to trace them all from the first.

19. The back of the roof is braced with 3/16"-square basswood strips. In case it might ever be seen, the underside of the platform roof was painted green. The prototype would have rafters and soffits, but this would require a good deal of work no one will ever see. I would include underside detail for a contest model, however.

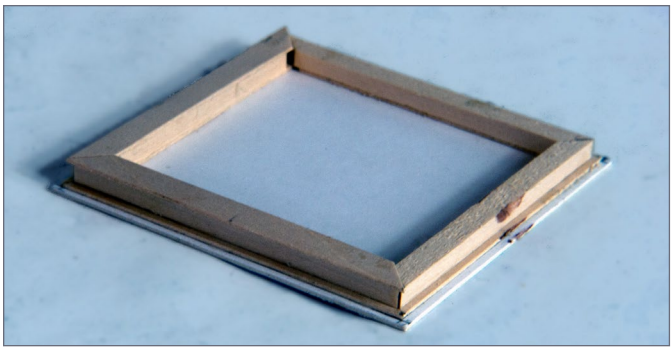
Since access to the interior became difficult, I built the back side of the agent's room separately. I may add much more detail than is necessary but these "quick interiors" take little time and cost even less to build. One never knows exactly what will be seen inside and it is better to include too much.

Commercial roofing sheets looked too perfect for this model, and they would have been difficult if not impossible to cut correctly. The area is large enough that the materials would have been costly, but not nearly as costly as the individual slate pieces sold for dollhouse use. In order to influence the overall color, I used light blue poster board. I sprayed it with gray primer, then discolored with over-sprays of white, red and black until I achieved a very mottled look.

Following guide lines drawn on the back, the slates were individually cut and applied.

There was probably no other way to achieve this look, which really does show up in large scale. I found it time consuming, but

20. At this point in the construction, three roof sections are installed.



21. I copied the tower from the prototype Walpole depot. I cut the square base for the lower tower roof from scrap mat board and used appropriately sized stripwood to build up the small facade.

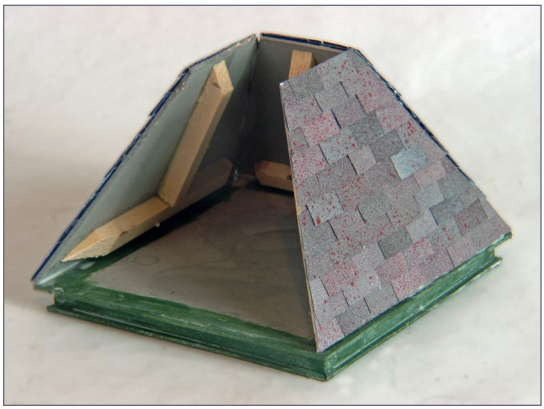
considering the time it might take to cut, fit, patch, and paint commercial roofing sheets, maybe not that much longer.

As I installed the first roof piece, I realized the interior lighting must go in before much more work is done. To evenly light such a large model, I wired a total of seven grain-of-wheat bulbs in

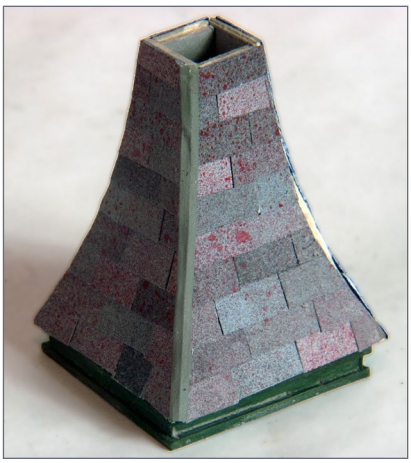
parallel, three above the exterior doors. I used leftover computer network cable for the wiring feeds, which are run through the base and through the ceiling of the unlit restroom area.

I considered using LEDs, but the rest of the C&B layout uses incandescent lighting. In practice, the lights are used only during shows and are operated at a slightly reduced voltage (9V), so it's unlikely they will burn out soon.

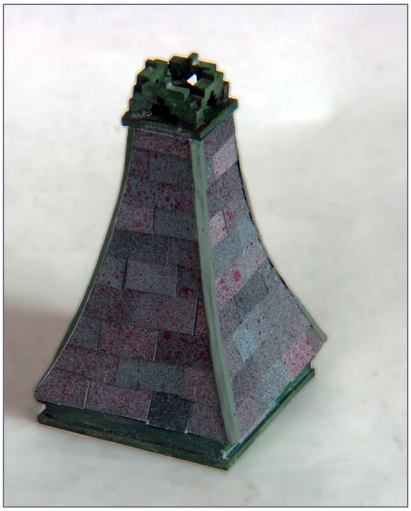
As I built the station, I noticed some gaps on the roof. Since the roof slates are individual, it was not difficult to fill even large

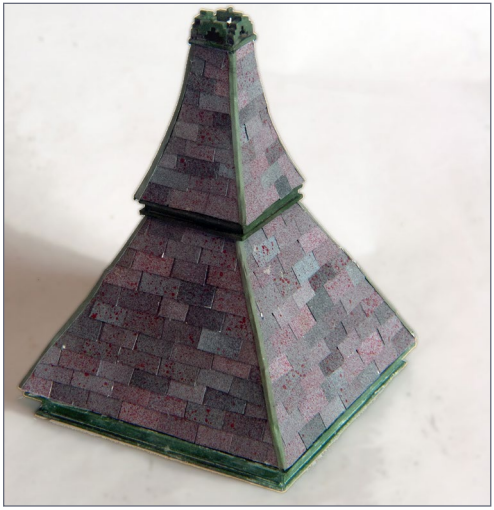


22. Construction of the lower tower roof – the sides have interior bracing and hold each other up while the glue is drying.



23. The upper tower roof is built on a second façade. The side walls are convex so the curve makes cutting the pieces a bit more difficult.

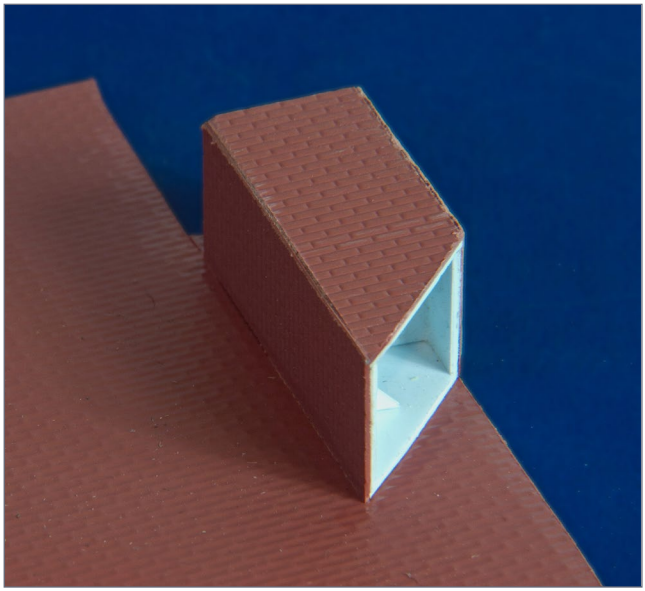




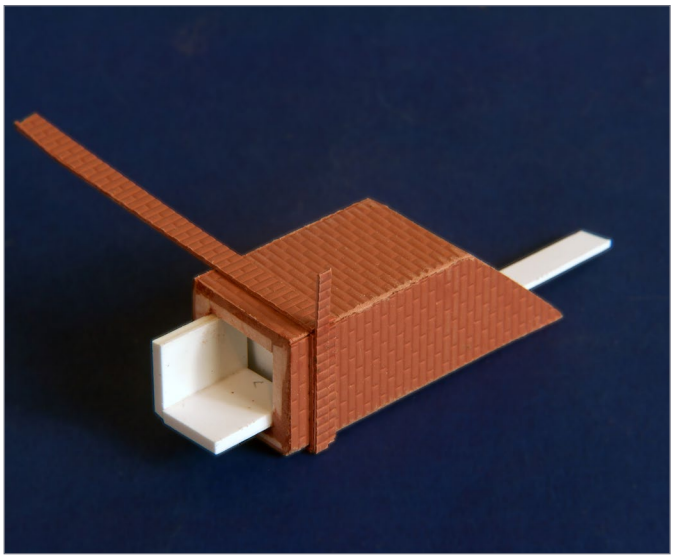
24. I used scrap from the laser-cut roof ridge trim for the finial.

25. Here is the completed tower roof.

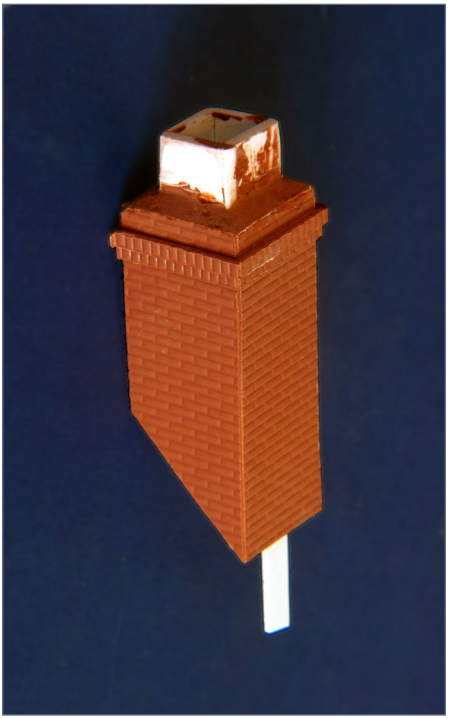
26. My first photo of the almost completed depot. All along I had felt the tower was too tall, but it is growing on me. The tower height is the same as the prototype, but the prototype waiting rooms are wider so the roof is considerably taller. If I were doing it over, I would probably cut an inch or so from the tower. But this is certainly not worth the work involved to the completed tower and this would only shorten the tower by two scale feet.



27. I could not find a good commercial chimney, so I built up my own from 0.030" styrene. I covered the sides with O scale Plastruct brick siding. I make no attempt to hide the corner seams, but I do work from the back to the front so the seams are on the least visible sides. G scale brick is available, but I think the O scale brick is closer to the correct size.



28. Again working back to front, strips of brick become the decorative chimney trim. I used more 0.040" styrene to build the flue tile.



29. I tooled some Bondo scratch putty and built up the cement tile to brick seal and to fill the tile joints. I sanded the tile corners round with a sanding stick.

30. This shows the completed chimney painted with Delta Ceramcoat Burnt Sienna brick, Sandstone concrete and Terra Cotta flue. I used carpenter's line chalk to dirty the tile. I cut the flashing from paper painted with Delta Hammered Iron. Since paper and styrene do not bond well, 0.060" styrene rod locator pins were glued to the inside of the chimney, then inserted in holes drilled into the roof. This considerably strengthens the somewhat fragile roof joint.

gaps with individual pieces, lifting some of the next course to insert them. Light weathering washes will later help blend the slates together.

For flashing, I used paper painted with Delta Ceramcoat Hammered iron. Flashing attached to the wall should only be seen on the wall surface, but has been folded out above the slate to fill any remaining cracks in the joint.

I took the finished station over and installed it in Steve Morrill's basement, where it now lives as its permanent home. ☑

31. A view of the completed station, signs and all, ready to be installed on the C&B. A signs file and the Corel station drawings are included in the subscriber bonus downloads for this issue.

32. A view of the completed station closer to eye level.

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Michael Tylick, MMR

Michael Tylick has been fooling with electric trains for as long as he can remember. Never one to commit to a single large project, he has instead built a number of smaller layouts of various types and in various scales over the years. A retired inner city art teacher, Mike has been a long time contributor to many publications including *Model Railroader, Railroad Model Craftsman,* the *National Model Railroad Association Bulletin,* and most recently the e-zine *Model Railroad Hobbyist.* He has also delivered numerous clinics and presentations on various railroad and historical subjects on all levels in different parts of the country.

Railroad interests are leaning towards prototype rail and architectural photography, and Mike is becoming keenly aware of what can be observed outside the basement. Much of his hobby time is now spent employed as a custom builder specializing in railroad structures and rolling stock. He also has worked with several organizations who build custom model railroads and has recently formed RailDesign Services, focusing on the design and visual aspects of model railroading.

Recently remarried, Michael now lives in eastern Massachusetts and has started an On30 railroad loosely based on Boston's Old Colony Lines. Mike also has the honor of being named Master Model Railroader #523.

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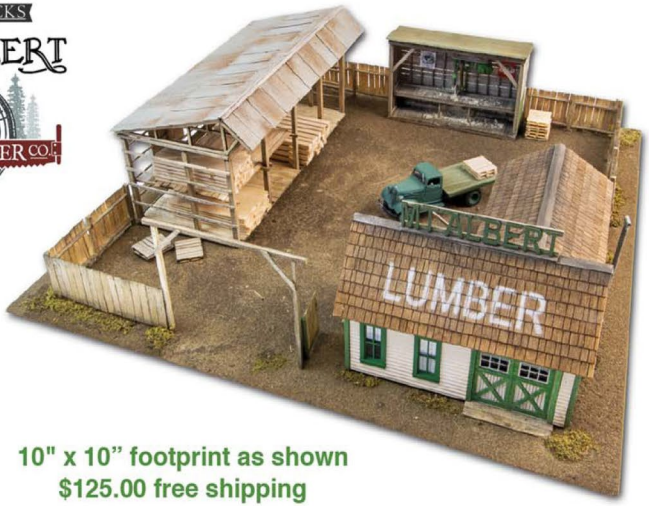

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CELEBRATE (A) RAILROAD

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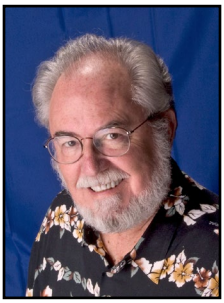

OCTOBER NEWS column

Richard Bale *and* Jeff Shultz

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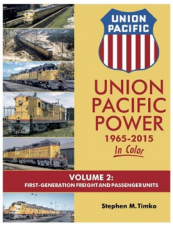
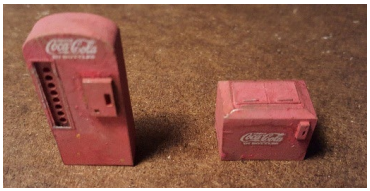
NEW PRODUCTS FOR ALL SCALES

Deepwoods Software has released version 2.1.41 of its Model Railroad System. The software package includes a collection of libraries and programs for communicating with Chubb and Lenz XPressNet networks, a user-mode driver for the Rail Driver control console, a library to parse XTrkCAD layout files, as well as utilities for computing dropping resistors, camera view areas, creating railroad time tables, and a switchlist-based freight car forwarding system. For additional information visit deepsoft.com/ModelRailroadSystem.

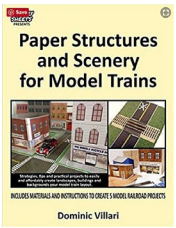
New book titles available now from **Morning Sun Books** include *Union Pacific Power 1965-2015, in Color, Volume 2,* by Stephen M. Timko; *The Soo Line-Milwaukee Road Merger, in Color, Volume 1,* by Jerry A. Pinkepank; and *The Long Island*



Railroad, in Color, Volume 5, by Arthur J. Erdman, *Nickel Plate Locomotive Portfolio 1954-1969,* by Stephen M. Timko. For additional information visit morningsunbooks.com.



Rusty Rails is selling a kit for two styles of old-time Coca-Cola dispensers. The items are 3D printed and include a set of decals. They are available in HO and O scale. For more information visit rustyrails.com.



Scenery Sheets has announced several new products, including *Paper Structures and Scenery for Model Trains,* deluxe background kits, and new texture designs including fieldstone and cobblestone.

Paper Structures and Scenery for Model Trains is a new book by Dominic Villari describing tools, skills and strategies for using paper as a modeling material on a model train layout. The second half of the book leads the modeler through using these tools and skills on five projects. Materials and instructions cover O, HO, and N scales. It is available at Scenery Sheets and Amazon.com.

Scenery Sheets has also released background kits which include a variety of building and structure types. Designed to be cut out and mounted to foam or wood boards, the kits are a quick and easy way to create custom backgrounds. Kits are available in O, HO, N, and Z scales.

Adding to their catalog of 200 designs, Scenery Sheets has created fieldstone and cobblestone designs in a variety of shades and colors. The designs come in packs of five and 10 pieces. For more information on Scenery Sheets products, visit their website at buyscenerysheets.com.

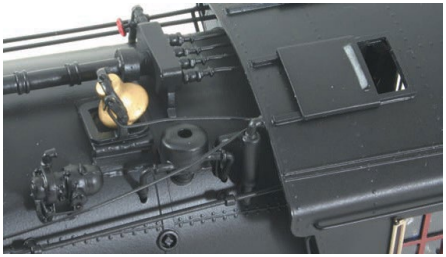
SoundTraxx is developing GenSet sounds for its Tsunami2 digital sound decoders. The system will provide independent control of the three prime mover RPM levels and volume as well as a mixer control to configure an individual locomotive with either dual or triple engines. Air dryer and the sound of blower motor fans are both adjustable. A video detailing the system can be viewed at view.bbemaildelivery.com/bbext/?p=land&id=570A5CA6E26502B4E0530100007F99B3&vid=2b30b1fb-ef03-c9bc-1562-507870f0aca0.

Coming soon from **Woodland Scenics** is Sunny Days Trailer. It will be available in N, HO and O scale. The ready-to-use structure comes with a printed interior and pre-installed LED lights. The 50mA RoHS compliant LED lighting is designed for use with Woodland Scenic Just Plug Lighting System which is sold separately. For additional information contact a dealer or visit woodlandscenics.com.

O SCALE PRODUCT NEWS

3rd Rail Division of Sunset Models is selling an O scale brass model of a Norfolk & Western Y-6b 2-8-8-2 steam locomotive.

Hand-crafted in Korea, this exceptional model includes a fully detailed backhead with painted dials and valve handles, individually sprung drivers, and numerous working hatches.



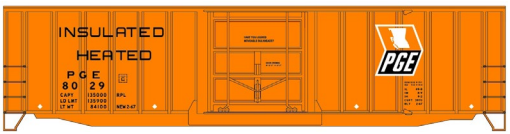
The precision drive mechanism includes a Pittman 9000 series motor and ball-bearing-supported gear box. Every visible fixture and apparatus on the prototype is replicated on the model. For more information visit 3rdrail.com.

Atlas O has scheduled a first quarter release for a group of military troop cars. The release will include a Pullman sleeper, a kitchen car, and US Army hospital car. All will be decorated in military livery. Undecorated models will also be available.

Military cars rebuilt as express boxcars will be available decorated for CSX, Monon, New York Central, Rio Grande MOW, and Railway Express Agency.

Atlas O plans to release another production run of its ACF 11,000-gallon tank cars during the first quarter of 2018. Road names will be Columbia Southern, Dow Chemical, DuPont, Olin Chemicals Division, and PPG Chemicals. Atlas O rolling stock is available with either 2-rail or 3-rail trucks. For additional information on all Atlas O products contact a dealer or visit atlaso.com.

HO SCALE PRODUCT NEWS

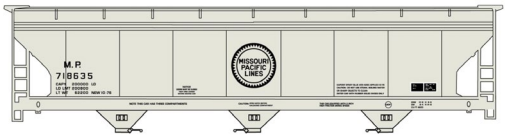


New HO scale kits available from **Accurail** include this Pacific Great Eastern 50-foot boxcar with a large plug door. The model follows a prototype built in 1967.

Also available from Accurail now is a 40-foot Great Northern AAR boxcar with double Youngstown sliding doors.

This 50-foot Northern Pacific combo door boxcar has a plug door as well as a sliding Youngstown door.

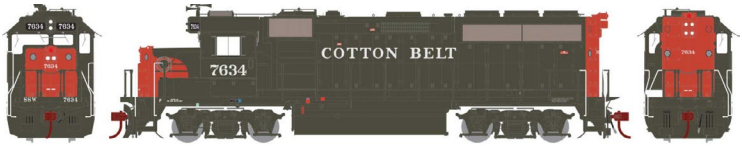
Accurail is selling a kit for this HO scale 40-foot single-sheathed wood boxcar. It has wood doors and ends and is decorated for Southern Pacific/Texas & New Orleans.



Completing Accurail's list of current releases is a kit for a Missouri Pacific ACF triple-bay covered hopper. The HO scale model is based on a prototype built for MoPac in 1976. All Accurail HO scale kits come with Accumate couplers and appropriate trucks. For more information contact a dealer or visit accurail.com.

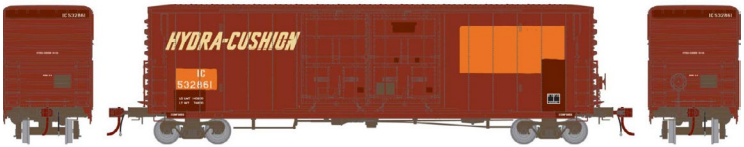
American Model Builders is selling two individual HO scale LaserKits that together make a highly believable rural scene. Shown at the left is kit no. 729, United Farmers Co-op. The model features typical tab and slot wall construction with peel and stick windows, doors, and trim; rafter tails, dock height floor; laser-cut tarpaper, battens, and roofing materials. An assortment of custom white metal and cast resin detail parts is included. The assembled model is four inches tall over the roof-top sign and a footprint of 7 x 4½ inches.

On the right of the prior picture is kit no. 193, Country Elevator, that features some exceptional signage. Assembly details are similar to kit no. 729, plus custom scribed platform decking, positionable drive-through doors, laser-cut ladder and hoist frame, white metal spout and hoist pulley, and plastic nut-bolt-washer castings. The assembled elevator is 9 1/8 inches high and has a footprint of 4½ x 7 1/8 inches. Both kits come with illustrated instructions and color signage with instructions on how to achieve the painted-on appearance of the Faultless Feed sign. For information contact a dealer or visit laserkit.com.



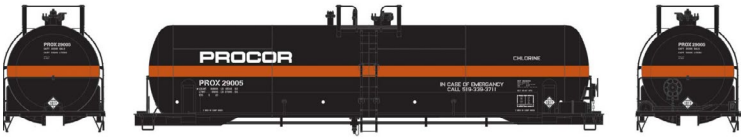
At the top of **Athearn's** production schedule for release in August 2018 is an HO scale Genesis version of the EMD GP40-2. Production of the 16-cylinder 3,000 horsepower prototype began in 1972 and quickly became a popular replacement for first-generation diesels. Cotton Belt and Burlington Northern versions of the model will have an 88-inch nose and corrugated radiator grilles.

The run will include early production units with an 81-inch nose and chicken wire grilles decorated for Union Pacific, Chessie System/B&O, and Chessie System/B&O units leased to Santa Fe. Athearn DCC-ready locomotives feature Quick Plug technology with both 8- and 9-pin connectors for an aftermarket decoder. DCC models have a factory installed DCC decoder with SoundTraxx Tsunami2 sound.



Athearn's August 2018 release also will include a Genesis series 50-foot PC&F boxcar with Youngstown double plug doors. The HO scale model will have wire grab irons, etched metal coupler platforms, an etched metal running board, full underframe detail, and 70-ton roller bearing trucks with rotating axle caps. Road names will be Illinois Central (ex-SP) with a Hydra-Cushion slogan, Evergreen, and Southern Pacific.

A Southern Pacific car in Athearn's primed-for-grime paint with faded base colors is included in the release along with an SP maintenance-of-way car.



Athearn has included a 20,900-gallon tank car in its August 2018 production schedule. The HO scale ready-to-run model is based on a prototype built by Richmond Tank Car of Sheldon, TX. Heading the list of road names is the PROX Procor car shown. Additional schemes include ACTX Honeywell International, OWIX Old World Transportation LTD, PTLX Pullman Transport Leasing, TEIX Transportation Energy Inc, and UTLX Alberta. A unique Southern Pacific fuel tender is included in the release.

Depending on the practice of the prototype road, the tank car models will come with either 70-ton trucks with 33-inch wheels or 100-ton trucks with 36-inch wheels.

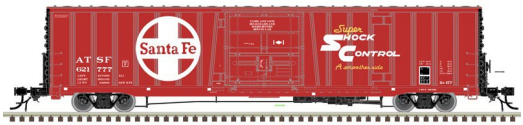
A new production run of 53-foot containers is scheduled for release next August. The containers feature ISO castings with openings for twistlock fasteners at each of the eight corners. Carrier names include CSX, CIMC-EMP, CIMC-Exel, and CIMC-Hub Group. The HO scale models will be available in 3-packs with different numbers.

Additional intermodal equipment coming from Athearn next August includes 53-foot container chassis available in 2-packs. Carrier names include Seacastle, Trac Intermodal, Trac Leasing, Trailer Bridge, Union Pacific, and Union Pacific (ex-BNSF) in primed-for-grime paint.

Roundhouse Brand models coming from Athearn next August include an EMD GP35 diesel locomotive. The model will be produced from tooling originally developed by Rail Power

Products. The HO scale model represents a phase 1a version of the prototype that was produced in 1963-64 with 36-inch open top radiators. Some road-specific details such as cab sunshades and snowplow pilots will vary depending on the road being modeled. Road names will be Milwaukee Road, Chicago & Eastern Illinois, Kansas City Terminal, Lycoming Valley, and two schemes each for Montana Rail Link and Western Pacific.

The release will include a BNSF locomotive in Santa Fe's blue and yellow scheme. This is a DC model with a Quick Plug for an aftermarket DCC decoder. For additional information on all Athearn and Roundhouse products contact a dealer or visit athearn.com.



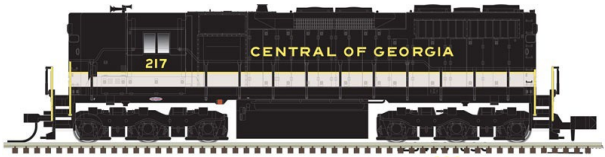
Atlas Model Railroad Company plans to release a brand new HO scale Master Line freight car model during the first quarter of 2018. The model will be a BX-177 boxcar with a single plug door framed by diagonal exterior bracing. The ready-to-run car will have trainline air hoses, etched metal crossover platforms, and 100-ton trucks fitted with 36-inch metal wheelsets. In addition to Santa Fe as shown here, the model will be available decorated in BNSF's swoosh scheme.

Atlas has scheduled another production run of its ACF 11,000-gallon tank cars for release during the first

quarter of 2018. Road names will be California Dispatch Line, Columbia Southern, Dow Chemical, DuPont, Olin Chemicals Division, PPG Chemicals, and Texas Natural Gasoline Corporation.

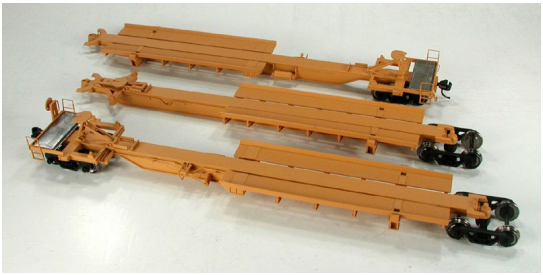
Included in Atlas' first quarter release of HO scale models is a group of new 45-foot containers. The ready-to-use containers are based on a prototype with beveled corrugated sides. In addition to Maersk, decorating schemes will include Matson, Sea Castle, and Triton. A total of four numbers will be available for each name. They will be sold in two-packs.

Atlas has announced new road numbers for its HO scale SD/SDP35 diesel locomotives. The HO scale ready-to-run model is based on a six-axle 2,500 horsepower prototype. Availability is targeted for the second quarter of 2018. Low-hood versions of the SD35 will be available decorated for Jersey Central, Conrail, Penn Central, Southern Pacific, and Chessie System-Western Maryland.



SD35s with high hoods will be available for Norfolk & Western and Central of Georgia. Atlas Master Silver series models will be available for DC operation. They will have an NMRA 8-pin plug for an aftermarket DCC decoder. Atlas Master Gold series models will have factory-installed ESU sound and DCC decoder. For additional information on all Atlas products contact a dealer or visit atlasrr.com.

Bachmann Trains is selling an HO scale 4-6-0 steam locomotive decorated for New York Central, Baltimore & Ohio, Canadian Pacific, Maryland & Pennsylvania, and Texas Pacific. The DC version of the Baldwin ten-wheeler has an 8-pin socket for an after-market DCC decoder. A DCC sound-equipped version is also available. For additional information contact a dealer or visit bachmanntrains.com.



New Trinity TTAX 53-foot spine cars are scheduled to arrive in November from **Bowser Trains.** Both three-unit FAF33 and five-unit TRAF53C car sets feature positionable hitches, and a diecast metal frame. Additional features include chemically etched walkways and 70-ton trucks with 33-inch metal wheelsets. For additional information contact a dealer or visit bowser-trains.com.

Broadway Limited Imports is selling HO scale versions of the Pennsylvania Railroad 6-8-6 class S2 steam turbine locomotive. Introduced in 1944, the prototype S2 had two steam turbines – one for each direction of travel. The S2 was to be a 4-8-4, but wartime restrictions on the use of light weight steel alloys forced the use of heavier materials resulting in a larger

locomotive and the need for six-wheel pilot and trailing trucks. The model is equipped with BLI's Paragon3 sound and operation system. The Rolling Thunder sound system features a synchronized turbine "woosh" sound rather than the staccato exhaust of traditional steam locomotives. BLI is offering the ready-to-run model in three versions: as delivered, with small smoke deflectors, and with large smoke deflectors as shown here. For additional information on all BLI products contact a dealer or visit broadway-limited.com.

ExactRail is offering an HO scale 64-foot Trinity TRINCool refrigerator car in two paint schemes. The Platinum series car features photo-etched stainless-steel brake platforms, brass bulkhead caps, and Kadee couplers. Twelve numbers each are available for Union Pacific/ARMN in the as-delivered paint job and in the circa-2014 repatch scheme. For additional details visit exactrail.com.

InterMountain Railway is booking reservations for a new production run of HO scale Santa Fe SFRD refrigerator cars. Delivery is expected in March or April of next year. Decorating schemes will include class Rr32 cars with a

straight-line system map on one side, with the opposite side displaying El Capitan, Super Chief, Grand Canyon or The Chief logos. Class Rr27 cars with a curved system map will be available decorated for The Scout and El Capitan.

A Ship & Travel slogan will be available on a class Rr21 reefer with a large Santa Fe cross herald (above) and on a class Rr23 Super Chief car. An undecorated kit with plastic wheelsets and no couplers will also be available. For information contact a dealer or visit intermountain-railway.com.

Imperial Hobby Products is selling components for an HO scale Canadian light rail vehicle (CLRV). The model is based on a prototype that entered service in Toronto in the late 1970s. The CAD-designed body consists of a cast resin shell. Available separately are 3D-printed parts for the roof, brake grids, and end skirts. Clear cast-resin parts for the curved end windshields are also available. The 3D-printed frame is compatible with a Bowser #125100 mechanism. Detailed 3D-printed truck sideframes are designed to fit Bowser trucks. Decals are available for Toronto Transportation Commission. For additional information visit ihphobby.tripod.com.

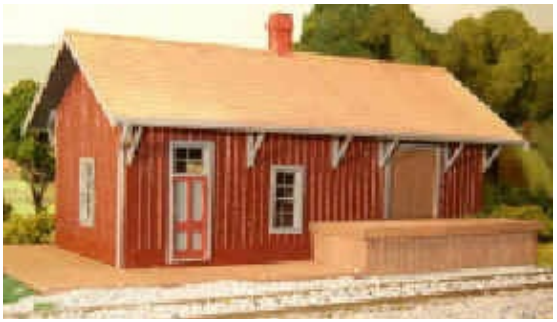
ITLA Scale Models is selling the Olympia Tool & Die Co., a wood building kit featuring tab and slot construction and modular part design. The kit can be assembled in at least 12 different

footprints. Each wall surface includes laser-etched brick details. The kit includes rear loading dock walls, separate rooftop and wall details such as vents and electrical meters, access stairs and entry doorways, and a billboard sign kit. For more information go to itlascalemodels.com.

Kadee Quality Products' year-end schedule includes the release of a PS-2 twin-bay covered hopper decorated for Minneapolis & St. Louis. The HO scale ready-to-run model is based on a prototype built in 1955 and repainted in the spring of 1974.

Also set for release in December is a Boston & Maine 50-foot PS-1 boxcar with a 9-foot Youngstown sliding door. Kadee is modeling the car as it was in 1977 after the running board was removed and the ladders shortened. All Kadee HO scale models come with Kadee couplers and two-piece self-centering trucks. For additional information contact a dealer or visit kadee.com.

Kana Model Products has an HO scaled laser-cut kit for a small town station named Meadowvale. The model is based on



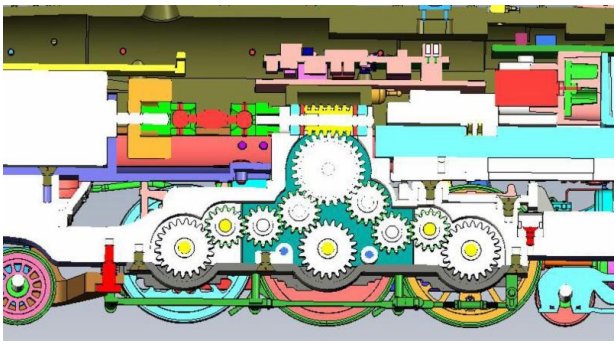
a prototype west of Toronto. The trackside platform was used to load freight onto express and other head-end cars in a branchline consist. The kit includes laser-cut walls, wainscot, cast windows, doors, and chimney; color-coded Mt. Albert Scale Lumber, and Campbell shingles. The finished model has a foot print of 7 x 4½ inches. For more information visit kanamodel.com.

Korea Brass USA is now shipping an HO scale DCC track cleaning engine. Constructed of diecast metal, the self-propelled track cleaning engine features a TCC decoder that controls engine functions and the top-mounted beacon, as well as turning the "vortex vacuum" on and off. In addition to the vacuum, the engine is equipped with two rare earth magnets for collecting ferrous objects and both abrasive and cloth cleaning pads. A demonstration video is at youtube.com/watch?v=ZBe5P3zJueQ and additional information is at korea-brass-usa.com.

Owl Mountain Models has introduced an HO scale kit for Harriman class F-50-10 and F-50-12 flat cars. The kit includes brass detail parts, Kadee couplers, and special weights. Options include K or AB brakes, and ABS molded T-section or U-section trucks

with metal wheelsets. The injection-molded model is based on a widely used Southern Pacific prototype built from 1916 to 1928. Many of the cars continued in MOW service until the late 1970s. White decals are available for Southern Pacific, Pacific Electric, Northwestern Pacific, Texas & New Orleans, and Galveston, Harrisburg & San Antonio. Black decals are available for SP MOW. To order visit owlmtmodels.com.

Work continues at **Rapido Trains** in bringing the Canadian Pacific Royal Hudson project to fruition. Concern for a smooth and powerful drive for the model steam locomotive prompted a major redesign to the chassis and drive system. At issue was the usual model steam locomotive problem of transferring power from the driven axle to the other axles through side rods. The inherent problem of loose rods or slight binding can cause lurching and uneven starts.



To preclude this problem from occurring initially or developing over time, Rapido has redesigned the drive mechanism to provide direct gear drive to all axles. This computer drawing illustrates the new drive arrangement. For additional information on all Rapido products contact a dealer or visit rapidotrains.com.

Studio Kits has introduced a Small Block Office Building kit. Representing a simple cinder block office building, the HO scale kit is constructed of resin, wood, and styrene strip, featuring commercial window and door castings. Suitable for any era from the 1940s to today, the finished kit measures 1½ x 2 inches. Figure not included. For more information visit studiodkits.com.

Tangent Scale Models has released another production run of PS-1 Mini-HyCube boxcars. Notable features on the HO scale model include separate underframe brake components with wire piping, narrow ladders and sill steps, trombone-style coupler lift bars, see-through crossover platforms, Barber 70-ton S-2-A roller bearing trucks with 33-inch machined wheels, and Kadee metal couplers. The ready-to-run model is available in six authentic decorating schemes including D&RGW as shown above.

Additional road names include a CB&Q 1970 Havelock repaint, two Burlington Northern schemes in Cascade Green (1973 and 1975), and two slightly different Illinois Central Gulf schemes. Tangent allows mixing for multiple car discounts on quantity purchases. For additional information visit tangentscalemodels.com.

Walthers is booking advance reservations for a Chesapeake & Ohio deluxe train set of seven cars decorated for the famous George Washington name train that operated between Washington D.C. and Cincinnati, OH. The cars in the deluxe sets will have factory printed names and numbers, LED interior lighting, and Preiser passengers and crew installed throughout the train. Availability is planned for late next January. Motive power will be provided by Proto EMD E8A and E8A-A diesel units in a choice of either DC or DCC with LokSound. All of the equipment will be decorated in the post-1954 George Washington livery.

In addition to the deluxe seven-car set, individual cars without lighting or passengers may also be reserved. They include a 70-foot heavyweight RPO-baggage car and an ACF heavyweight baggage car with an arched roof (above).

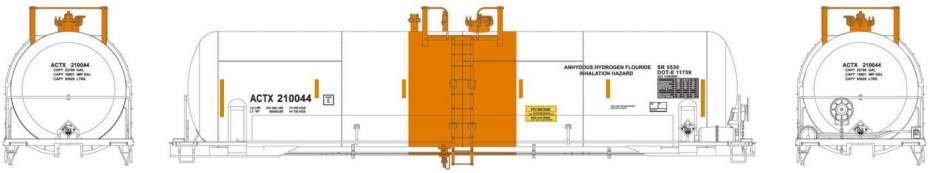
Lightweight 85-foot Pullman-Standard cars include a 52-seat coach with fluted skirts (above), a 10-6 sleeper (below), and a dormitory-diner (bottom).

The Pullman-Standard cars will be offered with and without fluted skirts. Some of the cars are already

sold out at Walthers but may still be available through selected dealers.

Walthers plans to release this Mainline series 39-foot Trinity 3281 cu.ft. twin-bay covered hopper car in December. Road names for the HO scale ready-to-run model will be WSOX-Wells Fargo First Union Rail, Union Pacific, CSX, General American, Norfolk Southern, and Trinity Industries Leasing. For more information on all Walthers products contact a dealer or visit walthers.com.

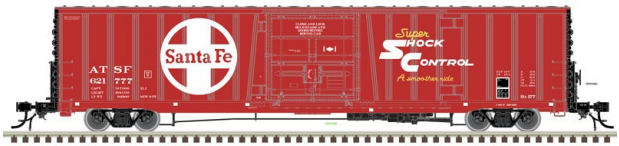
N SCALE PRODUCT NEWS



Athearn has included 20,900 gallon tank cars in its production schedule for release next August. The N scale ready-to-run models are based on a prototype built by Richmond Tank Car of Sheldon, TX. Leading the list of road names is the ACTX Honeywell International car shown here. Additional schemes include OWIX Old World Transportation LTD, PROX Procor, PTLX Pullman Transport Leasing, TEIX Transportation Energy Inc, and Southern Pacific fuel tender.

Completing the release is a UTLX Government of Alberta car. Depending on the practice of the prototype road, the N scale models will come with either 70-ton trucks with 33-inch wheels or

100-ton trucks with 36-inch wheels. For additional information on all Athearn products contact a dealer or visit athearn.com.



Atlas Model Railroad Company plans to release a brand new N scale freight car model during the first quarter of 2018. The Master Line model will be a BX-177 boxcar with a single plug door framed by diagonal exterior bracing. The ready-to-run model will have trainline air hoses, etched metal crossover platforms, and 100-ton trucks fitted with 36-inch metal wheelsets. In addition to Santa Fe as shown here, the model will be available decorated in the BNSF swoosh scheme.

Atlas has scheduled another production run of its ACF 11,000 gallon tank cars for release during the first quarter of 2018. Road names for the N scale models will be PPG Chemicals, California Dispatch Line, Columbia Southern, Dow Chemical, DuPont, Olin Chemicals Division, and Texas Natural Gasoline Corporation.

Included in Atlas' release of N scale models during the first quarter of 2018 is a group of new 45-foot containers. The ready-to-use models are based on a prototype with beveled corrugated sides.

In addition to the Seacastle scheme shown here, the containers will be available decorated for Maersk, Matson, and Triton. A total of four numbers will be available for each name. The models will be sold in two-packs.

Atlas has announced new road numbers for its N scale SD/SDP35 diesel locomotives. The ready-to-run model is based on a six-axle 2,500 horsepower prototype. Availability will be during the second quarter of 2018. Low-hood versions of the SD35 will be available decorated for Jersey Central, Conrail, Penn Central, Southern Pacific, and Chessie System-Western Maryland.

SD35s with high hoods will be available for Norfolk & Western and Central of Georgia. Atlas standard models will be available for DC operation. Atlas Gold series models will be available with factory installed ESU sound and DCC decoder. For additional information contact a dealer or visit atlasrr.com.

InterMountain Railway is booking reservations for a new production run of N scale Santa Fe SFRD

refrigerator cars. Delivery is expected in March or April of next year. Decorating schemes will include class Rr32 cars with a straight line system map on one side with the opposite side displaying Super Chief, El Capitan, Grand Canyon and The Chief. Class Rr27 cars with a curved system map will be available decorated for The Scout and El Capitan.

Ship & Travel slogans will be available on a class Rr21 reefers with a large Santa Fe cross herald (above) and on a class Rr23 Super Chief car. An undecorated kit with plastic wheelsets and no couplers will also be available.

InterMountain Railway has assumed responsibility for completing the N scale Tier 4 GEVO project originally launched by Matt Gaudynski of Fox Valley Models. Matt was forced to put a hold on the project due to serious family health issues. InterMountain expects to have the first release ready next spring. Road names will be BNSF, new image ER44C4; Canadian National EF-644t, CSX ER44AH, Union Pacific C45AH, Norfolk Southern, and Navajo Mine Railroad. For additional information on all InterMountain products contact a dealer or visit intermountain-railway.com.

Micro-Trains Line has launched a new series of N scale 36-foot wood reefers decorated for Heinz products. As shown here, the initial release promotes preserved cherries and apple butter.

Micro-Trains has released an N scale model of this 56-foot 20,427 gallon general service non-insulated tank car. The ready-to-run model rides on Barber roller bearing trucks.

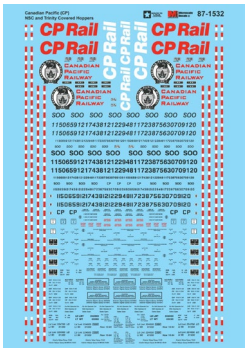
This 33-foot Atlantic Coast Line twin-bay open hopper is based on a composite war-emergency car built by Bethlehem in 1943. For additional information on all Micro-Trains Line products contact a dealer or visit micro-trains.com.

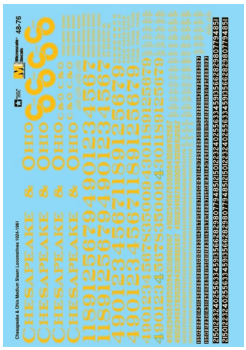
ScaleTrains.com is selling N scale Union Pacific pre-2006 water tenders. The Rivet Counter series models represent old tanks from GTEL turbine locomotives that were later refurbished as auxiliary tenders for excursion steam locomotives. Although similar, each of the 24,000 gallon tenders have unique details. For information on all ScaleTrains.com products visit scaletrains.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

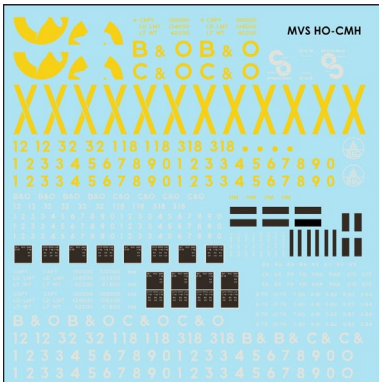
Chooch Enterprises has introduced a series of 15 translucent acrylic paints that are designed for use as washes over normal

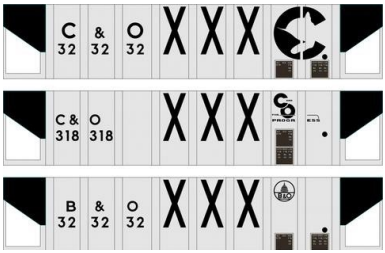
base colors. The colors may be diluted with water for any desired intensity. Chooch is selling the paint grouped in 5-packs that are identified as Rainbow First Coats, Weathering First Coats, and Weathering Earthtones. The product line was developed in cooperation with American Paint Company. For complete information visit choochenterprises.com/paints.html.





Microscale Industries has released new lettering sets for Canadian Pacific NSC and Trinity covered hopper cars, and Chesapeake & Ohio steam locomotives. The water slide decals are available in N, HO, and O scale. For additional information contact a dealer or visit microscale.com.





Mount Vernon Shops has released a set of HO scale decals for the Chessie System Moonshine Hoppers.

Although banned from interchange in the late 1970s, the cars remained in on-line service on the Chessie System. The hoppers received yellow ends and three large yellow "X's" on their sides. They also received modern data stenciling but no ACI labels. Each decal set has sufficient material to decorate two cars. The set is appropriate for the Train-Miniature/Walthers eight-panel twin-bay hopper car. For more information go to mountvernon-shops.com.

Send us your product announcements

If you are a hobby manufacturer with a product announcement, just click here and submit your announcement to us. Our web site and free magazine reach continues to grow, so get on board this new media train! ■

DISCLAIMER .....

The opinions expressed in this column are those of the writer and do not necessarily reflect the opinion of *Model Railroad Hobbyist* or its sponsors. Every effort is made to provide our readers with accurate and responsible news and information, however, neither *Model Railroad Hobbyist* or the writer of this column can be held responsible for any inaccuracies or typographical errors that may inadvertently appear in this column.

Briefly noted at press time ...

Bowser has released its Montreal Locomotive Works M636 diesels to dealers. Decorating schemes for the HO scale locomotive include multiple versions of CN, CP, Cartier, FCP, and D&L. The release includes both DC and DCC LokSound version ...

InterMountain Railway plans to make another production run of both HO and N scale Southern Pacific cab forward locomotives for release early next summer. Four numbers each will be available for 4-8-8-2 class AC-11 and AC-12 locomotives. Models will be available for analog DC operation as well as with factory installed DCC and DCC with sound ...

Kato has scheduled another production run of its GE P42 Genesis locomotive for release next February. The N scale model will be decorated in Amtrak's Phase V scheme. Also due in February are aluminum autoracks in Amtrak's 1990s Phase III scheme ...

Mask Island Decals has released lettering sets for Litchfield & Madison, KO&G, MP, and T&P hopper cars ...

Sunset Models is producing HO scale Harriman heavyweight passenger cars. The injection molded plastic models include a baggage car, RPO, coach, lunch car, and open-end observation. Road names on the initial release will be Union Pacific, Illinois Central, CB&Q, Rock Island, Santa Fe, and three Southern Pacific schemes ...

SELECTED EVENTS

October 2017

(Please note that many events charge a fee. Check individual info website for details.)

CANADA, ALBERTA, October 28, Fall Swap Meet, sponsored by Mainline Model Railroaders Fellowship, at Central Lions Senior Recreation Centre, 11113-113 Street. Info at mmrf.ab.ca/fall_swap_meet.

CALIFORNIA, OCEANSIDE, October 14, Train Show, Swap Meet & Family Picnic, sponsored by the North County Model Railroad Society, at Heritage Park, 220 Peyri Drive. Info at swap-info@ncmrs.org.

COLORADO, COLORADO SPRINGS, October 28-29, Train Expo Colorado. Mail to: Chapel Hills Mall Event Center, 1710 Briargate Boulevard. Info at tecoshow.org.

ILLINOIS, LISLE, October 26-28, Chicagoland RPM (formerly known as Naperville RPM), at Sheraton Hotel and Conference Center. Event hosted by Mike Skibbe and co-sponsored by NMRA. Info at rpmconference.com.

MASSACHUSETTS, BOXBOROUGH, October 14-15, 53rd Annual Railfair sponsored by Nashua Valley Model Railroad Association, at Boxboro Regency Hotel, 242 Adams Place. Info at nvrra.com.

MASSACHUSSETTS, HINGHAM, October 28-29, Model Railroad Show & Open House, sponsored by South Shore Model railway Club & Museum, at 52 Bare Cove Park Drive. Info at ssmrc.org/FallFlyer.pdf.

MICHIGAN, WYOMING, October 14, Grand River Valley Railroad Club Fall Train Show, at Home School Building, 5625 Burlingame Ave. Info at grandrivervalleyrrc.org/shows.html.

MINNESOTA, WOODBURY, October 14, Newport Model RR Club Flea Market, Woodbury High School, 2665 Woodlane Dr. Info at newportclub.us.

MISSOURI, KIRKWOOD, October 7-8, 27th Annual Greater St. Louis Metro Area Train Show, at Kirkwood Community Center, 111 S. Geyer Road. Info at seetrains.com.

MISSOURI, LAPLATA, October 21, Silver Rails Model Train Show, Silver Rails Event Center, 204 East Moore St. Info at aprhf.org/2017/02/08/silver-rails-model-train-show-2017.

NEBRASKA, BEATRICE, October 21-22, Model Train Show at City Auditorium, 205 North 4th. Sponsored by Beatrice Area Railroad Enthusiasts. Info at trainweb.org/barerr.

NORTH CAROLINA, WINSTON-SALEM, October 20-21, RPM Carolinas School of Railway Prototype Modeling, 1450 Fairchild Road. Info at sissonstony.wixsite.com/rpm-carolina.

PENNSYLVANIA, HARRISBURG, October 12-15, NMRA Mid-Eastern Region Convention, info at mer2017.org.

SOUTH CAROLINA, COLUMBIA, October 14, Model Train Show, at Jamil Shrine Temple, 206 Jamil Road. Info at southcarolinatradeshows.com.

WASHINGTON, CHEHALIS, October 14-15, Fall Swap Meet & Train Show, sponsored by Lewis County Model Railroad Club, at Southwest Washington Fair Grounds, Blue Pavilion Building, 2555 North National Avenue. Request info from tedstrains@lewiscounty.com.

November 2017

CALIFORNIA, ROSEVILLE, November 11-12, International Railfair at Placer County Fairgrounds, 800 All American City Boulevard. Info at internationalrailfair.com.

CALIFORNIA, SIMI VALLEY, November 4, Swap Meet, sponsored by Santa Susana Railroad Historical Society, at 6503 Katherine Road. Info at santasusannadepot.org/Clubhome.html.

LOUSIANA, METAIRIE, November 25, Open House at Crescent City Model Railroad Club, 601 North Lester Avenue. Info at ccmrc.com.

MICHIGAN, ANN ARBOR, November 26, Southeast Michigan Model Railroad Flea Market & Show, sponsored by Rails on Wheels, Washtenaw Farm Council Grounds, 5055 Ann Arbor-Saline Rd. Info at railsonwheels.com/index.shtml#trainshow.

MICHIGAN, EAST LANSING, November 5, Lansing Model Railroad Club Show & Sale, at Michigan State University Pavilion, 4301 Farm Lane. Info at lmrc.org.

MISSOURI, TOWN AND COUNTRY (CHESTERFIELD), November 4, NMRA Gateway Division, Model Train Show and Contest, at Trinity Lutheran Church, 14088 Clayton Road. Info at gatewaynmra.org/st-louis-train-show.

NEW JERSEY, SCOTCH PLAINS, November 4-5, 2017 Garden State RPM, at the Union County Vocational-Technical School, 1776 Raritan Rd. Info at gsrpm.org.

OHIO, SPRINGFIELD, November 4-5, 42nd Annual Dayton Train show sponsored by NMRA Division 3 at Upper Valley Mall, 1475 Upper Valley Pike. Info at daytontrainshow.com.

OREGON, ADAIR VILLAGE, November 25-26, December 2-3, Open House sponsored by Corvallis Society of Model Engineers, at 7155 NE Vandenburg Avenue. Info at csme1959.org/events.html.

PENNSYLVANIA, ALTOONA, November 2-3, Fine Scale Model Railroad Expo, at Blair County Convention Center. Details at modelrailroadexpo.com.

RHODE ISLAND, NEWPORT, November 9-12, NMRA Northeastern Region Convention, at Atlantic Resort Newport. Info at newport2017.org.

SOUTH CAROLINA, NORTH CHARLESTON, November 18-19, 6th Annual Train Show, sponsored by the Charleston Area Model Railroad Club, at Danny Jones Armory Park, 5000 Lackawanna Blvd. Info at chamrc.com.

TEXAS, BULVERDE, November 11-12, The Enjoyment of Model Railroading, presented by San Antonio N-Trak Association at Bulverde Spring Branch Library, 131 Bulverde Crossing. Info at santrak.org.

UTAH, SANDY, November 11-12, Intermountain Train Expo, hosted by NMRA Northern Utah Division, at South Towne Expo Center, 9575 South State Street. Info at intermountaintrain-expo.com.

WASHINGTON, KENT, November 11, Annual Swap Meet, sponsored by Boeing Employees Model Railroad Club, at 525 4th Avenue North. Info at swapmeet@bemrrc.com.

WISCONSIN, WEST ALLIS (MILWAUKEE), November 11-12, Trainfest, , sponsored by NMRA WISE Division, at Wisconsin State Fair Park, 8200 West Greenfield Ave. Info at trainfest.com.

Future 2017, by location

NEW JERSEY, EGG HARBOR TOWNSHIP, December 9-10, Train Show sponsored by Shoreline Model Railroad Club, at Atlantic Christian School, 391 Zion Road. Request info from Dennis Weiss at trains1971@comcast.net.

NEW YORK, ALBANY, December 3, Annual Great Train Extravaganza, at Empire State Convention Center. Info at gtealbany.com.

Future 2018, and beyond

MISSOURI, KANSAS CITY, August 5-12, 2018, NMRA National Convention and National Train Show. Host hotel is Westin Kansas City at Crown Center. Info at kc2018.org.

UTAH, SALT LAKE CITY, July 7-13, 2019, NMRA National Convention and National Train Show. Host hotel is Little America Hotel. Info at nmra2019slc.org.

MISSOURI, ST. LOUIS, July 12-18, 2020, NMRA National Convention and National Train Show. Host hotel is Hilton St. Louis at the Ballpark. Info at gateway2020.org.

CALIFORNIA, SANTA CLARA, 2021, NMRA National Convention and National Train Show. ■

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REVERSE RUNNING

commentary

Joe Fugate

Click here for reader comments

Are we making the hobby too complicated?

As I look at the "ever more realistic"

trend in the hobby, I have started to wonder if we make the hobby too complicated for newcomers.

As I look through magazine back issues from the days I first got into the hobby (the 1960s), I notice a lot of writing about the hobby focused on just having fun.

These days, it seems to have changed. The prototype modeling trend has taken hold and unless you're modeling a prototype line accurately, there is a trend to label you a "second class" modeler.

How are uninformed newcomers to measure up? They come online and proudly show us their work – we either yawn because it's so generic/simplistic, or we pick it apart because it's not quite prototypically accurate. If you're modeling generic trains, or not modeling a precise time period, then you're not a "serious" modeler.

▶ STEPPING OUTSIDE THE BOX WITH A CONTRARY VIEW

For example, I've seen discussions on modeling an era correctly. If you take a loose approach with things generally from the 1950s (if it was correct for 1950 to 1959, then it's fine for your layout), then some of the "serious" modelers say "you're actually modeling late 1959, but you're doing a real poor job of it."

How's that for encouraging a hobby newcomer to have fun with trains? Talk about throwing cold water on a perfectly legitimate modeling approach by sounding judgmental!

Perhaps it's time we stop trying to put so much of a "super serious" spin on how we look at the hobby. How about we avoid "good vs bad" terminology in our discussions of how to approach the hobby?

Just because *you* want to model generally in the 1950s instead of doing something more precise, who is to say that's "poor" modeling? In the hobby publications from the 1960s, the focus was more that the various ways of doing the hobby were all good, just different.

Another area of concern has to do with operations. If you're "just running trains" for fun, then you're just a casual hobbyist! You need to be using a prototype-based car routing system and prototype-based operations paperwork to be a serious model railroader!

My greatest fear is we're getting so picky by defining a "good" versus a "poor" approach to the hobby that we're driving would-be hobby newcomers away by making the hobby feel too complicated and involved.

What happened to appreciating the fun of model railroading however someone may elect to enjoy it, even if it doesn't happen to be exactly how *you* prefer to do the hobby?

And what about moving away from judgmental wording that is self-serving, such as the era-modeling discussion above? Enough with the "poor modeling" rhetoric that neatly puts how *I choose* to do the hobby on a pedestal and puts down everyone else's approach.

Maybe it's time we all remember our roots in the hobby and appreciate that just having fun with trains can be great too?

By remembering that it's really about fun, whether simple or complex, we can encourage more hobby newcomers. ☑

DERAILMENTS

The worst derailments on Train Mountain

In this fun video, we see the final run day at Train Mountain during their Narrow Gauge Meet in 2016. In particular, the video highlights the derailments on this huge live-steam sized railroad!

Howl-o-ween train jokes ...

Q. Why do you have to wait so long for a train on Halloween?

A. Don't you know? On that day, there is only skeleton service.

Q. What did the monster say when he saw a train full of passengers?

A. Arrrggr, a chew-chew train, yummy! ■

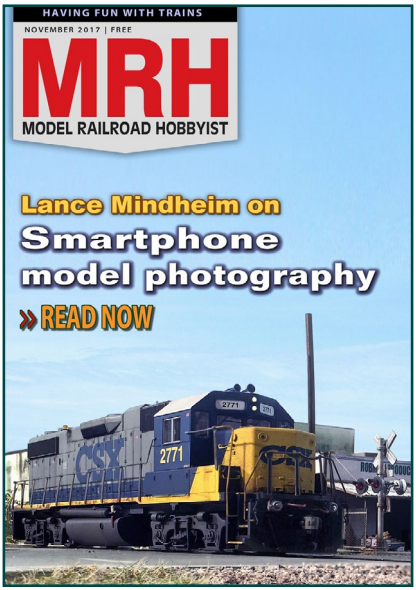
BIZARRE FACTS AND HUMOR (SUPPOSEDLY)

Off the rails ...

Get paid ...

If you're the first to submit a bit of good humor or bizarre facts and we use it, it's worth $25! Just send to derailments@mrhmag.com ■

Coming next issue ...

- Lance Mindheim on railfan-view model photos with a smartphone.
- Using craft paints to replace Floquil weathering colors
- Building Caso station
- Modeling timber cars
- Southern North Shore track plan
- And lots, *lots* more!

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