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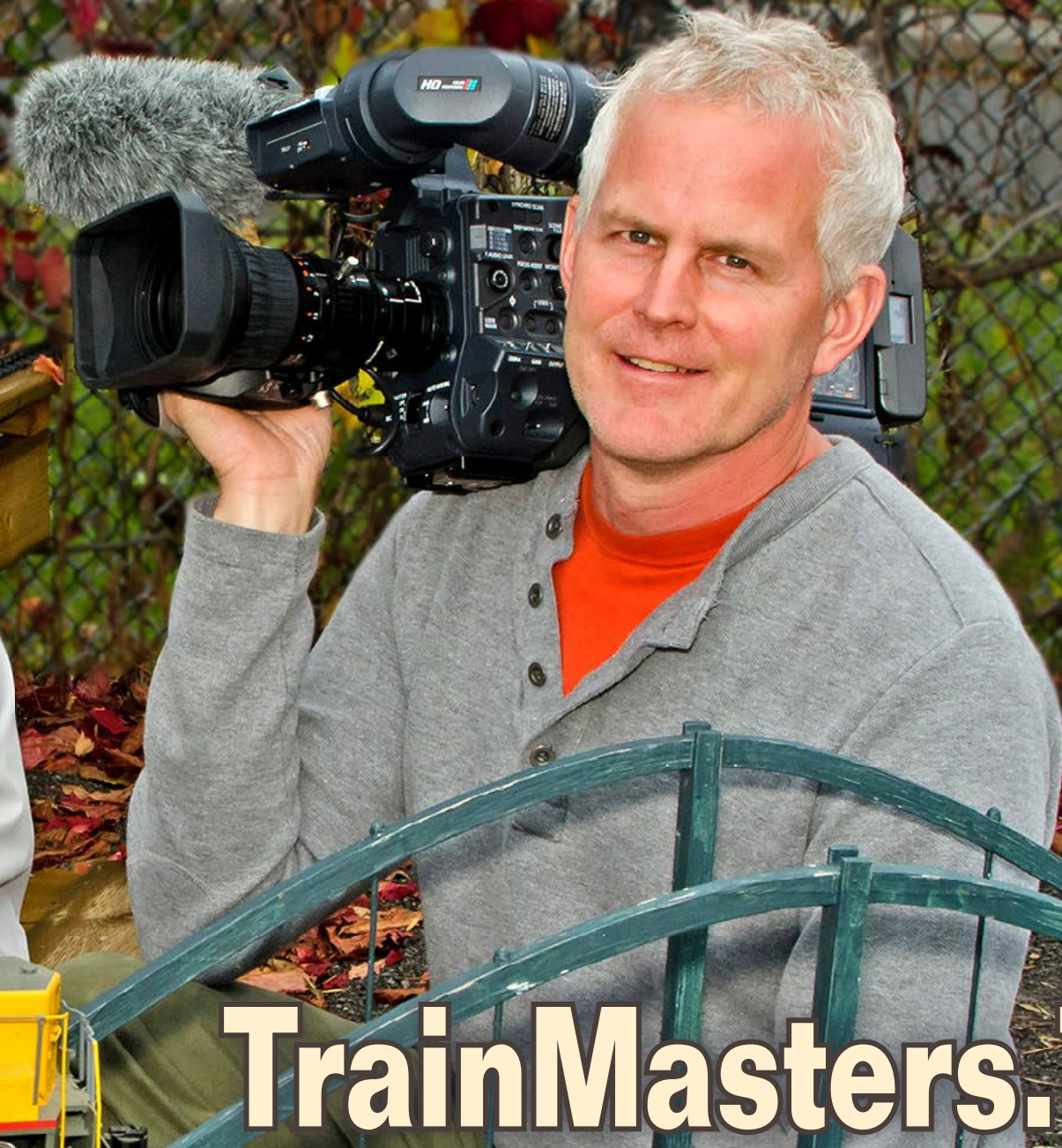
Model Railroad Hobbyist magazine™



December 2013

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MRH-Dec 2013



Model Railroad Hobbyist magazine™

Issue 46

Front Cover: Barry Silverthorn, TMTV executive producer (right) and Barry Birkett (left), garden railroader star of *Barry's Backyard* on TrainMasters TV. Read more about TMTV in this issue's cover story.



ISSN 2152-7423

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Les Halmos, Modular railroading
Ken Patterson, Reporter at large
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Issue password: Dec2013

Cover and MRH masthead



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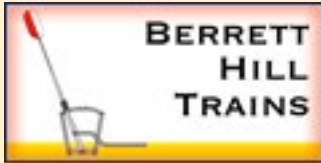
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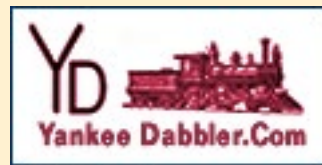
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MRH introduces TrainMasters TV

by Joe Fugate



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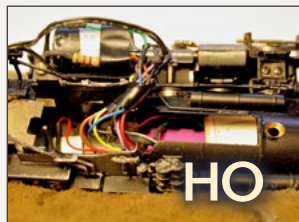
by James McNab



Yes, it's a model

MRH's great modeling photo feature

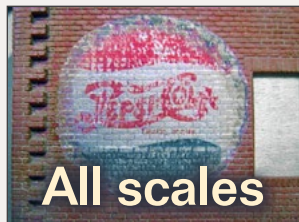
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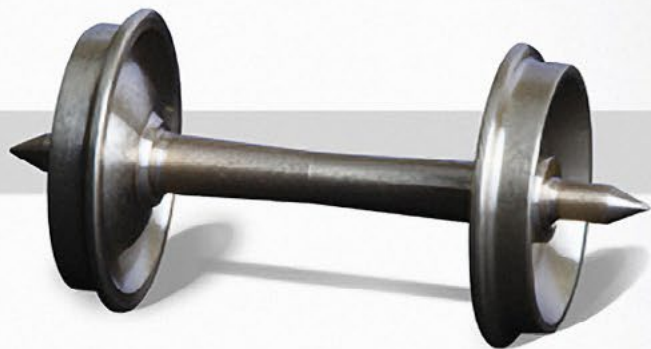




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COMING SOON



MRH in the TrainMasters era

What TMTV means to MRH readers



Publisher's Musings editorial
by Joe Fugate



The cover story this issue talks about our new premium video offering for model railroaders, TrainMasters TV. To learn more about TMTV, turn to the cover story.

For this editorial, I want to talk about what TrainMasters TV means to MRH readers. Even if you never become a TMTV subscriber, would that affect you as a reader of MRH?

Some of you may be wondering if this means we'll siphon off the best of the free MRH videos and now make you pay for them on TrainMasters? Or does this mean MRH won't get the attention it used to get because it's now the poor (free) step-child of TMTV?

No on both counts. Barry Silverthorn, the executive producer of new content production for TMTV, is staffing it completely separate from MRH so that does not happen. Also, Barry is charged with producing all-new content for TMTV. We won't suddenly be taking the video content in MRH and putting it only on TMTV instead.

TMTV subscribers may get advance sneak peeks at some MRH video content, or they may get feature length video versions of

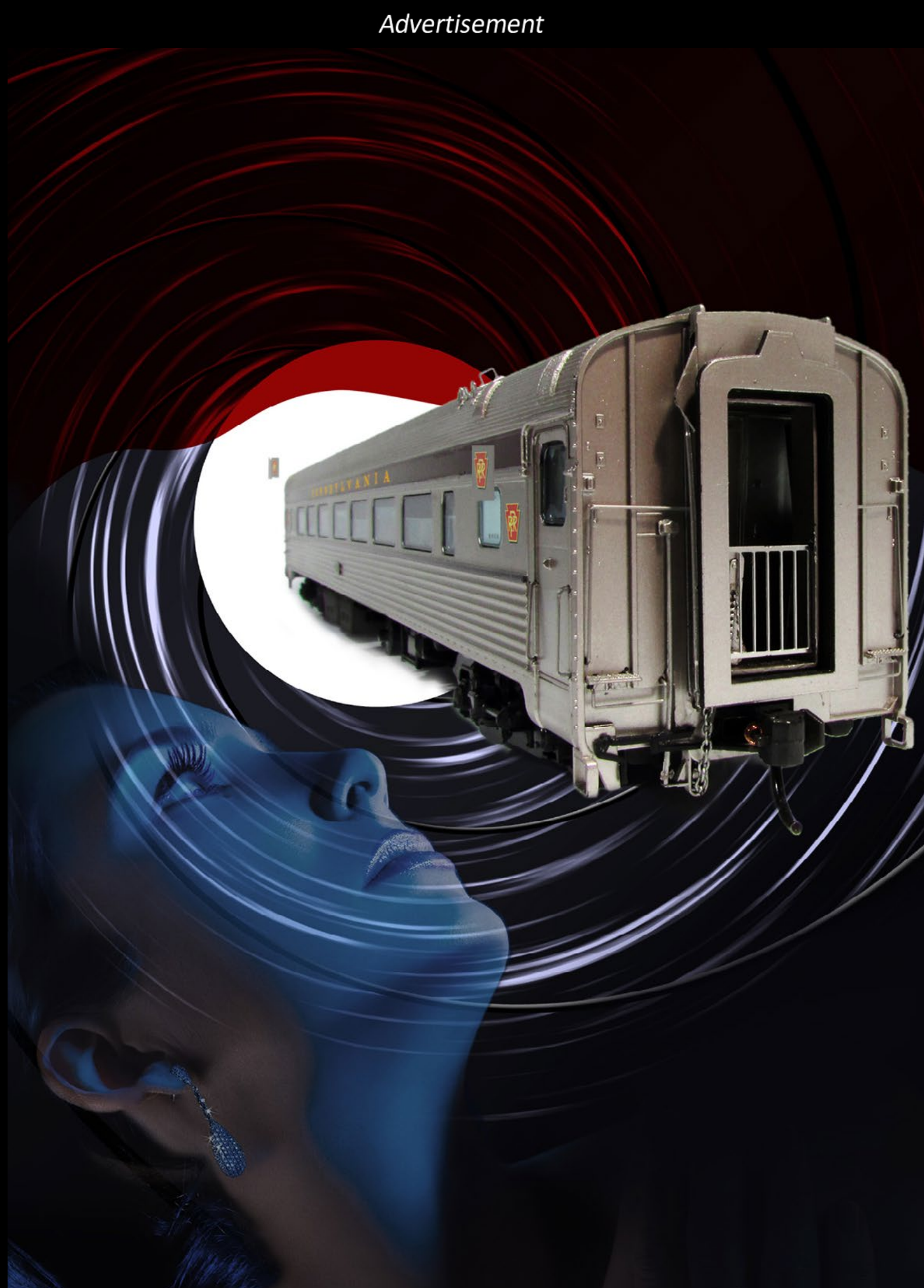
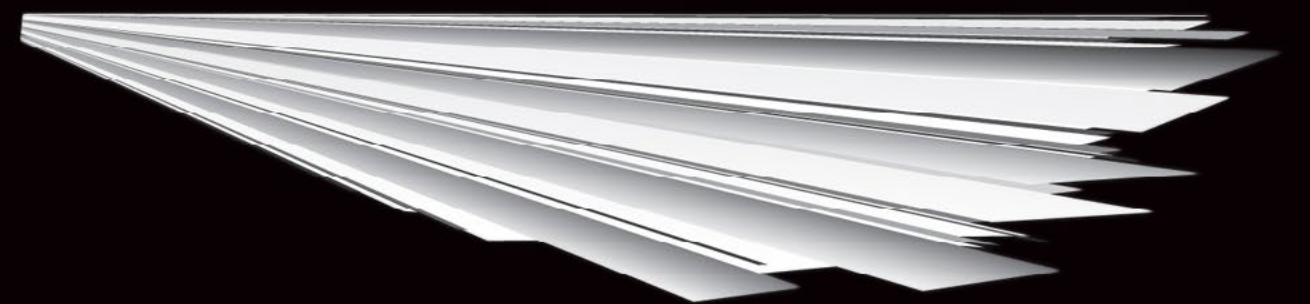


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About The Show

Every year late in January or early in February, the Amherst Railway Society holds its Railroad Hobby Show at the Eastern States Exposition Fairgrounds (The home of The Big E) in West Springfield Massachusetts. More than 25,000 railfans and public attended the Show each of the past three years.

The event features real life railroads and scale model railroads, historical societies, travel agencies, art shows, flea market dealers, importers, manufacturers and photographers. You have to see it to believe it!



MRH video content that we paid to have produced specifically for TMTV.

More likely the reverse is going to happen. MRH readers will reap benefits from TrainMasters TV that they otherwise would not get.

For instance, we travelled to Mike Confalone's this last summer to do a several TrainMasters TV feature-length videos on Mike's Allagash Railway layout. These videos include an hour-long interview with Mike on how he designed, built and runs the Allagash, plus two Ops Live DVDs of his 6+ hour long op session.

We'll be pulling some of this footage to go with our 5th Anniversary "Allagash Bash" cover story in the January 2014 issue of MRH. This is footage we simply may not have had, but thanks to TrainMasters, a special field trip to Mike's place, we now have over 6 hours of raw footage to draw from.

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MRH readers who never subscribe to TMTV are already reaping the benefit of TMTV because of all this extra material to draw from, and we expect this cross-over benefit to continue.

Really, the cross-pollination goes both ways. I can envision a really good article leading to a whole series of high quality how-to videos on TMTV, and I can also see an interesting TMTV guest leading to new articles from that guest in MRH.

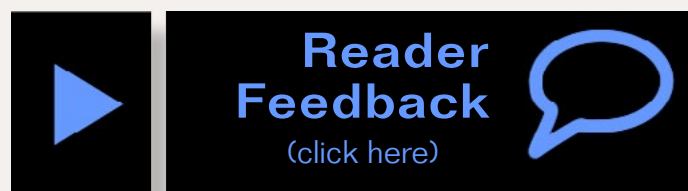
And lest we forget the business side of things, a percentage of the TMTV revenue is going into the MRH general fund (since MRH is the exclusive distributor of TMTV videos), further ensuring a strong future for your favorite digital model rail-roading magazine!

So that's what TrainMasters TV will mean to MRH readers. It's a completely different company with its own staffing and production. It just happens to have the MRH branding for distribution. Where cool things show up on TMTV, you can expect some slop over into the magazine.

I expect the net effect will be to improve MRH, with an even richer assortment of content coming your way, thanks to TMTV doing the legwork to cultivate it.

If anyone has any further questions about what, if anything TMTV will mean to MRH readers, I'm happy to answer them on the comment thread for this editorial.

Look for our 5th Anniversary issue in January. It's shaping up to be a really fun issue!



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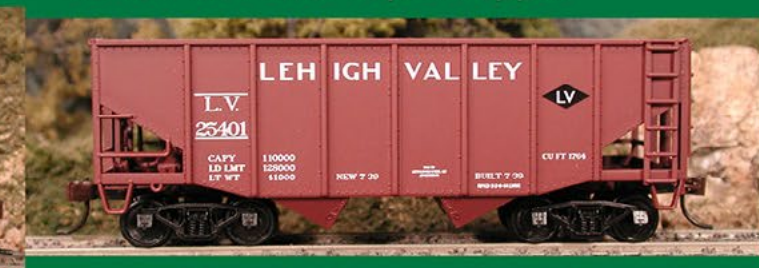
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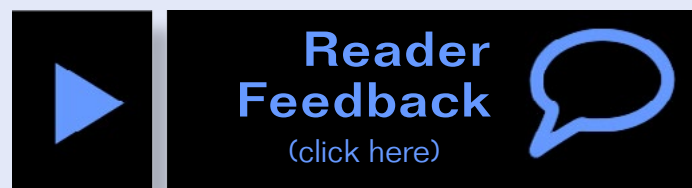
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Notes from the MRH STAFF

Merry Christmas from MRH, “Yes, It’s a Model,” dropping the fires on steam, and more ...



We want to wish you all a Merry Christmas and to thank you again for being an MRH reader. May you all have a blessed and prosperous 2014!

It’s hard to believe that this January we will be celebrating five years of publishing MRH. It has been an amazing ride, starting from our humble beginnings as a quarterly publication the first year, bi-monthly the second, and monthly the third year. After that we published our first e-book and now have started TrainMasters TV. Taking time to reflect, that’s a lot of ground covered in a relatively short time.

We are excited this all has been accomplished with a part-time staff (yes, we have “real jobs”, other sideline businesses to run, or are semi-retired), and maintained bringing a free publication for you. We are totally advertiser-supported, so when you make a purchase from one of our advertisers, let them know you saw their ad in MRH. It benefits us all.

So where do we go in the next five years, you ask? That’s a good question.



Nov 2013 MRH Ratings

The five top-rated articles in the [November 2013](#) issue of MRH are:

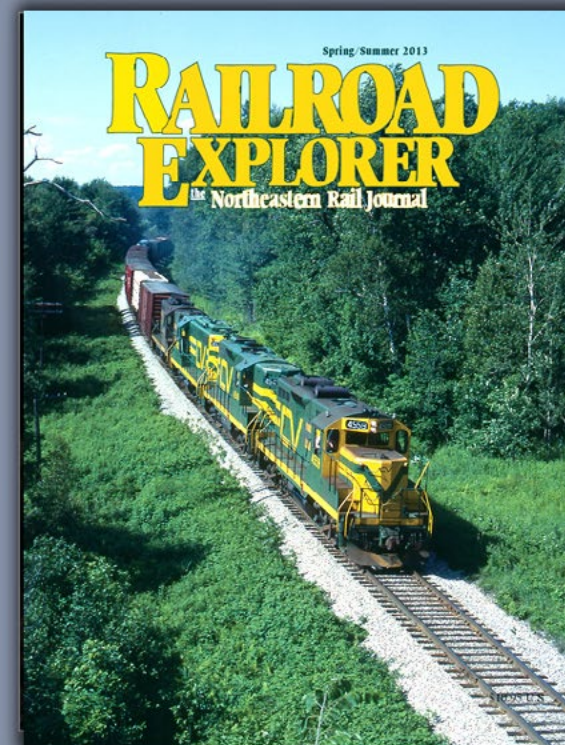
- 4.8 Build a shoofly scene
 - 4.5 Modelers guide to freight car hand brakes
 - 4.5 Modeling a DT&I Hydroframe-60 box car
 - 4.5 Yes, it’s a model
 - 4.4 DCC short circuit detection
- Issue overall: 4.6

Please rate the articles!

Click the reader feedback button on each article and select the star rating you think each article deserves. ***Thank you!***

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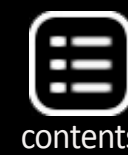
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It is our goal each month to deliver to you the best model railroading magazine available, while never losing sight of the hobbyist portion of our focus.

We will continue working on your behalf to find the best hobby content available. To do that, we need modelers to keep submitting articles for consideration. We also need your continued feedback through the comment button on each article as well as your input on the MRH forum. These critical tools help us keep our fingers on the pulse of the hobbyist.

While we can't know the future for certain, we are always watching for new hobby developments and insights.

We plan to do more eBooks, so if you have any topic ideas, check with MRH about us publishing an eBook on that topic.

In 2014, we are planning to roll out a newly updated MRH website, that's fully mobile enabled and has more features.

Also coming is what we're calling the "MRH Store."

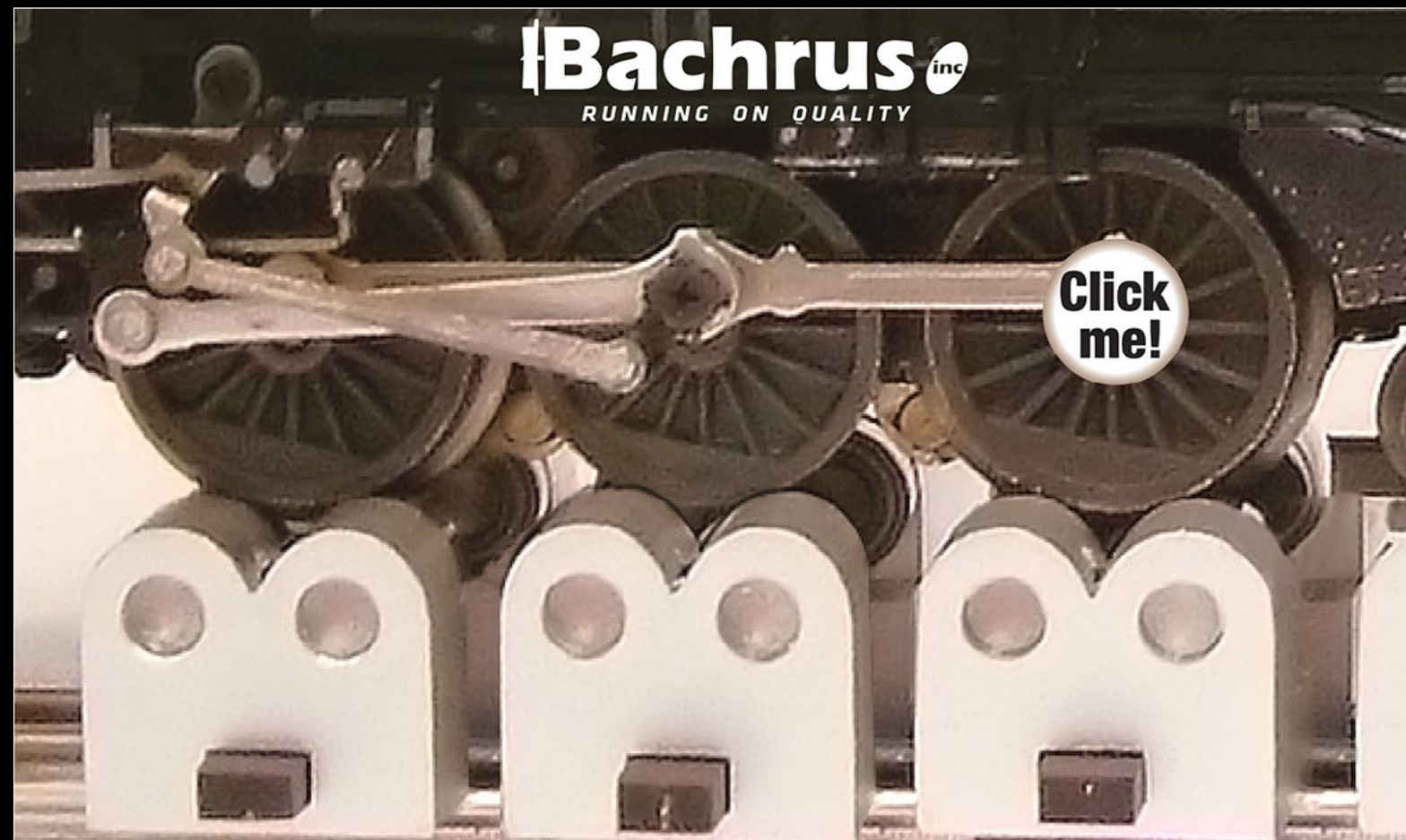
Some of you have expressed interest in MRH T-shirts, hats, and mugs. We're thinking about making these items available. A lot depends on us finding the right company to produce quality products at reasonable prices.

Model Railroad Hobbyist as a brand name has a lot more recognition than Model Trains Video, our parent company name. So as part of the coming changes, we'll be merging Model Trains Video into the MRH website as the new MRH store.

We're excited to continue serving our fellow modelers, and we count our selves blessed to be a part of such a great hobby family.

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RUNNING ON QUALITY



Yes, it's a model

For *Yes, it's a model*, ever wonder how we choose the photos or where we find them? Most of the photos used come from the regular weekend photo fun threads on the MRH forum. There are many great photos posted each weekend, more than we can ever publish each month. So do yourself a favor and check it out!

What does it take for a photo to make the cut? Assistant editor Don Hanley makes the final decisions, so we asked him. Here is what he said:

"I am looking for photos that have good composition and interesting subject matter. The picture needs to be believable and realistic, reminiscent of something that I could see on the prototype. The best photos tell a story without a

caption. The pictures that come to the top are often those that are the simplest.

*The picture needs to be well lit, in focus, and the modeling work needs to be of good quality. If the picture misses the mark on any of these it likely won't be chosen. I want to honor the best of the best in *Yes, it's a model*.*

*Then there's the **wow factor**. I can't explain it any other way. There have been some photos posted that just take your breath away. These photos hit the mark on composition, lighting, subject, simplicity, great modeling skills, and the picture tells the story. Any caption is just the icing on the cake.*

I also watch for pictures that can have a funny caption added as our finale to add a bit of humor and keep things light hearted. It's important to be able to laugh at ourselves sometimes. So if I pick a photo for the offbeat finale,

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consider it a honor, as that's what it's meant to be.

Finally, I like to present photos from many modelers. There are some who post excellent pictures on a regular basis to the weekend photo thread, and it would be easy to use photos from the same small select group of modelers every month. However if I did that, you'd start to think the MRH photo section has become a good-ole-boys club.

So I make a very conscientious effort to avoid picking images from the same modelers for Yes, it's a model. We encourage more of you to post to the weekend photo fun threads to keep that from happening. I want to encourage more of our readers to post their photos in the weekend photo fun thread on the MRH website and make my job of picking the photos more 'challenging' ..."

Dropping the fires?

We've received some emails from some of our readers who feel that MRH has dropped the fires on steam locomotives, in other words, we're running too many diesel era articles and not enough steam material.

Publisher Joe Fugate asked about steam locomotive articles on the MRH forum thread at mrhmag.com/node/15919. The answers cover a wide range of thoughts from "yes, we definitely need more" to "I hadn't noticed".

We would love to publish more steam locomotive articles. There is something fascinating about watching a steam locomotive operate on the layout even if you are a diesel fan.

A part of the fascination is the variety of steam locomotives along with all of the



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moving parts. So, that being said, who is willing to take up the flag and submit an article?

Here are some possibilities:

- Modifications necessary to convert an existing steam locomotive into a specific class or sub-class of locomotive, such as adding a different tender or details to a locomotive.
- Upgrading an existing locomotive and improving its operations
- Modifying and upgrading an old brass steam locomotive to today's standards
- Painting as well as weathering a steam locomotive.
- How to tune-up a steam locomotive for flawless operation.

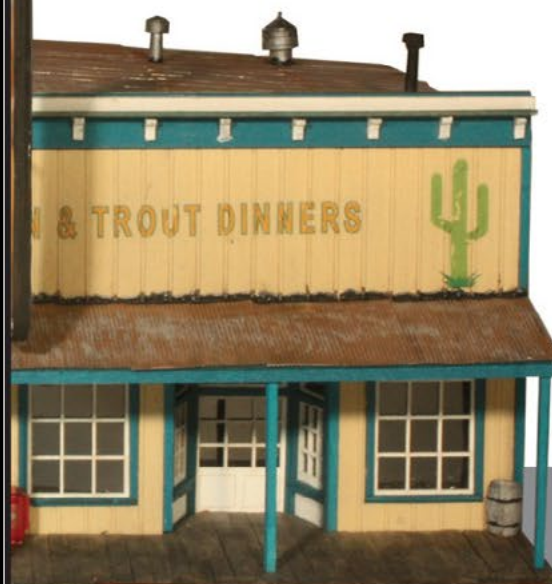
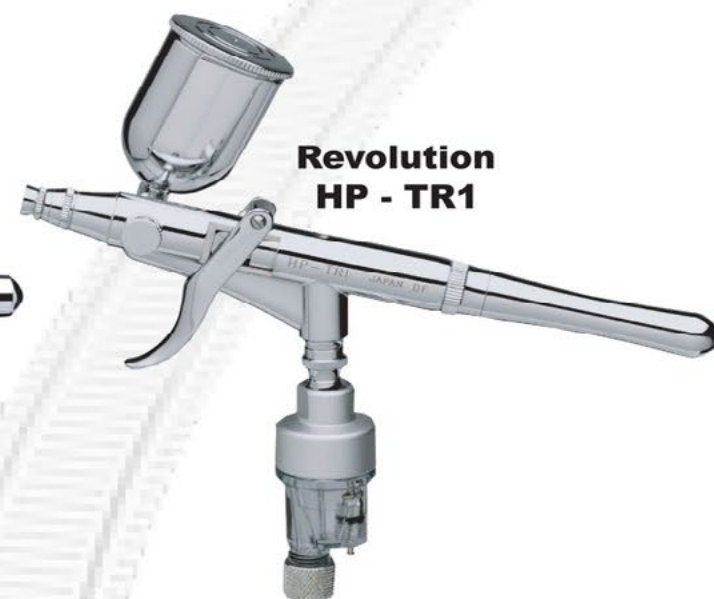
For us to publish an article, we need to have it submitted. As stated earlier in staff notes, we are a part-time staff. Much of

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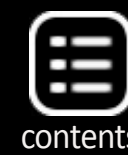
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our hobby time is spent putting the magazine together for you. Waiting for one of us to write an article on steam locomotives could leave you waiting for a long time. We have an article this month, on installing a sound decoder in a brass steamer.

Who is next?

This issue

In this month's issue we have an outstanding line up of articles beginning with the formal introduction of TrainMasters TV. Joe interviews Barry Silverthorn, executive producer, giving our readers an overview of the vision and scope of TrainMasters. If you had questions and were hesitant to sign up, this interview should answer those questions for you.

Interested in a seldom-modeled prototype operation? How about locking up the turnouts on your layout? James McNab shows us how we can model this real-life, day-to-day operation on a layout in a very practical manner.

Bob Battles provides us some very practical tips for installing a sound decoder and speakers in a brass steam locomotive. Learn how to do a professional sound installation.

Need signs for your building walls? Ralph Renzetti will take you on a step-by-step tutorial on how to make your own custom-weathered signs. Meanwhile, Bernie Halloran will show how to bend the sky with a different material few of us have ever considered using.

We have our regular columns beginning with, Q-A-T where you can learn something every month, followed by Bruce's ever-popular DCC Impulses. This month Bruce shows us how to meet a very practical need, tips for DCC motor control.

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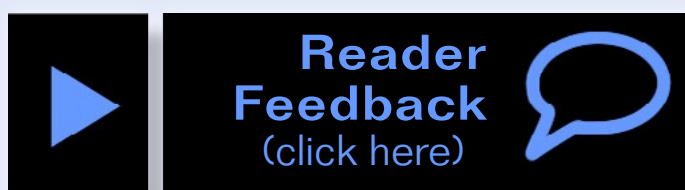


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Mike Rose bit the bullet and tore out a portion of his layout to improve operations. Check out part one of his journey in Getting Real.

In The Lite and Narrow, Larry Smith explains a seldom-modeled, but critical part of the steel industry, coke ovens. Ken Patterson is celebrating his first year of What's Neat This Week columns with a potpourri of video segments and photos from the last 12 months.

Have a great read this month and happy holidays to each and every one. ■



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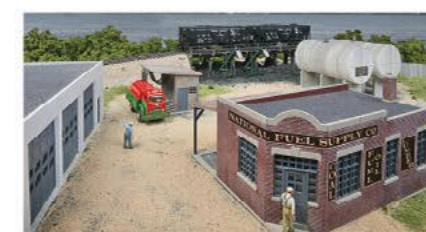
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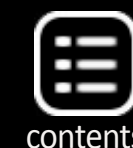


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MRH

Questions, Answers and Tips

Reader
Feedback
(click here)



QUESTIONS AND ANSWERS

Suitcase connectors

Q. I went to the local electrical supply store to get some 3M suitcase connectors, mentioned in an article, to wire up the DCC bus and feeders for my model railroad. The counter guy didn't know what I was talking about, and I didn't have a sample to show him. We eventually found the right thing, but what's up?

A. To the counter guy, that's an insulation displacement connector, or IDC. "Suitcase connector" was the coining of some model railroad writer many, many years ago, and you won't find the term used outside of model railroading. Yes, they do kind of look like tiny suitcases (1). For phone lines, flat cables, and other specialized uses there are other IDCs that don't look like suitcases at all.

IDCs, when handled correctly, can save some upside-down soldering under the layout. They provide a long-lasting connection when used with correctly sized wire. The connectors come in a couple of sizes and are color-coded. Knock-off copies of the 3M product are also sold, but reports vary as to their reliability.

The "run and tap" connectors commonly used for model railroad power supply wiring have a channel for each size of wire. You don't need to strip away the insulation. The connector wraps around the larger wire ("run"). The smaller gauge pushes into a stub connector at the top ("tap"). The connection is made by folding over the connector lid and clamping it with special pliers, or with lineman's or slip-joint pliers (2). The special tool and connectors are available from Micro-Mark, from electrical supply houses, and from some big box home improvement stores.

Here's the 3M product page: solutions.3m.com/wps/portal/3M/en_US/EMDCI/Home/Products/Catalog/~?rt=cm&R=5433891+5433261.



1: The 3M Scotchlok 905 connector is sized for 18-14 AWG solid or stranded wire in the through "run" fitting and 22-18 AWG solid or stranded wire in the "tap" position. No insulation stripping is necessary.

2



2: Slip-joint pliers can be used to clamp the Scotchlok connectors shut, but a flat jaw will do a cleaner job than this rounded variety. When the connector is correctly clamped, the lid will snap shut and the wires will resist a judicious pull.

Here's the Micro-Mark page of connectors and crimper:
micromark.com/scotchlok-crimping-tool,8952.html.

– MRH

Passenger car diaphragms

Q. Some of my old passenger cars don't have any passenger connections between them, and the gap doesn't look very good. How can I fix this?

A. There have been many manufacturers of scale model passenger car diaphragms over the years. They have taken many forms, from accordion-pleated paper with metal face plates, to full-width sliding connections, to rubber tubes (3). At any given time, the big problems for modelers seem to be finding the part that looks right for the application, and rounding up enough of the same brand to give your train a uniform appearance.

Walthers, Broadway Limited, High Tech Details, Rapido, American Limited, The Coach Yard, Keil Line, Marklin, and Train Station Products parts are listed as “in stock” at walthers.com in a variety of scales, designs and prices. Local hobby shops may have them, as well as out-of-production parts from IHC and other former specialty manufacturers. Searching eBay for manufacturers' names will also turn up suppliers with caches of discontinued parts.

To find out what diaphragm your cars require, compare prototype photographs to the catalog illustrations. The British refer to these as “corridor connections,” (4) which has always seemed like a more descriptive name.

3



3: Walthers represents the diaphragms at the end of its new passenger cars with a springy, sliding housing to keep the gap between cars filled.



4: These Bachmann Branchline UK cars have a fixed diaphragm at each end that allows a gap to show in the corridor connections of passenger trains.

If you are modeling contemporary passenger cars with simplified rubber-tube diaphragms, sections of heat-shrink tubing can be measured, cut to fit, and fastened in place.

– MRH

Switch lists

Q. My buddy wants to operate his railroad using switch lists. Not being a railroader, this is all new to me. Where can I learn how to use them, and what do they look like?

A. This is kind of a loaded question. He may be talking about using the correct real-life railroad form for the job, or he may be talking about using a specific software program that tracks and creates car movements. An article in the October 2013 *Model Railroad Hobbyist* talked about using the JMRI programs

for operating, including generating train lists and routing cars. Other commercial software for modelers can also generate switch lists.

Let's assume he's talking about casual operations, using the switch list (5) as a way to move cars around. You need some sort of a form, a pencil, and some idea of where the cars in a train are to be set out, and what cars are to be picked up from sidings or interchanges. Some people use car cards and waybills to keep track of cars and destinations, and the waybills will tell you where cars are to go. You can also skip that step and make up a list on the spot, based on the cars and destinations

FORM 146-S

Switch list

TRAIN _____ COND _____ DATE _____ TIME _____

No.	Car Initials	Car Number	Car Type	Destination	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

5: A blank generic switch list form can be the basis for simplified freight train operations on a model railroad, identifying cars in a train and their destinations. Search via Google for “switch list” for examples.

available. Forms are different from railroad to railroad, but in general there will be a row of columns across the page for car number and reporting marks, car type, destination and comments. Some have a column for contents, some do not.

A conductor will list the cars in the train, starting at the caboose end, and fill in the destination data based on waybills. In the pre-computer era these were rough-and-ready forms. Each conductor wrote them for their own on-the-job use, with whatever abbreviations were needed to save time yet leave the list readable.

The important thing to remember is that the switch list is a railroader's tool. It isn't a specific operating system, or some arcane thing based on knowledge of rules. It's a handy way to keep track of cars and get the work done without having to memorize a lot of things.

There are great details on making up and using a switch list at greenbayroute.com/1967switchlist.htm.

Dennis Drury's October MRH article on using JMRI for ops is at: mrhmag.com/magazine/mrh-2013-10-oct/jmri-for-switch-lists.

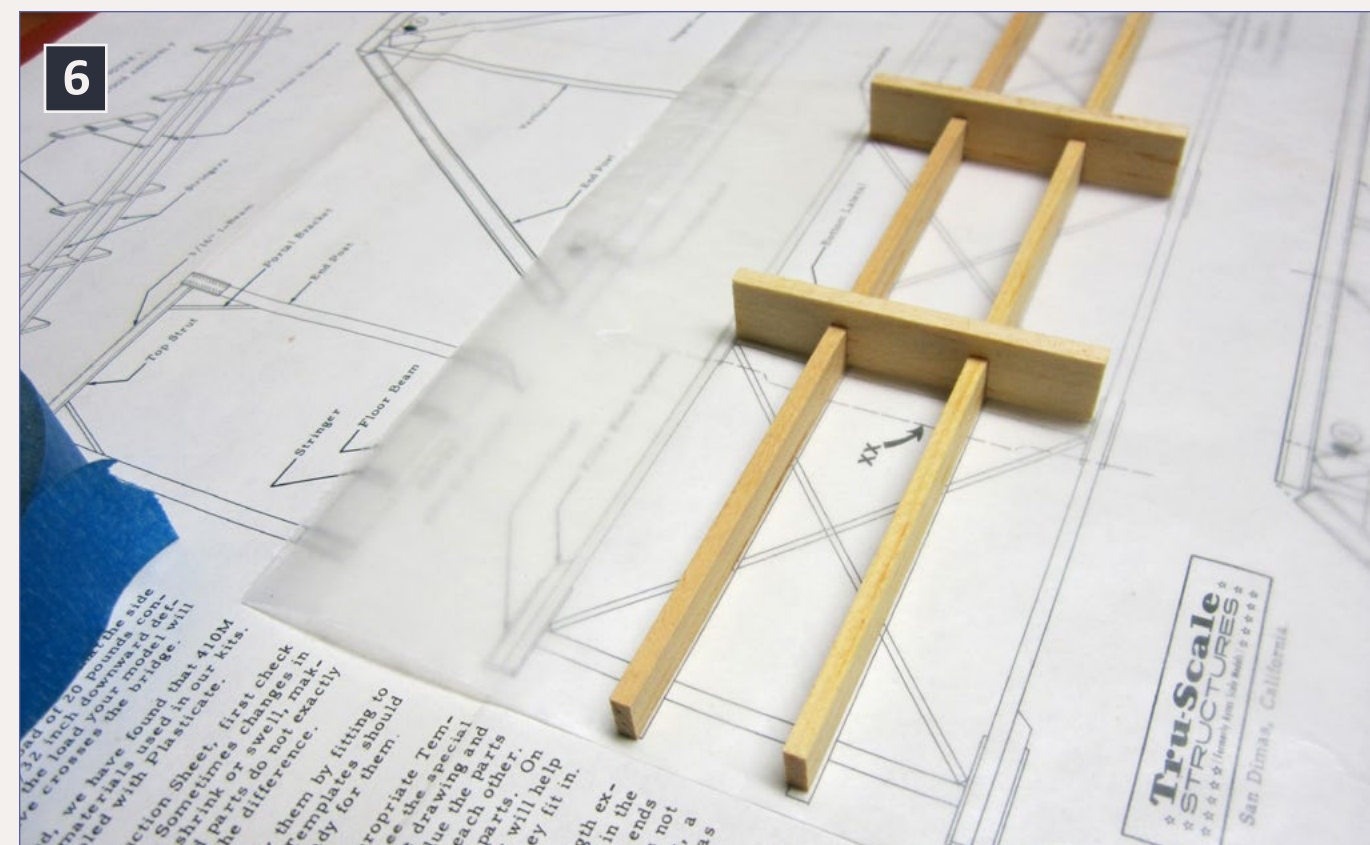
– MRH



TIPS

Wax paper

When building wood structures, put wax paper (6) flat over your plan, and hold it in place with tape, weights or pins. Then start by placing parts on the wax paper, adjust them



6: Wax paper will protect construction kit plans from damage and allow the plans to be used as a jig to assemble kit components. (Tom Waters photo.)

for fit, and tack them in place with a small bit of white glue. Use wood glue to join the parts.

After your assembly is complete you can turn the work over and gently peel the wax paper off the back. If there is white glue on the back of your project, just dampen a Q-tip and rub the glue until it softens and wipes off.

– Tom Waters

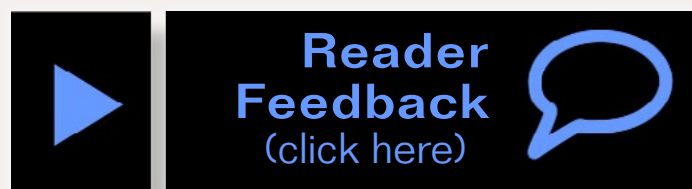
Post-It line-up

I do a lot of custom painting and sometimes need to change numbers on freight cars or passenger cars using individual letters. The problem is that getting individual letters to line up and go straight can be quite difficult and fiddly.

I thought of using low-tack masking tape as a guide but then looked up and saw the numerous 3M Post-It notes I had on the workbench as reminders. Tried one of them on the car side that I was doing, and then lined up the decals by using the top of the Post-It note as a guide.

Takes longer to explain than it does to do and you need to make sure that you cut the decal film right at the bottom of the decal. Setting solution did not get under the note, so the paint was safe. Hope this helps someone.

– Rob McLear



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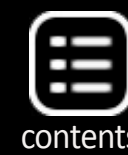


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Tips for DCC Motor Control



DCC Impulses column
by Bruce Petrarca

How to tame your locomotive ...

A reader requested a column on how to optimize motor control, so here comes a pretty technical column without a lot of pretty pictures. This subject is scale independent. I've used these techniques in all major scales from Z (1:220) to Fn3 (1:20.3), including N, HO, S, O and G. I'm going to share some concepts and include some comments about specific decoders. Remember to read the literature that came with your decoder and what the manufacturer has online before you try these adjustments. What specific CVs do may vary between manufacturers. That's why I only mention NMRA standard CVs (ones that are common between all manufacturers) in this column.

My goal with DCC is to provide immediate and precise control of my locomotive. When I crack the throttle, I expect the loco to start to crawl. Opening the throttle wider, I expect a smooth transition to running speed. I don't want slot-car style top speeds. If the decoder includes sound, I expect realistic sound



response, too. See the video of my garden loco after being set up: [youtube.com/watch?v=cWfZLyCuy_k](https://www.youtube.com/watch?v=cWfZLyCuy_k)

Frequently, prototypes have a top speed in the 25 to 40 MPH range, by capability or by rule, so I try to match it in scale.

Examples include:

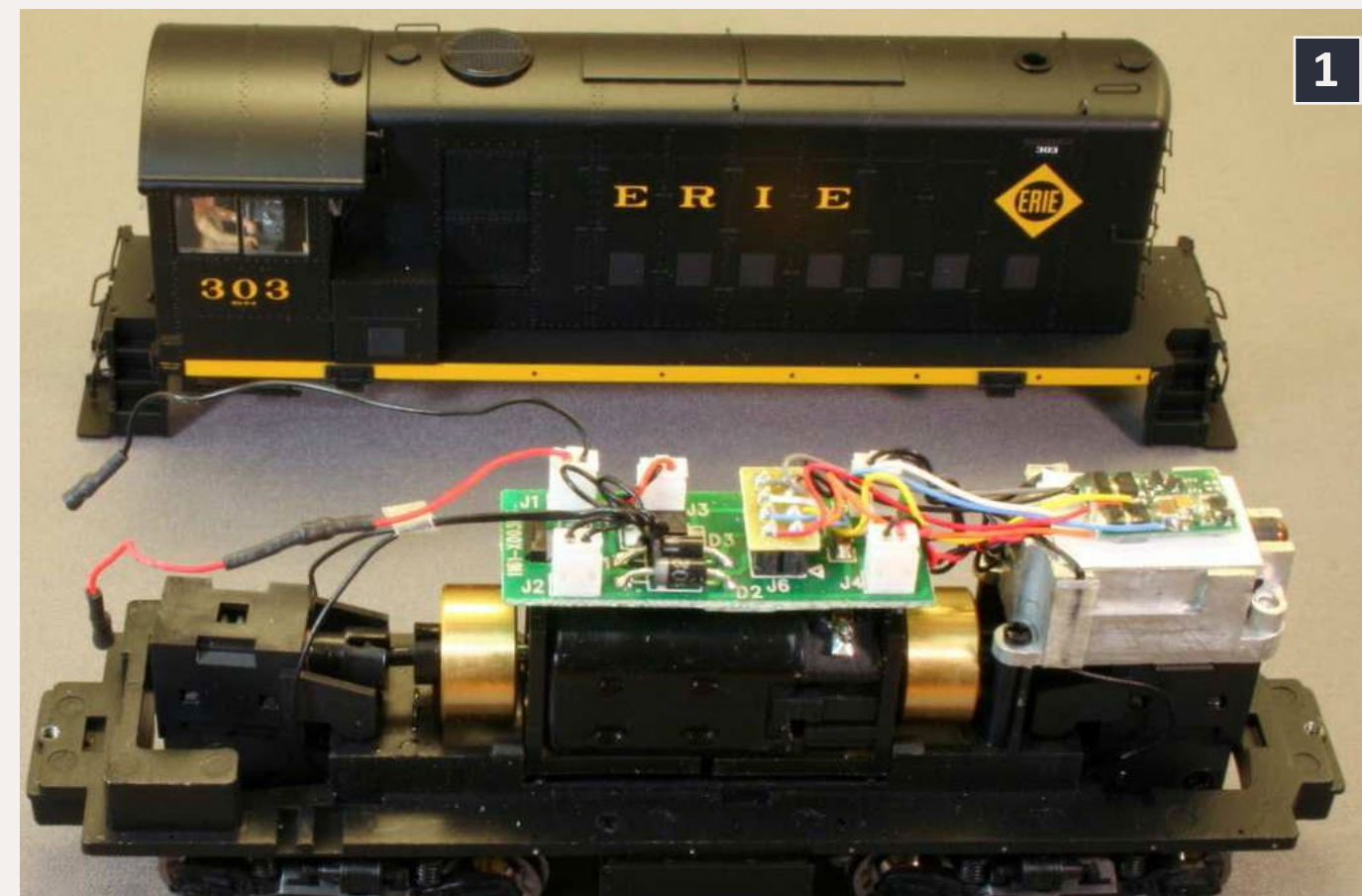
- Branch lines, like my HO Santa Maria Valley: mrhmag.com/url/layouts-smvrr
- Narrow gauge, like my Fn3 Rocky Mountain Pacific: mrhmag.com/url/layouts-rep
- Yard switchers - be they older switchers or road switchers

For now, let's just look at what we can do with our decoders to provide realistic motor control. The sound effects can come along later, once we have the motor response we want.

Getting your loco started

Isaac Newton described inertia (a body at rest tends to stay at rest, etc.). Well, model locomotives have that in spades. Not only do they have intrinsic mechanical inertia, but also we intentionally add inertia, in the form of flywheels, when we can. In addition, when surfaces, even metal, sit in contact for a period of time, they develop stiction. This is a word derived from sticking and friction to describe the physical mechanism behind the need to give things a shove to get them moving.

Even a small switcher, such as the HO-scale HH660 shown in figure 1 has two flywheels and lots of bearing surfaces. While Nano-Oil mrhmag.com/url/nano-oil may help, there may still be starting stiction issues. To get your loco rolling, you need to overcome both the inertia of the drive system and the stiction.



1: Locomotive drive line with flywheels (HO Atlas HH660).

Some background

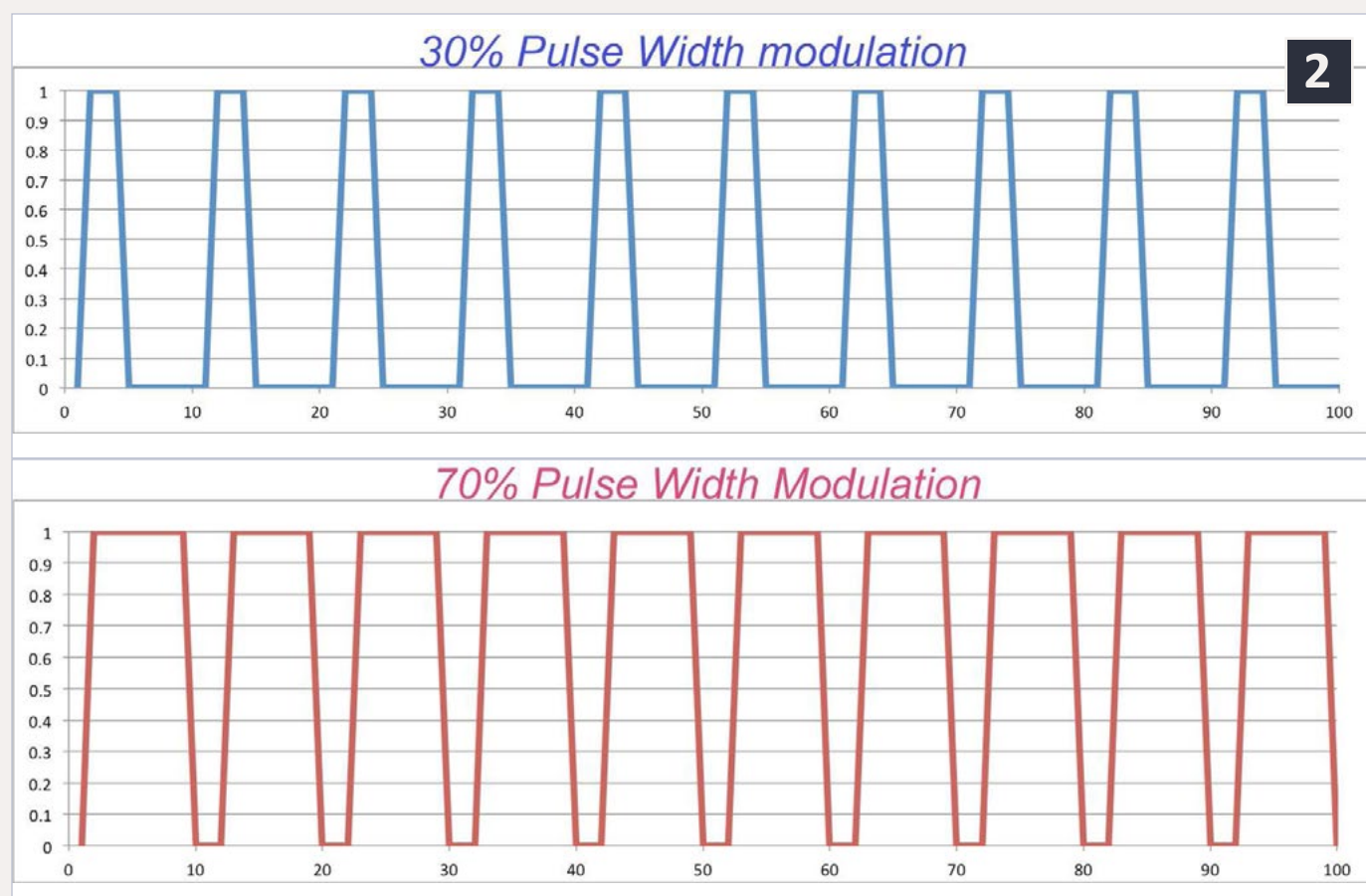
Since this discussion revolves around a lot of electronic terminology, you may wish to review my column on basic electronics in the December 2012 issue mrhmag.com/dec-2012-dcc-impulses before you press on with this column.

In the DC (analog) days, fancy power packs had a pulse mode that was an attempt to provide that shove to get the loco moving. At low speeds some pulses of voltage were added to the low-level DC, in an attempt to overcome inertia and stiction.

In some of the power packs, pulse mode was used throughout the speed range, as folks found they had smoother operation that way. Pulse mode used throughout the entire speed range is actually pulse width modulation (PWM).

PWM is where full voltage is always applied. The voltage to the motor is turned on and off in repetitive pulses. The longer the pulses, the faster the motor runs. If you want the motor to run at half speed, the full voltage is applied for about half the time and zero voltage the rest of the time. Thus, you control the motor speed, not by changing the applied voltage but by varying the time that it is applied (that is, the Width of the Pulses).

When DCC was created, PWM was selected for many reasons as the motor control method. Also, part of the basic DCC design was the ability to adjust the amount of power provided to the motor at the starting speed step (CV 2), at the middle (CV 6) and at the top (CV 5). See figure 2.



2: PWM – full voltage, variable time driving a motor at 30% and 70%.

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What will they think of next?



Some decoder manufacturers opted to include a feature to overcome the stiction and inertia by providing additional power at low throttle settings for a bit of time. They frequently called it kick-start. It gave much of the same effect as the early pulse power packs and is adjustable in some brands.

As DCC became popular and more and more locos began running with decoders, folks began to notice that the locomotive would hum at the frequency of the pulses, usually in the octave below middle C, for the musicians in the crowd. Decoder manufacturers responded with high frequency drive mrhmag.com/url/dcc-hi-freq-drive where the pulses were so rapid that any "singing" of the motor was beyond human hearing, some as high as 30 kHz. Each manufacturer has its own marketing moniker for this design.



With high frequency drive came another issue. When a motor is driven at a high frequency, it loses torque at low speeds, making the start-up issue worse. Again technology came to the rescue, when decoder manufacturers added pulses or shifted the frequency of the pulses as the motor started. Train Control Systems (TCS) was one of the pioneers of this technique, which they called dither. Digitrax calls it torque compensation.

Another technique was developing a following. Using the Back EMF (reverse voltage) developed by the motor, a BEMF style decoder mrhmag.com/url/dcc-back-emf is able to sense the motor speed during the time that the decoder is not driving power through the motor. Being able to sense motor speed allows the decoder to track trends, such as slowing down, and correct for them. Modern sound decoders, in addition to motor control, use this BEMF data to adjust sounds for load, chuff rate, etc.

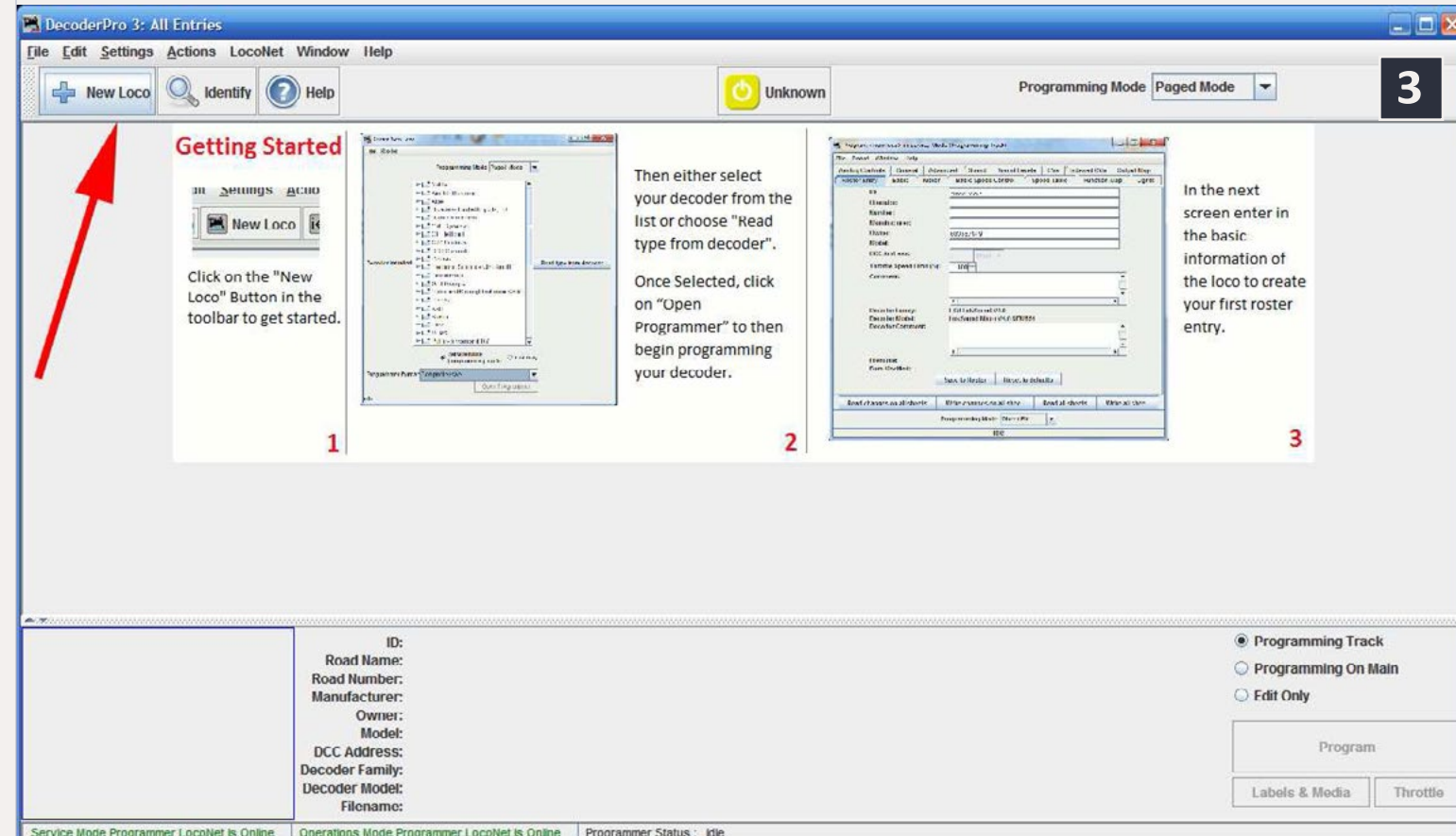
Getting started with DecoderPro

I highly recommend DecoderPro (see my July 2012 column: mrhmag.com/jul-2102-dcc-impulses for this tweaking. Every time I mention DecoderPro, or some other aspect of JMRI, I try to remind folks to donate to the cause. Even a \$10 bill a year from all the users would make a huge difference. Do so now, while you are thinking of it. Just click on the link: decoderpro.com/donations.shtml.

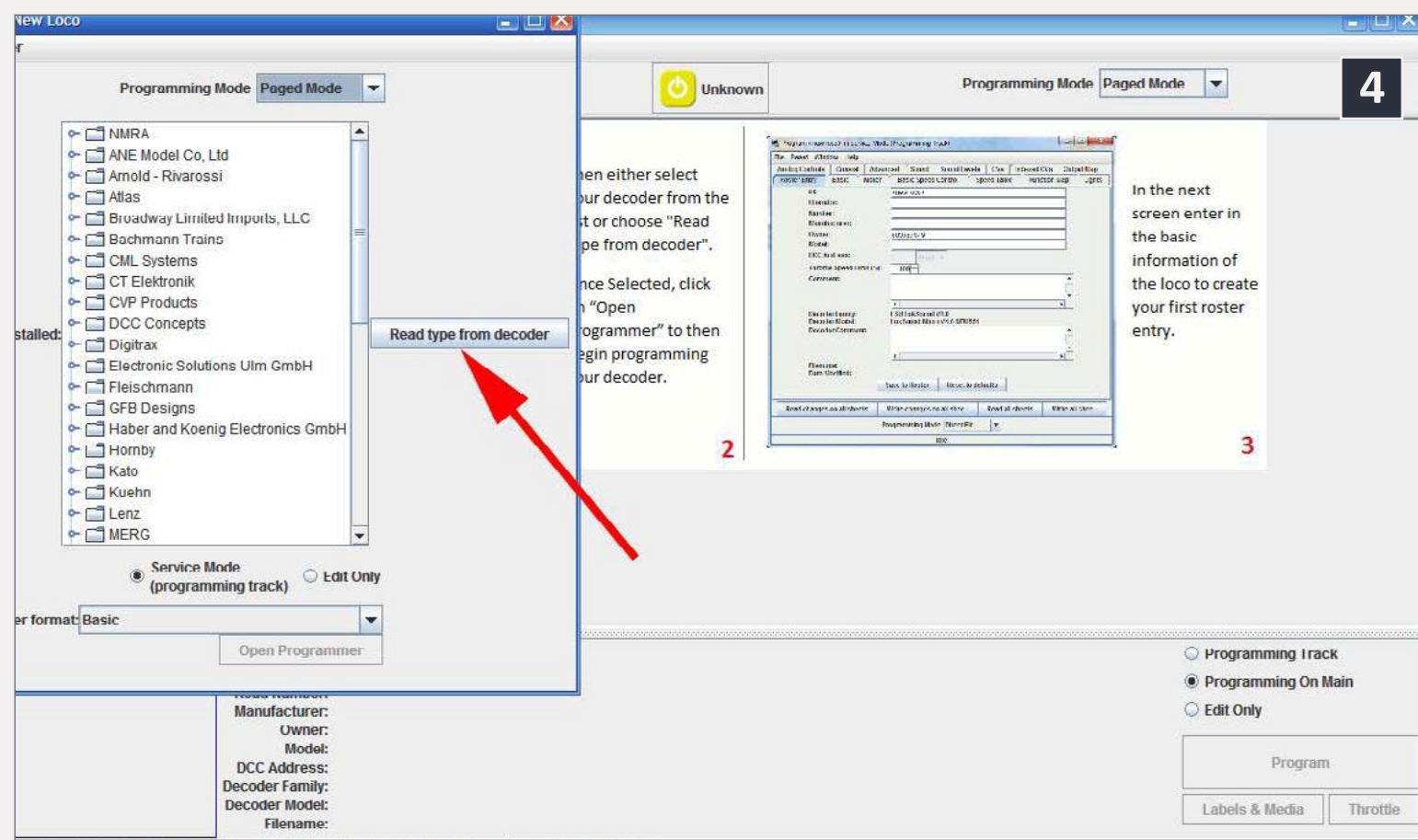
Assuming you have done nothing with DecoderPro before, you start by putting the loco on the programming track. Open DecoderPro. Select NEW LOCO (3).

Then READ TYPE FROM DECODER (4).

Once you have the decoder selected correctly, make sure COMPREHENSIVE display mode is selected and open the file in the PROGRAMMING TRACK mode.



3: DecoderPro screen: Starting a new loco with the NEW LOCO button.



4: DecoderPro screen: READ TYPE FROM DECODER.

If you don't have your address set, do so now in the BASIC tab.

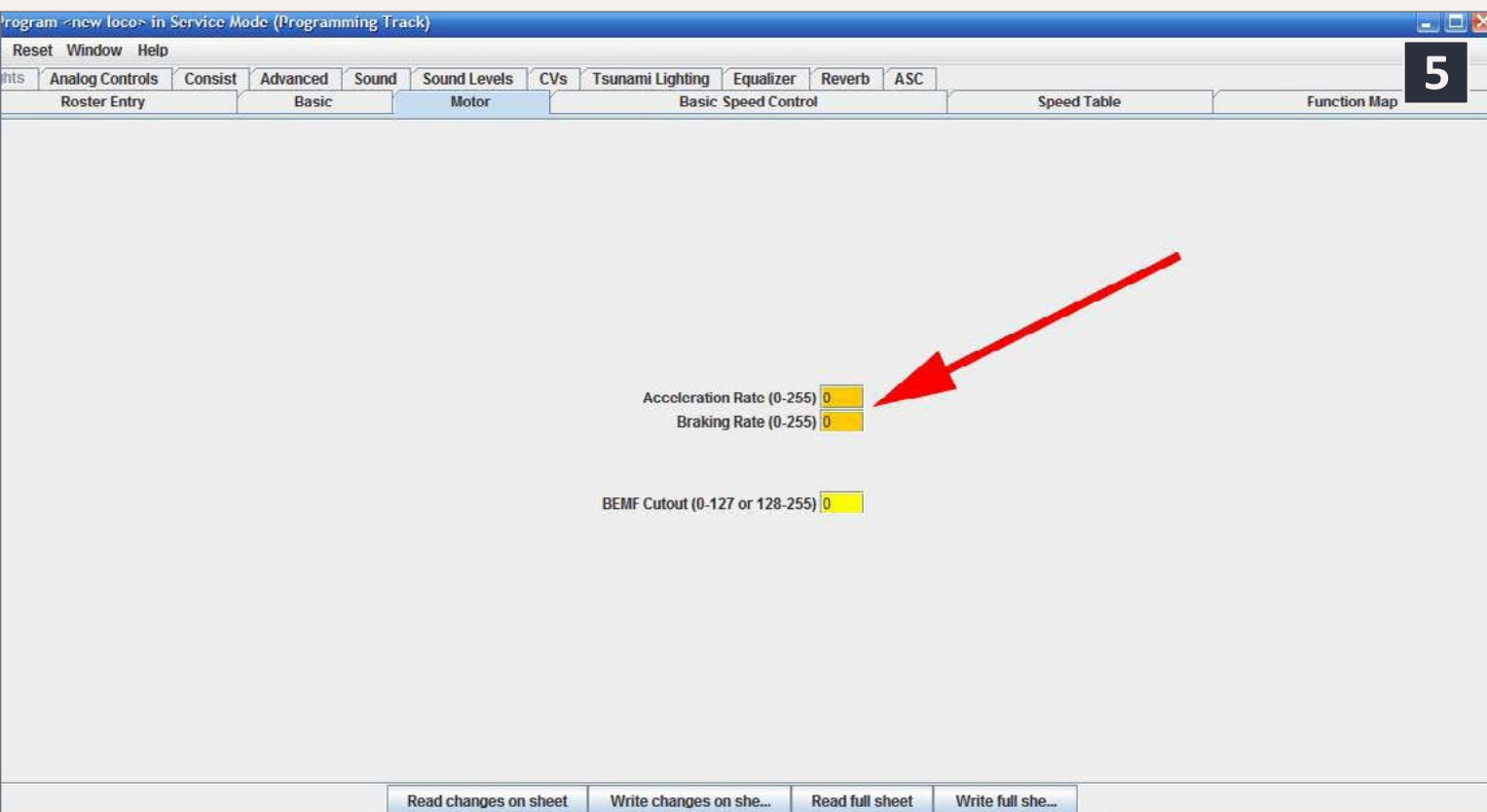
Before you can adjust any of the speeds, you need to assure that there is no momentum setting in the decoder messing up the results. The easiest way to do this is to set momentum (CVs 3 and 4, for those of you not using DecoderPro) to zero (5).

Set the decoder to 28/128 speed steps (6).

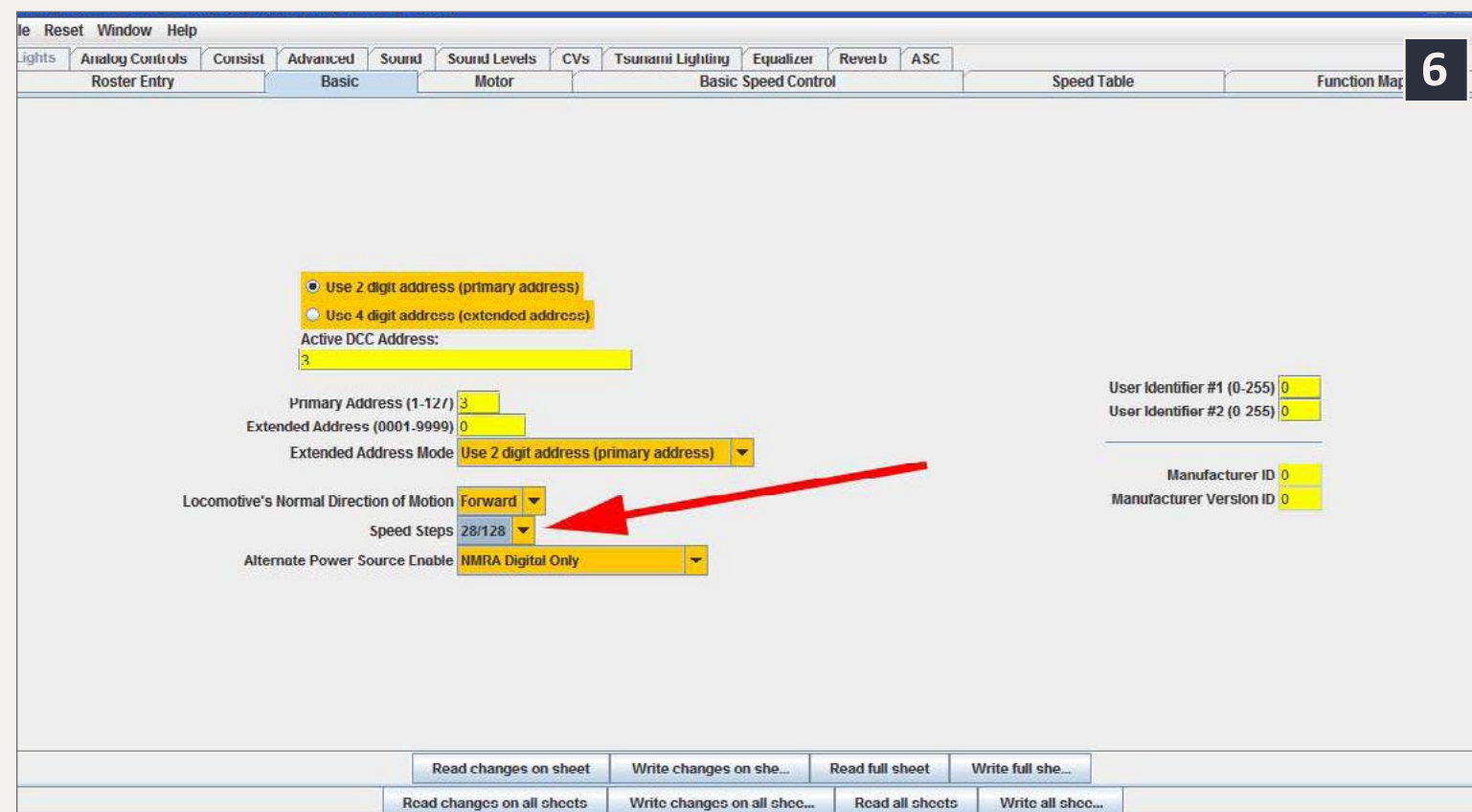
WRITE ALL CHANGES to the decoder and SAVE the file you have created onto your computer.

Set start speed first

The old saying is, "You gotta walk before you can run." Your loco's gotta creep first, too. Most decoders use pretty much the same set up process. I'll note some specific differences along the way.



5: DecoderPro screen: Momentum (CV 3 and CV4) set to zero in MOTOR tab.



6: DecoderPro screen: Select 28 or 28/128 speed steps in BASIC tab.

Open the DecoderPro file for your loco on the computer in the PROGRAMMING ON MAIN mode. Then you can run the loco with a throttle and customize the loco with the computer. For best results, use a throttle capable of exactly reading speed steps, like a DT4xx series from Digitrax or the Pro series from NCE or a LH100 from Lenz.

CV 2 is called Start Voltage in the NMRA standards. The sharp-eyed folks in the crowd will have already noticed that this is a misnomer. The motor voltage is constant; the power applied to the motor to control the speed is varied by changing the length of time that the voltage is applied to the motor as in figure 2. So, CV 2 really should be called Start Speed or Start Power.

The quickest way to set up a crawl is to set your system to 128 speed steps. This is totally compatible with the decoder being

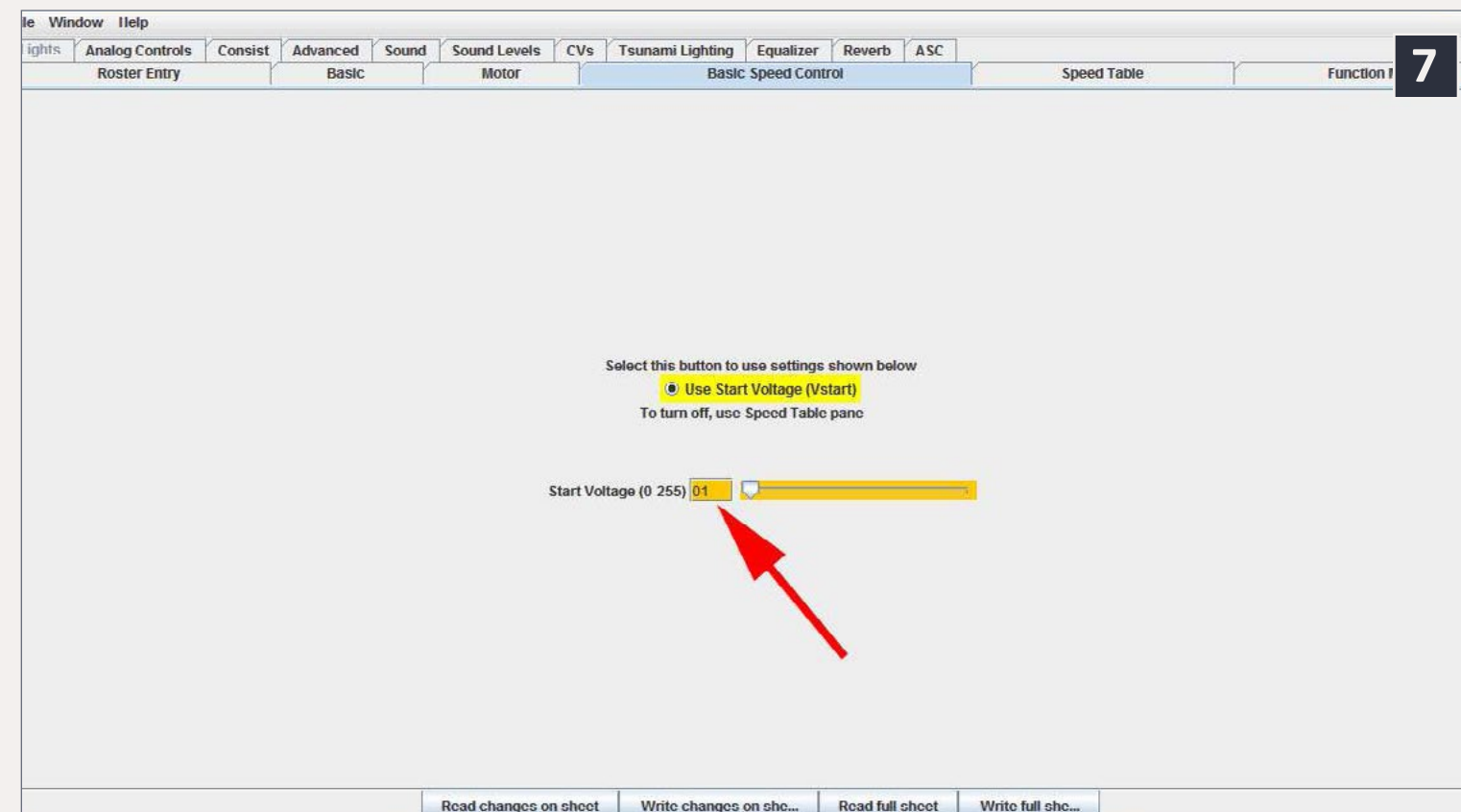
set to 28 speed steps – see Mr. DCC's Workbench at the end of this column. Adjust CV 2 (7) until the loco just starts to move at speed step one on the throttle. Because of stiction, the best way to accomplish this is to set CV 2 to 0 and then run your throttle up until the loco runs, and back down to speed step 1. If it continues to run at your desired minimum speed, all is well. If not, add one to the value in CV 2 and try it again. If you overshoot, subtract one from the value in CV 2 and try again.

Note: if you are planning on using speed tables, make sure CV 2 is zero and adjust CV 67 instead (9).

Now check for stiction. Set your throttle to 0. Move it to speed step 1, without overshooting. Does the loco move? In my experience, BEMF decoders will overcome stiction, given time to sense that the loco isn't moving. Non-BEMF decoders and excessively sticky locos may need kick-start or dither adjustments here. See the manual for your specific decoder.

Tsunami users note: If BEMF is going to be used in your Tsunami decoder, CV 2 should ALWAYS BE ZERO. Frequently, locos will run too fast with a Tsunami on speed step one. The Tsunami BEMF is doing too good a job overcoming stiction in these cases. There is a way to fix this, but it is beyond this column. Check it out on my website in the middle of the Tsunami page mrhmag.com/url/dcc-soundtraxx-tsunami for instructions and a video.

QSI users note: sometimes the loco will continue to run after you bring the throttle to 0, especially with the Q2 series decoders. There is a fix for that available on my web site: mrhmag.com/url/qsi. With the Q3 software, a lot of issues have been fixed and the tendency to run-on is reduced.



7: DecoderPro screen: Setting start voltage in BASIC SPEED CONTROL tab. Note: this is a Tsunami file which doesn't support mid or top voltage (CVs 5 and 6).

Limit top speed

Many folks stop at this point when adjusting their decoders. I press on and limit the top speed.

Sixty MPH is 88 feet per second, or roughly the length of a road switcher per second. So, if your loco moves past a fixed point in one second, it is doing about 60 SMPH. If it takes two seconds, it is going 30 SMPH. All but the largest layouts with long mainline runs would benefit from speed limiting in the 30 to 40 MPH range, in my opinion. This means that the loco will take about 1-1/2 to 2 seconds to pass a fixed point with the throttle wide open.

The side benefit of limiting top speed is that the entire throttle range controls the loco from creeping to maximum. It is so

much easier to switch or make realistic movements with the full throttle range available, not just a quarter of it. So, let's set the top speed.

In decoders that support CV 5 (another misnomer: Maximum Voltage), the easiest way is to set CV 5 to 128 (8). Then run the loco wide open and time past a fixed point. If it takes less than 1 second to pass a point, reduce CV 5. If it takes longer than 1-1/2 seconds, increase CV 5. Quickly you have a loco tamed down.

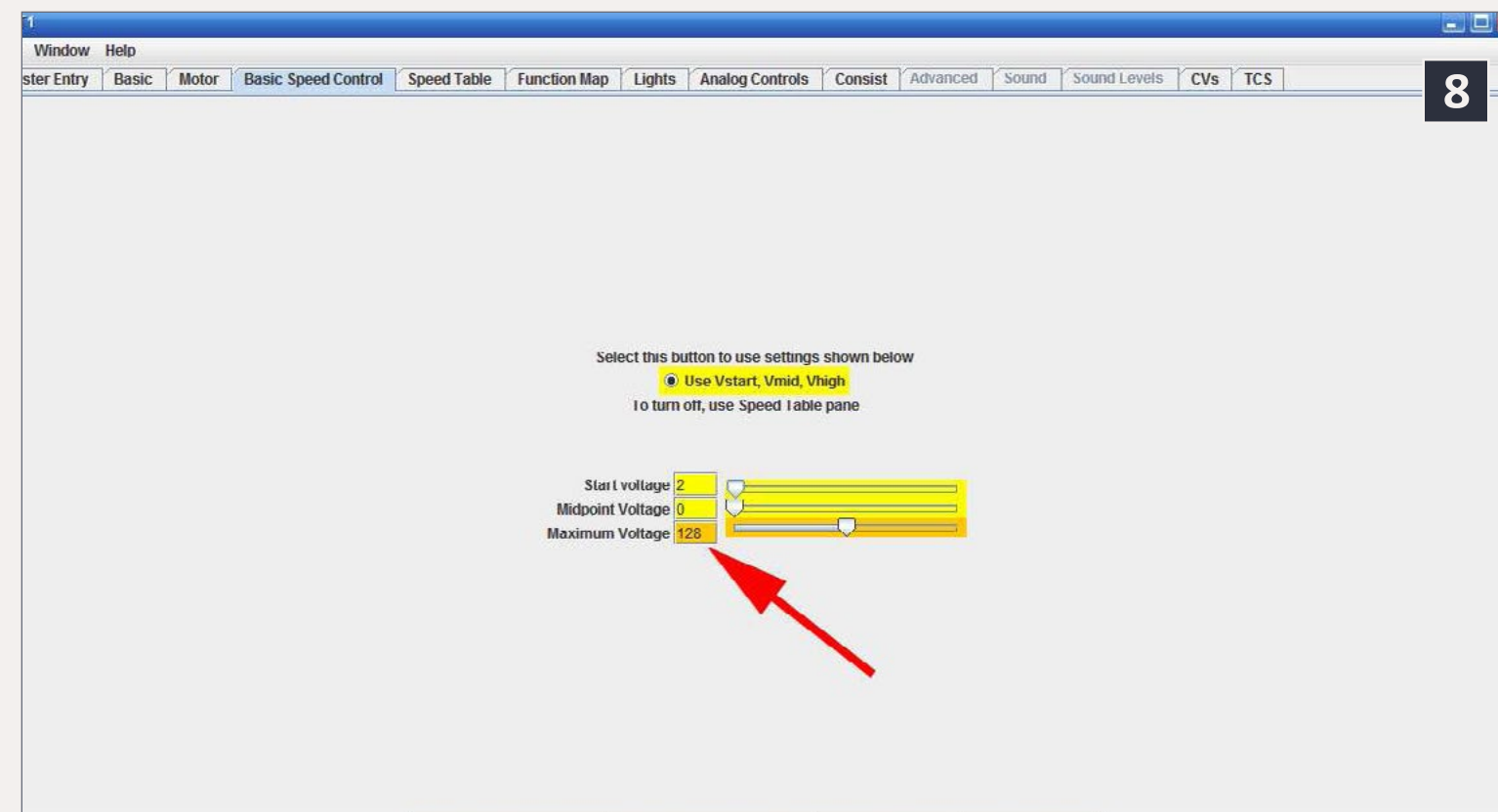
If you are using a speed table, set CV 94 in the same way as I described for CV 5, above. Here's where DecoderPro does you a favor. It has a button you can press to MATCH ENDS. That will make a linear speed table between the crawl speed you set in CV 67 and the top speed you set in CV 94 (8).

Note that Tsunamis don't support CV 5. You need to do some sort of speed table work with them. Learn more about this on my web site mrhmag.com/url/dcc-soundtraxx-tsunami.

Set momentum

Wanna get a real brouha going? Get a group of DCC operators together and ask, "How much momentum is enough?" You will probably start an argument that ranges from "ANY!" to "Such that it takes 30+ seconds for the loco to come up to speed." We all have our different ways of operating and momentum setting plays into the crux of that.

Why have any momentum at all? Well, with DCC it is really easy to just hit the DIRECTION button when you want to change direction. Even easier with throttles like the Digitrax UT4, where direction control is a toggle switch! Absent some decoder momentum, you will stress your decoder with the track voltage being applied by the decoder being added to the BEMF being generated by the motion of the train. This can, when you are running high track voltages and high train speeds, cause the



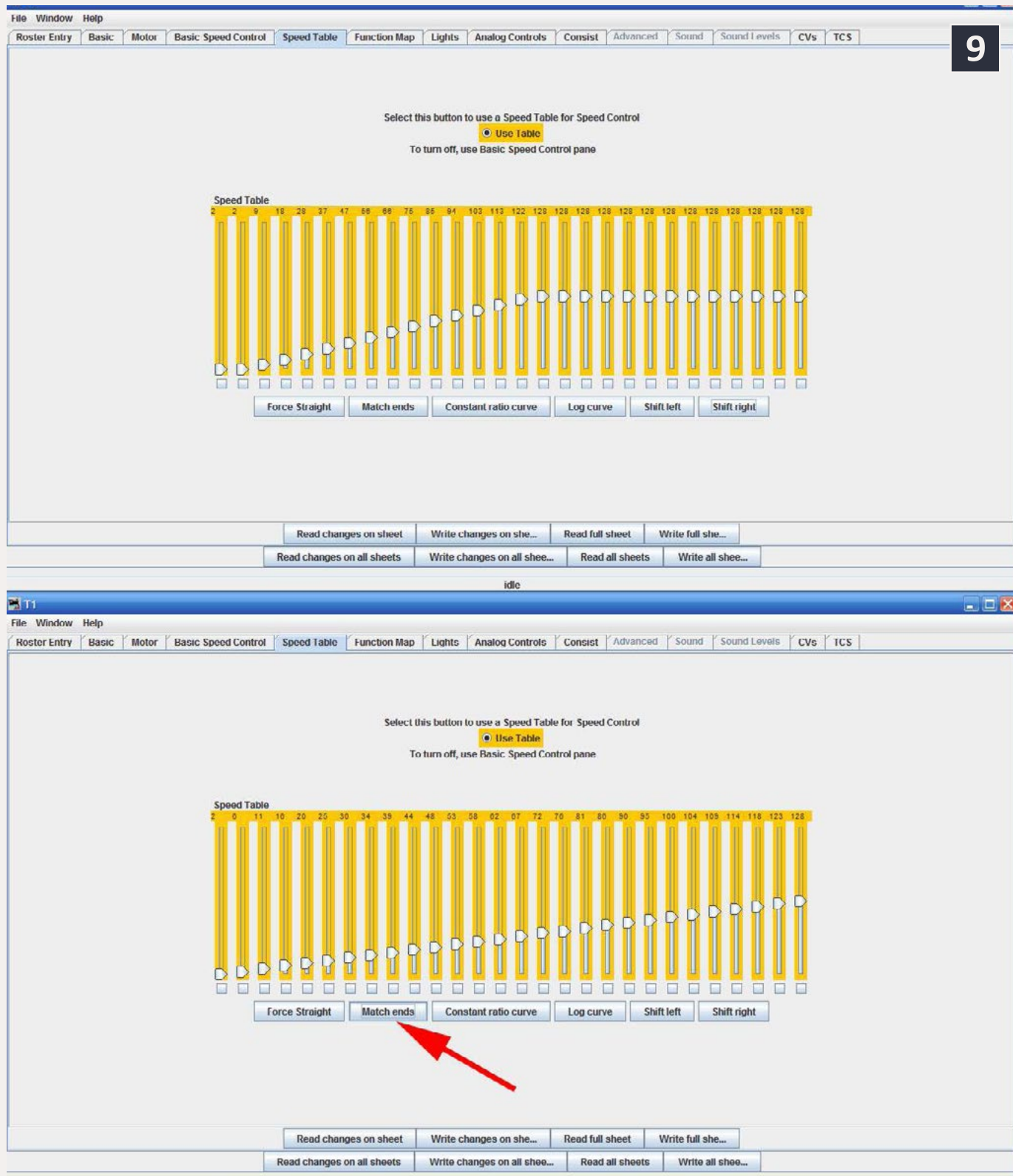
8: DecoderPro screen: Setting maximum voltage in BASIC SPEED CONTROL tab with a decoder that supports CVs 5 and 6.

voltage on the motor leads to exceed the NMRA standards for DCC voltage. This may damage your decoder.

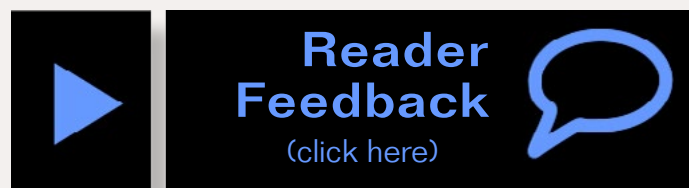
Okay, so some momentum is good.

If you are using a sound decoder, you may want more momentum set than with a nonsound decoder. Why? The motor in a prototype loco won't respond immediately to throttle input. It takes some time for spooling up or down. The sound decoder manufacturers generally create this transition in sound over time. If you have no momentum set in the decoder and you turn the knob from 20 to 40 miles an hour, the loco (and train) may respond instantaneously, while the motor is still making "20 MPH" sounds.

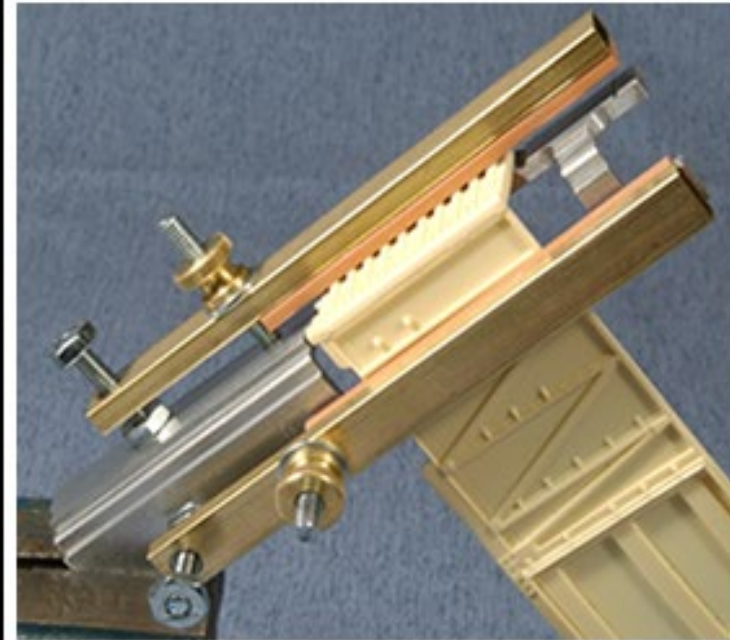
Okay, so, with sound, more momentum is better.



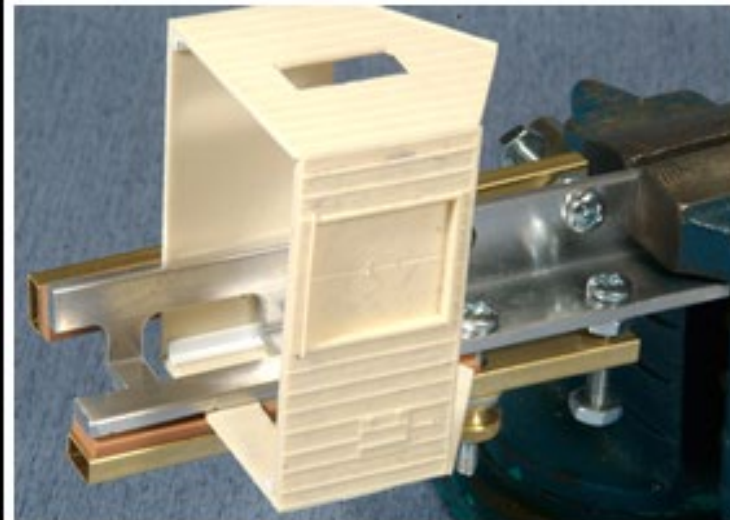
9: DecoderPro screen: Setting minimum and maximum speeds in the SPEED TABLE tab instead of the BASIC SPEED CONTROL tab – before and after using the MATCH ENDS button.



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Here are my rules of thumb:

I set the deceleration momentum (CV 4) to half of what I set the acceleration momentum (CV 3). Model train operators don't always think very far ahead. My observation is: if the train slows at the same rate that it speeds up, more crashes occur. Non-Sound decoders, I use a minimum of 2 in the acceleration momentum (CV 3) and half that in deceleration (CV 4). I find that a maximum of 8 works well, see figure 10.

Sound decoders, I use 10 to 40 for acceleration (CV 3) and half that in deceleration (CV 4).

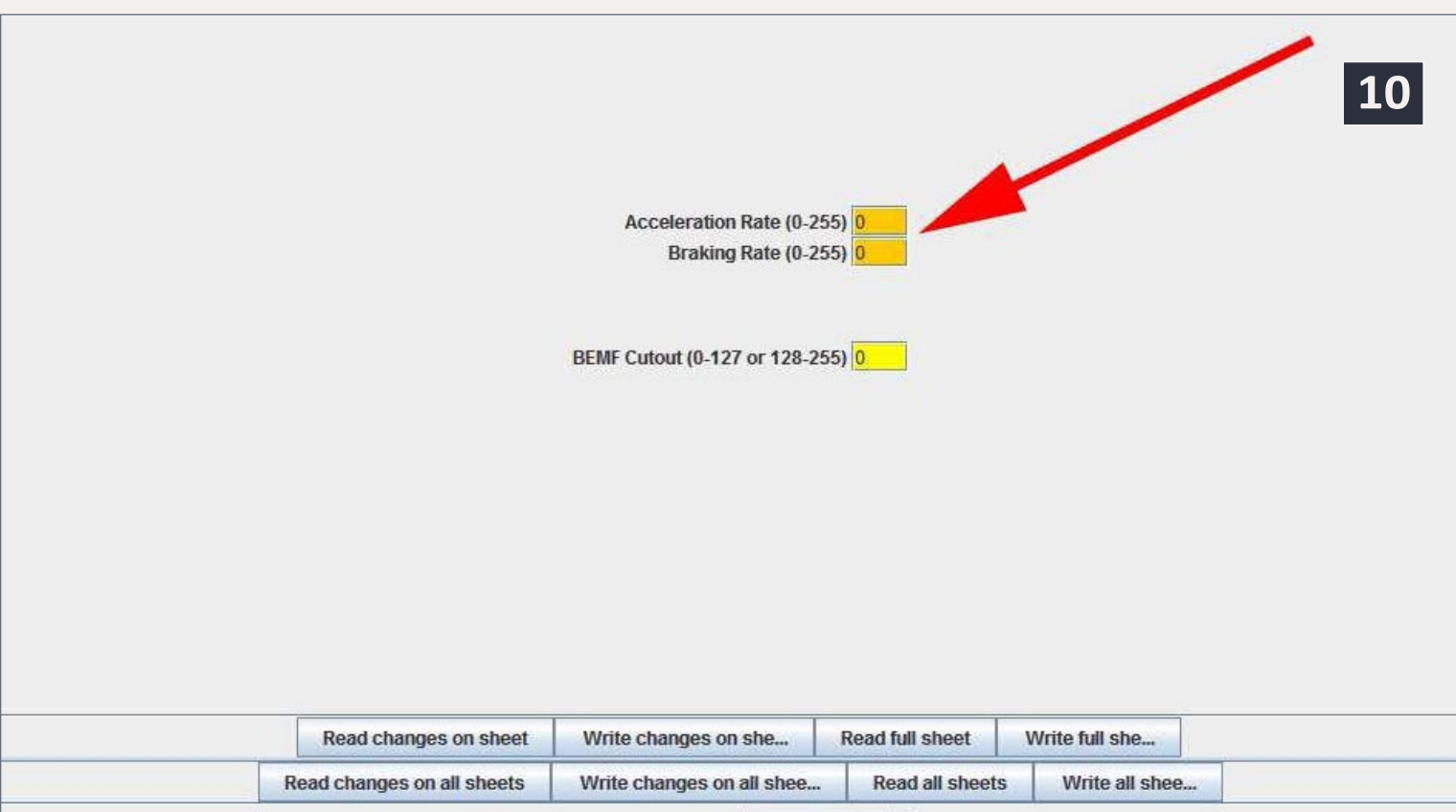
I recommend you find a throttle response that works for you and make all your locos run the same way. If all your locos respond similarly, guests can learn how you set your locos and work with it. If every loco is different, be ready for some cornfield meets. Note that this will



probably NOT be the same numbers being set in various manufacturers' products, as different folks' decoders have different sensitivities to the numbers in CVs 3 and 4.

BEMF Settings

Some decoders (TCS, for example) have simple BEMF settings: on or off. Others (SoundTraxx or Digitrax, for example) have some very complicated adjustments to fine tune the BEMF settings. These decoders will work if you just enable the BEMF, but the tweaking makes a big difference in your operation. I will refer you to your decoder's instructions. To get Tsunamis to creep requires the BEMF settings to be adjusted. There is a way to fix this, but it is beyond this column. Check it out on my web site in the middle of the Tsunami page mrhmag.com/url/dcc-soundtraxx-tsunami for instructions and a video (10).



10: DecoderPro screen: Setting momentum in the MOTOR tab – This is for a TCS T1. You can see the BEMF cutoff settings in this tab, too.

BEMF Cutoff

Some BEMF decoders allow BEMF cutoff. This is a way of having your cake (low speed BEMF control) and eating it too (no BEMF at running speeds, to interfere with consisting or create a “cruise control”). In its simplest form, the decoder uses a setting in a CV to tell it above what speed the BEMF control is disabled, or “cut-off”. The exact settings vary by decoder, but I would start with the cutoff at 25% of maximum speed and adjust from there to taste.

BEMF & Consists

There are two points of view for using BEMF with locos that are going to be consisted: “Yes.” and “No.”! I fall in the “Yes” category.

I find that with some tweaking, locos can run in consists with BEMF activated. I believe that folks who say outright, “No.” haven't successfully tweaked their locos.

BEMF Cutoff is an help, too. It allows BEMF control for getting started and no BEMF for locos to fight in the consist at speeds.

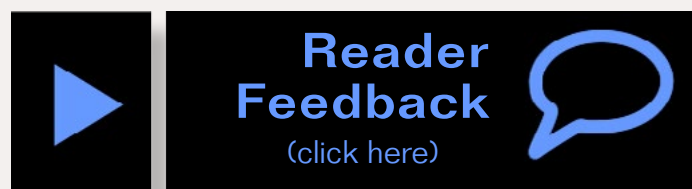
I hope you feel a bit less intimidated by the terms and concepts behind motor control in your DCC decoder.

For more information on these topics, you may consult my website at the URLs imbedded in this column. There is also data on the DCC Wiki site (mrhmag.com/url/dcc-wiki). When looking at the DCC Wiki site, please understand that it is a compilation from lots of folks, so it would be normal for it to be self-contradictory. Also, the CVs for these adjustments are not standardized, so any CVs mentioned on the Wiki should be checked against the documentation for your specific

decoder and not just used blindly – you might end up fiddling with something you don't intend.

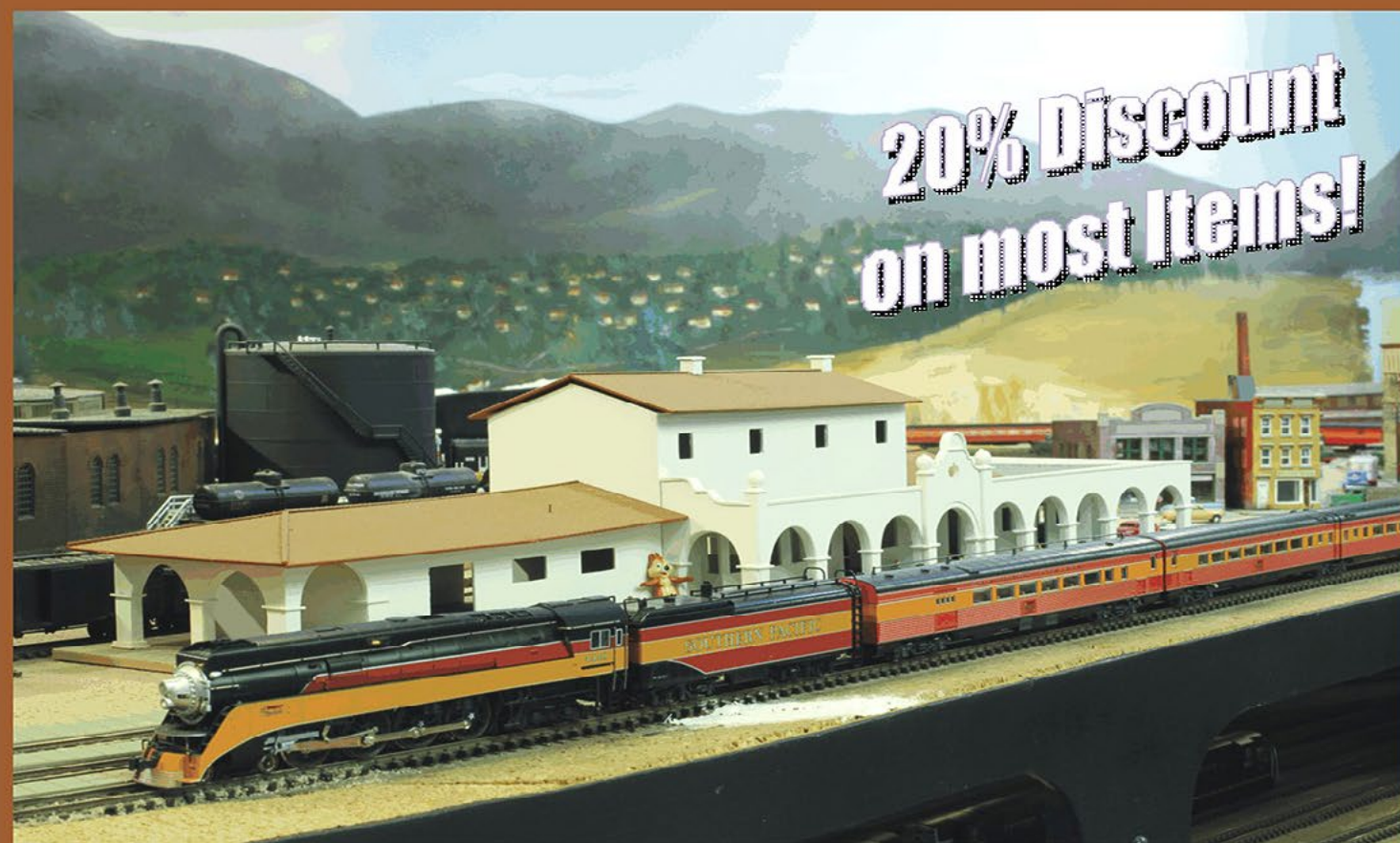
If you liked this column, please click on the Reader Feedback link here and rate it awesome. Please join in the conversation that invariably develops there about the topics presented in the column. Share your experiences. Thanks.

Until next month, I wish you green boards.



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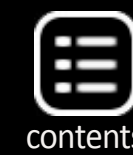


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From Mr. DCC's workbench ...

SPEED STEPS IN PERSPECTIVE



11: Diesel control stand on an EMD MRS-1.

steps. As soon as you move the throttle off zero, the locomotive would be told to run at 10% of top speed. As you advanced the throttle, nothing would happen until you reached about 15% of the total throttle range. Then the loco would be told to run at 20%, until you turned the throttle up past about 25% of the range. So, the loco would immediately try to jump from 10% to 20% of top speed, its acceleration limited only by the momentum setting in the decoder, the loco's flywheel and the load of whatever cars it is pulling. Not very realistic.

What is a speed step? That is the way that the command station tells the locomotive where you have set the throttle controlling a particular loco.

To make things easy, consider how it would work if there were 10 speed

Folks have said, "Well, locos have 8 notches, so why do I need more than 8 speed steps?" It is true that the diesel motor may only run at 8 different speeds, but there is a throttle that controls how much of the power being generated is directed to the drive motors. When you are running a prototype diesel, the throttle determines speed with infinite variability. The motor (and its associated sound) does, indeed, have 8 distinct steps. By the way, steam locomotives are infinitely variable, too. So, the more speed steps you have, the more accurately you can reproduce the nuances of loco speed.

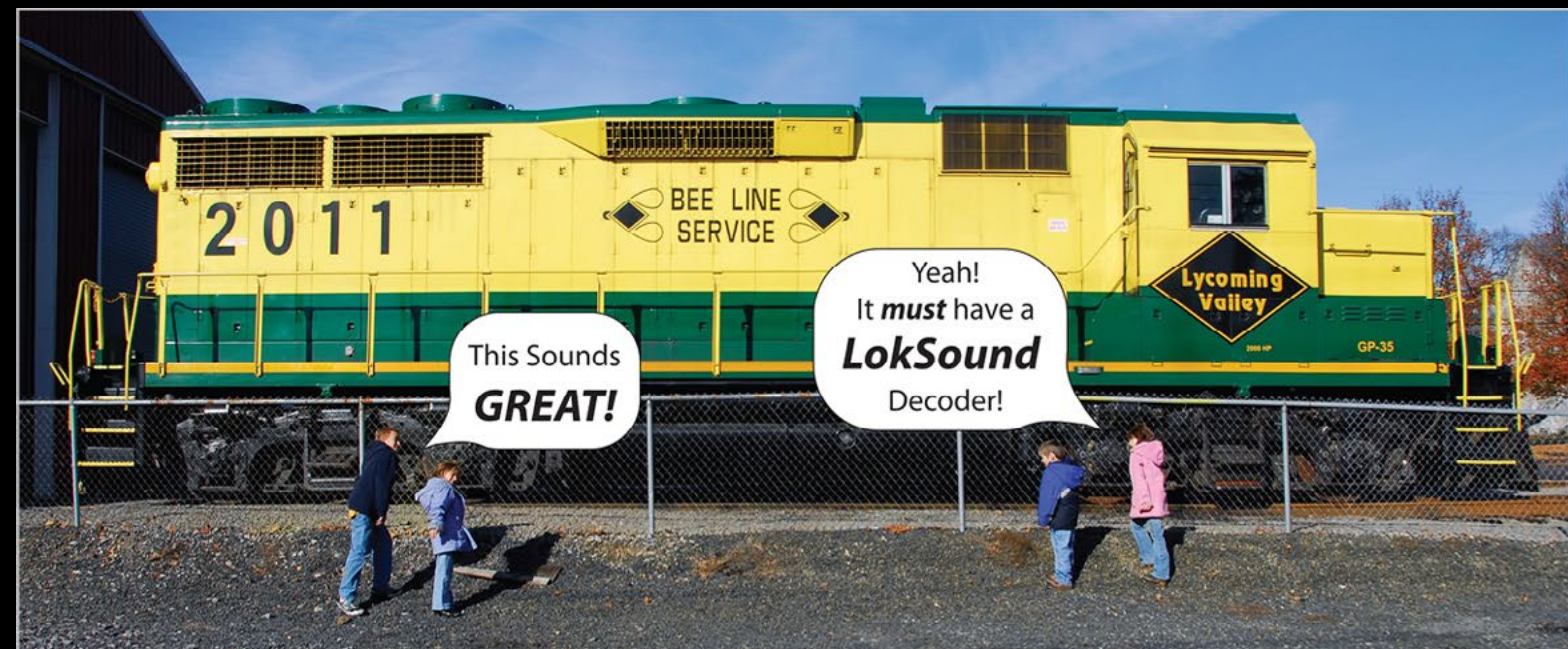
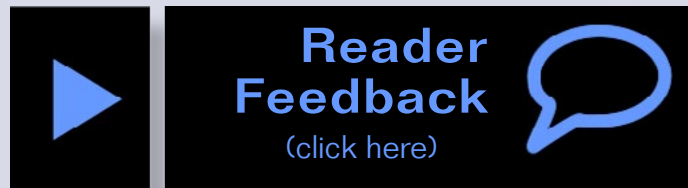
Way back in time, when DCC was new, there were several designs of speed steps. Quickly, 14 speed steps became the norm. Then came 28 and 128. Folks pretty much decided that the less than 1% difference available from 128 speed steps was enough, so the standard stopped there. DCC command stations must be able to speak all three versions (14, 28 and 128) to accommodate decoders of all vintages.

Inside modern decoders there are two options: 14 and 28 speed steps, adjusted by setting CV 29. What happened to 128? Well, decoders are kind of bilingual. If they are set to 28, they can understand the command station if it speaks 28 or 128.

"So, with all these choices, what should I do?" is the question on your lips. That's your decision, but here's what I do. Firstly, forget 14 speed steps. There are all sorts of issues that are tied into the speed control with that language. So, ALWAYS, set your decoder to 28 (some call it 28/128, for reasons that you now understand). Then you can go between 28 and 128 by only changing your command station. I always use 128 speed steps when setting up

a decoder. That way, you know you are getting the most accurate speed control your system and decoder can provide. If you choose, you can tell your command station to talk to this decoder in 28-step language. I leave the system talking 128 steps, but I'm a control freak. Just ask my wife.

By the way, some decoders use more than 128 speed steps internally for speed calculations. The SoundTraxx Tsunami comes to mind. It looks at the speed called for by the command station using up to 128 speed steps. It then calculates the PWM that should be sent to the motor at this moment in time, based on the BEMF and momentum settings and the prior response by the motor to speed changes, in 1024 increments. ☑



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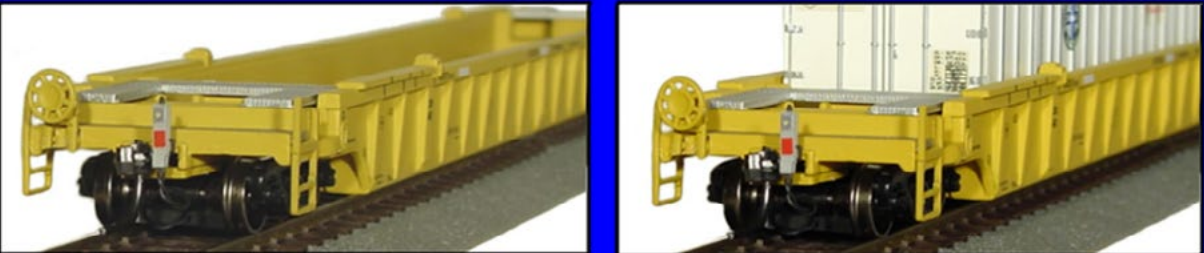


Patented Technology - US Patent 7,549,609

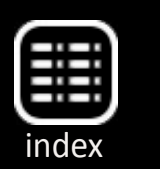
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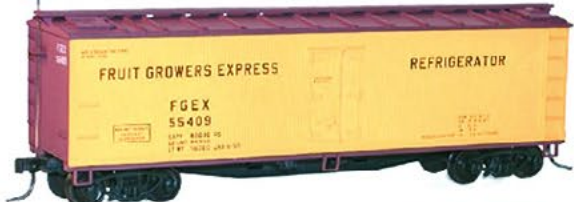


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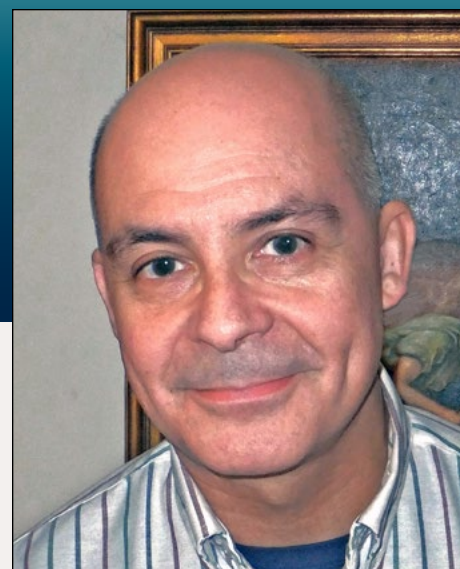
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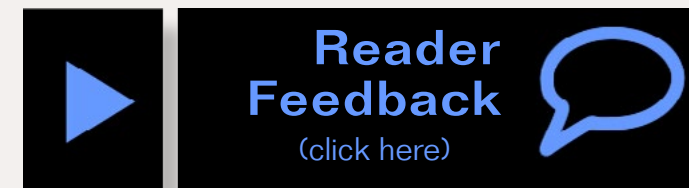
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**"How long did it take you
to build your layout?" -
Part 1**



Getting Real column
by Mike Rose

I'm still not sure how to answer that question!

But of course, explanations are in order here. Before I sat down to write this column today, I was exchanging e-mails as usual with a nice group of modelers, all layout builders. What started out as a discussion of trees eventually morphed into a discussion of priorities, and it got me thinking about the above question, something I must have been asked hundreds of times in the past.

The honest answer is that it depends on what point you count as The Starting Point. Because at this point in time, precious little is left of the original layout I began about 23 years ago after building my present house. In essence, the layout has largely been totally rebuilt in-place over time.

The original layout was my first large layout, and occupied half the basement, with my office and utilities consuming the balance of the remaining space. It was the first large layout I'd ever built, and by the time I got all my track installed and had it running, we soon identified many operational issues that



needed to be addressed, not the least of which was minimum radius. The first rebuild commenced.

Time moved on, perhaps five years after the house was built, and I'd already outgrown my basement office. Fortunately there was sufficient property to build another building next door, and that became my first-floor workshop and second-floor office. The basement of that building served as the basement I really didn't have in the house, due to the layout occupying most of it.

The former office location was demolished and rebuilt with curved corners, the well filter equipment was moved out a bit to permit tracks to go behind it, staging was built in the utility area, and the main line was extended to go around the entire basement perimeter. This included a huge, 22' long double-ended staging yard in addition to the utility area stub-ended staging yard. Once all that was up and running and I had the original part of the layout presentable, in August 2011 I had an open house/op session – my first. You can read about all of that by going back to this column:

mrhmag.com/magazine/mrh-2012-01-jan/getting_real.

Feedback was positive, but the ensuing conversations convinced me that I needed to get rid of the pool table near the new staging yards, and instead use that space to build a nice new peninsula. Those efforts have been well chronicled in earlier columns. The basic peninsula construction column can be seen here:

mrhmag.com/magazine/mrh-2011-07-Jul/gr-conrail_zts.

This column details a great deal about the construction of Mehoopany area of that peninsula:

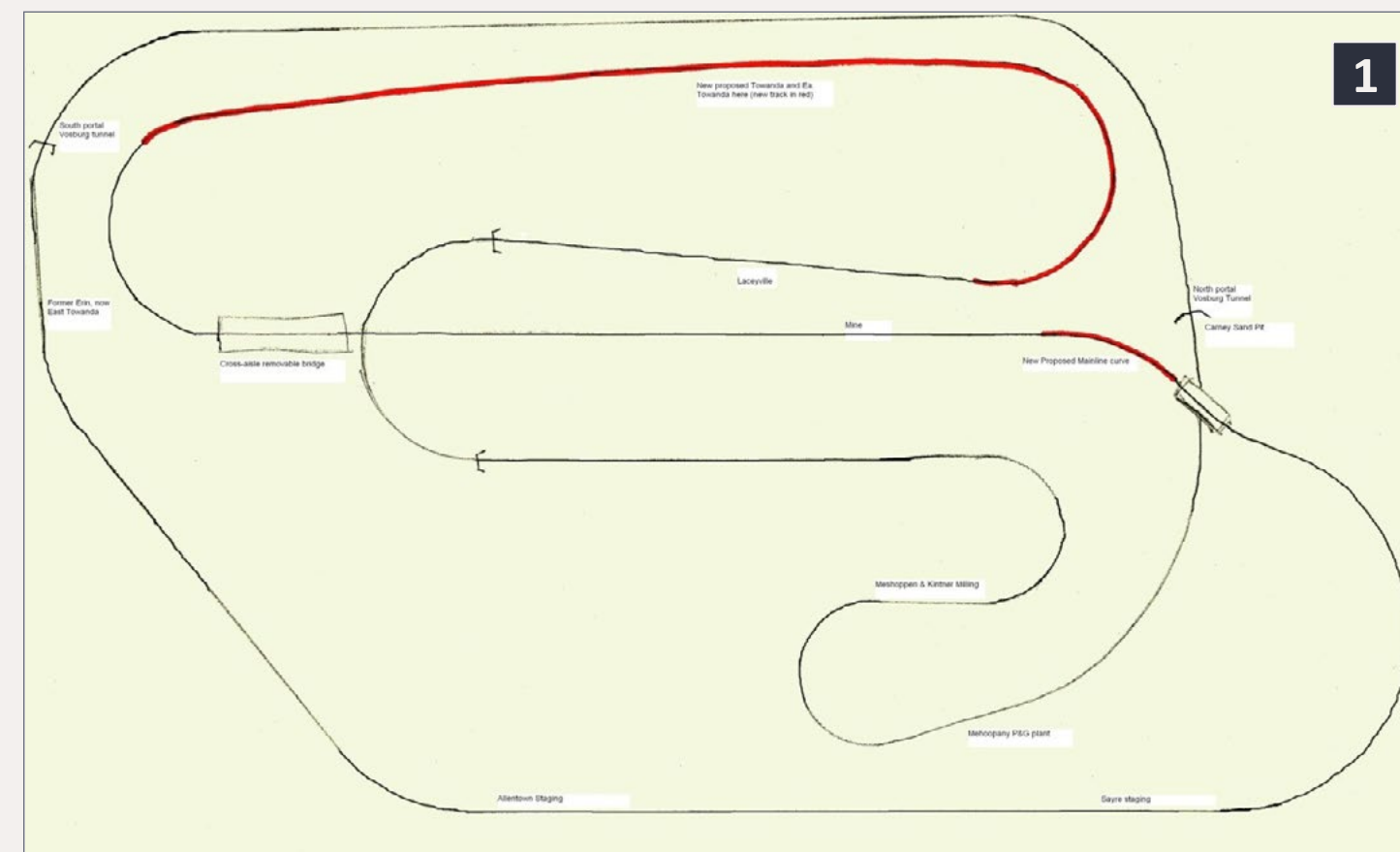
mrhmag.com/magazine/mrh-2012-06-jun/getting_real.

And of course, my last column in May covered the opposite side of the peninsula, Meshoppen and

Kintner Milling: mrhpub.com/2013-05-may/land

You would think that at this point I'd be in the process of getting to the super-detailing phase of the railroad, and refining my operations with waybills, something I'd been longing to do. Meanwhile I'd been attending op sessions at Mike Confalone's and devoting a great deal of thought to how my own layout would operate.

It was in early December of 2012 that I realized, on one of my last bike rides of the season, that there might be a solution to the aspects of my layout that had been bothering me since the incorporation of the new peninsula. In fact, I couldn't wait to get back home, look at the layout to make sure I wasn't



1: Areas shown in red represent changes to the main line and therefore new track construction.

forgetting something, and to put pencil to paper. I came up with the preceding rough sketch and sent it off to Mike Confalone for discussion.

The main thrust of it was twofold: To redirect the main line so that you could stay with your train in true walkaround fashion (and not have to endure your train entering an 8' tunnel while you zipped around 32' of peninsula to rejoin it on the other side!), and also to allow the inclusion of more actual towns along the line being modeled.

This had the happy result of also getting them in the correct order, always desirable if possible. The only fly in the ointment here was that it involved some serious demolition of already-constructed railroad, throwing literally thousands of man-hours into the trash!

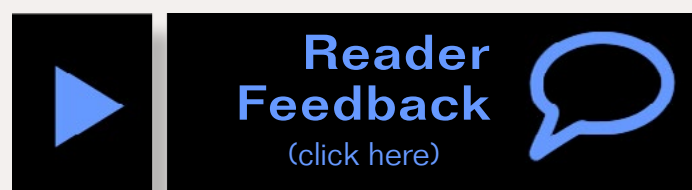
Mike Confalone's actual words, upon hearing the entire plan, were "You know, it's a bold move, but it's the right one," and after a bit more discussion with the Railroad Brain Trust, I went down there on one long Saturday and tore out all that needed to go, as shown in some of the following shots.



2: The main line to be moved enters the “to-be-removed” 8' tunnel in the extreme right of this photo. Consider this a “before” photo.

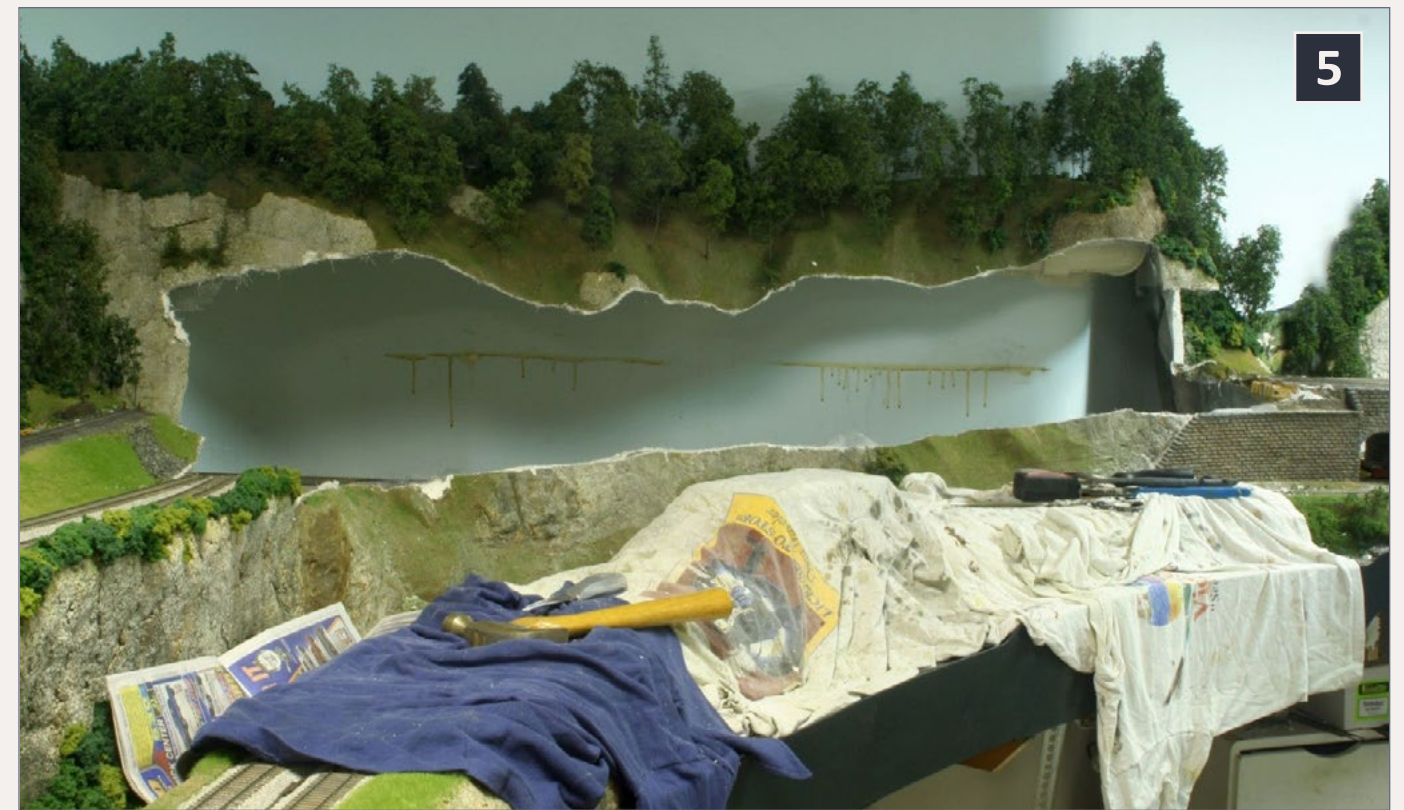


3: In this alternate view the upper left shows a tunnel portal that also will be removed. The main line entering that tunnel will swing around to join the main on the upper right (above lower track).





4: Here's that same area after demolition. You can see how the portal has been removed on the right. The line on the wall represents where the tracks and tunnel used to go.



5: And here is the alternate view of that same area. The rags are an attempt to protect my bridge and "finished" track. Working behind finished areas is most certainly NOT ideal!

The larger area to be demolished was actually the earliest portion of the layout that still existed. This was the fictional town of Hammill, and had a long line of structures along the rear that concealed a gash I'd cut into the wall in order to get more depth for larger radius hidden turnback curves under the yard there, many years ago.

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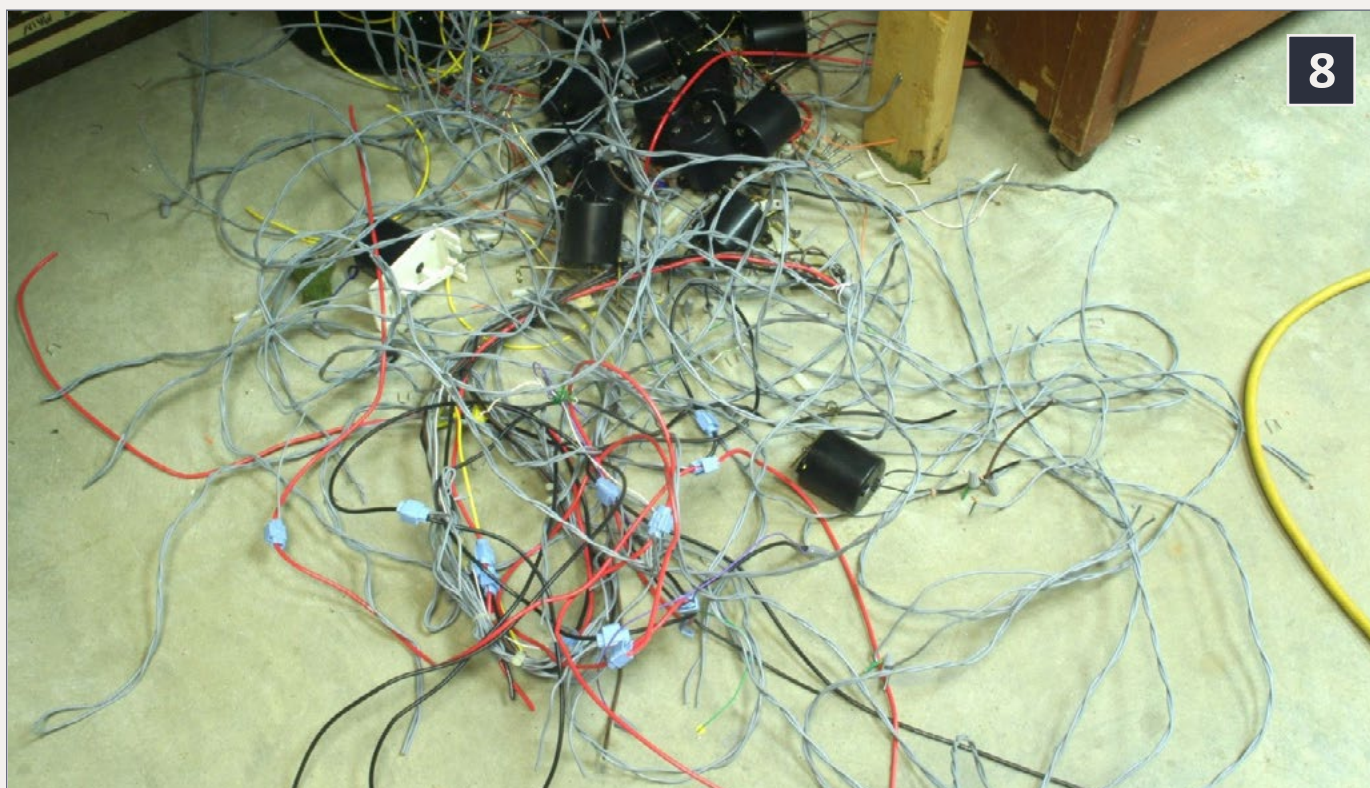




6: The “last train out” of Hammill Yard ferried the cars there to the opposite side of the basement, in preparation for the demolition that was about to occur. The old-style Shinohara turnouts here are so old that they pre-date DCC. The layout was originally wired for five-cab rotary DC block control.



7: This opposite angle view of the remainder of Hammill shows the extent of the area to be demolished (basically an entire side of the basement) and the degree of completion of this area. It was looking quite dated to me as compared to recent construction.



8: The first thing I did after getting all the cars and structures off the layout was to remove all of the Hanksraft turnout motors and associated wiring. All I could think of were those hours of work in a pile on the floor.

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9: Next I used a Dremel motor tool with a cutoff disk to remove portions of the rail on all of the tracks. This allowed me to cut straight across with conventional woodworking saws.

10: After removing all of the structures, here is what was left to be removed.

11: Weapons Of Mass Destruction – If only I had all of these available to me when I first started building the layout! Possibly the most useful tool is the red vibrating saw, which allowed me to make cuts in hard-to-reach areas and through scenery with a minimum of dust. The lime-green lithium impact driver was a champ at quickly removing old screws, and effortlessly installing new ones.

12: It certainly came out faster than it went in! Some of this benchwork goes back to my early teens, believe it or not, and was moved from another home. Many of the screws are regular-head, screwed in by hand with a screwdriver until a patch of skin the size of a dollar coin fell off my right hand.





15: For me it's always sobering when years of work end up here!

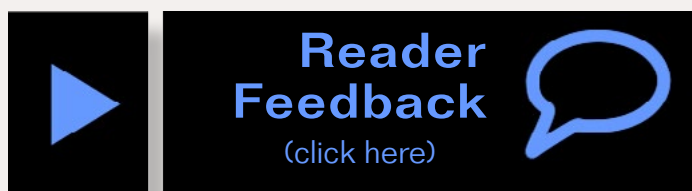
13: One of my goals was to retain this corner-hiding mountain and to upgrade the ancient trees with my current versions of Super Trees.

14: Old mountains die harder than yard areas. Shown here is what's left of a tunnel and liner just past Laceyville. This is the future location of Presswood interlocking, the route into the new Towanda. You can still see the old tunnel portal in the background above the tunnel liner in the center. That is the other end of the to-be-removed 8' tunnel.



16: With most of the chaos out of the way, it seemed therapeutic to immediately plunge into construction. First I tackled the main line restoration at what will now be called Green's Landing. This involved a tricky splice of two spline roadbed sections with plywood. The initial plan called for reusing the pair of tunnel portals, and hiding a portion of this new curve.

17: Here is the opposite view of the same area. You can see how it'll be possible to stay with your train as you make your way around the layout.



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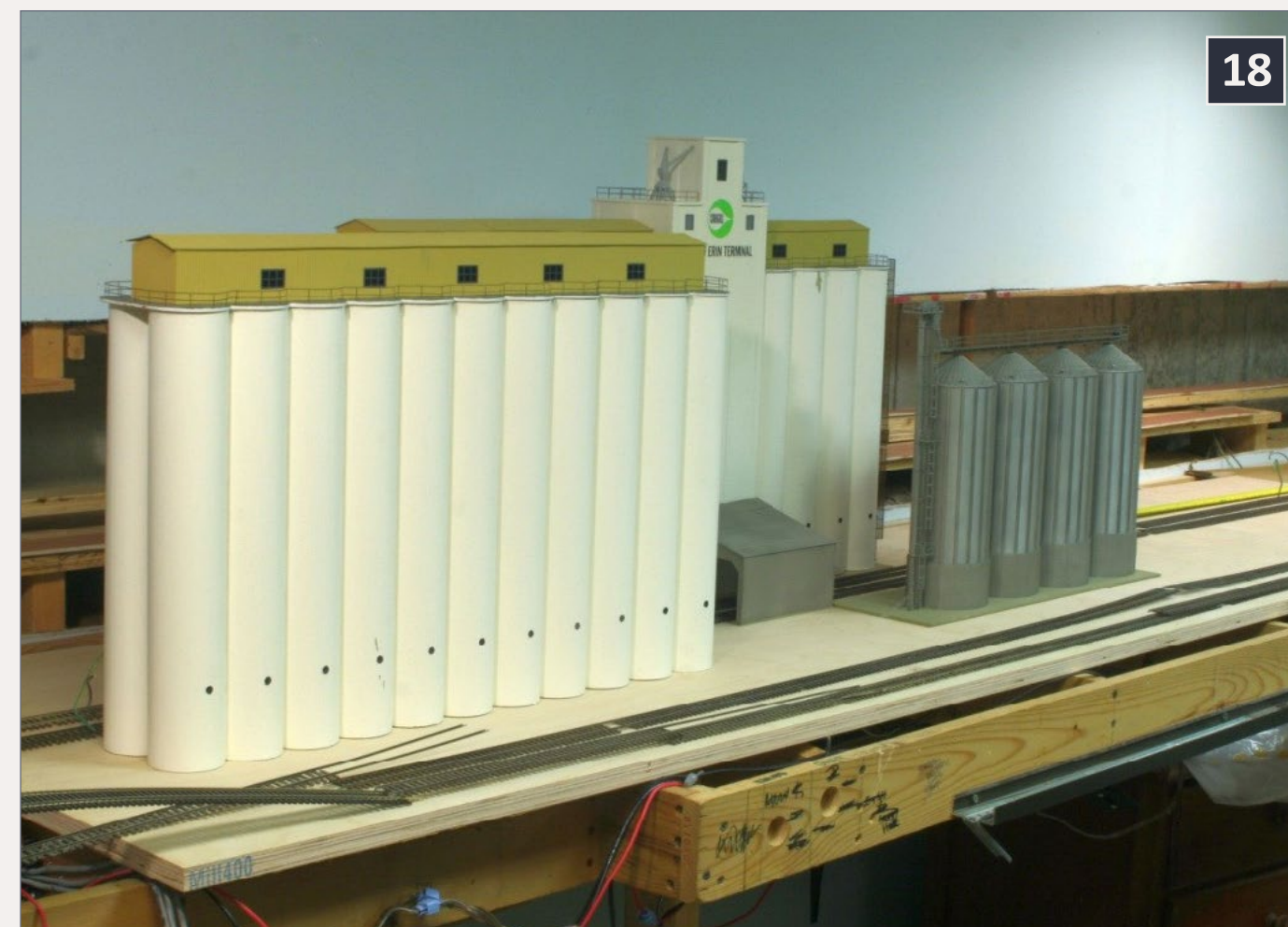
Meanwhile, in the other aisle, back where Hammill Yard used to be, the initial plan was to relocate “Grainzilla,” the big Cargill Terminal elevator that had been intended to block out the transition from layout to staging at the former Port of Erin (see *Railroad Model Craftsman*, June 2011) to the newly created real estate where Hammill Yard was.

Finally it hit me: Maybe I didn’t need that old stub-ended staging yard after all! But could I take that decidedly un-photogenic area and turn it into something layout-worthy? Here was my starting point:

The problem I’d created by locating the massive elevator where I put it was that it actually drew attention to the very thing I was trying to screen out: the transition to staging and the ugly air conditioning duct above it. Moving it to a new location where it could “breathe” and that would do it justice seemed like a noble goal.

18: Here is an early attempt at seeing what the big grain elevator would look like in the former Hammill Yard location. That piece of plywood is a full 8’ long, giving perspective to the size of everything shown.

19: It was hard to picture it properly when it was at bench, rather than track level, so I installed the risers that would support this plywood, and took another look. The tracks to the rear are “in the groove” and represent unseen main line trackage, much of it newly installed.



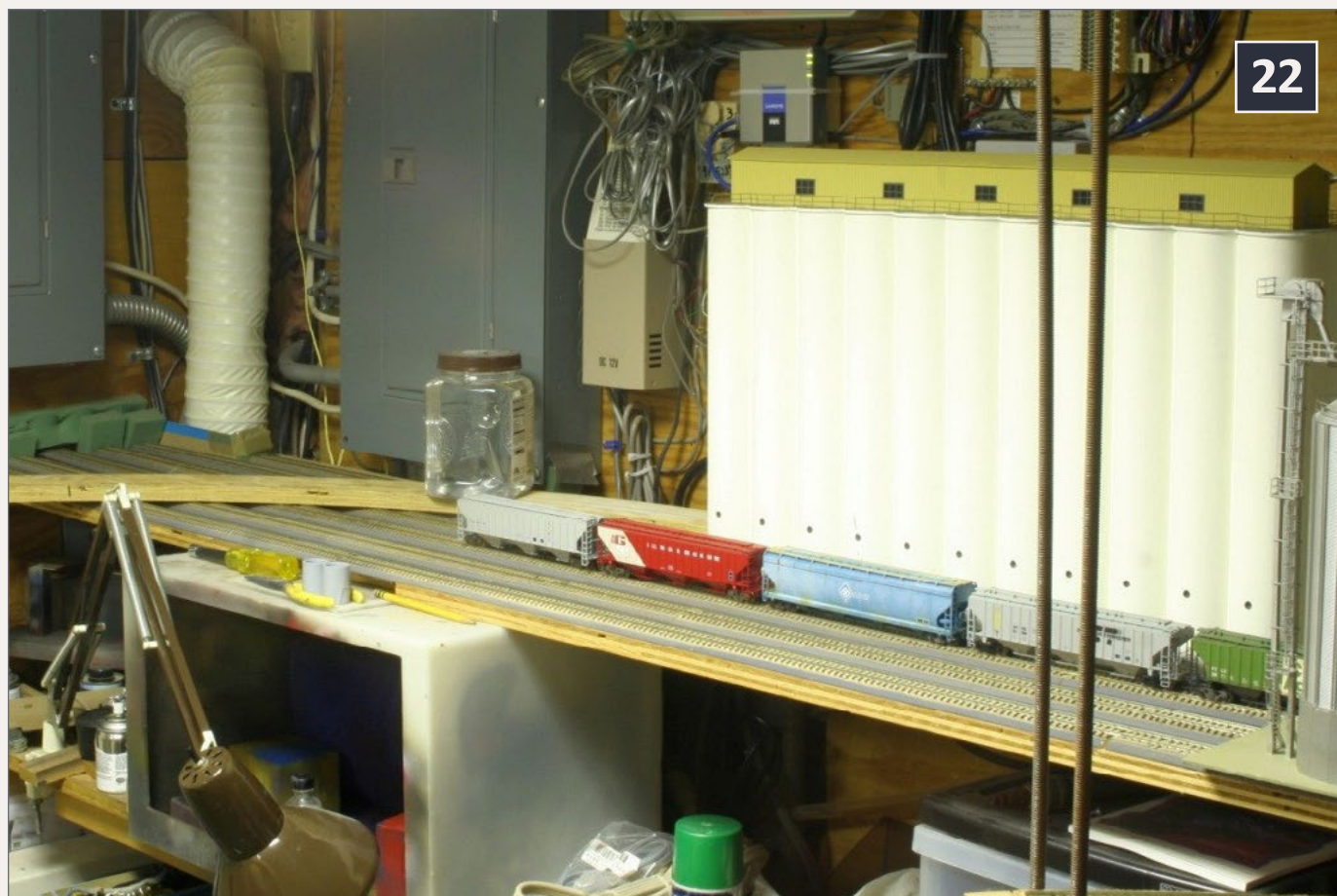


20: Now we're getting somewhere! Or are we? The more I looked at this developing scene, the more uncomfortable I became with it.

Clearly it was time for another bike ride! I kept thinking that despite the sheer length of the new location, it still didn't look right, due to the curves necessary at both ends of the site. If I was going to relocate this industry, I was determined to do it right. That meant having as much track to the right of the unloading pit as to the left of it, permitting loads to move through the unloading process and end up as empties past the pit. If you want to run a 16-car grain train, modest by any standard, and do it with two tracks, that meant 12-14 linear feet of railroad. Fortunately most of these fairly modern terminals are stub-ended, or at least I found ample prototype examples of just that.



21: Basically the area was a mess! My paint booth is under the yard on the left, followed by tools, paint storage, and of course the removable bridge to staging is smack-dab in the middle of all this.



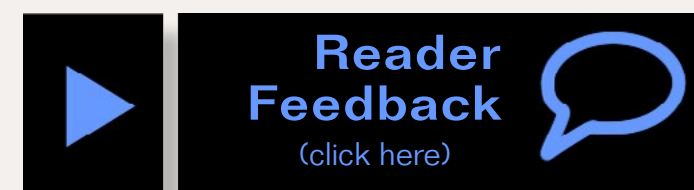
22: To complicate things even more, above the staging yard were all of my electrical and electronic utilities, including two large panels, a telephone key system, intercom, phone, and video. Above all that was the networking gear and more shelving with more...stuff!

Here I'm planning the relocation of the main line to staging from the extreme foreground right (held up by the threaded rod) to the location designated by the curved piece of plywood sub-roadbed in front of the panels. The plan includes adding a curved backdrop that is removable to screen out all of this chaos.

The first thing I did was to clear out the area above. I removed the lowest shelf and consolidated as much of the electronic gear as possible on the upper shelf. I planned to screen this out later with a black curtain. Next I relocated and condensed all of the communication and video gear to the smallest area of the background.



23: That meant of course that I needed to alter both sides of the bridge to staging. Here's a view of the original alignment. You can see how it crosses a laundry sink and then goes into the long, curved staging yard in the background.



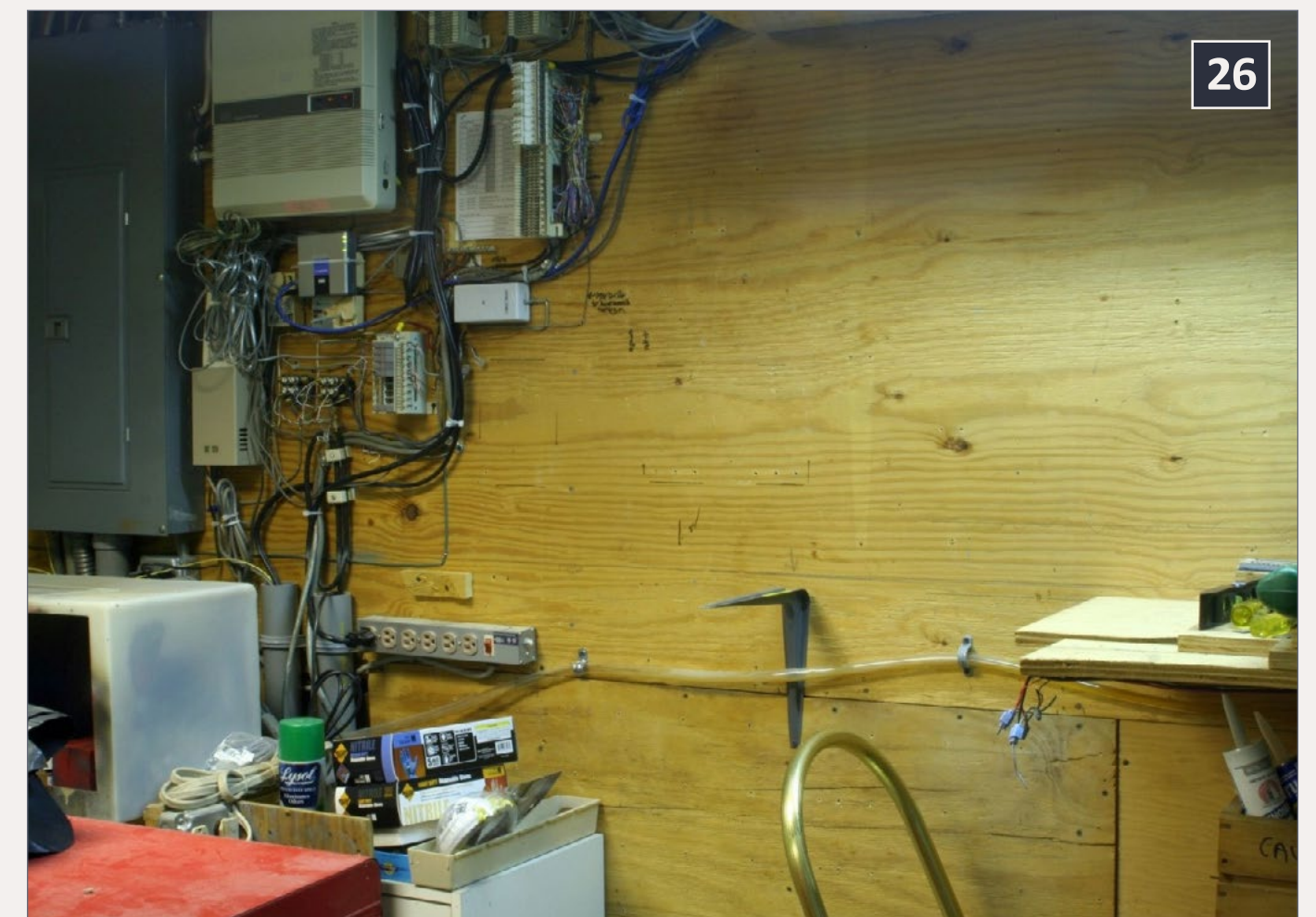


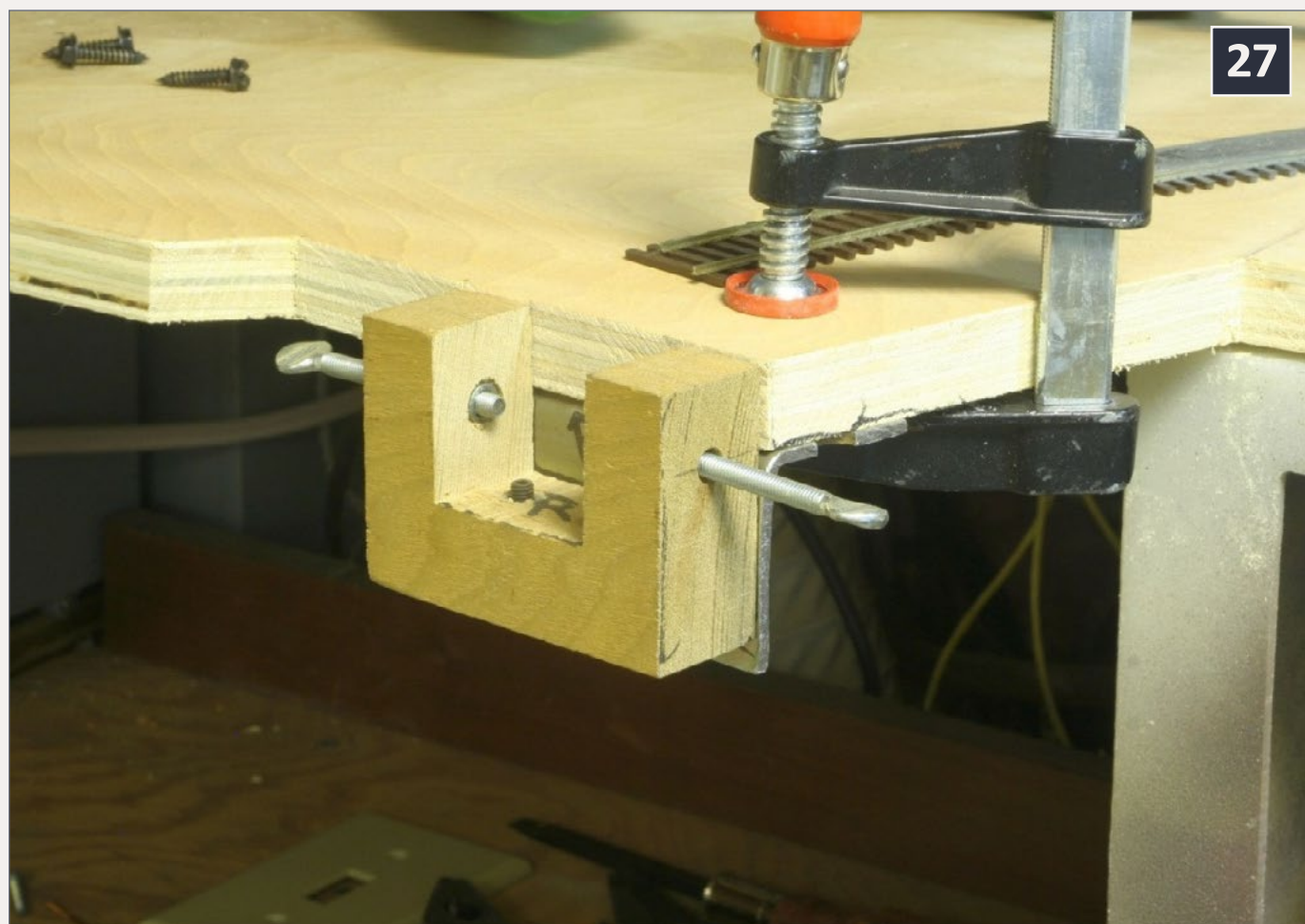
24: Here's the new alignment.



25: The new bridge location crosses a double door opening on 1.25" square aluminum tubing with hard-board sides and is easily installed and removed with the wooden sockets I built.

26: Since the old staging yard construction of so-so plywood on metal shelf brackets would be unsuitable for modern construction standards (and holding a lot more weight due to the elevator location), I decided to rip it all out and start fresh with top quality 3/4" birch plywood, my current standard.





27: This shot gives a good view of the bridge receiver that I relocated to the new sub-roadbed. The bridge can be leveled with the set screws and then clamped in place with thumbscrews.

28: Here all the new plywood is in place and ready for track and background work..

29: What a difference! Just having unpainted white .060" styrene instead of the plywood made it possible to envision how it was going to look.





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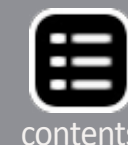
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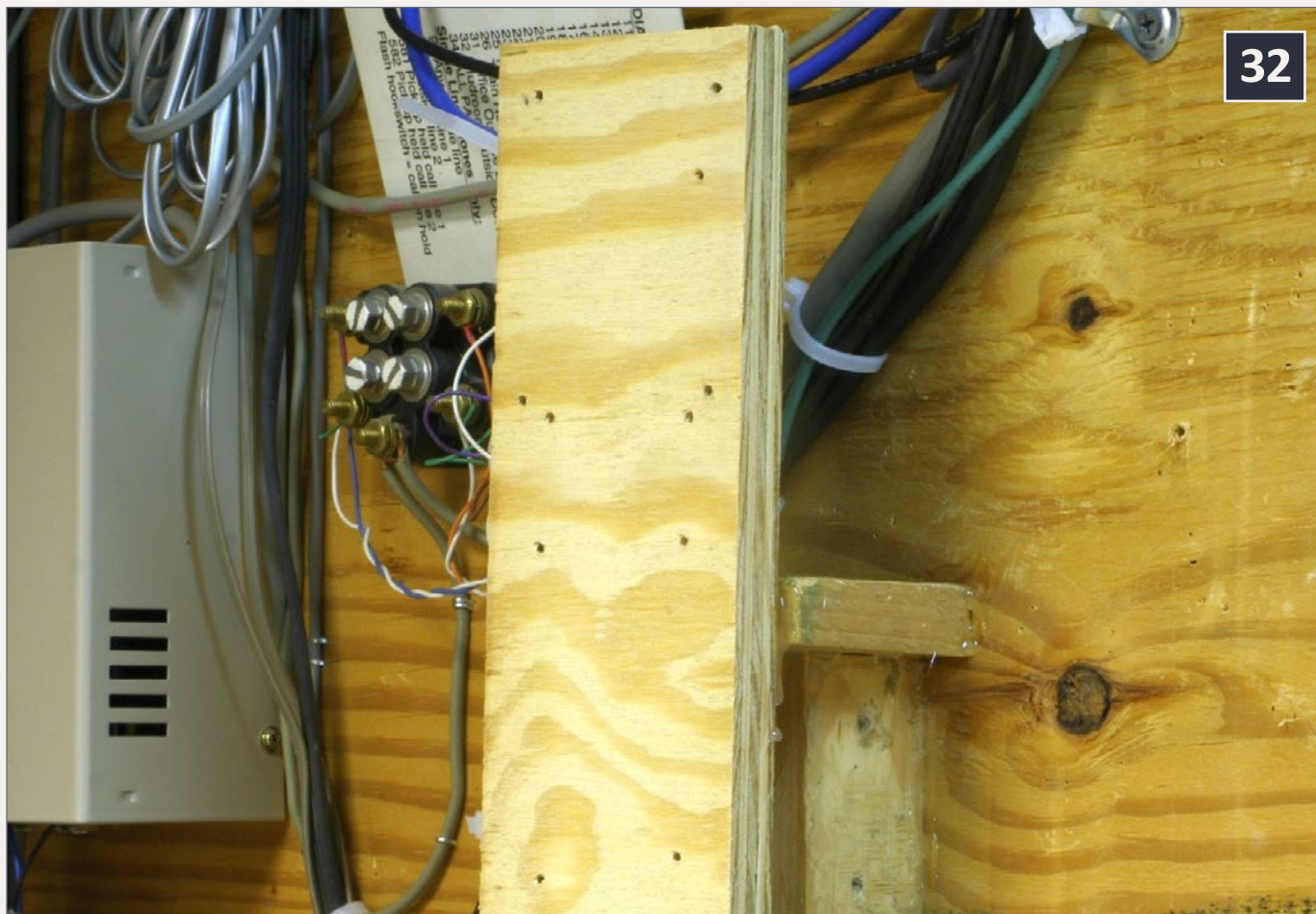
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30: Planning the curve: you can see how, once it's full height, the utilities will be invisible.

31: Since the curved backdrop needed to be removable, I had to engineer a way to support it. This proved to be a rather complex piece of construction due to all of the surrounding obstacles





32

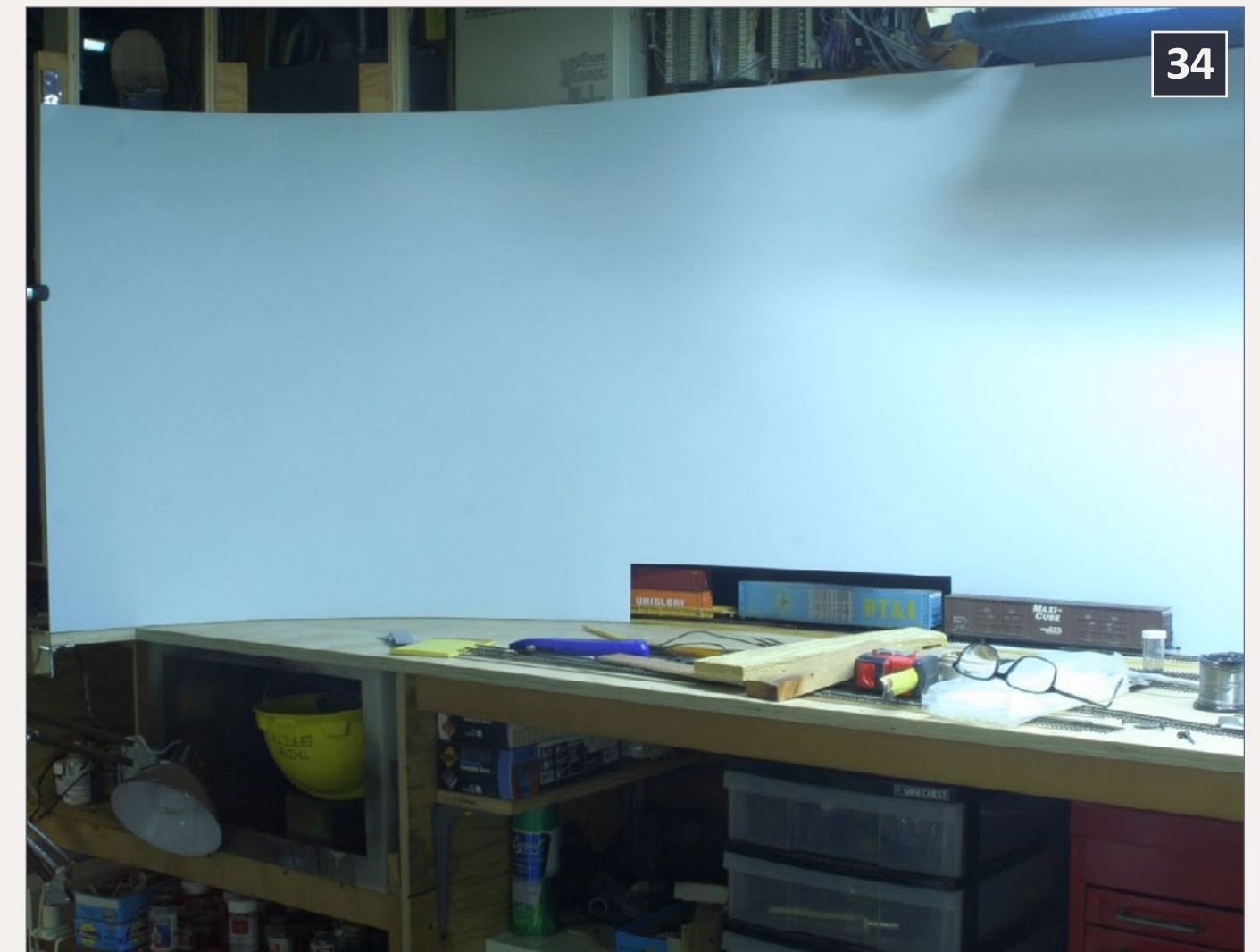
32: This is one of the crazy supports needed for the bracing that would support the Velcro for the removable backdrop. But note – no screws! How did I manage that?

33: My newest “MVP” tool: the PANTite professional hot glue gun and special high-temp hot glue. I can’t recommend this superior tool highly enough! No more awful hobby glue guns for me.

34: An early view of the curved utility-hiding backdrop. It was a relief to see this accomplish what I needed here.



33



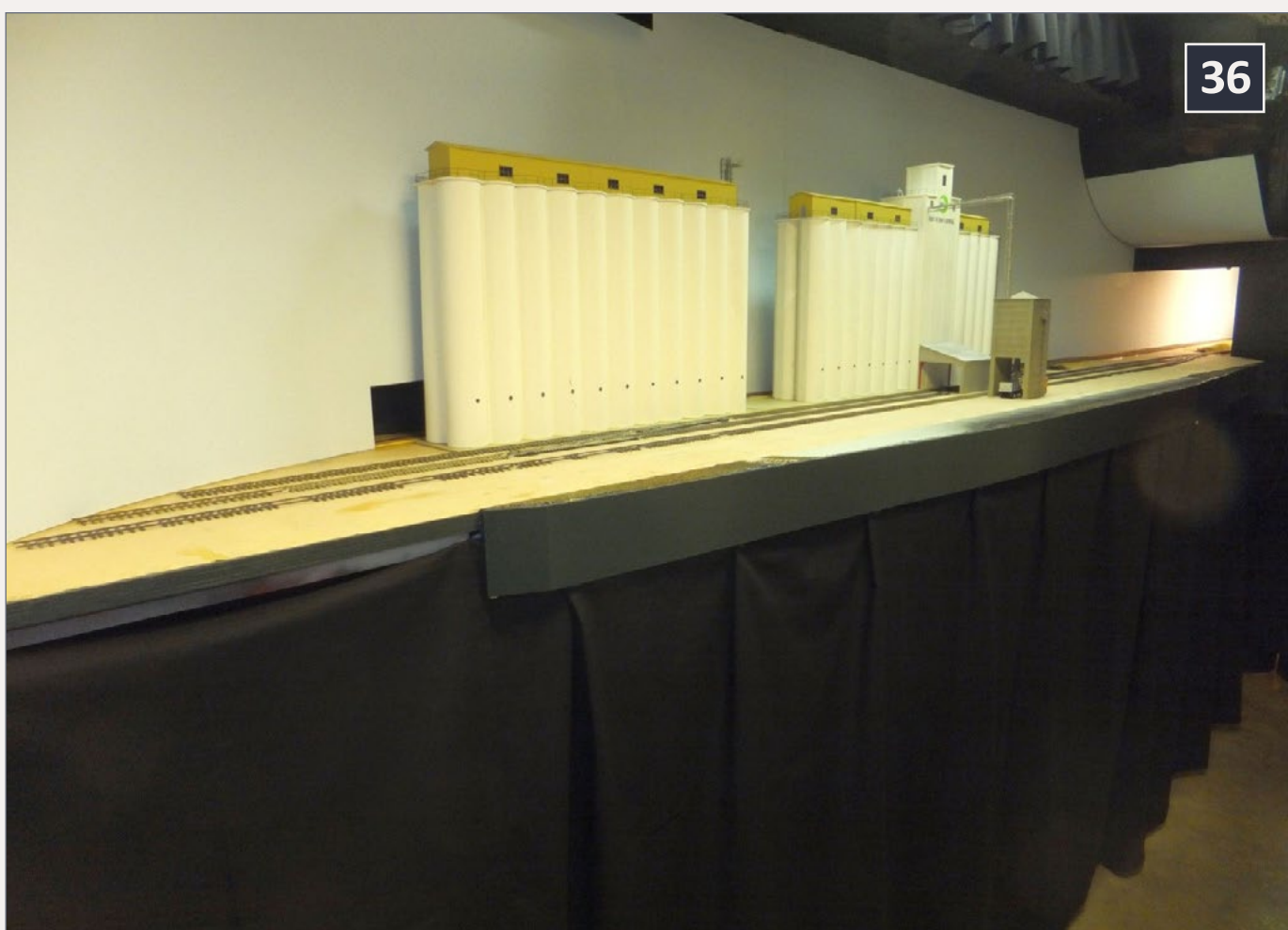
34



35: I also used the glue gun to add these stubs that would be used to bump-out the benchwork to support some scenery, including a road.

36: Here is a later view showing how curtains were used to hide all the chaos below the layout. You can just see the curtain that is used to hide what's on the shelf. And other blocking panels were added at the far end to screen out the water filtering and air conditioning equipment. Fascia is in place on the "bumped-out" front of the scene.

Next month, building Towanda out of the ruins of Hammill Yard ...



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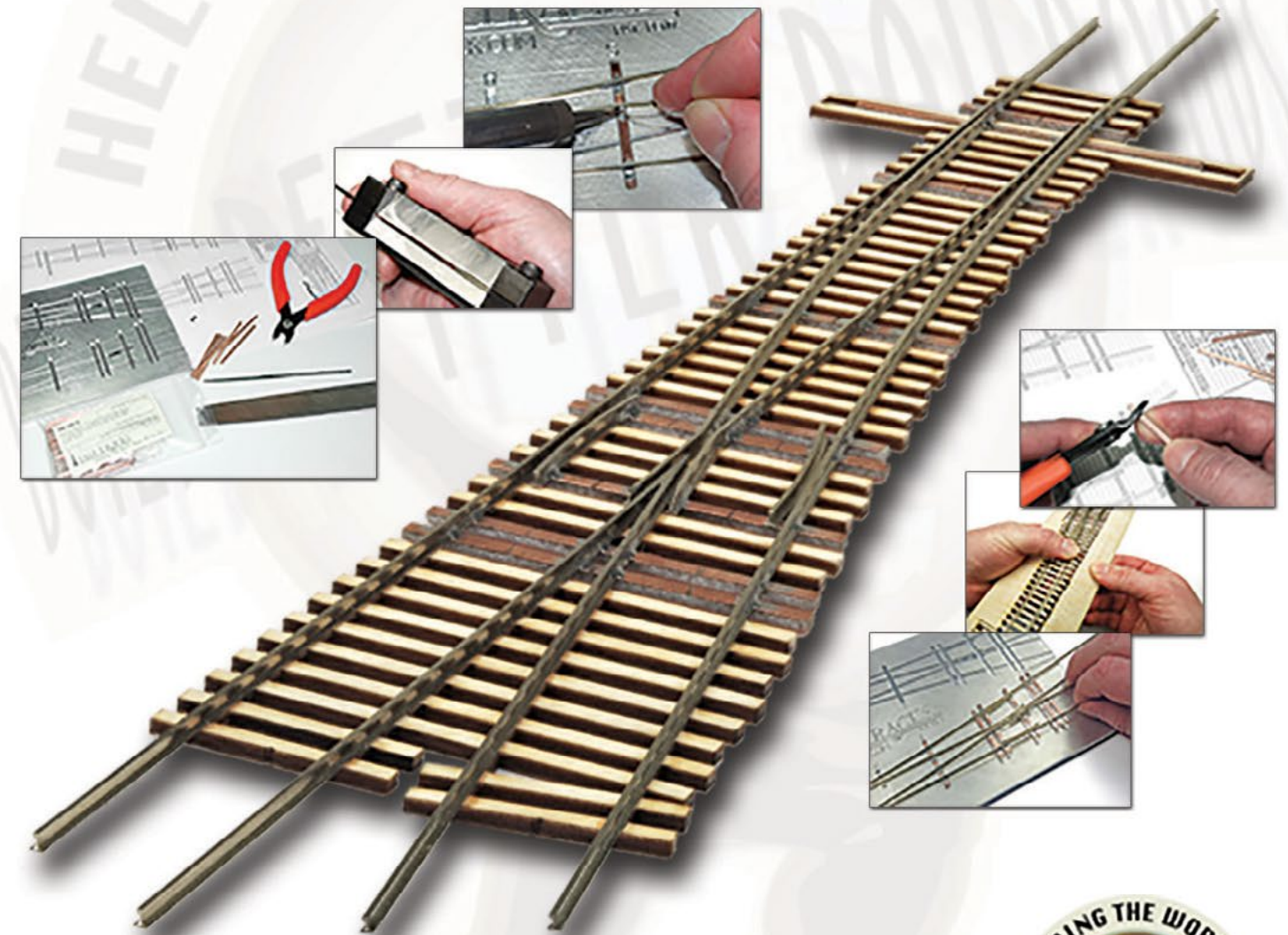
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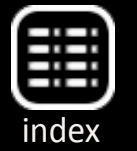
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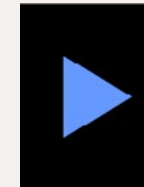


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Coke ovens!

Ramblings on Narrow Gauge and Branchline Modeling



Reader Feedback
(click here)



The Lite and Narrow column
by Larry Smith

Modeling a small battery of coke ovens, a multi-scale industry at home on any railroad ...

Most, if not all narrow gauge and shortline railroads were created to do one thing, and that was the movement of one or two commodities or raw materials to the rest of the world for use.

The narrow gauge Rio Grande's vast network of rail lines is the exception, and it was really a class one railroad that operated on narrow gauge track. The Rio Grande had more locomotives in some single classes than most other narrow gauge railroads and shortlines had in their entire fleets.

It carried diverse cargos and had a diverse fleet of freight cars. With these options coupled with the magnificent scenery of the Rocky Mountains, it is very easy to understand why narrow gauge modelers are drawn to this railroad.

Four prototype railroads have influenced my modeling. One is a standard gauge shortline and the other three are narrow



gauge. Three have one thing in common, their purpose for being built and operated, the movement of coal and lumber. This single purpose was also the root of their demise, and that of many other shortlines.

Two of the narrow gauge railroads served iron furnaces early in their existence and had coke ovens on the railroad. A third hauled coal from mines to coking ovens. To give some variety to my Clinch River, I decided to build a small battery of coke ovens at Stewart's Gap.

As an aside, the Rio Grande also had coke ovens in many locations on the railroad, so you Colorado fans won't feel left out.



1: Surviving Lewisburg coke ovens at Fultondale, AL.
Courtesy of bhamrails.info, John Stewart Collection

Types of Ovens

In the United States, the switch to coke as a raw material in the iron making process started in 1817 when the Plumsock furnace was opened in Fayette County, PA. As other furnaces came into use, anthracite coal, which was near to the major iron producers, was substituted for charcoal. Charcoal remained in use in the production of iron up until at least the early 1900s. There were charcoal kilns at the Cranberry Furnaces in North Carolina until the furnace shut down in 1903.

Beehives were a more sophisticated version of the earlier chimney type of furnaces. Earlier versions were exposed and the conical shape gave them their name of beehives. Charcoal kilns were larger but similar in shape. The earlier versions of the beehives had a wooden ramp located at the rear and wagons of coal were taken up the ramp. There the coal was loaded through the top opening by wheelbarrows, spread across the inside in a layer two to three foot thick and then ignited. The door was sealed, only letting a small amount of air through the opening, leaving the coke to cook for at least two days. These beehives weren't as efficient as the later enclosed beehives because of the manual loading that was required.

Belgian coke ovens were of a slightly different design. These ovens were developed in Europe, and then imported into the U.S. as early as 1875. The last remaining Belgian coke ovens are located in southern Ohio near McArthur at Vinton Iron Works. Belgian coke ovens on the East Broad Top supplied the iron works at Rockhill Furnace.

What follows is a description of the Vinton ovens as published in the *McArthur Enquirer* dated November 17, 1875. The article has been edited and reproduced by Richard H. Leive at oldefor-ester.com

“The ovens are built with Webster Firebrick, arranged together in one stack, each oven being 22' long, 6' high and arched over the top, and 2 1/2' wide, covering an area of 22' x 100'. The two outside ovens are supported by substantial stone abutments. There are 20 down flues to each oven and four up flues leading to a chimney. The 30 down flues lead to the four up flues, which connect with the chimney, 8' up on each oven. The gas from the coal enters the down flues, passes around and under the bottom and through the up flues to the chimneys, thereby completely surrounding the coal to be coked with hot sides and bottom.

“The charge of coal is 5 1/2 feet in thickness, or about 180 bushels, and the time consumed in the coking process occupies about 48 hours. At both ends of each oven are very (heave) sic iron doors lined with fire clay. When the coal is charged, those doors are closed and thoroughly luted (sealed) with common or yellow clay to prevent the access of any air whatever.

“When the coke is ready to be drawn, the iron doors are opened, and a powerful pushing engine is immediately run in front of the open oven. The plug of coke is discharged to the opposite side where it is immediately quenched by a stream of water. The water, besides preventing combustion, eliminates a considerable amount of sulphur. The coke is now ready for use in the furnace and is filled in iron barrows or buggies and run directly to the tunnel head to be charged into the furnace.”

These dimensions seem to be standard for the Belgian coke ovens as they are identical to the ones that were built on the East Broad Top at Rockhill Furnace. 48 of the ovens were built by McLanahan, Stone and Bayley of Hollidaysburg, PA and placed in service in 1876, and followed by 20 more in 1878. The furnace design was ahead of its time. They were the first



2: Blocton, AL Courtesy of bhamrails.info John Stewart Collection.

to attempt to recapture the gases from the ovens and the first to use pushers to get the coke out of the ovens.

The weakness with the ovens, which lead to their demise, was in the quenching of the coke that left the coke very wet, a major problem in the iron making process. Water had a tendency to make the iron brittle and less usable.

Beginning in 1880, the Rockhill Coal and Iron Company, EBT's parent company, began to build the traditional beehive ovens and by 1889 had 132 in use making the Belgians useless. In 1899, the Belgians were scrapped and their iron salvaged. While these particular ovens are gone, ruins of others still stand at the Vinton iron furnace site in McArthur, Ohio. There are excellent drawings of the Belgian ovens in *Railroad Model Craftsman*, May, 1990, page 79, as part of "East Broad Top in the Iron Age, Part III," by Lee Rainey.

Most of what we see still standing today are enclosed beehives. It isn't known when or how the beehives came to be enclosed to reduce heat loss to the ovens, however with the amount of dirt-cheap labor, it isn't hard to see how quickly this could have been developed.

After the invention of the Bessemer process for making steel as the number of beehives skyrocketed from 200 in 1870 to 31,000 by 1905 in just the Pittsburgh area. In 1885, the Rochester and Pittsburgh Coal and Iron company had the



3: Coke Ovens Battery No. 4 of the Newcastle Coal Co. in operation at Newcastle, AL Courtesy of bham-rails.info from Ted McCormack Collection

A Brief History

By definition from Wikipedia, "Coke: the fuel is a solid carbonaceous material derived from the destructive distillation of low-ash, low-sulfur bituminous coal."

Wikipedia also gives a brief history of coke, stating: "The use of coke, as a fuel, has been with us for centuries. It was first found to be used in China as early as the 9th century for heating and cooking. In the early decades of the 11th century, ironworkers in the Yellow River region of China began using it to fuel their furnaces as wood was almost nonexistent in the area."

A patent was granted in England in 1589 for the making of iron and steel, along with the smelting of lead. In the patent was a distinct reference to the processing of coal by "cooking." Two more patents were issued which mentioned coke, in 1620 as

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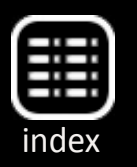
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a fuel for use for smelting ores and manufacturing of metals, and 1627, for removing the coal smell or smoke for use in heating houses.

In 1709, Abraham Darby developed a blast furnace using coke for firing. Because of coke's superior resistance to crushing, blast furnaces could become taller and larger. This one development made iron less expensive and was one of the factors leading to the Industrial Revolution.

Charcoal was the primary source of coke; however the rapidly dwindling forests created the need to find a better source for coke. Early coke, from coal, was produced by burning coal in heaps on the ground so that only the outer layer burned, leaving the insides free of the gases and oils; in other words baking the coal. This wasn't very efficient.

A similar situation occurred in the United States changing from wood to coal because of depletion of the forests for fuel in the salt brining industry. In this instance the development of the coal mining industry in West Virginia started.

Beginning in the late 1700s beehive ovens were developed to allow better control over the burning of the coal. They consisted of a chimney constructed of loose bricks, and several openings for the combustion gases to enter. As more experience developed with these ovens, the yield became better, from about 35% to 65% of usable coke by the mid-1800s. ■

distinction of building the world's longest coke battery, with 475 ovens over 1.25 miles. The output from these ovens reached 22,000 tons per month.

Modeling a coke battery

Flexibility is the key word when modeling a coke battery. I built my coke battery one way, but there other options. I used castings by Scale Model Masterpieces, the former Tom Yorke castings. The prototype for these castings is the ovens of the Cascade Coal and Coke Company, at Cascade in Preston County, WV. The ovens were built in 1903.

The castings come with the doors bricked closed and have to be opened to indicate an oven that is being charged or just pulled. They are cast in LabStone so the material is easy to remove using



4: Tom Maule's coke ovens under construction on his Mann's Creek Railway give an excellent view of the trolley system used at the Sewell beehives. Tom Maule photo.

just a hobby knife. There are eight yard wall castings and eight oven castings (sixteen ovens) for my battery. The basic kit comes with wooden retaining walls that are optional to use. These are also cast in LabStone and take stain very nicely. Depending on your space limitations, you can have more or less. Scale Model Masterpieces has an expansion kit with just the oven and yard wall casting with the trunnel pieces.

Construction began by cutting the left column from each casting, leaving the left end casting complete. This was on both the yard wall and the oven castings. Each casting was butted together, then rubbed back and forth until they fit tightly together. The castings were glued together using a combination of yellow glue and CA. I stained the castings with Dr. Ben's "worn concrete." After drying, the castings were given a wash of Builder's in Scale blackwood stain to highlight the stones.



5: Stewart's Gap beehives diorama. Larry car track and loading tippie are to be added. Details to be added are tools, mortar barrel, ladders and loading boards. The ovens are constructed using Scale Model Masterpiece's coke oven castings.

6



6: Close-up of Stewart's Gap beehives showing open and closed ovens. The yellow color represents firebrick used to seal the ovens.

Chalks were used over the oven doors to indicate sootiness from the coal.

Extruded foam board was cut to proper height, and using a NMRA gauge, track was into place and a line drawn locating the yard wall. The yard wall was attached to this piece of foam board. For my battery, I'm using the dimensions from the Sewell, WV coke battery. These are referenced on pages 76-81 of "West Virginia Narrow Gauge, Mann's Creek Railway," written by Ron Lane and Ted Schnepf. It states that the "coke dock" or "coke wharf" was 15' wide. This is a big saving in space for a model railroad over the 32' from the Connellsville measurements. I marked a line 15' from the front edge and glued the oven fronts into place.

Using both the Connellsville and Sewell measurements, I cut a piece of foam core board 25' x 202' for the tops of the ovens. I added foam core board partitions between each of the ovens. To the open door ovens, Evergreen tile sheet was added after being painted black. In the sealed ovens, holes were drilled for lighting to be added later.

At the top, measure in 5'2" and mark a line. This will be the center line for the tunnel heads. Glue them in place and stain them similar to the oven fronts. For the closed ovens, drill open the tunnel heads. For the open ovens, paint the center



7: Note the differences in the oven fronts on Tom Maule's Sewell, WV coke ovens from the Stewart's Gap ovens. Also, there is a difference in the oven fill holes. Tom Maule photo.



8: Coke ovens at Sewell, WV on Ron Lane's Mann's Creek Railway. Two of the ovens have smoke units installed. Photo by Ron Lane.

of the tunnel heads black. These are put back in place after the oven is charged from the larry car so the coal will ignite. When the coal ignites, the cover is removed and green smoke is vented. Haven't figured out how to do that yet.

The Sewell ovens' larry track was narrow gauge and ran on girders between piers 2'6" x 4'. The actual track gauge was 42" but mine will be 3'. The piers are cast in throw away molds.

Placing the top piece in place, I covered both it and the coke dock with dirt and let dry. Then I applied a liberal coating of Highball coal dust. To the coke dock I added some scale coke that I purchased from a company that is long out of business.



9: Coke ovens at Sewell, WV on Ron Lane's Mann's Creek Railway. Two of the ovens have smoke units installed. Photo by Ron Lane.

Larry cars

With the number of furnaces in use, there had to be some efficient way to get the raw coal to the ovens. Photographs from the late 1860s indicate that some kind of long push cart was used on rails along the tops of the early enclosed beehives, with men shoveling the coal into the ovens through the fill hole on top. While easier than pushing a wheelbarrow up a wooden ramp, such as used for the open beehives, it was still not efficient enough to meet the demand that soon developed.

Sometime in the late 1870s, and that is a guess, a car was invented to load the beehives from above. It was called a larry car. Larry cars are defined as a car moving on rails and

equipped on its underside with a hopper, used to charge coke ovens from above. It is thought to be a corruption of the British word lorry, which means truck.

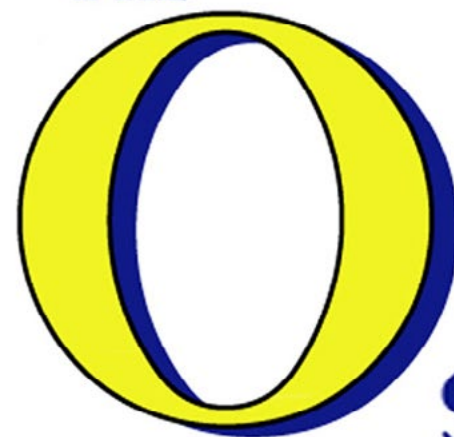
The cars are a standard design with a hopper mounted above an open framework and a chute on one or both sides to load the coal into the beehive. The cars are small. Powered cars are approximately 12'6" long and 8'6" wide. Non-powered cars are 8'6" long and 8'6" wide. Both cars ride on two axles, some with journal boxes, some without.

The chutes are manually operated with a control wheel located on either end of the car to lower and raise the chutes by chains. Drawings of a two-chute powered car, built by H.C. Frick for use at Scottsdale, PA, are in *Model Railroader*, June, 1981. The author states that these cars were used to transport coke

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10: Larry cars in position for charging the ovens at Sewell, WV on the Mann's Creek Railway. Ron Lane photo.

to the processing plant; from photos of other larry cars in use, it wasn't common practice. Instead, the cars moved coal from a hopper to the trunnel head (opening) and dumped.

There were two methods of moving the larry cars atop the beehives. The first used a trolley pole and a power line erected over the tracks. A wooden roof covered the operator's platform. The other method used a small steam locomotive to move the cars. The tracks were mounted on brick and concrete columns built at the same time as the beehives. These columns were 12'10" x 2'6" and placed at 14' intervals. The rails centered on concrete pads 2'6" x 2'6" x 1'3". The center of the fill hole for the beehive was located 5'3" from the front wall,

while the center of the larry track was an additional 7'3" from the center of the fill hole. Three cross ties were equally spaced between the columns.

These measurements are taken from Historical American engineering Record (HAER) memory.loc.gov/ammem/collections/habs_haer, drawing for the beehive coke ovens at Connellsville, PA and there is a disclaimer stating "topography and operating costs determined the configuration of beehive coke works. Coke ovens were always built in rows, and a single row built into the hillside was called a 'bank.'" This is a factor to be considered when building your models.

Modeling larry cars

Thomas Maule, a narrow gauge friend of mine, is modeling the Mann's Creek Railway and built larry cars for his coke ovens



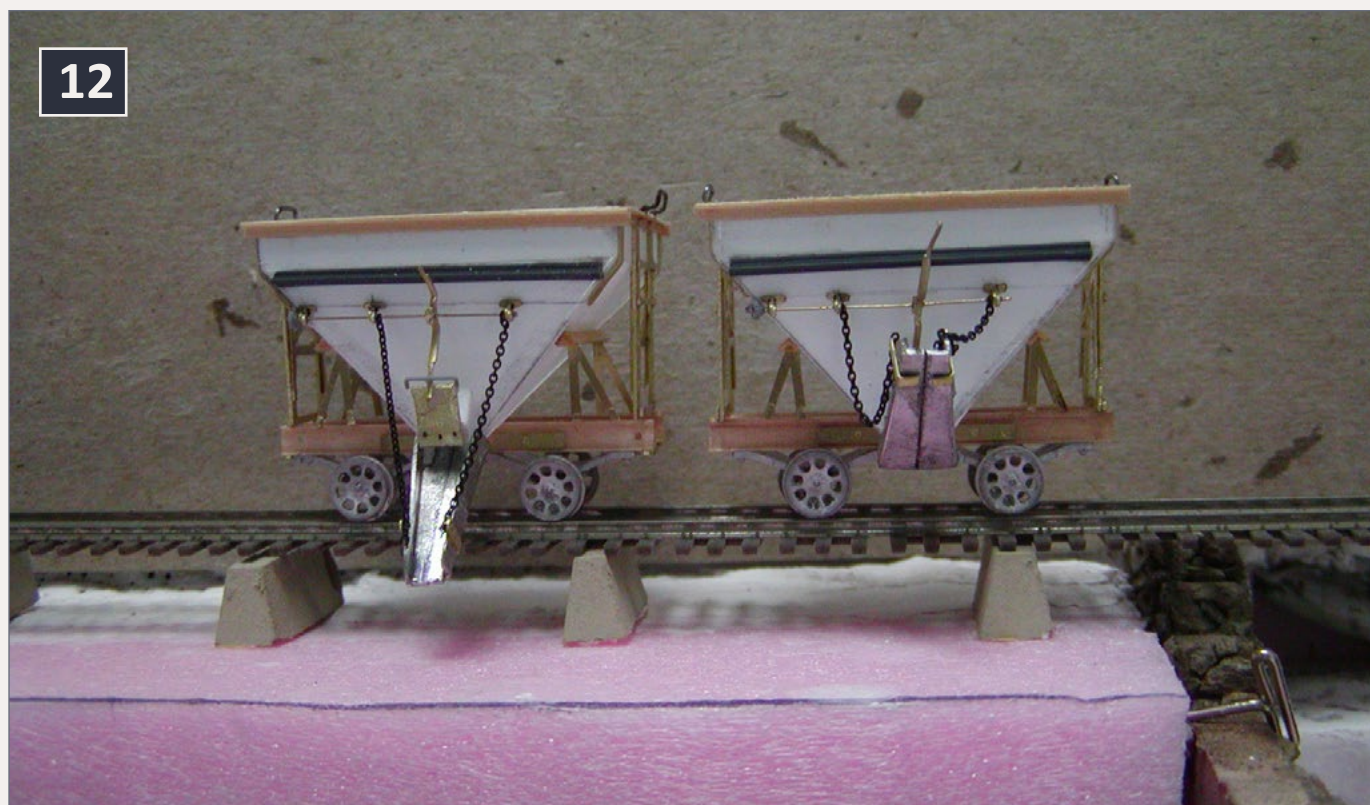
11: The bodies of two small larry cars under construction by Tom Maule. Tom Maule photo.

at Sewell, WV. I will be using his instructions to build my Larry cars. Here is how he built his:

I got my information from using photos from "Sewell onsite pictures," "West Virginia Narrow Gauge, The Mann's Creek Railway," and folks from Sewell.

These larry cars are also called "charge wagons" by the folks in Sewell who worked them. They ran on old street car rail. They had DC electric motors, (one car in each pair was powered and one wasn't) and traveled in pairs tethered together. A simple trolley system ran along the back of the charging area for power.

Page 78 of Ron Lane's book shows a great drawing of the end view, which I used to make a scale drawing. In Sewell, I actually measured a larry car which is flipped over on the very end



12: Tom Maule's two finished larry cars prior to painting, showing the location of the details for the cars as listed in the article. Tom Maule photo.

of the coke ovens. On Page 79 is a Rich Cool photo showing a great profile of front and angled slope sheet ends. It also shows wheel size, type, I-beam frame, chute, and the chain linked loading lever.

The box dimensions are 6'9" wide, 10' long, and 7'6" tall overall. Wheels ride on 42" wide track (I built mine for N scale track width). The spout is 12"x18" and feeds into the chute which it is hinged on. I used .020 Evergreen sheet styrene cut and scored to bend angles. The wheels are from Durango Press speeder kits.

Here is a rough description of how I built mine: Trial and error!

I made paper drawings of the ends, front and back, then I made cardstock templates to bend angles and capture the look from photos. Dry run fit and taped together, made modifications, then transferred onto pieces of .020 Evergreen

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sheet styrene to cut and carefully scribe, score and gently bend angles for main hopper and slope sheets. Spout was made from styrene also cut into a strip 18 scale HO inches, scored @ 12" increments bent and folded then glued together. Then the ends of the boxed tube were angle-cut and filed to fit hopper body. This is where the loading chute will mount.

On mine, one larry has its chute down for the loading position and the other has its chute stowed upright, showing that this charge wagon has just been emptied.



14: This illustrates the diminutive size of the larry cars. Tom Maule photo.



13: Close up of Tom Maule's two painted larry cars on the Sewell coke ovens. Tom Maule photo.



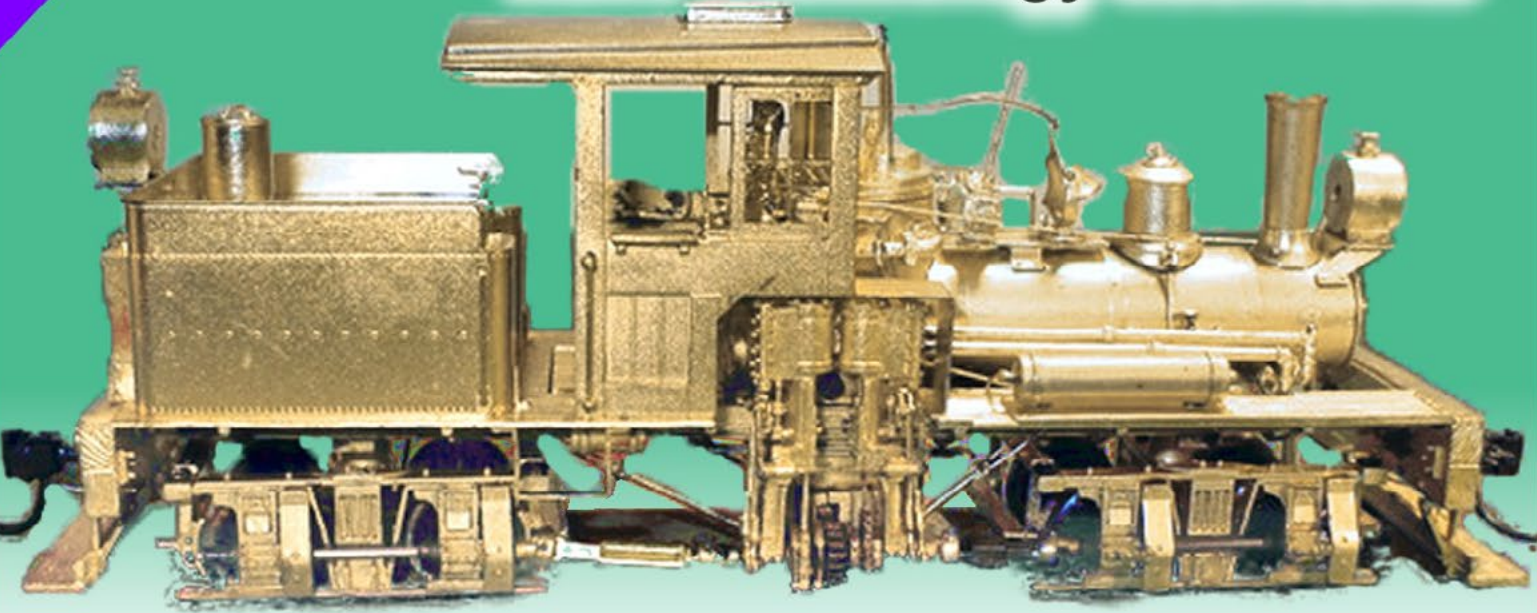
15: Coke ovens at Sewell, WV on Ron Lane's Mann's Creek Railway. Two of the ovens have smoke units installed. Photo by Ron Lane.



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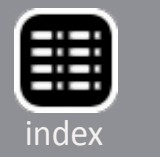
Photos and video of superb models



What's neat this week column by Ken Patterson



1: My 10-foot radius trestle stands five feet high and cost \$100 to build -- \$75 in fence pickets and \$25 in staples. This month's video includes lots of snow-plowing action.

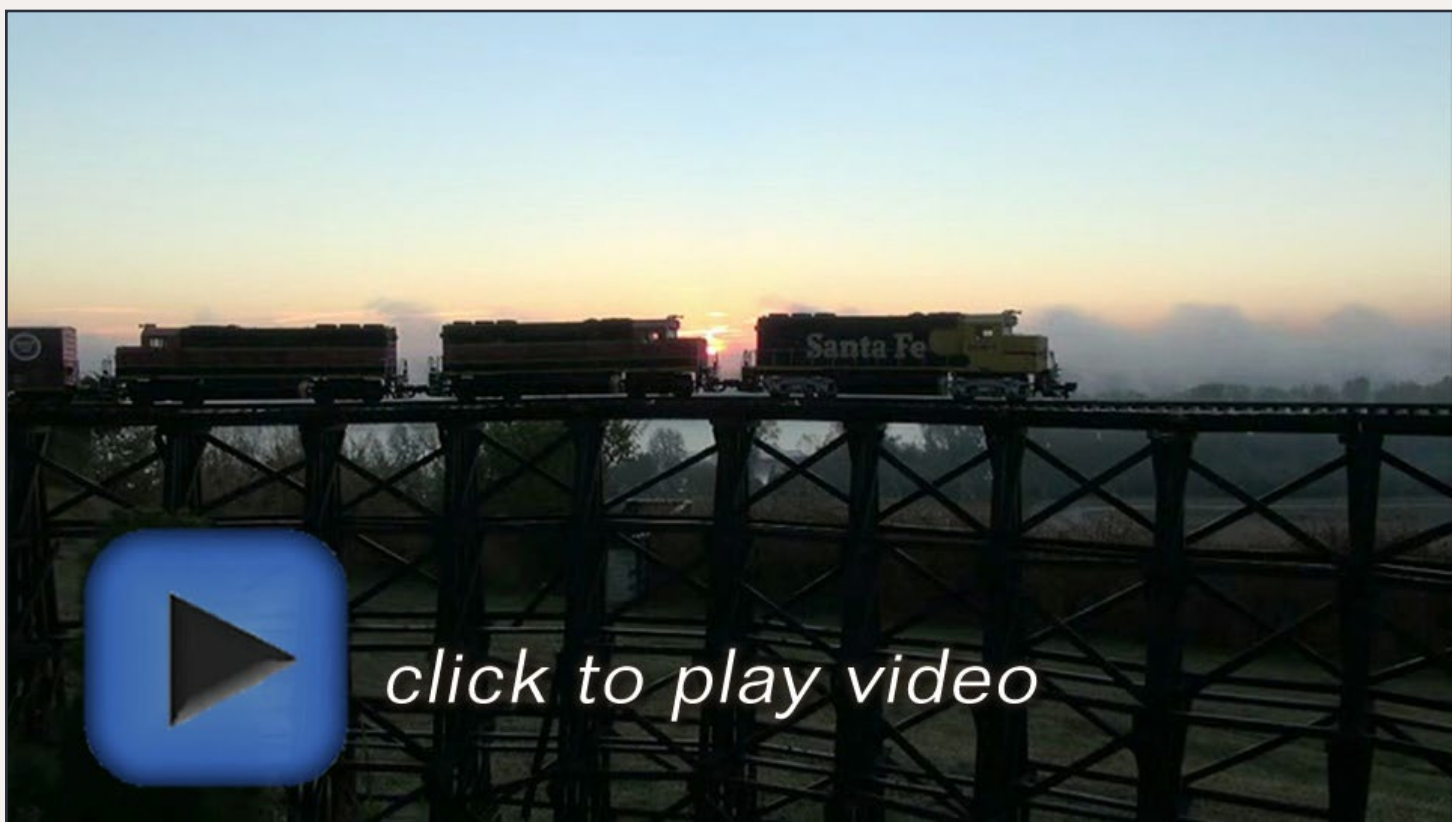


It has been a full year of "What's Neat This Week" photos and videos. Each month, they have only gotten better as new modeling artists are found and as new skills in video editing are learned.

In the past 12 months we have displayed quality modeling from some of the best freight car weathering artists in the United States.

This month's video recaps all of the talents that have appeared over the past year, and looks at four of the best run-by segments of the year, in full HD. I've added large scale trains plowing snow, something that was a big hit in the past year.

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3: This month's video includes my mini-lesson showing how you can shoot a photo like this of your models for a contest-winning entry. A few tracks and a little reflective resin make for a perfect shooting diorama.

[← back to previous page of text ...](#)

4



4: Norfolk Southern ACe's do a powerful video run-by this month. Full sound makes these locomotives something of a treat when they appear on video.





5a-5b: Mo-Pac blue is still around, at least in a celebratory paint scheme. These units are the pride of Union Pacific's new heritage fleet and look pretty special doing a slow run-by in this month's video. Full sunlight and sound make the power look great while working the mainline.

▶ **Reader Feedback**
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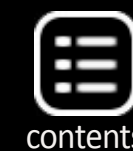


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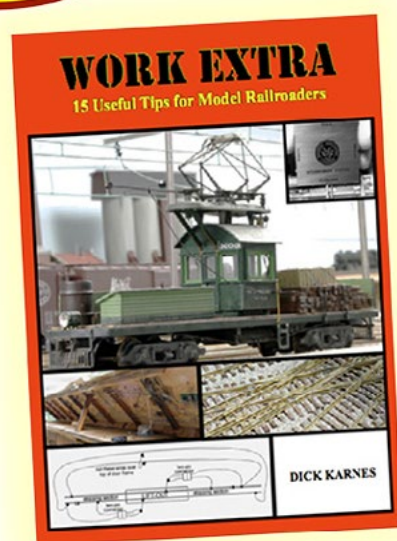
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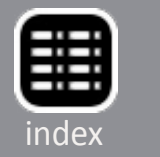
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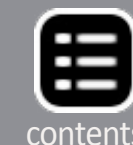
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MRH introduces

TrainMasters.TV

MRH Publisher Joe Fugate and TMTV Executive Producer Barry Silverthorn discuss the TMTV vision and their mission to transform hobby media ...

[Visit the TMTV website](#)


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1: MRH Publisher Joe Fugate (left) and TrainMasters TV Executive Producer Barry Silverthorn (right) met to discuss TMTV in this exclusive MRH feature story.

Joe: Okay Barry, let's say you are in the MRH booth at a train show, and somebody says, "I see you're promoting this TrainMasters thing. What's that?"

Barry: TrainMasters TV is a new way to experience the hobby unlike anything you've seen before. Think of it as a network TV show made just for people who like model trains, but instead of it being on cable, it's on the Internet.

TMTV is a 60-minute plus show with a lot of bonus content that's too long or too oddball to make it into the program. Because you have so many media choices these days, we make TMTV to be entertaining, informative, and hold your attention.

Joe: I think the entertainment aspect is vital. Some on the MRH forum described TrainMasters' programming as

entertainment on a subject they really enjoy, which of course is model railroading.

Another key aspect of TMTV is the tag-line: "Becoming a better modeler one video at a time." What are your thoughts on that?

Barry: This is one of the many places where we differ from something like MR Video Plus (MVP). I see MVP as a basket of different videos. They do have some multi-part videos and some series titles, but they seem to be more of a potpourri of video topics and have less of a common show thread theme.

TMTV's packages all the stories into a complete show, which has a different – and we believe a more special feeling to it. Of course you can go to the TrainMasters website and search for a particular video on a specific topic, because we do break the show down into individual videos, too.

First and foremost, TMTV is a TV show you can watch over the Web. It's a magazine in video format, as opposed to being just a potpourri of videos.

Joe: Yes, that's a good distinction. Here at *Model Railroad Hobbyist* we're about helping modelers do the hobby well. There's a big "people" component to everything we do.

Barry: I'm looking forward to the variety of faces that will be appearing on TrainMasters. Although we do have our familiar hosts, our Backshop Clinic segments, for instance, feature different guests. This means you'll get fresh perspectives and you'll always be learning new ways to do things.

One of the wonderful things about TMTV is there's no small select group telling you there is only one "right" way to do something. You can make up your own mind about which is the best technique for you. TMTV's variety of guest experts on the show brings a lot of compelling value to it.



“When I ask, ‘What would I want to see?’ there is so much I want to see myself! I realize we will never run out of ideas!”

Joe: As we’ve discussed, TrainMasters needs to be about the hobby at-large. Find the best and brightest who really know their stuff, and put them on camera to share their knowledge.

We have a huge opportunity to pull in those expert modelers you might not otherwise hear from, unless you happen to live next to them. Let’s expose up their wisdom and insight to everybody in the world over the web via TrainMasters.

Barry: We use the word “experts”, but it doesn’t take much to be an expert in this hobby in some cases. If you have a technique you do that’s in any way unusual, that’s something that somebody somewhere will be interested in.

I sometimes have difficulty convincing people to be a guest on TMTV. They figure they’re not very good on camera, and after all, they’re just doing what they do – it’s nothing special. But there is always something you can learn from somebody else’s modeling. So in that sense, anybody can be an “expert”.

Joe: Good point. No modeler should automatically rule themselves out as a possible candidate to be on TrainMasters.

Barry: As a producer of the content, I am always concerned about, “Is it too simple for viewers, or is this going to be over their heads, or is the terminology of the guests clear?”

I also ask, “Do viewers know what our guests are talking about, or do we need to explain everything to them?”

It’s all a very fine balance, which requires intuition. I base it on the people I know in the hobby, and what most of the people I know would want to see.

Joe: That’s exactly how we do MRH as well. There’s a good synergism between TrainMasters and MRH. A lot of times we just ask ourselves, “What would we like to see? What do we think people would be interested in, and would get a lot of traction with model railroaders?”

Barry: The problem is, when I ask, “What would I want to see?” there is so much I want to see myself! I realize we will never run out of ideas! On the other hand, where am I going to find the time to do it all?

“I would call my hobby interests ‘big-tent.’ I am broadly inclusive – traction, diesels, steam, freight, passenger cars, whatever – all of it fascinates me!”



Joe: Right! You sound similar to me. I would call my hobby interests “big-tent.” I am broadly inclusive – traction, diesels, steam, freight, passenger cars, whatever – all of it fascinates me!

Barry: Sadly, you and I will never live long enough to do all the things we want to do in this hobby.

Going back to the entertainment aspect of TMTV, I hope to make our content so that even if you’re not interested in traction, even if you’re not interested in Colorado narrow gauge, there’s still something in there that entertains you, so that at least you’ll sit and watch it, and we hope go, “Wow, I didn’t even know that – how fascinating!”

Joe: Yes, neither one of us can get too much of trains. So, where did this idea of TrainMasters TV come from?

Barry: Something like TMTV has actually been rolling around in my head for 20 years. It’s the “democratization of media” that has allowed us to do this.

TMTV asks, “What if we could have a whole TV station devoted to model trains?” How about getting an audience who like this topic too, and not be forced to watch what we’re fed by a network or a cable company? That’s pretty exciting!

Joe: It is! After the genesis 20 years ago, what happened next?

Barry: The short version of the story goes like this – I was working on a show about classic cars, and I felt we could get another 13 episodes out of the network if we switched out the wheels – from tires to steel. Put the wheels on rails, *Wheels on Steel* we called it, and do a show about trains.

We did a short *Wheels on Steel* pilot to show the network what it might look like. Unfortunately by the time the network saw the pilot, they had changed hands and they were no longer interested in either cars or trains.



4: TrainMasters TV Executive Producer Barry Silverthorn, editing the report on the 2013 National Model Train Show.

After throwing this idea around, one day I thought: if I can’t get the networks to pay me \$25,000 for a show, what if I could get 25,000 people to pay me \$1 each for that kind of program?

That’s really where things kind of took off. I contacted you, and you know the rest of the story – how I happened to walk in the door at the right time.

Joe: Yes, I’d already been telling the staff, “The next new media thing for the hobby is some sort of ‘streaming Netflix for model trains’.”



“Formula production says, ‘If it doesn’t interest a large audience, then we won’t do it.’ I’m sorry, but that’s not the MRH way.”

Then you waltzed in the door and said, “Hey Joe, I have this idea for a train channel on the Web, and I’ve got a background in TV production. What if we could partner, where I do the content, and you could distribute it?”

And the rest is history, as they say.

Barry: Sometimes I feel we’re late out of the gate with TMTV. But on other days I feel like we were way ahead of the rest of the world, at least on the production level of the monthly TMTV show.

Joe: We’re late in some ways, but we’re also just getting started, right? Between the two of us, we can dream up more stuff than we could ever do in two lifetimes with TrainMasters!

Barry: Because we’re subscriber supported, that gives us some freedom you don’t have with the ad-supported magazine.

If TMTV were a cable TV show, there would be many restrictions on what kind of stories we could do. Every story would have to be vetted by the cable execs, whereas with TMTV we

have the freedom to just go to Tennessee, for example, to cover the Oak Ridge Horn Honk – if we think something’s a great story, then we’ll do it. There’s no TV executive sitting at a desk somewhere going, “Oh I think we’d lose viewers if you did that story.”

Joe: Formula production says, “If it doesn’t interest a large audience, then we won’t do it.” I’m sorry, but that’s not the MRH way.

Barry: And in the network TV world I’m from, if a show like TMTV gets picked up, because the audience is so general, the content has to be dumbed-down. It’s so refreshing to do a series about trains and not have to spoon-feed the audience – I don’t have to treat them like dummies!

Joe: I support covering the hobby well with TrainMasters. I’ll pick on a particular interest: Traction. They don’t like me saying this, but traction is a hobby niche interest. The audience is not nearly as large as, say, for class 1 transition-era railroads.

Yet that won’t stop me from doing an article on traction in the magazine, and that should never stop us from doing a TrainMasters segment on a traction subject.

I want to cover the hobby well. If that means we do a segment that appeals to a tiny audience at times, then *fine!*

Barry: Good, I want to do a feature on PCC trolleys (street cars).

Joe: Go for it! Since TrainMasters does not have ads per se, then for hobby vendors, what, if anything, does TrainMasters have to offer them?

Barry: I start by asking what a particular vendor has to offer TrainMasters. There are many great stories that involve manufacturers.



6: The TMTV crew shoots the Tim Warris Bronx Terminal segment, which became the opening story in the inaugural November edition of TrainMasters TV.

I think of the very first story in the very first TMTV show for November: Tim Warris and the Bronx Terminal layout. How that led to FastTracks is a great example where manufacturers fit into the hobby.

Let's face it, most people get into manufacturing because of their passion for the hobby.

Like Jason Shron and his Turbo Train, the pilot we did for the *Wheels on Steel* show idea. That Turbo Train wouldn't exist if it weren't for the passion Jason has for Via Rail.

There are a lot of stories to be told through the lens of manufacturers, and they're just great stories without being "advertising."

Joe: We've also said it's appropriate for hobby vendors to do clinics under certain guidelines. If a vendor or hobby manufacturer has a product and can come on camera and explain how to use it, that's certainly OK. But it needs to be a how-to clinic, without marketing hype.

Barry: I'll give you a good example of that: Ken Schlotfeldt from Badger Airbrushes. I've talked to him about doing a clinic on airbrushes, on everything from how to choose an airbrush, to how to use one.

Ken told me that he will do demos, and he will use whatever brush, (even if it is the competition's brush) that's the best tool for the job. If vendors will do that, it gives them instant credibility. That's how vendor content will be done on TMTV. Focus on facts, not hype.

Joe: Yes, that's what we want.

Barry: One thing I like about vendors – they're the most motivated to come and do clinics. While we do pay an honorarium to any guest who appears in Backshop Clinic, for example, it seems the people who make certain kinds of products are the most motivated to demonstrate the different products in that space, including other vendor's products.

The only "ad" you might see on TrainMasters is a short billboard from, for example, one of our sponsors, Green Frog. Green Frog Productions has been very generous in allowing us access to their entire library of archived video.

So when we talk about Bob Bartizek's Pennsylvania and Western Railroad, we have footage of the Pensey from the 50s we can show. In return for them giving us access to their library, we'll display a logo billboard in the show. But it's not an overt commercial, it's just a billboard thanking them for their support.

Joe: Right, just a mention because they're helping support the show. Of course, there will be some mention of Model Railroad Hobbyist, too!

Barry: Yeah, but even that is within context.

And let's face it, MRH has done a great job with these forums, giving people a place where they can go and discuss things and ask questions. There's nothing wrong with encouraging that.

Joe: Okay, so I sign up for TrainMasters TV. What am I going to get in the course of a typical month?

Barry: What you to get is a show that's about an hour long, and it's presented in four acts. Each week there will be a new act, each being about 15-20 minutes long. Each week you can watch an act, or you can wait till the end of the month and watch them all at once as if it's one entire show.

As well there's bonus material – some material that's either too long or maybe too specific on one topic to put into the show. And there's material from the Model Trains Video DVD library that people can go back and watch.

Joe: So what are some of the different segments or shows that make up a monthly vidcast on TrainMasters?

Barry: There's the *Backshop Clinic*, which we've already talked about. Two people sit down at a table and work on a project together, or the host brings a project to show off.

We get to learn with them, and enjoy that process together. That's a segment hosted by Lionel Strang or Clark Kooning.

Lionel is quite a card. He's as entertaining as the project. It takes bit to get used to Lionel's style, but once you get to know him, he's like your older brother who puts you in a headlock and gives you a noogie and messes up your hair!

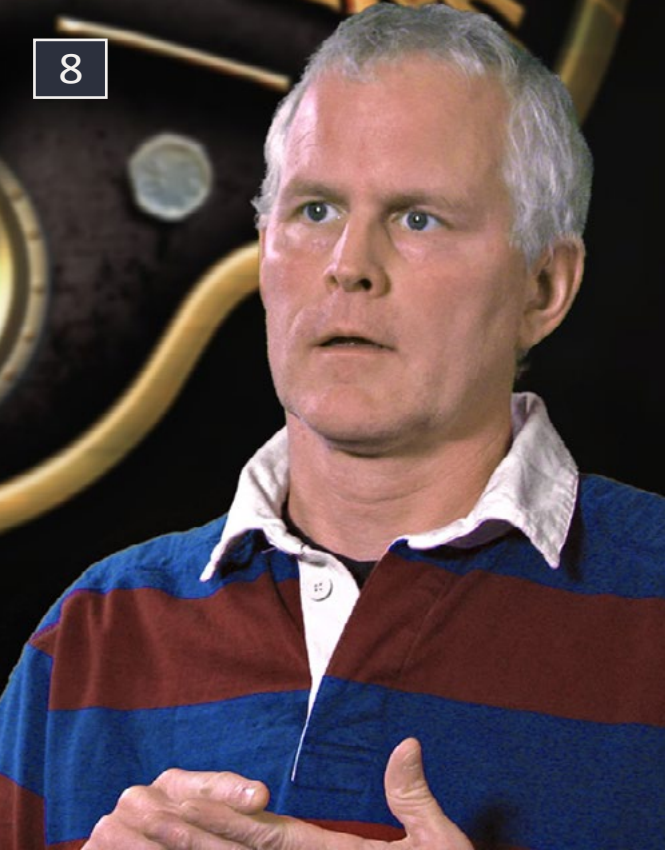


7: Modeler Chris Lyon shares some tips on painting detail parts with host Lionel Strang on *The Backshop Clinic*.

We have a segment called *DCC Decoded*. We will cover everything from decoder installation, decoder programming, effects and sound, the whole range of DCC topics. That clinic will be hosted by multiple guests over a season.

I'm really looking forward to this segment because I've been on the edge of the hobby the past ten years, so I'm having to play catch-up. I expect to learn a lot from *DCC Decoded*!

Joe: What else?



“We’re making a TV show here. There is a big difference between a YouTube video and a television show, quite frankly.”

Barry: Another feature I’m working on is *MyLayout*. The first installment of that will air in December or January. *MyLayout* allows anyone to be a part of TrainMasters TV. If someone has a camera and tripod, and a layout to show off, they can send us some video, and our host Jim Wright will present it.

I guess the most direct comparison to *MyLayout* would be YouTube. If you can make a video for YouTube, it’s probably easier to make a video for *MyLayout* instead.

We’ll do all the editing, and our host will present it in an entertaining way, and we’ll take out all your “ums” and “ahs.”

We’ll be posting instructions for submitting *MyLayout* videos on the TrainMasters website.

Joe: Speaking of YouTube, a post on our forum the other day asked, “What about YouTube? What about all this free stuff on the Internet? Why do I need TrainMasters?”

Barry: I’m glad we had that discussion. I realize TrainMasters TV isn’t going to fit everybody.

But I do wonder about the argument people can’t afford TMTV, and because of that they’re somehow being excluded. If you can’t find an extra \$4.00 a month, then maybe you can’t go to a party, either. We all have to pick and choose where we spend our money.

Joe: Did you notice there were 50 responses on that MRH thread about YouTube versus TrainMasters?

Barry: I scour YouTube myself for information, and not just for trains: everything from how to refinish furniture to recipes. But it often takes a lot of scouring to get what I want.

TrainMasters can guarantee even though you might not find everything you want in a particular segment, you’re going to be entertained by it. TrainMasters offers a dimension to your video experience that you don’t get anywhere else. It’s presented so you’re not distracted by how it’s presented.

We craft TMTV’s videos carefully to draw you into an unfolding story, which isn’t what your average YouTube video does.

Joe: Yes, TMTV draws you in, and keeps you in! Somebody on the thread about YouTube vs. TrainMasters talked about “speed bumps.”

Barry: Yes, “speed bumps” can ruin a story’s flow and kill your viewership numbers. Your typical YouTube video is full of speed bumps.

Joe: In text, you get speed bumps when the words don’t flow right, and typos can slow you down too. You were in the flow, getting the concept, and then BAM! The flow goes off into left field, or you can’t make out the word because of a typo, and your thought process gets interrupted.

When you hit one of those, you say, “Now where was I? What was this trying to say?” It happens in video, too. The video does a jump-cut where the continuity gets lost, the erratic



9: Sooner or later, every layout-building project comes to an end. This summer Bob Helm dismantled his HO-scale Norfolk and Western railroad to make way for a new project. Share his experience in a TMTV feature story, “When the layout came down,” coming soon.

camera motion makes you seasick, or the poor lighting makes it hard to see, or the cat runs through the picture, those kind of things.

Barry: I know we’ve done our job if you watch a 12-minute video, and it felt like it was only four minutes, because you were immersed. If you get engrossed in the story, time just flies!

It’s been surprising to me that I put together a 20-minute video on the Ottawa Expo show, and someone said that it was great,

but it should have been longer. My first reaction was, “Wow! I thought 20 minutes was too long!”

Joe: What you say is true about a lot of YouTube videos. I’m watching along and keep looking down at the progress bar. When is he going to get to the part I am interested in? Come on already!

Barry: I don’t want to just be critical of YouTube videos. With the democratization of media it isn’t that everybody *can* be on YouTube, it’s that everybody *is on YouTube!* How do we know the video is accurate? Does anyone ever challenge what’s in a YouTube video?

We’ve had some Backshop Clinics where Clark has said, “Well I’ve heard a different perspective,” or “*I have* a different perspective on this.” On TMTV, there’s always an opportunity to say, “Well, there’s more than one way to do something.”

Joe: We certainly don’t want to say there’s nothing good on YouTube.

Barry: No, that’s not what we’re saying. I’ve found very useful information there, but I often spend time looking for it. There’s no way we’ll be able to do everything on TrainMasters that you can find on YouTube. We would have to do a show every day!

Joe: To me, they’re complementary. It’s not an either/or.

Barry: Let me remind everyone we’re making a TV show here. There is a big difference between a YouTube video and a television show, quite frankly.

Joe: How about turning the whole price concern on its head? The typical model railroading DVD price point is about \$30. Blu-Ray disks would cost even more.

Essentially, TrainMasters gives you a \$30 HD Blu-Ray video each month. But now thanks to the Internet and digital videography, we deliver this video to you via the Internet for \$4-\$6 a month. In a year's time you're now getting \$400 worth of video for \$40-\$50. That's up to a 10:1 cost benefit!

Barry: The way I look at it, you can watch a 13-20 minute segment, and by the time you factor in all the bonus material you are getting, it costs you maybe 75 cents to watch that video. That's less than the cost of a chocolate bar for the week. And you'd eat a chocolate bar a lot faster!

Joe: Yes, you would! And I can say TrainMasters would probably better for your health.

10: Tom Patterson takes us on a tour of his Chesapeake, Wheeling and Erie Railroad in the November edition of TrainMasters TV.



Barry: It's important to talk a moment about why TrainMasters doesn't use the same free business model as MRH.

If we had advertisers totally underwriting TrainMasters TV, we'd have to have commercials, and lots of them. Someone would have to make all those commercials. It can take several days to make just one video commercial, so the TMTV crew would literally be spending all our time each month just making commercials.

And all the sponsor money would be going in to pay for this commercial-heavy video channel. It's different in print, because a lot of advertisers can make their own ads if they have Photoshop, InDesign, or Illustrator. But making a good video commercial takes a lot of specialized skill and knowledge.

To make just one commercial that's on a level of production to match the rest of the show, there's no way that's going to happen with the model train manufacturer market, given its size. So really the only way we can operate TMTV is for everyone to chip in a little bit, and help us fund this great programming by subscribing.

Joe: That makes sense. We also face that with *Model Railroad Hobbyist*. We try to include video content in the magazine. But to make a decent video, or even half-decent video, for the magazine is not something you can do in a couple of hours!

Barry: As I look at all the different ways it could be done, this turned out to be the best way to make it happen.

Joe: So what other segments are in the monthly TrainMasters program?

Barry: There's *Ken's Roundhouse*. Ken Goslett hosts that segment. He climbs all over a diesel locomotive, opens the doors,



11: Ken Goslett is the host of *Ken's Roundhouse*. In his segment, Ken features a diesel locomotive and take us back in history and under the hood to tell the story of its importance in North American railroading.

and shows us what's under the hood. He talks about their history and how they were important to prototype railroading.

So far we've been to the ExpoRail museum in Montreal, which is Ken's home. We plan to go across the border to New York state where we'll do some Alcos and a BL2. I have a soft spot for the BL2s, so I'm looking forward to shooting that one.

We have Barry's Backyard, which is a different Barry from me. Barry Birkett moved to a new house last spring and started a garden railroad (his second one). We document the process from turning the sod over, through his opening day for his

operating session. Hopefully next year we'll get to see some garden coming up around the trains.

Joe: What does 2014 look like for TrainMasters?

Barry: I'm looking forward 2014 and doing a series of projects. I'd really like to do a project layout, and I'm thinking it might be set in the Northeast, like the Boston and Maine. A visit to Lowell, Massachusetts, a town that's just full of factories, canals and streets, inspired me. It could make a good project layout.

If we do such a project, it will probably span the course of a year. We'll take people through all the steps from design and concept, right up to the finished detailing, and exhibition of the layout. We'll even go to Lowell and research the real location, taking our cameras with us.

Joe: Oh yeah! That sounds very interesting.

Barry: The core of TrainMasters TV is our documentary strand. I'm committed to having a documentary story in every month's episode that will profile someone in the hobby and their passion in pursuing it.

To me these documentary stories make up the cornerstone of the show. They're entertaining and compelling. I don't care what your interest is in this hobby, if someone has an interesting story, you'll enjoy watching it.

Joe: I know when I first saw a rough cut of the FastTracks segment in the November show, I was about half way through it, when I caught myself and said, "Wait a minute, this is something we're going to feature on TrainMasters. This is really good!"

I had become so engrossed in the story I forgot I was watching our content. Because it's told as an unfolding story, it grabs you and pulls you in. It's what all great entertainment does, whether it's trains or not.



Barry: That's the idea exactly. We're always looking for nice layouts to feature. That doesn't mean that the layout has to be finished, but at least part of it has to be finished. I'm never afraid to show parts of the layout that aren't finished.

I think for too long, book and magazine covers have given the impression that published modelers are better than most because they've finished their layouts. The hobby media seems to rarely photograph the areas still in bare benchwork or white plaster.

I'm not afraid to show incomplete area on our layout features, because I think you learn a lot from the unfinished areas too.

Right now we're looking for clinician guests from the Northeast U.S. to come in-studio and show us what they do. Generally that involves an overnight stay and a day of shooting. We like to shoot four or five 10-minute segments in a day, and we pay an honorarium for that.



12: Lex Parker's Denver & Rio Grande Western railroad will be featured in the December 2013 edition of TrainMasters TV.

Anyone who has done an NMRA clinic, for example, can show what they presented in that clinic on-camera for TMTV. It may seem like old material to them, but for a modeler who has never been to an NMRA convention, it's likely brand-new information.

Joe: That's most modelers, by the way. Probably 80% of the people in the hobby have never been to one of these conventions. What exactly does a clinician need to do if they're interested in exploring being on TMTV? Do I send somebody an email? Do I pick up the telephone?

Barry: Anyone interested in doing a clinic can email me directly (barrys@trainmasters.tv), and we can discuss it and find the best way to get them into the studio to do it. The TMTV studios are just an hour north of the New York State border. It's nothing for me to go to the Springfield, MA show from here.

A clinic can be anything. It can be on weathering locomotives or on locomotive detailing. There's also weathering rolling



13: Host Miles Hale (right) speaks with Dan Mason of the Southern O-scalers club at the 2013 National Model Train Show in Atlanta (November edition of TrainMasters TV).

stock, anything to do with scenery, or even a collection of tips on most anything. As long as it is something that is in any way different or a bit unique, we'd like to talk about it.

Joe: So if people want to sign up for TrainMasters TV, they can just go to our website: trainmasters.tv. On the website is a link that says "signup/login." Just click that, and you'll get a page that lets you sign up as a TMTV subscriber.

You can chose:

Monthly for \$5.99 – about the price of a sandwich.

One year Silver Charter membership: \$44 (\$3.67 per month).

To go whole-hog for two years, it's \$80 (\$3.33 a month, or about 11 cents a day).

Barry: And if they don't want to try a month, they can always try out the Previews to see if it is something they'd be interested in.

Joe: What about Barry the model railroader?

Barry: Oh that guy! I'm almost ashamed to say I have enough trains in my attic to fill half a hobby shop. Really they should be in the basement, but I've been kind of homeless for five years. Now that I have a basement, and it's full of TV equipment, it's even more challenging!

I have been varnishing the cabinets in my workshop. As they go up, I get to open up all those boxes in the attic, and it's like Christmas here. There's stuff that I'd forgotten I had!

Joe: How did you get into trains, what area interests you, and have you had any layouts?

Barry: That will probably end up in the TMTV blog, but I got my start like most people on Christmas day when I was four years old. I got a train set. If you look at the home movies, you can see my Dad playing with the train, and I'm not allowed to touch it!

I've built so many layouts over the years, I've lost count. I've built shelf layouts, portable layouts, some 4x8s, and layouts for other people, but I have yet to build a permanent basement-sized layout for myself.

Now that I have a basement of my own, I'm really looking forward to doing that. And I'm going to go nuts! I'm going to go double-deck and have a helix, two staging yards, and I'll do all those things that I've been thinking of doing for 10 years! And it's going to work, because I've had 10 years to plan it.

Joe: What specific prototype, era?

Barry: I am a huge fan of coal railroading. I will probably model something between 1975-1995. Right now it's looking like it will be Norfolk Southern, but I am still thinking about going Chessie CSX.



14: Barry has been storing most of his personal modelling supplies for over five years. Producing TrainMasters TV has finally given him the opportunity and motivation to get it all unpacked.

ironically, from television. I've always wanted to do something in the hobby, so I decided to open a small store.

I needed a place to do that, and in the town where I lived, the Via Rail station had space available. So I set up what was the only model train shop in Canada located in an active train station at that time. It was a wonderful experience that I wouldn't trade for anything.

That shop was successful for a time, then someone called me to do some video editing for them. Very quickly my career changed back to TV again.

Every once in a while I think about S scale too. I have so much HO stuff now that it would be another five years getting rid of it and switching to S scale.

I'll do some little S scale projects on TrainMasters to get my fix.

Joe: I'll bet you enjoyed your visit to Tom Patterson!

Barry: Oh my gosh! Tom's is the model for my kind of layout.

Joe: You mentioned having a hobby shop at one point. What was the story there?

Barry: Back in my mid-twenties, I was looking to make a career change, to make a career change, ironically, from television. I've always wanted to do something in the hobby, so I decided to open a small store.

Joe: It has come full circle for you, because now you've taken your skill and expertise in TV and video production and married it with your love of model railroading.


Barry: People I know who aren't even in the hobby look at what I am doing with TMTV and say how lucky I am to be able to turn out a model railroading TV show in a way that no one else is doing.

Many people will never make it to an NMRA convention to see a clinic. I'm glad we can use this technology to make such content available to them. It's great to be using any technology to help people instead of making their lives miserable.

Joe: Absolutely, that's the name of the game right there. TrainMasters TV is an extension of MRH, allowing us to take our hobby passion and do even more to help our fellow modelers.

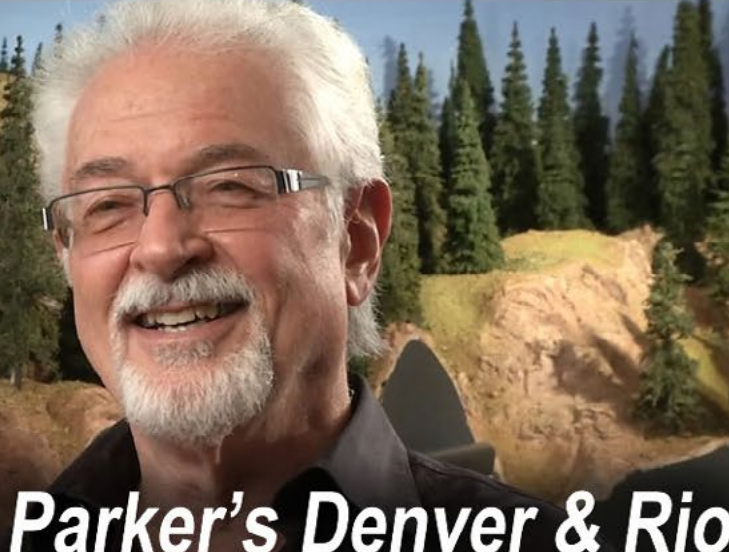
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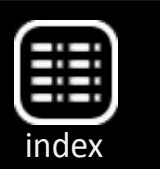
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Locking up your layout



– James McNab
Photos by author



Adding and incorporating equipment locks to your layout and operating sessions ...

Railroads lock everything. From turnouts to gates to signals, prototype railroads place their critical infrastructure under lock and key. The added safety and security ensures that only the right people have key access (pun intended) to the essential equipment of a railroad's operations.

Locks are such an integral part of the day-to-day running of a railroad that having them represented on our model railroads is almost required. As I developed my HO scale Iowa Interstate

Grimes Industrial Track layout, I realized that I was missing out by not including these locks as part of my operating scheme. Not only would including equipment locks on my layout better represent the prototype practice, it would also add additional tasks for my crews to perform, adding time and interest to my operating sessions.

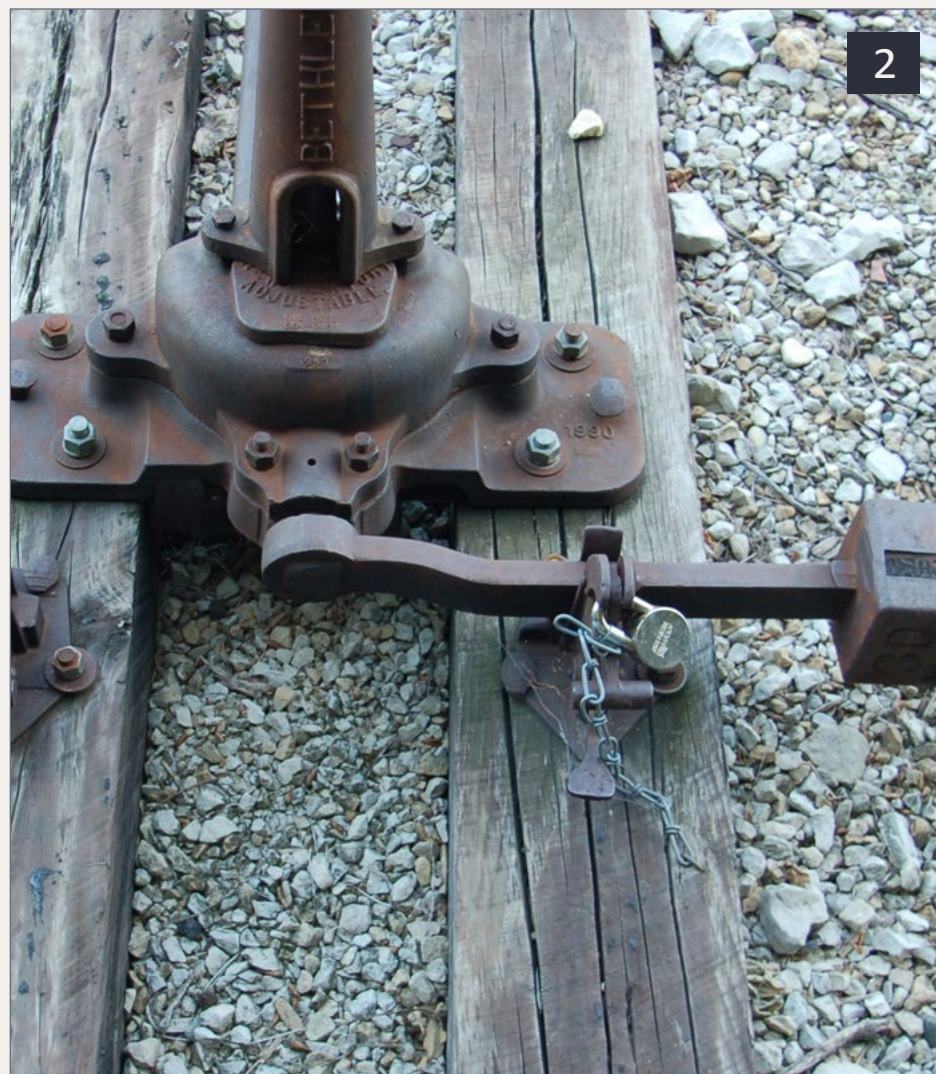
These locks can easily be added to your new or existing layout, as well as incorporated into your own operating sessions, with little investment of time and money.



1: Equipment locks play a key role in the operating scheme of James McNab's HO scale Iowa Interstate Grimes Industrial Track layout. His simple but straightforward methods can easily be used on your own model railroad.

Under Lock and Key

On prototype railroads, the train crew carries a railroad key to access locked equipment along the line. These locks are owned and installed by the railroad to prevent unauthorized access to their equipment. Locks are generally placed on every switch that is not under direct dispatcher control, such as powered switches in a CTC OS section.



2: The lock is clearly visible on the switch stand along the prototype IAIS Grimes Line. Train crews must unlock and remove the padlock before the switch can be thrown.

To throw a switch, the conductor must unlock a large padlock and remove it from the switch stand to allow the handle to be thrown and the points to move. Once the crew is done using the switch, the points are returned to their normal position and the switch is relocked.

When trains are switching an industry, the switch is generally left unlocked until the work is complete.



3: The same style of lock is use on fence gates at industrial spurs. The locks are usually owned by the railroad, so they can open the gate without needing the customer to do so.

Fence gates on industry spurs are also protected by lock and key. Copies of the keys are usually given to both the customer and the railroad, so that crews can access and switch the spur without needing to call the customer to open the gate. Just as is the case with turnouts, the gates are generally left unlocked while the train is working the industry.

Locks can extend to other railroad equipment. Derails are secured with the same type of padlocks that are used on

turnouts, and are only unlocked when a train needs to spot or pull cars from the spur. Railroads can also protect electrical equipment, such as crossing flashers for rarely used grade crossings. Crews will stop, unlock a control box, and activate the flashers. Once the train is across the road, the crew will turn off the flashers and relock the control box.

The Philosophy of Restriction

Working locks on a model railroad are not a common practice. Many modelers seem to not understand their purpose, or are hesitant in adding them to their layouts. Even the most active operators remain reluctant to include them in their operating scheme. When I asked several of my friends to give their feedback on adding equipment locks, the comments ranged from



4: Derails are placed on spurs to prevent runaway cars from fouling the main. To access the spur, the derail must first be unlocked and opened so trains can pass over the track.



5: These boxes contain controls that operate the grade crossing signals in the distance. Crews will unlock the boxes and turn on the signals before crossing, then shut off the flashers and relock the control box.

“my crew members will find them annoying” to “I’m afraid there will be a revolt during my operating sessions.”

I’ve found the opposite to be true. Adding equipment locks has given me the opportunity to replicate a key function of prototype railroading. The interaction between crews and locks provides a unique but essential task to the operating session. Using locks isn’t a hassle or a burden, but rather helps create a slower and more relaxed pace. This helps place less stress on the operator, the owner, and the operating session. And since time is equal to distance on a model railroad, your layout seems much larger than it was before locks were added.

While it may seem like locks would work only on smaller, more switching-oriented layouts such as my IAIS Grimes Line, even

the largest and most complex model railroad can benefit from using equipment locks. If you're worried about taking the plunge and locking up every switch and gate on your layout, consider starting small. Perhaps you have a seldom-used industrial spur that would benefit from having locks. As you and your operators become more comfortable with interacting with locked equipment during a session, you can add the procedure and hardware to the rest of your layout.

Locks for Model Use

Adding locks to your model operations can be a straightforward process. If you use powered switch motors on your layout, it can be as simple as adding a locking cover over the toggle switch. Crews would need to unlock the cover to gain access to the turnout control. Model Railroad Hobbyist author Lance Mindheim



6: Simple and inexpensive hardware is available to add switch locks to existing turnout controls, including locking covers for toggle switches and hasps for push-pull rods.



7: James combined readily available items into a custom solution to adding equipment locks on his layout.

has extensively written about adding locking covers to switches and other controls. More information is available on his website at LanceMindheim.com and in back issues of MRH.

Locks for manual turnouts requires a bit of planning. If you're using under-table devices that utilize a push-pull rod to activate, such as the BluePoint or Bullfrog controllers, it's easy to add padlocks to the control rod. Padlock eyes or hasps can be connected between the handle and the fascia. A padlock is then used between the two, preventing the control rod from being moved unless it's first unlocked.

If you're using over-table devices, such as Caboose Industries ground throws or the snap-action spring built into Peco and Micro Engineering turnouts, then you'll have to prevent the turnout from being thrown manually. On my own layout I use ME Code 70 turnouts and rely on their over-center spring for control, throwing the turnouts with an uncoupling pick or my



8: Despite most of his layout being scenicked, James was able to retrofit his equipment locks to his turnouts, gates, and other items.

fingers. I came up with a way to secure the throwbar from being moved unless it was first unlocked, using inexpensive and readily available hardware items.

Whatever method you have to control your turnouts, it's important that the locks you use are "keyed alike." These locks allow the same key to open multiple locks. That way, your crews aren't trying to match the right key to the right lock on your layout. A simple web search for "keyed-alike locks" will turn up a variety of options and styles that are available to purchase.

The "Rube Goldberg" Method

Since I wanted to prevent my turnout points from throwing unless they were unlocked, I had to come up with a method



9: Holes were drilled in the throwbar with a #67 bit. Any larger, and the wire wouldn't fit snugly in the hole, allowing it to move even when locked.

to secure them in one position. Unfortunately, most of my turnouts were already installed, wired and scenicked before I started adding locks to them. Had I decided to incorporate locks earlier in the construction of my layout, I would have saved myself a lot of torment.

In the end, I developed a system using inexpensive and readily available hardware items to retrofit lock-type devices to my layout. It may seem like an overly complex and convoluted setup that would make Rube Goldberg proud, but the final product is effective, easily manufactured, and inexpensive to implement.

I found that the best way to hold the points in place was to use stiff piano wire. The wire extends through the roadbed and into the turnout's throwbar. I drilled a hole in the throwbar

the same diameter as the wire to allow it to fit snugly when locked, then trimmed the wire flush with the top of the throwbar. To stiffen the wire and make sure it wouldn't wiggle loose in my extruded foam sub-roadbed, I use a brass tube as a sleeve around the wire. The tube also reduces friction as the wire moves through the roadbed.



10: Stiff but thin piano wire is then threaded through the throwbar hole and into the sub-roadbed. James uses extruded foam so he doesn't have to drill through a plywood base to pass the wire through.

With the wire in place, I needed a way to lift and remove the wire to lock and unlock the turnout. I decided I wanted the wire to default to the down, or unlocked, position. That way if there was a mechanical failure, I could easily unlock the turnout without affecting its operation. By itself, the wire is not heavy enough to drop down on its own. I devised a way to use a simple wooden shim to add additional weight to the wire. A hole is drilled through the thicker end of the shim to feed through the

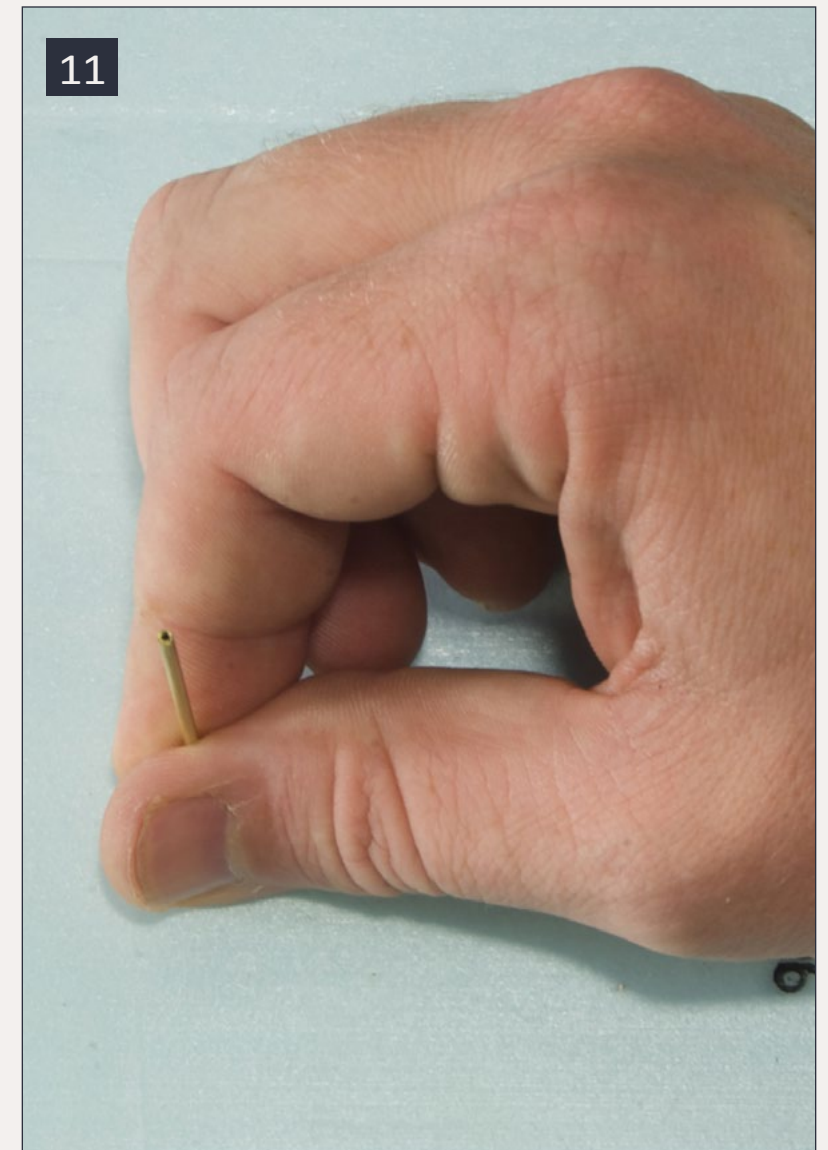
piano wire. The wire is then bent back underneath the shim and held in place with small screws. The screws add additional weight to the shim.

With the wire attached to the shim, it's then positioned underneath the layout. I found that it's important to make sure the wire slides freely through the brass sleeve. If it binds, the wire won't drop down when released. Make sure that the wire and shim combo are perpendicular to the sleeve and roadbed when installing them.

Fighting Gravity

The wire was now free to drop into the unlocked position, but I needed a way to prevent it from dropping down to the floor. I only needed the wire to drop enough to clear the throwbar, a distance of less than an inch.

First, I needed a way to attach the shim and wire combo to the underside of the layout, but still allow it to move freely. Luckily, I use extruded foam as my sub-roadbed. Some short but thick roofing nails give me the leverage I need to act as a hinge on



11: The wire is threaded through a brass tube to stiffen it in the sub-roadbed and prevent it from moving around in the foam.

the thin end of the shim. I simply shove them into the foam and allow their wider heads to wrap around the tip of the shim. If you have a more traditional sub-roadbed such as plywood, you could try small hinges attached to the end of the shim.

With the shim securely hinged, I turned to the lock itself. Small padlocks, while more prototypical in appearance and action, wouldn't work in this setup because they would have required access underneath the layout. In addition, I preferred to maintain the clean look of my layout's fascia and not have padlocks hanging everywhere. Ideally, each of the locks would be set into the fascia directly under the switch it controlled.

An online search for a solution turned up cam locks. Available from a variety of manufacturers, they're used primarily to lock



12: The excess wire is trimmed with the top of the throwbar using flush-cut pliers.

cabinet drawers. A cam lock sits flush with a surface and features a rotating arm that I could use to push up against the thick end of the shim. Cam locks are available in a variety of cylinder and arm lengths and can be made "keyed alike".

When I turn the cam to the up position, it presses the shim tightly against the roadbed and pushes the wire into the throwbar, locking the turnout. When the cam is turned to the down position, the weight of the shim pulls the wire down, unlocking the turnout. The thickness of the cam prevents the shim from falling to the floor.

Alternate Locks

If you're uncomfortable with a purely mechanical method, there are alternatives available. Electric supply retailers sell single-pole single-throw (SPST) switches that use a similar cam lock mechanism. The electrical switch features a lock and key that turns 90 degrees. When turned on, it allows electricity to pass through the lock, similar to a light switch. When turned off, no electricity can pass. You could use these electrical switch locks to turn off track power to a spur,



13: A contractor's wood shim provides the right amount of leverage to pull the wire down through the throwbar and sub-roadbed while being lightweight and simple to install.

effectively preventing access to the track unless the switch was “unlocked” ahead of time.

Switch locks can also be used in a purely cosmetic fashion. You could install the cam locks into your fascia and have them hooked up to... nothing. Crews would be asked to unlock and relock switches as part of their tasks without physically or electrically making a connection with your layout. For some, this level of simulation may seem like a gimmick of pure imagination, but it’s a simple way to easily add locks to your operating scheme.

14



14: The piano wire is threaded through a hole drilled in the shim and bent along the bottom so gravity will pull both the shim and the wire down when unlocked.

15



15: The completed shim and wire combination is ready to install under the layout’s sub-roadbed.

Securing the Rest

With my layout’s turnouts under lock and key, I turned to other equipment that would normally be secured on a railroad. Two of my customers had their spurs protected by fences and gates. I had already built the gates to be opened and closed by hand. It was a simple matter to add the same wire and shim combo to these gates. The wire sticks up enough to act as a stop for the gate, preventing it from opening. When unlocked, the wire lowers, allowing the gate to swing over the top of the wire. The wire is stiff enough to stop the gate, but small enough to be unobtrusive in the scene.

The same idea was used for a derail on one of my industrial spurs. I modified a Sequoia Scale Models cast metal derail to

make it functional. Train crews use an uncoupling pick to flip it open when they need to spot or pull cars during op sessions. Similar to the fence gate method, I set up a wire to extend up next to the derail, preventing it from being fully opened. Crews must unlock the derail to allow it to open, just as on the prototype.

To help orient my operators on which lock controls what, I added some inexpensive engraved signs above each lock. The signs feature the spur or industry name, along with its milepost location. It's a simple but elegant way to identify each turnout and lock while showing crews where they are on the layout. It's a good idea to label the locks in areas with large amounts of

switches, such as large industries or a yard, so that your operators don't lock or unlock the wrong device.

When a turnout is no longer in use, a railroad will usually spike and tag the switch to prevent train crews from operating the turnout. A new lock will be added to the switch stand with a tag or sign indicating that it is out of service. I modeled a spiked and tagged turnout by having the lock disconnected from the switch and the throwbar permanently secured with piano wire. I also added a styrene tag based on the prototype one behind the lock to show my operators that the turnout is not to be used.



16: Roofing nails, with their short lengths and wide heads, make great hinges for the shim wire setup when using foam sub-roadbed.



17: Make sure the shim wire is installed perpendicular to the roadbed to prevent it from binding. Placing the roofing nails on the sides instead of the ends allows for more flexible movement of the shim.

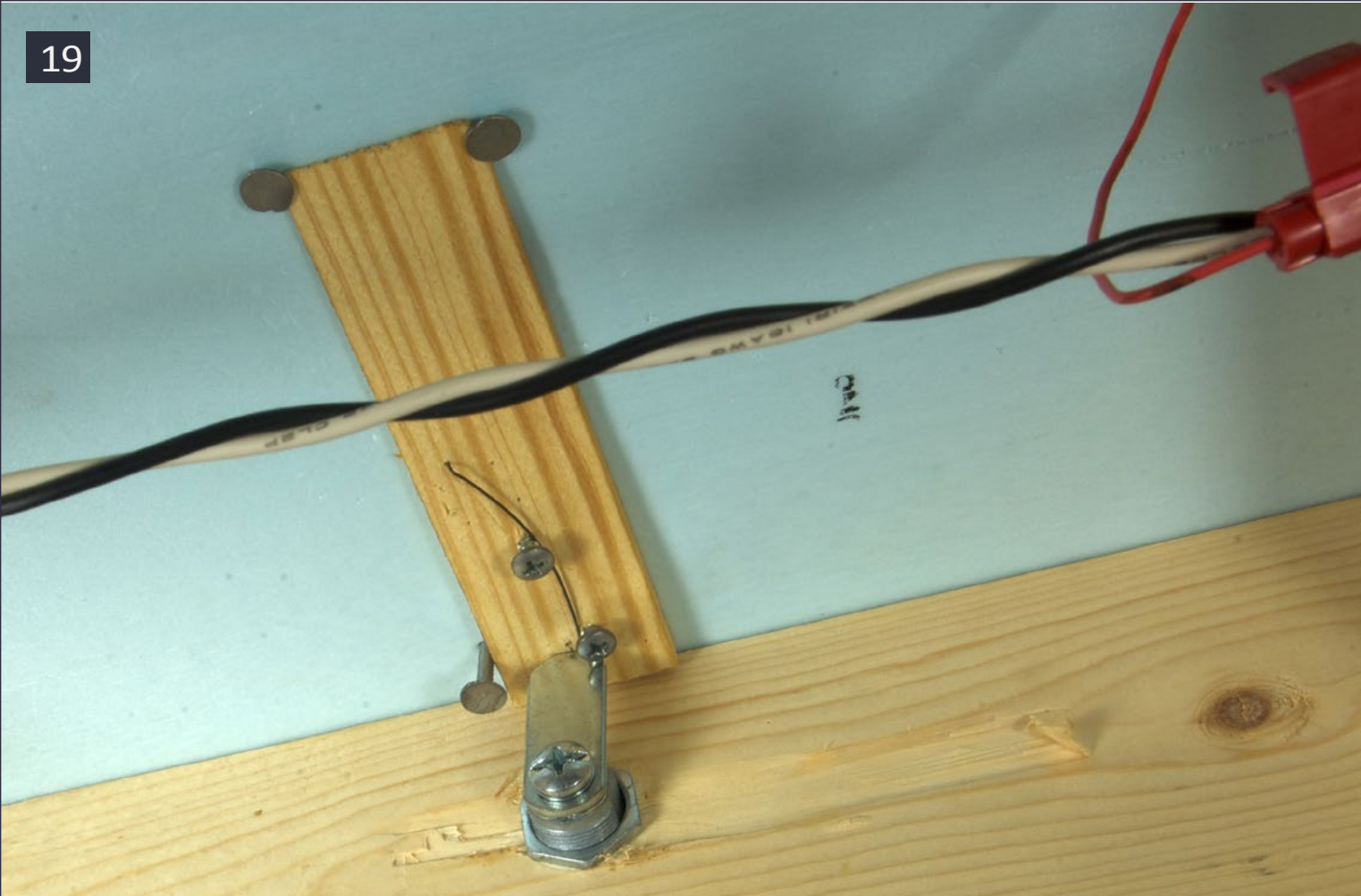
Working the Line

Let's follow along with the crew of Iowa Interstate Train DMSW-12, locally known as the "Tramp", as they work the Grimes Line and see how they interact with the locks along the way. Today's lineup calls for the train to work Beisser Lumber in Grimes, Iowa at the north end of the line.

Since Beisser is a facing-point spur, the crew will have to runaround their train at Urbandale to place the cars in the proper position. Arriving at the



18: James used cabinet cam locks to press the shim and wire up against the sub-roadbed. He preferred the cam locks because their flush mounting kept his fascia clean and clear, as compared to padlocks.



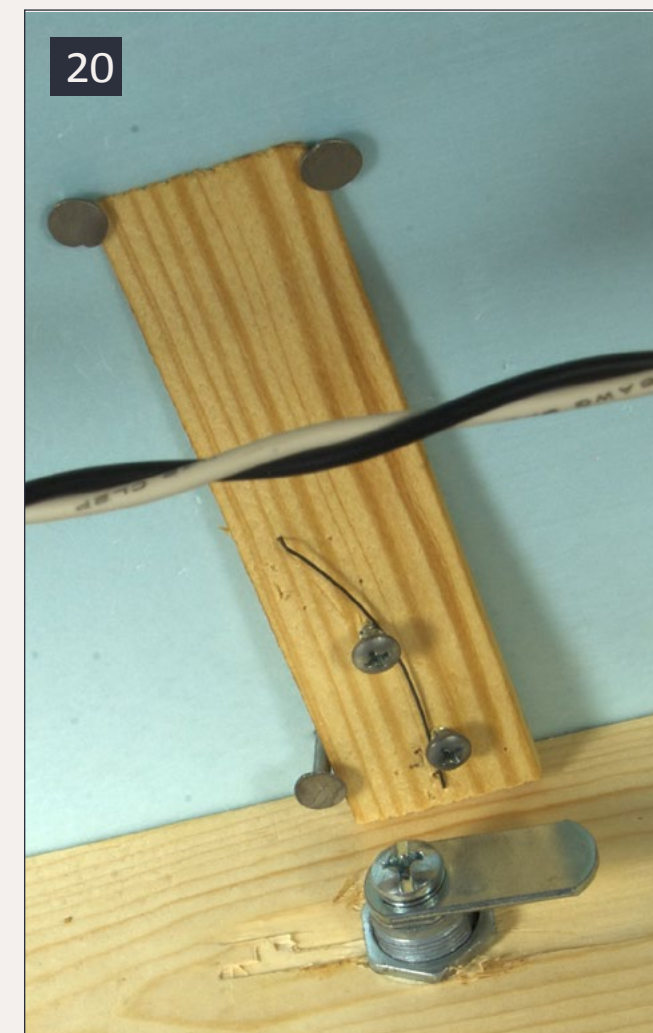
19: The cabinet lock cam arm presses the shim tight against the sub-roadbed and lifts the wire into the throwbar, preventing the switch from being thrown. Several cam arm lengths are available for cabinet locks.

Urbandale Runaround, the engine is uncoupled from the train and proceeds past the north siding switch. The conductor dismounts from the locomotive and reaches for his key. He unlocks the switch and throws it for the siding, then signals the locomotive to back past the switch. Once the engine is clear of the switch he sets the points back to the main track and relocks the switch. The conductor boards the engine for the trip down the runaround track.

After arriving at the south siding switch, the process is repeated. The conductor again unlocks the turnout and lines it to allow the locomotive to leave the siding. When it's in the clear, the switch is thrown back to the main and relocked,

allowing the train to proceed back to its cars, couple up, and shove to Beisser Lumber.

Once in Grimes, the conductor again dismounts and begins unlocking and opening all the equipment, including the turnout, derail, and industry gate. As the train pulls empties and spots loads, the turnout at the Beisser spur will be thrown from the open to closed position many times. However, the switch will be left unlocked while the crew works Beisser to expedite their tasks. Once the tasks are complete and the crew has reassembled their train on the main, the conductor will relock the gate, derail,



20: When unlocked, the weight of the shim pulls the wire down, allowing the switch to be thrown. The lowered cam arm and the roofing nails prevent the shim from falling out of the sub-roadbed.

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21



22



21 - 22: The same shim and wire setup was used to secure the gate to Beisser Lumber in Grimes, Iowa. Since the gate swings in only one direction, the wire prevents it from opening when locked.

23



24



23 - 24: The wire prevents the Sequoia Scale Models derail from fully opening unless it's first unlocked and lowered.



25: James uses engraved plastic signs to mark each lock. The signs tell what lock controls what equipment, as well as help orient operating crews to the layout.

Materials:

- 1-1/8" cylinder length cabinet cam lock, keyed alike
- .025" piano wire
- 1/16" diameter brass tube
- #8 - 3/8" machine screw
- Contractor wood shim
- 1-1/4" roofing nail ■



26: The prototype Pharm Tech spur on the Grimes Line has been tagged, spiked, and placed out of service. The switch lock has been replaced with a different model and a tag added so train crews know not to open or operate the turnout.

[← back to previous page of text ...](#)

and turnout. With everything locked and secure, the “Tramp” can head for home.

It's a Locked World

It's obvious why railroads and the customers they serve lock their equipment and property. Railroad locks serve to protect both the railroads and the general public from injury, damage, or theft, while providing a safe work environment for the railroad's employees. Modeling their use on our own layouts adds an interesting aspect to our operating sessions and helps us create a more accurate model railroad.

27



27: James modeled the tagged switch on his layout by disconnecting the lock from the turnout and permanently securing the throwbar. The tag is made from plain styrene sheet mounted behind the cam lock.

29



29: All locks on the Grimes Line are keyed alike so the same key can open all the equipment locks.

28: The Des Moines Tramp stops north of the Urbandale Runaround after cutting off its train. The conductor will dismount the train, then unlock and open the turnout.

28



30



30: When IAIS 708 is clear of the points, the conductor will close and lock the points before running down the siding to the south switch.

31: Locking and unlocking equipment is just as much of a conductor's job as is coupling and uncoupling freight cars.

32: Back on the running track, the Tramp is ready to couple back with its train for the shove north to Grimes.

31



32



33



33: At Grimes, the train crew has to unlock the turnout, derail, and gate. The process adds significant time and interest to an operating session.

34: While pulling and spotting loads at Beisser Lumber, the conductor will keep everything unlocked to make the work more efficient.

35: Once the crew has finished their work at Beisser, they make sure everything is locked up and secure before heading for home.

34



35





36: Train DMSW returns to Des Moines after a long day on the Grimes Line, secure in knowing that their equipment is locked and safe.



James McNab is an award-winning producer and video editor with more than 300 credits to his name. He details many aspects of the design, construction and operation of his IAIS Grimes Line layout at mrhmag.com/blog/jfmcnab.



Yes, it's a model

Model Railroad Hobbyist's monthly photo album



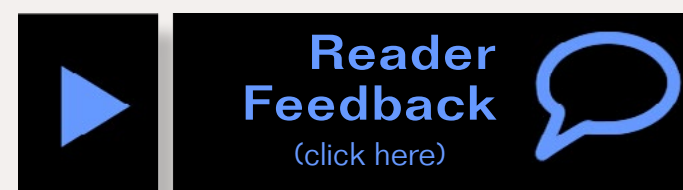
1: Lehigh Valley 632 and a sister unit lead a coal drag through New York's southern tier towards Buffalo on a cold winter's day. There is a fresh coat of snow on the ground from the storm that just passed through the area last night.

Chris Frissell shot this scene on his front porch rail just using some flex track and baking soda he blew with a straw for snowdrifts. We think this photo shows how a great shot can be composed with a few pieces and a little creativity. The photo was posted in Weekend Photo Fun mrhmag.com/node/15516.



2: Train #12, the eastbound Kettle Valley Express, arrives at Farron Summit early one morning in the winter of 1956. It is running about 6 hours late and should have left at 02:00. Farron is a pusher station high in the Monashee mountains. The head end pusher will cut off here and join its partner on the pusher track to wait for the next train to reach the foot of the grades. All helpers were called pushers on CP's Pacific Divisions regardless of their position in the train.

The picture was taken on Mark Dance's N scale Columbia & Western Railway. This winter scene was created largely using techniques described by scenery wizard Mike Danneman.





Seasons Greetings

From the MRH Staff

May 2014 be a blessed year
for you and your family!

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Chris

Charlie
Larry
Don

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Jean-Francois

Bruce
Les
Mike

Ken
Richard

Jim D.



3 - 4: CP 5654 and 5615 push a Jordan spreader through the freshly fallen snow in the Canadian Rockies. The crew has a long day ahead of them clearing the main for regular traffic.

The diorama on the pictures was made by Stefan Foerg in Germany. Stefan made the "snow" by using baking soda with a mix of carpenter glue, water and some drops of soap. Step by step information about the construction can be found on Jürg's MRH Blog: mrhmag.com/node/13383.

The snow-covered CP Engines are made by Dave Terdich, who use also baking soda to simulate snow. The Jordan spreader is an Overland Models brass spreader painted and weathered by Rodney Walker. To simulate fresh fallen snow in my pictures, Jürg used corn starch applied with a spoon and wire mesh. It was easy to blow it away after the photo session.



Playback problems? [Click to try a different version.](#)



5: CNW 4700 gets a taste of an early Midwestern winter as it rolls through the Illinois countryside on its way to a destination in Chicago. Once emptied it will be routed back to another grain elevator to repeat the process as it wanders the rails across the North American continent.

Gary Christensen photographed the scene on a small diorama that he built using a 2" x 18" x 36" piece of Styrofoam. The fence posts are toothpicks with thread for the fence wire. The snow is sifted baking soda. Gary says he spent a little more than an hour building the diorama. The model began as an Athearn RTR painted bright pink that he weathered. To see more of his work visit: theweatheringshop.com.

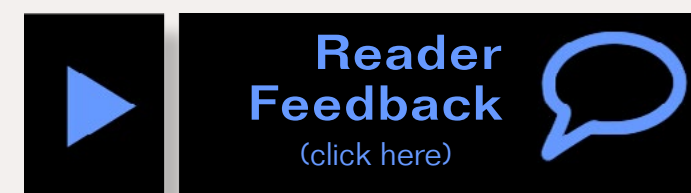
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Our *Yes, it's a model* feature draws many of its images from the MRH website, especially in the [Weekend Photo Fun thread](#) created there each weekend. For how to post photos to our website, [see this help how-to](#). You need to be an MRH subscriber to post photos to our website, to subscribe, [just fill out this form here](#).



6: PRR K4 1361 exits the western portal of Black Mountain emerging into the bright sunlight. It will take the crew a few moments for their eyes to adjust to the brightness as they lead a local passenger train to its next station.

Crandell, who goes by the name Selector on the MRH forum, shot this scene on his former Seneca Falls layout. The locomotive is a Broadway Limited Imports. The bare tree is a sagebrush twig that he harvested on a visit to the in-laws in British Columbia.





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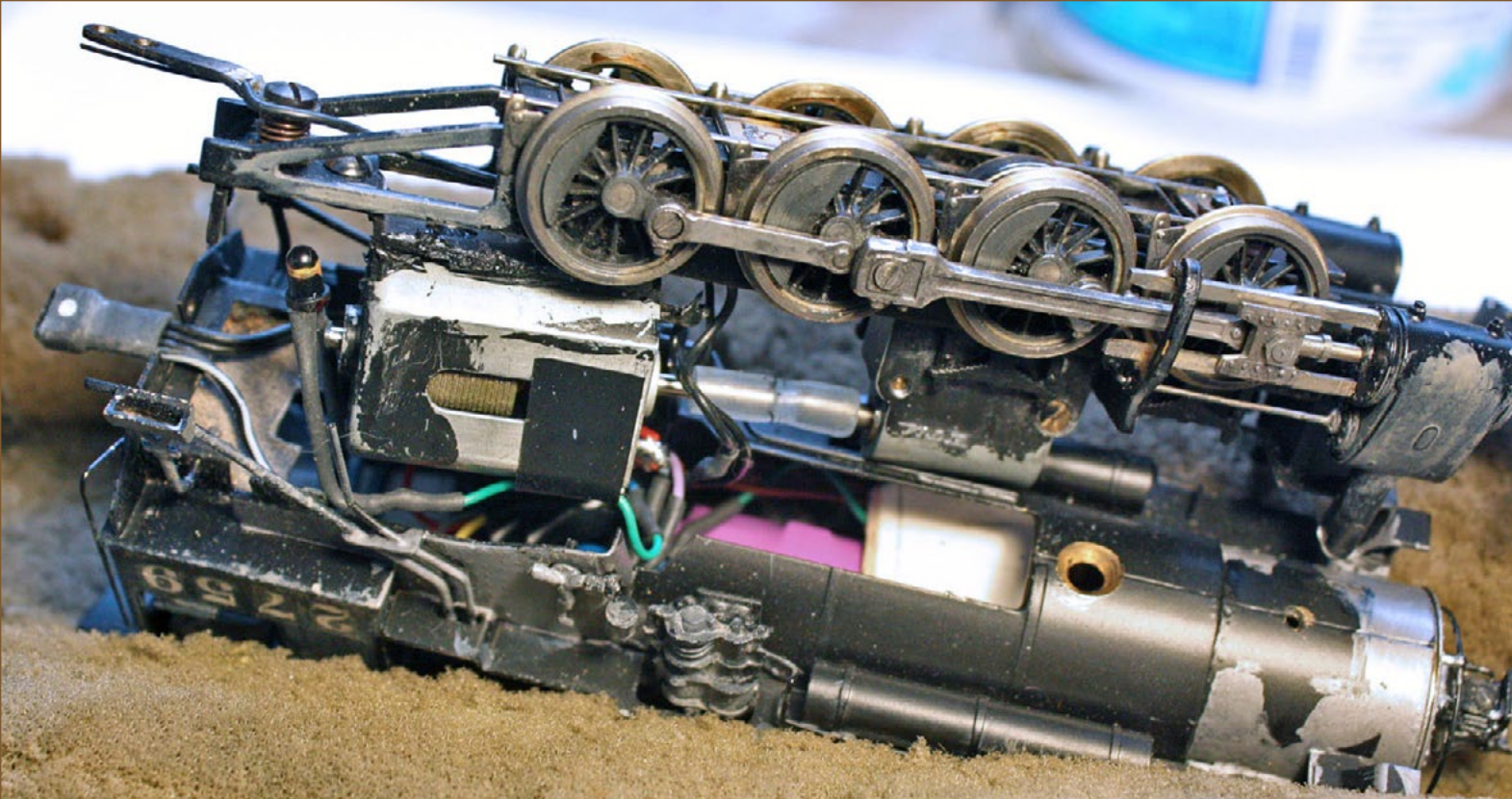
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Installing a sound decoder in an H0 brass engine

– By R. G. “Bob” Battles
Model Photos by the author



Find out how to plan and install a decoder in a brass engine ...

Installing a sound decoder in a brass locomotive is not especially difficult for an experienced modeler, but it requires some careful planning, familiarity with an ohmmeter, some basic soldering skills and the ability to drill, cut and finish brass. This article will assume you possess these skills plus the usual modeler's hand tools, a decent ohmmeter and a soldering iron.

We will cover soldering small wires and components. The methods shown in this article are not the only way of doing them, but they work and have been proven to be safe and reliable.

We will be installing a Soundtraxx Tsunami decoder in a medium-sized engine, such as a 2-8-2, 4-6-2 or larger, but these techniques and methods will work on almost any brass engine.

We will mount the speaker in the tender, and the decoder in either the tender or the engine, depending on available space. Obviously this will require a cable between the engine and tender, and there are two or three that can be used, all reasonably priced and readily available.

My philosophy has always been to mount the decoder inside the boiler if possible, rather than in the tender. It makes adding lighting functions, such as “Firebox Flicker,” Mars light, cab lights, classification lights, etc., much easier and cuts down on the number of wires running between the engine and tender. Unfortunately, sometimes there just is not sufficient room inside the boiler for the decoder, so this is a judgment call for a given engine. I will point out a couple of items later that may help you overcome space limitations.

Before we actually start the installation, we need to check some basic items on your engine:

(A) The engine you’re installing the decoder in should be painted. I am very uncomfortable installing a decoder in an unpainted engine, and here’s why: With the decoder installed, the painter will disassemble the engine, putting a strain on the wiring and disturbing electrical components.

Since the decoder and wiring cannot be completely removed without unsoldering some wires, if any wires or components become broken, damaged or torn loose during painting, there is a good chance the decoder can be destroyed when powered-up again.

If that happens, who has the responsibility to fix it and who pays for it? In short, it can turn into a real hassle. With careful

handling and even wrapping the engine in plastic sheeting such as Saran Wrap while working on it, any paint job should withstand installing a decoder with minimal touch-up.

(B) Open-frame motors are not suitable for use with a decoder – they arc too much at the brushes and usually draw too much power. If your engine has an open-frame motor, replace it with a good can motor.

I have had excellent results with the Alliance “Helix-Humper” motors, and have also used them in my own engines with decoders, but there are plenty of others on the market to choose from. Just be sure to do a “stall current test” to make sure it does not draw more current than the decoder can handle. You can do this on the bench using a multimeter with a regular power pack before you install it the motor your engine, as described in the decoder instructions.

“Open-frame motors are not suitable for use with a decoder – they arc too much at the brushes and usually draw too much power.”

(C) It helps if the tender comes apart! Surprisingly, there are many Vanderbilt tenders out there that are completely soldered together, and “breaking into them” can mean resorting to brutal measures. I have had to cut large holes in the bottom of one-piece Vanderbilt tenders to install a decoder and speaker, and this tested my metal-working skills to the limit.

(D) Lastly, your engine must be tested on analog DC power before starting the decoder install. Clean all the wheels and make sure it runs smoothly and quietly, with no binds, stalling or shorts. It is much easier to troubleshoot an engine on analog

power than it is with the decoder installed, so give it a thorough checkout before you begin the decoder installation, and correct any problems that come up.

When items A through D have passed muster, we are ready to begin the preliminary work of:

- (1)** deciding where to mount the decoder,
- (2)** what lighting functions we want, and
- (3)** where to run the cable to the tender.

This is a good time to check the available space inside the boiler for the decoder. If there is a boiler weight inside, remove the smoke box front by prying it off, then the screw holding the weight in, and drop it out the front.

By setting the engine upside down and looking into the front of the boiler while shining a light down into the firebox area, you should be able to see how much room you have.

Begin by removing the boiler from the frame, usually with one screw through the bottom of the cylinder saddle and two screws at the back or underside of the cab.

“Surprisingly, there are many Vanderbilt tenders out there that are completely soldered together, and 'breaking into them' can mean resorting to brutal measures.”

With the boiler removed, if the engine has a constant-lighting unit for the headlight, remove it. Then make sure one side of the headlight bulb is not “grounded” to the boiler—both leads must be electrically isolated before connecting to the decoder.

Normally there is a wire running from the draw bar to one side of the motor, so cut that wire but note which motor terminal it

uses, as you will need to know this later. The decoder must be mounted far enough forward so the wires will not get caught in any moving parts, and there must be enough room around the motor for the cable to the tender and a couple other wires to pass freely.

If the decoder will fit in the boiler, proceed to the next paragraph – if it will not, it will be covered in the paragraph entitled “Decoder in Tender.”

“The decoder must be mounted far enough forward so the wires will not get caught in any moving parts.”

Lighting functions

First, decide on what lighting effects you want to use. Then we can discuss the actual wiring and soldering in the next section after you have all the components ready to hook up.

Most steam locos had a single headlight but some, like the SP Daylight 4-8-4s and others, had a Mars light as well. In addition, many people have also installed a golden white LED at the rear of the firebox to simulate the flash of the oil burner flame, using the “Firebox Flicker” option of the Tsunami. I have also wired in a few classification lights on the front, as well as cab interior lights.

The Tsunami is a four-function decoder, meaning it has provision for a headlight and a backup light, plus two additional lighting options using functions 5 and 6.

Determine which lighting you want and whether you want LEDs or incandescent bulbs. Most steam loco headlights need to be drilled for a bulb.

The small 1.5-volt bulb is the easiest to use, but it will need a dropping resistor, since decoder lighting functions deliver 12 volts. A 1/16” drill works well for the 1.5 volt bulb and you may need to drill the backup light as well.

CAUTION! Drill slowly and gently, or you will rip the headlight off its bracket!

TIP: on any engine with two headlights, use the same lighting for both of the lights, either LEDs or bulbs. An LED next to an incandescent bulb looks odd and not prototypical. A white firebox LED can be placed at the rear/center of the firebox on oil-burning engines, but after you determine the best spot for it, it will be easier to mount it if it is wired first.

If your engine has interior cab detail and a full backhead, a light mounted on the cab ceiling is easy to wire up, and looks cool when the engine is standing still at night. We will cover the actual wiring of the lights in the section, Soldering and Splicing Wires.

Loco/tender cable

You will need to determine a safe path for the cable to the tender. This is a critical part of the job, and if not done properly, can cause derailments and other weird problems!

“An LED next to an incandescent bulb looks odd and not prototypical.”

In 99% of decoder installations, with the decoder in the engine and a tender with a backup light, a four-wire cable will do the job – you need two wires to the speaker, two wires to the backup light. However, if the decoder must be mounted in the tender or if space is at a premium, TCS makes a subminiature six-wire

cable that works very well. If this engine does not have a backup light, you will only need a two-wire cable for the speaker.

The main criteria is this – there must be large enough openings in the engine and tender so the cable is free to flex without binding or limiting engine and tender movement on curves and uneven track.

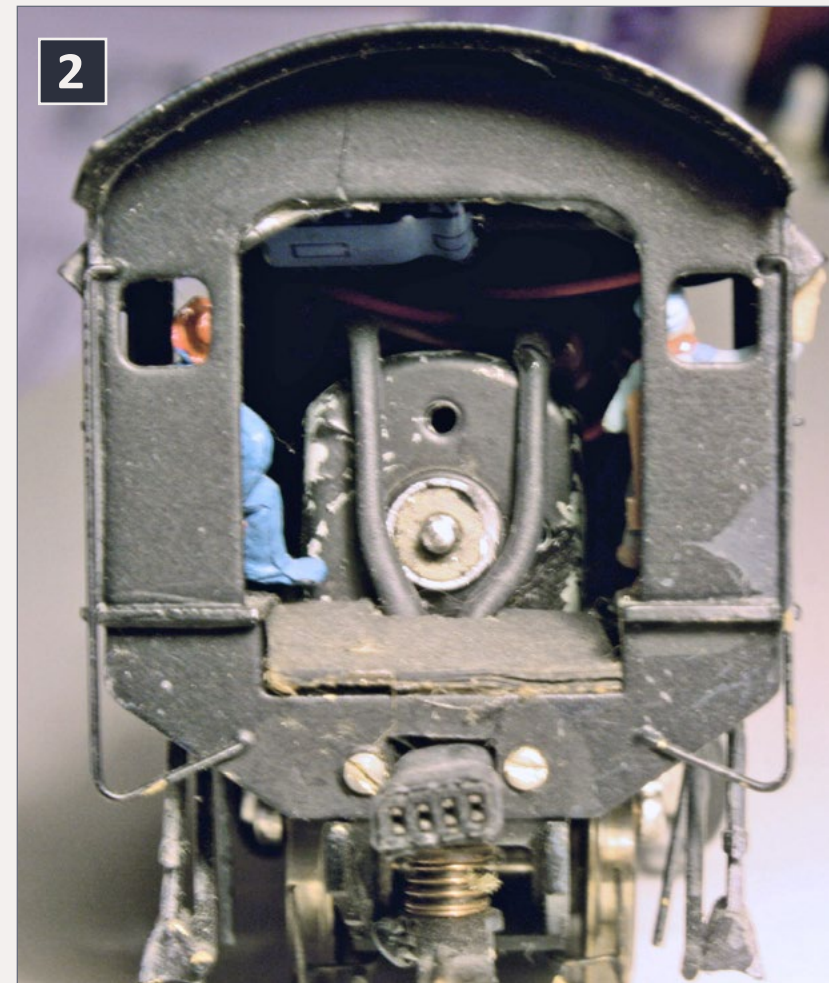
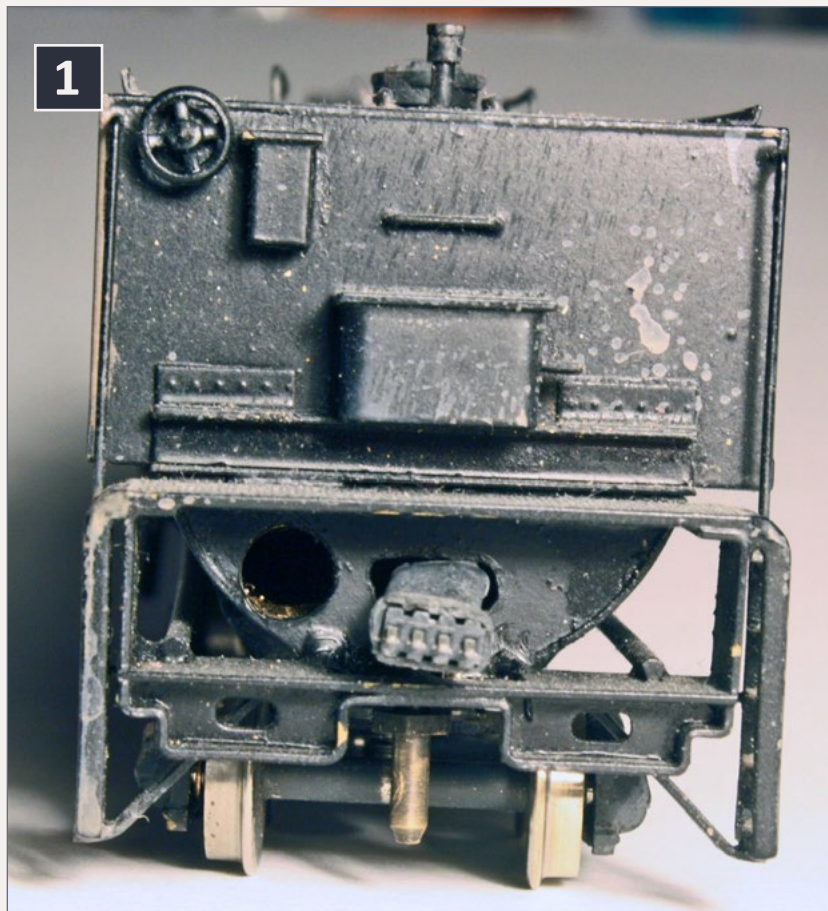
Since the engine is normally heavier than the tender, any binds will usually show up on curves by the tender tilting over, making poor contact with the track, derailing, or all three. It is crucial that the hole in the tender front bulkhead and the opening in the engine be the same height off the rails; they must also be on the longitudinal centerline of the engine and tender.

Take some time to measure and mark the locations accurately so the holes line up vertically. Then remove the tender shell and inspect it to be sure there is room inside to route the cable

past any bulkheads, partitions or braces and that there is room on the frame/floor for a speaker.

Any tender weights may need to be removed until this portion is finished, and reinstalled later in a different spot. If

1: Front of tender showing cable cutout and cable.



2: Cable cutout in cab apron and cable.

these items look good, you can proceed with making the cable opening in the tender. Figures 1 and 2 show examples of the holes cut for a four-pin cable.

To make the opening, I drill two or three small 1/16" holes first and then enlarge them into one big

hole with a Dremel Moto-tool using a #113 engraving bit; final shaping and smoothing is done with small files.

You must file the opening smooth with rounded edges so they cannot snag or cut into the cable! I normally cut/drill the four-pin Miniatronics cable opening at least 5/8" to 3/4" wide and about 1/4" high for the cable to feed through.

The TCS six-wire cable has much smaller wire so it is more flexible and will not need as large an opening. With some engines, there is plenty of open space under the cab, and running the cable will be a simple matter, but others will require a hole in the cab apron or even the frame. (While maybe easier, it looks tacky for cables to be run on top of the cab and tender floor.)

Test-fit the cable with the engine and tender coupled, the cable ends plugged together, and inserted into the holes you made. To verify that the holes are large enough, you must be able to move the tender up, down and sideways 1/2" independently of the

engine, and vice-versa; if not, you must enlarge the holes until you can get that amount of movement. Remove the cable for now, touch up the paint around the openings, and set it aside.

Tender speaker

In 98% of rectangular tenders, you can mount the speaker on the floor, and many engines have the holes already drilled for you. If not, you will need to drill holes in it for the sound to go out. If there is absolutely no way to mount the speaker on the floor, I have mounted speakers in the coal pile and drilled 40 or 50 holes in the coal for the sound to come out the top, and it sounded good.

The tender itself makes a great enclosure, and you will be amazed at how loud it will be if the speaker is mounted so it is sealed around the opening or holes.

Try and use the largest speaker you have room for, but be sure it has 8 ohms impedance. Test it first with a 1.5V battery with a 1.2K resistor in series to make sure it makes some static when you touch the terminals with it.

In a Vanderbilt tender, you may have to build a small baffle of plastic or cardboard to seal off the ends of the speaker from the curved tank bottom. Find a location on the frame where you can drill enough holes for it and not hit any brake parts, then scribe a circle around it in pencil and drill the holes about 1/8" apart. A 3/16" or 5/32" bit works well, but be sure to anchor the tender securely when drilling!

After smoothing off the holes, paint them and then you can mount the speaker. I use any good silicone RTV, since it holds well, but the speaker can be removed fairly easy if it ever needs replacement.



3: Showing underside of tender and holes for speaker sound.

Hold the speaker in place and run a bead of RTV around the speaker and on the tender floor to hold it down, making sure it is sealed tightly to the floor. This is a good time to reinstall the tender weight – you want the tender to weigh at least 5 or 6 ounces when finished. Set it aside to cure overnight.

Decoder in the tender

There are a couple of extra challenges encountered when mounting the decoder in the tender:

(A) you will need to find a place for the decoder in addition to the speaker,

(B) you need to run power from the right rail to the decoder.

Delivering right-rail power can be done in at least three ways:

(1) You can make pickups on the tender trucks for it

(2) you can use a wire in the cable from the engine to the decoder and

(3) you can reverse the draw bar – soldering the stud to the engine and drilling the tender for the insulated draw bar mount.

I've done all three. At this point a four-wire cable between the engine and tender may not be enough, and the TCS six-wire cable would be a good choice if you plan to use any additional lighting functions like a Mars light or Firebox Flicker. In any event, two wires will go to the headlight and two to the motor plus one wire for each additional function and/or right-hand rail power from the engine frame, so this is the time to plan what size cable you will need.

“I use any good silicone RTV, since it holds well, and the speaker can be removed fairly easily if it ever needs replacement.”

It is important to make a drawing of which wire goes where in the cable. The black decoder wire will go to the tender frame/floor. You can put the headlight dropping resistor in the tender as well. Again, if you desire lighting effects in the engine in addition to the headlight, mounting the decoder in the engine might make things easier.

CAUTION! Hard-wiring functions between the engine and tender without a disconnect plug is considered bad practice and shoddy workmanship.

A decoder installed in the tender should be held in place so it doesn't flop around during handling, and possibly damage the speaker or connections. It can be taped to the floor in the coal or oil compartment away from the speaker using double-stick tape or plastic electrical tape.

I've made retaining clips out of cardboard to hold the decoder up against the underside of the tank, yet made it easy to remove if necessary. Since a Tsunami gets fairly warm while in

use, avoid making a retainer out of plastic – the heat will warp it. Cardboard will withstand the heat and keep its shape.

Testing and wiring the decoder

At this point you should unpack your decoder, sit down, read the instruction sheet and then come back to this section. While I've only had one DOA decoder in 15 years, we should still test the decoder before we proceed with the wiring. You will need to have clip leads from your DCC track power handy.

With the decoder wires untangled, strip off the insulation from the red, black and the two purple wires; connect the two purple wires to the speaker terminals securely, even though this is temporary, and clip the DCC track power leads (it doesn't matter which one) to the red and black wires **CAUTION!** The orange and red wires can look very similar – if you connect the orange wire to track power and turn it on, you will destroy the decoder!

Power-on your DCC controller, and shortly you should hear the air compressor stroking and some low steam sounds. Assuming this is a new decoder, select loco address 3 and you may hear the reverse linkage throw; press the Headlight button and you should hear the generator crank up. Try the bell and whistle and advance the throttle a little to hear some exhaust chuffing. If these functions sound good and nothing is overheating or smells hot, you can assume the decoder is OK.

Headlight dropping resistors

If you are using 12-volt headlight bulbs, ignore this paragraph— they won't need resistors. If you are using LEDs or 1.5-volt incandescent bulbs, you will need resistors and the best place (in some small towns, the ONLY place) to get them is Radio Shack. They make an assortment of 1/4-watt resistors for about \$7.00 that will have what you need, or you can

buy packs of five resistors of the same value for about \$2. (Unfortunately they do not carry all of the standard sized resistors but I have tried to specify resistors that Radio Shack stocks so modelers won't have to drive for miles looking for an electronics shop).

For LEDs, a 1000-ohm resistor works well, as will a 680-ohm or even 1200-ohm – LEDs are not fussy. Just remember that the blue decoder wire is positive, so the Function wire will go to the negative lead on the LED, the one by the flat spot on the flange. For 1.5V bulbs, it gets a little sticky since the wattage (current) of the bulb determines the resistance, so there is no “one size fits all” dropping resistor.

However, if you know the current rating of the bulb(s) you will be using, a 15-milliamp bulb will need a 680-ohm ¼-watt resistor and a 30-milliamp bulb will need 400-ohms of resistance. However, a 30-milliamp bulb at full brightness draws about 0.32 watts, enough to get a ¼-watt resistor very hot! The quickest way around this is to use two ¼-watt resistors wired in



4: How to connect two resistors in parallel; note that small shrink tubing is used first, then a larger size is shrunk over them to cover the resistor leads and cover any bare wires.

parallel (4), and in this case a 1000-ohm and a 680-ohm in parallel will give you the proper resistance plus ½-watt capacity so they will stay cool. Miniatronics makes both 15 ma and 30 ma bulbs so if you have a choice, get the 15ma type. They're both about the same brightness.

“The best thing you can do to make good solder joints is to keep the tip of your iron clean with a coat of molten solder on it!”

Soldering and splicing wires

If you don't feel confident making small solder connections, please read this section fully before you go into the actual wiring of the decoder. You will be making several splices in the course of this installation and they must be made so there are absolutely no bare connections!

Here is what you will need to make good reliable splices: a good-quality adjustable wire stripper, some small needle-nose pliers, a sharp knife, some 1/16" shrink tubing, some small 1/32" lead-tin solder, and a 20- to 30-watt soldering iron with a small tip.

HINT: the best thing you can do to make good solder joints is to keep the tip of your iron clean with a coat of molten solder on it! File it smooth while it is cold and as it gets hot, coat it with solder (called “tinning”) and then lightly wipe it off with a rag. Remember, hot solder conducts heat much better than dirty oxidized copper, so keep your iron clean and “tinned” with solder, and your connections will go together easily and quickly.

If you have never done solder connections this small, I urge you to try a few test splices with scrap wire till you get the hang of it. To make a splice, strip off no more than about ¼"

of insulation, twist the strands between your fingers so they stay in line, and fold the exposed copper wire in half and into a hook; do the same to the other wire. Don't forget to slide a 3/8" to 1/2" length of shrink tubing onto the wire a few inches, and you are ready to make a connection.

Hook the two wires together and pinch the ends so they're smooth with no strands sticking out (5). Now, while keeping a slight tension on the wires in a straight line, hold the hot iron under the joint, press the solder against the wires, and the instant it melts, get away – you're done (6).

Tests have shown that .005" of solder is enough to make a solid electrical connection, so you don't need very much; a typical joint shouldn't take more than two seconds. Do it quickly-- the longer you heat up the joint, the more insulation you will melt! Then slide the shrink tubing over the joint, be sure it covers the bare wires completely, and hold the iron under it till it shrinks tight (7).

When splicing-in a dropping resistor, cut the resistor leads off to about 3/8" long and also bend them into a hook; use a slightly longer piece of shrink tubing so it covers the leads completely. If you need to splice two resistors together, use a short piece of 1/4" shrink tubing that will fit over them and slide it onto the joint between the resistors after they have been soldered together.

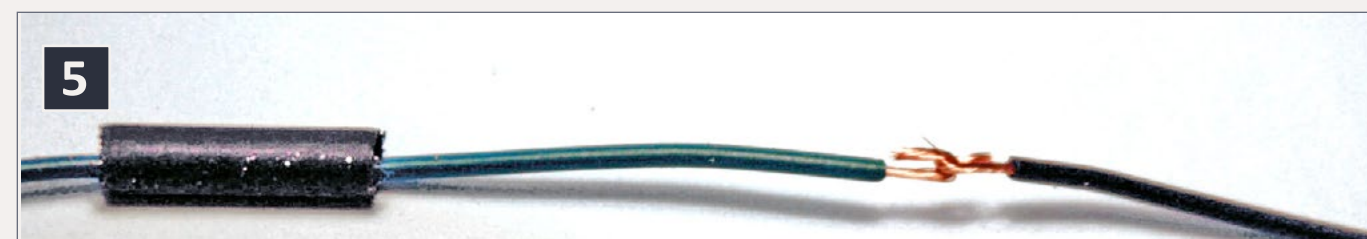
When soldering wires to the motor, tin the end of the wire to make a faster joint and deliver less heat into the motor.

Since the wires on the decoder will probably be much longer than needed, it is time to plan where they will be routed so you can determine the length of each one. You should have 3 or 4 inches of slack in the wires running from the boiler to the frame, so you can remove the boiler without stretching

or breaking them. If you are not using Function 5 or 6, cut the green and brown wires off at 2 or 3 inches and tape them back onto the decoder along with any other unused wires and the capacitor.

Assuming the decoder will be placed in the engine, it is imperative that all wires be routed away from the motor shaft, flex coupling, and any rotating parts. To make things easier, wire the headlight and its dropping resistor, plus the wires to the tender cable, and the wires and dropping resistor for the fire-box LED, to the decoder on the bench beforehand.

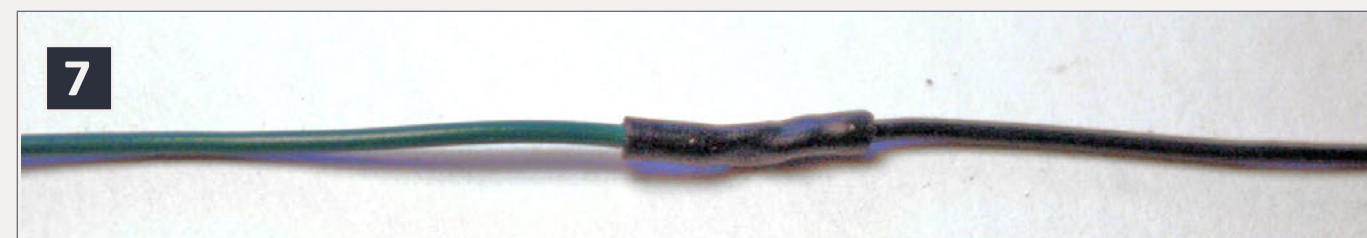
Then the decoder and these wires and components can be inserted into the boiler as a unit, avoiding a lot of splicing in close quarters inside the boiler. (You can put the dropping



5: Wires hooked together for soldering.



6: Soldered splice, ready for shrink tubing.



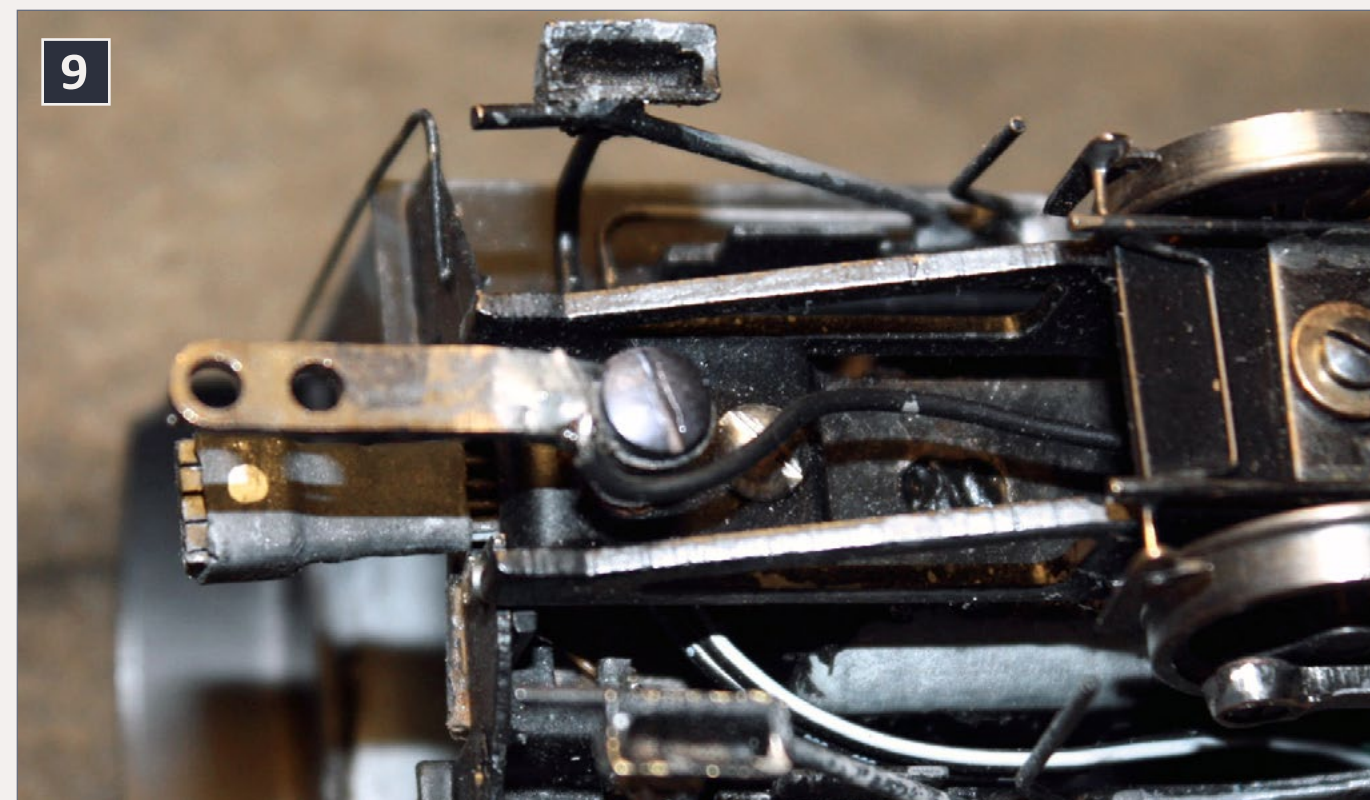
7: Finished splice.

resistor for the backup light in the tender where there is plenty of room.) After the wiring for the lights and the flat cable are finished, you should have two leads to the motor (orange and gray) and two leads to the track power (red and black) remaining to be wired; the red lead will go to the loco frame and the black lead will go to the draw bar.

The orange lead will go to the motor terminal which formerly was connected to the frame or right rail. I always solder the black lead directly onto the draw bar itself rather than the terminal or nut on the shoulder screw – this eliminates one sliding connection that often gets dirty or corroded, and causes stalling. While soldering the lead to the draw bar (6), hold the contact wire with a clamp or forceps so it doesn't move, and make sure it is well-soldered and fits snugly against the stud on the tender.



8: This shot shows the “Firebox Flicker” LED at rear of firebox, and the flat cable to the tender can be seen just to the left of it. Drawbar is down below it.



9: Black power lead soldered to drawbar.

At this point, if you have accounted for all the wires on the decoder and there are no bare connections anywhere, check the wiring to the track, motor and lights once more, for pinched, stretched or damaged leads. If all looks well, you should now be ready for a quick check before you button up everything.

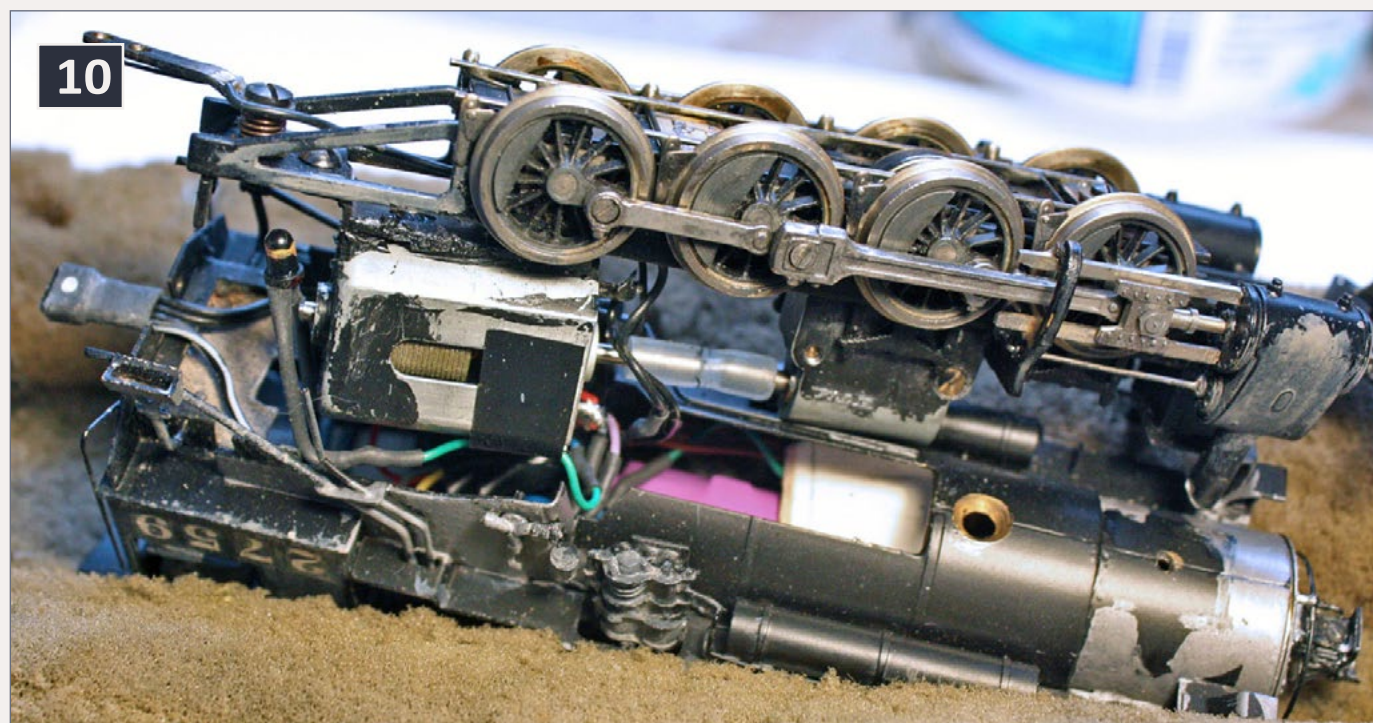
Set the boiler loosely on the engine, place the engine and tender on the track and plug the cables between them (WARNING! Take care not to plug the four-pin cable “one pin off” or you will wreck the decoder!), then turn on the DCC controller.

In a second or two you should hear the compressor pumping and some light steam sounds. Select Loco address 3 and try the whistle – if it blows, press the Headlight button and you should hear the dynamo crank up and the headlight ramp up to full brightness. (A small “quirk” in the Tsunami sometimes will have it power up with the backup light on in Forward direction, but as soon as you advance the throttle, you will hear the Reverser

throw and the headlight will come on.) Advance the throttle a notch or two and the engine should move forward. Stop and change direction and the backup light should come on. If you have a Firebox Flicker LED, press the function you wired it to (5 or 6) and it should come on. Set its CV (51 or 52) to 141 and the flickering should start. If the LED seems too bright, a dab of yellow paint will soften the glare. If all these functions look normal, you can assume you installed your decoder properly.

Now, take the engine back on the bench and put the headlight bulb into the hole you drilled for it; I hold it in with some plastic tape on the inside of the smoke box door. Then route the engine wiring neatly so it is away from any moving parts and out of sight.

This is a good time to replace the boiler weight, but you may have to saw off some of it to fit under the decoder. A hacksaw with pretty large teeth works well, but be sure to file off any



10: Drive is ready to drop into boiler – the Firebox Flicker LED is to the left of motor, 4-pin cable in notch in apron at left; pink decoder can be seen in boiler. Wiring is carefully routed to avoid moving parts.

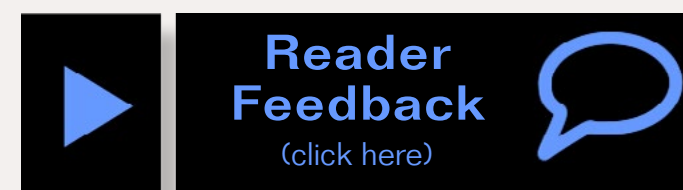
sharp edges afterward. If possible, use the original mounting holes and screw, but be very careful not to tighten it down and pinch some wires. When you're satisfied that the wiring is clear and not pinched, put the boiler back on properly.

TIP: It is easier to place the boiler upside down on a soft surface and drop the frame/running gear down into it, rather than fit the boiler down over the frame – you can see if any wires are caught, pinched or in the wrong place. Then run the engine on the layout for several minutes as a final test. Don't forget to set the decoder address to the number on the side of the cab. I also like to set CV3 and CV4 to values around 30 or more, to give easy more prototypical acceleration and slowing down; this will also extend the life of gears and couplers.

Finally, I like to include a data sheet explaining the details of the installation, a wiring diagram, and any CVs I changed from the factory defaults. This will be handy if there's a problem five years from now when the details are forgotten.

I also encourage my customers to leave their engines on the layout or in a larger box where they do not need to disconnect the engine and tender each time they are used. This will wear out the cable connectors pretty quickly and, unfortunately, the cables do not come with a lifetime warranty. Replacing them will be time-consuming and expensive.

I hope you enjoy your sound-equipped loco for a long time!





Bob Battles grew up in a railroad family, his Dad being an agent/operator on the Western Pacific Railroad.

Bob served four years in the US Navy where he learned electronics and worked on aircraft avionics. After being discharged he worked as a Field Engineer on large IBM mainframe computers for 25 years and later on credit card embossing equipment. He worked as a volunteer operator/instructor at the Western Railway Museum for over 25 years.

In 1964 he took up HO modeling and still enjoys building kits and operating his third layout. In 1997 he began doing contract HO repairs and decoder installs for Just Trains Hobbies in Concord, California but recently had to suspend the work due to some eye problems. He is married, retired, with two grown children and lives near Santa Rosa, California.

When talking to hobby vendors, please remember to mention MRH.

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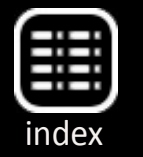
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– **Ralph Renzetti**

Model Photos by the author

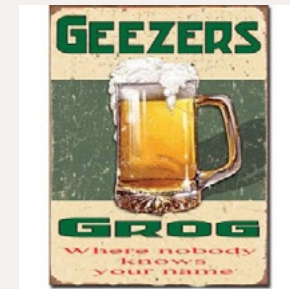
Getting that old weathered look for your posters and wall signs ...



When you want to add some old signs or posters to the walls of your buildings, are you satisfied with using pre-manufactured signs or even some that you may have printed from your computer? Are you satisfied with just cut-and-paste, giving your sign or poster a scale thickness of about 2.5 to 3 inches? That's in HO – imagine how out-of-scale it would be in N scale.

If you answered no to any of these questions, then read on.

I realize a lot of the building kits we get nowadays have signs included, but most of us have printers with built in scanners



and if not, you probably know someone who does. So scan the kit signs to a digital image.

I'm going to show you how simple it is and how realistic the results will be. If you're like me, you probably have been saving signs and posters for your models for a while, so you should have a nice selection. Above are the signs I chose for this tutorial.

Tools

The tools you will need are:

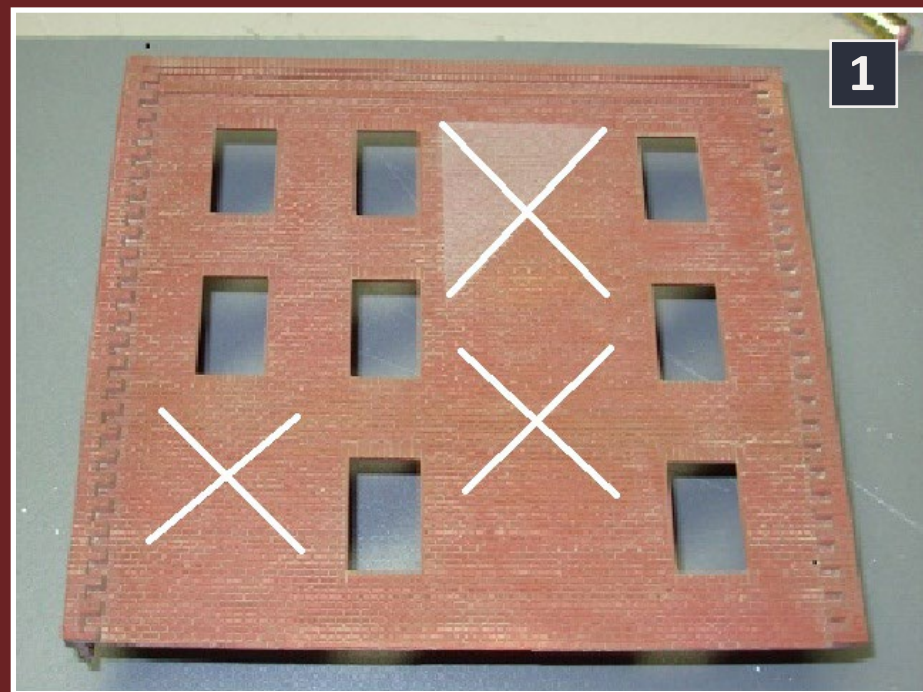
- Color ink jet or color laser printer
- Hobby knife with a new blade
- Straightedge for cutting
- 3M mending tape (the type that looks frosted)
- Tape measure or ruler
- Regular printer paper
- White glue or matte medium (either one mixed 50/50 with wet water)
- Lint-free cloth (an old T-shirt)
- Airbrush
- 50/50 mix of Testors Dullcote
- Tissue paper, the type used for gift wrap.
- Artist tracing paper or architectural tracing paper

OK, let's get started ...

STEP 1: Locating the signs

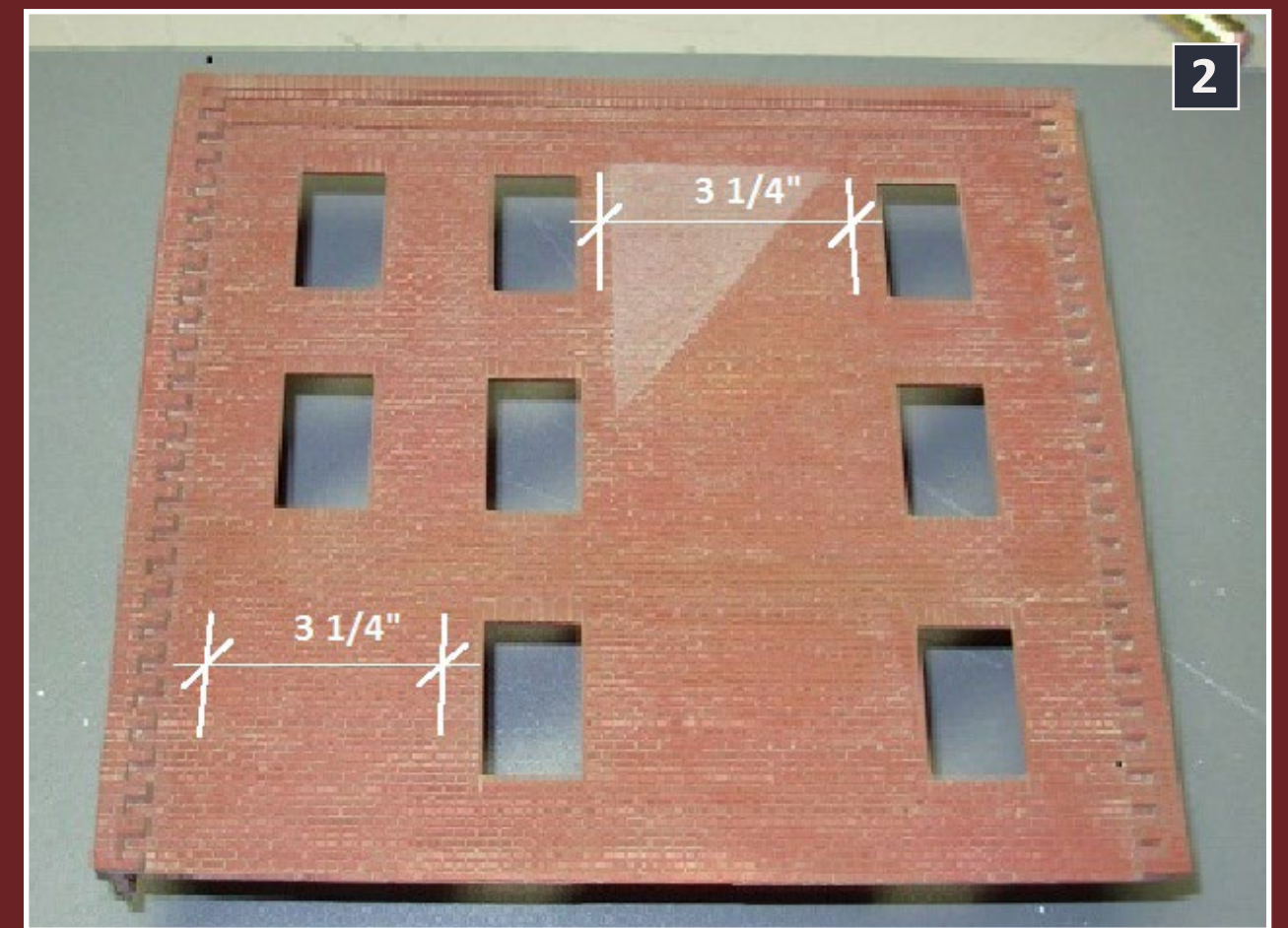
So you want to put some posters on a wall, or even better, you want to simulate an old painted sign on a wall. Well I've got news for you – it's easy. I think once you try this you may not go back to your old way. The process I'm about to explain is not set in stone; it's a process I stumbled upon and it works for me. If you feel you can improve on it, please feel free to do so.

Identify an area on a wall where you want the sign.



1: The "X" marks the areas I chose. I'm not going to go into great detail regarding the mortar between the bricks. Plain and simple, I used artist's oil paints and mineral spirits to make a light wash, and let it flow into the joints. You may have a different method, and that's fine, but it should be done and allowed to dry thoroughly before you go any further.

STEP 2: Measuring the sign areas

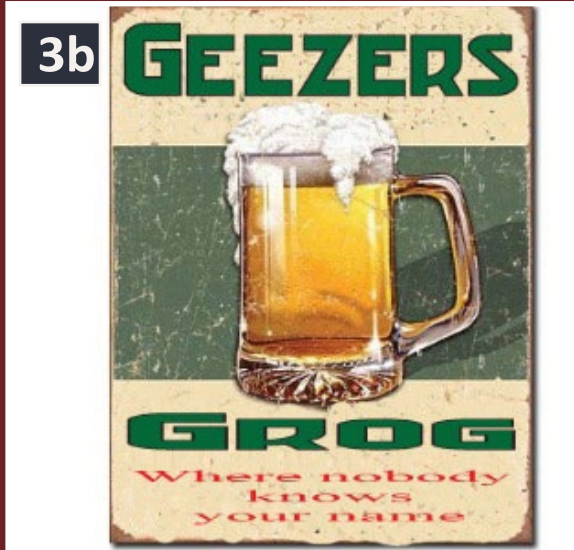


2: The areas marked above are the maximum size I want the sign to be.



STEP 3: The signs

Choose a digital image from the Internet or your personal files. Here are the images I chose for this clinic.

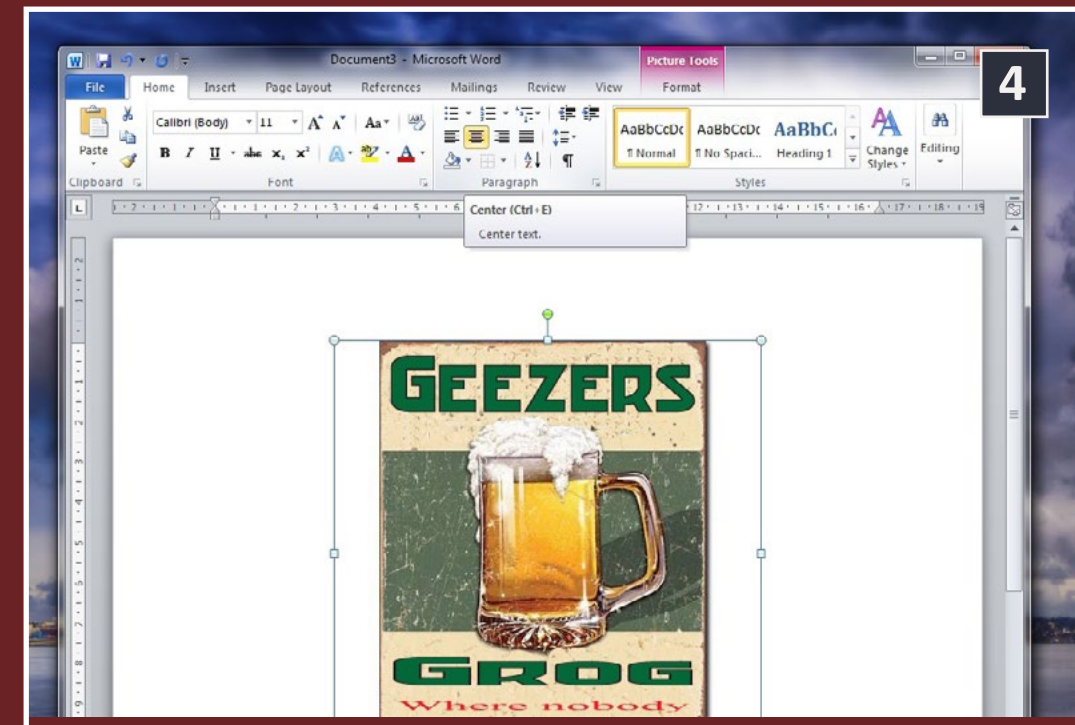


3-3a-3b: These are the signs I will be using.

STEP 4: Resizing the image

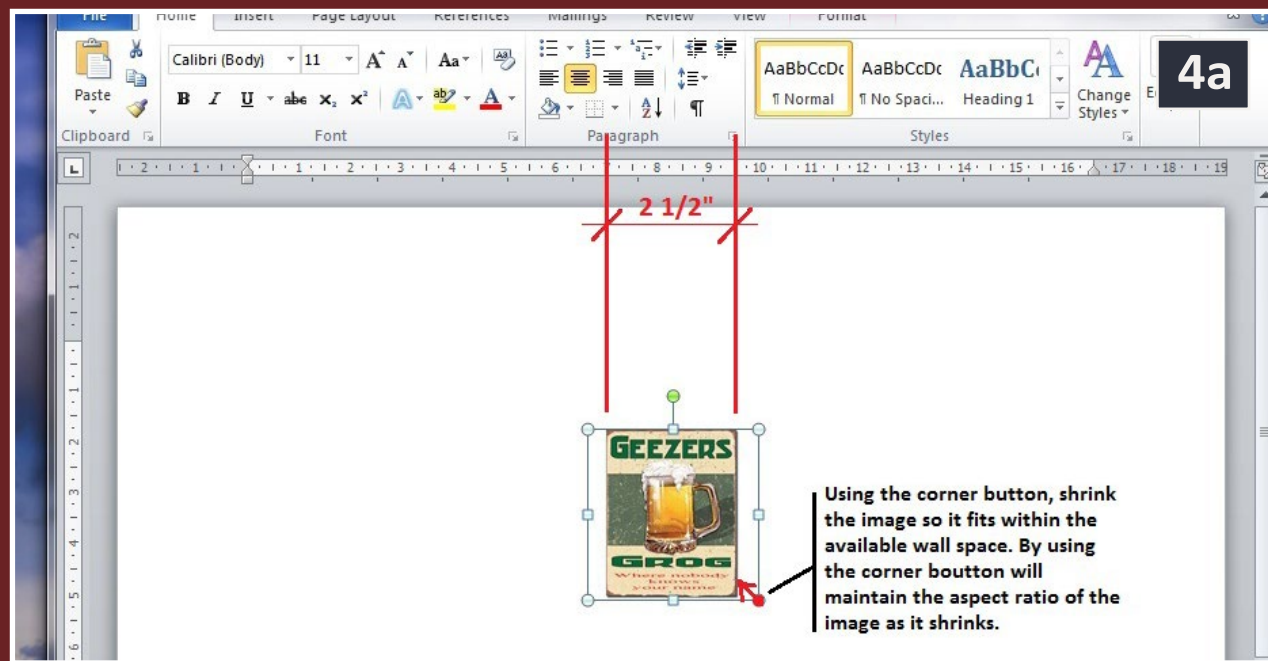
I used the word processor on my computer to resize the image. In this case it's Microsoft Word.

- In the paragraph-formatting section, center the image horizontally on the page.
- Make sure the page ruler is turned on to help you calculate the image size.
- When you left click on the image, a thin lined box will surround it. On each side you will see little circles or buttons.
- Left-click and hold the bottom-right button and move it in toward the image. This will force the image to get smaller. Keep an eye on the image and the ruler above to make sure your image is smaller than the available wall space.



4: The screen capture shows the sign centered in the document, along with the handles to resize the picture.

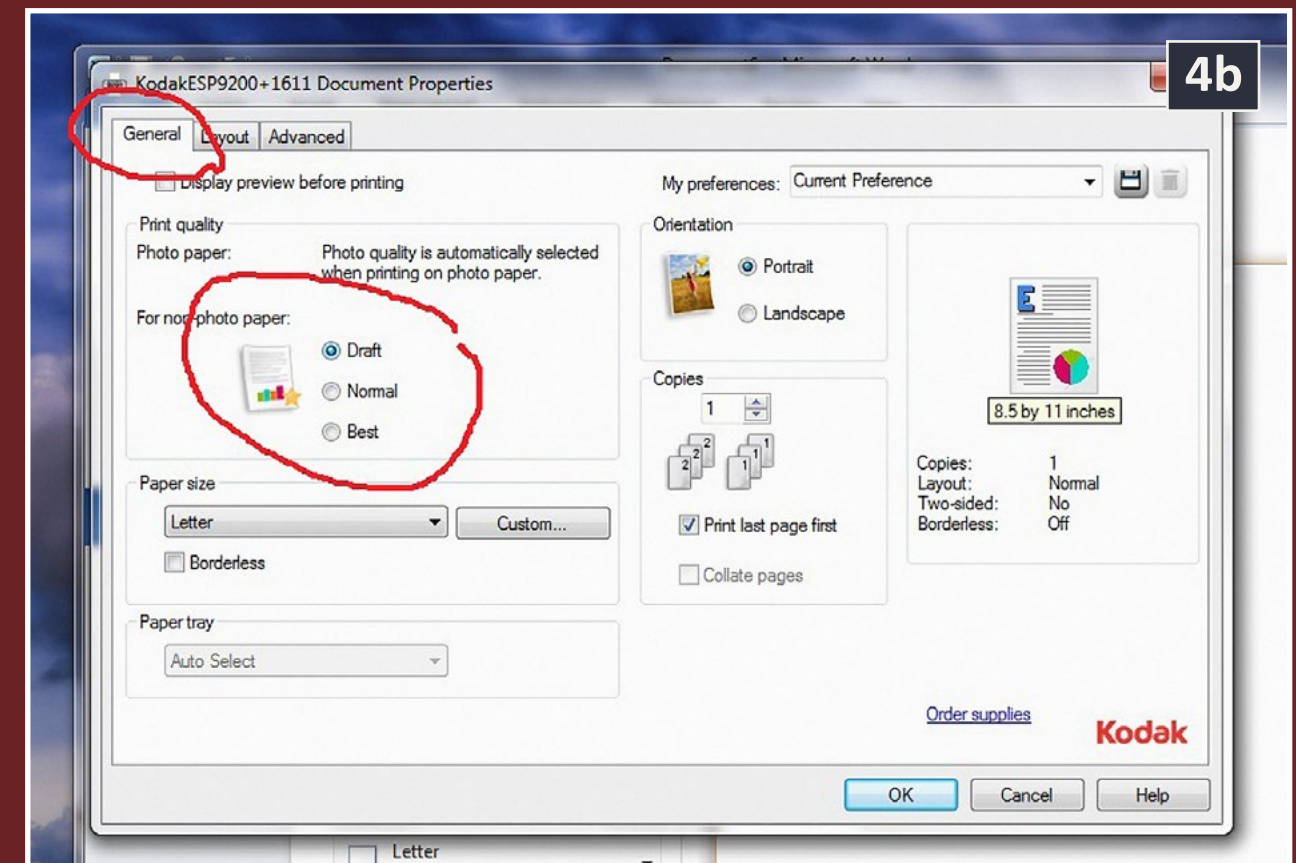
STEP 4: Resizing the image *Continued ...*



4a: Resizing the sign. I use the ruler at the top to ensure that I have the size that I want.

- Once you figure you have the size you need, make a print of your work, but not just any print.
- Left click on 'File' and select 'Print'
- When the print window opens, select the print 'Properties'. When the properties window opens, there should be three tabs, General, Layout and Advanced.
- In the General tab, change the Print Quality to 'Draft.' As for the Page Orientation, it really doesn't matter if the printed page is Portrait or Landscape.

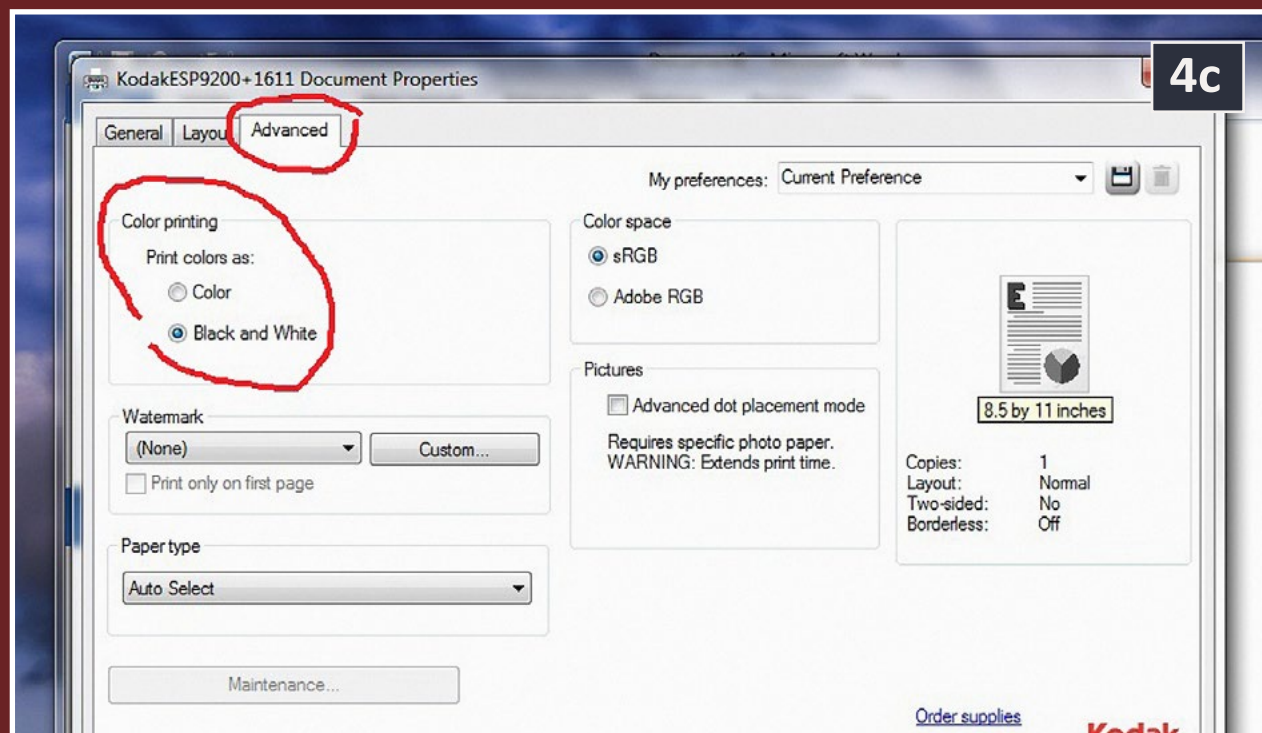
STEP 4: Resizing the image *Continued ...*



4b: Print settings used.

- There is no point in wasting your colored ink, so in the Advanced tab you will need to change from Color to Black and White. Once you've made the changes, go ahead and make a print. You'll need it for the next step.

STEP 4: Resizing the image *Continued ...*

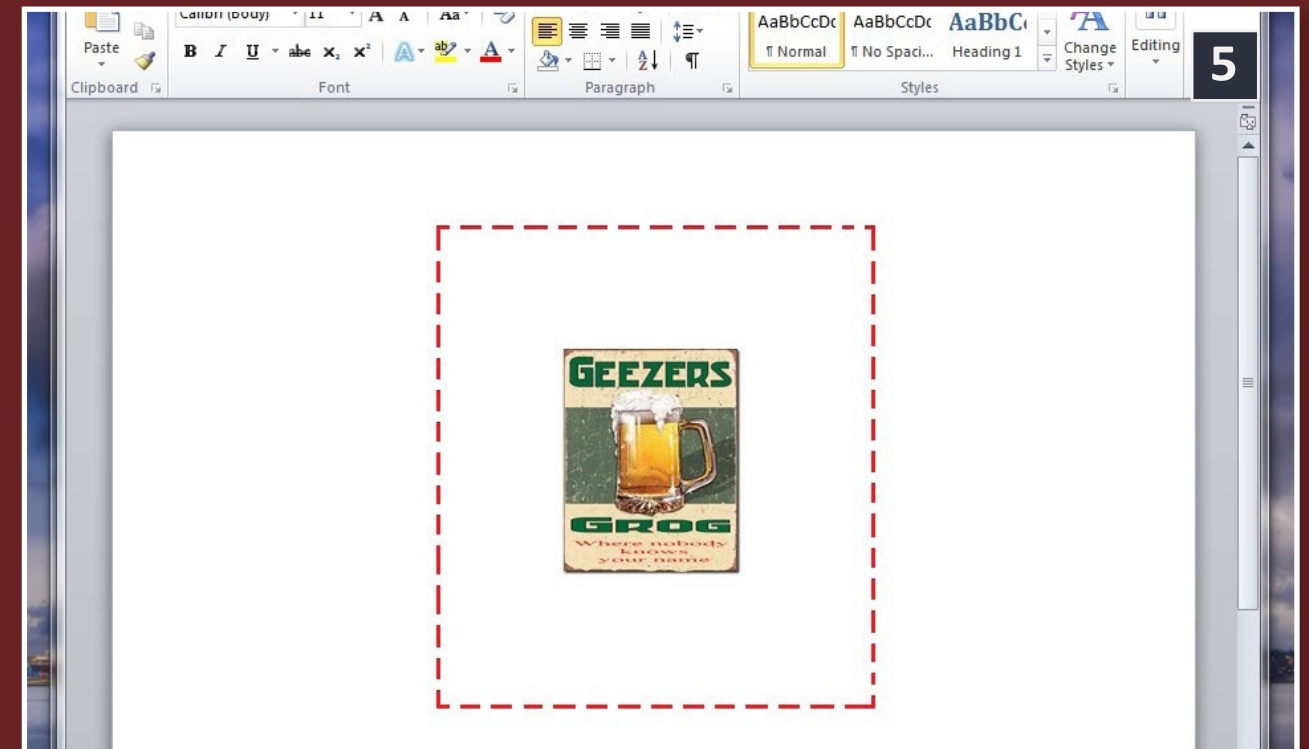


4c

4c: Go to the advanced settings to print in black-and-white only.

- Once you have your black-and-white print, draw a line all the way around the image, keeping about 1" from it on all four sides. The tracing paper is too thin to be run through the printer, so it needs to be in a holder.

STEP 5: Drawing a line around the image



5

5: A 1" line is drawn around the image. I use this line as the border for removing the black-and-white print. The extra space allows for minor misalignments of the two runs through the printer.

- The next thing to do is to take a straightedge and your hobby knife with a new blade, and cut along the line around the image.
- Now comes the tracing paper. There are two types or maybe more, but the two I used were Artist Tracing Paper and Architectural Tracing Paper. The Artist paper is more opaque, and the Architectural paper is super-transparent. Both are very thin and delicate. So here you will have to make a decision. Do I want the sign just to look old and weathered, or do I want it to look like it's fading away? Decide how transparent or opaque do you want your sign to be.

STEP 6: Reprinting the image

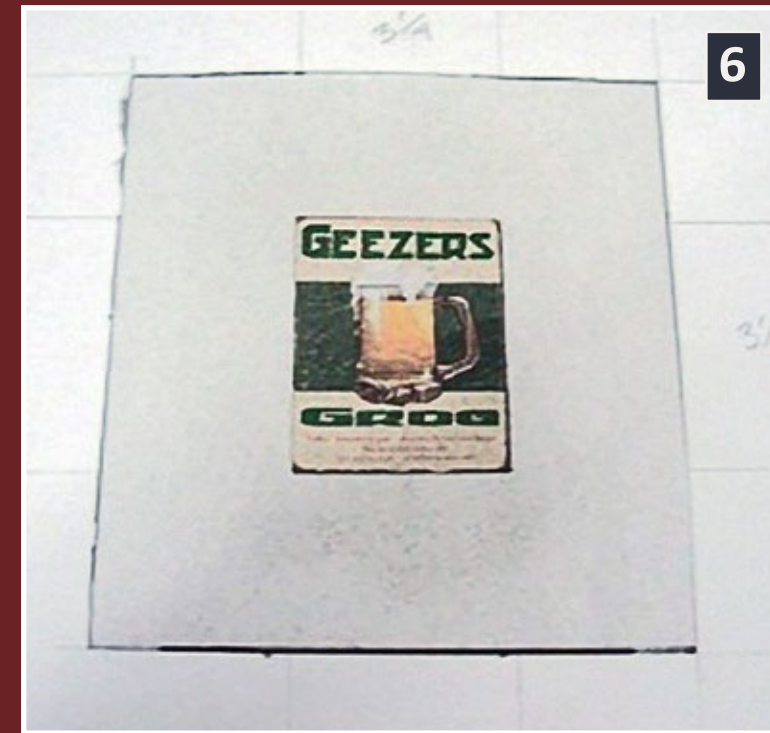
Whichever one you choose, you need to cut a piece of tracing paper to replace what you cut out. To hold it in place, I used the 3M Tape on the back side, and put it back in the paper supply tray to print the image again, but this time in color and draft mode.

Now I should point out that our printers **DO NOT PRINT WHITE**, they count on the white paper to fill the white.

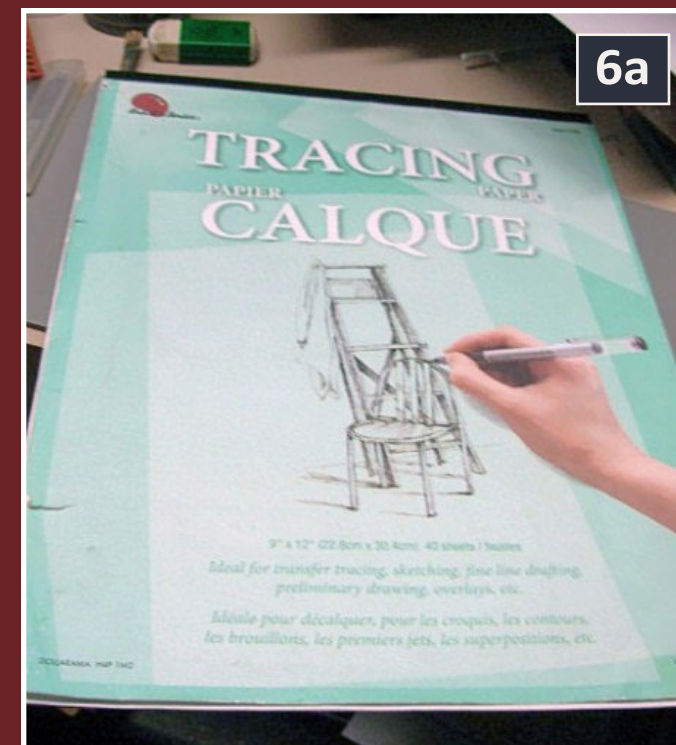
So here is another choice to make based on the age and condition you want your sign to be.

- If you want to be able to read your sign completely, you will have to make a mask in order to spray a whitish background the exact size of your sign. I used the cutout from my black-and-white print, cutting along the edge of the sign and leaving a hole where the sign used to be. Take this cutout with the hole in it, and tape it so the hole is in the desired sign position. I use an airbrush to spray a mixture of thinned acrylic paint, white or beige, through the opening. This mixture is 10% acrylic to 90% acrylic thinner. You will have to spray multiple coats, depending on how bright you want your sign.
- If you want the sign to be old and fading away, then do nothing or at the very least, apply one or two coats of the above mixture.

STEP 6: Reprinting the image *Continued ...*



6: The sign has been printed in color. Standard paper is used to hold the tracing paper in place while printing.



6a: The Artist Tracing Paper that I use. Any artist tracing paper will do.

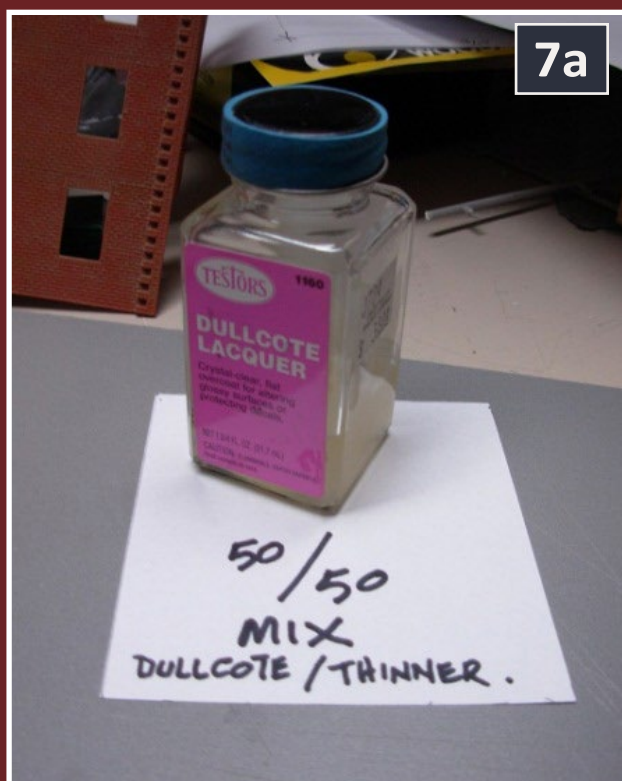
STEP 7: Adding the sign to the wall

Now comes the true test. If you've done everything else right, adding your sign to the wall.



7

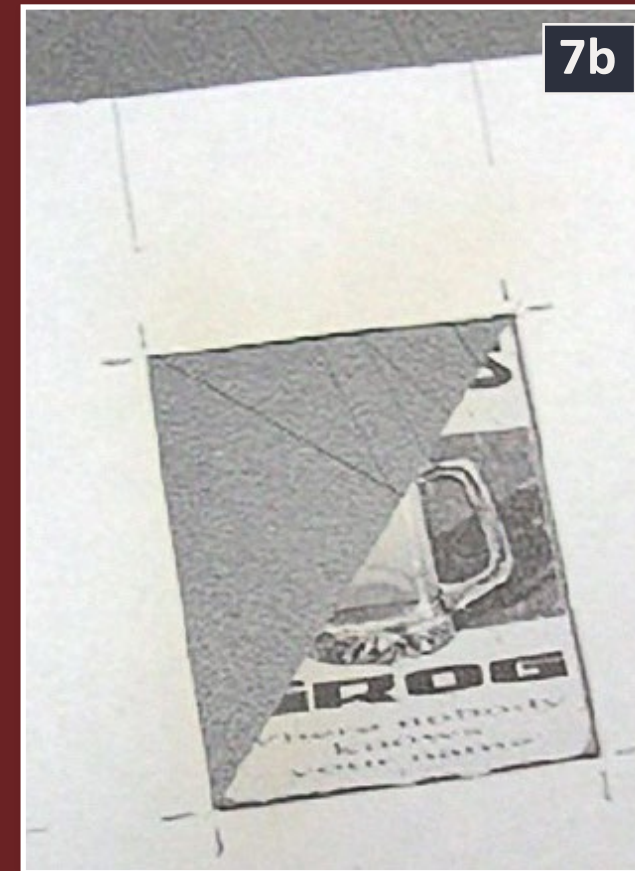
7 - 7a: Here are the white glue and Dullcote I use to apply the signs on the walls. Dullcote mixed 50/50 with appropriate thinner and applied with an airbrush gives a better, finer finish than from the rattlecan.



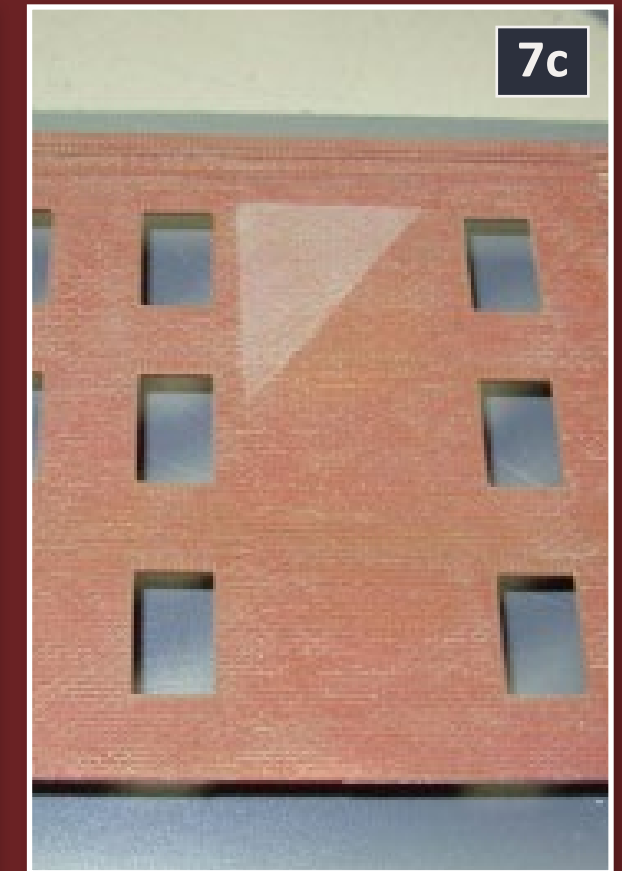
7a

Tip: Stuck bottle tops? Try wrapping an elastic band around the bottle cap and try again. 9 out of 10 times this solves the slipping finger problem.

STEP 7: Adding the sign to the wall *Continued ...*



7b



7c

7b - 7c: Here is the cutout from the black-and-white print. I cut out half of the image diagonally and used it as a mask to spray a beige background and allowed it to dry overnight. In hindsight, I should have sprayed more than one coat.

STEP 7: Adding the sign to the wall *Continued ...*



7d: This sign is done with Artist Tracing Paper. The sign was fixed with a spray of 50/50 mix of Testor's Dullcote and lacquer thinner to both sides to stop the ink from running when water-based glue was applied.

STEP 7: Adding the sign to the wall *Continued ...*

The Dutchman and the Pepsi signs are on Architectural Tracing Paper. They both got a very light coat of beige background color on the wall before the signs were applied. Again before the application of the signs, a coat of Dullcote was applied front and back to seal the ink. Once the signs were applied they were allowed to dry overnight. The next morning I took a piece of emery paper and sanded all the signs lightly to rub away some of the detail.

You be the judge. If you like how the sign looks, and you like this process, feel free to use it or improve it.

Note: Keep this in mind. If you do improve on this process, please use the comment key at the end of the story to tell me me what you did, so I can use it too.

STEP7: Adding the sign to the wall *Continued ...*



7e



7f

7e - 7f: The Dutchman and Pepsi signs are much older and faded. For these I used the architectural tracing paper.

STEP7: Adding the sign to the wall *Continued ...*



7g

7g: The wall with an extra Pepsi sign will be used in another location. Now it's time to attach the wall to the building and place it in its future home on the layout.

One final coat of Dullcote, and the only thing left to do is to weather my wall. I'll bet everyone has their own way of weathering masonry walls, so I won't go into that.

So! I hope this was informative and FUN.





Ralph Renzetti is a retired construction manager for Bell Canada. He has been modeling in HO since the early 1970's and is currently building his second layout. He enjoys sharing and helping fellow modelers by giving clinics and how-to's at national conventions and LHS. His current passion is railcar and locomotive weathering.

To learn more his layout thread can be viewed on the Railroad-Line Forum at: railroad-line.com/forum/topic.asp?TOPIC_ID=37755.



Did you see this MRH video?



The ultimate "Yes, it's a model" video as James McNab switches NW 86th

Watch the video now



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Yes, there will be guys who take a look at your layout and say something like, "I'm not gonna go through all the trouble of coving my corners, I'm just gonna Photoshop them out." Sure, tell that to your Aunt Betsy.

History of coving corners

The old-fashioned way to create the museum diorama look was to sheath the entire wall with Masonite and then warp or bend a sheet into the corner of the room. What about expansion and contraction? Masonite expands and contracts more than drywall, and even the Masonite company recommends a 3/32" expansion gap between pieces. What about the bulk of

the material being fixed to the wall? Even a 1/8" sheet weighs 18 pounds. Where are you going to get that installation help when you need it? Finally, what size radius are we



1. Scissors, cove-base adhesive, a notched trowel and a roll of vinyl flashing are all that's needed to cove corners.

– **Bernie Halloran**
Model Photos by the author



Consider this new way of coving your corners ...

Charlie Comstock took a brave step forward in the May 2013 issue of ModelRailroadHobbyist (mrhpub.com/2013-05-may/land/#/22/zoomed) by demonstrating what a difference coved corners make on a layout. But there is an easier way to eliminate inside corners, a new way that is much easier and cheaper than using sheets of styrene. As the man said, "Sorry Charlie."

contemplating? With soaking and steaming, as in wooden boat building, about the smallest radius you achieve might be about nine inches. That's after a lot of steaming and gentle bending. Screw pops? Don't ask.

The next solution to come down the pike was rolled aluminum. Aluminum rolls are even more difficult to handle than sheets of Masonite: cuts, dents, blood and special hanging tricks are part of the installation process. You can't just glue it up.



2. Cove base adhesive immediately holds the vinyl in place. Clean-up with soap and water.



3. Hide the edges of the vinyl with two light coats of ready-mixed joint compound. Prime and paint.

More than 30 years ago, I followed the methods used by diorama builders at the National Museum of Natural History at the Smithsonian. Half-inch drywall was hung installed around the room to within 16" of the corner. From there, ¼" or 3/8"

drywall was used. Coming out of the corner, ¼" or 3/8" transitioned back to half inch. Galvanized sheet metal with a lip folded on each side was slipped into the transition joints and plastered. It took good work with a trowel. The penultimate step was giving the sheet metal a coat of special galvanized primer. Once primed and painted, the job was done. The corners were perfect and resisted cracking for over 20 years.

New products for coving corners

The game changer is vinyl. Vinyl rolls .015 inches or 15 mils thick are sold in 10", 12", 14", 20" and 24" widths. They are found where aluminum flashing is sold in your neighborhood. Vinyl can be cut with a utility knife, tin snips or scissors. Vinyl rolls come in standard lengths of 30 and 50 feet. Home Depot's



4. Notice where the wall and ceiling join: the radius is between 4 and 5 inches.



5. I painted these clouds with acrylics as an experiment. The vinyl flexed harmlessly.

website is currently selling a 24" x 50' roll of DuraFlash flashing for \$59.95 with free shipping. A 50' roll did every corner in my basement, and there were many corners, plus special applications.

Installation

Other than a notched trowel, like a Natch 3/16" back splash trowel that will set you back almost two dollars, all you need is a can of wall base adhesive. This is the stuff used to stick rubber or vinyl cove base to that ugly construction joint between your walls and floor.

Cove base adhesive sets up almost immediately but remains workable for hours. You don't need to spread any adhesive down the middle of your carefully-measured sheet of material,

because it's not going to make contact with the wall. Spread the adhesive on the glossy side of the vinyl.

Slip the sheet into the corner and wiggle it around for a moment until everything is parallel and square. Press your palms against the glued surface and wipe off the excess with a soapy sponge. It will cling in place without any additional support, staples, screws or sky hooks.

Since the vinyl is standing proud of the wall only .015 inches or 15 mils, you can skim over the seam with ready-mixed joint compound within 24 hours. Lightly sand with fine grit paper and give it another thin coat. Let that coat dry, sponge off gently and prime the whole thing. Apply your sky color. That's it.



6a-6b. McCalls is located in a corner. It's impossible to tell where the corner is in this scene.

The process is so remarkably easy it can be done even after your layout is built, although doing it beforehand will save a lot of aggravation. You don't need to find, buy or transport large 4x8 sheets of styrene. No screw holes. No help needed. For the price of one sheet of styrene, you can do the whole basement. [☑](#)



7. The A&P building is in a corner coved more than 7 years ago. The vinyl remains tight and the seams are crack-free thanks to modern materials.



Bernie Halloran has three grown sons, one fine wife and two silly dogs. He's a retired Marine with hot and cold war experience, a master gardener with lady's garden club experience, and a scale armor and aircraft model builder who's last layout (MR Oct. '06) was sold with his house.

He now has a new basement, where the New York, Kittatinny and Western in the summer of 1963 is being rebuilt.

Did you see this MRH video?



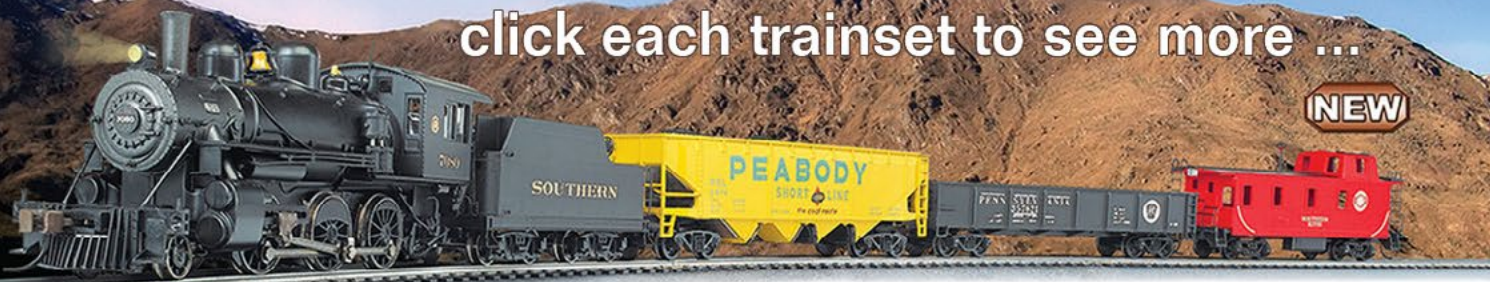
**Ken Patterson's
"This is NUTS!"
daring shoot ...**

Watch the video now

HO
SCALE

GOOD THINGS COME IN ALL SIZE PACKAGES

click each trainset to see more ...



NEW

ECHO VALLEY EXPRESS with DIGITAL SOUND • Item No. 00825 • MSRP \$279.00



Bachmann has exciting new ready-to-run electric train sets for both HO and N scale modelers. Our sets include everything needed to get started in model railroading: locomotive, cars, track, power pack, and speed controller. We are delighted to introduce two Digital Sound sets—the Echo Valley Express and Thunder Chief—that also include a DCC sound-equipped locomotive and E-Z Command® controller. No matter what size you choose, there are lots of good things that come in these complete train packages!



**THUNDER CHIEF with DIGITAL SOUND
Item No. 00826
MSRP \$279.00**



HO
SCALE

E-Z Command® Control Center with Plug-In Wiring
included in Digital Sound sets

NEW

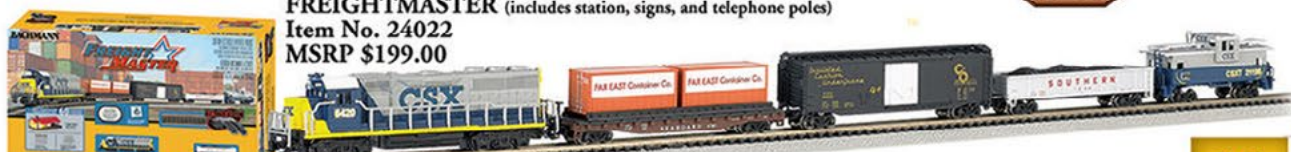


**JINGLE BELL EXPRESS
Item No. 00724
MSRP \$195.00**

HO
SCALE

NEW

**FREIGHTMASTER (includes station, signs, and telephone poles)
Item No. 24022
MSRP \$199.00**



NEW

N
SCALE

HO
SCALE



**THE STALLION
Item No. 24025
MSRP \$135.00**

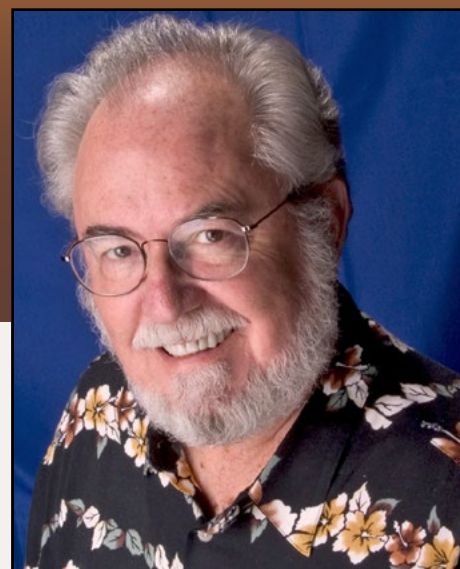
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*The Old
Yardmaster*



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December 2013: The latest model railroad products, news & events

by Richard Bale and Jeff Shultz

Atlas donates \$5000 to Hurricane Sandy relief

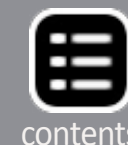
Following the widespread damage left in the wake of Hurricane Sandy in 2012, Atlas Model Railroad Company pledged to donate the profits from the sale of a special series of N, HO and O scale covered hopper cars to the relief fund. The project proved to be a big success with a donation of more than \$5,000 being divided between the Empire State Relief Fund of New York, and the New Jersey Relief Fund. Although the N and HO cars are sold out, the O scale version of the special edition car is still available. Hobbyists interested in supporting the project will find complete details at:

atlasrr.com/News/save-the-shore.htm ...



Family dynasty continues

Stacey Walthers Naffah has been named vice president of sales and marketing for Wm. K. Walthers Inc. She is the fourth generation of the Walthers family to work for the company



founded by her great-grandfather in 1932. Stacey previously served as vice president of marketing and communications, as well as consumer marketing manager since joining the company in 2009 ...

Berkshire Valley update

Last month we noted that Berkshire Valley Models had been purchased by Rich Rands. Transfer of ownership of the O scale specialty firm has been confirmed by Rich, who said he and his partner, John Kalin, are in the process of reorganizing all operations of the company, replacing some molds, building up inventory, and developing several new products. The new company address is P.O. Box 1666, Fenton, Missouri 63026. Rich and John can be contacted by email at berkshirevalley@gmail.com. In November we incorrectly stated that Frank Czubryt, who founded Berkshire in 1989, had passed away. We extend a sincere apology to Frank and are happy to note that he is alive and well and recently enjoyed a week of camping in Maine ...

Trainfest 2013

The annual Trainfest show is a favorite venue for manufacturers to preview new products for the coming year. Interesting items spotted last month at this year's event include a PS 4750 covered hopper in Accurail's exhibit, and decorated shells of HO scale ALCo Century 430 locomotives in Bowser's booth along with engineering samples of an all-new Century 636 locomotive scheduled for release next year. Wheels of Time had early production samples of the new Piggy Packer Intermodal Loader announced in MRH last September. Traction fans were happy to see a new brass body kit for an Illinois Terminal class B motor coming next year from Model Railroad Warehouse, and Athearn surprised a lot of folks with the unveiling of three versions of its forthcoming GP7u/GP9u locomotives.

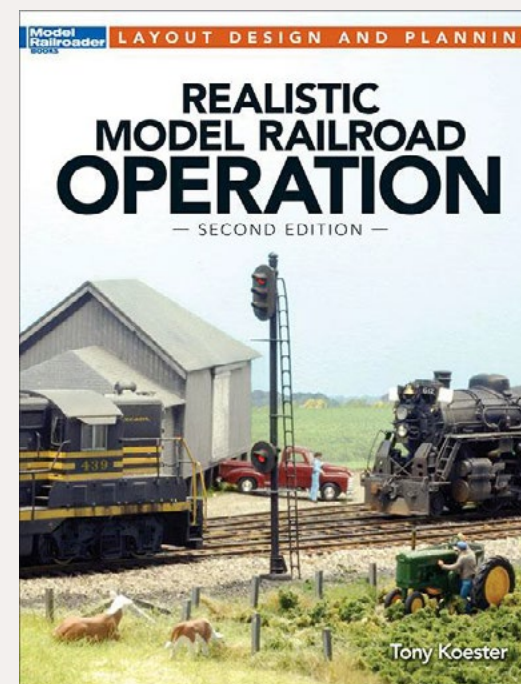
You'll find details in our Athearn report. MTH showed pre-production samples of various HO models including a new ore car, and two new steam engines -- a Pennsylvania class H10 2-8-0, and a big Allegheny 2-6-6-6. Atlas showed a revised S series Alco switcher, and an RS-3 locomotive with a new exhaust stack. Now let's see what else is new this month ...

NEW PRODUCTS FOR ALL SCALES



Frenchman River Model Works (frenchmanriver.com) is selling a kit for a scow with a wood deck that is adaptable to multiple scales. The dimensions of the finished

model are 12.375" x 4.125" which equates to 90' in HO, 66' in S, and 49' in O scale. The kit is composed of cast resin with pewter detail parts. It is priced at \$45.00.



Kalmbach (kalmbachstore.com) has released an updated edition of Tony Koester's "Realistic Model Railroad Operation". The author explains how real railroads operate trains and how hobbyists can apply those methods to their own model railroads. Timetable and train order operation are fully covered, as well as how cars are switched, how yards function, and how signals work.

In the final chapter of the 96-page soft-cover book, Koester discusses the people side of conducting an operating session including the potential pitfalls of managing crews and visitors within the confines of home layouts. The book is available at \$19.95 from the above website.

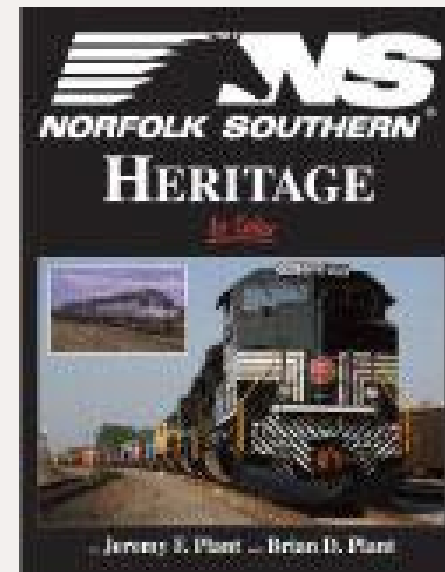


Labelle Lubricants (con-cor.com) has released its popular #102 Multi-Purpose medium viscosity hobby gear oil with a new formulation that includes PTFE – the parent ingredient in Dupont Teflon®. It is packaged in a half-ounce dispensing bottle with an MSRP of \$9.29.

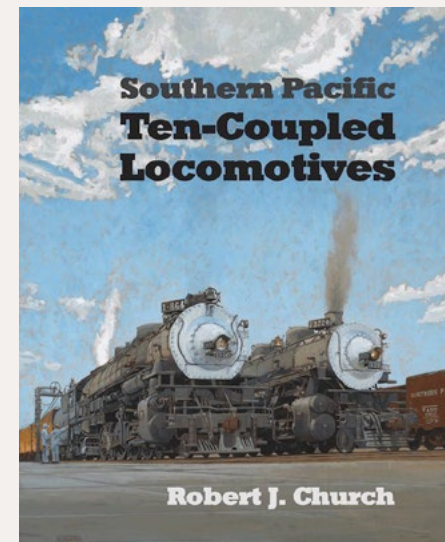


Model Designs (mldesigns.ca) sells a variety of scale birds including pigeons, ducks, seagulls, and eagles. Although generally scaled for HO, the small two-legged critters are suitable for S and O scales as well. A separate line is available for N scale modelers. Visit the above website for a complete listing and pricing.

New releases from **Morning Sun (morningsunbooks.com)** include a book that illustrates what the designers and painters based their work on for the popular NS Heritage series and their interpretation of the original vintage diesel units. “*Norfolk Southern Heritage In Color*” is available now. Also newly released is “*Southern Pacific Facilities in Color Volume 1: California, Oregon, Nevada, and Utah.*” Authored by Timothy



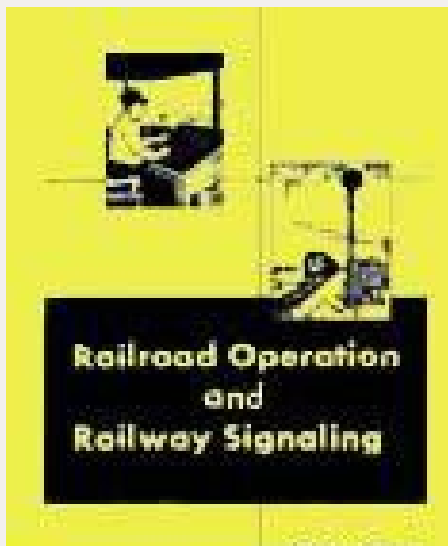
Morris, the book illustrates the stations, towers, shops, and terminals, as well as the trains, that used their services. Both of the new books from Morning Sun are priced at \$59.95 each.



Just in time for the holidays, **Signature Press (signaturepress.com)** has released “*Southern Pacific Ten-Coupled Locomotives*” by Robert J. Church. This in-depth study from noted SP locomotive authority Bob Church, covers all the ten-coupled types, from *El Gobernador* of the 1880s and the T&NO 2-10-0s, to all the 2-10-2s and 4-10-2s. Church includes

details on the design and construction of SP’s fascinating three-cylinder locomotives with Gresley valve gear in the SP Class 4-10-2s. Many previously unpublished photos – some in color – are included along with line profiles, maps, and locomotive/tender plans. A special chapter on tenders by Arnold Menke is included. The hardbound 534 page indexed book includes 795 illustrations. The book is available through dealers or direct from the above website.

Simmons-Boardman Books, Inc (transalert.com) is selling a softcover handbook titled “*Railroad Operations & Railway Signaling.*” Author Edmund J. Phillips, Jr. presents illustrated



questions and answers that explain the what, why and how of prototype railway signaling. Various signaling systems are discussed including the advantages and disadvantages of each in relation to train operation. The 5.5" x 8.25" book is priced at \$25.00.

LARGE SCALE PRODUCT NEWS



Bachmann (bachmanntrains.com) has 1:20.3 scale narrow gauge boxcars with a Murphy roof, operating side

doors, and metal grab irons and truss rods. The ready-to-run models are available decorated for Florence & Cripple Creek, Denver & Rio Grande, and Colorado & Southern. Also available are data-only cars in either oxide red or oxide brown. Visit the above website for additional details and pricing..

NEW PRODUCT FOR O SCALE



third quarter of next year.

Atlas O's (atlaso.com) has scheduled a 42' coil steel car for release in the

Road names will be Kansas City Southern, Atlantic & Western Railway, Chattahoochee Bay Railroad, Norfolk Southern (blue scheme), and U.S. Steel as seen here. Three-rail versions of the ready-to-run model will list at \$79.95. Also coming is a two-rail model at \$89.95.



Bachmann (bachmanntrains.com) has On30 scale gondolas decorated with data

only. The cars come in choice of either black or oxide red. The ready-to-run models have an MSRP of \$42.00 each.



Ragg's To Riches? (raggstoriches.com) is selling an O scale kit for Dolores Section House. The prototype was a private home built from a Sears house kit that was later purchased by

the Rio Grande Southern Railroad for use as a section house in Delores, Colorado. The kit can be built as the RGS had it or as a standard Sears house. Although Ragg's has previously offered HO and S scale versions, this new O scale kit has been completely redesigned from the ground up. Features include chimney castings, door knobs, lock plates, hinges for the doors, and positionable windows. Curtains, shades, a screen door, and peel-and-stick shingles are included along with an outhouse, and a backyard picnic table. The footprint of the finished model is 6" by 8" or 6" by 9.5" if the optional rear addition and back porch are built. The kit is priced at \$125.00. Ordering

information, including shipping costs, and additional photos are available at the above website.

NEW PRODUCTS FOR HO SCALE



In conjunction with Railfest, **Accurail** (accurail.com) released three different 40' wood reefers decorated with Wisconsin-themed private owner cars. Two of the cars are painted white for Northern Refrigerator Car Co. with one decorated for "Larsen's Veg-All" and the other sporting the "Green Bay Route" slogan. The third wood reefer in the Trainfest-inspired group is decorated for UTRX with "The Best Canned Peas From Wisconsin" slogan.

In conjunction with Railfest, **Accurail** (accurail.com) released three different 40' wood reefers decorated with Wisconsin-themed private owner cars.



Also introduced at Trainfest is a trio of former privately owned 50' double plug-door boxcars restenciled with a Wisconsin & Southern WSOR patch. The former road names were Evans Products, Arthur A. Pozzi Co., and Willamette Industries.

Also introduced at Trainfest is a trio of former privately owned 50' double plug-door boxcars restenciled with a Wisconsin & Southern WSOR patch.



A new Illinois Central Gulf ACF triple-bay covered hopper car is available at \$17.98.



Louisville & Nashville 50' double-door steel box car with "The Old Reliable" slogan at \$16.95.



Three car set of CCC&StL/Big Four 41' AAR steel gondolas at \$45.98. The gondolas are also available individually at \$16.98 each.

Three car set of CCC&StL/Big Four 41' AAR steel gondolas at \$45.98. The gondolas are also available indi-



C.I.L. Monon 50-ton offset side hopper car "The Hoosier Line" slogan at \$16.98.



Athearn (athearn.com) has released details on several new products including a mid-summer delivery date for the previously announced Southern Pacific 4-8-2 class MT-4 steam locomotive equipped with a distinctive skyline casing. The

Genesis-series model will be available in road numbers 4349, 4358, and 4360, with the last two having Boxpok main drivers. A DCC version with factory installed SoundTraxx® Tsunami® sound will have an MSRP of \$399.98. A DCC-ready version will list at \$299.98. The model comes with a class 120-C-6 Vanderbilt-type oil tender lettered Southern Pacific (prior page). Unlettered tenders as well as a tender lettered for Southern Pacific Lines are available separately at an MSRP of \$89.98.



Ken Paterson photo of preproduction models courtesy of Horizon Hobby

EMD delivered six GP39X diesel locomotives to Southern Railway in 1970. Athearn plans to produce a ready-to-run HO scale version with all of Southern's characteristic features including a high short hood, controls positioned for long hood forward operation, a bell mounted on the long hood end, and walkway safety lights. Following an extensive upgrade by EMD in 1982, the GP39X locomotives were re-designated GP49. All six road numbers (4600-4605) of the Southern GP39X and the Norfolk Southern GP49 will be produced. DCC-ready versions of the Genesis series model will have an MSRP of \$169.98. Models with a DCC decoder and SoundTraxx® Tsunami® Sound will list at \$269.98. A release date has been set for July 2014.

Athearn showed a mockup of a GP7u/GP9u diesel with a Topeka Cab and chopped nose hood at Trainfest 2013. The HO scale Genesis model is based on a group of several hundred locomotives Santa Fe upgraded in their Topeka Shops in 1972.



In addition to the Topeka cab with a roof-mounted air conditioner, other distinctive details being consid-

ered include (where appropriate) blanked out dynamic brake housing, modified slotted and deleted sidesill skirts, modified Blomberg-B truck sideframes without outer brake shoes, pointed pilot plows, modified steps on conductors side, Prime Stratolite warning beacons, a ground-plane antenna, and a Salem air filter. Availability and pricing are expected to be announced soon.



Ken Paterson photo of preproduction models courtesy of Horizon Hobby

Athearn (athearn.com) has updated their schedule of HO scale Genesis series SDACe and SD70M-2 diesel locomotives. Due for release in July are the latest version of Canadian National SD70M-2 units with front and rear marker lights, nose headlight, and rear rock pilot. New versions of SD70ACe locomotives will include Norfolk Southern locomotives in the horsehead scheme; Union Pacific with PTC antenna and water sight-glass; demo models with water sight-glass in EMD yellow (one road number, above), and EMD's blue scheme. Unless noted each road name

will be available in four numbers. Standard DC non-sound units, priced at \$199.98 each, will be DCC-ready using Athearn's Quick Plug™ technology. Sound-equipped models have Soundtraxx® Tsunami® DCC decoders and are priced at \$299.98.

Attention SCL modelers! Athearn is considering cancelling plans to produce F-units decorated for Seaboard Coast Line due to lack of pre-orders. Anyone interested in Genesis F9A, F3A/F7A, and F7A/B models decorated for Seaboard Coast Line should contact their favorite retailer as soon as possible. Although preorders for the Genesis SCL GP40-2 were also low, Athearn will produce them as previously announced.



Atlas (atlasrr.com) has scheduled the next release of its Trainman® series RS-32/36 for the third quarter of 2014. In addition

to the SP unit shown here, other road names will be Genesee Valley, Conrail, Apache Railway, Delaware & Hudson, Louisville & Nashville, and Lehigh Valley. Visit the above website for information and pricing on standard and undecorated models, as well as a limited edition version.



Also coming in the third quarter is a kit for an Atlas Trainman® series 1937 AAR 40' boxcar. The kit is priced at \$17.95. Features include Dreadnaught ends, straight panel roof, and molded ladders and grab irons. Road names will

be Canadian National (express scheme in black, green, and yellow), Erie Lackawanna (express scheme in gray, maroon, and yellow), Chesapeake & Ohio, Kansas Oklahoma & Gulf, Southern Railway, and Southern Pacific. An undecorated kit will also be available at \$12.95.



The final HO scale item in Atlas' third quarter schedule is a Master® series 42' coil steel car decorated for Kansas City Southern, Atlantic & Western Railway, Chattahoochee Bay Railroad, Norfolk Southern (blue scheme), U.S. Steel, and Bethlehem Steel as seen here. The ready-to-run model will list at \$36.95. An undecorated version will list at \$29.95.



The final HO scale item in Atlas' third quarter schedule is a Master® series

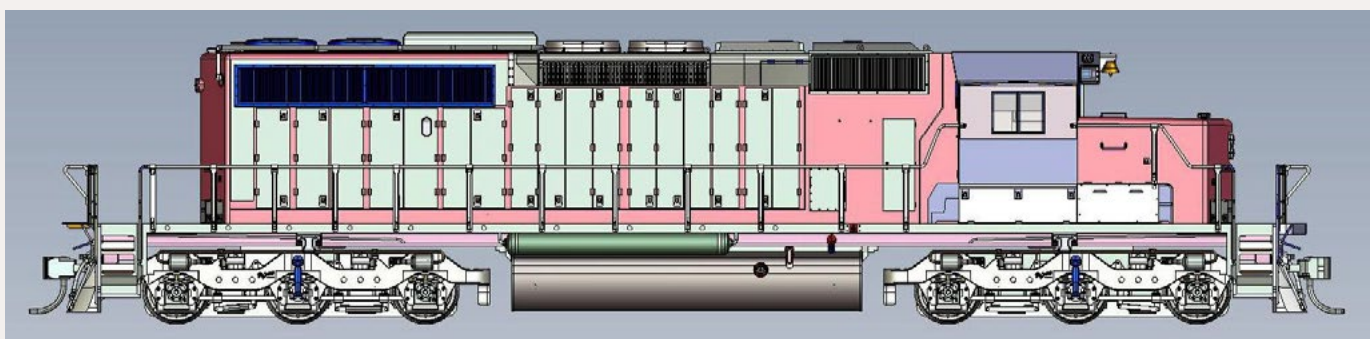
Bachmann (bachmanntrains.com) is now selling individual cars from its Ringling Bros. and Barnum & Bailey Circus

collection. In addition to the coach shown here, an open-side excursion car, tiger boxcar, and gondola are all available. Visit the above website for pricing and ordering information.

Bowser (bowser-trains.com) has announced road names for its F7 diesel locomotives scheduled for release in May. In addition to the Alaska Railroad version shown here, names will include Spokane, Portland & Seattle; Boston & Maine; Chicago North Western; Canadian National (zebra scheme with noodle nose); Kansas City Southern; Louisiana & North West; Lehigh Valley;



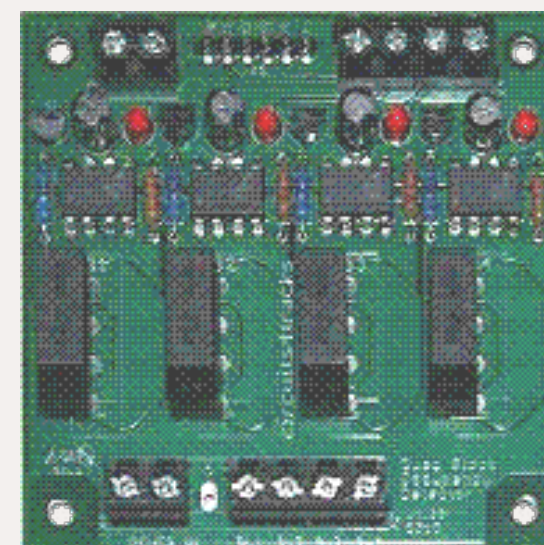
New York Central; and Wellsville Addison & Galetton. Analog/DC models have an NMRA 8 and 21 pin plug to accommodate an aftermarket decoder. Models with DCC are factory equipped with a LokSound Select dual-mode decoder which allows locomotive to operate on standard DC as well as DCC equipped layouts. DC models will have an MSRP of \$179.95. F7s with factory installed DCC will list at \$279.95. Matching F7A-F7B units will be priced at \$329.95 and \$499.95 respectively. Dealer orders are due by December 20, 2013.



Bowser is developing an All-Canadian SD40-2 locomotive based on prototypes built in London, Ontario by General Motors Diesel (GMD). Bowser is soliciting input from hobbyists and rail fans who have photos or other documentation to authenticate specific details unique to the GMD SD40-2s. Current planning calls for producing CP road number 5718, CP 1813, CP 1839, CP 5962, CP 6040, and BCR 752 – all with 102" noses. Also CP 5570 with an 81" nose. For additional details on this project visit bowser-trains.com/new/gmdsd.html.



Broadway Limited Imports (broadway-limited.com/1020-Address-Changer.aspx) has introduced a DCC Address Changer that is designed to simplify DCC address programming, reading, and resetting any NMRA compliant decoder. According to BLI, the new product is in response to complaints from hobbyists about the hassle of programming DCC equipment. The handheld device will be available in early 2014 at an MSRP of \$79.99. Complete details, including a product video, are available at the above website.



Circuits4Tracks (circuits4tracks.daxack.ca) is selling an economical occupancy detection system suitable for both DCC and DC operation. Each circuit board handles four detectors. The boards are available as kits or fully assembled. Buying the kit reduces the cost to under \$5.00 per block. Pricing and complete specs are available on the above web site.



Con-Cor International's (con-cor.com) Christmas Car for 2014 is titled

Vixen, the fourth in the company's reindeer series. The HO scale ready-to-run model has an MSRP of \$23.98.



Concept Models (con-sys.com) is selling a kit for an HO scale Delaware & Hudson flat car with four high pressure gas tanks. The unusual looking car dates from 1912 and was used to transport illuminating gas derived from coking operation in the steel industry.



Also new from Concept is a U.S. Army Air Service helium tank car. Although listed as a tank car, the unique 1912-1920 prototype is a flat car fitted with

three high pressure tanks for transporting helium used for Army blimps in reconnaissance service. The car dates from 1912-1920. Concept kits consist of basic plastic or resin body components only. Metal fittings, detail parts, trucks, and couplers are not included. Visit the above website for more information.



ExactRail (exactrail.com) showed a pre-production sample of a Thrall 54'

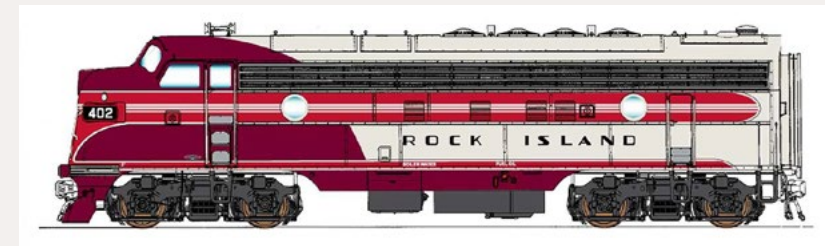
Protector coil car at the 2013 edition of Trainfest. The HO scale model follows the unique NS prototype with a large transverse

bulge at each end of the insulated hood. Pricing and a release date are pending.



InterMountain (intermountain-railway.com) reports that its HO scale U18B diesel locomotives will be

ready for release next month. In addition to Seaboard System shown here, road names will include Seaboard Coast Line, Maine Central, LMX, Ferrocarriles Nacionales de México, Peabody Coal, Pickens, and CSX. Non-sound versions of the ready-to-run model will have an MSRP of \$159.95. Locomotives with factory installed sound will list at \$229.95.



Also due for release in January are FP7 locomotives decorated for Florida East Coast, L&N, VIA Rail, and

Rock Island as seen here. A-units will have an MSRP of \$159.95 and \$239.95 for non-sound and sound-equipped models respectively. A Rock Island B-unit will be available at \$139.95 and \$219.95.



InterMountain HO scale F7 locomotives are set for release in February. In addition to the D&RGW

scheme shown above, road names will include Southern Pacific (black widow with snow plow), Wabash, New York Central (cigar band scheme), KCS (freight scheme), Baltimore & Ohio, and Canadian National. A units will have an MSRP of \$149.95

for non-sound and \$229.95 for sound- equipped models. Comparable B units will list at \$139.95 and \$219.95.



Several classes of Santa Fe stock cars are scheduled for release from InterMountain in late May or early June.

In the mix are class SK-R, SK-T, SK-U, and SK-S as shown here with double doors and AB brakes. Six road numbers will be available for each class at an MSRP of \$34.95 each.



InterMountain's new AAR Alternate Standard twin-bay open hopper car will be arriving at dealers soon. Freight car expert Ed Hawkins

worked closely with InterMountain in developing this HO scale model which promises to be an accurate representation of the prototype. Six road numbers each will be available for ATSF, Erie, Northern Pacific, W&LW, Clinchfield, Chesapeake & Ohio, Montour, Nickel Plate Road, Baltimore & Ohio, Cambria & Indiana, Litchfield & Madison, Minneapolis & St. Louis, Pittsburgh & West Virginia, and Pittsburg & Shawmat. The ready-to-run model will have an MSRP of \$38.95.



Kadee Quality Products (kadee.com) is quoting a February release date for a 1951-era Rock Island 40' boxcar with a "100 Years of Progress" herald.



Visit the above website for more information including pricing.

Also coming from Kadee in February is a St. Louis & San Francisco 40' boxcar featuring a "Ship it on the Frisco" slogan.



Penn Dutch Scale Models (modelbarns.com) has a selection of 12 different kits that build into authentic looking HO scale barns. The models feature corner post, and tab & slot construction, and include various components from Northeastern Scale Lumber. The kits range

in complexity and price from \$37.00 to \$79.00 each. Built-up models are also available. Visit the above website for additional details.



Rapido Trains (rapidotrains.com) has formally announced that it will produce HO scale versions of the Canadian-built FPA-4 and FPB-4 passenger locomotives.

The prototypes were unique to Canadian National given their FPA-2 profile and ALCo 251 prime mover. Montreal Locomotive Works (MLW) built the locomotives in the late 1950s. After being retired by CN in 1989,

the locomotives found new life on several American tourist railroads with many still in service today. Rapido's initial release will be decorated for CN (1959 scheme), CN (zebra scheme with noodle logo), VIA-CN (CN colors, wiped nose), VIA-CN (blue and gold scheme with CN on nose), VIA Rail Canada, Grand Canyon Railroad, Napa Valley Wine Train, and New York & Lake Erie. An undecorated version will also be available.

Although initially produced exclusively for MLW, the HO scale ready-to-run models are now available through regular Rapido dealer outlets. The MSRP for the FPA-4 and FPB-4 models ready for standard DC operation is \$225.00 and \$200.00 respectively. Models with factory installed sound and a DCC decoder list at \$325.00 and \$300.00 respectively. Visit the above website for a complete list of details on the feature-laden model.



Red Caboose has scheduled another release of X-29 boxcars in June. The HO

scale ready-to-run model is a good replication of the more than 30,000 prototypes that served the Pennsylvania Railroad and several other Northeastern based lines beginning in the early 1930s. Many X-29 continued in service into the 1950s. Road names on the June release will be PRR with plate ends (circle keystone with Buy War Bonds slogan), PRR with Dreadnaught ends (circle keystone herald), Lehigh New England, CNJ-Jersey Central Lines (large liberty herald), Baltimore & Ohio, and Chicago Great Western (Corn Belt Route herald). The ready-to-run model will have an MSRP of \$34.95.



Also on the production schedule at Red Caboose is a run of HO scale General Service drop-bottom gon-

dolas with a release date of July. In addition to the Union Pacific version shown here, the ready-to-run model will be available for Western Pacific, Denver & Rio Grande Western, Great Northern, and Southern Pacific. The steel-side version of the model will have an MSRP of \$33.95.



A composite-side version of the car with board extensions will be available at \$36.95 for Southern Pacific. InterMountain

Railway is responsible for marketing Red Caboose products. For additional information visit intermountain-railway.com.



Spring Mills Depot (smd.cc) is scheduled to release the second production run of its highly-regarded B&O class I-12 wagon-

top caboose this month. The model will be available in six new paint schemes with variations in lettering, lettering color, and herald size. Blue cabooses from the 1965-69 and 1970-71 era

are part of this release. An undecorated kit is also available. The steel underframe, Duryea draft gear, and A-B brake system of the prototype are all replicated in this HO scale version. The ready-to-run model rides on AAR caboose trucks with elliptical leaf springs and metal wheel sets. The body-mounted Kadee® couplers are secured with Phillips-head screws. Pricing information and images of all of the new schemes are shown on the previous website.



& Foundry. An impressive selection of cast pewter vehicle kits includes a 1948 Ford convertible, a 1948 Studebaker Starlight coupe, a 1949 Mercury, a 1953 Corvette, a 1955 Chevy Bel Air coupe, a 1956 T-Bird, and a '56 Ford F-100 pickup. Among our personal favorites is a 1953-64 Mack B-42 open-cab fire truck shown above.

Virginia Foundry and Model Works is taking reservations for another production run of HO scale kits for an 1888 Tiffany refrigerator car. The main components of the craftsman-type kit are cast in resin from masters created by Bob McGlone. The kit has been upgraded since an earlier release with many body details -- hatch supports, drip strip, latch bars, and the six-hinge doors -- now cast into the one-piece car body. Additional components in the kit include Kadee #5 couplers, Tichy type-K

SS Ltd (scale-structures.com) sells a wide range of HO scale structure kits and detail parts including items originally produced by Alloy Forms and Nevada Iron Works



ted with Intermountain metal wheel sets. A choice of lettering from either Art Griffin or Clover House is included. The kit sells for \$45.00. For additional information contact John Canfield at jcan2x@hotmail.com.



Rail Link, and WSOR as seen here. The HO scale ready-to-run standard DC model has an MSRP of \$59.98.

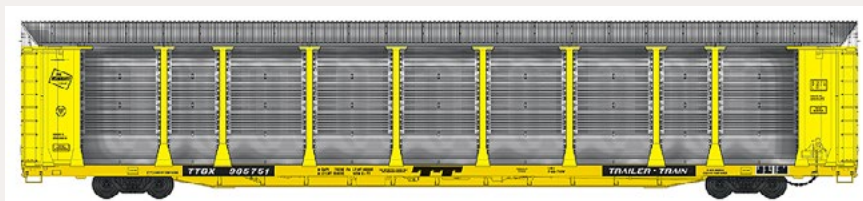


Walthers HO scale Proto® version of an Evans 4780 cu ft covered hopper car will be available in January in four new decorating schemes. Special features on the 56' triple-bay hopper include separate grab irons, and see-through etched-metal walkways and end platforms. Road names will be UELX (ADM, Arthur-Daniels Midland), Burlington Northern, MKT, and USLX (Farmers Cooperative Association, York, Nebraska). The MSRP will be \$39.98.

air brakes, a PSC brake wheel, and Panamint Models T-82 wood transom swing-motion arch bar trucks with outside brake beams. The trucks are fit-

Walthers (walthers.com) has Trainline® series GP9M diesels decorated for Canadian National, Southern Pacific,

Walthers HO scale Proto® version of an Evans 4780 cu ft covered hopper car will be available



Also due in January is a Walthers Proto® series 89' bi-level auto carrier. In addition to the Milwaukee Road version shown here, road names will include Burlington Northern, CSX, GTW, ATSF, Soo, and TFM (Transportacion Ferroviaria de Mexico rack on a TTGX flat). The ready-to-run HO scale model will have an MSRP of \$47.98.



A 23,000 gallon 54' Funnel Flow tank car is scheduled for release by Walthers in February. Road names will be ADM, Corn Products, Terra, Procor, UTLX, and Sunoco. The HO scale ready-to-run Proto® series model features etched-metal walkways and platforms, detailed brake train pipe and brake rigging, and road-specific placement of manways and safety valves. The MSRP will be \$39.98.

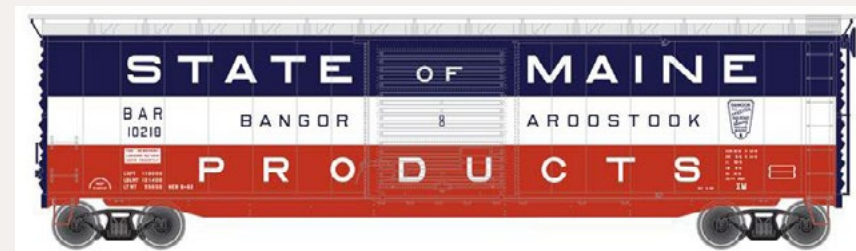
The HO scale ready-to-run Proto® series model features etched-metal walkways and platforms, detailed brake train pipe and brake rigging, and road-specific placement of manways and safety valves. The MSRP will be \$39.98.

N SCALE PRODUCT NEWS



Atlas Model Railroad Company's (atlasrr.com) production schedule for the third quarter of 2014 includes an N scale GP15-1 with new road names including Richmond Pacific, LTEX (Larry's Truck & Electric), BNSF, Burlington Northern, Norfolk Southern, and Apalachicola Northern. The ready-to-run locomotive will have an MSRP of \$94.95. An undecorated version will list at \$89.95.

The ready-to-run locomotive will have an MSRP of \$94.95. An undecorated version will list at \$89.95.



An Atlas Trainman series 50' boxcar with 9' Youngstown doors is also scheduled for release in the third quarter of next year. In addition to the Bangor & Aroostook car shown here, road names will include Baltimore & Ohio, Delaware & Hudson, Norfolk & Western, Illinois Central Gulf, and Reading. The MSRP on the N scale ready-to-run model will be \$18.95. An undecorated version will be available at \$13.95.

In addition to the Bangor & Aroostook car shown here, road names will include Baltimore & Ohio, Delaware & Hudson, Norfolk & Western, Illinois Central Gulf, and Reading. The MSRP on the N scale ready-to-run model will be \$18.95. An undecorated version will be available at \$13.95.



The final N scale item in Atlas's third quarter schedule is a Master® series 42' coil steel car decorated for Atlantic & Western Railway, Chattahoochee Bay Railroad, Norfolk Southern (blue scheme), and KCS as seen here. The ready-to-run model will list at \$30.95. An undecorated version will list at \$24.95.

The ready-to-run model will list at \$30.95. An undecorated version will list at \$24.95.



Con-Cor International's (con-cor.com) Christmas Car for 2014 is titled Vixen, the fourth in the company's reindeer series. The N scale ready-to-run model has an MSRP of \$23.98.

The N scale ready-to-run model has an MSRP of \$23.98.

Reservations are being taken now for a new wagontop caboose being developed by Fox Valley Models. Road names for the new N scale model will be Baltimore & Ohio (1941-1945), B&O

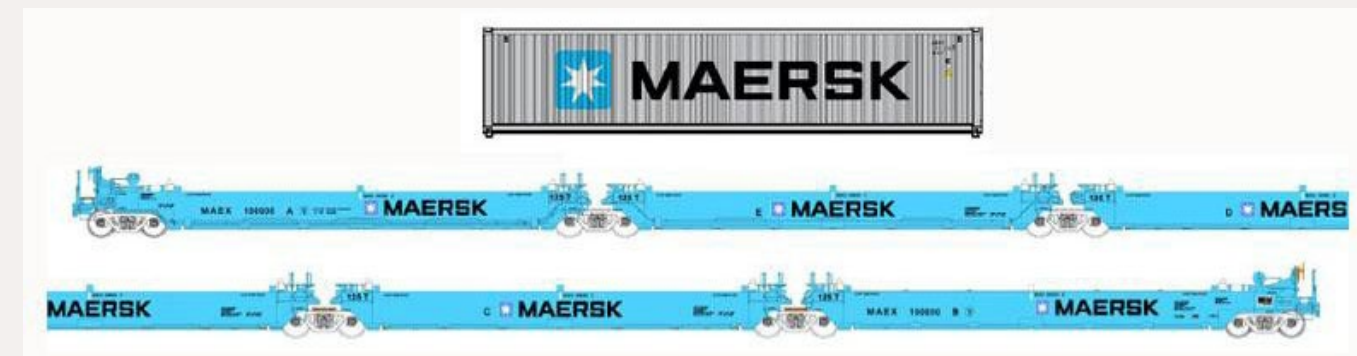


(1955-1962), B&O (blue, pool service 1965-1969), and Chessie System (yellow, with B&O and Chessie logo, above). The MSRP will be \$34.95. Delivery is expected during the second quarter of next year. InterMountain Railway is responsible for marketing Fox Valley products. For additional information visit intermountain-railway.com.



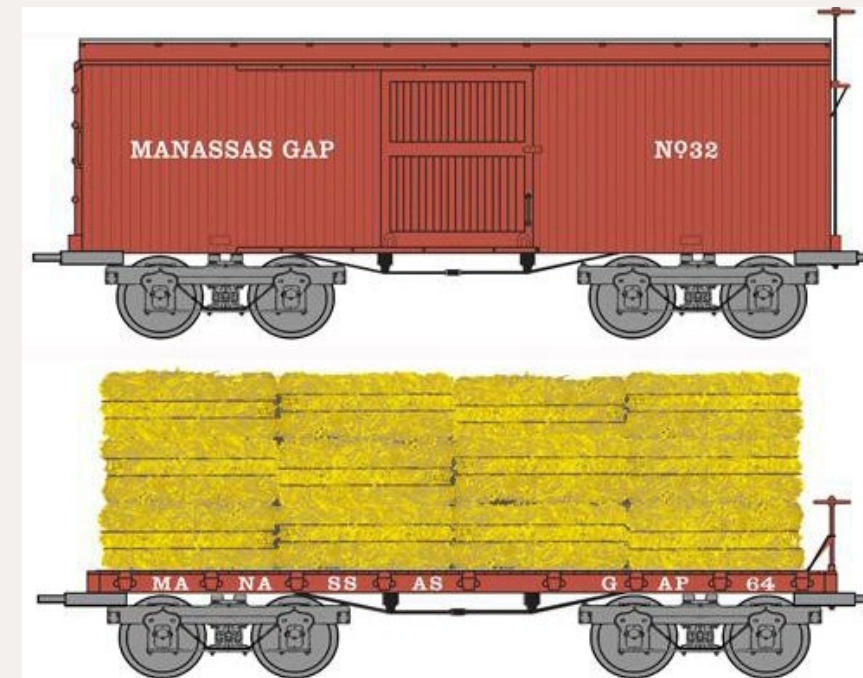
InterMountain Railway (intermountain-railway.com) plans to release several ver-

sions of Santa Fe stock cars in late May or June. In the mix are N scale versions of class SK-R, SK-T, SK-U, and SK-S as seen here with double doors and AB brakes (HO model shown). Six road numbers will be available at an MSRP of \$24.95 each.



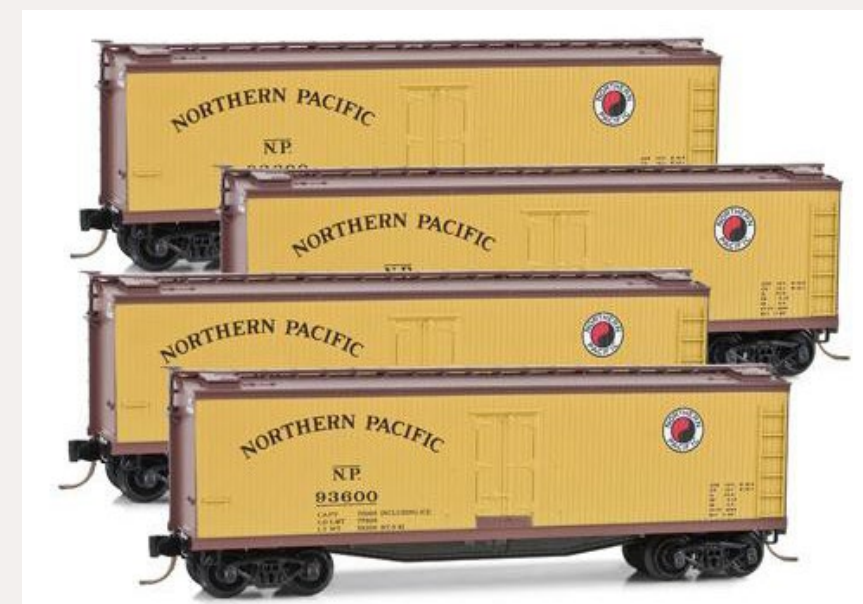
Kato (katousa.com) plans to deliver Gundersen MAXI-I 5-unit double-stack well-cars with magnetic containers in new

decorating schemes in late March. The 5-car unit will come with ten 40' containers with all of the cars and cans decorated for Maersk. It will have an MSRP of \$150.00. The MAXI-IV 3-car articulated well-car set will have an MSRP of \$110.00 and will be decorated in the new TTX scheme. It will come with six UMAX 53' containers.



lated hay load at \$16.90. The ready-to-run models feature rigid-frame trucks and simulated link-and-pin couplers. All prices mentioned are MSRP.

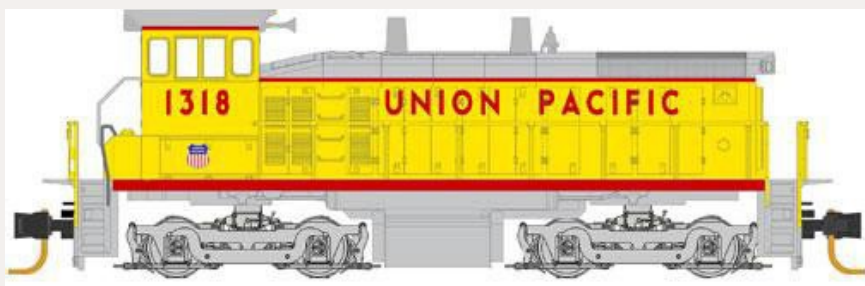
Micro-Trains Line (micro-trains.com) has released three 26' Civil War-era freight cars decorated for Manassas Railroad. The N scale models include a boxcar and a caboose at \$17.70 each, plus a flat car with a simu-



Also new this month is a 40' Northern Pacific wood-side refrigerator car with a fish-belly underframe. The N scale ready-to-run Micro-Trains models come in a four-pack at an MSRP of \$89.95.



Scheduled for release in January is a three-pack of 56' general service tank cars at an MSRP of \$89.95.



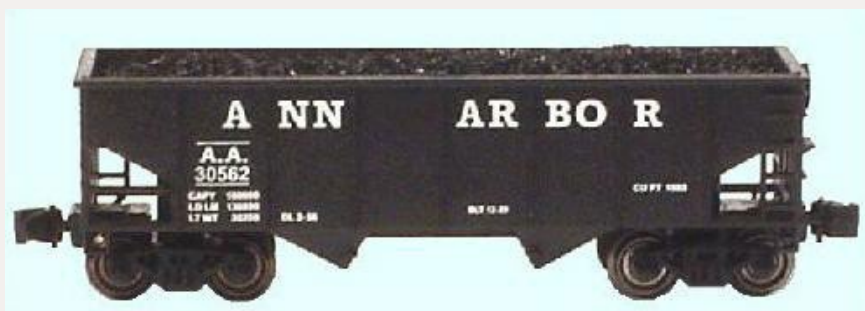
Micro-Trains continues to work on developing an N scale SW1500 diesel locomotive.

Road names are expected to be Norfolk Southern, Burlington Northern, Conrail, and UP. Pricing and a release date are still pending.

Z SCALE PRODUCT NEWS

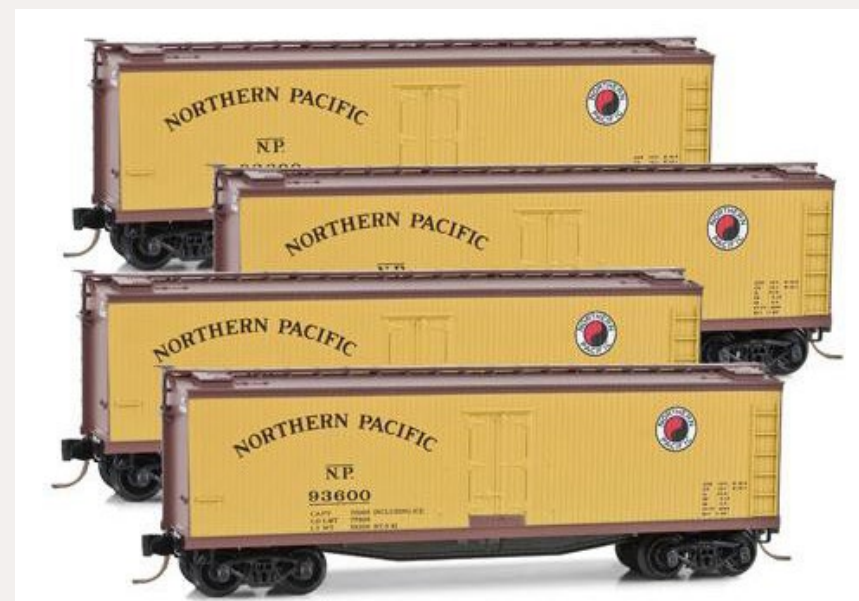


Full Throttle (wdw-fullthrottle.com) has introduced two new road names for its Z scale 33' rib-side open-top hopper cars. The road names are Alaska Railroad and Ann Arbor.



The twin-bay cars are properly weighted for Z scale operation and have

knuckle-type couplers, and Bowser Bettendorf-style trucks with blackened metal wheels. Two of each ready-to-run model with different road numbers are packaged in a clear presentation box. The MSRP is \$42.00 for the two-pack.



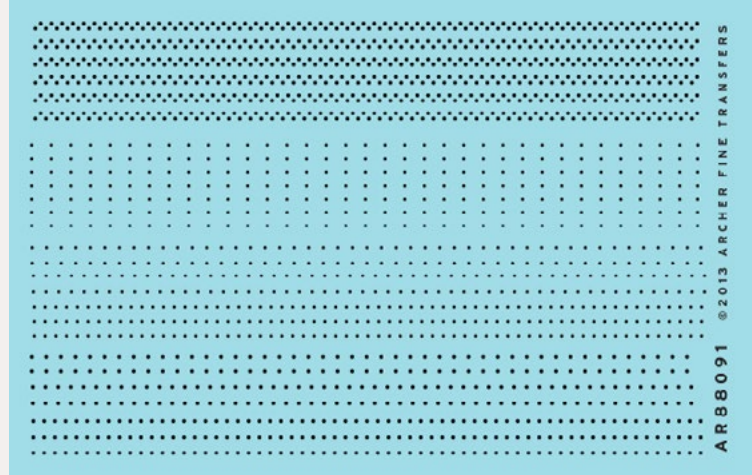
Micro-Trains Line (micro-trains.com) is selling a four-pack of Z scale Northern Pacific 40' wood reefer cars at an MSRP of \$89.95.



New Micro-Trains Z scale items due in January include a four-pack of ATSF PS2 twin-bay covered hopper cars. They will have an MSRP of \$84.95 for a four-pack. Additional details are available on these and other Z

scale models at the above website.

NEW DECALS, SIGNS AND FINISHING PRODUCTS



Archer (archertransfers.com) is selling starter sets of 3-dimensional resin rivets on clear decal film for most popular scales. The HO set contains 31.2 linear inches of 5/8" and 7/8" diameter rivets in single,

alternate center style, and tank car double rows. Starter sets for O scale (see illustration), S and N scale offer similar assortments. All sheets have an MSRP of \$17.95.

Archer has published a handy catalog of Surface Details™ with full size sample pictures of each sheet. Selections include resin rivets, weld beads, louvers, treadplate, foundry symbols, cast on to Microscale clear decal film. The catalog has an MSRP of \$4.00.

Allen Ferguson, owner of **Black Cat Publishing** (greatdecals.com/BlackCat.htm), is modifying some of his existing decal sets to include data for Tangent's new triple dome tank car. Some of the changes will include the A, B, C, and 2000 gallon data for the three domes as well as new weight information.

Daniel Kohlberg (home.mindspring.com/~paducah) has GN and BN silk-screened decal sets for Cannon & Company's new HO scale laser-cut 50' plate C double-door box car kit (cannonandco.net). Kohlberg item BN-04 is for Great Northern series 138400-138699 boxcars from 1967 forward. The specially



designed GN logo is laid out in vertical strips which are cut and applied individually over the side ribs. The result is said to be a perfect circle. Kohlberg item BN-05 is for Burlington Northern 50' plate C double-door boxcars from 1974 forward.

New decals from **Microscale** (microscale.com) this month are Western Pacific, Tidewater Southern, and Sacramento Northern cabooses (item 212); Pacific Fruit Express 1960s Gothic lettering for ice reefers (item 1340); assorted New Haven freight cars (item 1436); Western Pacific steam locomotives (item 1444); and Genesee Wyoming and various mid-western short lines (1445). For HO scale decals prefix the item number with 87, for N scale use 60.

San Juan Decals (sanjuandecals.com) has released new decal sets for RGS Miller stock car (HOn3 at \$7.95), D&RGW 6200 series flat car (On3 at \$7.95, 1:20.3 at \$9.95), D&RGW high side gondola (1:20.3 at \$12.95), and D&RGW 6500 series steel flat car (1:20.3 at \$10.95).

Yuma Car & Foundry (hansmanns.org/ycf_decalsets_20130928.pdf) has developed a selection of wet decals for HO scale NKP equipment. The current list includes NKP steam locomotives, hopper cars, and boxcars. Also NYC lettering sets for P&LE, Boston & Albany, and C.C.C. & StL. The decal sets are priced at \$6.00 each, plus \$1.00 shipping for any quantity. The company is able to sell and ship only to US or Canadian addresses.

DISCLAIMER ..

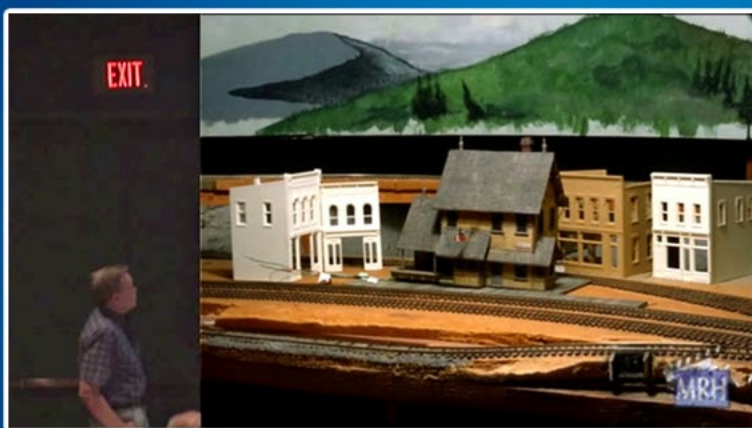
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**Earl Smallshaw
on structure
modeling &
selective
compression**

Watch the video now

Briefly noted at press time...

... **Athearn's** N scale 50' PS1 boxcars and GATC 2600 Airslide covered hoppers will be available in July in six new decorating schemes. Athearn HO scale Ready-to-Roll (non-Genesis) models coming this summer include AMD-103 P40/P42 passenger locomotives with new details and new decorating schemes. New schemes for Airslide covered hoppers, Ortner 5-bay rapid-discharge open-top hoppers, Eastern-style four-window cabooses, and AC4400CW locomotives are also due this summer. Athearn Genesis series diesel locomotives due in July include an NS GP49 and several variations of a Southern GP39X. Modernized SD70ACe and SD70M-2 locomotives for NS, UP, CN, and two EMD paint schemes are also scheduled for July. FGE 57' mechanical reefers in three new decorating schemes – both with and without sound – will be arriving in late summer. We'll have full details on Athearn's July and August delivery schedule in our next report.

... **ExactRail** has released production versions of the HO scale Bethlehem 3483 hopper the company previewed last July at the National Train Show. Road names on the initial release are Great Northern, Burlington Northern, Rio Grande (three variations), and Burlington (two variations). Hobbyists interested in an undecorated version can drop a note to Blaine Hadfield at info@exactrail.com.

... **KatoUSA** plans to release its HO GE P42 Genesis locomotive decorated for Amtrak's 40th Anniversary Heritage Phase II decorating scheme the first week in December. Additional schemes planned for the P42 Anniversary series will follow later this month or in early January. Visit katousa.com for more details. ■

Selected Events



December 2013

CALIFORNIA, DEL MAR (Metro San Diego), December 7-8, Great Train Expo, Del Mar Fairgrounds, 2260 Jimmy Durante Blvd. Info at greattrainexpo.com.

COLORADO, LONGMONT, December 14-15, Annual Train Show, sponsored by Boulder Model Railroad Club, at Boulder County Fairgrounds. Info at bouldermodelrailroadclub.org.

FLORIDA, LARGO, December 14-15, Train Show, sponsored by Suncoast Model Railroad Club, at Minnreg Hall, 6340 126th Avenue North. Also open house at SCMR Club location, 12355 62nd Street North. Info at suncoastmrrc.com.

FLORIDA, PALM BAY, December 21, Display of HO Scale Modules sponsored by Palm Bay Model Railroad Club, at Franklin T. Degroodt Memorial Library, 6475 Minton Road.

FLORIDA, THE VILLAGES, December 19-22, Christmas Train Show with operating layouts in all scales, at Colony Cottage Regional Recreation Center, 570 Colony Blvd. Info at: villagerailclubs.blogspot.com.

MARYLAND, BALTIMORE, December 8, 22, 29, 2013 and January 5, 12, 19, and 26, 2014, Model Railroad Club Open House, at Baltimore Society of Model Engineers (BSME) with operating HO and O scale layouts, admission by donation. 225 W. Saratoga St (3rd floor walkup). Info at modelengineers.com.

MASSACHUSETTS, MARLBOROUGH, December 7-8, Annual New England Model Train Expo hosted by NMRA HUB Division featuring operating layouts, 200 plus dealer tables,

manufacturer's displays, railroadiana, Build-a-Car Clinic for ages 8-14, and a Boy Scout merit badge clinic. Best Western Royal Plaza Trade Center, 181 Boston Post Road West (US 20). Info at hubdiv.org.

OKLAHOMA, OKLAHOMA CITY, December 5-7, 37th Annual Oklahoma City Train Show and 19th Annual N Scale Convention, at the Travel & Transportation Building, Oklahoma State Fairgrounds. Info at okctrainshow.com and oknrail.org.

PENNSYLVANIA, EPHRATA, December 7-8, 14-15, 21-22, 28-29, Annual Holiday Open House at Short Line Model Railroad Club, 11 South State Street (parking on Sugar Alley). Info at slmrc.com.

PENNSYLVANIA, MONACA, Dec 7-8, Dec 14-15, Dec 21-22, Dec 28-29, Public Train Show sponsored by Beaver County Model Railroad & Historical Society, at 1495 Old Brodhead Road. Info at bcmrr.railfan.net.

January 2014

FLORIDA, COCOA BEACH, January 9-11, Prototype Rails 2014 hosted by Mike Brock, at Cocoa Beach Hilton Oceanfront, 1550 N. Atlantic Ave. (Highway A1A). Premier RPM event featuring some 80 clinics presented by a blue ribbon cast of speakers. Info at prototypetrails.com.

GEORGIA, SAVANNAH, January 18-19, 25th Annual Model Railroad and Train Show, sponsored by Coastal Rail Buffs Inc. Info at coastalrailbuffs.org.

MASSACHUSETTS, WEST SPRINGFIELD, January 25-26, Railroad Hobby Show, sponsored by Amherst Railway Society, at Eastern States Exposition Fairgrounds. Info at amherstrail.org.

MICHIGAN, EAST LANSING, January 12, Train Show & Sale, sponsored by the Lansing Model Railroad Club, at Michigan State University Pavilion. Info at lmrc.org/trainshow.

MISSOURI, ST. CHARLES, January 18, Train Fair, sponsored by St. Charles Railroad Club, at Heart of St. Charles Banquet Center, 1410 S. Fifth Street. Info at stcharlesrailroadclub.com.

WASHINGTON, SEATTLE, January 18-20, Model Railroad Show, hosted by Pacific Science Center, For details contact Katelyn Del Buco at kdelbuco@pacsci.org.

Future (By location)

CANADA, ONTARIO, BARRIE, February 15-16, 2014, 44th Annual Barrie Allandale Model Train Show, “under the glass” at Bradford Greenhouse, 4346 County Road 90. Info at barm.ca.

AUSTRALIA, NSW, ALBURY, May 24-25, 2014, Annual Train Show sponsored by the Murray Railway Modellers Inc., at Mirambeena Community Centre, 19 Martha Mews, Lavington. Info at murrayrailwaymodellers.com.

CALIFORNIA, SANTA CLARA, February 6-8, 2014, O Scale West and S West combined meets, with both standard and narrow gauge modular layouts, dealer tables, clinics, videos, and contests. Hyatt Regency, 5101 Great America Parkway. Info at oscalewest.com.

ILLINOIS, COLLINSVILLE (Metro St. Louis, Missouri), August 8-9, 2014, St. Louis Railroad Prototype Modeler’s Meet, with clinics, displays, manufacturer’s exhibits, layout visits and operating sessions. At Gateway Convention Center. Info at: icg.home.mindspring.com/rpm/stlrpm.htm.

INDIANA, INDIANAPOLIS, July 3-10, 2016, NMRA National Convention and National Train Show. Info at nmra2016.org.

MAINE, AUGUSTA, Sept. 7-10, 2016, 36th National Narrow Gauge Convention. Info at nngc2016.org.

KANSAS, OVERLAND PARK (Metro Kansas City, MO), September 3-6, 2014, 34th National Narrow Gauge Convention. Info at kansascity2014.com.

NORTH CAROLINA, SPENCER, May 29-June 1, 2014, Streamliners at Spencer, a gathering of prototype locomotives from the 1930s through the 1950s at the North Carolina Transportation Museum including an Atlantic Coast Line E3 and the Southern Railway’s E8 and FP7. Details at: [nctrans.org/Events/Streamliners-at-Spencer-\(1\).aspx](http://nctrans.org/Events/Streamliners-at-Spencer-(1).aspx).

OHIO, CLEVELAND, July 13-19, 2014, NMRA National Convention and National Train Show. Info at 2014cleveland.org.

OREGON, PORTLAND, February 1, 2014, SP&S Railway Historical Society Railroad Swap Meet, Holiday Inn at Portland Airport, 8439 NE Columbia Blvd., Portland, Oregon. Additional information from Jerry Pickell at pickell5141@nsn.com or call 360-735-0516.

OREGON, PORTLAND, March 15, 2014, 29th Annual Model Railroad Swap Meet, sponsored by Willamette Model Railroad Club, Kliever Memorial Armory, 10000 NE 33rd Drive. Info from Keith Kieres at wmrswapmeet@yahoo.com.

OREGON, PORTLAND, August 23-30, 2015, NMRA National Convention and National Train Show. Info at nmra2015.org.



PENNSYLVANIA, MALVERN, March 28-30, 2014, 6th Railroad Prototype Modelers Valley Forge Meet, at Desmond Great Valley Hotel. Info at phillynmra.org/rpmmeet.html.

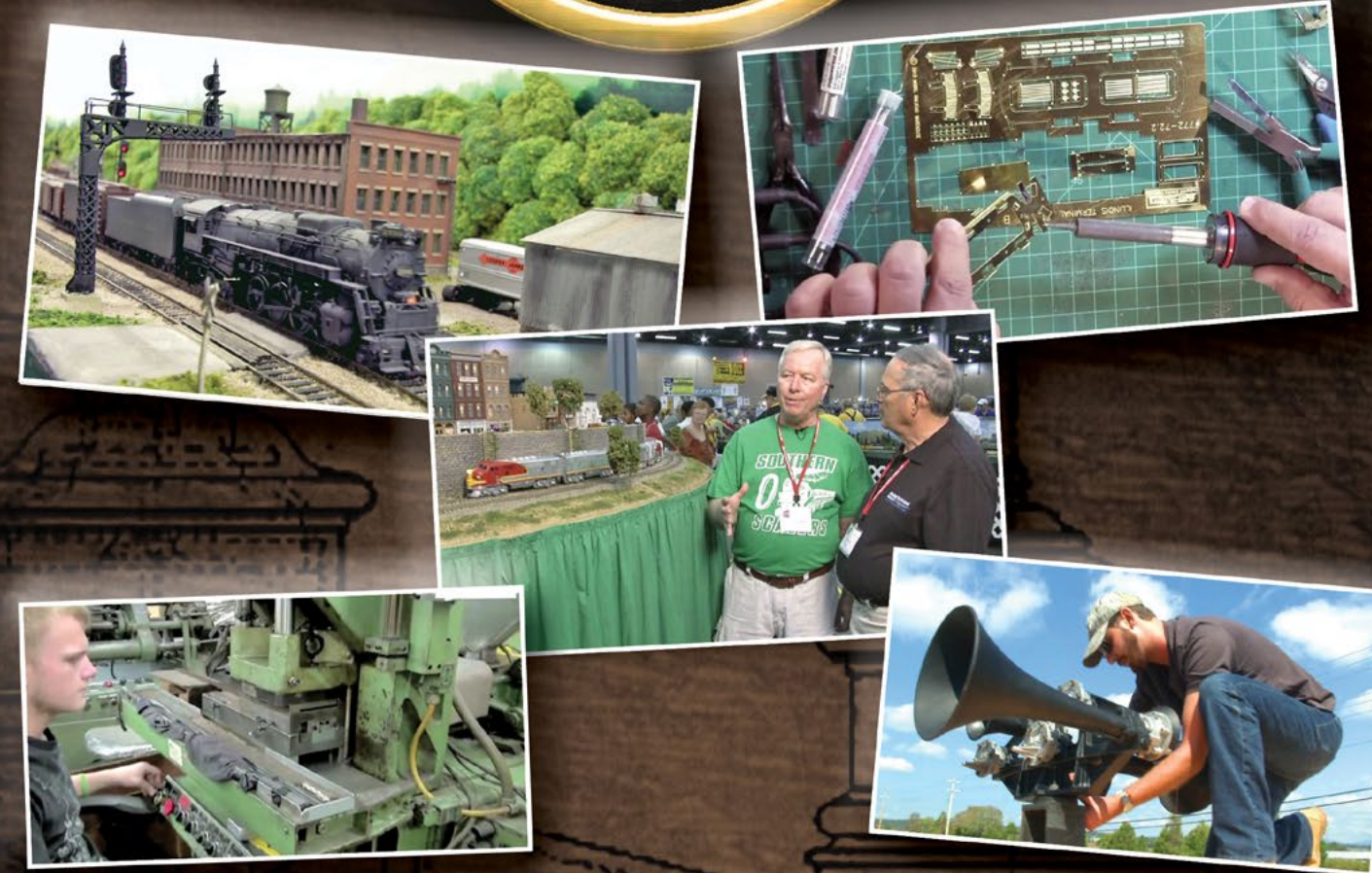
SOUTH CAROLINA, EASLEY, February 1-2, 2014, Annual Train Show with HO layouts, G scale live steam, motor cars, kids activities, and 200 plus vendors. Sponsored by Central Railway Model & Historical Association, at Larry Bagwell Gymnasium, 111 Walkers Way. Info at CRMHA.org.

TEXAS, IRVING (Dallas area), February 26-March 1, 2014, 29th Annual Sn3 Symposium, at Sheraton DFW, Irving. Info at Sn3-2014.com.

TEXAS, HOUSTON, February 15, 2014, Greater Houston Train Show featuring 20,000 square feet of operating layouts, instructive classes, photo and model contests, and vendor displays presented by San Jacinto Model Railroad Club, at Stafford Centre, 10505 Cash Road. Info at sanjac.leoslair.com.

TEXAS, HOUSTON, 2015, September 2-5, 2015, 35th National Narrow Gauge Convention. Info at nngc-2015.com.

VIRGINIA, STAFFORD, September 12-13, 2014, Mid-Atlantic Railroad Prototype Modelers Meet, with model displays, clinics, and RPM camaraderie. Wingate by Wyndham Hotel, Fredericksburg, VA. Info at marpm.org. ■



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An imagination model railroad

Reverse Running: Stepping outside the box with a contrary view

by Don Hanley

Remember getting that train set for Christmas? I do. It was a Lionel set with a diesel, three cars, and a caboose.

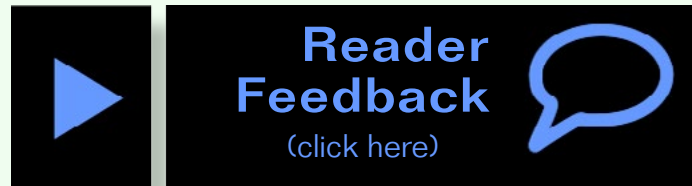
There was a loop of track that Dad had laid on a piece of plywood that he had painted green. But I was driving that train across the country.

From New York to Chicago, Chicago to St. Louis, St. Louis to.... wherever my imagination wanted to go!

I suggest moving to an “imagination model railroad.” Think about the savings of time and money that can be had.

No more chasing down those pesky electrical shorts that show up only when guests are on hand. No derailments or running out of supplies after the hobby shop is closed. No more desired or needed models out of production.

By using our imagination, we don't have to worry about scale, era, or geographical area.



And now the layout room can be converted into the craft room your spouse always wanted!

The possibilities are endless: one moment you can be an engineer of the Broadway or 20th Century Limited, the next operating a yard goat shoving cars over a hump, or dispatching a busy commuter line.

The confines of a layout just evaporate. Your railroad can go from sea to shining sea, or be a short line that runs only a few miles. Today you can be operating in the 1880s, tomorrow some futuristic train.

Only your imagination is the limit.

Of course, there will be a few minor drawbacks. Some might think we spend way to much time daydreaming, when in reality we are operating our imaginary layout. But then I suppose that happens already when we are down in the layout room.

Those not in the know might think it a little strange when we use sound with our imagination modeling, but that shouldn't be anything too new.

I am sure there might be some diehards who refuse to move into this bold new future of imagination modeling. Their small minds insist on actually building and operating a layout where they pine about the “good-ol'-days” of layout tours and operating sessions with other modelers.

But for those of us who see the future: Ahhh, I can imagine the possibilities!

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Derailments

The funny and the bizarre (allegedly)



So you want to derail a train? It's not as easy as you might think. Watch this WWII video as the Army Corp of Engineers seeks the minimum it will take for insurgent demolition troops to guarantee they can derail a train.

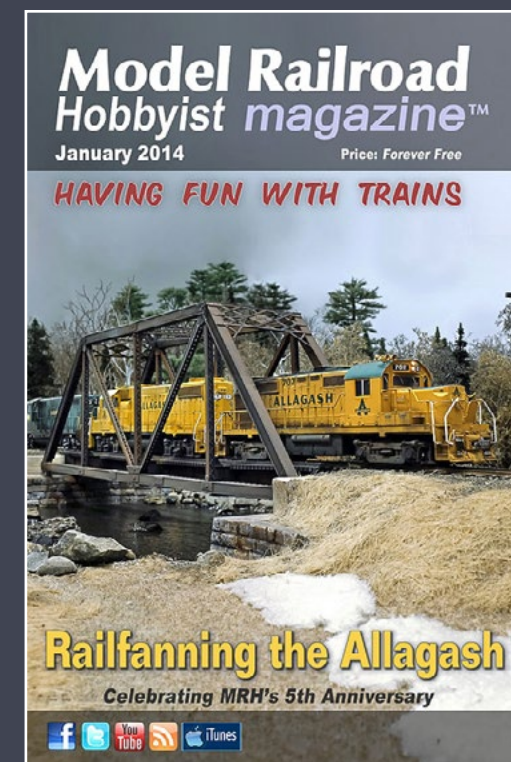
If you're the first to [submit a bit of good humor](#) and we use it, it's worth \$25!



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- Modeling a velocipede
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- Mold making
- ...and lots more in the January MRH



More Derailments humor ...



Johnson forgot to use his NMRA clearance gauge when he built the base for the overhead walkway.



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