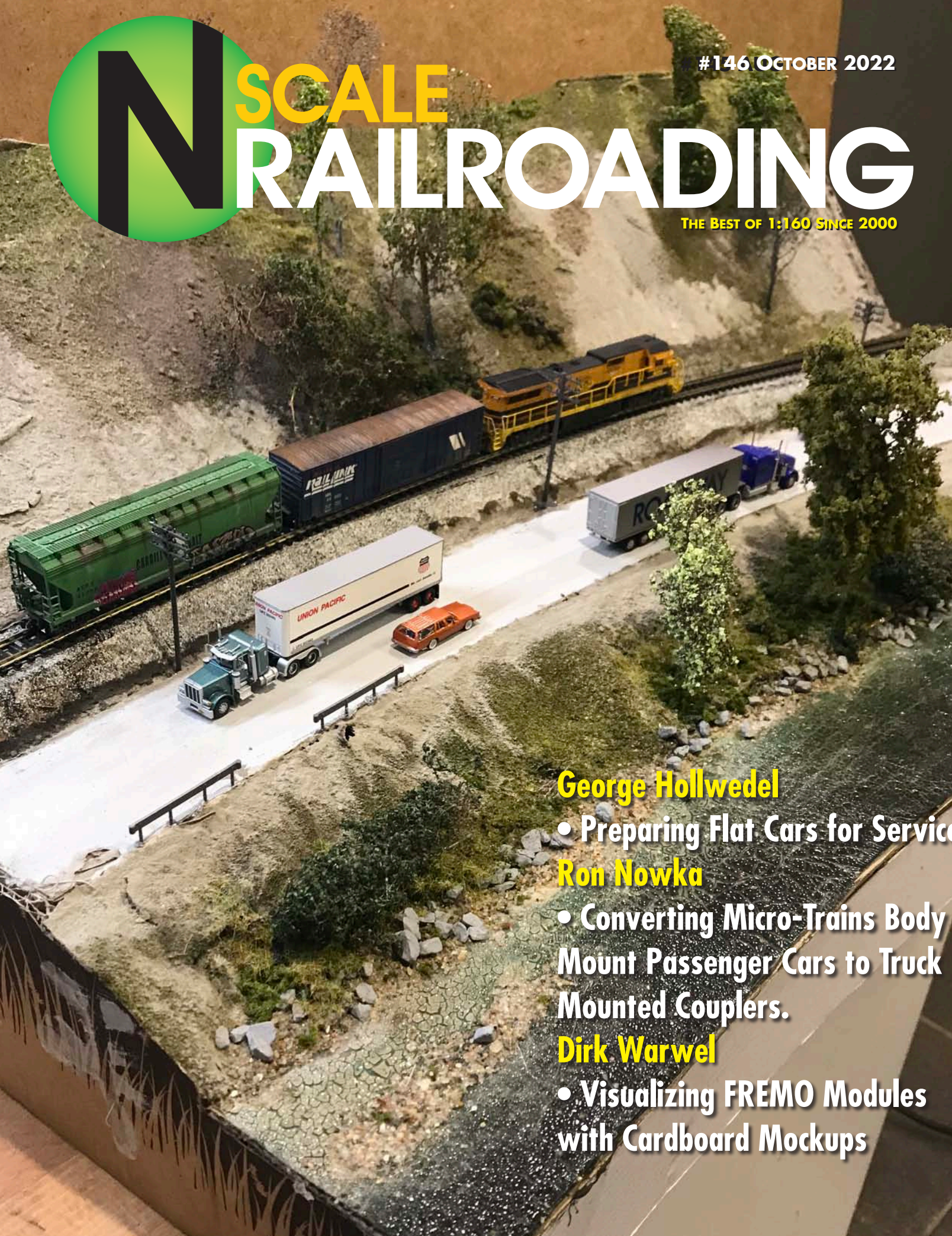


#146 OCTOBER 2022

# N SCALE RAILROADING

THE BEST OF 1:160 SINCE 2000



**George Hollwedel**

- Preparing Flat Cars for Service

**Ron Nowka**

- Converting Micro-Trains Body Mount Passenger Cars to Truck Mounted Couplers.

**Dirk Warwel**

- Visualizing FREMO Modules with Cardboard Mockups

# N SCALE RAILROADING WELCOME!

**T**he cover shows a cardboard mock up constructed to test out ideas before constructing a series of Fremo modules. It is a great way for individuals to share their ideas with the group and get everyone's input. The scenic material is recycled.

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**W**elcome to *N Scale Railroading* #146, the October 2022 issue.

Page 04. New Products.

Page 08. **George Hollwedel** likes to customize his rolling stock. Here he shows how he modifies his Micro-Trains flat cars, including weathering and body mounting the couplers.

Page 14. Micro-Trains' passenger cars have factory body mounted couplers. With broad radius couplers one can mix body and truck mounted couplers.. though there are considerations with car weight and flange depth. We had a case where body mounted couplers were derailing so wanted to switch to truck mounted couplers. **Ron Nowka** shows how he modifies MTL cars to truck mounted couplers with MTL 1018 trucks/ couplers.

Page 28. Communication is tough if a group wants to coordinate scenery on a portable layout. **Dirk Warwel** shares how his group built cardboard mock ups to test how they liked several variations and determined what they should use.

Page 37. **NCalendar.** ▶

**N SCALE RAILROADING**

OCTOBER  
**2022**  
ISSUE 146

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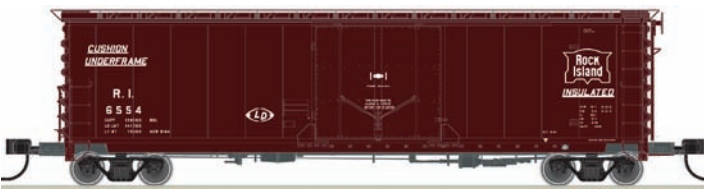
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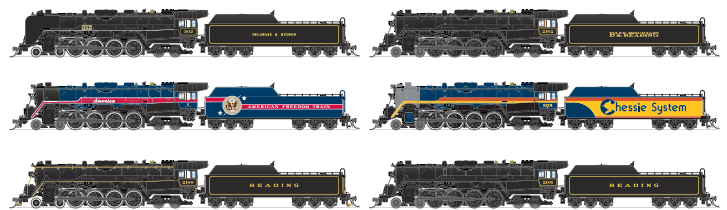
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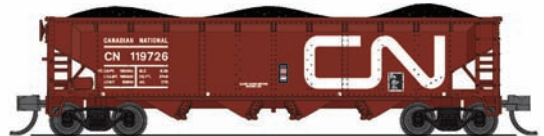
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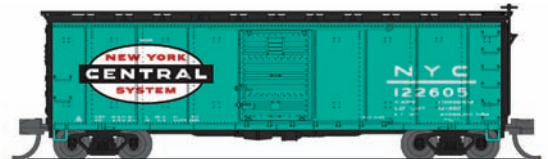
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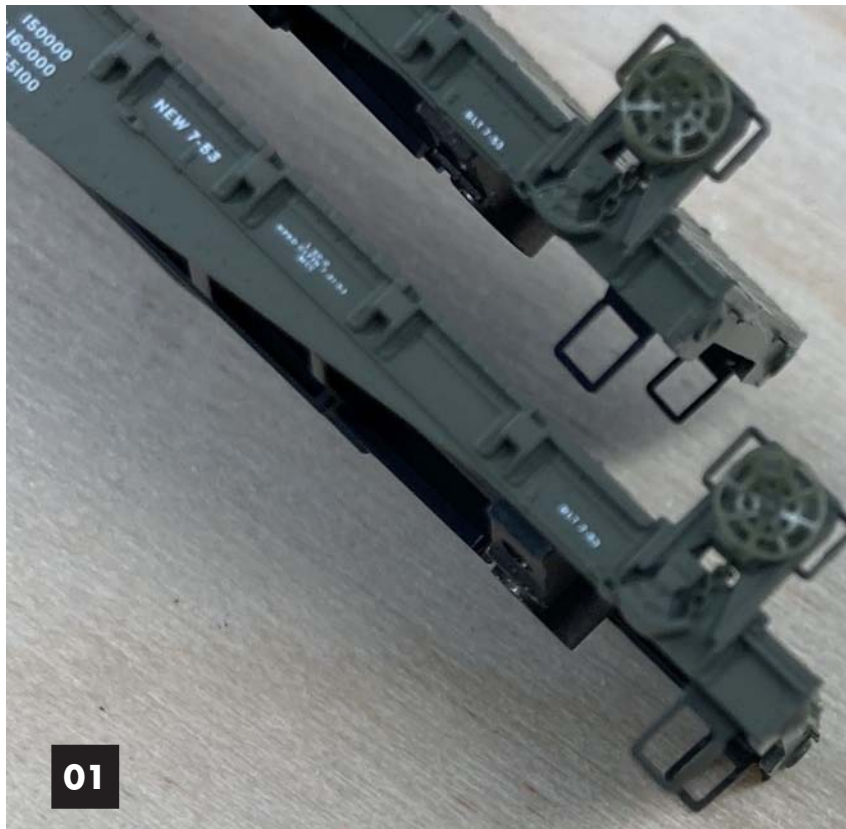
# FLAT CAR PREP

By George Hollwedel/ Images by author



I recently decided to improve the looks and function of my flat car fleet. Most of my fleet are Micro-Trains products and while they are truly excellent models, I thought some improvements

could be made. The above photo shows a before and after of two US Army flat cars. The following series of images shows how to get there.

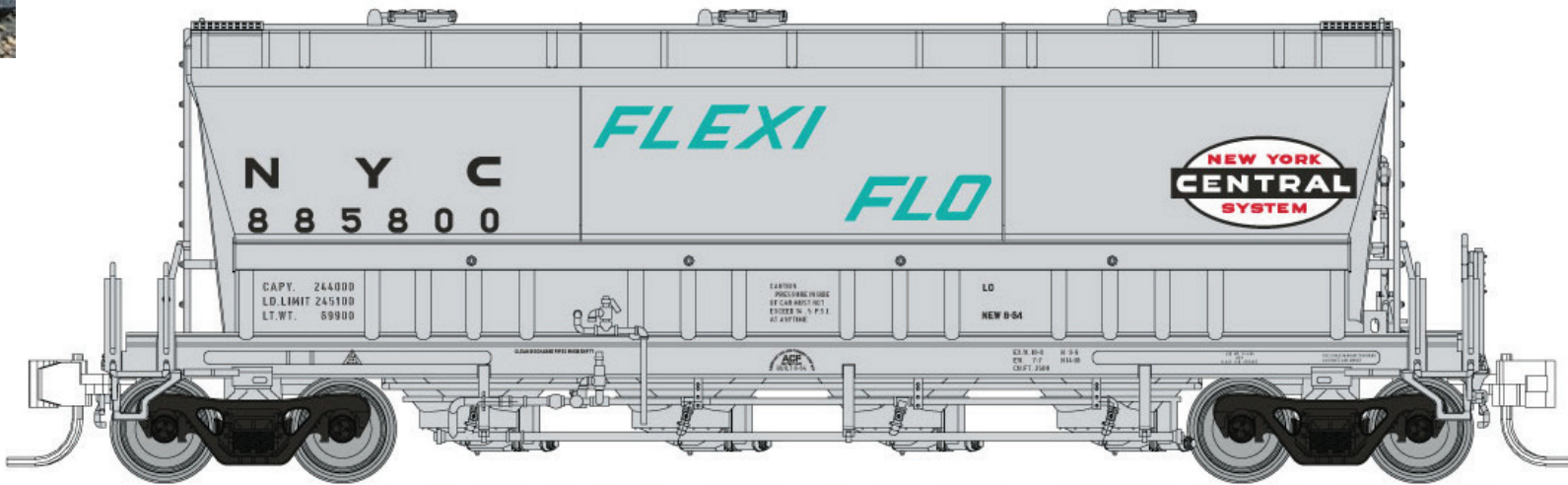


01

Image 01. The first thing I do on all freight car layout prep is to ensure the stirrup color matches the car body color. In this case, I used Modelflex 16-95 Green Drab, an acrylic water-based paint. Just a few brush strokes and the black stirrups are a thing of the past.



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RAPIDO



02

Image 02. While the flat car deck is mainly wood, there are metal areas showing. These are part of the main structure of the flat car while the wood deck is along for the ride. The green masking tape is 4mm pin striping tape I found on Amazon. The white masking tape is 2mm from Tamiya which I stock in my “store”.



03

Image 03. I chose a paint from Woodlands Scenics set 125, labeled number 1. To me it has the gray-brown look of weathered wood. Your view may vary, and I have done other flat cars with different shades of brown or tan to have a good variety. I decided to do all my US Army flat cars with the same color. This is also a water-based paint which goes on with a brush quite nicely.



04

Image 04. After the brown dries, I typically wait overnight, I do a trick that I recently learned from one of the newer members of our club. I get a can of Tamiya TS-71 “Smoke” from my stash and give a very light dusting of the surface from a distance, and did I say very light?



05

Image 05. I let the Smoke dry for about one-half hour then get out the Tamiya TS-80 “Flat Clear”. If this is a new item for you and you have used Testor’s Dull Cote before, be in for a surprise. The Tamiya sprays far better and does not yellow over time. All my freight cars get a flat clear finish before being layout ready.

# Fleischmann

3 piece set: Swing roof wagons, DB



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Td 928

Swing roof wagon, DR



item# 830352

CAD drawing Tds-y

Swing roof wagon, DB AG



item# 830354

Tds

Self unloading hopper wagon, DB



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Ed 089

Self unloading hopper wagon, SBB



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Fcs

## Nimble 2-axle wagons - the self-unloading wagons from FLEISCHMANN

Based on the experience gained with the bulk freight cars developed from 1954 onwards, the German Federal Railroad purchased further vehicles from various manufacturers. Thereby open freight cars for the transport of ballast, ore, coal as well as cars with swivel roofs were supplied. But the popular and convenient cars also found their way abroad and were used by many railroad administrations, including the Swiss SBB. Now the completely redesigned self-unloading cars are rolling onto the N-gauge rails. Already at a first glance they convince by their filigree appearance and the many attached details. Fine engravings on the car floor, deeply engraved spring packs and brake shoes invite you to dwell on. And even the body knows how to impress, with its many applied details. Assure yourself, have a look at the model at your local dealer!

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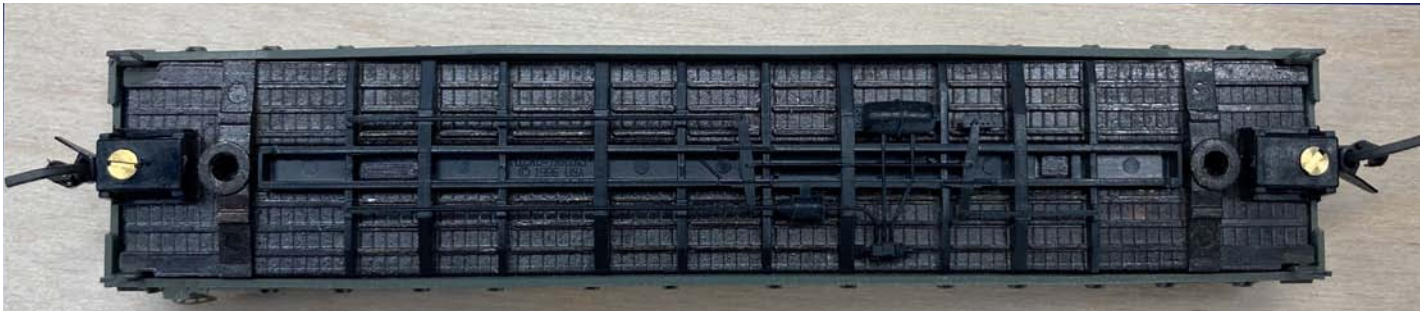


Image 06. My next step is to install body mount couplers. Micro-Trains makes it easy on the newer generation flat cars as the floor is complete and there are two holes provided. These holes line up for a 1027 (001 02 014) coupler to be easily installed. Drill and tap the forward hole for the 00-90 screw and the coupler is ready to mount. I found some 3/16" flat head screws at "MicroFasteners". The 1/4" screws provided by Micro-Trains are too long for this installation. A round head 3/16" could also be used. If working with an older generation flat car that does not have the extended floor, the 1026 (001 02 013) coupler is then proper choice.

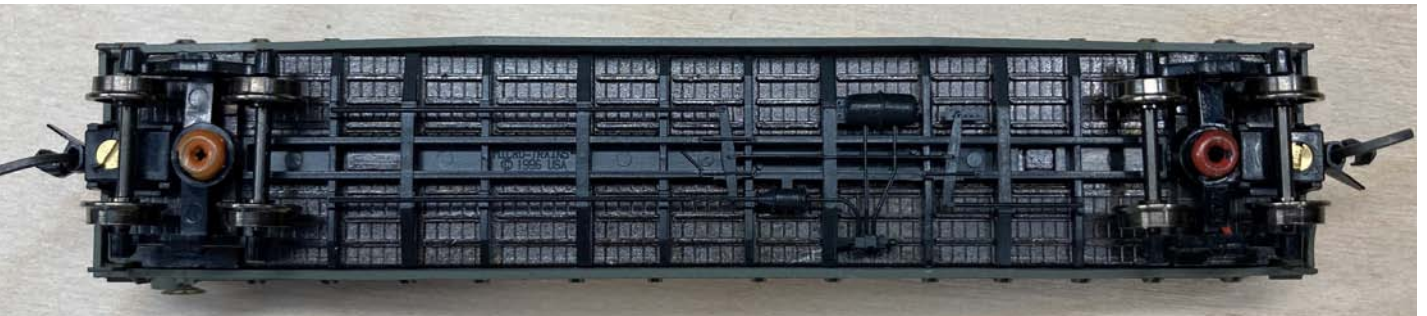


Image 07. I finish off my cars by installing metal wheels into the Micro-Trains trucks. I have been using Eastern Seaboard part number 920100 33" wheels with .540" axle length. These wheels have been readily available and I have not run across any that are defective.



Image 08. Here is a finished car with a KenRay Models 02007 M4 Sherman Tank load. (Note that the turret is reversed for transit.)

**Military loads** during the first half of the 1940s would include medium tanks (various M3s but mainly M4s. Baldwin Locomotives Works built prototypes of the M6 heavy tank but it's main job may have been to sell war bonds and perhaps get Germany to rush their heavy tanks. The US Army doctrine at the time was to use 33 ton medium tanks like cavalry and the job of taking out enemy 70 ton tanks was often left to tank destroyer units. TDs could make great loads of that era.



Above are US M7, M10, M18, and M36 tank destroyers. The M7 used a half track chassis. The M10 and M36 were built on M4 chassis. There was a program to convert M10s to M36s. The M10, M18, and M36 had thin but sloped armor and an open top. The M36 was also used in Korea and its gun could destroy any vehicle it faced. In domestic transit I figure tank destroyers would be transported between the factories and seaports and sent to Europe. As their production didn't overlap, TDs on these trains would be the same model. Some equipment would be shipped for service with a specific division but many would be shipped to supply depots. -Editor

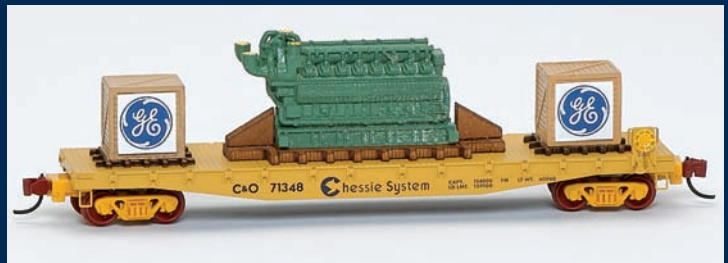


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# CONVERTING MICRO-TRAINS BODY MOUNT PASSENGER CARS TO TRUCK MOUNTED COUPLERS

By Ron Nowka/ Images by author



Image 01. The MTL Baggage/Express and RPO/Express cars with truck mounted couplers.

**F**or many years the Union Pacific pool train between Portland and Seattle was headed by heavyweight RPO/Express and a full express car. We don't have detailed images of these cars in 1950 so for now we are using stock Micro-Trains Line Railway Express car #1736 and an RPO/Express car #2267 equipped with body mount couplers and compatible silver 3 axle trucks. The RPO/Express car has a Harriman roof purchased from Shapeways.

The rest of the consist are Kato cars with one RailSmith sleeper. All of these cars have truck mounted couplers which are working well over the route's trackage. (To reduce friction the Director of Passenger Services often operates heavyweight cars with the center axle removed.)

The route near Seattle Union Station has small radius curves which cause these two cars to derail when backing the train through the curves. Attempts to realign the curves have improved the problem but coupler offset between body mount and truck mount cars remained a source of derailments. Since opposing truck mounted couplers track fine in compression as well as tension I wondered what it would take to install MTL 1018 truck mounted couplers?

This sounds simple except that the MTL body mount trucks have an offset bolster pin location which if used directly would place the trucks in the wrong location. Comparing the offset truck with the MTL1018 I could see that there is enough room and material on the MTL1018 to drill a new bolster hole on the

MTL1018 truck frame. See photo 15. The location of the new hole is over the T in MTL1018. The diameter of the hole needs to be .076 which can be accomplished with a #48 drill. You may notice that the pilot hole is not centered on the truck frame. To correct this I had to file the hole over to the correct location then finally use the #48 drill to finish the hole.

While studying the cars I noticed that the trucks on the baggage car are a different style from those on the RPO car. The trucks on car #1736 look more like commonwealth trucks. So, is there a way to make a MTL1018 passenger truck look like a commonwealth truck? I compared actual Micro Trains commonwealth trucks but the wheel base is shorter and the coupler length is not adjustable. The biggest difference between the two styles of trucks seem to be the flat side frames below the upper main casting. Before wildly cutting into a good set of trucks I blacked out the frames of one truck with a Sharpie to see how it looked. Then I started grinding away the side frames with a dremel disk.

MTL1018s have adjustable couplers. There are a few things that have to be done to the couplers to make them operate correctly. First heat stake the coupler pocket to it's frame with a soldering iron. Second, trim the little burr from the back of the coupler parts. Image #12. Third, tap the mounting screw hole with a 00-90 tap for the mounting screw. Fourth, relieve the truck frame where it meets the coupler pocket. Both of these cars require extra relief to shorten the couplers an additional .020. Fifth, adjust the magnetic trip pins to clear the rail by .010 per the Micro-Trains instruction sheet.

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02



Image 02. Micro-Trains Railway Express Baggage car with modified MTL1018.

03

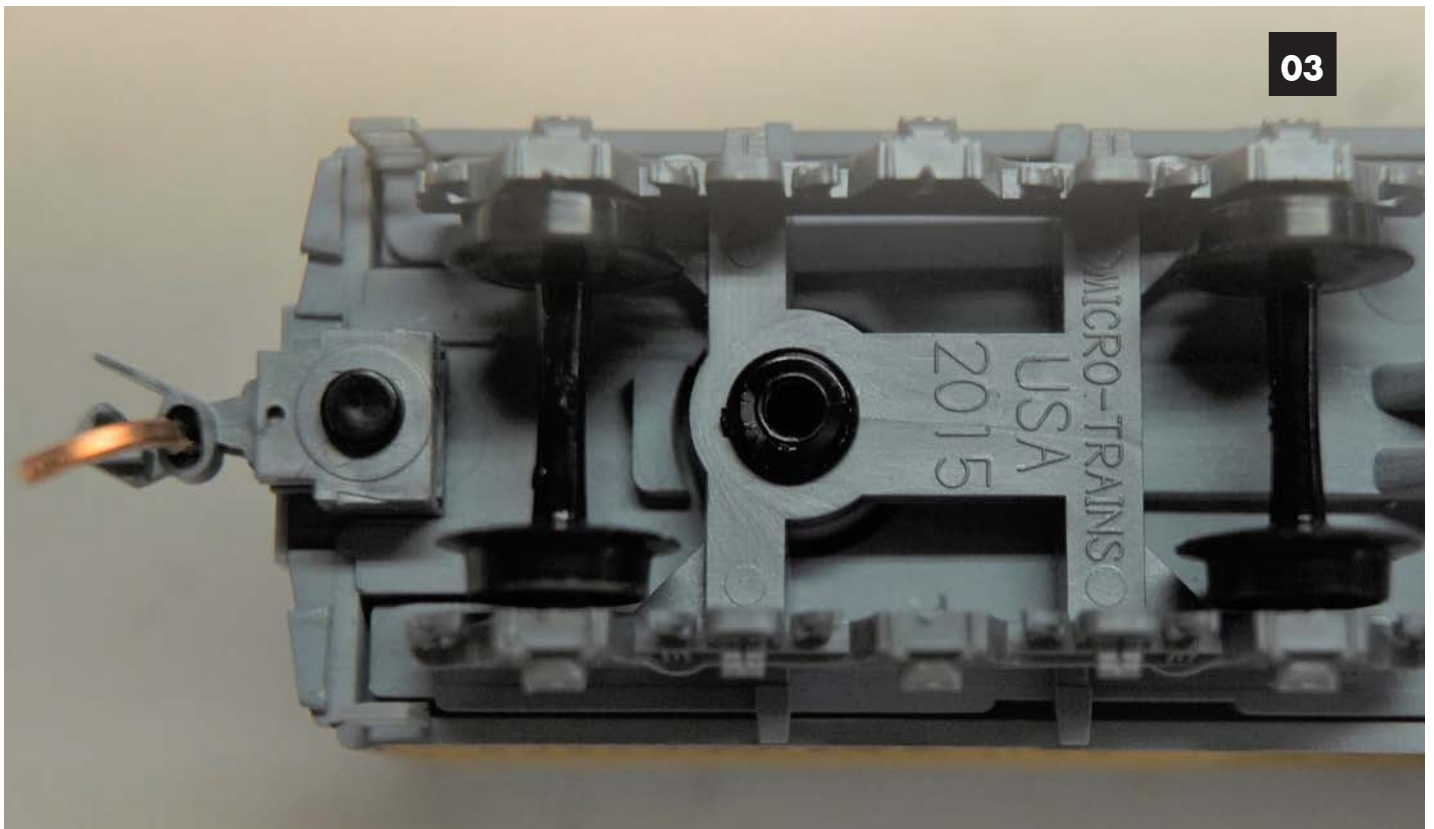


Image 03. Bottom of Railway Express Baggage car with body mount truck and coupler installed.



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# N SCALE RAILROADING

04



Image 04. MTL1018 3 axle truck with center axle removed.

05



Image 05. 3 axle MTL body mount truck with MTL 1007 wheels and center axle removed.

06



Image 06. 3 axle MTL body mount RPO truck with center axle removed and coupler in place.

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07

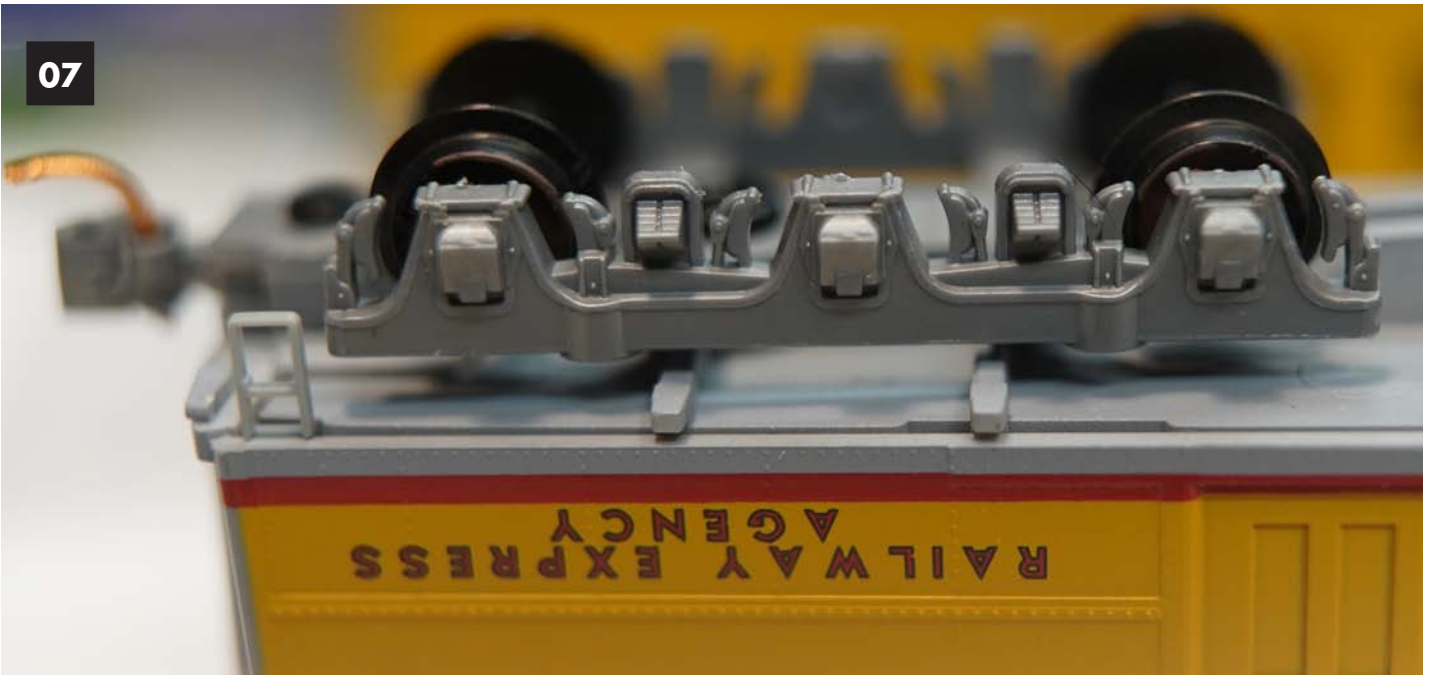


Image 07. 3 axle MTL body mount MTL truck with center axle removed and coupler in place.

08

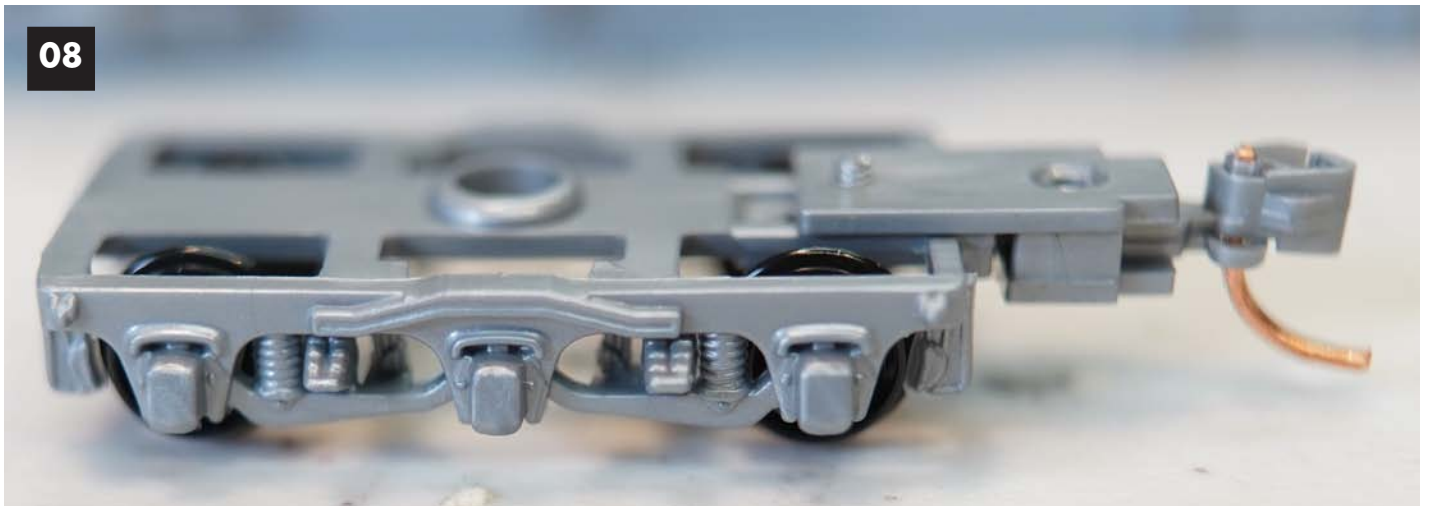


Image 08. MTL1018 with no modifications.

09



Image 09. MTL Baggage car body mount truck.

10

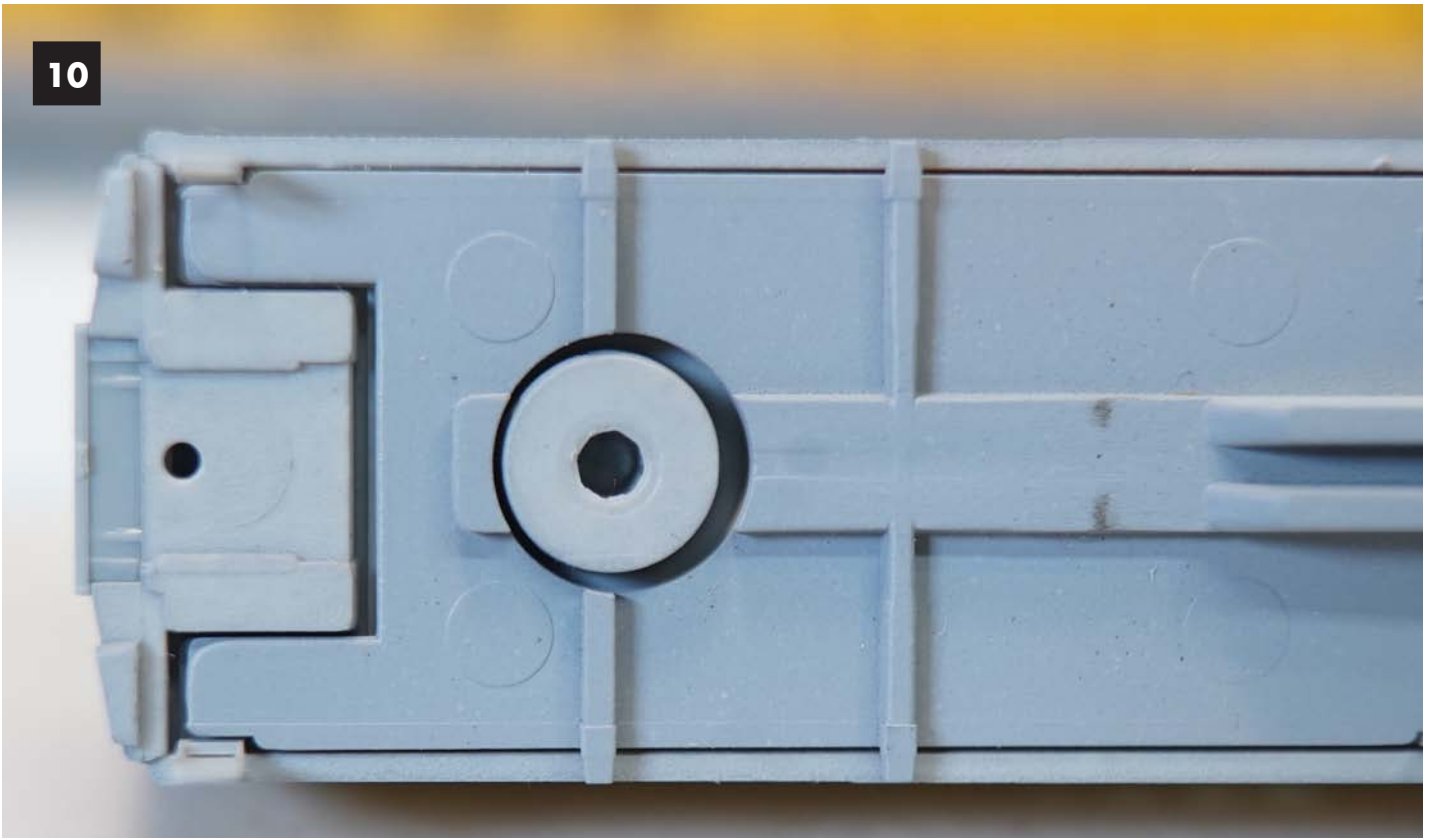


Image 10. The bottom of a Micro Trains car with truck and body mount coupler removed. Car construction does not lend itself well to drilling a new bolster pin hole. The new location would be on the edge of the bolster pad. The gap could be filled but then the car may not be able to be disassembled.

11

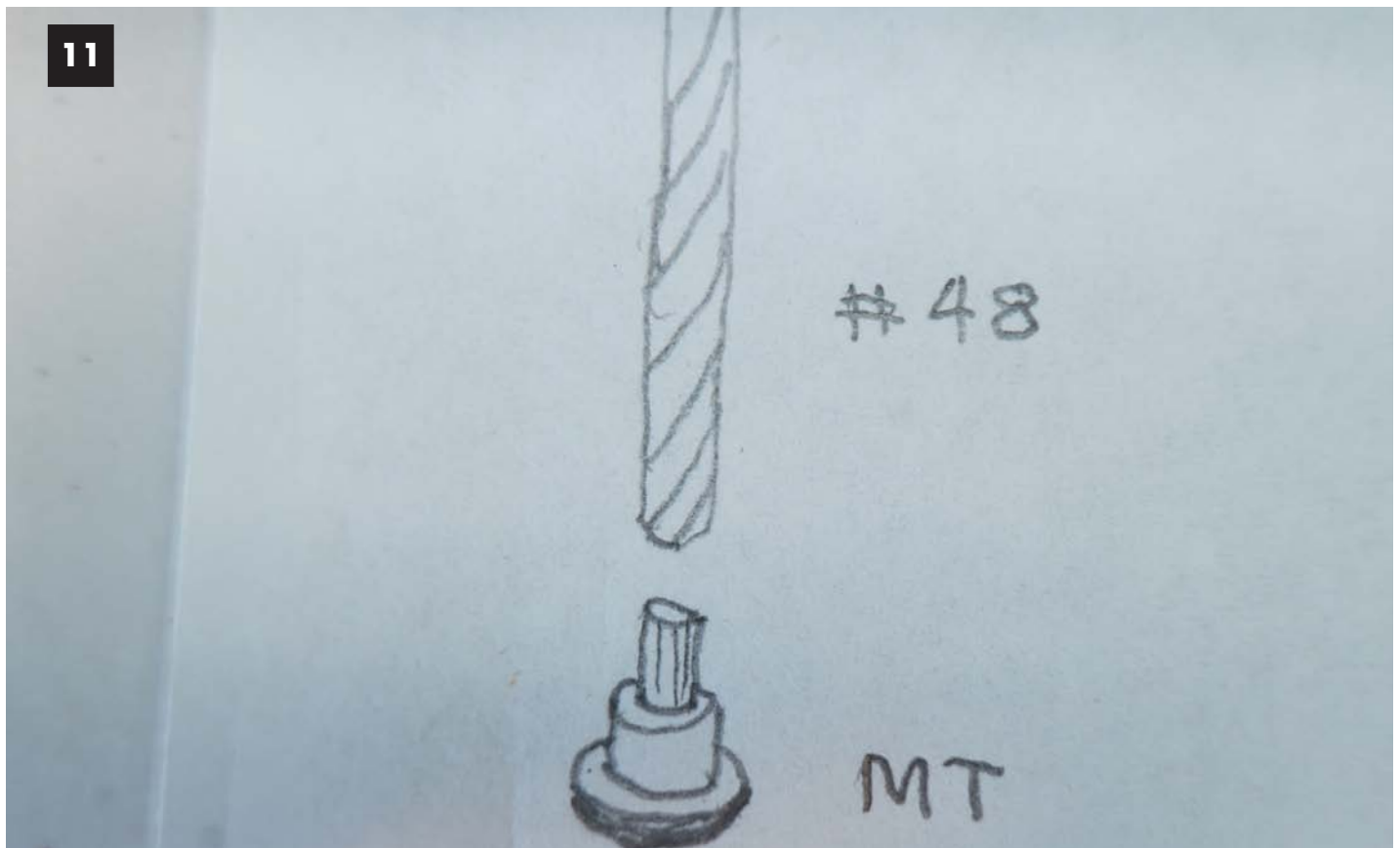


Image 11. Reference drawing showing MTL Bolster pin and #48 (.070) drill for bolster pin shoulder.

12

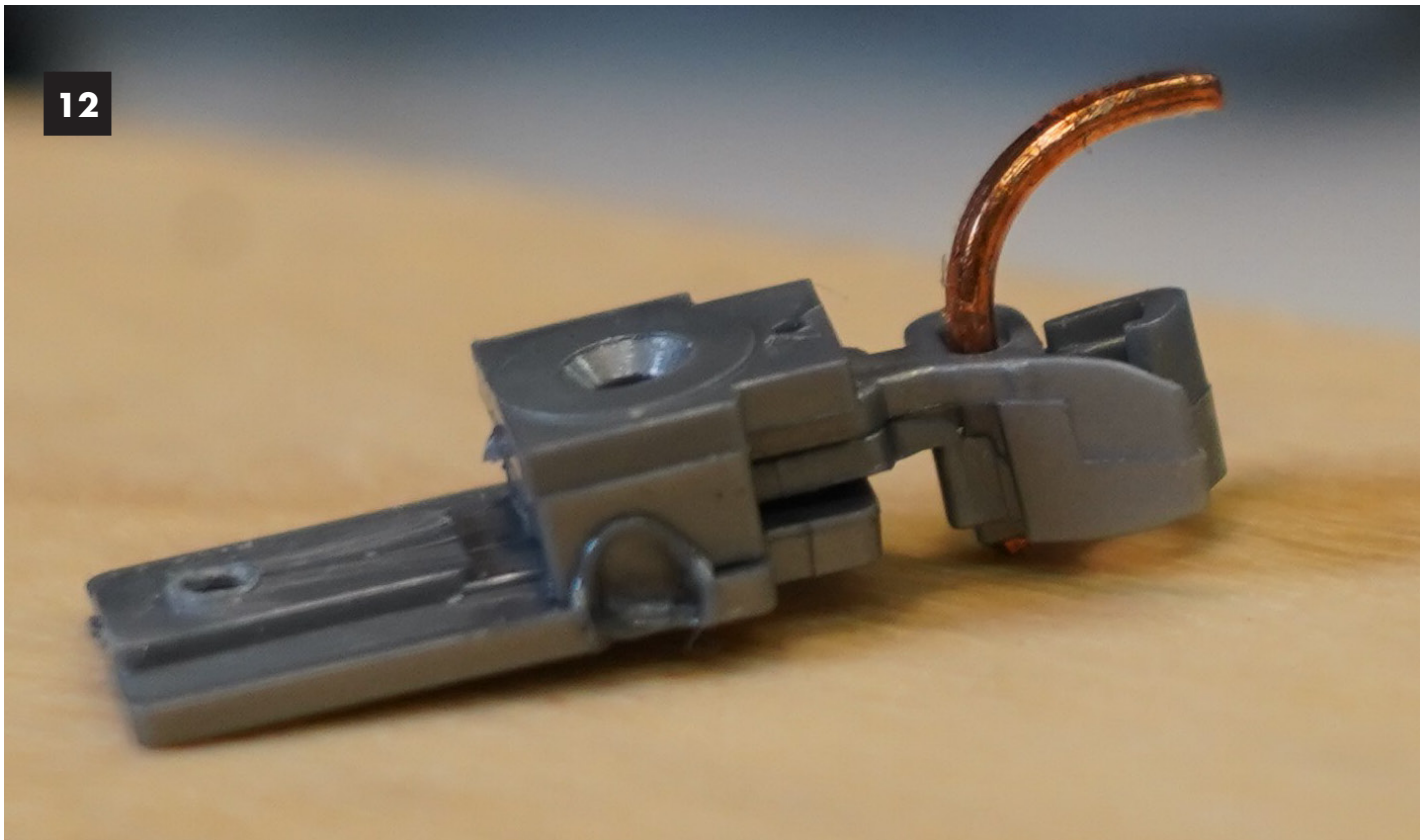


Image 12. The internal parts of the coupler sometimes protrude out of the coupler pocket. If the burrs contact the truck frame and the coupler may not operate as expected. These burrs can be removed with a sharp X-Acto knife.

13

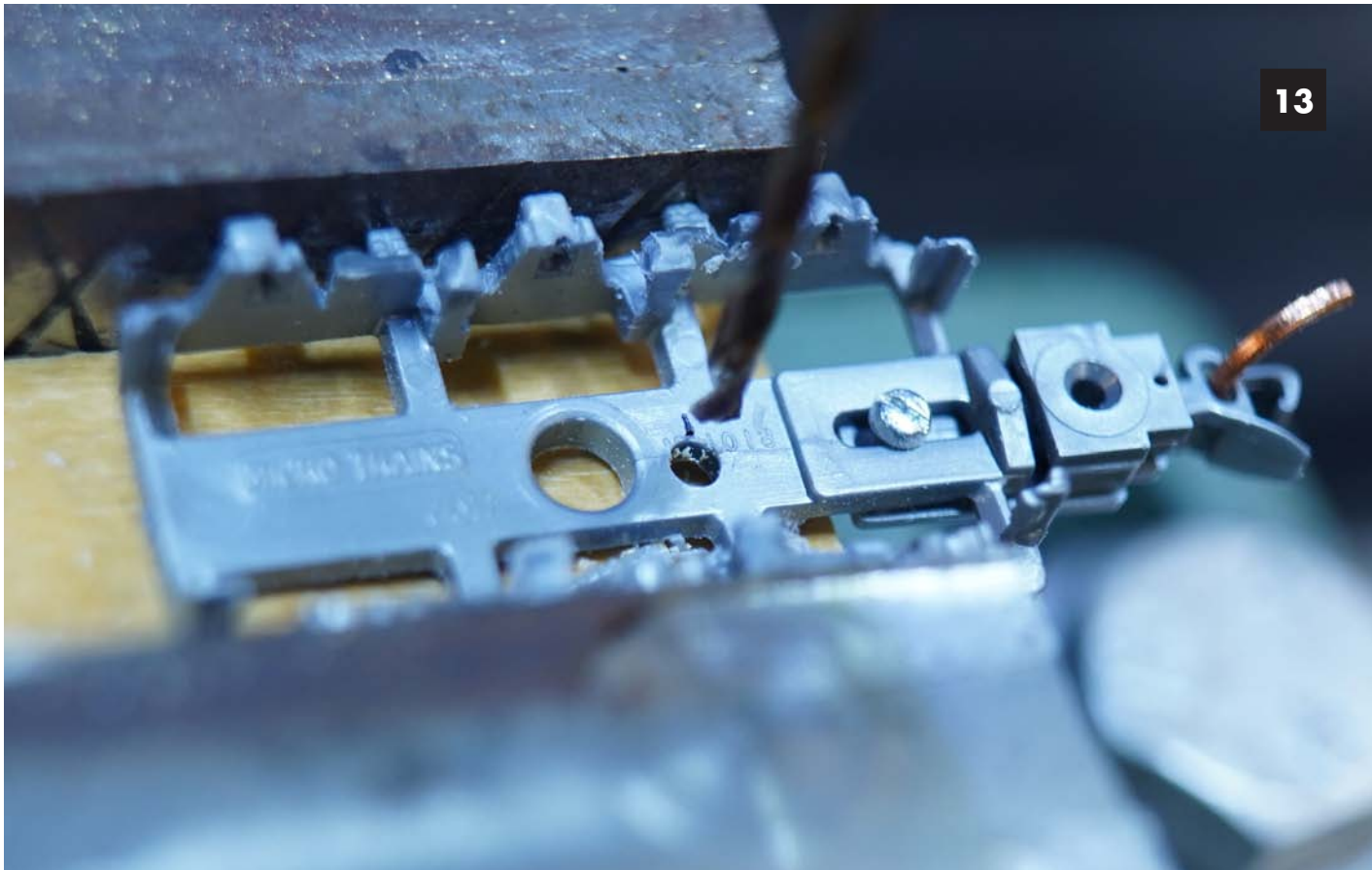


Image 13. Drilling the pilot hole in the truck frame.

Image 14. Drilling the pilot hole at the new location. The black mark is at the T of MTL1018.

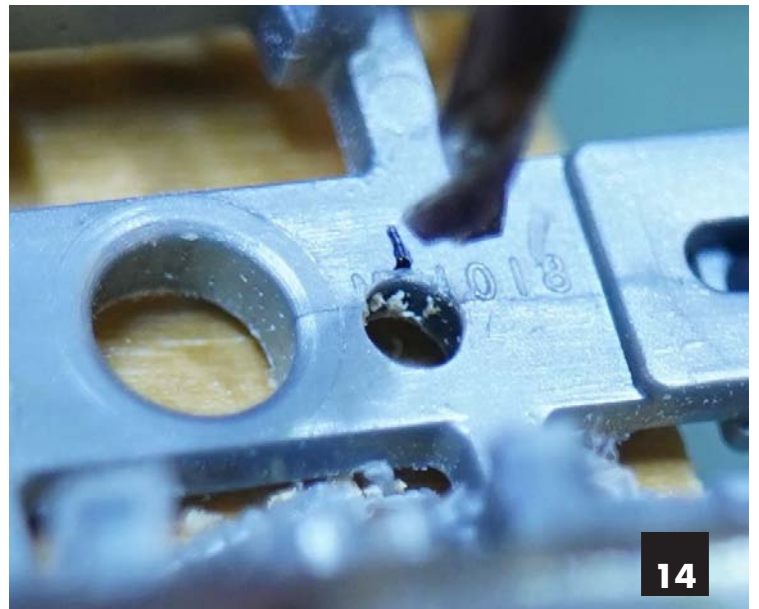
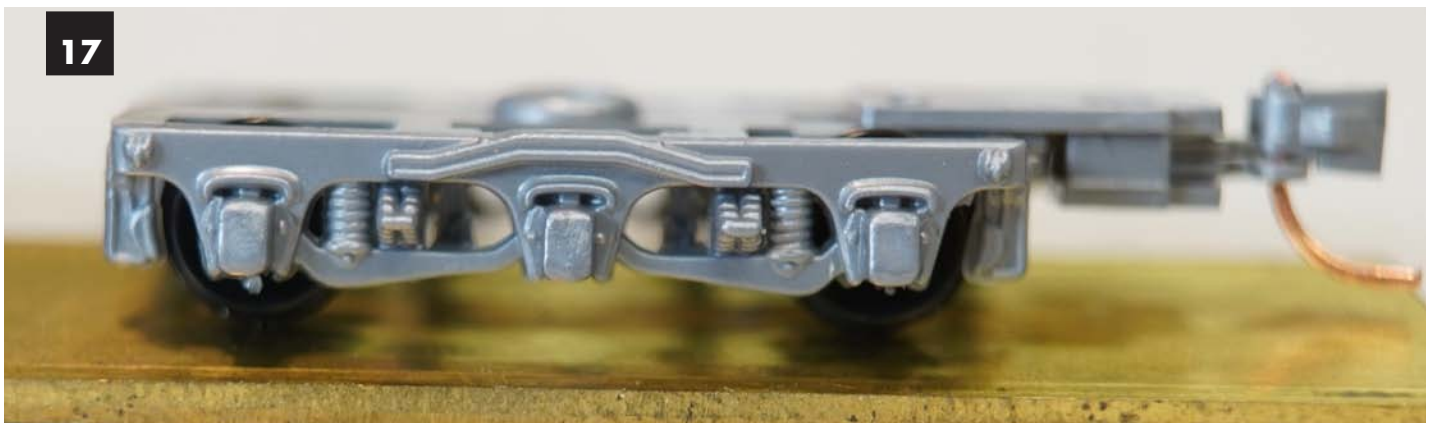


Image 15. Finishing the new bolster pin hole with a #42 drill. The pilot hole was moved over with a tiny round file prior to finish drilling.

Image 16. A small reference line was scratched near the end of the coupler mounting tab. The excess was removed with an X-Acto knife. A similar amount was removed from the coupler assembly. The complete assembly can be seen in image 24.

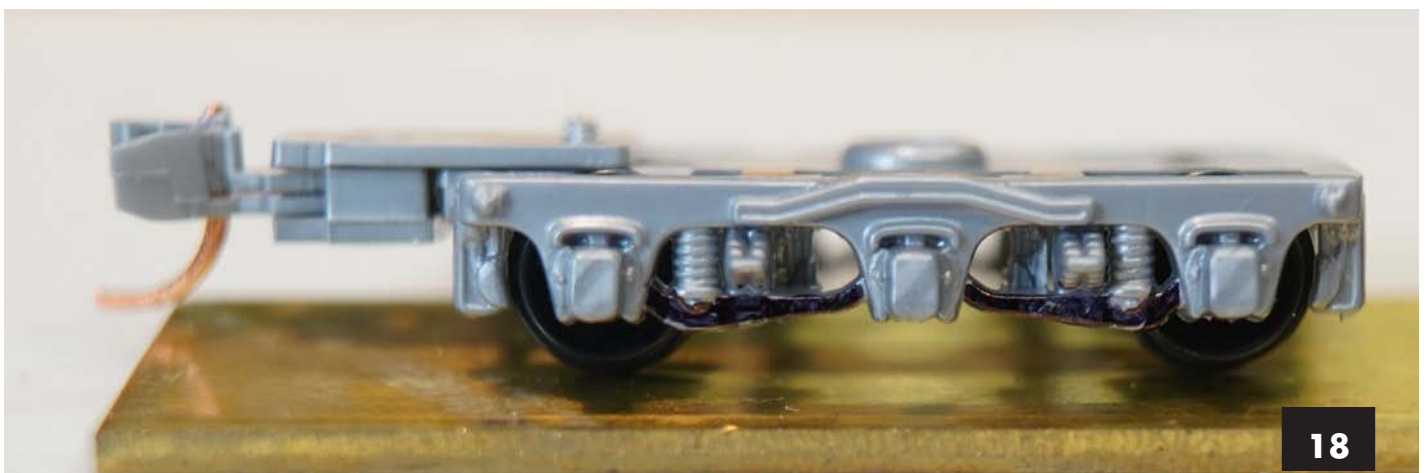


16



17

Image 17. Micro-Trains 1018 truck with coupler assembly installed. The 00-90 mounting screw is trimmed off flush so it doesn't catch on the car underframe.



18

Image 18. Micro-Trains 1018 truck with lower frames blacked out.





Image 19. Modified MTL1018 on MTL baggage car.

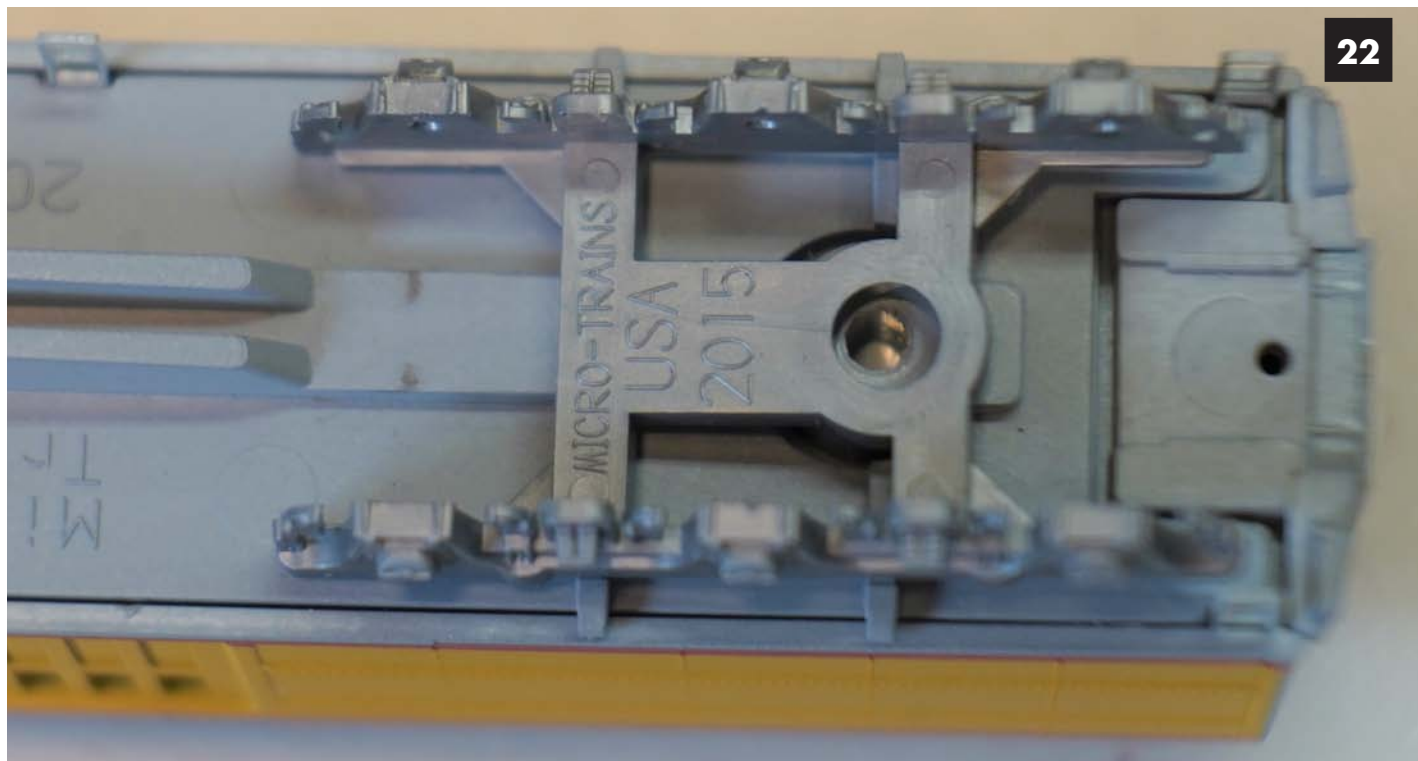


Image 20. 3 axle body mount truck and coupler on baggage car.



21

Image 21. MTL RPO car with body mount truck and coupler.



22

Image 22. MTL 2015 body mount Railway Express baggage car truck without bolster pin and coupler.

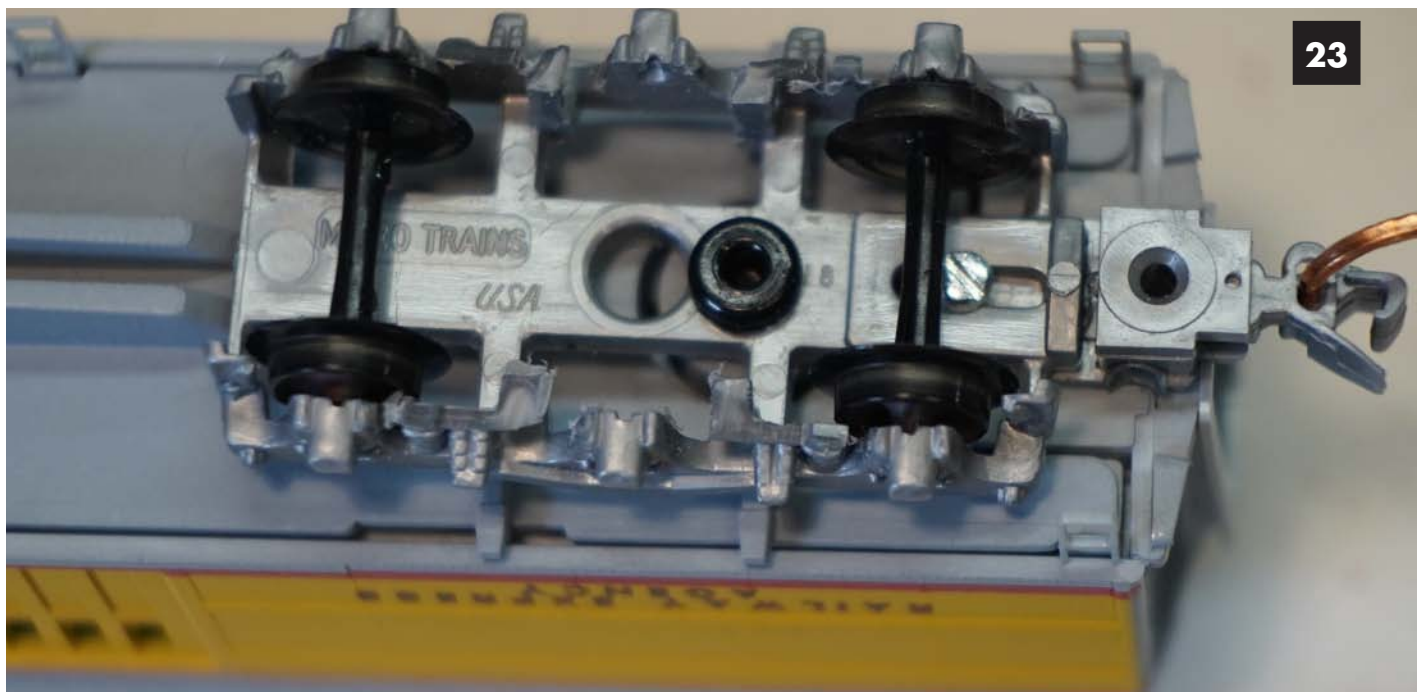


Image 23 Modified 1018 with coupler in extended location. Look at the silver screw's location on imagers 23 and 24.

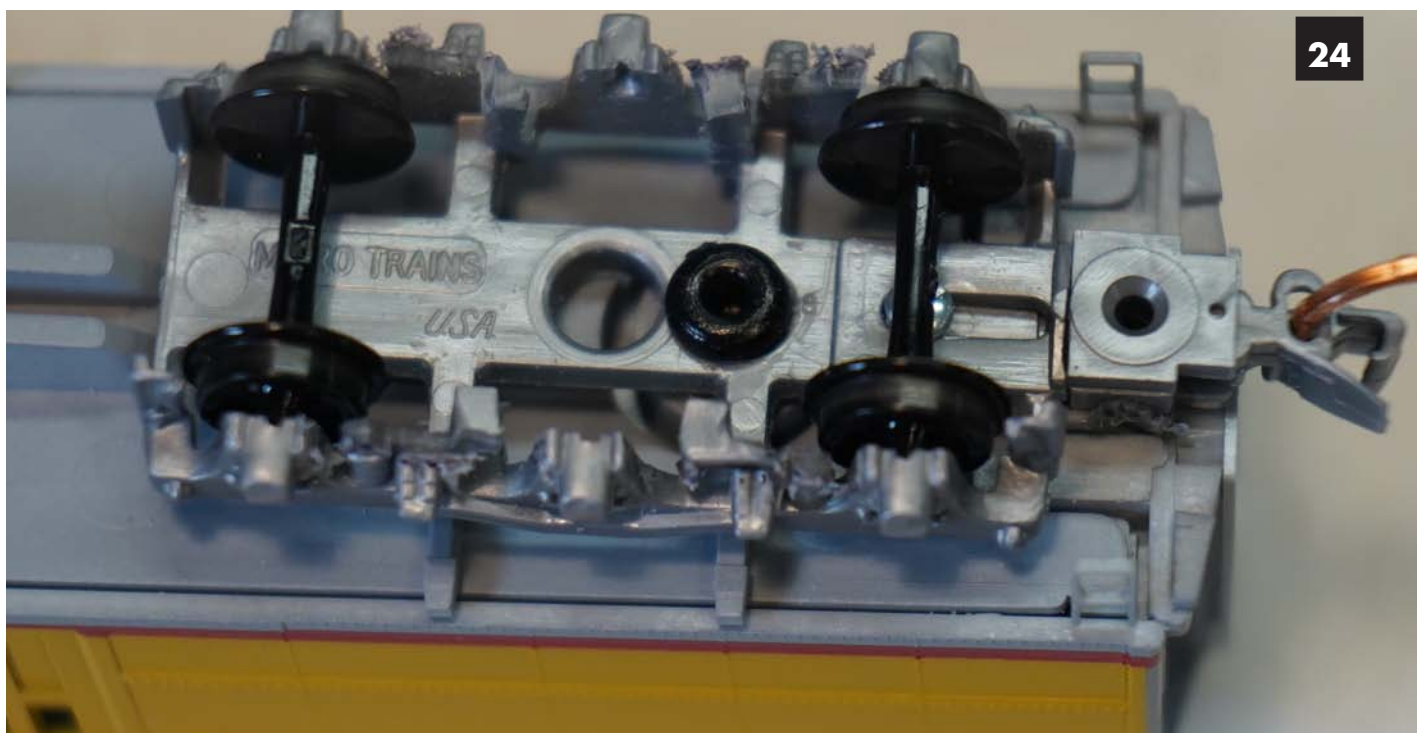


Image 24. Modified 1018 truck and coupler installed on MTL baggage car with coupler in extra reduced location.



Image 25. Both cars with modified MTL 1018s coupled together. At this point we're not worried about close coupling like we're concerned about derailing in the tight radius track when backing up to reverse the consist.

# VISUALIZING FREMO MODULES

01

## WITH CARDBOARD MOCKUPS

By Dirk Warwel/ Images by Author

### Who We Are

The american chapter of FREMO has been active since 2003, building modules following North American prototypes in N scale and jointly operating them at meetings. Our modular standard is flexible regarding module size and shape, as long as the end plates are 400 mm wide. The single track is centered at the end plate, has a right angle to it, and is 1,300 mm (roughly 51 inches) above the floor.

For more info on our club please refer to NSR issue #127 where we have discussed our club and operating scheme in more detail.

### The Challenge

Our standards call for a flat terrain shape. This offers maximum flexibility in arranging our modules as they can be rotated and operated from both sides. But it limits the options to build more “exciting” scenery.

So following a number of initial discussions and teleconferences we set out to explore options to build modules where the track runs through a valley, following a small river or creek. The vision was to create a coherent scenic run that can be inserted between stations to increase operational and visual separation.

This article describes how we developed the valley profile, how we used mockups to support our decisions and gives an outlook what we plan to do with the new format.

### Requirements

We started the design process by defining a number of requirements that we wanted to meet:

- Make the Valley Modules interchangeable with each other, following a common “recommended practice”. This would allow us to create a long valley run with modules from multiple builders.
- Provide connector modules to integrate the Valley modules with the standard, “flat” modules.
- Keep the appearance of the river simple; the river should

not have any discernible direction, so we are able to rotate valley modules. This also means no rapids and no wave formations, which is a bit of a shame as these make for great scenic elements. But form has to follow function...

- Potential to add industries and towns in the valley, although this would be a later stage.

### Design Considerations

Early on it became apparent that we all had slightly different ideas how these valley modules should look like.

Initially we thought about adding a street to the valley. There are numerous examples where the railroad, a street and a river all share the same valley as the river had carved a natural, low grade path through the mountains. We thought that the interaction between these three elements might add excitement and show how human engineering overcame the natural obstacles. Also there could be scenic highlights where street and railroad had to cross the river due to a sharp bend in the valley.

But we had to consider a number of potential issues:

- Would all elements fit or look too “busy”? We strive for a realistic representation of the scenery surrounding our trains, so a cartoon version of a valley would not be acceptable.
- How wide would the street need to be? How far away from the track?
- How much space could we allocate to the river?
- What would a plausible elevation of street and track over the river?
- How tall would the walls of the valley need to be? We wanted to give a sense of depth whilst still being able to transport the modules to our meetings.

With all these considerations it became apparent that it would be good to visualize our options and ideas before we committed to plywood and plaster. Enter the cardboard mockup modules. The idea was to provide a 3D discussion aid that is easy, fast and cheap to construct.

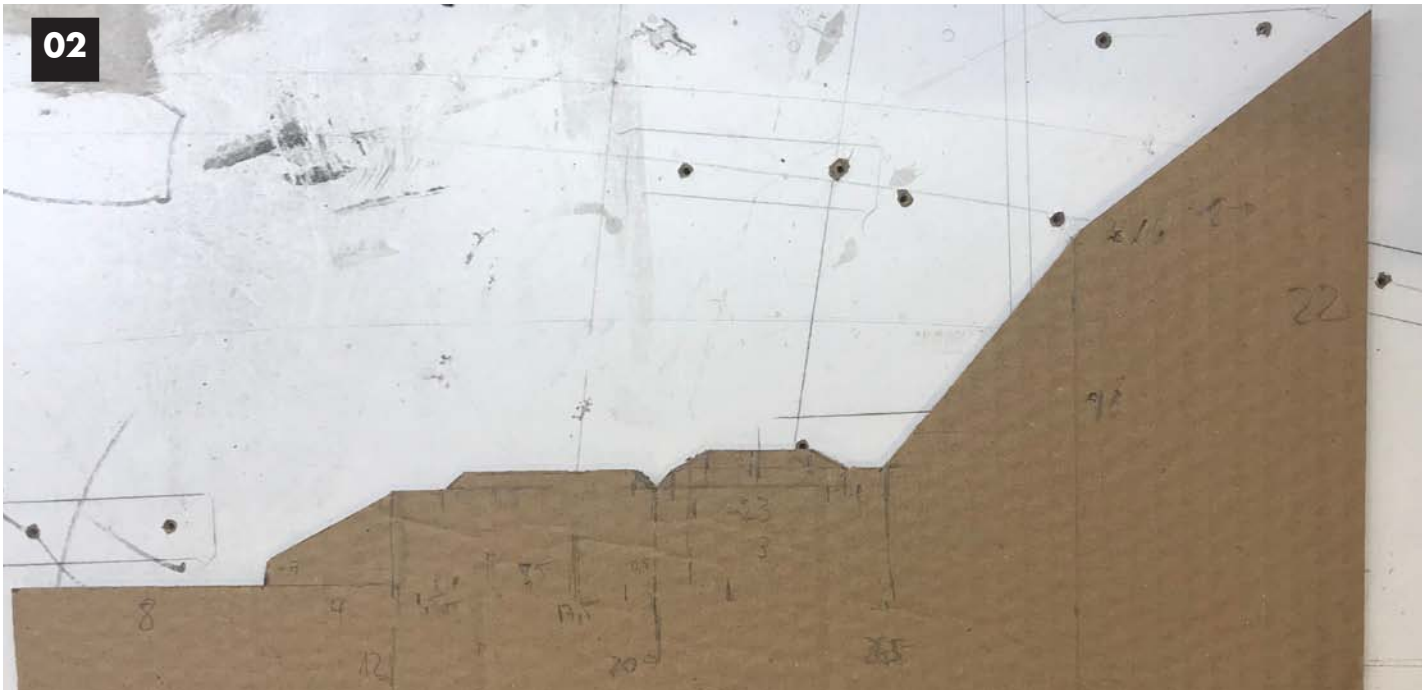


Image 02. **Mockup Version 1.** This was the first profile we considered. The track is off center, which is a deviation from the standards for flat modules. The valley wall is 12 centimeters high with an inflection point. The track is higher than the street, but they are fairly close to each other.



Image 03. Adding front and back walls plus strips of cardboard for the track, street and river. I used hot glue throughout construction as it dries very fast. It starts to look like a module, though without a proper landform it was still difficult to visualize how trains and cars would look like.



Image 04. So I added a rough landform, using leftover cardboard and paper. This might have been fit for purpose already, but adding a little bit of scenery goes really fast and might help with the visualization.



Image 05. I added a little color; neatness does not count, it is a mockup after all. The ripple effect on the river was a pleasant surprise; the paint made the top layer of the cardboard soft and it sank into the corrugation.



Image 06. A little bit of green, some small rocks along the river and tile grout for the hills. All was leftover material from previous module constructions.



Image 07. Trees, guardrails and telegraph pole provide a better impression how the trains will look like.

08



Image 08. This is the look I was going for: a street that is wide enough to be plausible and a valley wall that is high enough to tower over the train. The construction and scenery took about 3 hours to complete. Normally building FREMO modules takes longer, but I considered the time well spent as we gathered important learnings

from this module.

We found that track and street are too close together and that at 22 centimeters total height the modules would be difficult to transport. So back to the drawing board and to Version 2.0



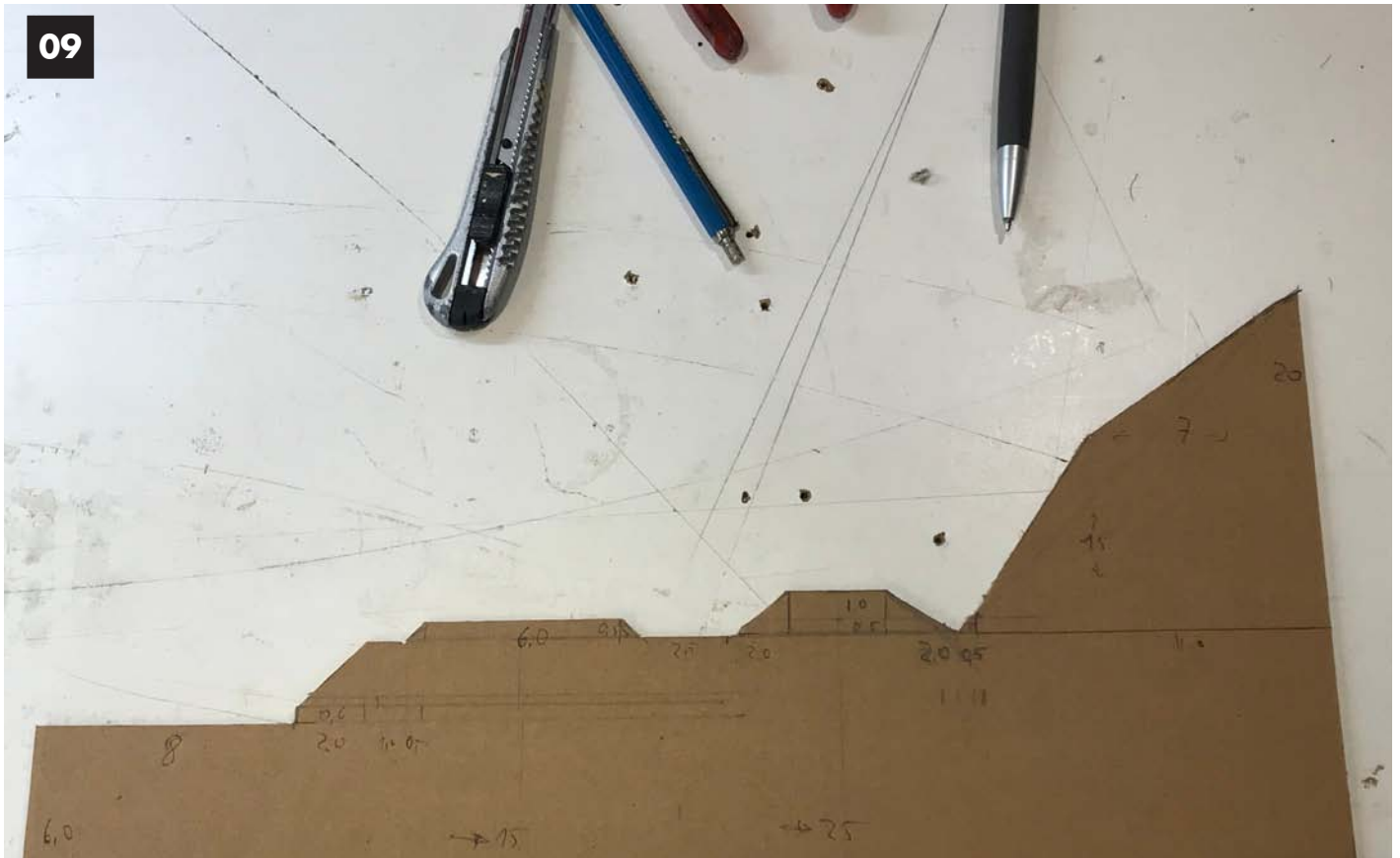


Image 09. Mockup **Version 2**. This is the endplate for Version 2.0. The street and track are further apart and the height of the valley is reduced by 2 centimeters to 20. Not a big reduction, but it would make the modules more manageable.



Image 10. Construction followed the same process as for **Module 1.0**. Again the hot glue sped up things, though be careful not to get glue on your hands. Wearing gloves is a good precaution against burns.

11



Image 11. I added landforms, paint and scenery, re-using the trees, telegraph poles and guardrails from version 1.0. Using a steam engine and smaller cars made the module look more spacious, so I used the same equipment for comparison photos as on version 1.0.

12



Image 12. The Cadillac is a 3D print, available on Shapeways. The paint is called "Persian Lime Firemist".

**Version 2.0** again taught us some valuable lessons. The biggest decision was to drop the street and move the track back to the centerline of the module. Though we liked the street we felt that it was overpowering the scene and that we would have to be very prescriptive on color and markings to develop a coherent scene along multiple modules.

We also found that the valley wall looked much better with the height variation of version 1.0. This sparked the idea to use different heights between modules, which would make the

planning of the layout more challenging but offer greater realism in the scenery,

We also decided to use a consistent slope for the valley. After scenery and trees the inflection line became nearly invisible. Also it would have been more difficult to add cliffs and rocks. Mockup Version 3 and 4

**Version 3 and 4** are simplified and they addressed a number of specific questions: how high should the back of the module be and how wide would we make the river.

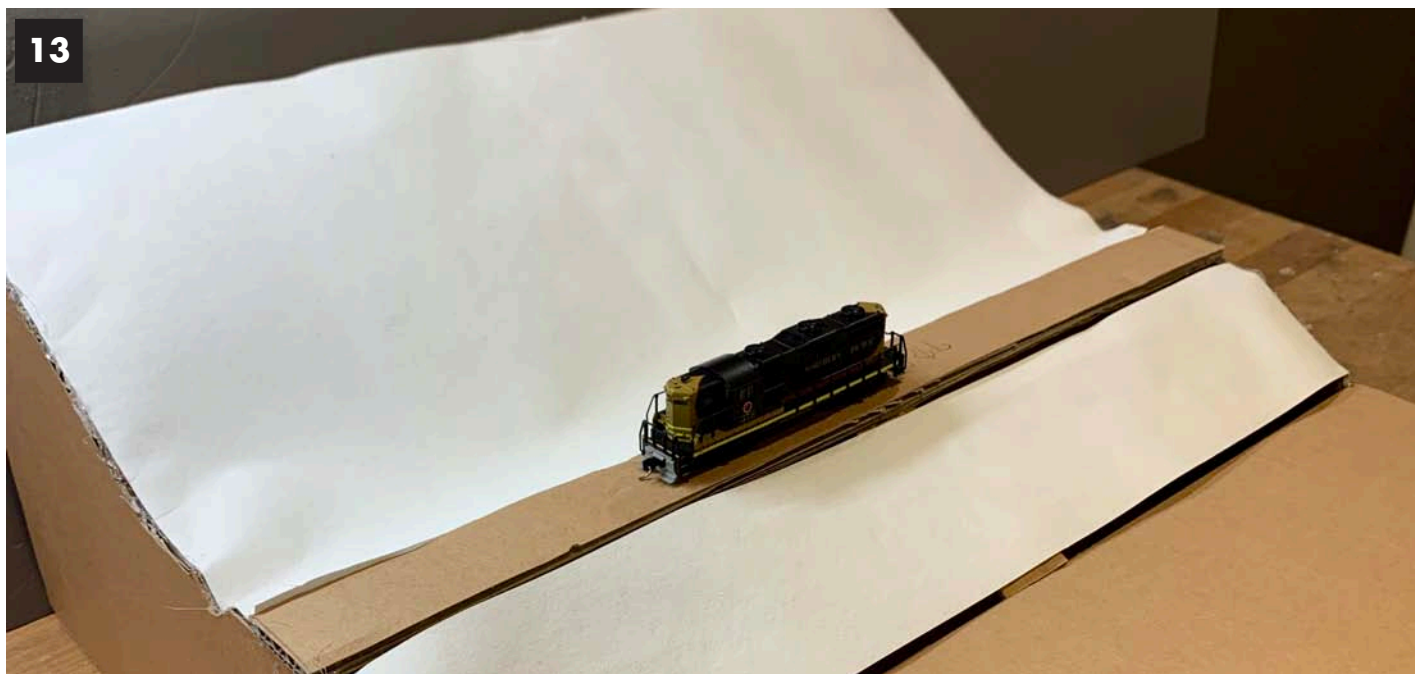


Image 13. **Version 3** had a 7.5 centimeter tall back and a wide river. We decided that this height would be appropriate for transition modules from flat standard modules to valley modules. The river was deemed too wide.

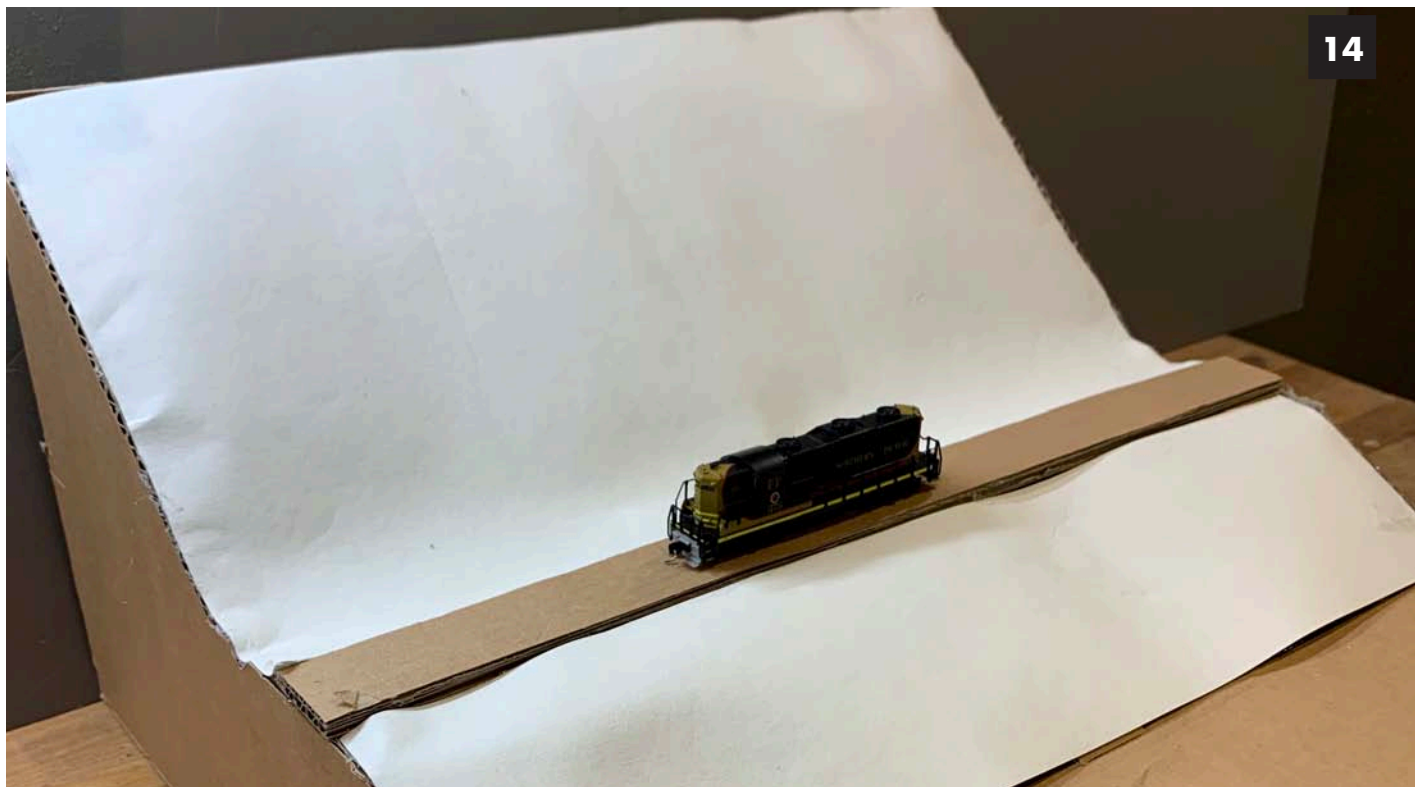
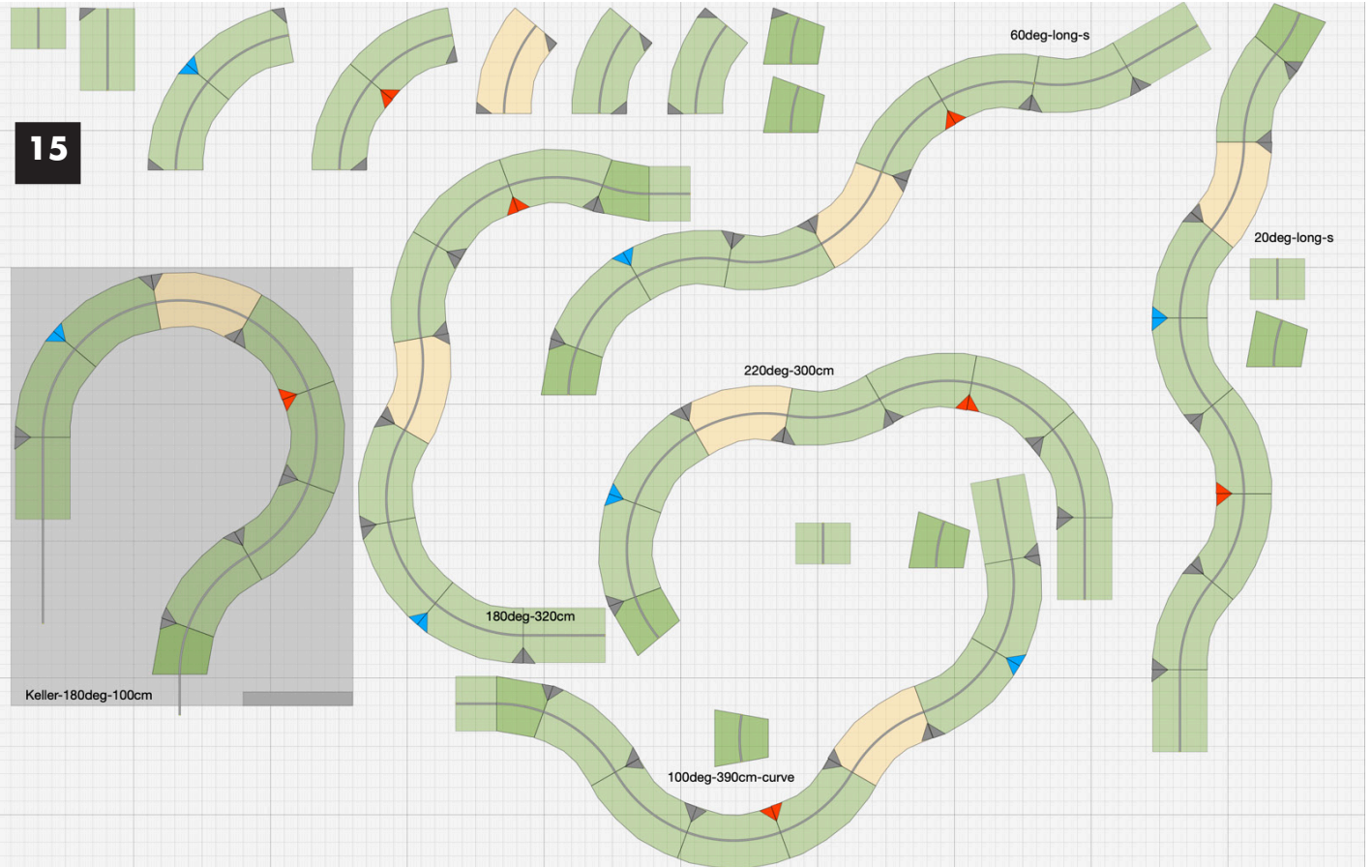


Image 14. **Version 4.0** was the final version for the full-height valley module: the river is 8 centimeters wide, the back is 12 centimeters tall.



**Outlook**

Image 15. As we started to look at the valley module we realized that we needed only a relatively small number of modules to create a lot of different configurations. Blue triangles are full height module endplates with the hill on the outside, red is full height with the hill on the inside. Grey are medium height modules. The yellow module is a river crossing.

This small group of modules could be the starting point to integrate additional valley modules as they are being built. So I was volunteered to build a 7-module “valley module starter kit”, including a river crossing module.

The construction is beyond the scope of this article, but if there is interest I might cover it in a future NSR. Image 16. But I want to leave you with a sneak preview how the real modules look like: ▶



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**2023 JUN 13-18 NV** Sparks/ Reno area.  
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**2022 SEP 23-24 PA** Altoona  
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