

THE COUPLER

NMRA NORTHEASTERN REGION



No. 273

APRIL-JUNE 2019

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with NeoPixels
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Using Floor Finish
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COVER PHOTO

A Union Pacific Rio Grande Heritage Unit leads a manifest train out of the depths of The Eagle River Canyon with Highway 24 way above on Bill Brown's *Leadville and Red Cliff Railroad*. The LARC will be open for tours and operations during the *Empire Junction 2019* NER convention in Syracuse. The layout is actually two railroads in two different eras. Read about one of these beginning on page 7 of this issue.



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FROM THE EDITOR . . . By JEFF PASTON

When planning a convention, the first thoughts seem to be that "wish list" of things you'd like to see, or events you'd like to have. But also in those early stages, there can be the worry that your convention might not achieve that special attraction that makes it "different" from all of the others, or at least brings a good attendance.

At first, planning for the NER convention this fall in Syracuse seemed like the same old stuff. But as planning progressed, the level of excitement increased.

A train excursion appeared; topics for clinics keep getting better! Then there is a special tour of layouts and a major Digital Command Control (DCC) manufacturer in a neighboring Division. My interest is piqued. This is shaping up to be a real good time!

Among the clinics is the *Digital University*, an extensive program for those wanting to learn the intricacies of DCC. Further electronic wizardry will



be Jim Kline's clinic about using NeoPixels to light model structures. *The Coupler* has a preview about those NeoPixels in this issue.

There is also a teaser about operating sessions that will be offered. Bill Brown's two era, two-level layout will be location for two operation opportunities. The convention will also feature more than 25 great layouts to visit.

As I said, things are shaping up quite well. I can't emphasize enough the importance of registering as early as possible since some sessions have limited openings.

On another subject, just as I prepare to put down more ballast on my layout's trackwork, comes a different system that seems ridiculously easy. We have an article on page 13 about using an acrylic polymer floor finish as the bonding medium for ballasting.

Our *Exploring the NER* feature on page 14 of this issue introduces you to a railroad attraction in Edmundston, NB, that is truly a family affair. I'm told the area is an ideal summer vacation spot. 

OPEN DOEHR By JOHN DOEHRING NER President

What Our Members Want

A few years back (2015), we conducted a comprehensive survey, asking members what they liked (and didn't) about their Division and Region, and what they wanted to see most in focus, effort, and growth in the NER. We received more than 325 responses, with all divisions reporting, and captured lots of thoughts, perspectives, and good ideas. This feedback fed into our strategic planning efforts and helped us focus our work on the priority objectives of members. (*Note: We plan to update the NER Member Survey in the coming months.*)

Two thirds of our current members are at or beyond retirement age, and most have been in the NMRA for at least several years. Most see themselves as intermediate or accomplished modelers, with active to very active participation in the hobby. And while they report multiple obstacles to hobby progress, the number one reported constraint is time – to devote to trains.

Almost 80 percent of members say they're satisfied with the NER, with the *Coupler* magazine listed as highest value, followed by the Region convention. Jeff Paston and the editorial team have done a superb job of delivering and improving the magazine (color!), and I believe it's one of the best today in the entire NMRA.

In 2015, the Region convention was on shaky ground, but since then we've fared much better with efforts led by Dave Insley and the team, alongside the selfless work of generous host divisions. Next stop is Syracuse, promising yet another memorable weekend experience for

NER train buffs. After that, we'll be in the HUB in 2020, and we have some cool ideas for what comes afterwards. About 50 percent of members report they've never attended a regional convention, and that's too bad – *the NER annual convention is in my opinion the single biggest opportunity for you to enhance your value in the Association, and progress in the hobby this year!* If you can, please attend the convention in Syracuse this September! (It's an investment! We think it's worth it! You won't be sorry!)

Beyond the *Coupler* and convention, members want more connectivity with other modelers, additional regional activities, more knowhow sharing and help, and support for their Division. We're working on several of these now – having first changed our *governance model* substantially – to allow for all division presidents to sit on the NER Board. This is already facilitating better communication and integration between the Region and divisions, and across the divisions, and it will speed up the flow of new ideas and initiatives all around.

We're now embarking on a Region Website overhaul to create a much more inviting and helpful portal for members with relevant information and timely news, upcoming activities and events, and connection to some of the astounding modelers we have in the NER. We envision a Website that is *much more than we have today* – but this will take time and energy and involvement of many. If you have an interest and passion in this area (Website, content, marketing), please stand up now! We need you! 



Former Coupler Layout Editor

Vondrak Named RMC Editor

Longtime NMRA and NER member Otto Vondrak has been named editor of *Railroad Model Craftsman* magazine, effective with the May issue. He replaces Stephen Priest. It is with some pride to note that Otto started his climb to head RMC from a former editorship with *The Coupler*. He served as layout editor from Issue 220 (September 2005) to Issue 236 (October-December 2009). Otto used his graphic arts skill to bring a significant redesign to *The Coupler* newsletter, which includes the main font still used for the banner and headings in today's magazine.

Otto has been active in the NER for some time, including membership on the "Manhattan Limited" convention committee



prior to his *Coupler* work.

He served as art director of *The Dispatcher's Office*, the OPSIG journal, from 2007 until the end of 2010 when White River Productions took over. One of the reasons he said he had to let go of the OPSIG publication was because he accepted a full-time position with Carstens Publications as associate editor of *Railfan & Railroad* in January 2011. In 2014 both *R&R* and *Railroad Model Craftsman* were acquired by White River Productions.



A native of New York State, and a graduate of Rochester Institute of Technology's (RIT) graphic design program, he co-founded the RIT Model Railroad Club.

Otto is a member of the NER's Lakeshores Division.

Model Railroading Hobby Promoters

Nominations Requested for Annual Spate Award

The Spate award was created by the Great Falls Model Railroad Club in memory of Robert W. Spate. The award is presented annually to the member of the Northeastern Region of the National Model Railroad Association or organization among those members or organizations nominated, who or which best exemplifies the promotion of the hobby of model railroading.

Preference is that the service to the hobby be in a public forum open to young people and/or others who normally are not exposed to the hobby. The award is an engraved plaque and is presented at the Region convention.

Nominations may be made by active Division boards of directors or trustees and by the Northeastern Region area director for those members or organizations not represented by an active Division.

Selection is made by a committee approved by the Region board of directors.

Robert W. Spate of New Harbor, Maine, was a Life Member of the National Model Railroad Association, member of the HUB Division of the Northeastern Region,

and actively shared his model railroading with young people and others interested in learning about the hobby. This award honors Bob and recognizes others who share this spirit.



NMRA Club at Springfield. Members of the Valley HO Track Model Railroad Club, a 100% NMRA modular club, participate in the 52nd Railroad Hobby Show Jan. 26 and 27 in West Springfield, MA. Helping run the club's 20-by-40 foot layout are Jeff Dean, layout coordinator at left,

THE COUPLER Deadlines

MAY 17 – July-Sept issue
AUGUST 16 – Oct-Dec issue
NOVEMBER 15 – Jan-March issue

TIMETABLE

Compiled by JACK LUTZ

CONVENTIONS

- April 4-6:** 34th Annual Sn3 Symposium; Bellevue, WA <www.sn3seattle.com/>
- May 23-25:** O Scale National Convention; Santa Clara, CA
- June 23-29:** 65th National Train Collectors Association Convention; Albuquerque, NM <camembers.org/>
- June 26-30:** 27th Annual National N Scale Convention; Rosemont, IL <nationalnscaleconvention.com>
- July 7-13:** NMRA National Convention; Salt Lake City, UT <nmra2019slc.org>
- July 30-August 3:** NASG National Convention; Cincinnati, OH <NASG.org>
- September 19-22:** NER Convention- Empire Jct. 2019; Syracuse, NY <www.empirejunction.org>
- October 11-14:** MER Convention; Valley Forge, PA

SHOWS

- April 6:** Great Northern New England Train Show; Dover, NH <netca.org/>
- April 6:** First Annual SMMRC Train Show; Westbrook, ME <southernmainemrc.wordpress.com/>
- May 5:** New England O Scale Train Show; Hudson, MA <trainweb.org/metrowesthudsonshow/mrms_show.html>
- May 19:** Wayne Train Show; Wayne, NJ <eastcoasttrainparts.com/wayne.htm>

MEETS

- April 6:** Seacoast Division NMRA 2019 Spring Event; Newington, NH <seacoastnmra.org/>
- May 4:** GSD Spring Meet 2019; Hillsborough, NJ <www.nergsd.com/upcoming.html>
- May 31-June 1:** New England/Northeast Railroad Prototype Modelers Meet; Enfield, CT <nerpm.org>
- July 20:** Seacoast Division NMRA 2019 Summer Event; <seacoastnmra.org/>

Plenty Planned for Syracuse – Ops, Tours, and Clinics Fill Convention Schedule



The upcoming NER convention in Syracuse is promising some exciting activities that should make this a memorable event for those attending. Organizers of *Empire Junction 2019* have added a railroad excursion, top-notch clinics and workshops, operating sessions on nationally-known layouts, and even a visit to a well-known model railroad manufacturer.

Without a doubt, the key to getting the most from this convention is to register early. There are a number of events with limited capacity. These include the “Modeling with a Master” clinic, a tour of Rochester-area layouts, some DCC clinics, and operating sessions on specific layouts. There are also a few “extra fare” events.

EXTRA FARE

A “rare mileage” fall foliage excursion will operate on the Finger Lakes Railway on Saturday, rain or shine. Convention organizers say this is a great opportunity for NER members and spouses to meet one another and share an enjoyable convention activity.

The train will operate on what was once the New York Central’s Auburn Branch. The trip will start in Solvay (just west of Syracuse) with hopes of reaching Geneva. Enroute, there will be a run-by (weather permitting) at the historic Martisco station owned by the Central New York Chapter of the National Railway Historical Society. The station museum will also be open for visits during the convention.

The excursion is \$35 and pre-sold box lunches from Panera

Bread are available at \$15 each. A café car with non-alcoholic drinks and snacks will operate during the trip. Unfortunately, the train is not wheelchair accessible.

Jack Ellis of Bar Mills Scale Model Works will present a three-hour hands-on “Modeling with a Master” clinic. Participants will construct, finish and weather two walls of a Bar Mills kit under Jack’s tutelage. Whatever you don’t finish, you will take home, along with several samples of weathering powder and a container of Jack’s own mix of stain. The session is \$10 and limited to 15 participants.

Some convention-goers will get right down to business by 2 PM Thursday when they start class at the “Digital University.” Erich Whitney is offering the three-hour session on Digital Command Control (DCC). Participants must commit to bring a laptop computer and two locomotives to the clinic. They will download the latest version of JMRI (Java Model Railroad Interface) software, and receive instruction on the many possibilities it affords for decoder programming and layout control. They will learn skills, including speed-matching those two locomotives they bring. Registration limited to 10 at \$10 each.

Among the non-rail activities is a “Sip ‘n Paint.” On Friday night at 6:30, this fun session has participants painting a piece of art based on a railroad theme. To help the “creativity,” the artists will also enjoy some wine. The \$30 fee includes paint supplies, canvas, and the wine. No experience is needed since an instructor will provide step-by-step instruction.

“The Lakeshores Limited” Tour

Better Be Faster than a Speeding Locomotive to Sign Up!



Ron Stacy's Rondemont & West Shore RR

Twenty lucky convention-goers who sign up quickly will tour seven unique layouts and a major model railroad manufacturer in the nearby Lakeshores Division, the newest member of the NER. Centered in Rochester, just an hour-and-a-half west of Syracuse, the Division will host a carpool tour that leaves the convention hotel at 8 on Friday morning and will return around 6 that evening.

Included on the tour will be a short visit to NCE, one of the largest manufacturers of DCC systems, decoders, and accessories. The owner, Jim Scorse, is an avid two-rail O scale Erie Railroad modeler who loves to talk trains.

There is no added cost for the Lakeshores tour. A stop will be made for lunch.

Three layouts will be holding

operating sessions on Friday evening for which participants can sign up separately from the tour.

Here are the layouts scheduled for the tour.

Pete Darling’s *Donner Pass* in Scottsville, N.Y., recreates the Southern Pacific’s Sacramento Division in 1941 and filling a basement.

Ray Howard’s *Seneca Lake*,



The Finger Lakes Railway will host a Saturday excursion west of Syracuse along the former New York Central Auburn Branch. Photo: Mike Flannery

SPECIAL EVENTS

On Thursday evening from 5:30 to 6:30, a welcome reception is planned that will offer complimentary soft drinks, coffee and tea, cheese and crackers, vegetables and dip, and a cash bar. The reception will introduce conventioners to Syracuse and Central New York with information on things to see and do, restaurants, and train watching sites.

"Digital University" continues with more sessions open to everyone starting at 7 PM Thursday. Tom Nelson will offer a session on LCC (Layout Command Control), and Chuck Diljak will cover using *JMRI Ops Pro*.

Friday's activities start with The Lakeshores Limited, a guided tour in the adjacent Lakeshores Division. More about this is in the article also on this page.

REGISTRATION

Empire Junction 2019 registration is now open! A registration form is on page 6 of this issue. You can also register online using a credit card at the convention Website <empirejunction.org>.

Early registration until June 30 is only \$50. Then, there is regular pre-registration between July 1 and August 15 for \$60. There is no charge for spouse/significant other registration. The cost for the banquet buffet on Saturday night is \$40. The Sunday morning awards breakfast buffet is \$25. Menus for both meals are on the Website.

The convention is offering a special package price that includes the registration, banquet and breakfast for \$100 until June 30. The package is available for \$115 between July 1 and August 15.

LAYOUTS AND OPS

Convention organizers are trying something different by not mailing a layout tour book. Instead, convention registrants will receive a link to special section of the convention Website, where locations, descriptions, and a schedule for some 25 layouts will be available.

Nine layouts are scheduled to offer operations with more than 130 operating slots. Three more layouts in the Lakeshores Division offer even more opportunities. Early registration is strongly encouraged to get preferred layouts. Descriptions of the 12 layouts are on the convention Website. The NER's Op-Sig Coordinator Al Oneto will contact registrants to assign operating positions. 🚂



Jersey City on the Rochester Model Railroad Club layout.

Ontario, & Western in Geneva asks the question what if the NYO&W had come toward Seneca Lake, rather than north of Syracuse. The layout is set at Saturday, August 15th, 1925 (at 2pm).

Bruce Shepard's *Buffaloville Southern* in Macedon is a fictional branch of the New York Central.

Ron Stacy's *Rondemont & West Shore* in Penfield is a major Mid Atlantic east-west carrier set in 1977. You may have

seen pictures of the RWS featured in NCE advertisements.

The *Seneca Valley Lines* of the Rochester Model Railroad Club is loosely based on the route of the Lehigh Valley RR from western New York to New Jersey. The layout features a trolley line that operates from overhead wire.

The *Rochester and Irondequoit Terminal Railway* of the Rochester Institute of Technology (RIT) Model Railroad Club is a

proto-freelanced HO scale version of the NYC Falls Road from Rochester to Niagara Falls in the mid to late 1990s Conrail era.

Gordon Spalty's *Maine and Western* in Rochester is set in autumn in New England. The layout also features the narrow gauge *Portage Oneida Rwy*.

To learn more about these layouts visit the 2019 convention Website <empirejunction.org> 🚂

— Ned Spillar MMR and Drew James



**To register for the 2019 NER
Convention, please go to:**

<www.empirejunction.org>

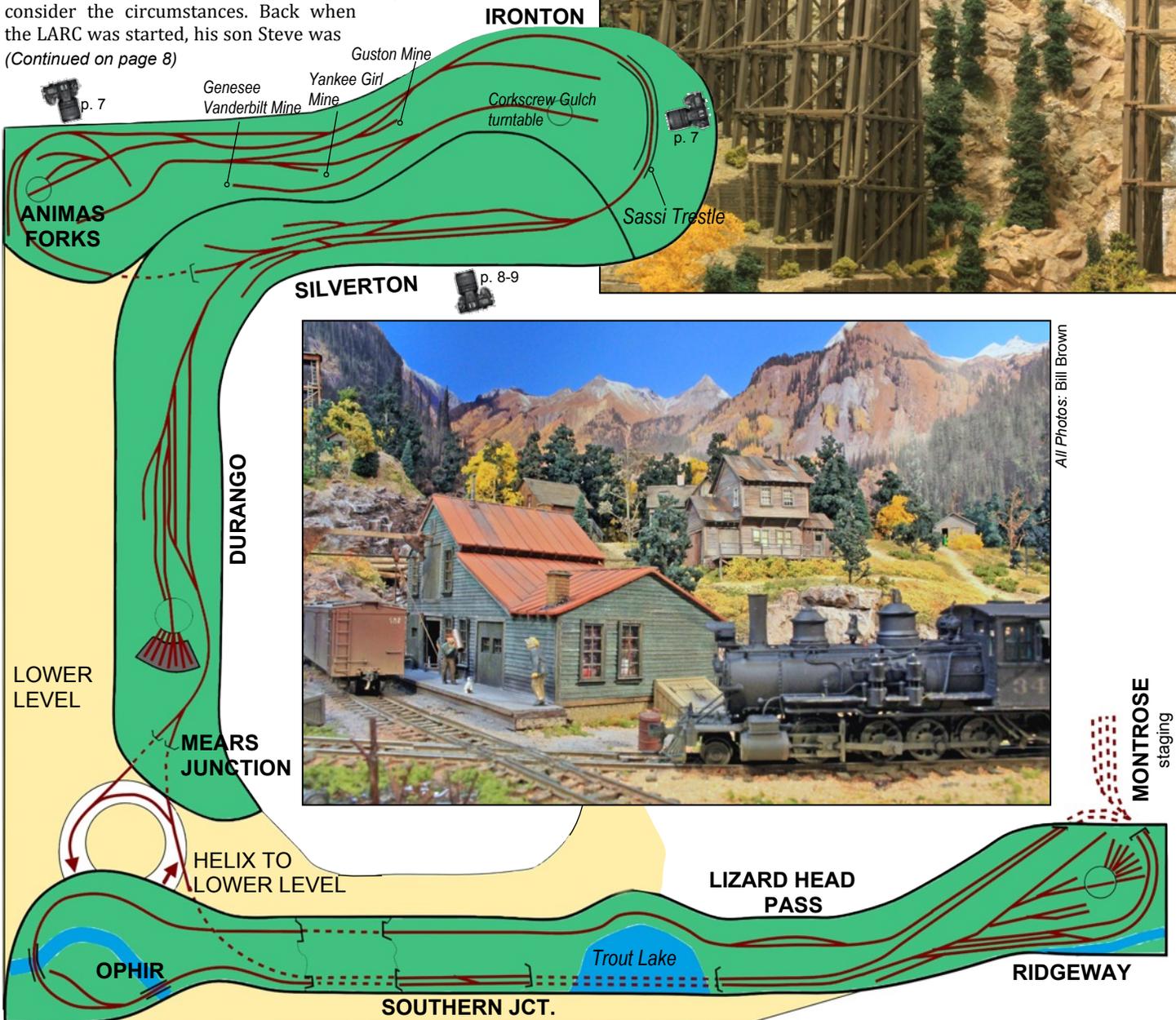
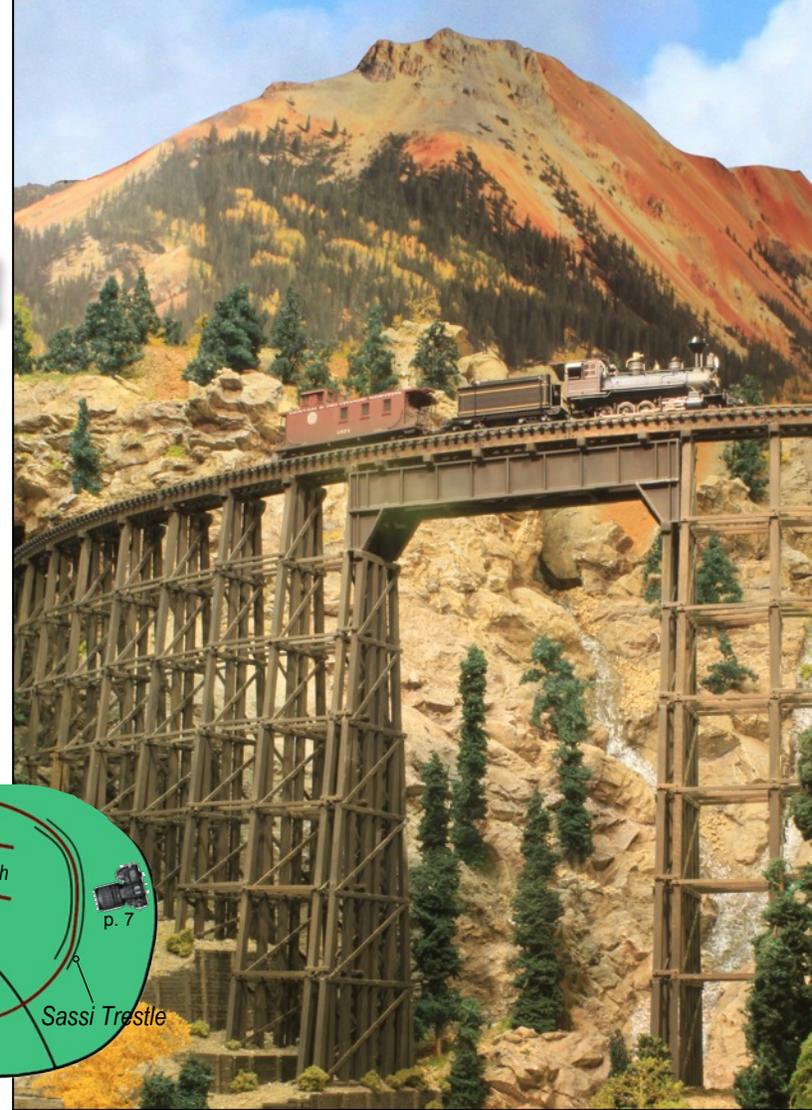
The Upper Deck is a Second Railroad!

Model railroaders who have visited Bill Brown's expansive basement empire have enjoyed viewing his modern-day Leadville and Red Cliff Railroad (LARC), depicting the Denver & Rio Grande Western's former Tennessee Pass route through the Rockies. But Bill didn't stop there when he realized his real interests lie in D&RGW narrow gauge action. On a level above one stunning layout sits another that takes visitors back in time to an era where steep grades, sharp turns, and slim gauge rolling stock negotiate breath taking Colorado scenery.

While the standard gauge modern-day LARC is about 98 percent done, the narrow gauge pike had been a work-in-progress for the past few years. That progress is now reaching its finishing stages as well.

Some may ask, "Why two layouts? Can't Brown make up his mind?" Bill says the reasoning is logical if you consider the circumstances. Back when the LARC was started, his son Steve was

(Continued on page 8)



All Photos: Bill Brown

The Upper Deck is a Second Railroad!



Above, the morning mist is just burning away as Mudhen 462 pauses at the Silverton station. Around town, the morning rituals are getting underway as the milk delivery passes by. We're not sure what's happening at the meat market with both an ambulance and a fire department vehicle in front and a man "resting" on the sidewalk.

Upper photo on page 7: The Sassi Trestle on the way to Animas Forks is not the place for an engineer to fall asleep and forget the 10 mph speed restriction! The trestle was scratchbuilt by Lou Sassi for his former HO West Hoosic Railroad. Lou gave it to Bill Brown when he moved south.

Lower photo on page 7: A chill in the October air foreshadows the winter to come as D&RGW 343 passes workers at the Animas Forks Mercantile Shop below the snow-capped peaks of the surrounding mountains.

(Continued from page 7)

still living at home, and Bill, wife Judy, and Steve had just toured Colorado for the first time. Steve found himself in love with the modern trains around the front range of Denver, and Bill felt equally strong about the slim gauge era of the past that roamed the San Juan Mountains further south. The decision was made to incorporate both gauges and eras.

Back in the mid-20th century, the two gauges interfaced at Salida. Even though the dual gauge track-age was removed during the 1950s and '60s, that did not stop the Browns from concocting a scenario in which those tracks were maintained into the modern day. Although Bill and Steve's layout still features that coming together of the two gauges, Bill is now operating the two as separate eras.

Brown's D&RGW plan depicts the Colorado *Narrow Gauge Circle* that has been memorialized in many books and print media over



the years. The LARC layout has seen its share of publicity as well with coverage several times in *Model Railroader* and *The Narrow Gauge and Shortline Gazette*.

The operating plan begins with newly added staging tracks from which C-19s and Mikados lead runs of passenger trains and freight into the intricate scenery to both Ridgeway to the south, and eastward across Marshall Pass to Mears Junction. Both routes end up in Durango – famous today as a tourist destination, but with an important past as a place where boxcars and gondolas filled with precious metals traveled from the mines to the north and west.

From Ridgeway, one can guide trains with helper engines around the famous Ophir Loop to Lizard Head Pass, or from Durango, trains can trek through Silverton to the Silverton Northern Railroad and its distant terminus at the newly completed Animas Forks. Here,

several very detailed structures have been added along with the turntable for turning locomotives for their adventurous journey back. Hundreds of trees have been “planted,” making a flawless transition to the stunning backdrop Bill photographed when he was in Colorado. Anyone lucky enough to draw the Silverton Northern trick will enjoy about 90 minutes of operating action negotiating the four percent grades to the myriad of businesses that have been added in precarious places.

Brown’s empire is just one of many quality stops on tour during the *Empire Junction 2019* NER convention around Syracuse between September 19 and 22. Convention-goers will be able to view both of the LARC layouts in action during an open house on Sunday, and at separate operating sessions earlier in the week. 🚂

Illuminating Model Structures with NeoPixels

By JIM KLINE

Photos by the Author

My first memory of model trains was at Christmas; eyes at track level of my older brother's *American Flyer* layout. I waited anxiously for the steam engine's headlight to pierce the darkness as it made the turn at the far end. I sat there in my PJ's, cup of hot chocolate in hand, watching the light grow larger. I feared I might be run over, but at the last moment, the train veered off and I was safe. I've never grown tired of watching that scene.

In order for the illusion to work, the room lights had to be turned off, and only the Christmas tree lights with the small town and

its buildings lighted on the layout below. No other light was needed or wanted.

We work diligently detailing our rolling stock, motive power, buildings, and track signaling, but usually with respect to the full light of day. However, there is another dimension that we should consider – what our model structures look like in reduced light and properly illuminated from within.

There is an inexpensive device – a *NeoPixel* – that is very well suited for this task.

includes solder pads for wiring. NeoPixels are wired to other NeoPixels, one after the other, forming a serial chain. Three wires are needed to connect the NeoPixels together: 5 volts, ground, and data. At the beginning of the chain is the “brain” that directs which NeoPixels to turn on and which to turn off and of what color. We will discuss the “brain” a little later.

NeoPixels are able to produce an almost unlimited color output. This allows for

Glossary of Terms

Adafruit Trinket: Offshoot of the Arduino family of micro controllers utilizing a very small form factor.

Address: Unique numeric identifier used by a Sketch to directly communicate with a specific device among a group of similar devices.

Arduino: Micro controller that is programmed using free software on the Internet.

Compile: Process of converting user entered code from a Sketch into Arduino readable format.

Grain of Wheat: Miniaturized version of an incandescent bulb, usually 12 volts.

IDE: Integrated Development Environment is a set of tools and programs used to create, debug and upload an Arduino Sketch.

LED: Light Emitting Diode is a solid-state device that produces visible light without heating a filament.

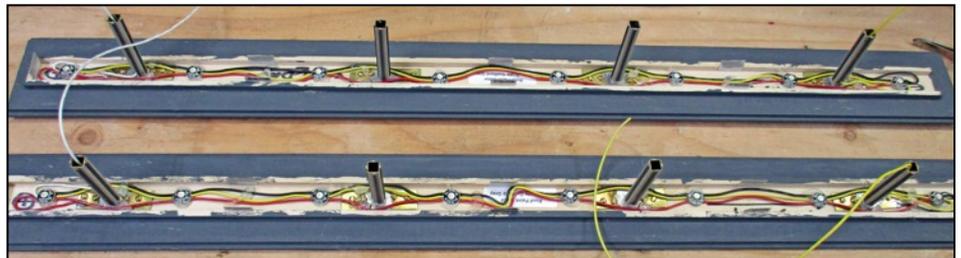
Library: Specialized set of instructions that are inserted at the beginning of a Sketch in order to perform certain functions.

NeoPixel: Small electronic device that contains three individual LEDs and a controller able to produce various colors and intensities of light.

Serial: When transmitting data method of sending data one piece at a time in sequence.

Sketch: An Arduino program.

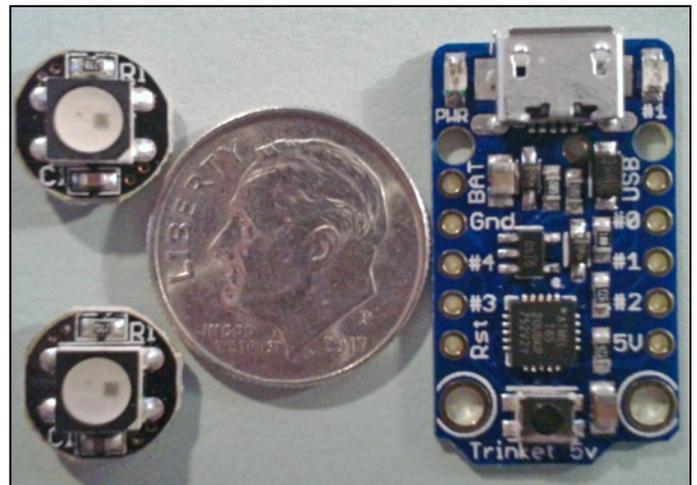
Syntax: The rules of punctuation, case and order for writing a compilable Sketch.



It is an electronic component that contains three individual LEDs – red, green, and blue – along with a controller encapsulated in a small package. This is then mounted onto a small diameter printed circuit board that

the interior of a structure to be illuminated with a color that is closer to prototypical. There is also the ability to individually control the intensity of every NeoPixel in the chain. That is not easily attained with discrete LEDs

The passenger platforms at *top of page* have eight NeoPixels installed in each. The *center photo* shows the installation and wiring through brass tubing.



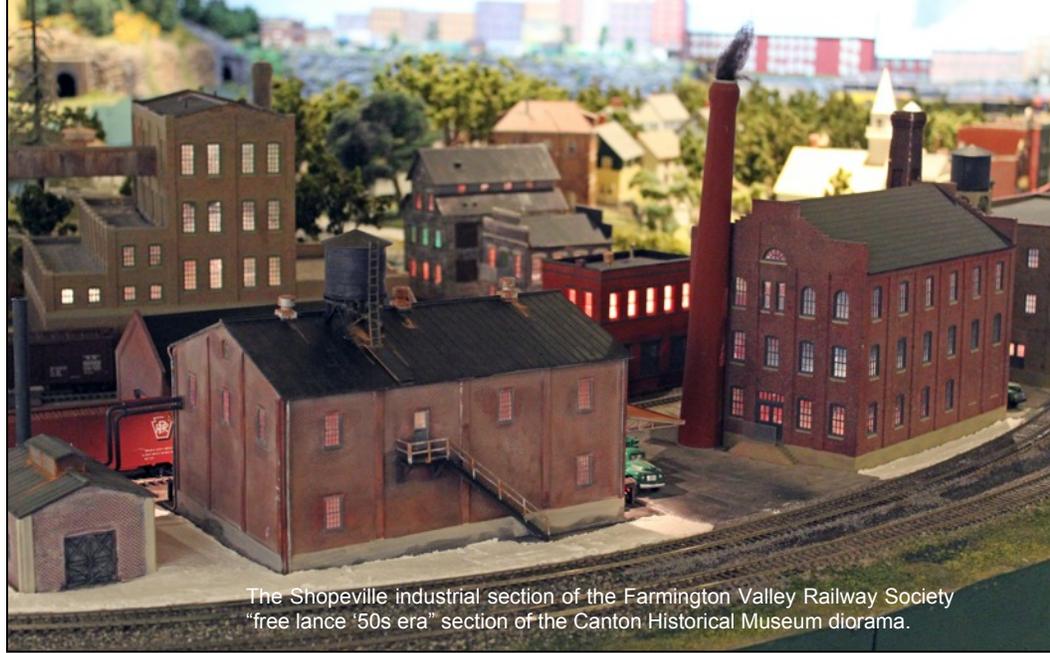
At *right*, two NeoPixels and an Arduino unit are extremely small when posed next to a dime!

or grain of wheat bulbs. This versatility makes it possible to place several in a structure, and then selectively turn on or off a particular floor or department to give the illusion of occupancy. Additionally, special effects can be employed such as arc welding, furnace kilns, airport strobes, work zones, etc. Your imagination is the limiting factor.

GETTING STARTED

Begin with a plan! It is not enough to say, "I want to light my buildings." Survey your layout and decide which structures are candidates for lighting. As you make your selections, document what it is that you wish to accomplish with each structure. You will need this documentation later, so be as detailed as possible.

For each structure that will be lighted, determine if any rework needs to be done such as wall and roof seam gaps that allow light leakage, windows properly glazed, foundations light tight! Once the structure has been "reworked," begin assembling and dry fitting the partitions and floors per your plan. A good material for this is a thin wall corrugated box, although any relatively stiff, thin material will work. We use hot glue to install partitions and floors as well as the NeoPixels. Also, be aware of the surface color of this material as it may adversely affect the color of the light.



The Shopeville industrial section of the Farmington Valley Railway Society "free lance '50s era" section of the Canton Historical Museum diorama.

the Farmington Valley Railway Society (FVRS)/ Canton Historical Museum (Connecticut) where I am a member, we attach a three-pin male connector to one end and a female three-pin connector (pn HKBAYI) to the other end of the structure's NeoPixel chain. The connectors are then fed through a half inch hole under the structure to

same for each structure. The male connector is the beginning of the chain, and the female connector is the end. This allows removal of a structure for maintenance without disturbing the wiring of the entire chain.

CONTROLLING NEOPIXELS

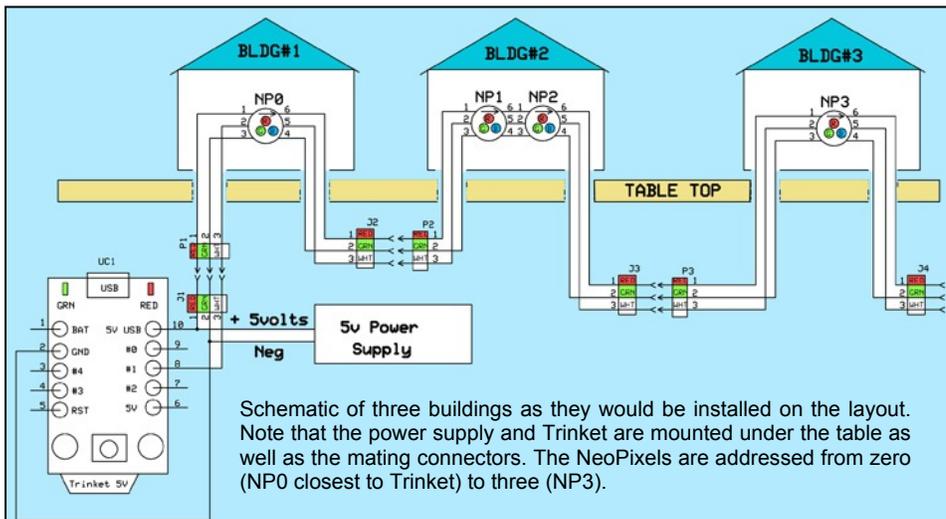
Once structures have been installed on the layout and connected to each other, they form a chain of NeoPixels organized in



Small office building with four pixels – one in each room on each floor.

Next, decide how the interior lighting of the structure will be run from a wiring standpoint and the location of the "start" and "end" connections of the NeoPixel chain to penetrate beneath the table top. At

the underside of the table where they are then mated to neighboring structures on either side. The orientation of the connectors is the



Schematic of three buildings as they would be installed on the layout. Note that the power supply and Trinket are mounted under the table as well as the mating connectors. The NeoPixels are addressed from zero (NP0 closest to Trinket) to three (NP3).

"single file." This arrangement is required because the "brain" transmits the data down the "chain" in serial, sequential fashion. As an example, the schematic at left depicts four NeoPixels in a chain. The first piece of data will be for NeoPixel #3; the next for NeoPixel #2; followed by NeoPixel #1; then NeoPixel 0.

What makes all this possible is a micro controller called an *Arduino*. The Arduino was originally developed to introduce students to the world of programming. It is a very popular (and inexpensive) platform that has been embraced by many hobbies and is beginning to find its way into model railroading. (Check out Jerry Grochow's article on Arduinos, in the January 2019 issue of *NMRA Magazine*).

There are many derivatives of the Arduino developed to perform a variety of functions. One of the two Arduino derivatives that the FVRS uses is the Adafruit Trinket

(Continued on page 12)

Illuminating Model Structures with NeoPixels

(Continued from page 11)

Mini Microcontroller-5v. The *Trinket* can control up to 100 NeoPixels (LED/NeoPixel strip - WS2812B) and measures 1 1/2" x 5/8" and is priced under \$10. The average cost of a NeoPixel is 16 cents!

The brightness of a light source, such as an incandescent bulb, grain of wheat bulb, or single LED can be adjusted - but not its color. A NeoPixel can be programmed for both! We know the makeup of the NeoPixel contains three individual LEDs in one package and that each one of the three can be independently adjusted. Each of the three LEDs has a brightness range from 0 to 255 with 0 being off and 255 being full bright. If we were to adjust the blue LED to 127, we would see blue, but with a brightness level of about one half of what is "full bright."

Similarly, if we adjusted all three LEDs to 255, the light would appear as white (red + green + blue). If we wanted to reduce the brightness of white, we could reduce each of the three settings to 100 and still have a white light - but at reduced brightness. There are many combinations available to mix the three LEDs light output (color and brightness) in a NeoPixel. This is true for each NeoPixel in the chain as they each can have a unique color and brightness level of their own.

WRITING A "SKETCH"

The best examples of good benchwork are those that started with a plan.



Interlocking tower: Two NeoPixels installed - one per floor.

The best examples of solidly performing trackwork are those that started with a plan! We could go on and on, but you get the idea.

Ask any programmer what the single most important aspect of writing a program is and they will answer "having a plan." As a matter of fact, it is imperative to know exactly what you want to accomplish with your "program" before you write your first line of a code. In the Arduino world, a program is referred to as a *Sketch*.)

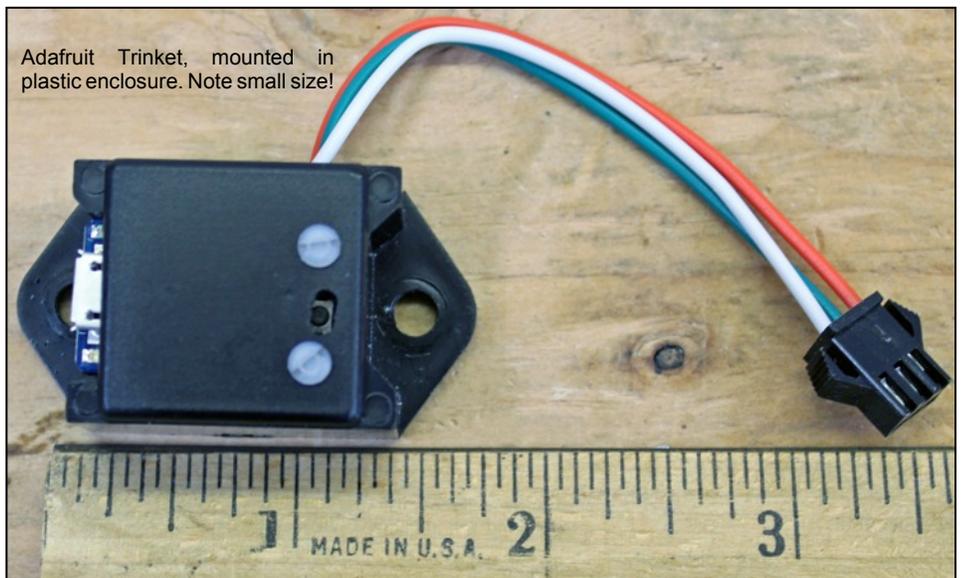
Programming special effects can be implemented in a Sketch, but require an understanding of the various time dependent functions as you will be turning NeoPixels on and off based on time. The good news is that the Arduino family of controllers has a wealth of information on the Internet free of charge, and covers timing, as well as many other useful functions. The programs and utilities (tools, libraries, programmer Integrated Development Environment [IDE] tutorials,

etc.) that you will need are also available for free on the Web. You provide the computer, USB cable, and Arduino!

To activate a NeoPixel, four pieces of information are required - 1)The NeoPixel's address (location relative to the Arduino), and 2)the red, 3)green, and 4)blue values.

The format of the code is relatively easy to read and understand once you know how to interpret it. There is more to a Sketch than what is shown and can be discussed here, but the format is essentially the same throughout.

I hope you found this information helpful and are thinking of ways to add NeoPixels to your layout. If you plan on attending *Empire Junction 2019* in Syracuse, I will be conducting a clinic on NeoPixels. In the meantime, turn the room lights down, sit at the end of your layout, eyes at track level with your favorite beverage and wait for the magic of the approaching headlight of the train. 🚂



Adafruit Trinket, mounted in plastic enclosure. Note small size!



Photo courtesy: Plasser American



Take the "Pledge" Acrylic Floor Finish for Model Ballasting



By **JIM SCORSE** with **MIKE TYLICK**, MMR
Photographs by Jim Scorse

The only constant in life is change. Sooner or later, many of us will remove some or all of our completed trackwork as we plan a better layout.

Commercial track and switches are expensive, making us face the choice of either throwing away used track components or spending many hours trying to clean the ballast and roadbed remaining on the sections that we didn't destroy when removing them.

Prototype track is laid on a bed of rock ballast to ensure good drainage. Over time, silt, grease and dirt work their way into the ballast, causing it to cake up and no longer provide adequate drainage. When it gets bad enough, railroads will employ a ballast cleaning tool. This enormous piece of track equipment is used in tandem with a parade of dump trucks which haul away a surprising amount of dirt. The clean ballast is then deposited back in place and the track is resurfaced.

A quick way of ballasting model track is to use liquid acrylic floor finish. (This is *not* floor wax. It is a polymer. -Ed.) Pledge® acrylic floor finish is one brand available. It was sold as Future® until a few years ago. Any brand of acrylic floor finish should also work as well.

It's inexpensive and readily available.

Track is laid with loose ballast in the traditional manner, but instead of white glue or acrylic medium, liquid floor finish is used as the adhesive. Using an eye dropper, dribble a liberal amount over the track. Pledge® is thin, so it absorbs quickly (*photo 1*). There is no need to pre-wet the ballast. Since Pledge is an acrylic floor finish rather than a glue, the bond is essentially waterproof. Switch points are not welded shut as they are with glue. Stubborn mechanisms can be easily loosened with a Q-Tip® and ammonia.

If track must be removed, completed sections can be lifted from the roadbed with a putty knife. No solvents seem to be necessary to loosen the track. To clean the track for reuse later, track sections – ballast and all – are submerged in a covered pan of household ammonia (*photo 2*).

In a short time, the ballast is loosened from the track, which is now as good as new (*photo 3*). Ammonia odors are quite strong, so you should consider doing this work in the garage or other well-ventilated area.

The track is now clean and the ballast is at the bottom of the pan (*photo 3*). (Lacquer-based paint is not affected by the soaking, but it is still a good idea to test a small painted section to be sure whatever paint you had used isn't damaged by the ammonia.)

The ammonia in the pan is reclaimed through a strainer (*photo 4*). The reclaimed ballast is rinsed off and allowed to dry. And, as in the prototype, the ballast is clean and reusable (*photo 5*).

Jim Scorse is the owner of NCE Corporation.





Attraction Familiale de L'amour des Trains (A Family Attraction from a Love of Trains)

It seems like a neat tourist attraction based on a great deal of love for trains. So Coupler Contributing Editor Mike Tylick reached out to the owner of Du Reel au Miniature (From Real to Miniature) in Edmundston, NB, for a story. As Mike notes, "It's way up in the Canadian Maritimes, but what better place to beat the summer heat?"

By GUY LaFORGE

Photos Provided by the Author

My story starts in Edmundston, New Brunswick, where we see a young boy in the sandbox playing with cars and building houses with wood blocks. Eventually he got older and started adding details to the blocks. Eventually, that little boy got married and his beautiful wife gave birth to a son. And then the son started playing with blocks. The young boy, now older, still liked to build things, so he built his son a layout because that's what he wishes he could have had as a child. But after his son grew up, he doesn't play with trains anymore. But I – the young boy in the story – still play with mine!

My HO layout is 15 feet wide by 42 feet; about 900 square feet. I wanted to put emphasis on where I lived and where I work. Expanding my horizons a little bit, I built my vision of New Brunswick.

In 1998, my wife, Géraldine, and I opened the *Boutique Jef Style*, which combined my wife's passion and mine. Half of the boutique is glass etching and the other half is a train hobby shop. Then after opening, we wanted to promote the hobby, so we opened our layout to the public. The response we got wasn't what we expected!

To our great surprise, people started to give



us real railroad artifacts. They kept telling us, "Well, you love trains, here are some railroad pieces." The collection started with a few pieces and grew within a few years to 1,000 artifacts. With all of that generosity, my wife and I knew we had to showcase the artifacts and their stories. The success of that small exhibit led us to renovate our shed and use one side as a mini-museum. But by then, the collection was well over 3000 pieces!

For us, getting all those gifts was amazing! So naturally, we needed to do something to honor the donors. In 2006, we started building a replica of a 1900s train shed (engine house) that would serve as a museum to display our artifacts. We officially opened the *Du Réel au Miniature Railroad Interpretation Centre's* doors in July 2008, and it's been amazing ever since.

What makes our centre very special is that we change the exhibit each year. Since the collection keeps growing, we owe it to our guests to change the display. At the end of 2018, our collection had more than 8,500 pieces! Everything we have has been donated by awesome community members, businesses, and people from all around Canada who heard about us and want to participate.



Guy and Géraldine LaForge

Over the years, we have had a lot of visitors who were also modelers themselves and who enjoy our railroad and displays, the warm welcome, and my expertise. I have spent hours talking with both seasoned modelers, and beginners starting their first layouts. I have learned new tricks as a modeler and shared a lot with the people I meet. At the centre, we get upwards of 200 modelers a year. In 2014, the *Congrè Mondial Acadien* (an event honoring Acadian culture and heritage–Ed.) was coming to our town, so we decided to build a 1/8 scale riding train. We went from 700 visitors a year to upwards of 3,000! Another big project coming up is the opening of our rail workers' village called *Village des Cheminots* in 2020. We want to provide an experience just like the railroad workers used to have when they were working on the railroad.

We have grown a lot in the past few years thanks to the help of our volunteers, students, and community. 



At left, the museum's 2018 exhibit theme was *Travail du bois* (woodworking). The yellow machine at the front is a 1910 *Vélocipède* used to make rail inspections.

A young visitor looks over the Napadogan area of the New Brunswick-themed HO layout at right.



Top of page: Adults and kids enjoy a ride on the 1/8 scale train with Guy LaForge at the throttle. The train ride is about 1 km through a tree plantation.

Top right: The Railroad Interpretation Centre *Du Réel au Miniature* museum is in a 1900-era engine house replica, built in 2006.

Adding Passenger Service

By **JEFF HANKE**

On the Chessie System, the East End of the Cumberland Division was not known for being a hot bed of passenger service. It was known for high volume, high tonnage freight traffic. There were, however, two types of passenger service offered which make for interesting modeling.



First, in the Chessie Era (1972-1986), Amtrak operated one train each way over the East End. The *Shenandoah* ran until Sept 1981, and then the *Capitol Limited* ran from Oct 1981 to today. The *Capitol Limited* made stops in Harpers Ferry, Martinsburg and Cumberland. There was also

coach (932-6303), 85' Budd grill-diner (932-6322), and the Budd 10-6 sleeper (932-9013) to model these cars.

The "shorty" baggage car was the hardest kit to find. It was made by Train Station Products as its kit #870. Since it is incredibly rare to find, I used some of the company's detail parts and scratchbuilt my own, counting toward my passenger car requirement on the Achievement Program's Cars Certificate. Also, note that some times a dome car was seen later on this train, but not in any of the 1982 photos I have.

MARC
The Maryland Area Regional Commuter service offered trains for folks working in DC from as far out as Martinsburg, WV, each day. This service started with either a single or double RDC,

It is probably the best task for a new operator. The train has priority over every other train, so never has to yield to any other traffic. It also does not pick up or set out any cars, making knowledge of switching or turnouts unnecessary. The westbound train simply runs from one end of the layout to the other, stopping at three passenger stations (Brunswick, Harpers Ferry, and Martinsburg) enroute to Cumberland staging. The eastbound does the same in the opposite direction. Each stop is accompanied with a 3-5 minute delay to simulate unloading and loading of passengers and baggage.

MARC trains are just as easy to operate. The train starts the day in Martinsburg, loading morning commuters for the run eastbound through Harpers Ferry, Brunswick, Point of Rocks, and ending in DC staging. The same consist (single or double RDCs) shows up again in the afternoon running westbound, stopping at the same stations, ending back in Martinsburg, where it ties up for the night.

Passenger trains are the perfect



The Capitol Limited makes its first stop in Martinsburg, WV. The series of Walthers cars, combined with a scratchbuilt "shorty" baggage car, make for an accurate representation of the real train circa 1982. Photo: Jeff Hanke

commuter service, run in the 70s by Chessie using B&O marked RDCs from Martinsburg to DC. The Maryland Area Regional Commuter (MARC) train service took over this operation in the late 1970s. Since I model 1982, I focus on the MARC modeling.

CAPITOL LIMITED

The *Shenandoah* had one of Amtrak's lightest passenger numbers. So in Oct 1981, Amtrak started running the *Capitol Limited* from DC to Chicago. The name was made famous on the B&O, running a similar route until 1971. Amtrak ran one train daily in each direction. The consist of these trains varied based upon photos I have of them from around 1982. Most commonly seen were a F40PH locomotive, a "shorty" baggage car, a 73' baggage car, two coaches, a diner, and a sleeper.

Luckily for the modeler, all of these cars have been made in model form at one time or another. I have used Walthers 73' Budd baggage car (932-6402), 85' Budd 46-seat

but grew to former B&O F-units pulling light weight passenger cars in the early '80s. I have acquired a B&O marked RDC and plan on running it to denote the early days of MARC operations. Normal road numbers in my photos of the era were 9910, 9911, and 9921.

OPERATIONS

To operate a passenger train over the East End in the early Amtrak era is easy.

type for new operators to learn throttle control, braking, and bell and whistle signals without overwhelming them with facing point turnouts or blocking freight cars. I've also found out it is the type of train with which children most easily identify and enjoy running.

I look forward to sharing more on the new East End going forward, but until then... Keep on workin'.

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NER Office Manager

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