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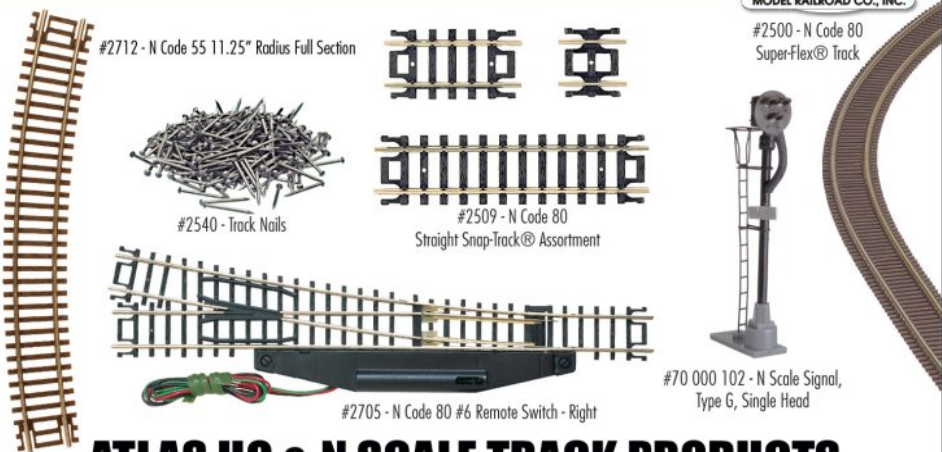


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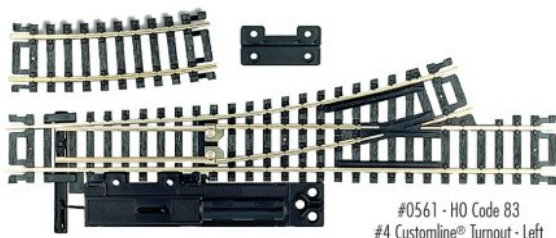
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Model Railroad Hobbyist |

August 2024 | #174

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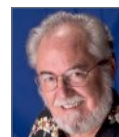
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V1.2 Aug 17

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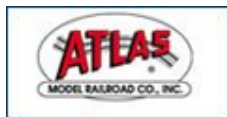
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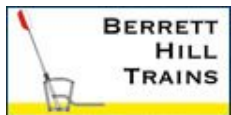
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Publisher's Musings: Siskiyou Line 2 reality attack ...
JOE FUGATE



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MRH Website this month: Ore car fleet project, ...
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What's Neat: Shop complex scene: part 3, ...
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PUBLISHER'S MUSINGS



Model Railroad Hobbyist | August 2024



JOE FUGATE HAS A REALITY ATTACK REGARDING SISKIYOU LINE 2 ...

I DISMANTLED SISKIYOU LINE 1 BACK IN 2022, when we moved from the Portland, OR area to the Tulsa, OK area. The idea was to get some rural property near our son (who also moved to Oklahoma) and to put a nice double-wide manufactured home on it, along with a prefab steel outbuilding for a garage, shop, and layout space.

In June of 2022, we moved to the Tulsa area and lived in a one-room apartment with all our stuff in storage while our son looked for some property.

Ultimately, our son bought 20 rural acres in the Beggs, OK area, which is about 30 minutes south of Tulsa and 45 minutes from the airport (almost identical to how far we lived from the airport in Portland).

Our son sold us 1 acre on the northwest corner of his 20 acres, so we're nice and close as we hoped. We put a 28x66 new manufactured home on the acre and we're loving it. We just built a nice deck off the back sliding glass door [1], so we're just now finishing up all the work on the house to get it completely done.

Next up is to look at finally starting the prefab steel outbuilding. I was originally thinking of doing a 30x60 footprint, but as we all know, inflation has been high the last few years and the cost of doing that 30x60 has gone up significantly since we first looked

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at that approach back in 2022. Time to rethink my plans and downsize things somewhat.

As I consider downsizing, I read the comments on the thread for Jim Six's column on the age limitations of doing a home layout and I have to admit at almost 70 years old now, my eyes may be bigger than my stomach, so to speak.

I plan to do Siskiyou Line 2 (SL2) using TOMA modular section methods, building a small piece of the layout to completion then hanging staging off each end and running trains through some nice scenery sooner rather than later.

I also plan to use my Run like a Dream guidelines to get a layout that performs flawlessly and has virtually zero derailments or stalls. Further, I plan to make good use of high momentum modern sound decoders with several ProtoThrottles available for operators. I will also have regular knobby throttles available for operators who prefer that.

Using a ProtoThrottle with high momentum settings has completely transformed how I run trains. It makes running a train a lot more engaging and fun, frankly. We set up the Train-Masters TV TOMA layout at several shows and I ran trains off-and-on all weekend long at the show.

1. We are only just now finishing up the work needed to get our new MF home fully functional. For instance, we just recently finished this nice back deck out the rear sliding glass door. We built it ourselves following recommended best practices and code guidelines.



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PUBLISHER'S MUSINGS | 3

I can tell you I was completely engrossed and had a total blast with the ProtoThrottle on a 14' x 8' shelf layout about 24" wide.

I can easily envision getting a few TOMA sections of SL2 built, and having such a good time that I am not highly motivated to build more module sections.

So if I get realistic, I have to ask myself, why do I need so much space if I may not ever fill it? I also have a potential long-term buyer for MRH, so my long term plan of selling MRH when I'm 75 looks quite likely to happen.

The original outbuilding plan included office space for MRH and a TMTV studio. But if MRH Media moves to new owners within the next half decade or so, maybe I just don't need all that space.

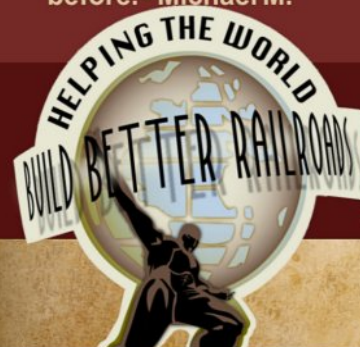
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Oklahoma is, after all, tornado alley – but most of the locals I've talked to have never even seen a real tornado in person, so the risk of any one home getting hit specifically is low.

Still, you do want to be prepared, so we had planned on putting a safe room in the new outbuilding. But we have since discovered a reasonably priced stand-alone safe room option built out of solid reinforced concrete with a massive steel door and ventilation.

The thing is several tons, surprisingly affordable, and not going anywhere in winds up to 250+ mph. So we no longer need that floor space in the outbuilding – and we have an entire acre to work with as to placement for the “safe building.”

RETHINKING THE OUTBUILDING

So I asked myself, what if we only built a garage and layout room, and that's it? Oh yes, and a small bathroom with just a toilet and a sink.

Instead of 30x60, how about 24x50? That's still a respectable 1200 square feet in total. I can devote one entire end to the garage, with space for the small bathroom and for a small workshop along the back wall.

That leaves me with 24' x 30' of space for the layout. SL1 was in about 800 sq ft of space, and this still gives me about 700 sq ft of space for SL2. Given that I'm not likely to fill all that space quickly with layout, I think I could be quite happy with that much space – in fact it still may be too much.

When I do the cost computations on the smaller size, it saves me around 50% on the total cost. Ironically, that puts me back in the same approximate cost zone as the larger building was back in 2022.

So I worked up a rough plan [2] of the new smaller SL2. I'm trying to use a generous three feet for the aisle width with only a few short pinch points as needed to get things to fit.



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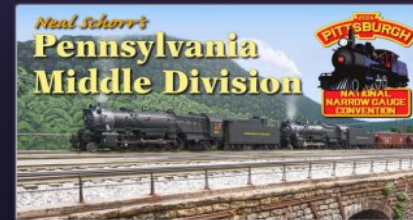
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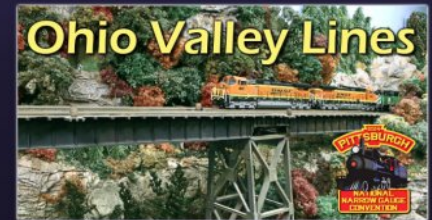
The LOUNGE CAR

Guest: Jim Six

Topic: New layout plan deep dive



Neal Schorr's Pennsy layout



Ohio Valley Lines club layout

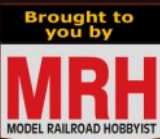


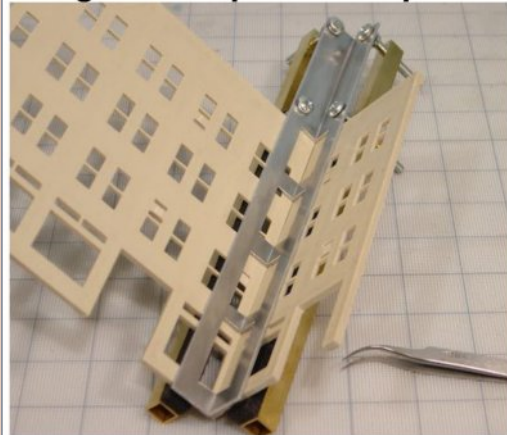
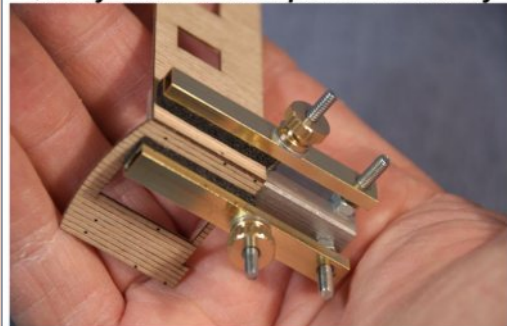
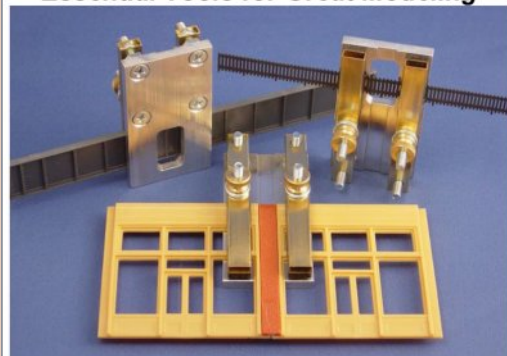
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I'm also allowing for a 9' x 9' crew lounge space near the entrance. That same space can host an under-the-layout workbench and serve double-duty as TrainMasters TV shooting space between op sessions.

Siskiyou Line1, as many of you know, was a mostly double-decked mushroom layout. Although the room floor space was about 800 sq ft, I computed it would take an 1100 sq ft room to hold the layout if it was all on one level.

As much as I like the mushroom concept, SL2 will not be a mushroom. It will be a single-decked layout, focusing on just the Siskiyou Line from Eugene to Dillard in southern Oregon.

It will also include the Coos Bay branch simply as staging that connects to the Siskiyou Line main outside of Roseburg.

The Coos Bay Hauler can still run the entire length of the Siskiyou Line main before entering or emerging from staging.

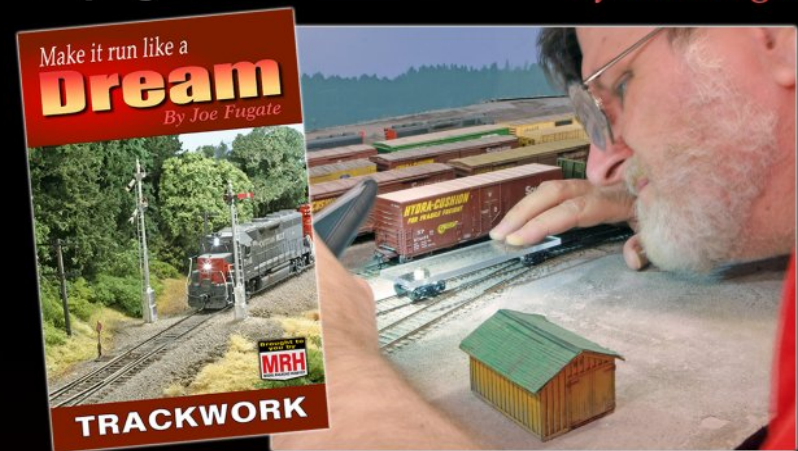
Even though I'm planning on doing SL2 as bite-sized TOMA chunks, almost 700 sq ft of

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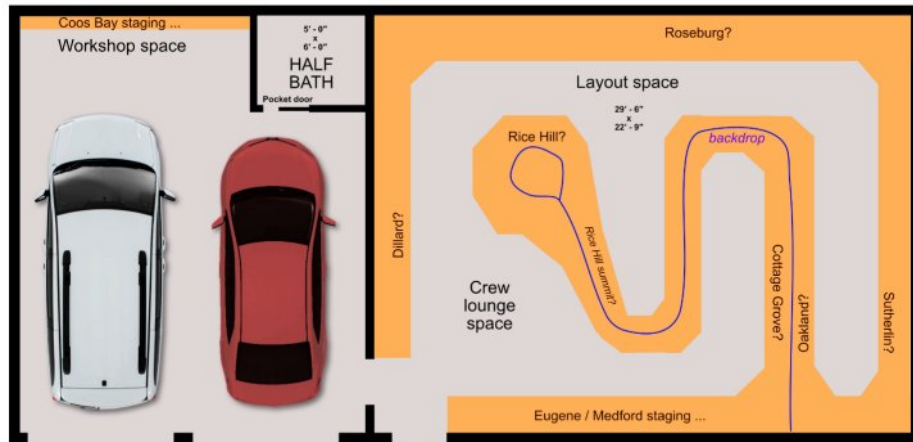
layout is still a lot of layout to finish. Depending on how much time I still have left on this ol' mortal soil, I may still be hard pressed to finish it all.

If all goes well, we may be able to break ground on this new outbuilding between November and March.

I'VE BEEN CLONED

We attended the 2024 St Louis RPM meet this last July in Collinsville, IL. Some of you stopped by to say hello, it was great to see you there!

Bernard Hellen, proprietor of MRH advertiser miniprints, was there doing full body scans to immortalize yourself as a 3D figure. I took Bernard up on his offer and I've now been cloned, so to speak.



24' x 50'

2. Here is my Siskiyou Line 2 outbuilding plans if I downsize to reflect the economic realities of 2024. This more modest 24' x 50' structure still has nice space for a garage, room for a half-bath and some workshop space. And of course, it has generous space for a layout. I show a rough idea how I might arrange the layout in this space.



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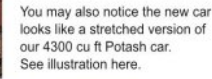
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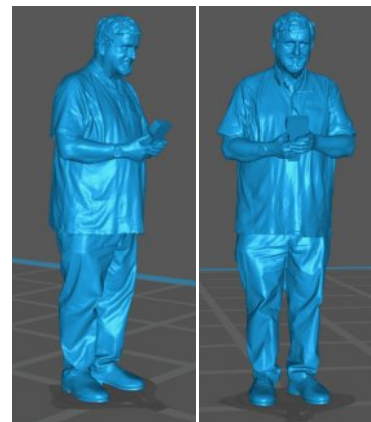
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In [3] you can see my 3D scan likeness. I'm having HO and O scale figures made for me to share with my friends and family, as well as place on the new SL2 layout as it takes shape.

If you'd like your own Joe Fugate figure for your layout, I'm sure Bernard would be happy to take your order! ☑



3. I've been immortalized by miniprints as a 3D-printed figure. Bernard Hellen, the owner of miniprints, scanned me and soon will have me available in his [scanned figure collection](#). In case you don't know what I'm holding, that's an NCE hammer head throttle and I'm doing my favorite part of the hobby: *operating*. Note my smile ...

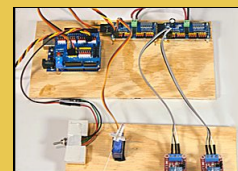
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Best of the
MRH FORUM

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THIS MONTH

Model Railroad Hobbyist | August 2024

Compiled by **JOE FUGATE**



CPR ore car fleet building project

MRH forum member **cv_acr** (Chris van der Heide) started a thread on building a fleet of ore cars. Chris walks through the entire process he used to CAD design the masters, to 3D print the cars, then to detail and paint the cars, and finally to letter them.

Along the way, Chris gives insights on what did and did not work as planned. Check out this thread on the MRH forum!



View the full thread on the MRH website

► **MRH'S MONTHLY GREAT MODELER POSTS**



1. *MRH* forum member **Modeltruckshop** (Steve H.) this very impressive mood photo of his open-top transformer load in the winter.

Let's see your open top loads

MRH forum member **railandsail** (Brian E.) started a thread asking for folks to post pictures of their open top loads. The thread has dozens of photos so far, with the photo above from **Modeltruckshop** being among the best.

Steve says,

"This is an all 3D printed car built from the Frisco drawings, including 3D printed trucks and load. The drawing was for everything but the transformer load. Interestingly enough, the Frisco only had the one depressed center car."

Do check out this thread for dozens more photos of interesting flat car loads. Be prepared for some out-of-the-box thinking on this thread, like one photo showing the load dumped due to a derailment. You will also see load ideas you may not have considered.

[View the full thread on the MRH website](#)



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2. New MRH forum member **Beyko Engineering** posted the process we went through developing a real-time car loader for coal loads. And yes, it really works!

Automated loading of live loads

New MRH forum member **Beyko Engineering** has started a new thread stepping through his experiments building an automated coal loader for live hopper loads. He says:

“I’m prototyping a Coal Flood Loader mechanism to load HO hopper cars. I’m working on automatic chute operation where the chute opens and closes on its own. Adjusting the sensors will determine how much of a fill or spill you get.

For the building itself, I’m using a Walthers Coal Flood Loader kit.”

It looks like **Beyko** hopes to start a sideline venture building and selling these loaders. His video of it all in action is amazing.

[View the full thread on the MRH website](#)

Floquil/PollyScale stash running out?



MRH has mapped the old familiar colors to new readily-available acrylic paints.



Floquil Color	Color Name	MRH Color	MRH Color	MRH Color	MRH Color
Primer Grey		MRH 4002	MRH 4002	MRH 4002	MRH 4002
Engine Black		MRH 4003	MRH 4003	MRH 4003	MRH 4003
Black Primer		MRH 4004	MRH 4004	MRH 4004	MRH 4004
Grey Black		MRH 4005	MRH 4005	MRH 4005	MRH 4005
Black Primer		MRH 4006	MRH 4006	MRH 4006	MRH 4006
Black Primer		MRH 4007	MRH 4007	MRH 4007	MRH 4007
Black Primer		MRH 4008	MRH 4008	MRH 4008	MRH 4008
Black Primer		MRH 4009	MRH 4009	MRH 4009	MRH 4009
Black Primer		MRH 4010	MRH 4010	MRH 4010	MRH 4010
Black Primer		MRH 4011	MRH 4011	MRH 4011	MRH 4011
Black Primer		MRH 4012	MRH 4012	MRH 4012	MRH 4012
Black Primer		MRH 4013	MRH 4013	MRH 4013	MRH 4013
Black Primer		MRH 4014	MRH 4014	MRH 4014	MRH 4014
Black Primer		MRH 4015	MRH 4015	MRH 4015	MRH 4015
Black Primer		MRH 4016	MRH 4016	MRH 4016	MRH 4016
Black Primer		MRH 4017	MRH 4017	MRH 4017	MRH 4017
Black Primer		MRH 4018	MRH 4018	MRH 4018	MRH 4018
Black Primer		MRH 4019	MRH 4019	MRH 4019	MRH 4019
Black Primer		MRH 4020	MRH 4020	MRH 4020	MRH 4020
Black Primer		MRH 4021	MRH 4021	MRH 4021	MRH 4021
Black Primer		MRH 4022	MRH 4022	MRH 4022	MRH 4022
Black Primer		MRH 4023	MRH 4023	MRH 4023	MRH 4023
Black Primer		MRH 4024	MRH 4024	MRH 4024	MRH 4024
Black Primer		MRH 4025	MRH 4025	MRH 4025	MRH 4025
Black Primer		MRH 4026	MRH 4026	MRH 4026	MRH 4026
Black Primer		MRH 4027	MRH 4027	MRH 4027	MRH 4027
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Black Primer		MRH 4029	MRH 4029	MRH 4029	MRH 4029
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Black Primer		MRH 4031	MRH 4031	MRH 4031	MRH 4031
Black Primer		MRH 4032	MRH 4032	MRH 4032	MRH 4032
Black Primer		MRH 4033	MRH 4033	MRH 4033	MRH 4033
Black Primer		MRH 4034	MRH 4034	MRH 4034	MRH 4034
Black Primer		MRH 4035	MRH 4035	MRH 4035	MRH 4035
Black Primer		MRH 4036	MRH 4036	MRH 4036	MRH 4036
Black Primer		MRH 4037	MRH 4037	MRH 4037	MRH 4037
Black Primer		MRH 4038	MRH 4038	MRH 4038	MRH 4038
Black Primer		MRH 4039	MRH 4039	MRH 4039	MRH 4039
Black Primer		MRH 4040	MRH 4040	MRH 4040	MRH 4040
Black Primer		MRH 4041	MRH 4041	MRH 4041	MRH 4041
Black Primer		MRH 4042	MRH 4042	MRH 4042	MRH 4042
Black Primer		MRH 4043	MRH 4043	MRH 4043	MRH 4043
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Black Primer		MRH 4070	MRH 4070	MRH 4070	MRH 4070
Black Primer		MRH 4071	MRH 4071	MRH 4071	MRH 4071
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Black Primer		MRH 4073	MRH 4073	MRH 4073	MRH 4073
Black Primer		MRH 4074	MRH 4074	MRH 4074	MRH 4074
Black Primer		MRH 4075	MRH 4075	MRH 4075	MRH 4075
Black Primer		MRH 4076	MRH 4076	MRH 4076	MRH 4076
Black Primer		MRH 4077	MRH 4077	MRH 4077	MRH 4077
Black Primer		MRH 4078	MRH 4078	MRH 4078	MRH 4078
Black Primer		MRH 4079	MRH 4079	MRH 4079	MRH 4079
Black Primer		MRH 4080	MRH 4080	MRH 4080	MRH 4080
Black Primer		MRH 4081	MRH 4081	MRH 4081	MRH 4081
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Black Primer		MRH 4084	MRH 4084	MRH 4084	MRH 4084
Black Primer		MRH 4085	MRH 4085	MRH 4085	MRH 4085
Black Primer		MRH 4086	MRH 4086	MRH 4086	MRH 4086
Black Primer		MRH 4087	MRH 4087	MRH 4087	MRH 4087
Black Primer		MRH 4088	MRH 4088	MRH 4088	MRH 4088
Black Primer		MRH 4089	MRH 4089	MRH 4089	MRH 4089
Black Primer		MRH 4090	MRH 4090	MRH 4090	MRH 4090
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Black Primer		MRH 4092	MRH 4092	MRH 4092	MRH 4092
Black Primer		MRH 4093	MRH 4093	MRH 4093	MRH 4093
Black Primer		MRH 4094	MRH 4094	MRH 4094	MRH 4094
Black Primer		MRH 4095	MRH 4095	MRH 4095	MRH 4095
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Black Primer		MRH 4097	MRH 4097	MRH 4097	MRH 4097
Black Primer		MRH 4098	MRH 4098	MRH 4098	MRH 4098
Black Primer		MRH 4099	MRH 4099	MRH 4099	MRH 4099
Black Primer		MRH 4100	MRH 4100	MRH 4100	MRH 4100

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Done Output Table for decoder manufacturers							
Pin Number	Decoder Buddy Original	V5	LokSound 4	5	SoundTraxx T2 & E2 (21PNEM8)	TCS	Digitrax** & NCE
1		A10		A10			
2		A7		A7			
3	A6	A6	A6	A6	(FX8)	F6*	F6
4	A4	A4	A4	A4	Fx6	F4	F4
5		A12		A12			
6		A11		A11			
7	A0r	A0r	A0r	A0r	F0r	F0r	F0r
8	A0f	A0f	A0f	A0f	F0f	F0f	F0f
13	A3	A3	A3	A3	Fx5	F3	F3
14	A2	A2	A2	A2	Fx4	F2	F2
15	A1	A1	A1	A1	Fx3	F1	F1
17	A5	A5	A5	A5	(Fx7)	F5*	F5
* Note; TCS functions 5 and 6 are not programmable, and will only output constant bright lights							
** Unavailable for comment							

3. *MRH* forum member **amsnick** (Nick Santo) posted this table he built of 21-pin decoders and which pins do what. Extremely useful!

21MTC pinout discussion for DCC tinkerers

MRH forum member **MikeHughes** started a thread doing a deep-dive into the 21-pin decoder interface in all its iterations, attempting to bring some clarity to which vendor has which pins and what the pins do. Mike says:

“I’m hoping the unique advantages of various decoders will be drawn out of this discussion for driving unique effects on locomotives ...

“ I reference the Decoder Buddy because they help with a neat and tidy implementation, coming with resistors on board, and are my preferred tool for rat's nest reduction.”

For a lot more helpful details and diagrams, check out the thread on the *MRH* forum!

[View the full thread on the *MRH* website](#)

Recent Weekly Photo Fun threads

Here’s couple interesting photos from some recent Weekly Photo Fun threads. Enjoy!

[View list of recent Photo Fun threads](#)



4. *MRH* author TomJohnson posted this photo of his small bedroom shelf layout. Tom says, “Cass County GP30 awaits its next assignment near the Conrail Interchange. I had a large concrete elevator here and decided to open up the scene so I relocated it, giving the layout some much needed “negative space.”

5. *MRH* forum member **thewizard1** (Charles D.) posted this photo of an SP ALCO pulling a tank car of hazardous swamp slime. The photo caught the eye of our Publisher



Joe Fugate who is an avid SP fan. Charles clearly is taking a tongue-in-cheek attitude with his swamp slime car!

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WHAT'S NEAT column



Model Railroad Hobbyist | August 2024

KEN PATTERSON COVERS THIS MONTH:



VIEW READER
COMMENTS

- LAYOUT CONSTRUCTION WITH KEN PATTERSON
- QUICK LAYOUT TIP #2 WITH KEN PATTERSON
- ROBERT STEARS OF ROKA PROTOTYPE MODELS
- MATT STERN OF BACHMANN TRAINS INTERVIEW



AUGUST 2024

WHAT'S NEAT with Ken Patterson
Shop complex scene, part 3

click to play video

PHOTOS AND VIDEO OF SUPERB MODELS

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THIS MONTH, Ken finishes the scenery at the Construction Equipment Shop complex, complete with foundations, buildings, asphalt, ballast, and ground cover. Robert Stears from Roka Prototype Models stops by with samples from the third run of their HO scale 16,000-gallon tank car. Matt Stern from Bachmann Trains drops in via Skype with some models that are either just available or coming soon. Ken has a quick tip on installing structures and wiring on a foam-based layout while retaining maintenance access.

Finishing the diorama with Ken Patterson



1. Ken has decided it is time to finish-up a scene that he started two years ago. Part 2 showed how he built this building, and now he'll install it and finish the surrounding area.

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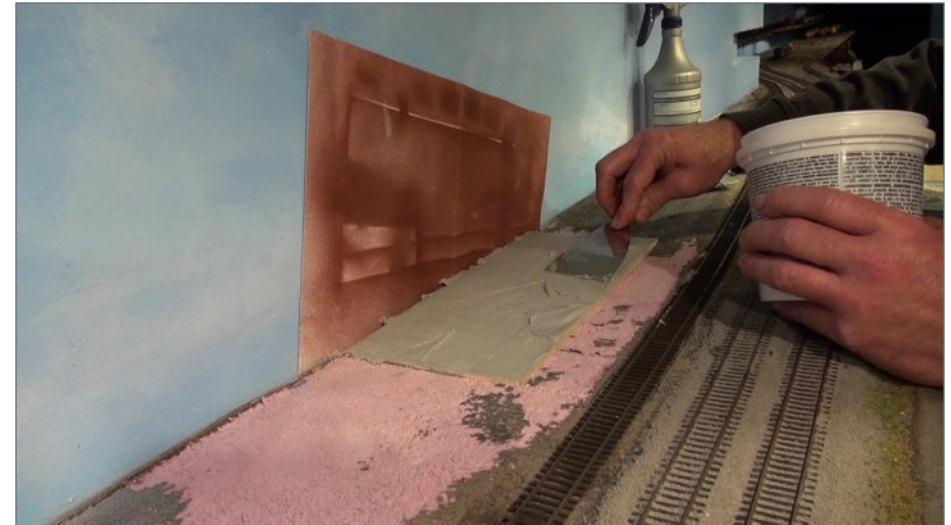
Early E-units, EA through E6

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2. After using stick pins to secure 1/8" wood forms on the area of foam he leveled, Ken uses Dap Concrete and Mortar Repair to create the pad for the building to sit on.



3. He uses a wide trowel to ensure the second pad will be smooth and level.



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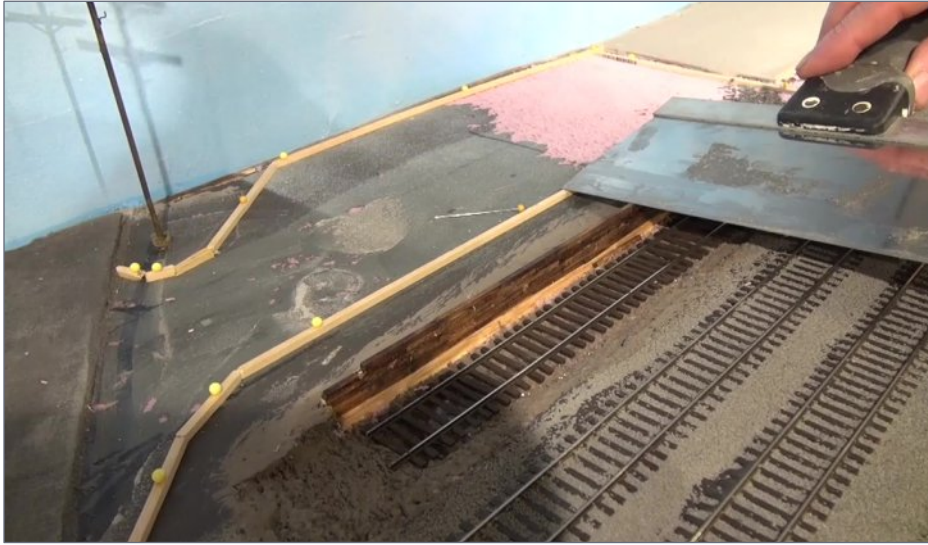
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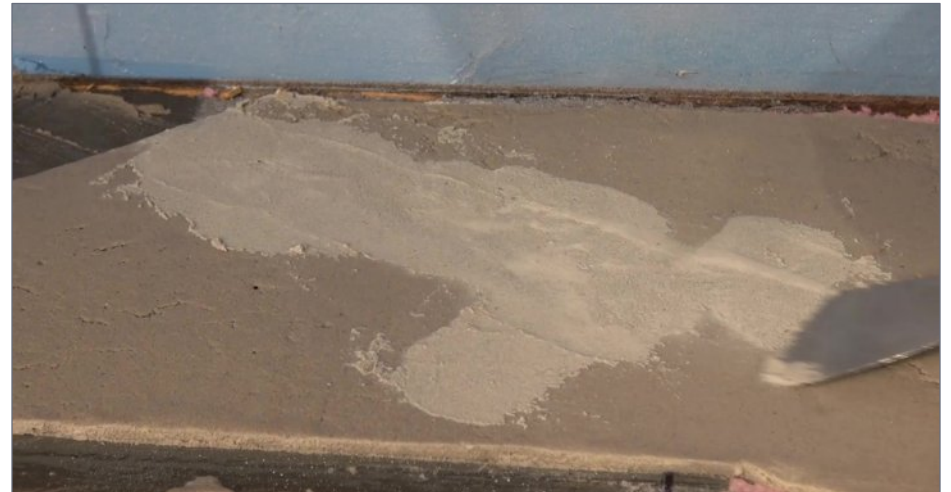
4. While the first two pads are drying, Ken puts in a third pad, which will provide road access. He will later add a sloped ramp from the access road to the railroad-tie retaining wall he's built. The pavement will be level with the decks of flatcars.



5. After allowing the Mortar and Concrete Repair 18 hours to dry, Ken uses a painter's knife to cut away the wood forms.



6. Since Ken laid the cement over the railroad spur, he uses a cut-down hacksaw blade to reopen the flangeways in the pavement.



7. The Mortar and Cement Repair material shrinks as it dries, leaving cracks. Here Ken fills the cracks and uses a putty knife to level everything.



8. When the pavement is completely dry, Ken uses an India ink-and-alcohol mix to give it a darker color resembling asphalt.



9. After laying in limestone ballast that he's ground and sifted from his driveway, Ken liberally applies Woodland Scenic's Scenery Cement from a spray bottle set to a fine mist. The ballast is level with the rail heads so trucks can drive out onto it.



10. Then after laying down more limestone ballast, Ken applies ground cover over most of the area. The ground cover is dirt from his own backyard.

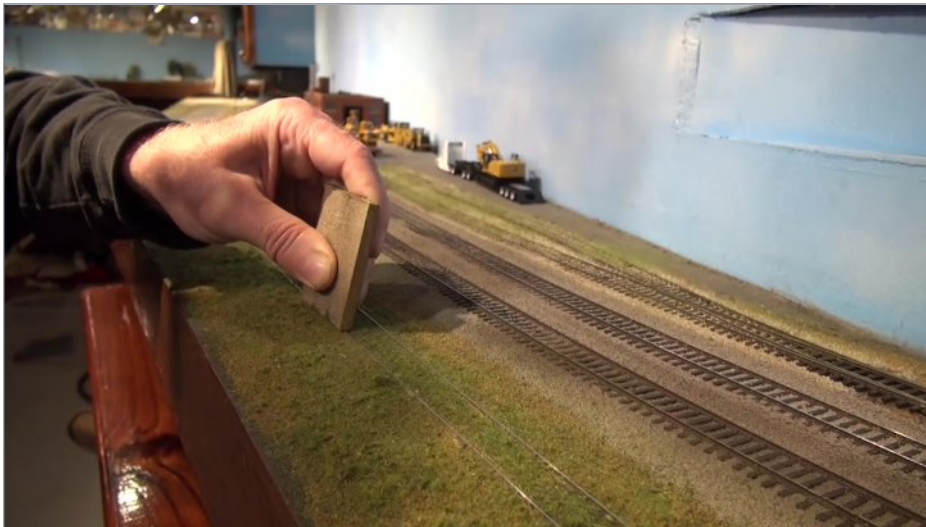


11. After adding some ground foam, everything gets soaked with Scenic Cement.





12. While the glue is still wet, Ken applies static grass to the area for more texture.



13. Having buried the track in dirt, ground foam, and static grass, Ken cleans the rails with a Bright Boy.



14. With the scenery done, Ken turns an eye toward super-detailing, including the 3D-printed scissor-lift from miniprints on the far right, and the truck from East Coast Circuits with a full lighting set including an animated arrow sign. He plans on lighting the building and area but hasn't settled on which system to use.

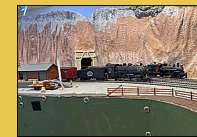
Info: www.woodlandscenics.com

Info: miniprints.com

Info: eastcoastcircuits.com

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**10 lbs of operation
on a 5 lb layout: 2**

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Ken's Quick Layout Tip #2: Building a foam layout for maintenance



15. Ken is repairing some of the lights in this scene he built with the B.T.S. Hyde Pulp Mill set, and thinks his method of building the diorama itself on a piece of plywood helps when maintaining the module.

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16. By putting the Woodland Scenics JustPlug lighting hubs in a cave he excavated out of the foam under the actual diorama, he made accessing them easier than lifting the entire module to work underneath it.

Info: www.woodlandscenics.com

Info: www.btsrr.com/4095mast.htm

16,000-gallon HO scale tank cars from Roka Prototype Models



17. Robert Stears dropped by the What's Neat basement studio to show off the third run of the GATC 16,000 gallon tank car in HO scale.



18. Originally acquired for petroleum products service, as the cars aged, many were rebuilt into water cars for use on fire service trains, surviving into the BNSF era. Other water cars, painted silver, were rebuilt as potable water cars, and used to haul it to remote locations during droughts. They also were rebuilt as vegetation-control cars. ATSF and BNSF fire service, water and vegetation control cars are included in the run.

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19. This MRL car, formerly Northern Pacific, was seen as recently as January 2021 in Helena, Montana.



20. The Chicago Great Western had multiple colors of the GATC tank cars, which are also slightly larger in size. The different colors depicted the load carried. They also survived into the Chicago NorthWestern era.



21. The Burlington Northern also used these cars in Maintenance-of-Way water service.

Info: rokamodels.com

Matt Stern of Bachmann Trains shows upcoming products



22. Matt is showing the upcoming GP40 in HO scale in BNSF paint. This model also will be available in Union Pacific, with the lettering on the locomotive in the Little Rock typeface.



23. Matt also showed off the open-sided excursion car in HO scale in the East Broad Top and (seen here) the Roaring Camp & Big Trees Railroad. While these are standard-gauge cars, Bachmann believes people will be interested in them as a memento of riding on the narrow-gauge lines depicted.



24. Bachmann has received its first painted samples of the 5161 Trinity Hopper in the CSXT Grain Express paint scheme. They'll be releasing this model in two road numbers, both of which are seen here.

WHAT'S NEAT | 16

See the video at the beginning of the article for all of the techniques Ken uses in finishing the construction equipment repair complex, many of the 16 GATC 16,000 gallon tank cars coming

WHAT'S NEAT | 17

soon from Roka Prototype Models, all the other models that Bachmann has coming, and Ken's Quick Layout Tip #2. ☑



25. Painted samples of the HO scale N scale Chemical Tank Car have also arrived in Philadelphia. These cars feature two different size manways on top, and will be available in Penn Salt, Hooker, Diamond Chemicals, and Englehard.

Info: bachmanntrains.com



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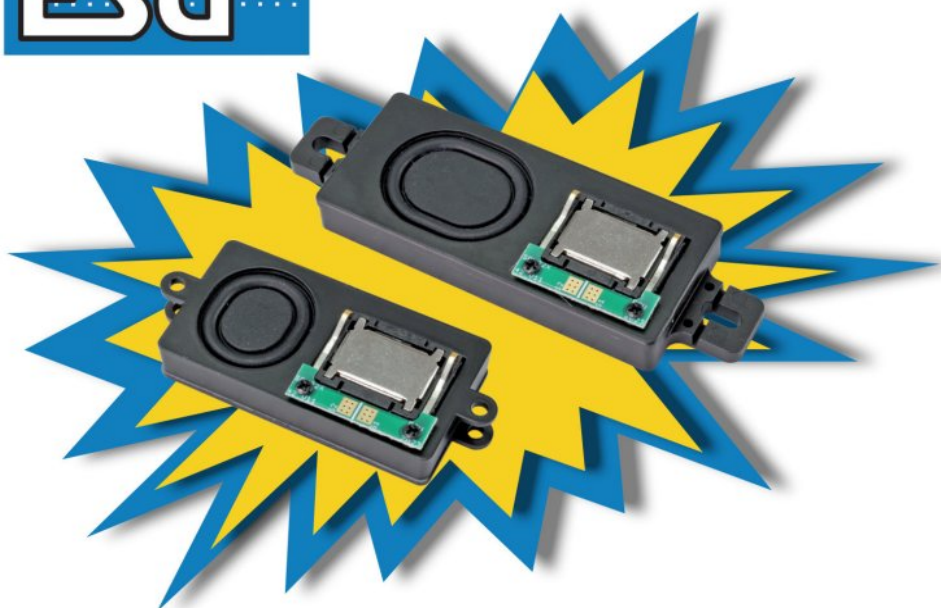
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www.loksound.com

Making your own quality twisted-wire cables



Electrical
Impulses

1. Here's a 25-foot twisted-wire cable I made for less than 23 cents per foot using the methods shown here.



Model Railroad Hobbyist | August 2024

JOE FUGATE SHOWS FABRICATING DIY TWISTED-WIRE CABLES OF ANY LENGTH FOR PENNIES PER FOOT ...

IF YOU'RE USING SOMETHING LIKE AN ARDUINO OR OTHER PROGRAMMABLE board to control things on your layout, having a source of inexpensive twisted-wire cables can save a lot of money.

You can use these cables to connect to servos used for turnouts, semaphore signals, or other layout animation. Twisted-wire cables can be useful for any situation where you need a long data cable run that maintains a strong, clean logic signal.

MAKING YOUR OWN TWISTED CABLE | 2

Why twisted cables? To reduce electromagnetic interference. Twisting the wires together creates a canceling effect. Any interference/noise in one wire is essentially canceled by the interference/noise on the other wires, helping to keep the signal clean.

You can buy #22-24 (AWG) twisted cables for 66 cents per foot, but for two 25' cables – one from the control panel to an Arduino hub, then back out to the servo – that's \$33 worth of wire per turnout at that distance!

You can buy bulk #22-24 stranded wire for 7 cents per foot.

For a Tortoise, Circuitron recommends #18 wire to and from the 12V power supply, which is about 15 cents per foot per wire. Two wires running about 25 feet from the control panel will take \$7-\$8 of #18 wire.

Making a three-wire twisted #22-24 cable to drive a servo that's 25 feet from an Arduino hub and associated control panel will take about \$10-\$11 worth of wire for a DIY three-wire twisted cable. Of course, turnouts closer to the control panel will need less wiring, so this is something of a worst case.

The cable-making process involves two main processes: 1) making the twisted cable, and 2) crimping the pins on the wires for the connectors on the ends.

Peter Randerson posted a nice tutorial thread on the MRH forum about how to do the crimping, so I'm drawing from Peter's excellent information. Peter showed straight-line three-wire servo cable in his tutorial, but I believe twisted cable is a better choice for long-run data cables to reduce the chance of errors in the data transmission.



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M. Dodd

WHY NOT HEAVIER #20 WIRE?

To choose the “right” wire size, you need to know how much current that wire will be carrying. Wire has resistance, which causes the voltage to drop as current flows through it. How much it drops depends on the wire’s resistance and the amount of current.

Ohm’s Law defines this relationship. It is: $E = I \times R$, where E is the voltage dropped, I is the current in amps, and R is the resistance in ohms. The larger the wire, the less resistance it has, and the less the voltage will drop.

There are tables on the internet that show, among other things, the resistance of copper wire. Here is one: powerstream.com/Wire_Size.htm. The AWG wire gauge column is on the left. Four columns over is the resistance in ohms per 1,000 feet. #20 wire has a resistance of 10.15 ohms per 1,000 feet, or 0.01015 ohms per foot (or just round down to 0.01).

The 25-foot cable in this article has a total of 50 feet of current-carrying wires – one for the 5V power out to the servo, and the second for the power return. Fifty feet of #20 wire has a resistance of $50 * 0.01 = 0.5$ ohms.

How much current does a servo draw? An MG90 micro servo might draw 200mA (0.2A) with a heavy load. Using Ohm’s Law, the voltage drop along 50’ of #20 wire (0.5 ohms) and 0.2A current is $E = 0.2 * 0.5 = 0.1V$. The servo will receive $5V - 0.1V = 4.9V$, which is 0.1V above the specified minimum 4.8V supply voltage.

Let’s do the same calculation for #24 wire. According to the table, this has a resistance of 25.67 ohms per 1,000 feet, or 0.026 ohms per foot. Fifty feet of #24 wire has a resistance of $50 * 0.026 = 1.3$ ohms. Back to Ohm’s Law: The voltage drop along 50’ of #24 wire (1.3 ohms) and 0.2A current is $E = 0.2 * 1.3 = 0.26V$. The servo will receive $5V - 0.26V = 4.74V$, which is just 60 millivolts (1.25%) below the 4.8V minimum supply voltage.

Everything depends on *your* situation. Ask yourself;

- How long is *your* cable? Shorter cables have less voltage drop.
- How much current does *your* servo actually draw? Re-do the wire size calculations using a realistic current.
- Does *your* power supply produce 5.0V, or is it higher or lower? Lower supply voltage might be too low at the servo. Higher is better, so if it’s adjustable, set it to just below the servo’s maximum 6V supply voltage.
- Would using #22 wire be a better choice than #24? #22 size and price fall between #20 and #24, so repeat the calculations above for #22’s resistance. ■

TOOLS AND MATERIALS

To build these cables, we need these tools and materials.

Good-quality pin-crimper [2A]: This will make crimping the pins on these cables easy if you follow the guidelines here.

Long slender needle-nose pliers [2B]: For working with these pins and plugs. The slender jaws and fine serrations allow getting in and around things with ease.

Length-adjustable wire stripper [2C]: A length-adjustable wire stripper like the Knoweasy stripper guarantees cutting off a precise length of insulation, which makes the pin crimping process much more goof-proof.

Quality flush-cutters [2D]: A big help for snipping wire ends and for precisely trimming back a bit of insulation on the stripped ends.

Servo plugs and pins kit [3A]: You can buy a kit for making servo plugs that has everything you need: male pins, female pins, plastic

MAKING YOUR OWN TWISTED CABLE | 5

plugs for each type of pin, and a connector shield to help ensure a solid connection and protect the metal pin tabs from accidentally shorting. A 30-plug set includes all the parts to make 30 cables with all the pins and plugs for each end of the cable.

#22-24 wire in bulk rolls [3B]: Also get some #22-24 stranded wire with red, black, and yellow insulation. The shopping list at the end of this article lists 300 ft rolls selling for about 7 cents per foot (Amazon Prime). If you shop around online and are willing to go with 1000-5000 ft rolls, you can get the price as low as 6 cents per foot with shipping.

Also, a tiny bladed jeweler's screwdriver and a 5/64 drill bit may be useful. More on that in the following information.



2. Tools needed. A) Pin crimper. B) Slender needle-nose pliers. C) Length-adjustable wire strippers. D) flush-cutters.



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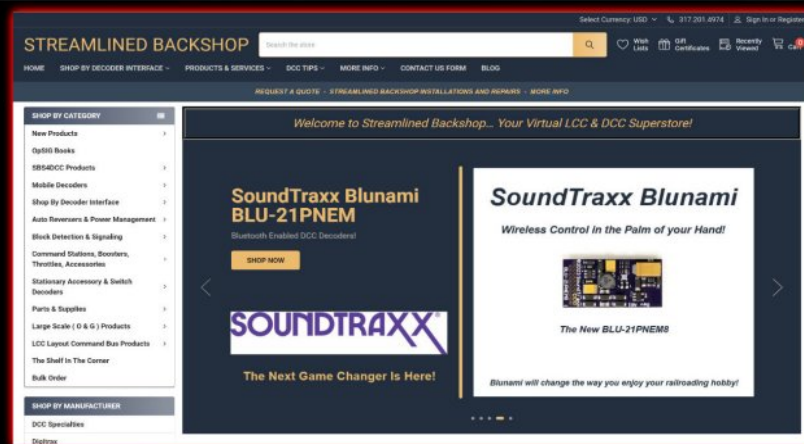
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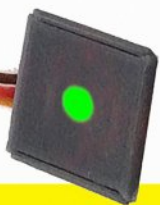
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MAKING YOUR OWN TWISTED CABLE | 6



3. Materials needed. A) Servo plugs and pins kit. B) Bulk #22-24 stranded wire, one roll each of yellow, red, and black insulation.

TWISTING THE WIRE

This is how I twisted the wires into cables.

I first tied one end of the three wires to the metal frame of shelves at the far end of a long hallway [4], then used a clamp to hold the three wires over the back of a chair [5]. I cut the wires to length, then wrapped blue tape around the three wires and clamped them into a drill [6].

Then I slowly spun the drill until the wires twisted tightly together. I've found you generally want to go as tight as possible because the wire will unravel a bit once you release it.

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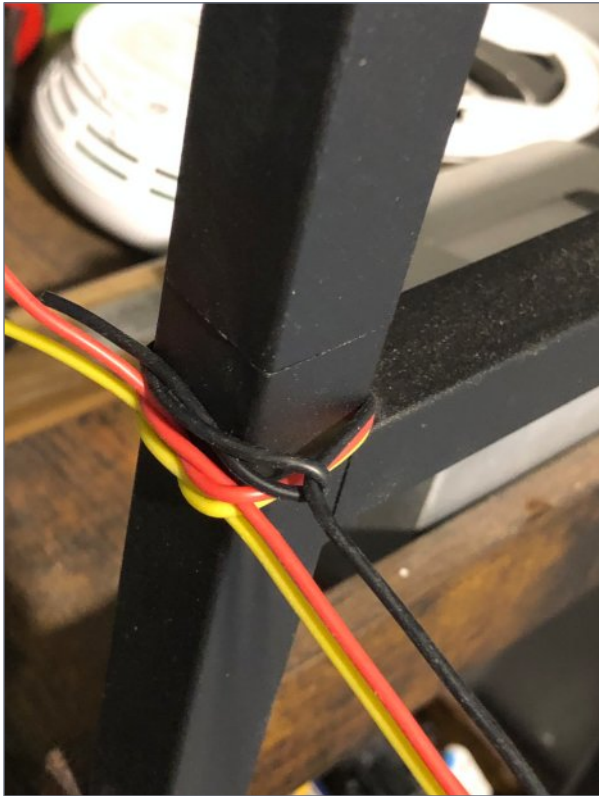
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One trick to “set” the wire to its new twisted form is to apply a heat gun to it. I used a heat gun set at 950°F and held it one inch from the wire for five seconds at a time. I would count, “One thousand one, one thousand two, one thousand three, one thousand four, one thousand five” then move an inch down the wire and repeat.

The idea is to get the wire so hot that it’s just shy of burning you when you touch it. At five seconds per inch, that’s about one minute per foot, so it took me 25 minutes to do the entire length of the wire.

I allowed it to cool for an hour then cut it loose from the bookcase and removed it from the drill, and took off the blue tape. I rolled up the twisted wire and moved on to adding plugs to each end.



4. I tied one end of the wires to the frame of a bookcase.



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MAKING YOUR OWN TWISTED CABLE | 8



5. I clamped the other end of the wires with a spring clamp and draped them over the back of a chair, then cut them to length (about 26' in this case, a little extra is good).



6. I wrapped the cut end of the wires with blue painter's tape and chucked the bundle into a drill. You can see the wires stretch 25+ feet down a hall to the tied end on the bookcase at the far end.



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7. I spun the drill slowly to put a fairly tight twist into the wire. Generally, you want to “over-twist” the wire somewhat because it will unravel a bit after being released.



8. Heating the cable to “set” the twist.

CRIMPING

Now let’s talk about the pin-crimping process and the techniques to get a successful crimp of male and female plugs to the data cable wire.

It’s helpful to understand the different pins, plugs, and the protective sleeve before discussing the crimping process itself. The set includes female pins and a plug casing for them, and male pins with a plug casing for them. Finally, to protect the plugs and avoid any possibility of an exposed metal pin tab from ever shorting, the set also includes a sleeve [9].

There are two kinds of plastic plug casings in the kit, one with a tab along one side, and one without. The Amazon photos for this kit show using the tabbed plug casing with the female pins, but I find I prefer to put the male pins in that casing [10, 11].

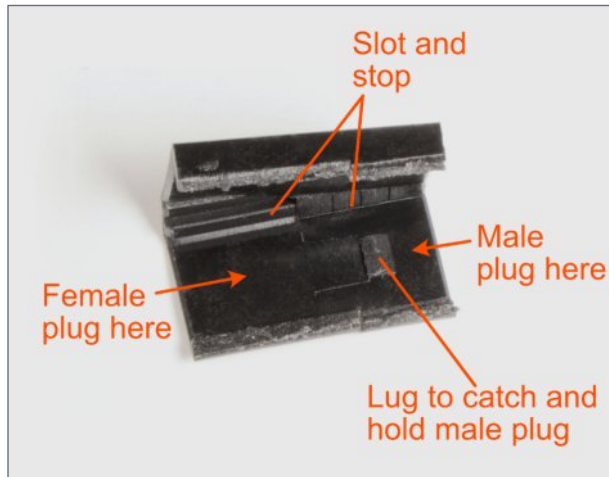
I prefer the way the male pins work inside the protective sleeve, I think they’re easier to connect this way. It appears either approach works (male or female pins inside the tabbed plug casing), so use whichever you prefer.



9. Here’s what comes in the kit. Note that we use the plug with the tab on the side for the male pins.

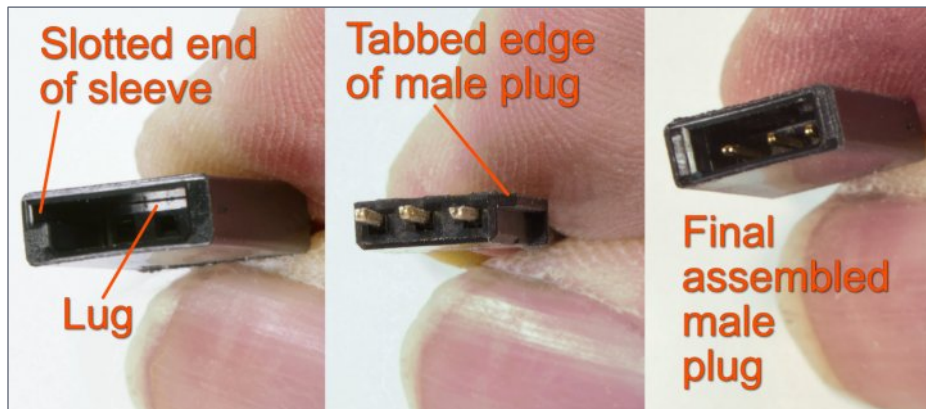


Next, let's take a closer look at the pins themselves. Note the portion of the pin that's intended to grab the insulation, the portion that's to grab the stripped wire, and the portion that's not to be crimped with tabs that catch on open slots in the plastic plug casing and are intended to hold the pins into the plastic casing and keep them from sliding back out of the casing.



10. Here's one of the sleeves cut open to reveal the slot for the tabbed plug, and a lug to hold the plug in place once inserted. I prefer the female and male plugs as shown here and in [11] but you can reverse them to put the female pins

in the tabbed plug casing – that works too.



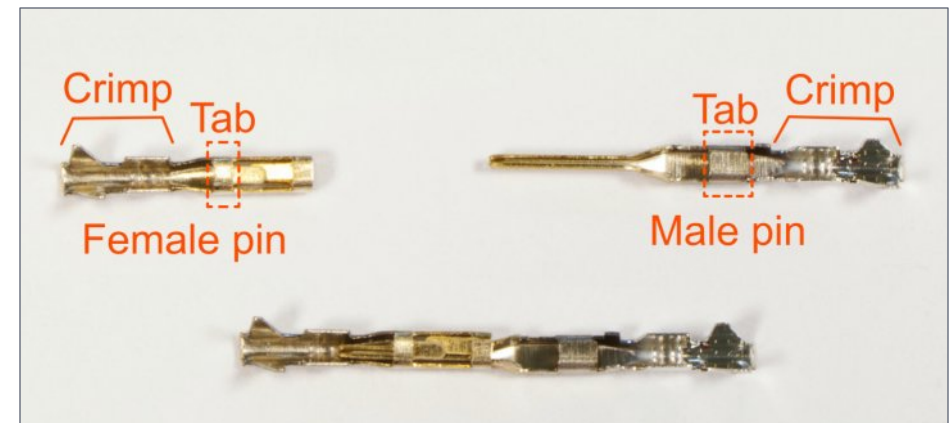
11. How the sleeve slotted end fits over the male plug with the tab. On the right is the on-end view of the assembled male plug pins inside the sleeve.

Also note how the male and female pins mate, and also note how far the male pin extends. The pin goes just to the point where the wire gets crimped on the female pin.

It takes some practice to get a successful crimp on these pins and to get the pins properly inserted into the plastic plug casing, so before you try it for real, I recommend you practice on some scrap #22-24 wire first. Here's the process I use.

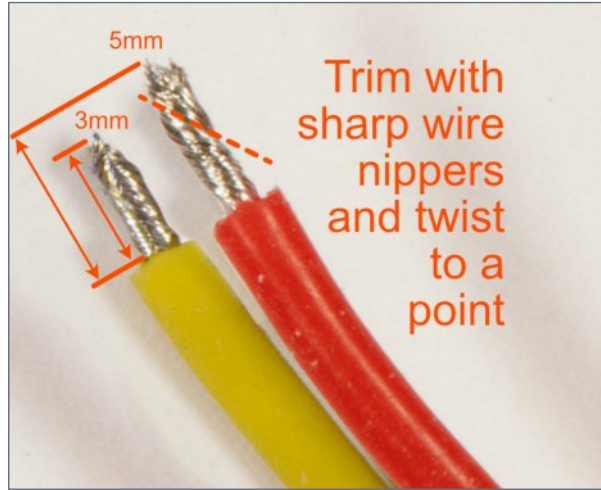
It's easier to work with the female pin if you insert the male pin into it first as shown on the bottom of [12]. This gives you a nice handle for maneuvering the female pin in the crimper.

First, set the wire strippers to strip 5mm of insulation. On the wires going into the female pins, it can be helpful to use the flush-cutters to cut off the bare wire end to a point after twisting the wire strands together. After the cut, twist the strands some more to make a nice point that's about 3mm long [13].

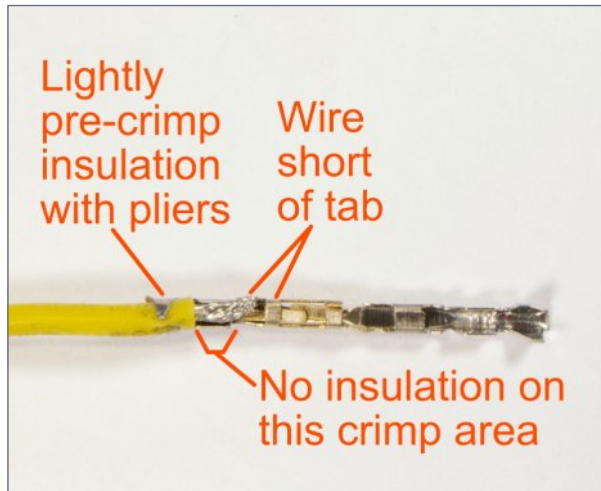


12. Looking at the female and male pins, note where the crimp area is and where the tab is on each pin. The tab is not crimped and it catches in a slot on the plastic casing to hold the pin in place and keep it from pulling back out easily. Note when plugged together, the male pin just reaches the stripped wire crimp area on the female pin.

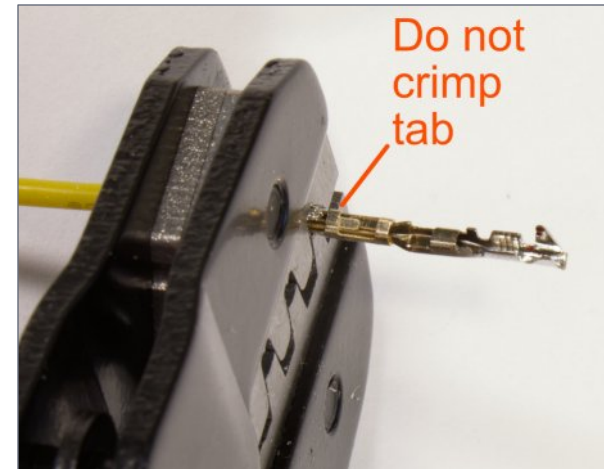
Next, insert the stripped wire into the female pin side up to the end of the crimp area well short of the tab. Now take the slender needle-nose pliers and gently bend over the insulation crimp tabs just enough to hold the wire onto the pin [14]. It's easier to insert the wire + pin into the crimper if you lightly pre-crimp the insulation tabs first with the needle-nose pliers.



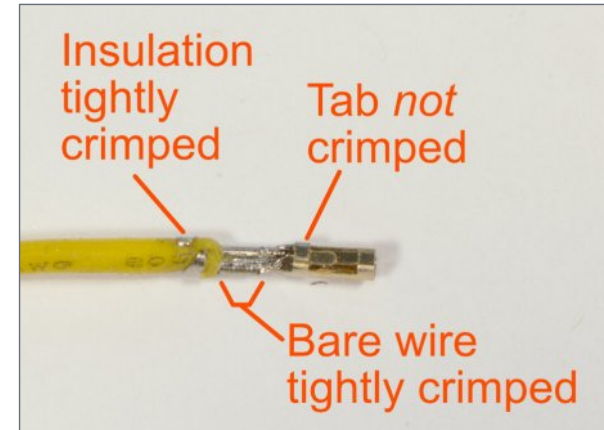
13. Cut off 5mm of insulation in the wire strippers and twist the bare wire neatly. Next use the flush-cutter to cut the end of the stripped wire at an angle and twist again to neatly make a point that's about 3mm long.



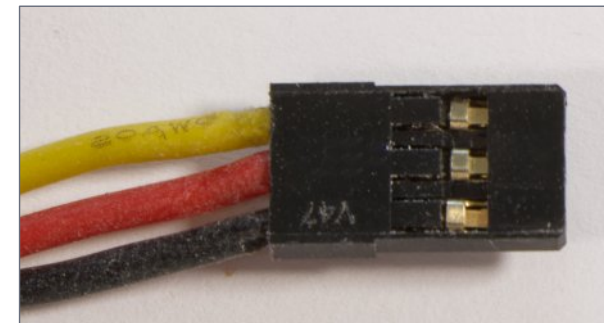
14. Insert the 3mm of stripped-and-pointed wire into the female pin crimp area and lightly pre-crimp the insulation tabs with the needle-nose pliers. Note the wire only goes into the crimp area, it does not go all the way to the tab that does not get crimped.



15. Insert the pin + wire into the slot on the crimper as shown. Place the pin so the stripped wire just barely shows and then crimp!



16. A successful female pin crimp looks like this.



17. Slide the female pins into the plastic casing that does not have the extra tab on the side. Slide the pins in until the tab appears in the plug casing slot as shown, locking the pins in place.

MAKING YOUR OWN TWISTED CABLE | 15

Now insert the pin + wire into the crimper as shown in [15] with the bare stripped wire just barely showing, and crimp! A successful crimp will look like [16] with the insulation tightly crimped and the stripped wire nicely squashed underneath the crimped bare wire tabs. Make sure the main tab on the pin is not crimped.

Once all three wires have the female pins crimped on, it's time to insert the pins into the plastic plug casing without the tab on the side in the order shown: yellow, then red, then black. Note the pins slide into the end of the plug casing farthest from the tab slots. I found it can sometimes be helpful to ream out the casing slots where the pins enter with a 5/64" drill to enlarge them slightly.

Push the female pins in until the tabs appear in the plastic casing slot [17]. It can be helpful to use a tiny jeweler's slotted screwdriver to assist in pushing the pins into the casing far enough the main tab appears in the slot. That locks the pins in place so they will not slide back out easily.

Now on to the male pins [18].

Again, strip the wire to 5mm, but in this case it's not necessary to trim the bare wire off to a point as for the female pins. As before, insert the stripped wire into the pin far enough that you can pre-crimp the insulation tabs with needle-nose pliers to hold the wire in place on the pin.

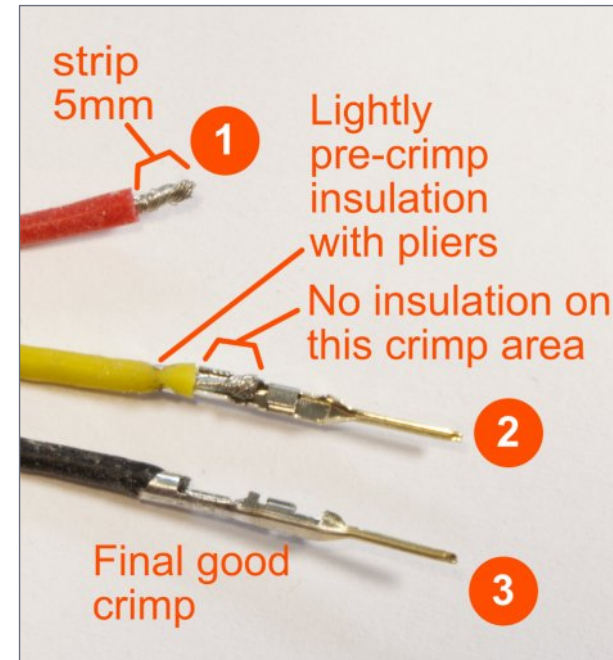
Now insert the pin + wire into the crimper until the stripped wire barely shows on the other side and then crimp! You can see what a good crimp looks like in [18-3]. Insert the male pins into the plastic casing as shown in [19] and [20]. With the open tab slots up, insert the wires in this order: yellow, red, black until the tab appears.

Now you can plug the male and female ends together to test them [21].

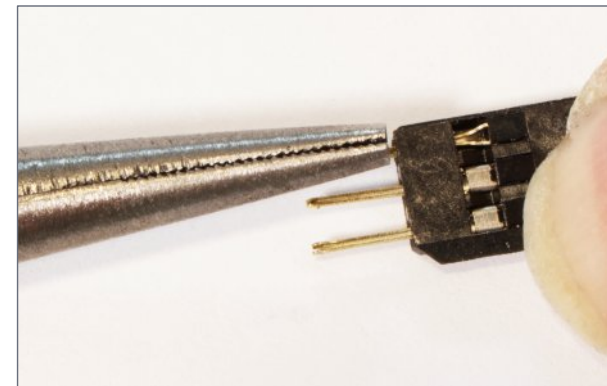
If you do want to include the sleeve to protect the exposed tab areas on each plug, you can add the sleeve as shown in [11], with the final completed connection including the protective sleeve as shown in [22].

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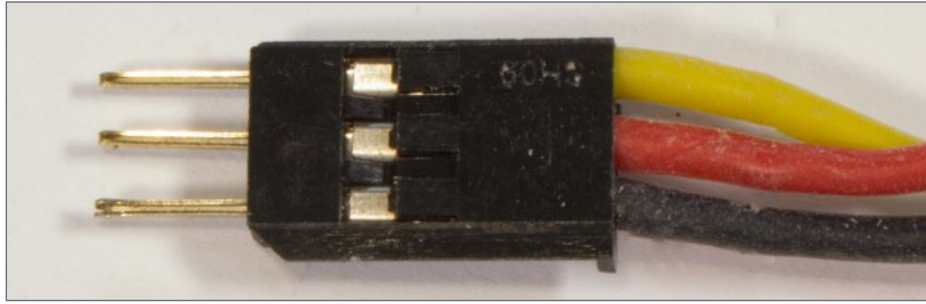
That's all there is to it. With a bit of practice, you can be making twisted servo/data cables as needed and save a lot of money over prefabricated twisted cables. As a final test, I took the cable shown



18. Strip and place the wire on the male pins as shown and then crimp.



19. Insert the male pins into the plastic casing with the tabbed side. Use the needle-nose pliers to gently pull the pin into place with the tab locking the pin in the casing.



20. The finished male plug with the tab slots up. Note the wire order: yellow, then red, then black.



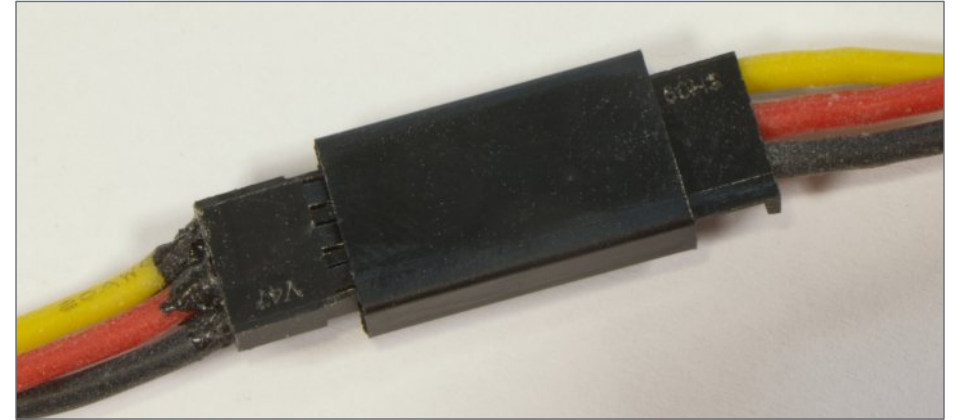
21. Testing the finished plugs without the protective sleeve in place.

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mrhmag.com/magazine/mrh2024-08/elec-impulses-shopping



here in these photos and attached it to the servo and the PCA9685 servo driver board as in my drive turnout with servos series, giving me 25 feet for the signal to travel. It worked flawlessly. ✓



22. The final finished plugs with the protective sleeve in place. I added some liquid electrical tape insulation on the female plug wires because I accidentally ripped off some insulation trying to set the pins into the plastic casing. I later found out I could ream the slots with a 5/64" drill, and the pins slide in much easier without damaging the insulation.

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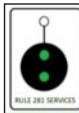
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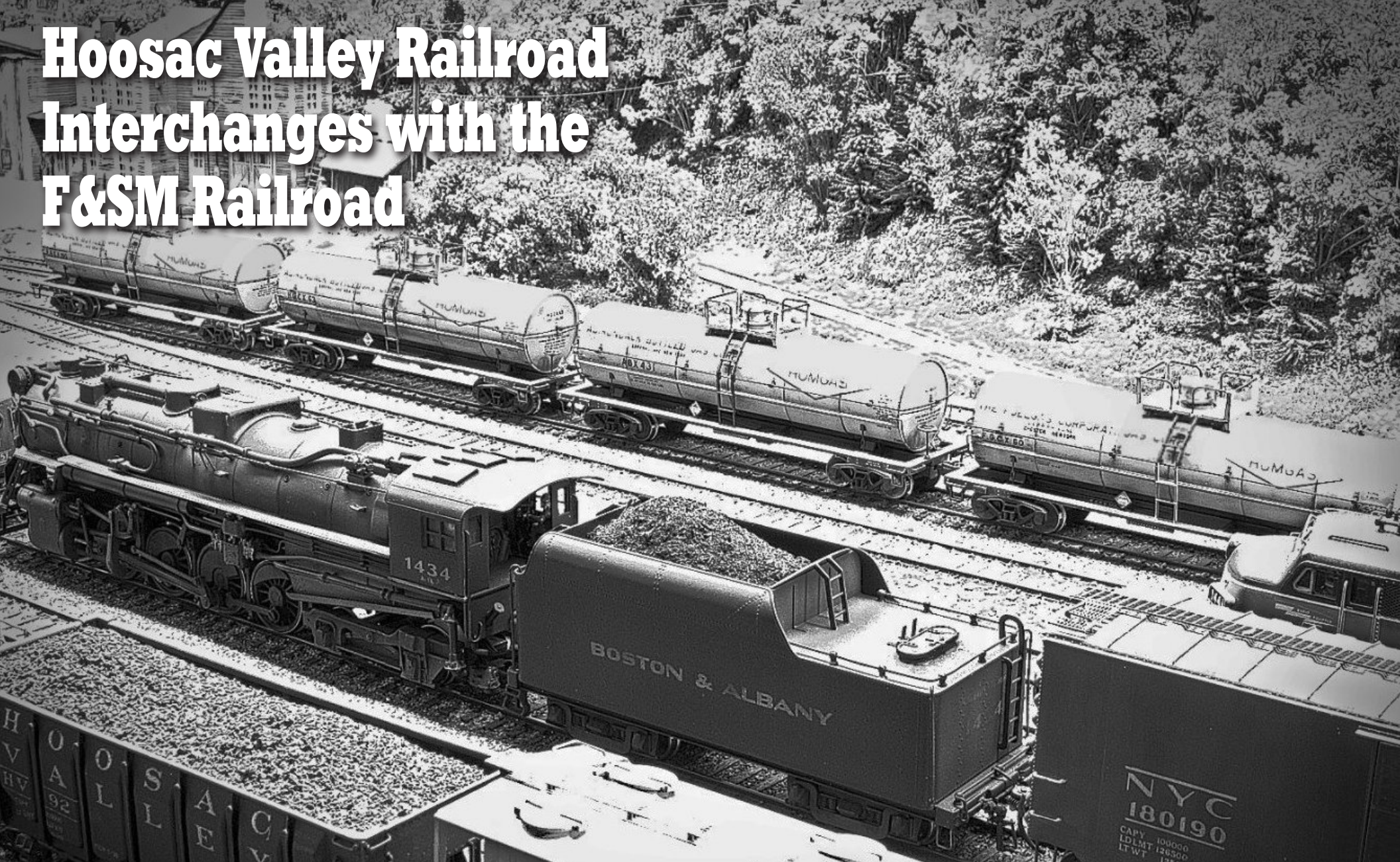
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Hoosac Valley Railroad Interchanges with the F&SM Railroad



Hoosac Valley main staging yard as you descend the stairs into Dick's basement. B&A 1434 is a Nickel Plate Brass Products 2-8-4 Berkshire upgraded with Tsunami sound, lighting, heavy weathering, and all-wheel pickups.



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SOMETIMES IN MODEL RAILROADING, opportunities arise that one just can't let pass. Throughout many years of building model trains for others, I found myself in a position to have a little fun recording things many don't get to experience.

INTRODUCTION OF THE PLAYERS

Dick Elwell had me installing DCC sound, upgrading, repairing, weathering, and maintaining some pieces of his active fleet of rolling stock and locomotive roster. Dick's operating schedules meant his equipment saw miles of travel over the decades.

One such day in mid-2012, I'd just finished weathering, repaired the drive line, and tuned-up the trucks on a pair of Stewart Hobbies/Kato F7 units #1558a & #1557a [1]. George Micklus had painted and lettered them for Hoosac Valley RR. Not all



1. Stewart Hobbies/Kato F7s 1558a and 1557a. Dick wanted weathering and reliable operation.



2. Rare Atlas 11,000-gallon gas tank cars. Each car has slightly different weathering to reflect various routes the cars took on the layout. The cars were tuned-up to meet NMRA standards.

engines on the Hoosac Valley railroad had sound, although they were mostly DCC-equipped, except for a few permanent residents of his roundhouse.

I also finished detailing and weathering four rare Atlas 11,000-gal Homgas tank cars [4] for which Dick had specific locations on his layout. He was proud to have these particular cars, and was excited to see them run.

I had just finished another engine for George Sellios' F&SM railroad. I upgraded his Bachmann GE 45-ton switcher No. 9 to include heavy weathering, a LokSound decoder with working headlights, dual beacons, speaker and an engineer [3].

Later George added some of his casting details for a little extra tractive effort to pull one or more cars. The engine could easily handle 11 cars on flat track.

OPERATION

When I presented George with his engine, he was so excited to run it that I almost got body-checked on his way to Fillmore Yard. While the last of the visitors were leaving the open house, George plugged in his throttle and proceeded to make up a local freight bound for Manchester [4].

Fillmore Yard is George's latest big yard, sporting some 12 tracks over 30" deep including the city scene. Full-length trains can easily depart and terminate here without problem. During a rare operating session, two operators can be kept busy switching, breaking/making up trains, and turning engines [5, 6].

MANCHESTER HARBOR

While railfanning as local FYMH enters Manchester Harbor, one can't help but take in the scenery and start counting structures [7]. I think somewhere around 650 structures inhabit the F&SM



3. Bachmann GE 45-tonner with LokSound decoder, working headlights and dual beacons. The cab has a speaker and engineer.



4. George at the throttle in Fillmore Yard operating his F&SM No. 9 a 45-ton switcher making up a local freight bound for Manchester.

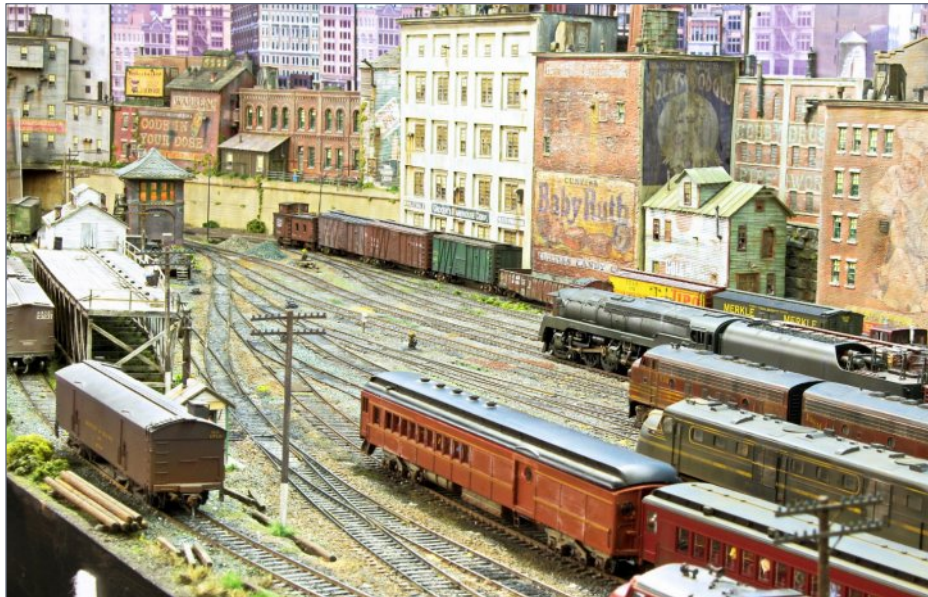
railroad. Although, knowing George, come back in a year, and another 50 might pop up.

Running this little switcher at a normal speed of 12-18 miles per hour gives one plenty of time to enjoy all the great scenery and vast structures the F&SM has to offer. Seeing George enjoy running his 44-tonner was rewarding after my time and effort upgrading it.

Taking pictures of the models I've built for George over the years really captures the ultimate goal of model railroading for me [8]. Seeing highly detailed scenes, hearing realistic harbor sounds from speakers under the layout, and listening to the horn or whistle of the train as it passes... Well, you know what I mean!



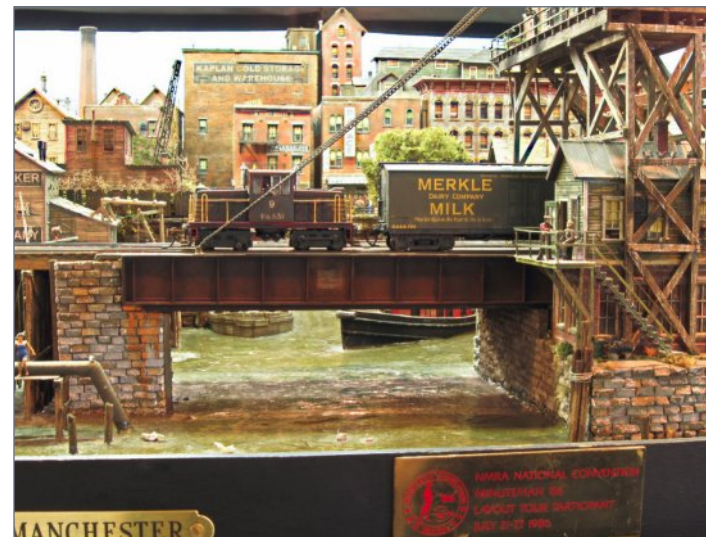
5. F&SM No. 9 backs out of Filmore Yard. It will take main track 1 to Manchester Harbor.



6. A wider view of Fillmore Yard, with our train in the background. From furthest to nearest is T-1 4-4-4-4, F7A/B set, a DL-109a, an FT A/B set, and a steam passenger train and an FT A/B set waiting for a locomotive and the next open house.



7. Local mixed freight FYMH crosses the Manchester River Drawbridge at restricted speed. Look at all the structures in this scene!



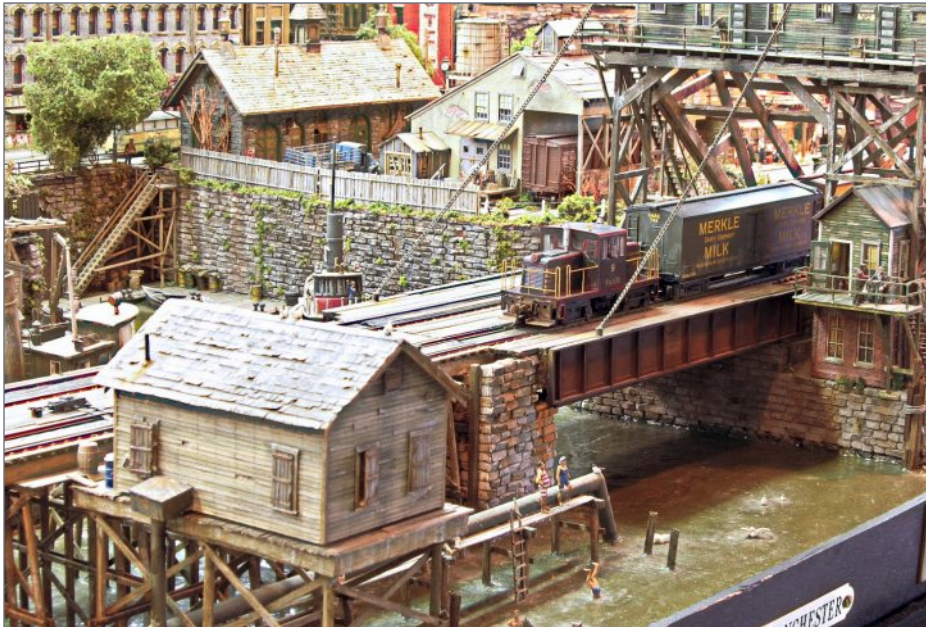
8. No. 9 creeps across the Manchester Drawbridge at restricted speed with FYMH. The only thing missing is the awful smell of that dirty water.



George thought an angled view of his newly upgraded engine crossing his monumental bridge with upgraded detailing would make a neat shot [9]. Right after shooting these pictures, we reviewed them, and discussed adding more details like counterweights and such to the bridge. That's for another day...

CRASH-BAM-SCREECH!

George and I heard one of the trains still running on the layout after this open house make a dreadful sound on the Beaver Meadows high bridge curve. I'd like to say we were both smooth and unpanicked about it, but we weren't. Derailments are rare on the F&SM. We both worked hard together over the years to improve the trackage, and knew a derailment should never happen in that part of the layout [10]. We



9. This northeastward view of No. 9 crossing the Manchester Drawbridge is quite a sight!

both ran to see what the matter was! Ten cars had left the track, and a hazardous tank car knocked the platform shelter and its wooden base off the concrete foundation [11].

Next, we heard the door close behind the layout and the sound of a derailed engine still running and grinding on the ballast. It was picking up speed for the lack of a weighted train behind it, and the drivers were no longer on the rails.

By the time I stopped the engine, rerailed it, and started backing to the train, George had returned from seeing who had suddenly left after the crash. "No one there," he said. Gone in a flash I suspect.

Upon closer inspection, we found the curtain behind the layout next to the door had been lifted up. It landed on the rails as it came down, leading to derailment.



10. A derailment on the F&SM right after an open house. Ten cars off the rails and our first structural damage.



11. Few derailments occur on the F&SM, but when one does, it's a doozy! Aside from minor damage to the shed and the fence railings, no figures were hurt during the derailment. The F&SM avoided injury lawsuits!

We cleaned up the derailment, and the train was running again in less than five minutes. George managed to re-glue the shed and the two fence railings back in place. He didn't even need to touch-up any weathering.

AN INTERCHANGE OPPORTUNITY

Here's where I decided to pull out the Hoosac Valley Models. While I set up Dick Elwell's engines and tank cars on the layout, George ran the rerailed train back down to Colbert Yard, and staged it for the next open house.



12. Hoosac Valley F7s 1558a and 1557 arrive at Colbert Yard on track 2 with four tank cars full of oil for the refinery.

As the interchange story goes, the tracks were cleared from the derailment, and the F&SM brass hat now needed tank cars because the oil refinery still needed the fuel delivered to keep production going.

Since fellow model railroader Allen McClelland's V&O interchanged with Don Santel's Ohio, Michigan, & South Shore, why not Dick Elwell's Hoosac Valley with George Sellios' F&SM? So, a call was put in to the Hoosac Valley railroad located in the western part of the state for any available tank cars to be delivered as soon as possible to the oil refinery near Colbert yard [12].

ARRIVAL OF THE HOOSAC VALLEY EXTRA

While filming the F&SM local mixed freight crossing the Manchester Harbor Drawbridge on track 1, I noticed what looked

like another train crossing on track 2 [13]. Looking eastward at Manchester Harbor into Manchester City is quite the view.

With all the redesigns and removal of the original tall city buildings (view blocks before Fillmore Yard), Manchester City still retained a few up-to-the-ceiling structures like Van Camps Pork & Beans Co. and Manchester Bank and Trust Co. [13].

MANCHESTER DRAWBRIDGE

As the Hoosac Valley extra passes over the Manchester River, the speed restriction for the draw bridge is 5 mph. The Manchester



13. As FYMH local mixed freight crosses Manchester River on track 1, Hoosac Valley extra arrives in Manchester on track 2. Van Camp's Pork And Beans, and Manchester Bank and Trust are two layout-to-ceiling buildings that survived the redesign once Fillmore Yard extension was built behind Manchester.



14. Manchester River Drawbridge (George's custom design) from a 1978 cover article in the *NG&SL Gazette* magazine.

Drawbridge is a custom-built two-track, non-operating wood structure with the draw section of steel girders [14]. George got the idea for his design from a Mar/Apr 1978 *NG&SL Gazette* article about an old ferry apron.

Looking eastward onto the bridge [15] we see the last tank car from the HV extra train on track 2. The crossover trackage is a good piece of modeling with a switch-on-the-bridge approach. In my 35 years of visiting, I never saw a derailment on the bridge.

TRAIN CREW STOP FOR LUNCH

As the train crew stops for lunch at Callahan's bar, we get our first closeup view of the foreign power growling on track 2

behind the fence. What a view the cityscape of East Manchester is with a pair of Hoosac Valley F7s [16]. I'm glad it's late summer and not the dead of winter.

The engine crew finished their liquid lunch and said goodbye to a couple of the locals. I can't help but wonder if they remember the plant manager of the refinery is expecting the tank cars full of fuel soon.

MANCHESTER CITY

With the crew's bellies full, the engineer checks his paperwork, and calls the dispatcher for clearance. The conductor and brakeman walk the train and knock off hand brakes on the tankers.



15. Looking eastward on the bridge, with the local freight and Hoosac Valley extra crossing the river.

Manchester City [17] is quite the bustling city and sees five passenger trains (of all sizes) a day.



16. A rare sight – two Hoosac Valley F7s on the F&SM in Manchester City in front of those tall buildings.



17. This view shows the overall bustling city of Manchester with its street-running tracks for passenger and freight trains. The oblique arch in the background is the bus terminal building.

Manchester peninsula (being the first part of the F&SM built) has seen the most redo, upgrades, improvements, and changes of any part of the layout. The fabulous Franklin & South Manchester Railroad book has the rarest (original scenes) pictures of Manchester.

DEPARTING MANCHESTER

As the train stretches out the slack and creeps forward past the signal, we follow along [18]. I ponder if artificial intelligence will ever be able to recreate the exhaust smell and vibration of two heavy diesel engines pulling and accelerating, with the wind blowing in the smell of that nasty polluted harbor river water.



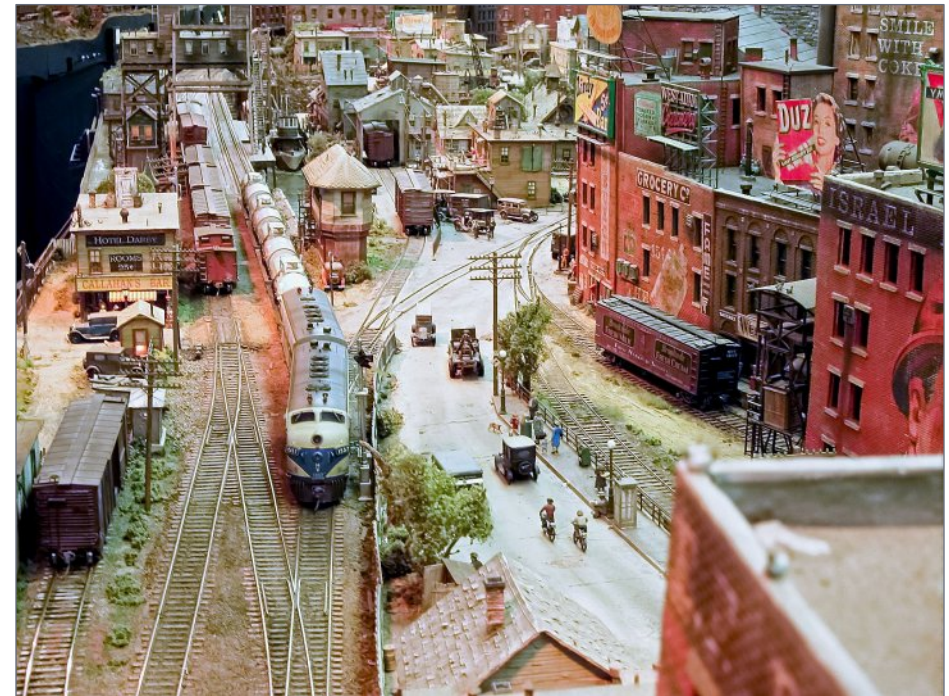
18. Hoosac Valley extra with 1557a on point creeps past the signal heading to the Colbert Yard oil refinery pulling four tankers.

With one last view overlooking Manchester Harbor, [19] some city folk wave goodbye to the crew that will bring much-needed fuel for the refinery behind Colbert Yard.

COLBERT YARD

After traversing around the layout (with George at the throttle having some fun) the Hoosac Valley extra arrives at the west end of Colbert Yard [20]. The crew waits for a local steam crew to clear the block so they can have the switches aligned for the reverse move.

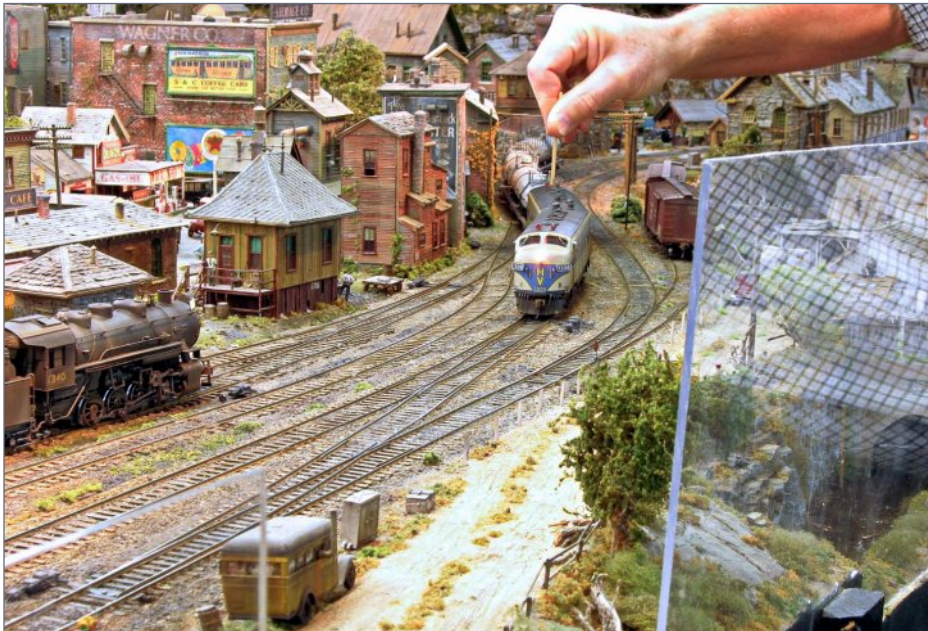
George is on the east end of the yard, excited to switch the HV train. I'm on the west end with camera trying to focus and capture his hand with an uncoupling skewer) [21].



19. A final view of Manchester Harbor as Hoosac Valley extra departs and heads toward Colbert Yard oil refinery.



20. The Hoosac Valley extra arrives at Colbert Yard, ready for the shove to the east end.



21. George stops the train and uncouples the cars from the engines. An 0 8 0 yard switcher waits for the interchange to happen.

The engines pull ahead through the crossovers to track 1 [22]. The bell is ringing, and the tracks groan under the weight of the F-units moving over the switches.

With the engines clear and the crossovers thrown normal, the newly weathered HV tank cars are sitting on track 2 waiting for



22. The two HV engines running from track 2 over to track 1 with George at the throttle.



23. It would seem even the Colbert Yard employees are fans of the visiting Hoosac Valley power. This is an interesting shot with the HV F7s in front of an F&SM Y6B 2-8-8-2, and an F&SM 0-8-0 switcher in the background.

The twin diesels head west to clear the interlocking, and return east on track 1 for the runaround move.



24. Having run around the tank cars and crossed back from track 1, the twin F7s now head west on track 2.

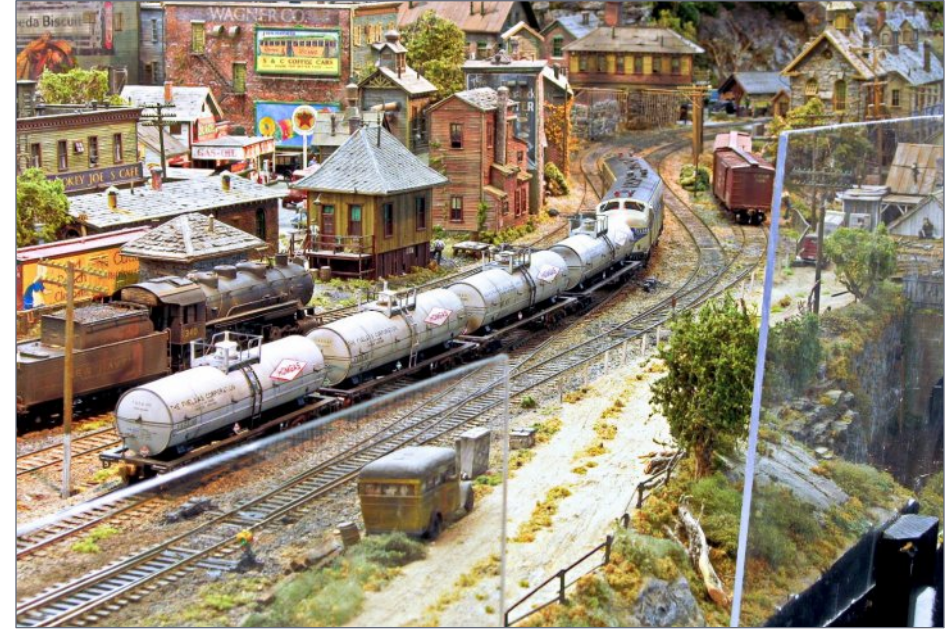
the engines to clear the interlocking, then head back beside them on track 1 for the runaround move [23].

With lots of crossovers at every yard or section of switching tracks, runaround moves are essential for switching most industries on the F&SM [24].

Visitors love to count the structures, vehicles, or figures in any scene, but I don't think anyone has ever counted the switches and crossovers. Shinohara is probably the most used track/switches on the layout. I believe over 200 switches easy, and only a handful are DCC-friendly. George and I spent many hours reworking the trackwork to flawless condition.

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25. The locomotives are coupled to the tank cars on track 2, ready for the shove into the refinery.

THE REFINERY

The engines head west around Bedford Falls to couple the cars on the east end of Colbert Yard, on track 2 [25]. Then they will begin their shove into the refinery along the refinery lead track, which is on the far side of Colbert yard from the aisle, and behind the roundhouse [26].

As the crew slowly shoves into the facility, the supervisor instructs them to tie onto the tank car in place at the racks, and push it down to the bumper. This will spot the four cars of the extra just right for unloading at the facility [27-29].

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26. The train crew shoves the cut of cars slowly down the refinery lead with the back corner of the roundhouse at right. The only way to view any train running on this track is to walk around, stand by the John Allen trestle, and look up the peninsula. Many don't realize this track has three long curves in it.



27. The train crew ties onto the black tank car, and pushes it to the stop. This spots the new tank cars perfectly for unloading. The storage tanks to the right are old Vollmer tank kits that George detailed for the scene. I can almost smell the refinery.



28. The facility's pumping shed is well-detailed. Its hoses and extensions can convincingly handle up to four cars at a time, though the norm is three.



29. After the crew unloaded the cars, the facility supervisor instructed them to spot the black tank car next to the two oil tanks. The visiting HV crew is good, and fits right in with the F&SM crews.



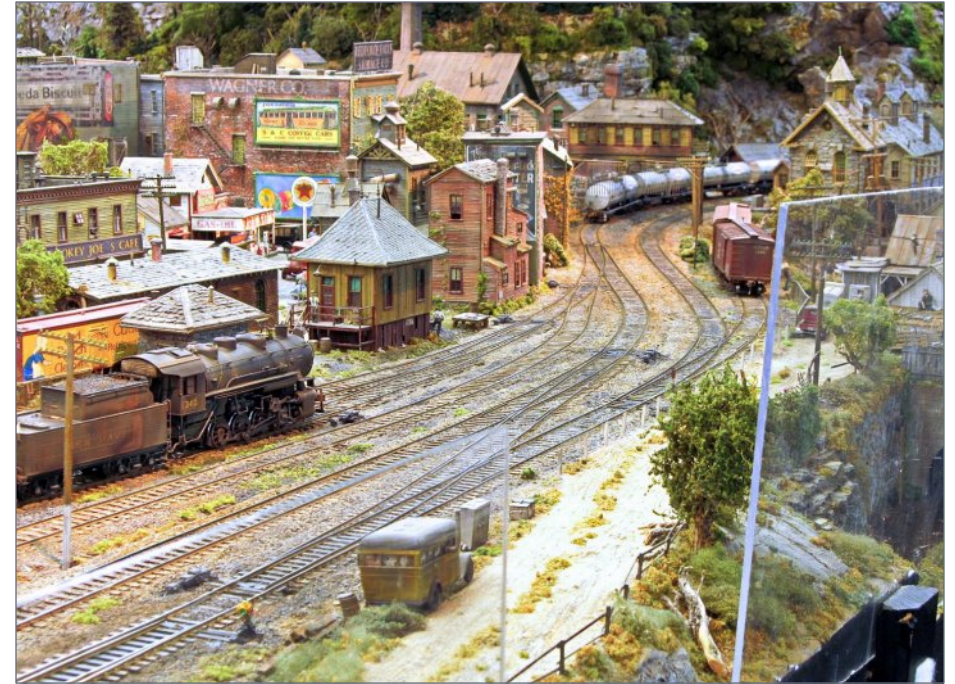
THE HV CREW DEPARTS THE F&SM

As the Hoosac Valley crew completes their extra delivery and departs the F&SM, we catch up with them on the refinery lead track as they pass some cluster housing. These structures, while simple, have awesome detailing and weathering. This gives new meaning to “the wrong side of the tracks” [30].

One last look at the Hoosac Valley tank cars as they head west back to the Berkshires [31]. I watched George have fun switching the Hoosac Valley extra train on his F&SM. I was glad I took the opportunity to bring these models and capture a few rare photos.



30. The Hoosac Valley crew departs the F&SM on the refinery track lead while passing some humble row/cluster housing.



31. The last shot of the Hoosac Valley extra tank train as it departs Colbert Yard on its way to home rails in the Berkshires.

HV TANK TRAIN ARRIVES HOME

Back in the Berkshires on Hoosac Valley Home rails, Dick Elwell used his NCE DCC system to bring the F7s in with the train of tanks [32]. He set out the four tank cars on track 8, and proceeded to park the F7s in front of a Nickel Plate Brass Productions 2-8-4 on track 4 [33].

CONCLUSION

Dick commented to me how much he liked the work I did on the tank cars and engines. He also got to see the pictures of George operating his models on the F&SM.



32. Dick takes the throttle to park the LokSound-upgraded F-units and weathered tank cars in the yard on the Hoosac Valley.

A big thank you to Dick Elwell (sadly, posthumously now that we lost Dick recently) and George Sellios for both being good sports about the time setting up all the camera shots and poses.

I know both had fun and enjoyed the models I've built and upgraded for them over the years. I will cherish the many laughs and stories forever. ☑



33. The F7 twins and the four tank cars are on home rails at last, resting in a yard on the Hoosac Valley. I upgraded the 2-8-4 at right with Tsunami DCC lights and sound, and weathered it for Dick Elwell a year earlier.

THOM DRIGGERS



Thom is the owner and builder behind Thom's Custom Trains. He lives in Massachusetts with his long-time girlfriend Luba for the last 20 years. He has been modeling since the mid-70s. His professional career and modeling business both have been around railroading, either prototype or modeling. He is an avid brass collector and builder. Luba loves to take train trips. She is retired now, and Thom is semi-retired at age 60. ■



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Nobody knows the trouble I've seen

Make it run like a

Dream

PRINT EDITION

By Joe Fugate



TRACKWORK

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1. The cover of Joe Fugate's [Make It run like a Dream: Trackwork](#).

Model Railroad Hobbyist | August 2024

JEFF PALMER OFFERS ADVICE FOR BUILDING ROADBED ...

DURING THE YEAR PRIOR TO THE 2023 NMRA NATIONAL CONVENTION, I spent time helping friends get their layouts ready for NMRA tours. I did a lot of track and scenery work. In this article, I discuss how to build good trackwork.

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In his book, *Make it run like a Dream: Trackwork* [1], Joe Fugate emphasized “consistency and standardization (one source).” That phrase sounds easy, yet we as modelers consistently fail spectacularly.

It’s worthwhile to begin with some basic questions like: Are the same track code of Peco, Atlas, and Micro Engineering flex track compatible? Does it make a difference if I ballast my track? Is hand-laying track better than commercial track?

CONSTRUCTION AND SUB-ROADBED

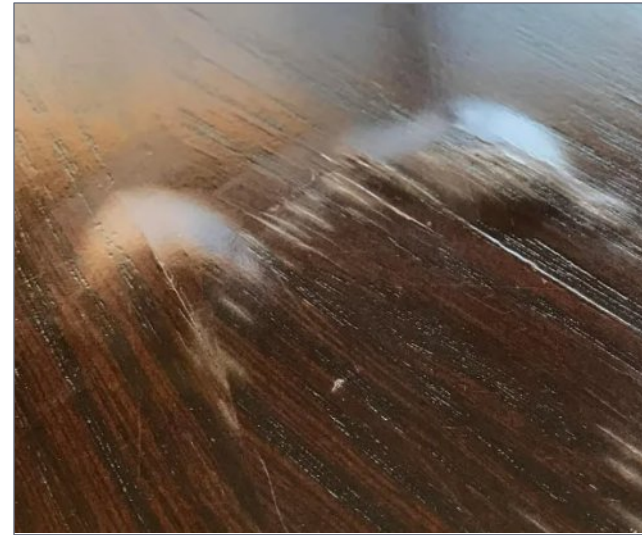
Whether you lay track directly on wood, foam, cork, spline, Micore, or Homasote, you need a smooth and uniform surface for the track. Let’s start with the wood sub-roadbed.

One of the most popular sub-roadbed materials is 1/2" or 3/4" plywood. When you buy plywood, look at the edges for signs of layer separation [2]. If you can see areas where wood is missing, or you see separations between the layers, move on to the next sheet.

Check all four edges. If you see splitting layers, or missing wood on one of the layers, those are signs that the plywood was poorly manufactured, or has been mis-handled. You don’t want that sheet.



2. The edges of plywood tell a story about its quality. None of these edges look good.



3. If the sub-roadbed is bad, the track roadbed does not stand a chance. Bubbles will occur if water has soaked into the plywood and affected the glue. It is hard to lay roadbed over a bubble.

Once you find a sheet that passes the edge test, look across the surface for bumps or blisters [3]. You want a uniform, flat surface. Many will say that you need cabinet-grade plywood, but there is a cheaper grade plywood referred to as “Blondewood.” Do not use plywood decking or sheathing.

The next biggest issue with sub-roadbed is construction. If the roadbed tilts, trains can drift from one side of the track to the other.

We think about degrees of slope as the angle of an incline (grade) as our train goes up or down a hill. This type of slope is easy to see. It’s common to talk about 1%, 2%, or 3% grades when we think of inclines.

As with the prototypes, the grade percentage is the change in elevation over a 100’ run. This chart can help [4].





J. Regier

CALCULATING GRADE PERCENTAGE AND DEGREES

Most of us are familiar with the concept of grade percentage, in which we calculate the difference in elevation over a 100-foot run. Inches or any other units will work, provided that we have the same units for elevation and run. Let's use Google to make these calculations.

The basic equation: slope (S) is equal to rise (E) over run (R). Use $S=E/R$ to calculate grade percentage over much shorter distances. A rise of $1/32''$ inches over four inches of track – $(1/32)/4$ as fed into a Google search bar – equates to a 0.78% grade for that segment.

Taking it a step further, if we take that same $1/32''$ height difference (E) across the $1-1/8''$ length of an Atlas HO scale tie (R), we type " $(1/32)/(1+1/8)$ " into Google. This yields an equivalent grade of 2.78% across the track side-to-side! Even a small difference dramatically affects track level side-to-side.

To calculate the angle of a grade, we can use an inverse tangent function: inverse tan (E/R). Continuing with our example, feed "inverse tan 0.0278" into google. The result will be 0.0278 rad.

But we want degrees. Simply copy the result and paste into the search bar, followed by "in degrees." This will yield 1.49 degrees for the angle of slope between the rails.

If you're using a digital level, it will give you the degrees off level. Using the equation: $\tan(\text{degrees}) \cdot R = E$, you can find the difference in elevation. Assuming the side-to-side level is off by 0.5 degrees, type " $\tan 0.5 \text{ degrees} \cdot (1+1/8)$ " into Google. The side-to-side elevation difference will be about 0.01 inches. It doesn't take much! ■



Percent Slope	Slope Degrees	Rise (per scale feet 100)
1%	0.57°	1'
2%	1.15°	2'
3%	1.72°	3'
4%	2.29°	4'
5%	2.86°	5'
6%	3.43°	6'

4. A chart for calculating slope degrees from grade percentage. Here is a helpful page for slope calculations: www.calculator.net/slope-calculator.html?x11=0&y11=0&x12=100&y12=5&type=1&x=Calculate.

The change in elevation (height) is easy to see going up or down a hill because of the relatively long distance involved. Unfortunately, it is a lot more difficult to see that same change across the 4- or 5 - scale foot distance across the tail tie. We call this "flatness."

This is hard to picture, and impossible to photograph, so maybe this word image works better: Your engine is on a 2-degree downward grade, slightly, but not noticeably leaning to the left, about to enter a turnout.

If you didn't get a "pick" at the point rail, the next obstacle in the path is the frog, just waiting to derail the engine. It's a right-hand turnout, forcing the wheel flange at a slight angle as it transitions from the wing rail to the frog, catching the flange.

This was an actual situation that consistently derailed a caboose. Troubleshooting took days, and repeated checks using the NMRA gauge [5] revealed nothing.

The turnout was replaced after much frustration, but this did not resolve the problem. Finally, the lead-in track to the turnout was checked with a digital level, and the tilt was discovered [6]. The tilt was corrected, and there have been no derailment issues since.

In the above example, the owner of the layout would have sworn those tracks were perfectly level. At one time, they may have been, but somehow something happened to ever-so-slightly tilt the roadbed.

In my experience, a tilt of less than one degree does not normally affect operation, but greater than that can compromise the performance of a turnout. The car does not have time to recover from the lean, and its weight pushes the wheel flanges tightly



5. The NMRA standards gauge is an excellent tool, but it doesn't tell the whole story, especially if it's a leveling issue.



6. A digital level such as this one from Micro-Mark can offer an exact measure of slope angle in degrees or as a percentage of grade. Here, the level shows the rails are 0.45 degrees off level, with the right rail higher than the left.

against the rail, increasing the likelihood that the flange will catch or ride up on a frog, switch points, or other flaws in the trackage.

While it is not unusual for a layer of foam-board, Homasote, or Micore to be placed on top of the plywood, this is not a cure for plywood issues; it only disguises the issues and make them harder to find.

Using a level, double-check the level of the layout or roadbed. If your track is on risers, make sure the sub-roadbed is square and flat as possible. It's easy to get a riser out-of-square with the framework.

Not all railroads use roadbed. Many mining and logging railroads placed their track directly on the ground, and filled-in with dirt between the rails. Most such lines were temporary, so they did not go to the expense of creating a permanent gravel roadbed.



7. Take a close look at the Homasote's uneven surface.



For those modeling mainline passenger and freight railroads, roadbed is mandatory to be prototypical.

HOMASOTE

Homasote is one of the most popular roadbed and sub-roadbed materials. Homasote can accept spikes and nails, and allow them to be repositioned without glue.

Its non-uniform surface is perfect for ground and scenery, and it is easy to carve and cut Homasote to place buildings.

If you need a flat surface for a roadbed, street, or other detail, simply spread a layer or two of spackling or other filler, and sand smooth.

Some modelers make their own Homasote roadbed by buying a 4'x8' sheet of Homasote, and cutting it into roadbed strips. The pitfall here is that Homasote's non-uniform surface frequently makes for uneven roadbed without further treatment [8]. Using a caliper, I found height differences ranging from 0.063" to 0.128" along one foot of roadbed made from strips of Homasote cut from the same sheet.

You must sand, mill, or fill the surface to make the roadbed uniform and level, or else shim the track so that it is well supported. Otherwise, the track can wind up significantly out-of-level [9].

Attention to detail is a must. If you are going to make your own Homasote roadbed, go to the trouble to sand or mill the Homasote to uniform thickness. A good YouTube video teaching the process of is available here: www.youtube.com/watch?v=sYh_mEs7fqs.

Another option is to buy Homasote roadbed from Central & western HomaRoad Supply (www.cwhomaroad.com).

The high cellulose content of Homasote makes it susceptible to moisture expansion, so you need to seal it before laying track.

Even ballasting the track can cause moisture damage unless the Homasote is properly sealed.

MICORE

Micore is made up rock wool, a mineral fiber material, and can be used like Homasote for both sub-roadbed and roadbed. The smoother, uniform surface of Micore allows it to be used as track roadbed more easily [10]. When cut into roadbed sections, the



8. These two Homasote roadbed halves have quite a height difference.



9. The track level shows a tilt of 1.9 degrees, enough to cause trouble.

two joining sections will match up nicely, and a simple sanding will complete the job.

The second difference is the ability of each material to hold track nails and spikes. With Homasote, you can pull a spike or nail, then replace it in the same hole, and it will still grip the nail. While Micore holds a nail or spike well initially, the same hole will not grip as well the second time without glue.

SPLINE

A popular form of sub-roadbed is spline made from laminated hardboard (Masonite). Any flexible material like thin plywood, Homasote, Micore, or others can be used to build spline. I've heard of foam-board laminated with hardboard used for spline.

Regardless of the material used, there are two forms of spline sub-roadbed. The first is solid spline where each layer of spline is laminated to the next [11]. The second is block-spline, where blocks of wood are used to separate the spline layers [12].



10. Micore has a much smoother, more-uniform surface than Homasote.



11. Solid spline sub-roadbed.



12. Block-spline sub-roadbed.



In both cases, the spline is built in place. The open architecture of block-spline requires the addition of a surface layer of Homasote or Micore to form the sub-roadbed. Both forms of spline can be uneven, so sand the surfaces smooth, uniform, and flat.

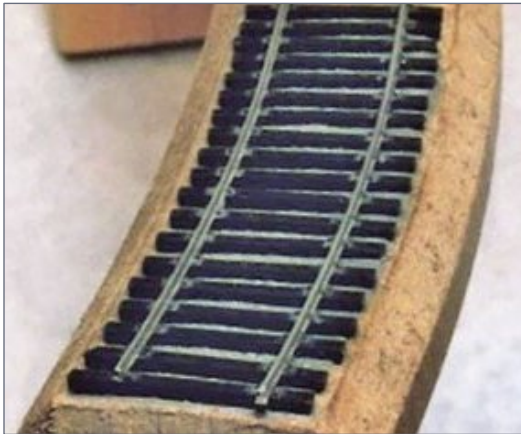
Sometimes, solid spline is used as roadbed [13]. Solid spline's extreme hardness makes it difficult to drive track nails or spikes without drilling pilot holes. Many people use glue to secure their track instead.

As with all other types of spline sub-roadbed, the rules of grade and flatness apply. This website has a short blurb on spline: www.trackplanning.com/splines.htm

FOAM

I love foam-board for scenery work, but not so much for a track roadbed or sub-roadbed. Don't take this wrong; I know of modelers who have used foam-board effectively and have flawless trackwork. Foam-board is flat, easy to install, and easy to carve to shape as roadbed [14].

The problem comes when folks do scenery or maintenance work later, and have to lean on it or place heavy tools on it. The foam-board



13. Solid-spline roadbed.



14. Styrofoam insulation is good for scenery.

can compress under weight and not return to its original shape, leaving a dip or depression.

What's sneaky about foam is, suddenly your train dips un-prototypically to one side, or worse, derails. We all know not to step or lean on the track or roadbed, but sometimes it happens anyway.

Most of the time, it's easy enough to fix by shimming the track. If the track is severely depressed or bent, cut out that section, level the roadbed, and replace the track.

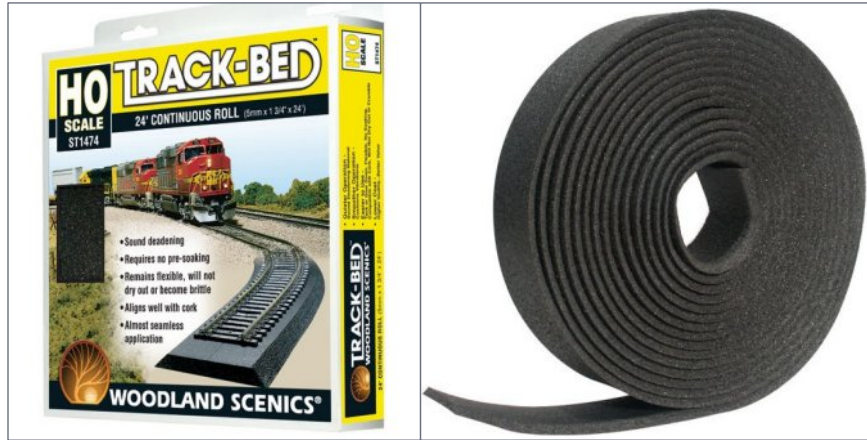
Woodland Scenics makes a foam roadbed [15]. When I encountered the product several years ago, I did not understand how to use it, so I needed to adjust my methods to accommodate the new material.

The roadbed needs to be put down using a tacky glue. Woodland Scenics recommends their Foam Tack Glue, though I've found Aleene's Tacky Glue to be a good substitute [16]. In any case, do not use spikes or track nails, as they will distort the foam roadbed and the track you are installing on it.

CORK

Like most modelers, the first roadbed material I used was cork. When I grew past the snap-track and moved on to my first real layout, cork was the roadbed material of choice [17].

I used nails to fix it in place early-on, but it didn't take long to learn each nail used needed to be set with a nail set. This is an effective method of securing the cork to the layout, but it makes



15. Woodland Scenics foam Track-Bed.



16. Woodland Scenics Track Glue or Aleene's Original Tacky Glue both work well with Woodland Scenics Track-Bed. Always use glue with the product, and avoid nails.

changing the layout tedious. Pulling each of those carefully placed nails without damaging scenery or structures is a challenge.

It did not take long to learn that cork roadbed glued to the sub-roadbed was easier to modify. I used pins or thumb tacks to hold the cork in place while the glue dried. I lightly sanded any humps or dips smooth, and filled remaining dips with spackling.

I've talked about leveling by sanding. Wrap a sheet of sandpaper around a short length of wood 2x4, or buy a hard rubber sanding block [18]. ☑



17. Cork roadbed.



18. A sanding block like this is handy for leveling roadbed.



JEFF PALMER



Until Jeff retired, he spent 50 years developing software, and 25 years as a college professor. During that time, as now, he was a modeler. That means that he loves to build structures, bridges, scenery, and locos. More specifically, his interest is in logging and mining, which by definition

means, he likes narrow gauge. It's the free form, and ruggedness that surrounds logging and mining railroads; the scenery and landscape.

He is always on the lookout for new techniques, and tools that improve the hobby. Model railroading allows him to expand his skill set, work with his hands, and share with his friends the things he has learned.

About 2 years ago, he completed his MMR (Master Model Railroader) certificate from the NMRA. During that journey, he had the privilege of meeting many of the modelers he looked up to like Gil Freitag, Duane Richardson, Chuck Ellis, George Sellios, Marc LaChey, Dave Revelia, Dave Frary, Scott Mason, and others. His goal is to be recognized in this group someday. ■

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Model Railroad Hobbyist | August 2024



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Proto 2000 Steam Loco - DCC sound and lighting

YouTuber **Daniel Cortopassi** demonstrates installing DCC sound and lighting into a Proto 2000 0-6-0 steam locomotive.

Dan shows the entire process of adding an ESU LokSound 5 decoder with lights to this loco. We found his method of making light lenses to be extremely clever. Dan also shows how he solves various install challenges along the way, which means his install methods can be generalized to many other steam locomotive models, making this a quite useful how-to. ☑



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AUGUST NEWS column



Model Railroad Hobbyist | August 2024

RICHARD BALE AND JEFF SHULTZ
REPORT THE LATEST HOBBY
INDUSTRY NEWS ...

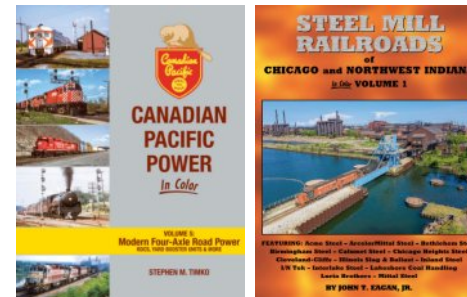


INDUSTRY NEWS

Conowingo Models, a wood craftsman kit manufacturer, has announced that it purchased Sugar Pine Models. The Sugar Pine product line will be modernized with laser-cut wood and 3D-printed parts. The first three Sugar Pine kits that will be reintroduced are the Georgetown Firehouse, Farm Style Water Tank, and the Water and Tool Car, all in HO scale.

Info: conowingomodels.com

NEW PRODUCTS FOR ALL SCALES



New all-color publications coming from **Morning Sun** include volume five of *Canadian Pacific Power In Color*. Author Stephen M. Timko features CP's modern four-axle road power, RDCs, Yard Booster Units and other

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

LARGE SCALE PRODUCT NEWS | 2

motive power including trackmobiles, maintenance vehicles, leased units, and cabooses (vans).

Morning Sun's new *Steel Mill Railroads of Chicago and Northwest Indiana* examines the steel industry in the title region including the locomotives, specialty cars, and facilities that help to make steel and its byproducts. The famous Hot Metal Train is covered in detail. Most of the photographs were taken within the confines of the mills themselves and show the daily operation of the steel mill railroads!

Info: www.morningsunbooks.com

ELECTRONICS



Broadway Limited Imports is introducing the CV Setter, a device for setting CVs on DCC equipped locomotives directly. Essentially a programming track controller, it allows the modeler to read and set CVs one at a time on the locomotive on the track it is connected to. All settings are made

through pushbuttons on the device.

Info: broadway-limited.com

LARGE SCALE PRODUCT NEWS

PIKO America has released several new G scale items in seasonal themes. Scheduled for release this month is a 2-6-0 Mogul decorated in a Halloween scheme. The locomotive features smoke and analog sound. It is available separately as well as in a set with two freight cars and a caboose.

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A radio controlled North Pole Express Mogul with different details is available separately and in a freight car set.



North Pole Express cars available in different Christmas themes include a wood caboose, two coaches and two combines.



Also new from PIKO American is a battery powered PRR 25-ton diesel switcher that features radio control and sound.

Info: www.piko-america.com

O SCALE PRODUCT NEWS



Atlas O has released information on new models available for preorder with delivery between next

month and the second quarter of 2025. All models mentioned in this report will be available for both two-rail and three-rail operation. At the top of the list is a Premier series GE C44-9W diesel electric locomotive. In addition to the special Alabama & Gulf Coast Railway Veterans paint scheme shown above, the model will be available decorated for Norfolk Southern, Santa Fe, Southern Pacific and Union Pacific.



Additional O scale motive power is coming from Atlas in the form of an EMD GP38-2 diesel electric road switcher. Decorating schemes will be available for Amtrak Phase VII, BNSF, Canadian Pacific, Chessie System, Conrail, Rock Island, Vermont Railway, Genesee & Wyoming (Heritage scheme) and Reading & Northern (40th anniversary scheme).



Atlas O scale Premier Madison heavyweight passenger equipment is scheduled for release during the second quarter of 2025. A four-car set consisting of a baggage car, two coaches and an open observation car will be available decorated for Central of New Jersey, New Haven, Santa Fe, Union Pacific and Western Maryland. A dining car and combine in a two-car set will be available for the same road names.



More modern passenger equipment is coming from Atlas O in the form of a Premier series Amfleet car decorated in Amtrak Phase III scheme.



Heading the list of freight equipment coming from Atlas O is a Premier series Funnel Flow tank car. The popular beer car will be available decorated for PJBX-National Bohemian Beer, PJBX-Schmidt Beer, PJBX-Stag Beer and PJBX-Pabst Blue Ribbon Beer. Non-beer schemes include ASRX-Amstar Domino Sugar, GATX-Trusweet, UTLX-Thiele and UTLX-Specialty Minerals.



Atlas is preparing to release a Premier series railroad crane and crane tender. The O scale models will be available separately in the following road names: Burlington Northern, Erie Lackawanna, Guilford, Illinois Central, Santa Fe and Seaboard Coast Line.



A 55 ton hopper car in the Premier series is also included in the 2024 Premier Catalog. Featuring a die-cast centerbeam, chassis and Andrews trucks, the model will be available decorated for B&O (Chessie System), Chicago, Burlington & Quincy; Lackawanna, Rock Island, and Toledo, Peoria & Western.



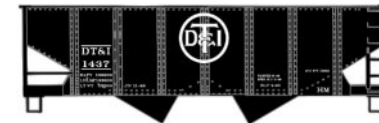
Scheduled to arrive in time for service this winter is an O scale snow plow. Road names include Boston & Maine, Canadian Pacific, Canadian National, Chessie System, Chicago & North Western, PanAm Railways and Pennsylvania Railroad.



Atlas O is preparing a 40' PS-1 boxcar decorated in four seasonal paint schemes including Christmas, Thanksgiving, 4th of July and Halloween.

Info: www.atlasrr.com

HO SCALE PRODUCT NEWS



New economy priced HO scale car kits from **Accurail** include this Detroit, Toledo & Ironton class HM coal hopper. The model is based on a prototype USRA design built in 1923.



Accurail is offering this Union Pacific triple-bay ACF covered hopper individually and in a three car set with different numbers.

Also new from Accurail is a kit for this 36' Southern Railway double-sheathed wood boxcar. The HO scale model is based on a prototype built in November 1923. All Accurail car kits come



with appropriate trucks with Delrin wheelsets and Accumate knuckle couplers.

Info: www accurail.com



R. Bale

EMD SD90MAC DIESEL LOCOMOTIVE

Introduced by EMD in 1995, the SD90MAC was intended to become that builder's most-powerful single-engine diesel locomotive using the newly developed 6,000hp 265H prime mover. Features on the new SD90MAC included radial steering trucks with AC traction motors and an isolated safety cab mounted on shock absorbers. Unfortunately, the new 265H engine was experiencing technical problems which led to the first group of SD90MACs being delivered with EMD's 4,300hp prime mover with the intention of retrofitting the locomotives with the more powerful 265H at a later date. Technical problems with the 265H were never fully resolved and no conversions were made. Over 400 SD90MAC locomotives were built with the 4,300hp prime mover.

Athearn's production schedule for December 2025 begins with a Genesis SD90MAC. The list of features on the HO scale locomotives include rubber trainline and MU hoses, etched see-through steps, sander lines, uncoupling levers, detailed cab interiors, walkway tread, windshield wipers and wire grab irons. The fuel tanks will be detailed with fuel fillers, gauges, and breather pipes. The locomotives will have LED lighting including number boards and truck lights.



Road names include Union Pacific units with front ditch lights, an EOTD, road

number specific air horns and nose door details.



SD90MACs decorated for Norfolk Southern will have both front and rear ditch lights, a front snow plow and nose mounted number boards.



CIT Equipment Finance Corp SD90MACs decorated in both blue and maroon schemes also have front and rear ditch lights, nose mounted number boards and a front snowplow.



San Luis & Rio Grande SD90MACs and units wearing the Iowa Pacific Holding scheme share details including number



boards mounted on the nose and ditch lights and a snow plow in the front.



Athearn has included a Burlington Northern fantasy SD90MAC in this release. The BN unit features front ditch lights, nose mounted



number boards and a front snowplow.

The heavy cast chassis features Athearn's Genesis driveline with a 5-pole skew wound motor, precision flywheels, all-wheel electrical pickup and all-wheel geared drive. The SD90MACs can handle an 18" track radius, however, a 22" radius is recommended for both appearance and reliable operations.

The SD90MACs will be available with onboard DCC SoundTraxx Tsunami2 sound with dual cube speakers. Non-sound DCC-ready units will have a 21-pin NEM connector for installations of an aftermarket decoder.



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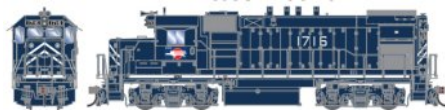
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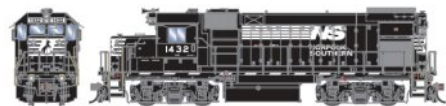
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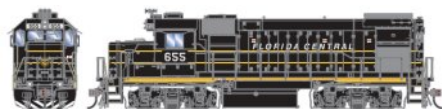
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Athearn's December 2025 production schedule includes a Genesis GP15 diesel road switcher. In addition to new paint schemes the models will be upgraded with operating classification lights and number boards. Additional features include operating number boards, uncoupling levers, MU and trainline hoses, see-through cab windows with full cab interior, windshield wipers, wire grab irons and detailed fuel tanks. A heavy die cast metal chassis will have a Genesis driveline system with a 5-pole skew wound motor and machined flywheels.



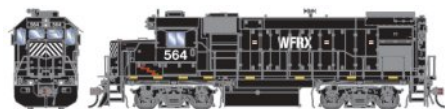
Athearn Genesis GP15 diesels decorated for Missouri Pacific and Norfolk Southern are ex-CR units with front and rear ditch lights and Leslie RS3L horns.



Florida Central and Patriot units will have operating number boards, Blomberg trucks and front and rear ditch lights.



The Patriot model will be painted and will include customer applied decals for Louisiana & North West, Piedmont & Northern, Sacramento Valley, Tennessee Southern and Utah Central Railroad.



A Wells Fargo Rail GP15 will have a cab air conditioner and a Nathan K3LA horn.



Athearn will include an EMD Demo GP15-1 in this release with operating classification lights, a Leslie horn, Blomberg B trucks and a small snowplow at the front. Athearn will also offer ex-Conrail GP15s decorated

for LTEX in three paint schemes: blue/black, red/gray and orange/green.



Completing the December 2025 production run GP15s is a high hood Southern Railway unit set up for operation with the long hood forward.



Athearn is retooling its original F7A unit as an early Phase 1 F7A. It will be marketed as an economy priced ready to run model under the Roundhouse brand.



A revised injection molded body with mostly cast on details will be fitted with an upgraded diecast frame with 5-pole motor, machined flywheels and all-wheel geared drive.



Two road numbers will be available for F7As decorated for Santa Fe, Denver & Rio Grande Western, Pennsylvania Railroad, Alaska Railroad, Great Northern

and Conrail.



Athearn is developing a Genesis version of an ICC caboose that will be available with sound.

Scheduled for release in late 2025, DCC controllable sound functions will include air horn or trainline air whistle, clickety-clack with optional wheel flat spot sounds, brake set/release sounds, emergency brake application sound, handbrake tie-down/release, adjustable flange squeal and bell sounds.



An ICC caboose decorated for the Kansas, Oklahoma & Gulf Railway will be available in five road

numbers. The KOG version will have end ladders, running boards, wind deflectors, window awnings and a toilet drainpipe.



Three road numbers will be available for an ICC steel caboose decorated for Missouri Pacific. Features include the addition of a battery box and the removal of ladders and running boards.



A Green Bay & Western caboose will have an operating roof beacon. The GBW cab will be available in one road number with end ladders and running boards. Note that three of the side windows have been plated over.

Features on all versions of the Genesis ICC caboose include interior seating, DCC controlled LED lighting, see-through platforms and steps, etched metal window and door screens, wire grab irons, uncoupling levers, trainline and brake hoses. Underframe details include air brake reservoir, control valve, and brake cylinder with plumbing and brake rods, and Barber-Bettendorf swing motion caboose trucks.



In addition to the fully featured Genesis ICC caboose, Athearn plans to also release a steel bay-window caboose in its December 2025 production

schedule. Most surface details will be cast into the injection molded body.



Road names on this release will be Southern Railway, CSX, BNSF, Kansas City Southern, Western Pacific and Burlington Northern. The HO scale model comes with Barber-Bettendorf swing motion caboose trucks.

Info: www.athearn.com



Bowser expects to deliver its GMD SD40-2W late this year. Reservations for the HO scale Executive Line

model are still available. The extensively detailed Canadian National model features numerous road number specific details. All units will have separate air hoses, windshield wipers, grab irons, uncoupling bars, a can motor, flywheels, nickel silver wheels and knuckle couplers. Lighting features include operating head, snow shields, winterization hatches and classification, stepwell, walkway and track inspection lights.

All class GF-30T versions of the CN GMD SD40-2W will have ditch lights, dynamic brakes, standard cooling fans, chicken wire grilles, a winterization hatch and a non-silenced exhaust stack.



Locomotives #5327 and #5345 will be decorated in the as-delivered Sergeant Stripes and the horn mounted over the bell. All other versions will have the horn mounted in the middle of the body.



Locomotives #5329 and #5336 will also be in Sergeant Stripes. They will have snow shields and their horns have been moved to the middle of the body.



Locomotive #5388 will be similar to all class GF-30T units except it will be decorated in the CNNA map scheme. The CNNA map scheme on locomotives #5339, #5336 and #5341 will include a web address.



Dave Marshall photo

All class GF-30U locomotives will have corrugated grilles, Q-fans, winterization hatches, exhaust silencers and horns mounted in the middle of the body. This group was delivered without dynamic brakes, however, some had them added later. Class GF-30U locomotives #5356 and #5363 will wear the CNNA map scheme.



Dave Marshall photo

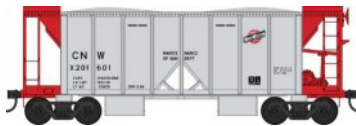
CN SD40-2Ws #5357 and #5361 will be the only class GF-30U models decorated in Sergeant Stripes.



Dave Marshall photo

Class GF-30U locomotive #5362 will wear a CNNA map and have operating strobe lights. All GMD SD40-2W models in this release will be available

with a choice of analog (DC) operation with a 21-pin plug or DCC with a LokSound V5 decoder.



Bowser has announced a July 2025 delivery date for a new production run of HO scale 70-ton ballast cars with side chutes. The deadline for preorders is September 6, 2024.



Road names will be Albany & Eastern, ATSF, Burlington Northern, CNW (gray), CNW (orange), Conrail (yellow), CSX (orange), Grand Trunk Western, Kansas City Southern,

Milwaukee Road, Morrison-Knudsen, Penn Central and Reading & Northern.



Models with data only will be available in a choice of gray or orange bodies.

Info: bowser-trains.com

Concept Models has released a new QTTX flatcar model in HO scale. Consisting of a scale 68' deck on two double-truck bolsters,



the kit includes 3D-printed parts and cast resin detail castings and assembly

hardware. Truck and couplers are not included. Info: www.con-sys.com



R. Bale

EMD GP16 LOCOMOTIVE

In a successful effort to avoid the cost of purchasing new motive power in the late 1970s, Seaboard Coast Line rebuilt 155 aging GP7, GP9 and GP19 locomotives. The program included replacing dynamic brakes with a new type 26L air brake system, installing a new high-voltage cabinet, remanufacturing the Blomberg B two-axle trucks, generators and traction motors; improving visibility by lowering the nose of the car body, retrofitting the cab with a standard AAR control stand and upgrading the prime mover with EMD 645 components that resulted in a 1,600hp rating which gave rise to the GP16 designation. But wait...there's more! In the late 1960s the Missouri Pacific repowered their entire roster of high-hood Alco RS-11s with EMD 567 series diesel engines. MP designated them GP16 presumably to reflect their new horsepower rating. In 1978 the ICG shops at Paducah rebuilt six GP7s for Clinchfield and named them GP11. When the CSX merger occurred in 1973 the GP11s were grouped as GP16s.



InterMountain Railway has just released three new HO scale models to its dealer network. Heading the list is an EMD GP16 road

switcher with a choice of an ESU LokSound decoder or an ESU LokPilot non-sound DCC decoder. An optional DC-only plug is also available.



Road names on this release are Seaboard System, Genesee & Wyoming York Railroad, Pee Dee River, Everett Railroad, South Carolina Public Railway,

Buckingham Branch Railroad, Burlington Junction Railway and South Central Florida,



A 10,000 gallon welded tank car with etched metal walkways has also been released recently by InterMountain.

Decorating schemes for the HO scale model include Deep Rock, Union Tank Car, Shipper's Car Line, U.S. Army, Frisco, Gulf Oil and Dupont.



A July release of HO scale 42' fishbelly flat cars should now be available at participating dealers. Six numbers each are available for Denver & Rio Grande Western, Chesapeake & Ohio, New York Central, Chicago & NorthWestern, Rock Island, Frisco, Boston & Maine, Duluth South Shore & Atlantic.



A Southern Pacific version of InterMountain's 42' fishbelly flat car

is available exclusively from Reed's Hobbies at reeds-hobbies.square.site.



InterMountain is booking preorders for an FMC 5283 cu. ft. boxcar with double doors. Reservations for the HO scale model are due September 30, 2024, with availability scheduled for summer 2025.



Early production of the FMC prototype had X-panel roofs with riveted seam caps. Later production cars had an X-panel

roof with stamped and welded seam caps. InterMountain will offer both types including a new cushion coupler pocket and trombone

style uncoupling bar. InterMountain's 5283 boxcars will have Hydra-Cushion underframes except the Southern Pacific version which will come with a Keystone cushioning system. Some SP cars were repainted for Golden West.



Road names on the initial release will be Cotton Belt, CIT Equipment Finance, Arkansas & Missouri, Bangor &

Aroostook, Minneapolis Northfield & Southern, Procor Lease, Southern Pacific, Golden West and GVSR (ex-Golden West).

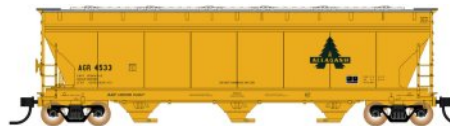


Advance orders for freight cars decorated for Mike Confalone's HO scale Allagash Railway are also being booked by InterMountain. Mike Confalone's

proto-freelanced Allagash Railway and shortline Oxford County look, feel and operate like real railroads. Serving Maine's paper industry, the AGR and OCTY work several large online mills hauling finished paper products and receiving inbound raw materials. For hobbyists following the Allagash, InterMountain is preparing several freight cars with the Allagash decorative scheme. The green Allagash model shown above is a 40' 10-6 welded boxcar with low ladders and high brake wheel.



Brown and green versions of a 50' PS-1 cushion boxcar will be available decorated for AGR.



This 4650 cu. ft. triple-bay CenterFlow covered hopper will be available in six numbers.



Mike Confalone's Oxford County short line is well represented by an FMC 5283 cu. ft. boxcar with double sliding doors.

Info: www.intermountain-railway.com

Moloco has released new prototypically accurate HO scale models of Brainerd-built Northern Pacific boxcars with double sliding doors. Six road numbers are available in four extensively researched decorating schemes.



A Northern Pacific car from 1956-57 features arched NP lettering and a 5' Monad herald.



This 1957 version features NP shadow scheme with an 8' NPR Monad. A 1969 green version of this scheme is also available.



Completing this release is a 1972 BN repaint.

Info: www.molocotrains.com



forward with production tooling. A final order deadline of October 15, 2024 has been established to assure availability on the initial release.



For detailed information including a summary of features on the subway cars and Toronto station see the January 2024 edition of *MRH*.

Rapido Trains reports that preorders for its HO scale Toronto subway have comfortably exceeded the minimum required to move



Rapido is working on another production run of Budd RDC-Rail Diesel Cars in HO scale. This run will include new Santa Fe and Southern Pacific schemes as well as a conditional run for a repurposed CN Test Track Evaluation System. The run will include a Budd RDC-9; a special powered trailer built for the Boston & Maine in 1956.



RDCs in this release will be available decorated for ATSF, Southern Pacific,

Yreka Western, Boston & Maine, Canadian National, MBTA, Metro-North, New Haven, NJ Transit, SEPTA, Susquehanna and VIA Rail Canada. An RDC-1 rebuilt and decorated by CN as Test Track Evaluation Systems car number 1501 is included on a conditional basis.



Features include full underframe piping and conduit, individual grab irons

and front door chains, etched-metal roof grilles and fan covers, lit number boards and class lights, a MoPower capacitor and numerous road name-specific details. The unique Budd trucks will be either fabricated or cast truck as appropriate.

The order deadline, including the conditional deadline for the CN 1501 model is October 15th, 2024. The delivery schedule is still to be announced.



R. Bale

GENERAL ELECTRIC U25B LOCOMOTIVE

The U25B (nicknamed U-Boat) was the first commercially successful domestic diesel electric road locomotive designed, built, and sold by General Electric. Introduced in April 1960, the U25B was the first locomotive powered by GE's FDL-16 engine. The U25B was the highest-horsepower four-axle diesel road locomotive in the U.S. at the time of its introduction. Prior to the U25B, GE had not been successful at breaking into EMD's dominant position in that market. The U-Boat put GE on the road to becoming the top locomotive producer in the U.S. GE introduced many innovations to the diesel locomotive market including a pressurized car body and a centralized air processing system that provided filtered air to the engine and electrical cabinet, thus reducing maintenance.

Rapido is planning another production run of its HO scale General Electric U25B road switcher. The run will include an early version of the U28B. Both high-nose and low-nose variants will be included in this new run.

Features include new Phase IV units representing late U25Bs and early U28Bs, working frog lights on Rock Island and MEC models, improved handrails and high-short hood versions. Road specific



variants include single or double front windows, side sill mounted handrails on Phase IV units, high or low side doors, battery box doors and different exhaust stacks. Sound equipped models will have ESU LokSound and MoPower capacitor.



Road names available in this release will be Burlington Northern, Conrail, CSX (Family Lines patch), Family Lines (L&N sublettering), Maine Central (U28B / ex-Rock Island), Milwaukee Road, Pittsburgh & Lake Erie, Rock Island, Southern Pacific and a high-nose St. Louis-San Francisco.



The order deadline and delivery schedule for the U25B locomotive are still to be announced.



Rapido has added five additional paint schemes to its previously announced Procor GP20 tank car (see *MRH* May 2024 for details).



The new schemes for the HO scale model include UTLX (As delivered with split P logo, era 1969), PROX (Patched split P logo, 1983), PROX (Late/old logo, 1990), PROX (Late repaint, 2005)

and Government of Alberta (UTLX, 1970).



Each scheme will be available in six-packs with different numbers as well as single cars. The Alberta car will be available singly and in three-packs. The order deadline is September 16, 2024. Delivery is TBA.

Info: www.rapidotrains.com

Tangent Scale Models has released a group of HO scale steel bay-window cabooses based on prototypes originally built for Rock Island Lines by the International Car Corporation. Following the Rock's bankruptcy in 1980 these cabooses were acquired by Union Pacific. The prototype cabooses were delivered to Rock Island in two slightly different body types.



The paint scheme on this caboose represents the initial 1967 release with a black roof, ladders and Apex running boards.



RI caboose number 17207 replicates ICC's 1971 production with a slightly taller body and 50-ton Rockwell express trucks. All other models in this release ride on

70-ton Barber caboose trucks. Note the silver roof and lack of running board and end ladders.



This model represents a 1979 white Rock repaint. Upgrades include window screens and the addition of a battery box.



Caboose 24605 replicates ex-Rock white cars patched for Union Pacific in 1980.



This caboose represents an ex-Rock Island car patched for UP in 1980 and leased to Chicago NorthWestern.



Beginning in 1981 UP repainted the former Rock bay window cabooses in Armour yellow. They were classed as CA-13 and wore a variety of slogans.

All of the models in this release feature Waugh Cushion Underframes, full brake details, and correct electrical conduits, roof vents, toilet bents, see-through steps and end platforms. The models come with Kadee couplers. DC and DCC compatible track-powered lighting is controlled by a wand included with each car. Unpainted kits are available for each of the body styles

Info: www.tangentscalemodels.com



A new EMD NW2 diesel switch engine is on **Walthers** spring 2025 delivery schedule. The Mainline series model will be available for DC operation and

with a factory installed ESU Sound/DCC decoder. Road names on this release will be Baltimore & Ohio, Indiana Harbor Belt, Frisco, Penn Central, Great Northern and Rock Island.



The HO scale model is based on Phase V prototype built in 1949 with louvered radiator grilles, dual tall conical exhaust stacks, a small front radiator grille, six

louvered side doors with a letter board gap, a large center cab window and factory installed grab irons. Road name options include with or without footboards and three styles of headlights.



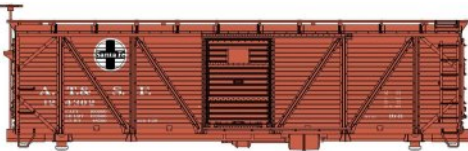
cars this fall. The Mainline series cars will have tinted windows, interior seats, and installed diaphragms. The cars will be equipped with Proto MAX metal knuckle couplers and GSI roller-bearing trucks with 36" machined metal wheels. The injection molded bodies will have drill starter points for customer installed grab irons using one of Walther's Horizon Fleet Car Detail Kits. Each model includes close-coupling drawbars that may be installed for larger radius curves.



(narrow stripes), Amtrak Phase III (wide stripes) and Amtrak Phase IV. The coach will also be available in Amtrak Phase VI with a Travelmark logo.



Additional new HO scale rolling stock coming from Walther's during the winter of 2025 includes an Amtrak Material handling car MHC-2. The HO scale Mainline model is based on a 60' car built by Thrall that saw extensive service from 1988 through 2008. Amtrak decorating schemes will include Phase IV, Phase III and Phase III with a USPS emblem. Features include a diagonal panel roof, door locking wheel, snubber anchor details on the side and long wheelbase GSC trucks with 36" machined metal wheels.

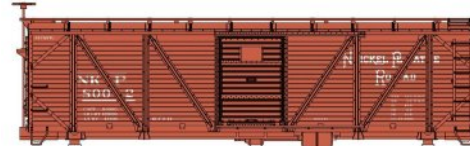


Walther's production schedule for winter 2025 includes a 40' ARA single-sheathed wood boxcar.

Walther's plans to release new Amtrak Horizon Fleet coaches and Café Club food service

This release will include a coach and a Café Club food service car decorated for Amtrak Phase III

The newly tooled Mainline series model represents a typical outside braced wood car in service from the 1920s through the end of WWII. The model will have a flat steel roof with wood running boards, Murphy ends with a horizontal brake wheel mounted on a vertical shaft, Bettendorf-type plain-bearing trucks with 33" machined metal wheels and knuckle couplers.



Road names will include Santa Fe, Illinois Central, Chicago & North Western, Kansas City Southern, Nickel



Plat Road and Duluth, Missabe & Iron Range. Also coming from Walther's during the winter of 2025 is a new production run of Mainline series Trinity 50' RD-4 five-bay hopper cars. The HO scale model represents a coal-hauling prototype in service from the 1990s to the present day.



The model features an injection molded body on a heavy die-cast metal underframe. Separately applied details include the hopper mechanism, brake details and interior bracing. The model will come with Proto MAX magnetic metal knuckle couplers and appropriate trucks with 33" machined wheelsets.

The cars will be available singly and in three packs with different road numbers. Road names will include AEPX-American Electrical Power Service Corporation, COMX-Commonwealth Edison, IESX-Alliant Energy, VAPX-Virginia Power, Chicago & North Western, BNSF, Union Pacific and Norfolk Southern.

Info: www.walthers.com

N SCALE PRODUCT NEWS

Athearn has included an N scale steel bay-window caboose in its December 2025 production schedule.



Features on the N scale model will include axle-mounted generator where appropriate, a detailed underbody, correct antenna, marker lights, smoke jack and vent, end walkway tread and clear window glazing.



Road names on this release will include Southern Railway, CSX, BNSF, Kansas City Southern, Western Pacific and Burlington Northern.

Info: www.athearn.com



R. Bale

NW2 DIESEL SWITCHER

Electro Motive Corporation introduced the NW2 diesel switch engine in late 1939. With a rating of 1,000hp, the NW2 was considered quite powerful for a locomotive that weighed only 124 tons and was just a little over 44' in length. EMC, and subsequently EMD, built 1145 of the popular NW2 before production ended in 1949. More than 50 North American railroads purchased the popular switcher. Many NW2s, readily identified by their dual conical exhaust stack, are still in service on short lines, light industrial applications and tourist lines.



Broadway Limited is booking reservations for a new production run of N scale EMD NW2 switch engines. The deadline for ordering to ensure delivery is September 26, 2024. Availability is planned for spring 2025.



The models will have a die cast body and chassis with separately applied details including handrails, grab irons, smokestack, horn, bell and metal Kadee compatible couplers. Models with a choice of non-sound or Paragon4 DCC sound will be available.

Road names for this new release will be Santa Fe, Great Northern, Indiana Harbor Belt, Milwaukee Road, Reading, Rock Island, Union Pacific, New York, Ontario & Western; and Spokane, Portland & Seattle. NW2 switchers decorated for SDWZ-South Dakota Wheat Growers and WSOR-Wisconsin & Southern will be available exclusively through Hobbytown.

Broadway Limited has extended the order deadline for its N scale E7's, E8's, and E9's locomotives to August 29, 2024. Availability is planned for January 2025.

Info: www.broadway-limited.com



InterMountain Railway is preparing eight new paint schemes for an N scale version of an ACF 4650 cu. ft. triple-bay covered hopper car.



The new road names will include Burlington Northern Santa Fe, Burlington Northern,

Cottom Belt, CSX, Far Mar Co, Dry Branch Kaolin, POOR railway and Allagash.



Each model will be detailed with an etched metal roof walk, metal knuckle couplers and appropriate trucks with

machined metal wheelsets. The deadline to assure availability on this release is September 30, 2024. Delivery is planned for summer 2025.

Info: www.intermountain-railway.com

JTC Model Trains has released a set of six 40' HC reefer containers decorated for Crowley. The pack includes four specific white Crowley containers, one Crowley unit that include Seaco decals and the new Crowley logo and one container decorated for Wreaths Across America.



Containers in the six pack are equipped with a mixture of ThermoKing and Carrier refrigeration units.

Info: jtcmodeltrains.com



Kato USA has scheduled a 2024 winter release for an all-new N scale model of Amtrak's Pacific Surfliner. The initial release will be available in a four-unit base set, a four-unit add on set, and a limited edition eight-unit set.

The Surfliner, which serves the coastal communities in Southern California between San Diego and San Luis Obispo,



operates in push-pull service with a Siemens SC-44 Charger on one end and a cab car on the other. The Surfliner version of the SC-44 has a shorted nose

section, a unique cowl and destination markers.



Additional features scheduled for the new N scale model include directional LED headlights, illuminated number

boards and see-through side vents. The locomotives will be DCC friendly with space for a speaker available in the fuel tank. The bi-level cab coaches feature directional lighting with alternate illuminating head and tail lights with an on/off switch for mid-train operation.

Info: www.katousa.com



N scale passenger equipment scheduled for release by **RailSmith** this

summer includes Disney's Lilly Belle, and the Disney monorail on a flatcar, and the Texas Special McCallsburg' Sleeper. The fluted coaches for the Texas Special, Santa Fe and Southern Railway will arrive in September 2024.

Info: lowellsmith.net



Micro-Trains Line has introduced an N scale 60' Thrall flatcar. This is

a welcome new body type body type from M-T. Features include a wood deck and tie-down channels. The initial release of the new model is decorated for OTTX with a build date of April 1974.

AUGUST N SCALE PRODUCT NEWS | 28



Also new from Micro-Trains is a Pacific Fruit Express class R-40-10 ice reefer. The N scale model is based on a prototype built in the 1940s that was upgraded in the

early 1950s with electric fans and repainted in the new orange PFE paint scheme.



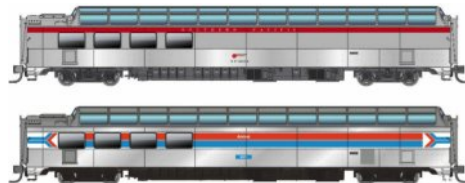
Also new from Micro-Trains is a Union Pacific 5053 cu. ft. boxcar with both a plug and sliding door.

Info: Contact a dealer.

Rapido Trains has announced three new N scale projects. Leading the list is a Southern Pacific Dome Lounge car. The carefully researched model will feature full interior and underbody details, flicker-free track-powered interior lighting, and magnetic knuckle couplers.



Six variants will be available on the initial release including cars with fluted and flat sides. Southern Pacific cars with fluted sides will be available decorated for Daylight, Overland and General Service. Cars with flat sides will be available for Amtrak Phase I, Canadian Pacific and SP General Service.



The order deadline and delivery schedule are TBA.

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Rapido's second new N scale project is for Chicago Budd Gallery Cars. The prototype cars were owned and operated by CB&Q, later Burlington Northern, and finally Metra.

Decorating schemes on

Rapido's initial release will include Burlington Northern, Metra (BN Logo), Metra (BNSF circle-cross logo), and Metra (BNSF swoosh logo).

Features on the gallery cars will include correct HEP underbodies with molded conduits, letter boards with multiple pad-printed options, working head, marker and ditch lights, working beacon and Gyalite (where appropriate), and tinted windows.

This is a conditional announcement with an order deadline of October 15, 2024. If sufficient preorders are received the project will go forward. Orders placed before October 15th will also receive special early bird 5% discount pricing.



Rapido has also announced a conditional release for the Metra F40PHM-2 locomotive in N scale. The models will be based on the last 30 F40PH variants that Metra ordered in 1991.

Towards the end of 2016,

the F40PHM-2s were sent out to Progress Rail for rebuilding and application of the new faded paint scheme. One rebuilt unit received a special CB&Q-inspired heritage scheme.

Decorating schemes on Rapido's initial release will be Metra (Blue, late 1990s+), Metra (Blue, Operation Lifesaver, late 1990s+), Metra (Faded, 2017+) and Metra (CB&Q Heritage, 2019).



Features on the N Scale model include correct "Winnebago" style front, dual rooftop air conditioners, working head, marker, backup and ditch lights, working beacon and Gyalite, wire grab irons and correct pilot plow or snowplow as appropriate.



The conditional order deadline for the N scale F40PHM-2 locomotive is October 15th, 2024. The delivery schedule will be updated if preorders reach the minimum target.



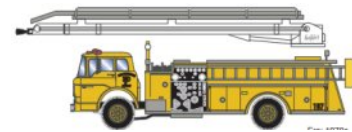
Info: www.rapidotrains.com

STRUCTURES AND SCENIC SUPPLIES



and photo-etched ladders.

Athearn plans to release an HO Ford C fire truck with vinyl tires. The model is equipped with a Telesquirt telescoping boom with a fire monitor



Six versions of the firetruck will be available including one yellow, one orange, two red and two red and white decorating schemes.

Availability is scheduled for December 2025.



Also coming late next year is a group of HO scale bay window cabooses that have been converted to food concessions.



The decorating schemes include Trenes Tacos, Popcorn Palace, Coffee Caboose and End Of The Line BBQ.



The models will be detailed with an industrial kitchen exhaust vent, menu boards, stairs and service platform,

awning, lit dual-sided reader board sign and a lit barn or bell style exterior lights. The model will require an accessory power supply for lights and the reader board.

Info: www.athearn.com



Inter-Action Hobbies has two new HO scale kits. The first is a Portable Office Trailer kit, representing a modular building found at construction sites and other locations needing temporary space for offices,

security posts, and the like. Measuring 1.4" wide x 3.3" long x 1.6" tall, the kit consists of laser cut and engraved resin impregnated board construction. Other laser cut parts include the entrance stairs, walls, baseboard heaters, built-in desks and shelves, floor, and foundation parts. Clear window glazing is also included. 3D-printed details include an air conditioner and supports, air exchanger, exterior wiring details, non-lit entry light fixture, door handle, roof vent stack, and cribbing supports. Waterslide decals and instructions are also included.



The second kit is a small office interior detail kit that can either go with the portable office trailer kit or in any office scene. It consists of two desks, one bookshelf, a worktable, and four

baseboard heaters laser cut out of resin impregnated board. Multiple 3D-printed detail parts include three office chairs, three computers, three monitors, three keyboards, two fire extinguishers, eight books or binders, two first aid kits, a water cooler, a microwave oven, and three trash cans. Some assembly is required, and instructions are included.



In both O and HO scales, Inter-Action Hobbies has released the Crazy Cat Lady Accessory Kit. Consisting of 3D-printed resin details, the kit includes 17 cats, 3 cat condos of varying heights, 1 kitty tent, 3 feeding stations, 2 open-top litter boxes, 1 covered litter box, and 1 cat lady figure. All the parts are separate and can be used to model different scenes. Info: www.interactionhobbies.com

Mine Mount Models has released the HO scale Crabby Jackie's, a new structure in the Echo Point Harbor series. Intended to be used as a kiosk or shed structure, it covers an area of 2.5" x 2.5" x 3".



With plywood used for siding materials and a laser-cut window and door, with the shed covered in task board material simulating a strapped tarpaper roof and walls. Two front walls (shed and

kiosk) and some resin detail parts are included, as are two picnic tables and a 3-inch section of picket fence.



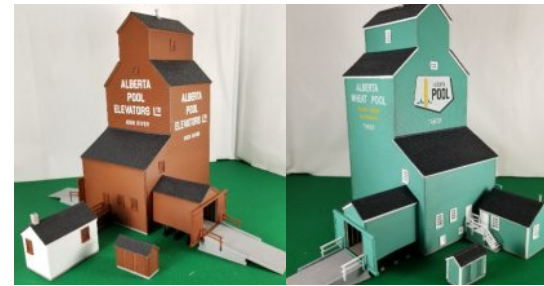
details that will enhance a scene.

Info: minemountmodels.com

Mine Mount Models has recently added many 3D-printed resin details in HO, S, and O scales to their product line. The details include birds, scales, spooled rope, crates, dumpsters, buoys, and other



miniprints has released a new 3D printed model of a vertical-mast diesel light tower. A model of a common item found at construction sites and other locations requiring temporary lighting, the vertical-mast diesel light tower consists of a trailer and a mast. The model is not lit but LEDs may be added for lighting effects. Info: www.miniprints.com



New from **Monashee Laser Engineering** is two new laser cut Canadian Grain Elevator kits in N scale. Based on original 1927 and 1948 Alberta Wheat Pool plans, the kits include laser cut floors, walls,

roof, trim, shingles, clapboard siding, and chimneys. Stripwood is included for interior framing. Including many 3D-printed detail parts, the models measure 8" x 7" (1927) and 8.75" x 6.25" (1948). Three separate sets of period appropriate decals are sold separately.



Coming soon is Ambler's Texaco Gas Station in HO scale. Also known as Vernon's Texaco Station and Becker's Marathon Gas Station, the prototype is in the Village of Dwight, Illinois on Route 66. The kit will include a 3D printed sign and two gas pumps.

Info: www.monasheelaserengineering.ca





Monster Modelworks has released a craftsman kit for John Burney's Carriage Shop. The HO scale model is based on a prototype structure built in Dublin, Indiana in the mid-1800s. The kit features 3D engraved aged American Bond brick walls with a stone foundation. Laser-cut parts include a wood storefront header,

roof trim, windows and doors; metal roofing material and signage. The assembled model measures 4.625" w x 5.8" l x 5.375" h. Monster Modelworks is marketed through Larkspur LaserArt & Promotions.

Info: www.larkspurlaserart.com



Rapido is developing a prototypically accurate tank and gun mount as loads for its HO scale DODX heavy duty flatcars. The prototype M60A1 tank, introduced in 1960, was

frequently seen loaded in pairs on the DODX's fleet of Magor flatcars. Rapido's HO scale versions will be available in a US Army scheme and in both summer and winter MERDC schemes.



Rapido's HO scale replica of a 5-inch/54-caliber Mark 42 gun mount is based on a light weight mount developed by the U.S. Navy in the 1950s to replace outdated WWII-era equipment. The gun

mounts will be decorated in standard US Navy haze gray paint. The order deadline is TBA with delivery planned for 2025.

Info: www.rapidotrains.com

Showcase Miniatures has released an N scale craftsman kit for Johnnie Belle's Bakery & Bistro. The kit consists of laser-cut parts,



peel and stick windows, a stainless photo-etched fire escape and numerous 3D cast resin details. The assembled structure has a footprint of 3.25" by 2.25" and is approximately 3.6" tall.

Info: www.showcaseminiatures.net



Coming soon from **Woodland Scenics** is the Moonlight Motor Court, a JustPlug lighting equipped model in the Built-&-

Ready series of prebuilt and painted scenery models. Produced in N, HO and O scales, the model consists of four buildings and a business sign, including exterior details such as window AC units, tables & chairs, trash cans, and a grill. The office includes a flag, ice machine, newspaper stands, and an ash tray.

Info: woodlandscenics.com

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! BRIEFLY NOTED AT PRESS TIME ...

Last August **Athearn** announced plans to produce N scale 40' Fruehauf Trailers, HO scale 53' Chassis and HO scale 53' Jindo Containers. Sufficient orders to justify creating production tooling were not received and all three items have been cancelled ...

Frenchman River Model Works has released an O/On30 craftsman kit for a Tobacco Shop and a Barber Shop ...

Kadee has released O scale 2 rail A-3 Ride Control, AR Bettendorf-style, Arch Bar and Barber S-2 trucks with 33" P48 wheels. Also new are ASF 100-ton roller bearing trucks with 36" P48 wheels ...

Roka Prototype Models is developing a new GATC 16,000 gallon HO scale tank car. Details including a release date will be available next month ...

Showcase Miniatures has introduced new N and HO scale craftsman kits for a mid-century gas station named Rollo Henry's. *MRH* will have photos and details for you next month ... ■



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Ongoing 2024

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available.

Info: www.opsig.org/Virtual

Archive: www.youtube.com/c/OperationsSIG

ONLINE, Zoom & YouTube, Wednesday & Saturday, see Facebook page. "New Tracks" Meetup, hosted by Jim Kellow, MMR.

Info: newtracksmodeling.com

YouTube: www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA

ONLINE, Facebook & YouTube, dates vary, see Facebook page. "NMRAX" organized by Gordy Robinson, Martyn Jenkins, Gert Muller, Jordan Kramer.

Info: www.facebook.com/groups/nmragroup

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics.

Archive: www.youtube.com/c/4DPNRMovies



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ONLINE, Zoom, Second Tuesdays, 8pm Eastern. "Off the Beaten Track" featuring Narrow Gauge layouts, clinics, and manufacturers.

Info: groups.io/g/NNG

AROUND THE USA, IN-PERSON, Various dates. ScaleTrains.com Road Trip.

Info: www.scaletrains.com/roadtrip



August - September 2024

CALIFORNIA, CROCKETT, August 24-25, 2024. Carquinez Model Railroad Society Open House. 645 Loring Avenue.

Info: cmrstrainclub.org

COLORADO, GREELY, September 21, 2024. Colorado Rail Proto Meet. Zoe's Café and Event Center, 715 10th Street (9am-5pm) and Colorado Model Railroad Museum 680 10th St. (5pm - 8pm).

Info: corpm.org

COLORADO, ESTES PARK, September 21-22, 2024. Rails in the Rockies 27, sponsored by Estes Valley Model Railroaders. Estes Park Event Complex, 1125 Rooftop Way.

Info: railsintherockies.org

GEORGIA, DULUTH (Atlanta), August 24, 2024. 65th Atlanta Model Train Show. Gas South Convention Center, 6400 Sugarloaf Parkway.

Info: www.gserr.com

KENTUCKY, BOWLING GREEN, August 24, 2024. The sHOW Modular Model Railroad Club Annual Summer/Fall Train Show and Sale. Historic Railpark and Train Museum, L&N Depot, 401 Kentucky St.

Info: www.facebook.com/events/7822652997826389

MAINE, AUBURN, August 17-18, 2024. The Great Falls Model Railroad Club open house during the Lewiston Balloon Festival. 144 Mill Street.

Info: greatfallsmodelrrclub.org

MARYLAND, BALTIMORE, September 6-8, 2024. Mid-Atlantic RPM. DoubleTree by Hilton BWI.

Info: www.marpm.org

MASSACHUSETTS, ORLEANS, Wednesdays, August 2024. Nauset Model Railroad Club Open House with G, O, S, HO, and N scale layouts. Rear of Hilltop Plaza, 180 Rte 6A.

Info: www.nausetmodelrrclub.com

MASSACHUSETTS, RAYNHAM, September 15, 2024. 24th Annual Old Colony Model Railroad Club model railroad show and sale. Taunton Inn & Conference Center, Myles Standish Industrial Park, Myles Standish Blvd.

Info: dingalls@comcast.net

PENNSYLVANIA, ALTOONA, September 14-15, 2024. 2024 Mike Phillips' N scale Weekend, presented by the Altoona Association of Model Railroaders. Blair County Convention Center, 1 Convention Center Dr.

Info: www.theaamr.org/n-scale-weekend

PENNSYLVANIA, HARRISBURG, September 21-22, 2024. Anthracite Railroad Modelers Meet XII. Reading Railroad Heritage Museum, 500 South 3rd Street.

Info: readingrrmm.com

TEXAS, AUSTIN, August 24-25, 2024. Austin 2024 Train Show. Palmer Events Center, 900 Barton Springs Road.

Info: austintrainshow.org

TEXAS, PLANO, September 28-29, 2024. 5th Annual Fall Plano Train Show, sponsored by the North Texas Council of Railroad Clubs. Plano Event Center, 2000 East Spring Creek Parkway.

Info: www.dfwtrainshows.com/page/fall-plano-train-show

Future 2024 by location

CANADA, ONTARIO, BRESLAU (Kitchner-Waterloo), September 29, 2024. Breslau Train Show, sponsored by Western Ontario Division, NMRA. Breslau Community Centre, 100 Andover Drive.

Info: www.youtube.com/watch?v=sSC-TA_feMM

CALIFORNIA, CROCKETT, August 24-25, September 14, October 26-27, December 7-8, 2024. Carquinez Model Railroad Society Open House. 645 Loring Avenue.

Info: cmrstrainclub.org

CALIFORNIA, SACRAMENTO, November 2-3, 2024. International Railfair 2024. Cal Expo, Building C, 1600 Exposition Blvd.

Info: internationalrailfair.com

COLORADO, PUEBLO, October 10-13, 2024. Rio Grande Modeling & Historical Society joint convention with Missouri Pacific Historical Society. Pueblo Convention Center, 320 Central Main Street.

Info: www.eventbrite.com/e/2024-mphs-rgmhs-joint-convention-tickets-794966836207

ILLINOIS, NAPERVILLE, October 10-12, 2024. RPM Chicagoland 2024.

Info: www.rpmconference.com

MAINE, LEWISTON, October 12, 2024. The Great Falls Model Railroad Club October Train Show. Kora Shrine Center, 11 Sabattus Street.

Info: www.greatfallsmodelrrclub.org

MASSACHUSETTS, ORLEANS, Wednesdays, July-August 2024. Nauset Model Railroad Club Open House with G, O, S, HO, and N scale layouts. Rear of Hilltop Plaza, 180 Rte 6A.

Info: www.nausetmodelrrclub.com

MICHIGAN, ANN ARBOR, December 1, 2024. Southeast Michigan Model Railroad Show & Sale. Washtenaw Farm Council Grounds, 5055 Ann Arbor Saline Road.

Info: cdjhyoung@yahoo.com

MICHIGAN, EAST LANSING, November 10, 2024. Lansing Model Railroad Club Show and Sale. Michigan State University Pavilion, 4301 Farm Lane (corner of Mt. Hope, Farm Lane, and College Roads).

Info: lmrc.org

MICHIGAN, NORTHVILLE, October 10-13, 2024. NCR Division 6 Regional Convention. Ward Evangelical Presbyterian Church, 4000 Six Mile Road.

Info: ncx24.ncrnmra.org

MINNESOTA, WOODBURY, October 12, 2024. Newport Model RR Train Flea Market. Woodbury High School, 2665 Woodlane Dr.

Info: newportclub.us

MISSOURI, KIRWOOD (St. Louis area), October 5-6, 2024. 33rd Annual Greater St. Louis Metro Area Train Show.

Meramec Community College Gym, Big Bend & Geyer Road.

Info: mvns.railfan.net

NEVADA, SPARKS, October 16-19, 2024. San Francisco Overland, 2024 SPH&TS Convention. Nugget Casino Resort, 1100 Nugget Avenue.

Info: sphts.org/convention

NORTH CAROLINA, DURHAM, October 17-20, 2024.

Piedmont Junction 2024, Mid-Eastern Region NMRA Convention. Raleigh-Durham Marriott.

Info: piedmontjunction.cpd13.org

OHIO, MIDDLEBURG HEIGHTS (Berea), October 5-6, 2024. 50th Annual Great Berea Train Show, hosted by the North Coast Division, NMRA. Cuyahoga Country Fairgrounds, Bagley Road entrance only, 19201 Bagley Road.

Info: thegreatbereatrainshow.org

OHIO, CAMBRIDGE, October 27, 2024. Sixth Annual Buckeye Division Train Show. Pritchard Laughlin Center, 7033 Glenn Hwy. Info: div6-mcr-nmra.org/trainshow.html

OHIO, MARION, October 10-12, 2024. Central Ohio RPM. Marion Union Station. Info: centralohiorpm.wordpress.com

OHIO, MARION, December 7, 2024. 38th Annual Marion Station Association Train Show & Sale. Marion Ohio Fairgrounds Coliseum, 220 E Fairgrounds St. Info: mariontrainshow@outlook.com

OHIO, WEST CHESTER (Cincinnati area), October 12-13, 2024. 56th Annual Div 7 NMRA Fall Train Show. Lakota West High School, 8940 Union Centre Blvd. Info: cincy-div7.org

OREGON, PORTLAND, October 5, 2024. Bridgetown RPM Meet. Sojourn Suites Portland Airport, 11707 NE Airport Way. Info: www.brpmm.com

PENNSYLVANIA, LINDEN, October 19, 2024. Annual Fall Train and Craft Meet. Woodward Fire Company, 4147 N Route 220 Hwy. Info: www.ccmrr.org/events.html

TEXAS, FOREST HILL (Fort Worth), October 25-26, 2024. DFW-Red River RPM. Forest Hill Civic Center, 6901 Wichita St. Info: redriverrpm.org

VERMONT, WHITE RIVER JUNCTION, October 13, 2024. Upper Valley Model Railroad Show. Connecticut Valley Auto Auction Building, 1567 VT-14. Info: cvrr.railfan.net/cvmrr

WASHINGTON, KENT, November 9, 2024. Boeing Employees Model Railroad Club Annual Swap Meet. Ken Commons Community Center, 525 4th Avenue North. Info: www.bemrrc.com

WISCONSIN, MILWAUKEE, November 23-24, 2024. Trainfest – America’s Largest Operating Model Railroad Show. Baird Center, 400 W Wisconsin Ave. Info: www.train-fest.com ■



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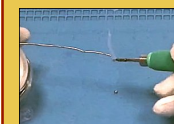
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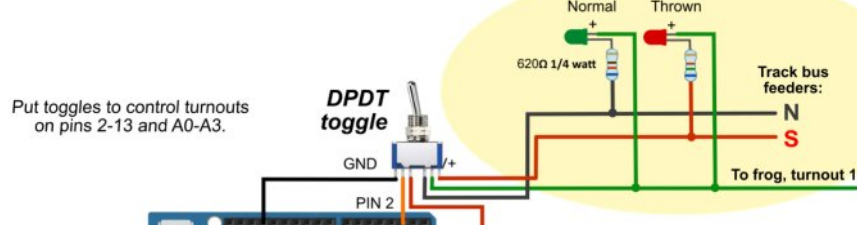
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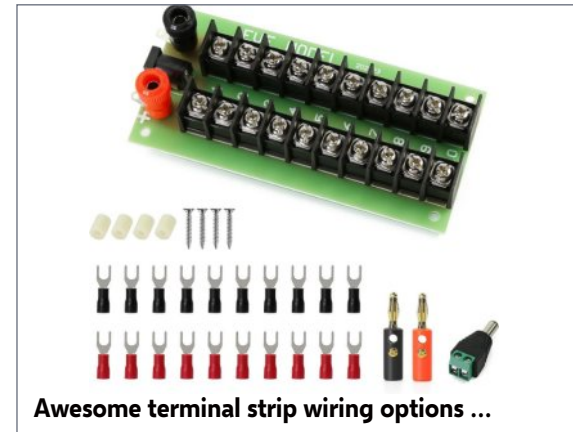
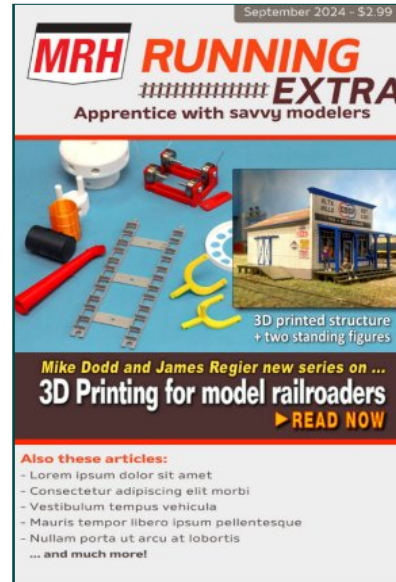
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