



THE GOAT

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Great Northern's "Empire Builder" races through western Montana led by E7A #504. Painting by Mike Danneman. Read about the pioneering EMD "A" units in this edition of *The Goat*.



IN THIS ISSUE

Editorial Comments.....	2
Railway Post Office (Letters)	3
Subdivision Reports.....	4
Historical Perspectives: EMD's "E" Units	6
Clinic: Backdrop Scenes, Part 3	12
Workbench Projects: Scenery Modules	17
Railroad Experience: Eastern Washington Gateway	20
Layout Tours: Workbenches.....	23
Modeling Products and Services: Visit to Sunset Junction	25
NMRA Achievement Program	26
Memoriam	26
Interchange: Building a Double-Ended Staging Yard	27
Superintendent's Report	29
Time Table – Events	29
Members' Want, Swap and Sell.....	30
View from the Caboose	30
Membership Application	33

EDITORIAL COMMENTS

Making a Contribution

Without delay, I want to thank those of you who have contributed news items, event schedules and articles that are of interest to our members. Hopefully, our message will also get to those who could become future members of the NMRA and our 5th Division. Thanks, too, to those of you who have offered words of encouragement and praise for the development of our newsletter over the past year.

I hope for increased participation in the production of future editions of *The Goat* by members in the 5th Division. We, in this part of the country, have a unique railroad history and a lot of very skilled modelers. And, as I have said before, we are historians, story tellers and teachers. Publishing in *The Goat* is a wonderful way to fulfill our obligations to each other and to the next generation of modelers. *Please, be a participant in this endeavor!*

General Guidelines: When I took over as the editor of *The Goat* last spring there was a well-established history and the ready availability of past issues to serve as a guide for me in my new position ó but there were no written rules or established formats for me to follow. I don't know how long I will be your editor, so in this issue I want to publish my own ideas and guidelines for this publication going forward.

I have tried to build our newsletter in a way that resembles an on-line magazine with regular departments and a standard format. I have tried to keep the size of the newsletter within a 30-32 page limit. Submissions should be in a digital format that will allow editing (text) and sizing (pictures). I use Microsoft *Word 2010* and prefer that submissions be in a compatible format (txt, rtf, doc or docx).

Departmentsö may be added or deleted from time-to-time depending upon the amount of material that is available and in response to suggestions and contributions by readers. Where possible, I will place submissions into an appropriate department. If there is no logical place in the newsletter for a reader submission I may put it into a general category or ask for some revisions to make it a more logical fit for the publication.

Submissions need not have prior approval but they may or may not be published òas is.ö I will reserve the right to make editing changes in order to fit the space that is available and to make what a reasonable person would describe as insignificant modifications of text. I will send a öproofö copy of finished articles to the original submitter. I always work on more than one issue of *The Goat* at the same time and reserve the right to determine *when* an article will appear due to the size limits mentioned above.

I often hear it said that "I would like to contribute something to *The Goat* but I can't write." My response to that is, as my father said to me so many times as I was growing up, "Can't never did anything."

That phrase still resonates with me as I think about trying a new modeling technique. I then treat each project as an opportunity to learn and master a new skill saying to myself "I CAN do this."

I won't suggest that you should become a new Hemingway (his paragraphs were often too long anyway) but I will challenge you to get beyond the "can't do" phase.

DO submit letters, news items and articles for *The Goat*. I will work with you to ensure that you will be satisfied with the result. You CAN do it.

I will attribute your contribution to you, by name, unless you specify otherwise with your submission. If you prefer to attribute the submission to a club or business, provide specific directions as to how you would like it to appear in print.

Letters to the Editor: The purpose of letters typically should be to clarify, amplify or correct something that appeared in previous issues of *The Goat*, to offer constructive suggestions, or make observations about our hobby. Constructive criticism is always acceptable; however, letters (emails) may not contain any personal attacks and may not include vulgarities in any form. Generally, letters should be limited to one or two paragraphs but longer points-of-view can be submitted for other departments in the newsletter. Please, express your views through letters to *The Goat*!

News Items: A primary goal of this publication is to keep members of the 5th Division informed about what is happening in our area. This can be accomplished by sending event notices for the *Timetable* or by submitting pictures and short captions to document things that could be of interest to our members. Generally, news (other than future events) will be placed in the *Subdivision Reports* department. Pictures always help tell a story so do try to include them with your submission. Keep your narratives short (up to four or five paragraphs) and don't worry about

your writing style; simply describe what your news event is about and I will do any necessary editing. If I believe clarification is needed, I will correspond with you using your email address.

Articles: Longer articles are always needed! You can decide the content and together we will find the right department in which to place it. Generally, articles are longer than news items (from one to five pages) and some back-and-forth communication may be necessary during the editing process. I especially encourage articles focused on skill building (clinics and workbench projects), history (research on a broad variety of topics) and personal experiences (work life, interest in railroading as a hobby, why you are in the hobby, etc.). Readers' interest in longer articles will be enhanced by pictures so do submit digital images to support your text.

Pictures: Pictures that you have taken and pictures from non-protected internet sites can be published in *The Goat*. I won't determine if any given picture can be reprinted and will assume that you have used good judgment in that regard. You should provide a photo credit for all pictures that are submitted. All pictures submitted for the newsletter must be in a digital format. I can use a variety of formats (*jpg* and *gif* being the most desirable). Check the size of the photo before submitting: I try to limit the photo file size to three megabytes and prefer one megabyte or less. I will generally size the photo to fit within page limits while keeping each large enough for details to be seen.

The views and opinions stated in *Editorial Comments* are not intended to reflect those of the NMRA or regions or divisions thereof. As the editor of *The Goat*, I welcome your comments and opinions regarding the comments made above or any other statements made in this publication. Send your comments to Alan Ashton, Editor (PNR5DNews@gmail.com).

5TH DIVISION RPO

Sorry, but the mail bag is empty! Send your letters to PNR5DNews@gmail.com.

SUBDIVISION REPORTS

Central Washington

Jim Trunzo (Wenatchee) asked a rhetorical question with two photos that he submitted to *The Goat*: "Where do old freight cars end up?" Jim's photos might present some interesting modeling ideas.



8000 gal tank car once used as a fuel tank. Location: Rock Island WA (Jim Trunzo photo.)



Covered hopper car now used as part of a bulk loading system for fertilizer. Location: Wheeler Road, Moses Lake, WA (Jim Trunzo photo.)

Tri-City Model Railroaders' modular HO-scale layout was again on display and in operation at the Richland Community Center On December 13 and 14. Visitors who arrived in the early evening were also able to view the *Christmas Lighted Boat Parade* on the Columbia River near the Center. Additional modular layout shows are being planned for January, February and March, 2014. Show details will be made available on the organization's website: www.owt.com/tcmr.

The Tri-City club is still awaiting a reply from the Internal Revenue Service on its application for a 501(c)(3) tax exemption status. In the interim, regular "Train -Till You Drain" workshops are continuing. Also, two former members were welcomed back to the organization.

Northern Idaho

Spring Train Show in Lewiston, ID: The **Lewis-Clark Train Club** is preparing for their third annual club show and swap meet. Flyers with vendor applications have been sent out but if you didn't receive your copy contact Dan Wise (wrails@ableone.net, phone 208-746-7335), Larry Mills (208-935-1655) or Mike McGee (NPStampede@tds.com, phone 208-816-6072). The show is scheduled for Sunday, March 23rd, from 9:30 a.m. to 4:00 p.m. Setup is from noon until 6:00 p.m. Saturday, and 7:30 a.m. Sunday. The first table is \$20.00 and additional tables are \$15.00. A square booth is \$30.00.

The club also invites vendors to share pizza and soft drinks on Saturday evening at 5:30 p.m. and coffee, donuts and a light breakfast on Sunday morning at 9:30 a.m.

Eastern Washington

Fall Spokane Train Show: The Fall (semi-annual) train show was held at the Spokane Fair Grounds. The event is sponsored by **River City Modelers** and the **Northwest Rail Museum** (Reardon). By all accounts the show was a success and the two groups are planning for the spring show that will be held in March.

The **Spring Spokane Train Show** will be on Sunday, March 9, 2014. Over 100 vendors will have close to 200 tables of items for sale ranging from train photos, railroad lanterns, signs, videos, model buildings & model trains in all scales of Z, N, HO, S, O & G. Throughout the day model railroad clinics will be offered on such model railroad related subjects as making trees, how to put a car kit together, installing couplers, basics of weathering, and making scenery. There will be at least 5 operating modular layouts in N, HO & G Scale. We are hoping to have an N Scale layout for the Spokane International Railroad, too.

The table fee is \$35 for each 8 foot table. For information or for a table reservation contact: Shirley Sample, cell #509-991-2317 or after 7 PM & weekends home # 509-292-8332, email: shirley@busnws.com or Kevin Kozlowski (509) 703-0514, email: kozlowskiamy@gmail.com. Reservations for tables can be mailed to Spokane Train Show, P.O. Box 3065, Spokane, WA 99220-3065. If a reservation form is needed, please contact Shirley.

Evergreen Railroad Modelers and **River City Modelers** hosted open houses for Rockwood Retirement Residents.



Jerry Quinn explains how the club's mainline tracks operate. (Evergreen Railroad Modelers)



Mike Tietz answers questions posed by the Rockwood Retirement residents. (River City Modelers)

On November 8th, the two clubs hosted a group from **Rockwood Retirement Community** for a special open house event. Although the turnout wasn't as high as expected, the visitors were very impressed by the layouts and asked a lot of questions. Some of the residents wanted to know when they could bring their grandchildren back to see the layouts. That was proof enough that that the events were successful.



Alan Ashton (Spokane) made a presentation titled "Model Railroading: Introduction to the Hobby" at the **Rockwood Retirement Community** on Spokane's South Hill. About 25 residents attended the *PowerPoint* presentation that was accompanied by various modeling items that illustrated the topics that were discussed. A copy of the *PowerPoint* presentation is available for anyone who wishes to give a similar talk. (Approximately one hour.) Contact Alan Ashton at PNR5DNews@gmail.com. Thanks go to **Jim Smith** at *Sunset Junction* for providing materials in various scales for use in the presentation.

HISTORICAL PERSPECTIVES: EMD'S "E" UNITS

Contributed by Alan Ashton (Spokane)

The introduction of Electromotive Corporation's E type locomotives represented an important step in the evolution of the passenger diesel locomotive. The EA, E1 and E2 were each built for specific railroads, but they were largely identical mechanically. The design and manufacturing concepts were a step further away from the custom-built, integrated streamliner and toward mass-produced passenger locomotives. The earliest E units (EA through E6 models) all featured a basic "slant nose" style except for a "bulldog nose" style that was tried in the E2. A style somewhere in between was used for the E7, E8 and E9, as well as the freight diesel cab units. It could be said that the E units' forward looking style influenced locomotive designers throughout the world for nearly a quarter of a century. But the E units weren't just a pretty face; they were technically innovative as well.

IN THE BEGINNING

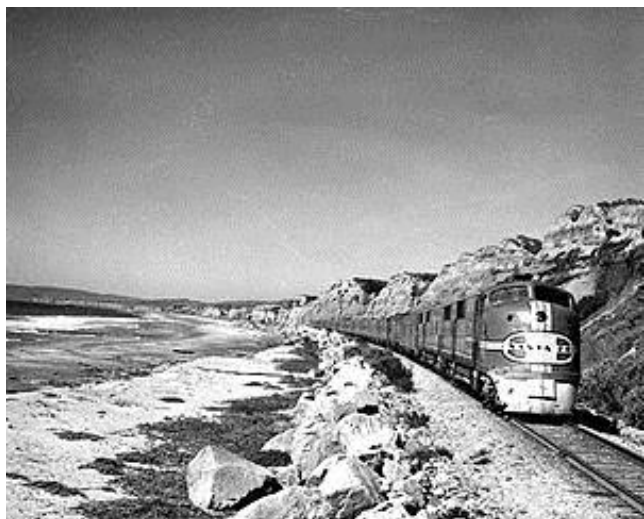


The Electromotive Corporation (EMC) model type EA/EB (cab/cables booster) was an early passenger train-hauling diesel locomotive built in 1937 and 1938 for the Baltimore and Ohio Railroad (numbered 51 through 56). They were the first in a long line of passenger diesels of similar design now commonly known as EMD E-units. Each locomotive unit developed 1,800 horsepower from two 900 horsepower Winton 201-A diesel engines. As was typical of this whole series, the locomotives were of A1A-A1A wheel arrangement specifying two three-axle trucks of which only the outer two axles were powered. The first EA, B&O Number 51 (shown in the picture), survives as a static exhibit at the Baltimore and Ohio Railroad Museum in Baltimore, Maryland.

Only six EA/EB units were produced. They hauled some of the major named trains of the B&O; the *Royal Blue*, the *Capitol Limited*, the *National Limited*, and others. These trains were streamliners in appearance, but they were built largely of refurbished heavyweight passenger cars rebuilt with smooth sides, smooth rooflines, air conditioning, new interiors and modern appointments.

GETTING ABOARD THE E1 AND E2 MODELS

Although only six examples of the EA/EB model were produced, they were followed almost simultaneously with the model E1 (in 1937 and 1938) for the Atchison, Topeka and Santa Fe Railway (ATSF) and the E2 for the Union Pacific Railroad, Chicago and North Western Railway and Southern Pacific Railroads (in 1937).



The E1, like its predecessor EA/EB, was powered by with two Winton 201-A engines for a combined 1,800 horsepower. The ATSF received a total of eight A (cab) and three B (booster) units. All Winton 201A-engined Santa Fe passenger units, including the E1's, were extensively rebuilt into the 80-class E8M engines in 1952-53. These were similar to production E8 models then in production, but de-rated to 2000 horsepower so as not to burn out the early traction (axle) motors (which were reused). Like the EA/EB models, the E1s utilized an A1A-A1A wheel arrangement.

The initial three locomotives were AB pairs built to haul the Santa Fe's *Super Chief* diesel streamliners, while the others were built as single A units to haul shorter trains. E1 number

two and her booster numbered 2A were the first locomotives to wear the world-famous Santa Fe "War Bonnet" red and silver colors. These units also used stainless steel sides on the car body to better match the road's new stainless passenger cars.

The "shovelnose" styling of the E1 was modified on later models because the streamlined headlight was found less satisfactory than more common types with vertical lenses. Plus, the elegantly sloped nose had a bad habit of deflecting vehicles up toward the cab in grade crossing collisions!

Each E1 was initially ordered for and assigned to a particular train. The ATSF practice was to give all locomotive units in a set the same number, distinguished by letter. The lead unit was designated 'L', but this was not carried on its number boards. The second unit was 'A'; subsequent units were 'B', 'C', if present. This numbering was part of the railroads' ultimately successful campaign to convince the railroad unions that a multiple-unit diesel locomotive should be considered one locomotive of several parts (and thus needing only one crew) rather than multiple locomotives requiring multiple crews under union agreements.

The E2 as a single unit developed 1,800 horsepower. Typically operated as a unit set in an A-B-B configuration, the three unit lashup developed a substantial 5400 horsepower. Like other E units, the E2 had an A1A-A1A wheel arrangement. The locomotives were diesel-electrics with two 900 hp Winton 201-A engines. Each engine drove its own generator to power the traction motors. In addition, the locomotives contained steam generators for passenger car heating.



Two sets of three were produced in 1937 for named passenger trains; the first set (SF-1, SF-2, and SF-3) for the *City of San Francisco*, jointly owned and operated by the Union Pacific Railroad, the Chicago and North Western Railway, and the Southern Pacific Railroad, while the second set (LA-1, LA-2, and LA-3) was for the *City of Los Angeles*, jointly owned and operated by the UP and CNW.

The E2's profile was more aggressive than the sloping snouts of previous EMC passenger power, so they gained a "bulldog nose" nickname. Seven porthole windows in the sides are also a unique feature of the E2 locomotives; others had four or less. One of the nicknames that these locomotives acquired, because of these portholes,

was "Queen Mary," after the British Cunard liner that was put in service about the same time. The Union Pacific Railroad also referred to the schedule of the "City of San Francisco," a passenger train hauled by these locomotives as sailings. The units were painted to match the trains in Union Pacific's Armour Yellow with Leaf Brown roofs and undersides, the same colors as UP's previous streamliners. There was extensive stainless steel on the noses, upon which were displayed the owning railroads' heralds in color.

The E2 locomotives were replaced by new E6 locomotives in 1940 and the joint ownership was terminated at that point. All four "B" units (SF-2, SF-3, LA-2, LA-3) went to the Union Pacific. They were used until 1953 when they were "rebuilt" into E8 locomotives. These rebuilds utilized little of the previous locomotives and were effectively trade-ins. The driving "A" unit of the SF set, SF-1, (the "Queen Mary") went to the Southern Pacific; it was likewise "rebuilt" into EMD E7 #6017. The "A" unit of the LA set, LA-1, went to the Chicago and North

Western (#5003A) and was scrapped in 1953 after it was destroyed in a head-on collision near Rhinelander, Wisconsin. No E2 units survive intact today.

EVOLUTION CONTINUES ó THE EMC E3



The E3 introduced a 12 cylinder version of the 567 series engine and two were used in each unit developing a total of 2,000 hp at 800 r.p.m. Earlier E models had used twin Winton 201As, but that engine was ill-suited to railroad use and was unreliable. The 567 was designed specifically for railroad locomotives, a supercharged 2 stroke 45 degree V type with an 8 1/2" bore by 10" stroke giving 567 cubic inches displacement per cylinder, which remained in production until 1966. Two D.C. generators, one per engine, provide power to four motors, two on each truck, in an A1A-A1A arrangement. A total of 17 A units and two B units were produced between 1938 and 1940.

Compared with other passenger locomotives made by EMC and EMD before and after these models, the noses of the E3, E4, E5, and E6 cab units had pronounced slants when viewed from the side. Therefore, these four models have been nicknamed "slant nose" units.

Roads that purchased the E3 model included Kansas City Southern Railway (3, one of which was the EMC demonstrator), Atlantic Coast Line Railroad (2), Atchison, Topeka and Santa Fe Railway (11 A, 1 B), Chicago and North Western Railway (4), Chicago, Rock Island and Pacific Railroad (2), Florida East Coast Railroad (2), Missouri Pacific Railroad (2) and the Union Pacific Railroad (1 A and 1 B).

Of specific interest, Atlantic Coast Line's number 501 (shown in the photo above) was wrecked before delivery and was rebuilt by EMC as an E6A. It has been preserved. It is the only E3 to survive and is located at the *North Carolina Transportation Museum*, in Spencer, North Carolina. It is stored in operating condition, and will be run occasionally.

TIME MARCHES ON ó E4, E5 AND E6



Seaboard Air Line number 3000 provides a good example of the EMC model E4.



CB&Q Silver Pilot and The Nebraska Zephyr . an example of EMC's model E5.



Rock Island 'slant nosed' E6 #630 switching at Chicago while E8 #660 rests in the background.

Between 1939 and 1942 the dieselization of America's railroads began to take hold. During this time, while America went to war, EMC produced three more models in the E series. Ironically, the E4 was produced before the

E3. Both models were identical, save for the E4 having a pneumatically-operated nose door passageway in order to facilitate crew movement between units in a locomotive consist. All the E4s were retired and scrapped by 1964. The E5 was produced exclusively for the Chicago, Burlington and Quincy Railroad (öThe Burlington Routeö), and its subsidiaries, during 1940 and 1941. The E5 was distinguished from the otherwise very similar E3, E4 and E6 by being clad in polished stainless steel to match the Burlington's *Zephyr* trains. Like those other models, the E5 had a sloping öslant noseö equipped with two headlights ó a regular stationary headlight and a gyrating signal light.

Very few features distinguished the E6 from the E4 and E5. Some of the deliveries showed variations of the öportholesö ó round and rectangular can be seen ó but this was not a good distinguishing feature. The nose was soon to change as can be seen in the Rock Island example in the pictures shown above.

Production models of the E4, E5 and E6 were all powered by 1,000 horsepower EMC model 567 V12 engines for a total of 2,000 horsepower per unit. Each engine drove its own electrical generator to power the traction motors.

The last surviving EMD E5 diesel, named *Silver Pilot*, is owned and operated by the Illinois Railway Museum in Union, Illinois. Last used on the Fort Worth and Denver Railway (a CB&Q subsidiary) on the *Texas Zephyr*, the E5 was matched with one of the Burlington's *Nebraska Zephyrs*, a 5 car, articulated, stainless steel 1936 passenger train. This equipment was used in the production of the 1992 film *A League of Their Own*, and for the 2006 film *Flags of Our Fathers*, E5 9911A *Silver Pilot* was used with 4 stainless steel passenger cars re-lettered to resemble the *Zephyr* style (see the above photo).

Two E6s survive today. One was operated by the Midland Railway, in Baldwin City, Kansas but has since been sold and may become part of a future museum in Manly, Iowa, or possibly be restored to operation. It is ex-Chicago, Rock Island & Pacific Railroad E6A #630. The other E6 is located at the Kentucky Railway Museum, in New Haven, Kentucky. It is ex-Louisville and Nashville E6A #770. This unit is for display only, as it came to the museum without a majority of its internal parts.

EMC or EMD: What's in a Name?

Electro-Motive Diesel, Inc., also referred to as "EMD", is owned by Caterpillar through its wholly owned subsidiary Progress Rail Services Corporation. The company designs, manufactures and sells diesel-electric locomotives and diesel power engines under the Electro-Motive Diesel brand. EMD offers an extensive range of locomotive products in the rail industry.

Electro-Motive Diesel, Inc. traces its roots to the Electro-Motive Engineering Corporation, founded in 1922. In 1930, General Motors Corporation purchased the Winton Engine Co. and Winton's primary customer of gasoline engines, Electro-Motive Corporation (a gasoline-electric car manufacturer), combining the two to form GM's Electro-Motive Division (EMD) on January 1, 1941.

PRODUCTION OF E UNITS SURGED AFTER WWII ó E7

As the war came toward an end, sales and production of E units soared. Between February 1945 and April 1949, 428 cab versions, or E7As, were built. Between March, 1945, to July, 1948, 82 booster E7Bs were built. The 2,000 horsepower came from two 12 cylinder model EMD 567A engines.

In profile, the front of the nose of an E7A was less slanted than on earlier EMD passenger locomotives, and the E7, E8, and E9 units have been called by some öbulldog noseö units. Still, the profile of these models differed significantly from the original bulldog, the E2.

Pacific Northwest modelers may be interested in which local railroads purchased E7 models. There were many. The CB&Q (44 A units), C&NW (26 A units), GN (13 A units), Milwaukee Road (10 A units), SP&S (1 A unit) and UP bought 4 A units and 3 B units).

The only E7 that survives today is owned by the Railroad Museum of Pennsylvania, in Strasburg, Pennsylvania and is ex-Pennsylvania Railroad E7A #5901. This locomotive has been cosmetically restored, and is on indoor display (See picture in next panel).



SP&S owned one E7, shown here in Spokane.



GN E7 in Minneapolis during 1964.



PRR No. 5901 E7(A) is housed at the Railroad Museum of Pennsylvania and is the last remaining E7.

MORE POWER! THE E8 AND E9

The E8 was introduced with 2,250 horsepower and a E unit standard A1A-A1A wheel configuration. The 2,250 horsepower came from two 12-cylinder model 567B engines, each driving a generator to power the two traction motors on one truck. EMD built 450 cab versions, or E8As, between August 1949 and January 1954 (447 for the U.S. and 3 for Canada). A total of 46 E8Bs were built from December, 1949, to January, 1954, all for U.S. railroads.

Certain units with the designation E8m were rebuilt using components from earlier EMC/EMD locomotives. Externally the units look just like E8s. The difference in horsepower produced in these E8m units is because the older generators are reused.

Externally, the E8 was very similar to both the E7 and the E9 which followed. The difference, of course, was in the adoption of the newer 567B engine that generated more power.



Union Pacific owned several E8 units and used them for passenger service.



This Milwaukee Road E8 is in very bad condition (in Chicago) as the railroad ran out of money.



Often photographed AZER number 6070 is one of the surviving E8 units. (In Saratoga after transfer.)

Arizona Eastern previously owned AZER #6070, an EMD E8 locomotive. Built for the Chicago and North Western Railroad as CNW #5029B on June 1953, it pulled passenger trains for that railroad, and was later used in Chicago commuter train service. It has been repainted in a scheme reminiscent of Southern Pacific's "Black Widow" livery, since Arizona Eastern was owned by Southern Pacific. As of August 2011, the locomotive has been transferred to the Saratoga and North Creek Railroad but we are not certain of its status in 2013.

The E9 represents the culmination of the E series. The E9 had two 1,200 hp (895 kW), V12 model 567C engines. With a total 2,400-horsepower, the E9 was the most powerful locomotive of its type. 100 cab-equipped A units were produced and 44 cabless booster B units between April 1954 and January 1964. The Union Pacific picked up the most E9 units. In all, UP purchased 35 A units and 34 B units. All E9 were built for service in the United

States. The E9 differed from the earlier E8, as built, only by the newer engines and a different, flusher-fitting mounting for the headlight glass, the latter being the only visible difference. Since some E8s were fitted with this, it is not a reliable way to distinguish the two. The picture of X-951 was taken in Spokane in July, 2012, during a visit by the Union Pacific's Anniversary Train and part of the Heritage Collection.



Union Pacific's visit to Spokane in 2012. The Anniversary Train arrived with an A-B-A power configuration.

Despite their relatively slow sales numbers, many Class I railroads saved their E9s for use on business trains or for other specialized services. As such, 42 are preserved today.

IN CONCLUSION, IT WAS A GREAT RUN!

From 1937 to 1964, EMC and its successor EMD's units powered American passenger and mail trains from the 1950s into the late 1970s. Even those few among us who do not admire the design and engineering behind America's railroad heritage will recognize many of the named trains: B&O's *National* and *Capitol Limited*, Santa Fe's *Super Chief*, Union Pacific Railroad's "City" fleet, Burlington's "Zephyrs," Illinois Central's *Panama Limited*, Milwaukee Road's *Afternoon Hiawatha*, New York Central's *20th Century Limited*, and Southern Pacific Railroad's *Coast Daylight* and *Sunset Limited* to name a few.

As America's passenger train network shrank due to unprofitability, Union Pacific, Rock Island and Illinois Central railroads began using E9s on freight trains. Amtrak, founded in 1971, bought 36 E9As and 23 E9Bs from the Union Pacific, Milwaukee Road, B&O and SCL. Amtrak used the E9s until the late 1970s and converted some E9B units to steam generator and head end power cars.

CLINICS

Creating Backdrop Scenes, Part 3 ó Adding a Third Dimension

Contributed by Alan Ashton (Spokane)



In Part 1 of this series (Volume 18, Issue 3) I discussed some simple techniques for painting a sky on your layout's backdrop. In Part 2 (Volume 18, Issue 4), I offered some ideas for painting trees and other scenery elements on the backdrop. Clouds, it was noted, are pretty much universal in appearance no matter where you are and change only a little from season to season (although obviously changing greatly in shorter periods of time). Trees vary by location, hardwoods in the eastern U.S. and evergreens in the Pacific Northwest, and by season. Therefore, more thought needs to go into trees and topography.

In this final installment of the series, I will offer some techniques that I use to add more dimensionality and depth to my backdrop. As mentioned before, I have very little real estate between my backdrop and track ó only two and one half inches. Also mentioned before, I am no artist and these techniques are merely the outcome of trial and error. I don't hesitate to follow up on any idea that pops into my head and I freely borrow ideas that have been previously published. Never-the-less I hope that, if nothing else, this series has inspired you to push your own boundaries and try to improve your own backdrop scenery.

Materials that you may find useful include:

- Pieces of scrap Masonite[®] hardboard and dimensional lumber;
- Wood glue, scenic cement, hairspray, contact cement, and hot glue sticks;
- Polyfill fiber or other tree making materials of your choice;
- Spray paints in a variety of seasonal foliage colors;
- A variety of scenic materials such as ground foam foliage (seasonally correct) and soils;
- Trees (these will vary depending upon the types of trees that are appropriate for your setting), and;
- Building flats (more on that later).

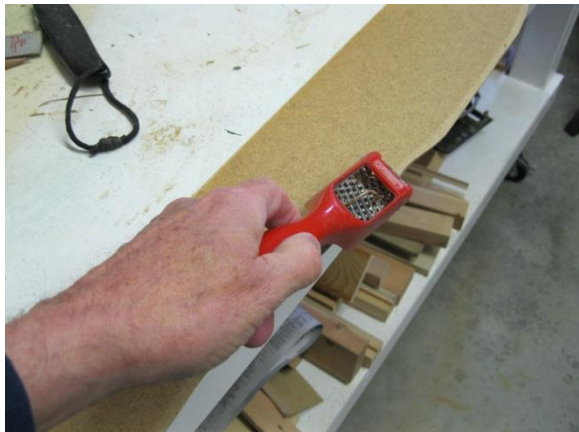
Tools that you may want to use include:

- Scroll saw;
- Drill and bits;
- X-Acto knife;

- Scissors, and;
- Hot glue gun

Before getting started with this article, I want to point out the connection between some of the techniques described here and in the next article, *Workbench Projects*. Scenery work can be messy and can require some uncomfortable contortions when done in place (on the layout). For both of these reasons, I try, whenever it is practical, to take construction to the workbench or shop. In this clinic I will secure foreground trees and shrubs to a piece of Masonite® hardboard while in the shop. Then I will glue the Masonite to the backdrop on the layout.

This process achieves two goals: First, I can work on a flat surface while adding the trees and foliage and, second, the mess is contained within the safe boundaries of my shop.



First, I cut a piece of Masonite to follow the landscape on the layout. Before cutting, I took some measurements from the tree lines that I had painted on the backdrop so that I could properly fit the "tree module" into place when it was completed. In my first attempt at this procedure, I used a Surform® rasp to bevel the top edge of the Masonite. In my second iteration, I skipped this step and I will explain why in a moment. Just so there is no confusion, I will refer to the Masonite backing as the "scenery module."



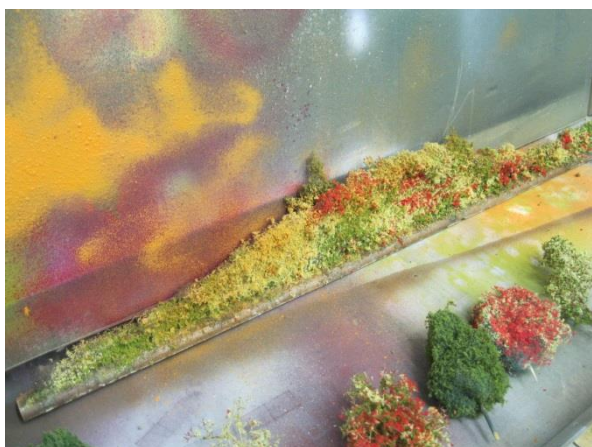
In my first experiment with this technique I spray painted the Masonite a deep brown color (rattle can) then placed the module on my workbench. I attached a variety of trees, scrubs and brush from previous work that I had on hand. We can talk about making trees in a later issue of *The Goat* since that is a topic in its own right. The blue tape that you see along the edge of the table was to let me know how tall the trees could rise above the module and not interfere with the painting. I needed to cover a void that I had left on the backdrop and didn't want to extend the foreground trees into previously painted hills that I was pleased with. Putting the trees on a flat surface was rather fun and easy.



In my second experiment, I attached a piece of wood to the bottom of the scenery module. This allowed me to do a bit more detailing while in the shop. On the first module that I did, I found that I still had to add ground cover once the module was in place on the layout. In the picture at left, you can see that the ground cover has been added. It consists of "zip-texturing" (Hydrocal® mixed with dry paint pigments) applied by lightly spraying some water on the area to be textured followed by dusting the plaster-pigment mixture. I also added some *Woodland Scenics*® turf and various shades of grass. This step gave me a pretty good base from which to work.



Next, I began to build up the trees. In my first module, I found that the top edge of the Masonite was visible after the module was put on the layout. In the second experiment, I used hot glue to attach some polyfill fiber to the top of the top of the Masonite. Prior to doing this, I had glued an extra piece of Masonite along the back side of the module to accommodate the extra space needed for the polyfill. The polyfill was spray painted with browns and dark greens before application. I teased the polyfill to make it very thin because otherwise when the leaves are attached it they tend to clump. The polyfill was attached with hot glue, some from behind and some along the top of the module. This worked well so no need to bevel the edge.



Next, I applied more scenic materials (Woodland Scenics) using spray on contact adhesive and hairspray. The foliage is represented using a variety of fine, medium and coarse materials in different colors, all of which I had in my shop. Then I gave the module a light application of spray paints (fall colors) to blend the textures and give the module what I felt was a more natural appearance. The trees that were to be applied next can be seen toward the bottom of the picture.



The trees were planted into holes drilled in the module base piece (the thin piece of wood that I had attached at the bottom). The nice thing about working on a module is that the piece can be drilled straight in from the bottom. I anchored the trees with a spot of hot glue. Additional trees and shrubs were then added and the module was nearly ready for the layout.



The tree module (first example) was glued to the backdrop. I was going to screw it in place, just in case I wanted to remove it later, but decided that was not necessary. In retrospect, I might have been better off with the screws since I still need to do some touch up but oh, well, live and learn.

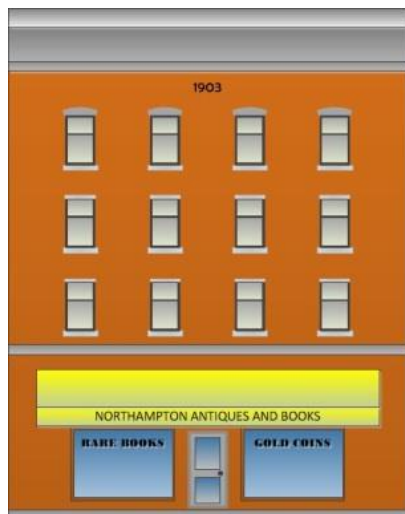


From this angle, the thin profile of the tree module can be seen. Few visitors choose to view the layout from this angle so it is not a concern.

Trackside Industries

Next, I needed to turn my attention to some buildings and trackside businesses to be located on the backdrop side of the tracks. My original thoughts included painting on the backdrop, buying kits designed for backgrounds or kitbashing something to make flats. However, my painting skills eliminated the first thought and the availability and sizes of suitable kits eliminated the second. The time and cost of buying enough kits to kitbash into background buildings took care of number three. I also considered painting some pieces of Masonite or poster board which I thought could work but would be little more than "stylized" structures with little or no character. This would be OK if my emphasis was on operations but I enjoy experimenting with scenery. I felt that stylized buildings would detract from the layout too much to be acceptable.

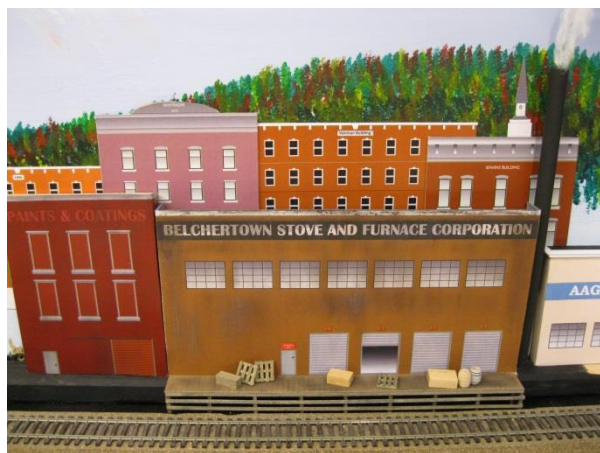
I have a copy of Microsoft's *Visio*® and I thought that I would experiment with making flats of background buildings. What I will describe here could be accomplished with nearly any drawing program and there are many available as "freeware" on the internet. But I already knew how to use *Visio* so that is where I started. Just a word about any program that you may want to consider: First, it should be capable of drawing standard shapes such as rectangles, circles and triangles; second, it should allow you to use a variety of colors to fill the structural elements that will make up your buildings; third, it should allow you to "group" pieces together making it possible to create a toolbox of structural elements such as windows, doors and rooflines, and; finally, it should allow you to resize your finished buildings without distortion. One drawback that I found with *Visio* was that it lacked some of the fill patterns that I would have liked to create brick siding. This was not a major concern because, as the "city" took shape, the lack of brick details was not readily apparent to viewers.



I created several backdrop buildings with different windows, roof details and street level entrances. For the buildings that would be represented in an overlapping fashion, I glued each image to a piece of cardboard (the backing from pads of paper). If the building was to be placed more in the foreground, I used a spray contact adhesive (*Elmers* or *3M* products are readily available) to attach the pictures to pieces of wood.



After the buildings are printed and mounted (see below) I spray them with a light coat of Testors Dullcoat® and apply weathering using artists' pastels. I first tried using a brush to apply the pastels but found that smearing the powdered chalk with my fingers worked better. One of the fill options in *Visio* also allows me to create color gradients. As you can see in the open bay door, the shading goes from light to dark giving the illusion of space in the doorway. An idea that I have begun to experiment with is to cut an opening in the wood backing where there is a loading door to make a shadow box. Workers, freight and equipment can then be seen inside the building. (See a progress report under View from the Caboose, page 31.)



Here, the stove and furnace company is almost completed with the addition of the loading dock and chimney. The loading dock was a one hour project using cardboard stock for the deck and strip wood for the framing. The chimney was made from a wooden dowel. A small piece of music wire was inserted into a hole drilled at the top of the chimney. The wire supports some cotton smoke for additional dimensionality.



A perception of depth is achieved by overlapping the background buildings. The buildings at the rear were made somewhat smaller before printing to easily achieved with *Visio*. Keep in mind that I have only 2-1/2" between the Masonite backdrop and the centerline of the rear track. In the picture at left you will notice that there is still plenty of room for loading docks and other details that will make the scene more interesting. In the corner is a building in 3D that was also created using *Visio*. Two tracks converge into the corner so I wanted to create scenery that would disguise the fact that the tracks terminate back there.

I call my techniques for this type of scenery development Modeling in Extremely Small Spaces (or MESS for short). I know that the acronym is a little misleading since the technique is designed to reduce or *eliminate* the mess, but you get the picture.

If you are interested in obtaining copies of the buildings that I have used for this project email me at PNR5DNews@gmail.com. I can make copies, resize buildings and add any names that you would like for your railroad. I will need to charge a small fee (a couple of dollars) for the printing and mailing.

WORKBENCH PROJECTS

Building Scenery Modules on the Workbench

Contributed by Alan Ashton (Spokane)



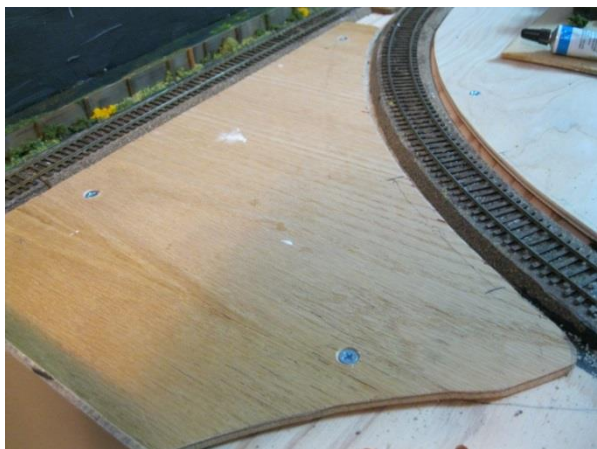
Building scenery can be a messy job. If it is to be done in a finished room with perfectly good carpeting and nicely painted walls, a great amount of care is required to prevent high blood pressure in a watchful spouse. In this installment of *Workbench Projects* I will discuss some techniques for building scenery in a safer location.

Although relieving spousal apprehension and stress wasn't the primary reason that I started designing much of my scenery away from the layout, it remains one goal. But here are the other ones:

- I can work on scenery details up close and without the necessity of leaning over and possibly damaging other things on the layout;
- I can simplify wiring for lighting or animation without much need for going under the layout (not a comfortable activity any more);
- I can remove the scenery module from the layout for later modification, repairs or cleaning;
- I can place the module in a location and space for photography of much like a diorama, and;
- Should the layout be moved or dismantled, much of the scenery can be removed for safer and easier movement to a new location.

As the layout is coming together, I look for logical places that will offer a dividing line one industry, structure or other currently undeveloped feature. By "logical" I mean that I can include the major feature in the scene and all related items such as roadways, fences, lighting, etc. I take care so as not to make the module too big making it hard to handle (I may need to go through several doorways and up a stairway) and still try to minimize the seams between modules. I also try to think ahead to make sure that the seams can be easily disguised.

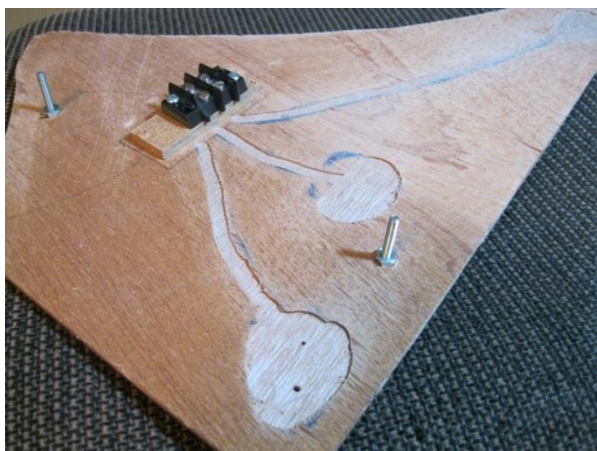
The first step is to determine what the finished scenery around a specific layout location will look like. I usually lay out the general dimensions by drawing on the plywood sub-roadbed. I determine what features that I have to work around such as track, roads, streams or other terrain features. If the shape is irregular, I draw it on a piece of brown paper and create a template. Then, I use the template to guide my cuts on a piece of 1/4-inch plywood.



I test the fit of the scenery module on the layout and make adjustments as needed. Then, I drill holes through both the module *and* the table to fit my flathead bolts. Once the holes are drilled, I drill out the hole in the table to a slightly larger size to accommodate a nut that will hold the bolts permanently in place on the module. The idea will be to allow the module to be put in place and be lifted out, as needed, by removing nuts and washers that are located *under* the table. As a practical matter, I don't put the nuts (and you may prefer wing nuts) under the table until I am completely satisfied with the scenery and ready to address the seams. I counter sink the module holes so that the bolt heads are flush.



If the scene will have lighting or electrical animation effects, I cut a rectangular hole in the table. The size and placement of the hole are determined by the size of a terminal strip (see following pictures) and the ease with which the terminal strip will be reached from under the table. Once the hole is cut, I put the module in place and trace the outline of the hole on the module.



Next, I determine where wiring for lighting and animation will go. I drill holes through the plywood module to accommodate the wiring. Then, I use a router to make shallow grooves from the terminal strip (mounted on a piece of scrap plywood to make it easier to work with while under the layout) from the terminal strip to the hole. Because of potential changes to the planned locations of lights, I use the router to remove a layer of wood around the anticipated spot where the wires should pass through the module. Notice that the bolts have been secured by nuts on the underside of the module. The hole in the table must be large enough to accommodate the nut and allow the module to sit flat on the table. Glue will hold the wires in place in the grooves.



When the module is put into place, the terminal strip should be easily accessible from below. Note the bolt in this picture. Because the hole in the table was enlarged to accommodate the nut that is already on the bolt, a washer will be needed when securing the module to the table from below.



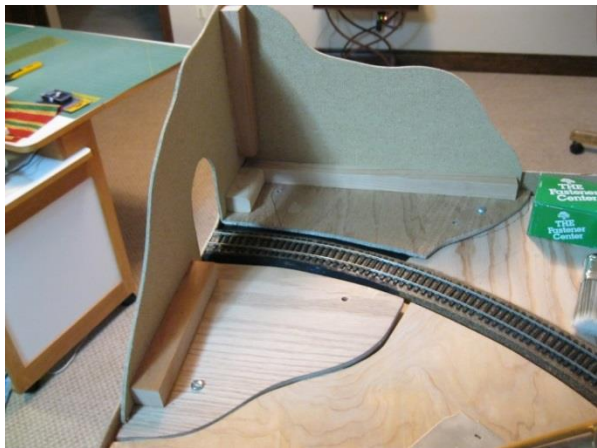
The module is now ready for scenery. I have moved it to my workbench where it has received a base coat of paint (earth) and a layer of joint compound (the white portion). I have already located a loading dock (made previously) and you can also see a mockup of a small office shed. A wood fence has also been installed to follow the curve of the adjacent track.



Work continues away from the layout. A gravel approach to the loading dock has been added and other scenery elements have been started. All of the needed tools and materials are right at hand and it is easy to work close up.



Being a somewhat impatient sort, I wanted to see how the scene will look when completed. I can easily walk the module to the layout and put it in place. By using plywood for the module base, there is very little warping or twisting. The module sits quite flat on the table and it can be easily lifted out and be returned to the bench where final scenery elements can be added.



Nearby, a tunnel module fits into a corner location. Notice that there are two pieces that make up the module base. This was easier than laying track over the module base and makes removal of the scenery module a snap. The pieces are joined by the Masonite[®] hardboard. When the portal is installed, that will also add to the overall integrity of the module.



The tunnel module scenery was added in my workshop that is adjacent to the garage. Application of Hydrocal[®] and other scenery materials was a rather messy job and here there is no worry about the carpet in our finished basement space. As with the other modules, the tunnel can be easily put into place on the layout. Notice how the bolts used to secure the module to the table also act to elevate the module while work is being done. This has proven to be very helpful.

RAILROAD EXPERIENCE

Contributed by **Bruce Butler**.

Bruce is an engineer for Eastern Washington Gateway and he shares his view from the cab. Bruce lives in Otis Orchards. He says that he has a few railroad models but doesn't consider himself to be a model railroader. We suspect that he is satisfied working in 1:1 scale. (Editor's note: The first picture in black and white was not submitted by Bruce but was found on the internet.)



Eastern Washington Gateway (EWG) is now handling 110 car grain trains. BNSF delivers them to Cheney as a single train. We take the empties to Geiger Junction, 8 miles out, where we swap the BNSF power for our own units. The train then continues west, peddling the empty cars at various elevators along the line.

The trains return east as two 50-60 car trains. The first train is parked on the Geiger spur and then engines go back west to pick up the second section. When the eastbound loaded train arrives at Geiger Junction it is combined with the first section and taken to Jensen Road, just north of Cheney. The train is parked there and the EWG power goes on into Cheney.

On this day, BNSF has left their power in the Cheney yard to take the train on to Pasco. At least three of their big (4400 hp) newer units are required as this train weighs about 15,000 tons!

On this Thursday afternoon I was called to take three BNSF units out to Jensen Road, couple up to the train, and then wait for the BNSF crew to call and let us know that they are ready to accept the train at the west

switch in Cheney where their crew gets on and the train goes onto their main line. This time they gave us three of their older GE diesels, model "Dash 9-CW", numbers 4341, 5068, and 4452. BNSF has over a thousand of this model and newer GE models. To many, they all look the same.

I was impressed with the fact that the 4341 was going to be the leader on this huge train. Only an IBM computer geek would appreciate the significance of the "4341" number. I spent several years working with the IBM 4341 mainframe computer and its successor the 4381. Yes there is a BNSF 4381 floating around somewhere.

After coupling up, releasing handbrakes, pumping up the air, activating the "Fred" on the end of the train, and moving the train a bit to make sure it was still all coupled, I had about an hour to kill before BNSF was ready to take us at Cheney. I took some pictures:



BNSF 4341, 5068, 4452 at Jensen Rd ready to take 110 car loaded grain train into Cheney to handoff to BNSF crew at the West switch.



View of the controls from behind the Engineer's seat. All the gauges are now digital.



Another view from the center of the cab. These units have large cabs.



Close-up view of the screen. The "EOT" is the marker, or "FRED" device on the last car of the train. Notice the speedometer shows "0". If we were moving, this picture would be in violation of rules.



You can change things by pressing the function key below the item. For example to count distance the train moves forward, press the "F1" key. I had to change ends when I got to Jensen Rd as the 4452 was the leader going out from Cheney. This involved some screen work on both units.



Another view, showing the forward facing camera just to the right of the left windshield wiper blade. Controls, from left are the reverser (yellow handle), the Throttle, the train brake and the engine brake.



This is the Conductor's side of the cab. He or She has a radio handset, speedometer, and emergency brake valve. The refrigerator is below the desktop.



This panel is on the back wall directly behind the Engineer's seat. Switches here control lights, heaters, computer diagnostics, etc. Best left alone unless you know what you are doing.

4341 was built in 1999 and is probably a 3-4 million miles engine by now. I signed the daily inspection card after checking oil, fuel, and coolant levels. It has been around. Since early September it has been inspected in LA, Chicago, Texas, and a whole lot of other places I couldn't identify. I marked the card as inspected in "Cheney".

Editor's Note: Under lease from the Washington State Department of Transportation, EWG operates the former "CW Branch" from its interchange with the BNSF at Cheney, WA, 108 miles west to Coulee City. EWG serves agricultural and industrial customers at stations at Medical Lake, Hite, Reardan, Mondovi, Davenport, Rocklyn, Webb, Creston, Wilbur, Govan, Almira, Hanson, Hartline, Cement, Odair and Coulee City. In 2008, the Spokane County Economic Development Commission's "Geiger Spur" was connected to the EWG at Medical Lake, providing a connection between the industrial park near Airway Heights through to Cheney.

LAYOUT TOURS

When I visit a layout I am almost as interested in seeing *where* the great work is done. How much space is allocated for a workbench? What tools and supplies are evident? How are building materials organized? In this edition, we are focusing on some workbenches with just a peek at the railroads that they service. If you can supply similar pictures from your home layout or workspace (even if you don't currently have a layout), please send them along for future *Layout Tours*.

Bill Kleinert lives in Lewiston and models in HO scale. Bill has been a railroad modeler for many years and has a particular interest and skill for creating scenery. Bill also enjoys building craftsman kits and, as he tells it, has many on the shelf waiting for construction.

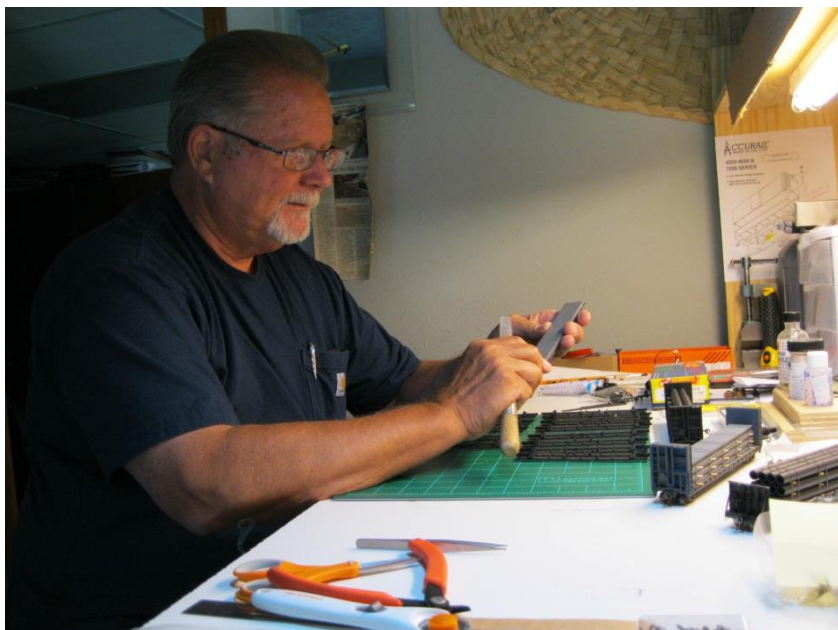


Bill points out that his workshop is in a separate space from the rest of his home. That gives him a place of solitude where he can pursue his hobbies.

Bill has presented clinics at the 5th Division's annual meetings and elsewhere. At last spring's meeting, Bill instructed the members present on how to use extruded foam insulation to build basalt rock formations. Bill's layout is modeled after local terrain so he has a lot of inspiration nearby.



Mike Tietz lives in Spokane Valley and been interested in railroading since childhood. Mike currently doesn't have a home layout but that hardly matters since he is the president of River City Modelers club (Spokane) and has a very busy schedule of railroad related activities. Still, Mike has a home-based workbench where he enjoys assembling locomotives and rolling stock for use at the club.



Mike has modeled in G-scale but he is now focused on HO since that is the scale at River City Modelers. He likes modeling Montana Rail Link equipment and has done a fine job in modeling both MRL locomotives and rolling stock.



Recently, Mike has been building realistic loads for his rolling stock. He is also involved in building club cars for sales that support River City Modelers.

If you would like your model railroad featured in *Layout Tours* please contact **Alan Ashton**, Editor. You can submit pictures and text or request a visit (I am always interested in seeing new layouts). The mission of *The Goat* is to share your enthusiasm and to highlight achievements among those who are interested in model railroading. Conducting virtual layout tours connects us all and helps this newsletter achieve its mission. Send emails to your editor ó PNR5DNews@gmail.com.

MODELING PRODUCTS AND SERVICES

A VISIT TO SUNSET JUNCTION



When you are in Spokane, a stop at *Sunset Junction* should be on your schedule. Owner **Jim Smith** has a great selection of things every modeler needs from locomotives and rolling stock to buildings, accessories and scratch building supplies.

Jim maintains a good selection of items for all scales although he emphasizes HO as it seems to be the most popular scale for his customers. Still, there is a lot for the N-scale modeler and for the larger scales as well.

Jim's own interest runs toward On3 and he is one of the builders of the *Hangman Creek* logging railroad that won *best of show* at the 32nd Annual *Narrow Gauge Convention* (Seattle) in 2012. Jim still enjoys the occasional run night on the layout which is now located at the residence of one of the builders. Would you like to see some pictures of this fabulous narrow gauge layout? Follow the link to http://www.youtube.com/watch?v=QVNT2s_0Lo or do a search for "Hangman Creek Model Railroad."



Jim has owned Sunset Junction for about twenty years and has been in the current location, 419 East Sprague, for the past ten. He purchased the business from **Bob Sample**, a name well known to most model railroaders in the Pacific Northwest.

When asked why he wanted to get into the business, aside from the "big bucks," Jim quipped, "I knew how to make it into a million dollar business. Just start with three million and know when to quit!" In fact, the hobby business is a labor of love. Jim says that he continues with Sunset Junction because of the interaction with customers and the ability to make new friends.



Jim offers a full service approach for hobbyists, with helpful suggestions and a willingness to find solutions to vexing problems. Need something ordered? No problem, Jim is always ready to help.

We talked a bit about the current state of the industry and I lamented on the passing of some kit builders. Jim readily agreed and said that he has observed a steady decline in manufacturers of fine kits. "It is probably because of an emphasis on operations and lack of time for modeling," Jim speculated.

Jim's only regret about the time that he spends at the store might be that it occasionally keeps him away from the golf course. Perhaps he should consider a combination of railroading and golf. I can visualize a 1:8 scale railroad taking golfers from hole to hole. What do you think about that, Jim?

NMRA ACHIEVEMENT PROGRAM

Phil Everett, AP Chairman

Regrettably, there were no models submitted for *Achievement Program* review at the **Fall Spokane Train Show**. We did have some inquiries about the program though. I think that it is possible people did not understand the process or get the word about judging of models. We will be at the **Lewiston** and **Spokane** train shows in the spring for judging and we are looking forward to seeing some of your models there.

There have been some small changes in the Achievement Program this year all designed to make it easier to have a model evaluated for a merit award and also for getting a certificate in a category. One important change is that most of the paper work is no longer required for evaluating what you want to submit. Instead, you can tell the judge orally rather than write an explanation of your model. I hope that will encourage more participation.

You can contact me if you have any questions. My Phone number is (509) 443-2457 and my email is lazytwo@gmail.com. If you e-mail me please use "AP" in the subject.

IN MEMORIAM – A SALUTE TO LOST FRIENDS

During the past few months, we have lost some of our railroad friends and PNR members. Please take a moment to remember them.

Hans P. Niermann, age 75, passed away on Nov 23, 2013. Hans was a member of River City Modelers. He will be remembered for his scenery work on the layout, especially the farm and apple orchard in "Weston" on the upper deck.

George Goulet, a Founding Member of the Tri City Model Railroad club, passed away on December 6th. George started model railroading with the group in the late '60s building an N-scale railroad with hand laid track in his basement. But he didn't have a basement so the group helped build one by digging out the crawl space. After moving from this home, George put his modeling energy into the club layout and modules. Later, he and wife Regenia purchased a home with a huge back yard on Court Street in West Pasco and built the fantastic Flower Mountain G-gauge garden railroad. George constructed the railroad and Regenia created the garden. They opened their railroad for many TCMR, PNR and regional garden railroad groups. We will miss George. He was a good modeler and a great guy. Our sympathy goes to Regenia who has supported the TCMR over the years. ó John Decker, Tri-City Model Railroaders.

Jim Wihlborg, a member of the River City Modelers club in Spokane has also passed away. No details were available.

If you know of others that are not named here or those who have recently passed away, please let me know so that they may be remembered in the next issue of *The Goat*. Thank you.

INTERCHANGE

In this installment of the *Interchange* we feature a narrative by **Rich Pitter** that describes progress on his home layout. Rich was the **HUB Division's** *Headlight* Editor for ten years before retiring to Eugene, Oregon in 2012. He has previously provided the *Headlight* with articles on the HO layout he is building in an 11'0" by 12'9" bedroom. Rich is currently the editor of the 1st Division's newsletter, *The Brakeman's Rag*, and is also the 1st Division's Education Chairman. He may be contacted at richpitter@aol.com.

A Double-Ended Staging Yard

By Rich Pitter

When I designed my layout, I was a glutton of sorts. At 64 years of age, I figured that this would be my last opportunity to build and operate a layout. The layout is complex in several ways, and will take several more years before I have it fully operable. I expect to be adding scenery and structures after that — hopefully never ending the fun of building this layout.

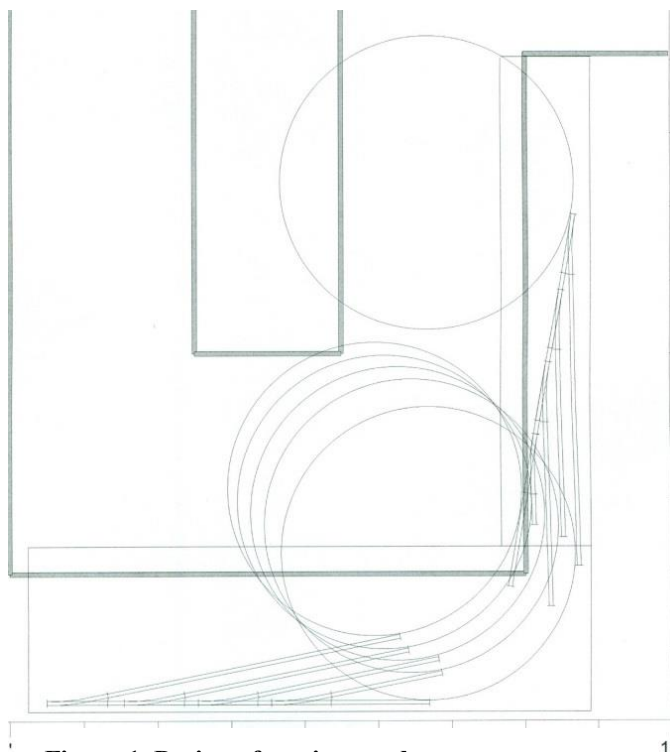


Figure 1. Design of staging yard.

I started with a list of "needs and wants." I wanted a 2-level around-the-wall layout with levels separated by about 24 inches. Having visited Fenway Park, I did not like obstructed view seats, so I didn't want any posts at the front edge of the layout to obstruct the view. I have friends in wheelchairs or walkers, so I wanted the aisle to be 31" wide. I wanted to model 1875-era western mining and logging operations, and to model a fictitious railroad that had a junction with the Virginia & Truckee RR so I could run V&T equipment and be able to model bridges, scenery, and structures that were representative of that era without modeling the V&T exactly.

The V&T is represented on my layout as the staging oval that runs around the room on the lower level. It has 24" minimum radius, #5 turnouts (built using *FastTracks* assembly fixtures), 3% grades, and 72" sidings. The fictitious railroad has 18" minimum radius, #4.5 turnouts, 3% grades, and 36" sidings. The upper level will be devoted entirely to the fictitious railroad and will have two fixed bridges over the aisle. Those bridges will be duck-under 5'10" to 6'0" above the carpet. There will be one

removable bridge across the aisle at the lower level. Once an

operating session begins, operators will not need to remove the lower bridge, but if it is removed, fail-safe circuitry will prevent trains from operating within two feet of the "chasm." I wanted DCC (Digitrax) with J/MRI, so visitors can use their smart phones or i-pads as throttles. No push buttons or toggle switches are used on fascia-mounted control panels to avoid accidental butt-pushing of controls. Mainline uncouplers will be actuated from the control panels.

As it turns out, I shoehorned a J-shaped aisle and a switching layout into available space. With the train elevator to move whole 3-foot-long trains from one level to the other during operating sessions, I was able to achieve all the important "needs and wants" that I specified. More research and construction awaits before the layout becomes reality, but those are fun for me. The northeast corner of the lower level was used for the staging yard (Figure 1). **Note:** *XTrackCad* is a freeware program and can be downloaded at <http://sourceforge.net/projects/xtrkcad-fork/>. No recommendation or endorsement of this product should be implied by reference in this newsletter.



Figure 2. Throat to staging yard.

To keep all side tracks similar length, I used two switch ladders of four #5 LH turnouts. I spaced the turnout frogs so the parallel diverging routes were separated by $2\frac{1}{2}$ feet. I experimented with the orientation of the two switch ladders. I did not run them both parallel to the layout edges around the corner but rather angled one ladder about 20 degrees (see Figure 1). The resulting geometry meant the three middle tracks had arcs of 100 degrees and the outer and inner tracks had arcs of plus and minus 11 degrees (the angle of the #5 frog) more and less than 100 degrees. Using XTrackCAD, I constructed 24-foot radius circles so they permitted transition curves with the tangents. I then laid out two rectangles representing plywood bases, as shown in the figure. I cut out $\frac{1}{2}$ -inch plywood and carefully marked X- and Y-coordinates, then used XTrackCAD locations to mark trackage on the plywood. I took the circle center points from the XTrackCAD information and used a trammel to draw the 24-foot radius curves. As a result, each of the five tracks has six feet of clearance.

Laying the roadbed and track was straightforward. Since turnouts were spaced about $1\frac{1}{2}$ feet from one another, I glued crossties between the turnouts and cut rail pieces to fit. I also terminated the Micro Engineering code 83 flex track tangents about two inches from the turnouts and similarly laid rail pieces to bridge the gaps. This lets me easily remove a turnout for repair or replacement.

When the cork roadbed was laid, I removed excess plywood using a sabre saw. *Cobalt* turnout machines were installed and wired and the sections were unbolted and moved into the train room, then re-bolted and installed in place, using those X- and Y-coordinates drawn on the plywood pieces.

Figures 2 and 3 show the staging yard trackwork as it presently exists. I am close to powering up DCC, but further away from installing my control panel for the staging yard. I have the control panel design and electronics worked out, but the proof-of-concept will be in its implementation. Hopefully, I will have that story for you in a few months.



Figure 3. Five track, double ended staging yard as it exists today.

5TH DIVISION SUPERINTENDENT'S REPORT

By Gary Thurow

We have started the 2013 ó 2014 year in a very good way. In September the Missoula club started the year with their annual train show and swap meet. I and several members from Spokane were able to attend again this year. I am not sure as to what the paid attendance was, but it appeared that there was a very good crowd on hand. I talked to several of the vendors and was told that their sales were about the same as last year. I know that some of the members From Spokane made purchases. I myself purchased another engine, which I have already too many of.

In October the River City Modelers and The Inland Empire Railroad Museum had their jointly sponsored train show and swap meet. The attendance was about the same as last year according to Mike Tietz, President of RCM. He also stated that the number of vendors was smaller than the Spring meet. Even given these factors, several of the vendors had almost sold out of the stock that they had brought before the end of the show. This I felt is a good sign that model railroading in the Spokane is alive.

I made an error in my last report. I stated that the Division had gained 20 new members. I should have checked with Regional first, before I made that statement. I was going on information that I had received of another party. The Division has only gained 7 new members, due to their transfer from the Division. Most are from Billings and Great Falls. Again I am sorry for the error on stating the wrong number.

Lastly, I would like remind all of you that we will be having the annual Divisional business meeting sometime in April. The day and place for the meeting have not been set as of yet. One item that will be on the agenda will be to start the planning for the 2017 PNR convention that the Division will be hosting. We will need to form committees, select a location, and set a date when the convention to be held. To this end I have contacted 2 hotels in the Spokane area and request bid packages from them. This is not to say that the convention needs to be held in Spokane. I am open to suggestion as to other locations that this convention could be held at. If you have any questions concerning what is needed to host the convention, please feel free to contact me at gathurow@cet.com and I will pass all information on.

May all of you and your families have a Merry Christmas and a Joyous New Year.

TIME TABLE – EVENTS

March 9, 2014, Spokane, WA. **Spring 2014 Model Train Show** at the Spokane County Fair and Expo Center, 404 North Havana, Ag Buildings C and D, Spokane, WA. 9:30 a.m. to 3:30 p.m., \$6.00 admission, 12 and under free. Model railroad clinics will be offered throughout the day for all visitors!

March 23, 2014, Lewiston, ID. **Third Annual Lewis-Clark Train Club** and Collectables Swap Meet at Nez Perce County Fairgrounds, 1229 Burrell Avenue, Lewiston, ID. 9:30 a.m. to 4:00 p.m.

July 12-16, 2014, Helena, MT. The **Great Northern Railway Historical Society** will hold an annual convention at the Great Northern Best Western. For more information go to <http://www.gnrhs.org>.

July 16-19, Yakima, WA. The **Northern Pacific Railway Historical Association** will hold an annual convention. For more information go to <http://www.nprha.org>.

July 30-August 2, 2014, Ogden, UT. The 2014 **Union Pacific Historical Society** convention will be held at the Summit Hotel. More details about hotel reservations and convention information will be available at <http://UPHS.org> in the future.

For additional event listings for the PNR jump to <http://pnr.nmra.org/>.

5TH DIVISION MEMBER'S WANT, SWAP AND SELL

List items that you would like to sell or swap in our new classifieds department. Send a request to the editor at abcja6730@yahoo.com. You must provide a description of the item, name and contact information. You can use an email address, telephone number or street address, or any combination of these. Listings will appear only once but you can send additional requests (after publication) if you want the listing to be repeated.

Masonite® subroadbed spline for sale. Cutting strips for spline is a pain and makes a mess. This spline is already cut and ready to be installed. If you haven't tried constructing with spline you should try it. Easements are really easy to see and model with minimal calculations. Spline sections are glued with common carpenter's glue. Strips are 3/16" thickness and 8 feet long. I have approximately 100 pieces. Sandwich 8 pieces for HO scale. Price is \$1.00 per spline or make me an offer for the lot. Contact Alan Ashton at abcja6730@yahoo.com.

Code 70 Lambert/Shinohara track (new), turnouts (some new, some used) and wyes (new) for sale. Flex Track: 36", box of 10 pieces, \$30.00 per box. Turnouts: #4 or #6 (new), \$6.00 each. Turnouts: #8 (new), \$5.00 each. Turnouts: #4 or #6 (used), \$3.00 each. Wyes: #4 (new), \$3.00 each. This track is great for yards and branch lines. Used switches, still operable, are also useful in the construction of dioramas and static displays. Contact Alan Ashton at abcja6730@yahoo.com for additional information on availability.

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VIEW FROM THE CABOOSE

Here are some stories that arrived after or too near the deadline to be included in other departments.



For the second year, **River City Modelers** was invited to join the *Christmas Tree Elegance* program at the River Park Square Mall in downtown Spokane. The Spokane Symphony Associates host this and other events throughout the year to help raise money for the Spokane Symphony Orchestra. The money raised from last year's events allowed the Spokane Symphony Associates to present donations totaling nearly \$200,000. On December 15th they raffled eighteen decorated trees and other assorted prizes.

River City Modelers sets up their 8x20 modular layout as a participant in this event and runs trains for the thirteen day run. Staffing is done by volunteers from our club and transportation is also supplied throughout this event. The public enjoys seeing different trains run on the layout each day. Kids of all ages enjoy watching the trains and seeing them as a traditional part of the Christmas season. We also answer questions about our hobby and hand out fliers with information about coming events.



On Saturday, December 14th, **River City Modelers** opened their doors to the public. About 85 people came to see the layout and the progress made over the past year. The RCM layout is modeled in the fall season during the 1970's. It is a dog-bone style with a single mainline. The layout features over nineteen scale miles of track, ten scale miles of five different branch lines, and thirty scale miles of sidings and yards. It is a two level layout with a helix at its mid-point. There is a fully functional CTC signal system and trains are dispatch controlled.

Here are more recent pictures from **Alan Ashton's** HO scale backdrop scene as covered in the clinic on page 12. This building employs a shadow box design to allow viewers to see inside the building.



NMRA ECONOMICS – A BRIEF INTRODUCTION

Message from Frank Koch, NMRA Chief Financial Officer:

This provides a very broad perspective of NMRA economics. Subsequent articles will provide more detail on individual elements and explain how we fund the various parts of our organization. We have committed to place the annual audit results and budgets on the website once it is redesigned. The IT department is busy with other higher priority work and this project is a bit down the list.

The NMRA is not a club but is a non-profit corporation, must conduct its business in strict accord with laws and regulations, and must have an annual outside professional audit (We pass with no major issues.). Like many corporations, we have multiple business units (four) and each plays a role in our overall financial strategy. Each of the four units serves a specific purpose and we manage them accordingly. The four units are Operations, NMRA Magazine, Non-Dues Programs, and Howell Day Museum (HDM). The first three are interdependent while HDM is treated as an independent financial unit, but still a part of the NMRA. The overall strategy is that the first three units balance each other every year. We do plan for a small surplus in each annual budget to cover unexpected opportunities or expenses during the year.

Within each unit, there are income and expense streams that are budgeted, tracked, and monitored. The challenge is to balance the first three against today's mix of member services, while finding ways to increase net revenue so that improvements and/or new services and benefits can be provided. We can also choose to redistribute our resources to change the mix of member benefits. As

an example, in 2013 the BOD chose to increase the budgets for IT and Marketing so that we could increase our reach and communication to members and non-members over the next few years. The website is being redesigned and responsibility for some content is moving to the Department Heads. The increased Marketing effort includes membership applications in all mail orders from several major suppliers, distribution of materials at railroad museums, and a trial of the Build A Memory initiative.

The total annual NMRA budget varies, but about \$2.3 million in 2013. This may seem like a lot but remember that it includes the annual convention, the National Train Show, and a major fund raising effort by HDM in 2013. Each area has its own budget which is reviewed by a Department Manager, the Finance Committee, and then approved by the Board of Directors on an annual basis. Each fiscal year starts with a zero budget and we build it based on the funds needed to deliver the agreed and planned programs. The chart below shows how the 2013 budget was distributed between the four units.

NMRA 2013 BUDGET (\$ Thousands)

	<u>Income</u>	<u>Expense</u>
Operations	668	720
Magazine	352	441
Non-Dues Activities	871	673
Howell Day Museum	<u>458</u>	<u>456</u>
Total	2,349	2,290

This has been a very brief introduction. Over the next year, I'll expand on each of the four areas and provide an introduction to the various types of assets and liabilities that make up the NMRA. If you have any questions or thoughts, my contact information is in the Magazine and on the website.

Frank J. Koch, NMRA CFO

THE GOAT is the official publication of the 5th Division of the Pacific Northwest Region, National Model Railroad Association. The Goat is published quarterly with at least one paper issue per year ó generally with ballots. Deadlines for material input are: March 15, June 15, September 15 and December 15. Publication dates are April 5, July 5, October 5, and January 5. Publication is the date *The Goat* is available on the PNR website. You may refer to the PNR website on the publication date to view, download and print *The Goat*. Special events may alter this timing. **All material and correspondence related to *The Goat* should be forwarded to the Editor.**
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