



The Goat

Volume 21:2

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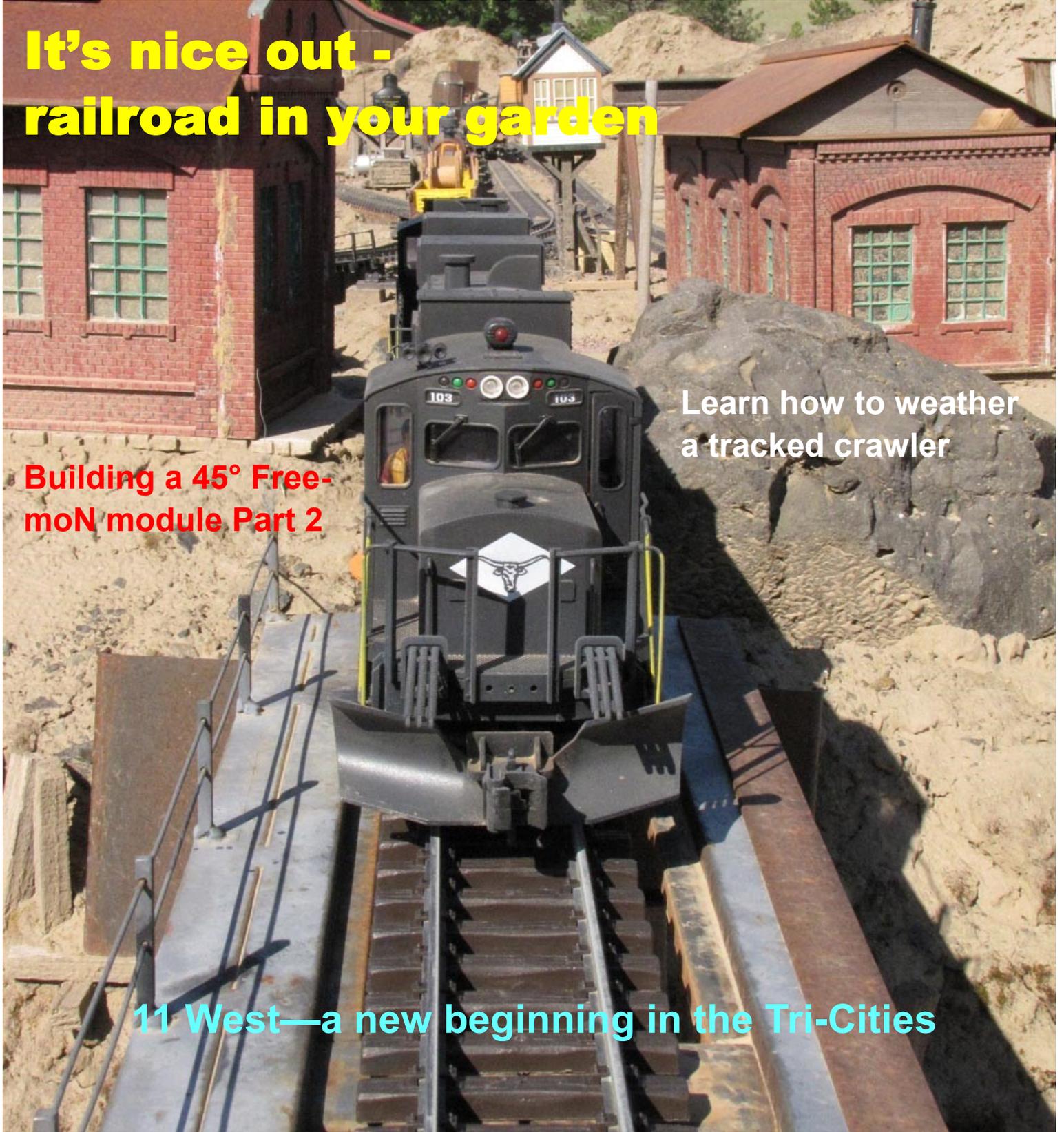
The official publication of the Pacific Northwest 5th Division of the NMRA – Also follow us at www.PNR5D.org

**It's nice out -
railroad in your garden**

Learn how to weather
a tracked crawler

**Building a 45° Free-
moN module Part 2**

11 West—a new beginning in the Tri-Cities



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On the cover

John Hair's 'North Powder and Western Railroad' G-scale railroad built in a wash between wheat fields.

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From the editor - Frank Wilhelm

Welcome to another edition of *The Goat*. I know, I know.... this is mighty late for the 2nd quarter - I'm sure you're wondering why that Wilhelm guy can't get it together and get the issue out earlier. Hey, I'm new to this and I'm feeling my way through putting together issues and balancing work life. Bill had asked me to hold off on this issue until after the annual business meeting at the end of April - fine, I don't want to get sideways with the superintendent - and it made sense to report on the happenings from the meeting. However, that also meant I was staring down the barrel of the end of the semester in my work life, the start of summer research, and a trip to southern Ecuador to get our summer students settled in there and check in with collaborators. So, here we are.

I'd like to thank all of the contributors to this issue - I believe there's a nice variety of articles from which you should be able to glean something for your own modeling success. We have the reports from the superintendent, the assistant superintendent, and an introduction from Joel Goldberg, one of our new AP co-chairs. Greg Baker, the other AP co-chair will have an introduction in a future issue. Joe McCummins leads off the articles with an introduction to garden railroading in the Inland Northwest - how many of you give up or slow your railroading hobby during the summer because it's nice out and you want to be outside? Yes, I thought so, have a read through Joe's article, perhaps some garden railroading is in your future? I know after fixing a G-scale engine for a friend and finding twist-on wire connectors under the hood similar to those in light fixtures - space is NOT an issue for decoders etc. - since then I've wondered about the possibility of a small loop in the backyard - we are slated for some future yard work...hm? We have an update from the new endeavor at 11 West of the Tri-City Model Railroaders in Kennewick - wow is all I can say; they've done some serious planning, and are now seriously building a model railroad. Check out their steel backbone on which the mushroom design is being built. We also have a nice weathering article from Alan Ashton, just in time, as I need a dozer for one of my modules; Bill Fassett has an update on happenings at the Inland Northwest Rail Museum; and then I continue with the 45° Free-moN module build from the last issue. Enjoy - and send in articles, updates, etc. for the next issue. Thanks.



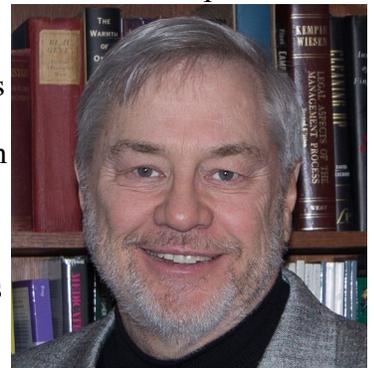
Frank Wilhelm, editor of *The Goat*.

From the Superintendent - Bill Fassett, Superintendent

The division executive committee continued to have conference calls via Skype – typically on the 2nd Monday of each month – to plan and coordinate division activities. Much of the last quarter’s time was spent preparing for the division’s annual business meeting. Assistant Superintendent Bill Kleinert took the lead and worked with our host club, the Lewis Clark Model Railroad Club to plan the meeting in Lewiston, Idaho – the first meeting held at a location other than Spokane for several years.

At the Spokane Model Train Show in March, the Division was represented by the Superintendent and Paymaster, while the Superintendent and Assistant Superintendent were present at the 7th Annual Lewis-Clark Train Show at the end of March. NMRA members from Division 5 and other divisions set up impressive Free-Mo layouts at both shows. As always, the River City Modelers held an open house during the Spokane show.

Twenty-seven members attended the Division 5 Annual Meeting in Lewiston on April 21, the minutes of which are posted on the Division 5 website at: www.prn5d.org. Bill Kleinert was elected to serve as Assistant Superintendent and Dick Smith was elected Chief Clerk; both for 2018-2019. As well, two recent transplants to the PNR were announced as new AP Co-chairs. Joel Goldberg, MMR, moved a couple of years ago to Bigfork, MT from Michigan. In Michigan he was in the North Central Region and served as its contest chair. Joel is a retired electronics professor. He will act as the primary AP Chair and work mostly with members in Montana. Greg Baker recently moved to Lewiston, ID from Oklahoma, where he served as a division superintendent in the Mid-Continent Region. Greg is director of safety for Watco and in his spare time he actively models in HO and writes articles which have been published in Model Railroad Hobbyist, including several switching puzzles. He recently took 1st place in the NMRA’s first Social Media Contest – congratulations! He brought the model along for those attending to admire. Greg will be AP Co-chair and will help members elsewhere in the division. Michigan’s and Oklahoma’s losses are certainly the PNR’s gains! The members of the division expressed sincere thanks to Phil Everett, MMR, who has served as AP chair for several years, and who had asked to “retire” from the job.



Bill Fassett, Division 5 Superintendent

Division 5 officers are looking forward to seeing other NMRA members at various venues throughout the region during the summer.



Figure 1. Greg Baker's winning entry in the first ever NMRA Social Media Kit Building Contest

5th Division Annual Business meeting summary — Bill Kleinert Assistant Superintendent

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The 5th Division annual meeting was held on Saturday, April 21 at the Community Center in Lewiston, Idaho with an attendance of approximately 25 individuals. After a minor logistical hiccup, but with the coffee on and the doors open, folks signed in, paid fees and bought raffle tickets for various prizes. A heartfelt Thank You! to all those that supplied prizes and traveled from far away. As well, the staff at the Community Center provided an excellent lunch consisting of pulled pork sandwiches, coleslaw and beans with coffee or soda. We held the raffle during lunch while we had everyone's attention.

Following the business meeting which concluded at approximately 10:30 we had a short break to refill coffee and grab a bite while also rearranging the room for the clinics. Two clinics were presented, one by Greg Baker on switching operations, and one by Rich Anema on Layout Command Control (LCC).

Greg gave a very interesting talk illustrated by PowerPoint on switching operations on the 1:1 railroads and reasons for doing things the way they do them. Near the end, he posed several situations that had actually occurred in his railroading career and then showed the solutions. One situation involved two locomotives and approximately 10 cars which were meant to serve a chemical plant with two sidings. Getting the loads distributed and the empties pulled required some 38 moves; fun problems for operation-minded modelers.

After lunch, Rich Anema from Kennewick gave a nice presentation on the progress of the new layout underway at the Tri-City Model Railroaders in Kennewick (see separate article in this issue – *ed*). His clinic focused on the demonstration of the Layout Command Control system (LCC) being promoted by the NMRA as a way to control anything electronic that is not locomotive-related on a layout, using a portable bench/module built by Bob Jekel. The LCC is a method to control model railroad accessories in an integrated fashion combining everything for turnout control, signaling, detection of trains, and structure lighting. It shows great potential for operating a large model railroad and will be implemented on the new 11 West layout the Tri-City Model Railroaders are building. The mock-up/test bench built of Plexiglas and electronics was a work of craftsmanship and allowed one to easily see all the components and their interconnection.



Rich Anema demonstrating the LCC workbench during a clinic after the annual business meeting.



UP engines on Bob Bjerke's N-scale 3-room layout

Several layout tours were available in the afternoon, including our host's, the Lewis and Clark Train Club (LCTC), Bob Bjerke's extensive UP N-scale layout in Lewiston, and Mike McGhee's NP and Stampede Pass in Julietta, also in N-scale. The LCTC club house features their HO layout depicting Lewiston and a portable N-scale layout along with several under-construction Free-mo modules. Their location is ideal, and many visitors are received annually. The N-scale layout is taken to various venues such as the Lewiston library, the LCTC Annual train show, and the Speeder Days at the WI&MR Depot in Potlatch. The LCTC has been in existence for over thirty years now in several locations; it's nice to have a permanent home these days.

Bob Bjerke's extensive layout in N-scale occupies three rooms in his basement and features the UP mainline from Omaha, NE to Pocatello, ID, and Ogden, UT. It is a DC

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layout that features many engines and rolling stock, as well as scratch-built structures, including a couple of refineries. Two-thirds of the layout is on shelves a little above eye level, so one needs to view it from stepstools, which Bob graciously provided.

Approximately 30 minutes west of Lewiston, in Julietta was Mike McGhee's N-scale layout called the Northern Pacific and Stampede Pass, representing the NP railroad in the Morton, WA area. It was about 2/3 completed featuring long runs that showed off long trains very nicely. It contains extensive coniferous forests to accurately represent the area being modeled. It also featured quite a few scratch-built buildings representing prototypes. The electrical DC system ran smoothly and a glance underneath showed neat wiring and thorough labelling. With the meeting located in Lewiston, several officers including Joel Goldberg, Shirley Sample, Gary Thurow, and Bill Fassett were on hand to evaluate Mike's efforts towards several AP certificates.



Lumber transport action on Mike McGhee's NP and Stampede Pass N-scale layout in Julietta.

Overall, the annual meeting and the layout open houses were a great success. An added feature of regional meetings is the chance to meet new individuals and make new friends. I had the pleasure of driving a couple of out-of-towners on the layout tours which provided a good chance to visit and get to know each other. It's always nice to share model railroading interests with other like-minded individuals.

Bill graduated from WSU in horticulture when the dinosaurs still roamed the earth. He spent 28 years with the city of Sitka in Alaska as their grounds superintendent. After retirement in 1998, he moved to Lewiston in 2000. He's been involved with modeling of one sort or another since age 10. He's currently working on a HO 10x18' layout with steam era, logging, mining and rail barge operation.



Bill Kleinert, Division 5 Assistant Superintendent

Introduction - Joel Goldberg - Division 5 AP Co-chair

My name is Joel Goldberg and I have been appointed as AP Co-Chair for the PNR Region. My main responsibility will be to work with fellow modelers who live in Montana, thus filling an area of apparent need. Together with Greg Baker, we will cover the Division.

Some background about myself: I have been modeling in HO since the mid 1950's. Currently I live in Bigfork, Montana. I migrated here from Michigan, where I lived in the NCR Region, where I was the region's Model Contest Chair. I earned MMR #458 in 2011. My latest layout on which I am working is in a 10' x 14' room, using MRC's DCC operating system. I am also involved with a group of local modular modelers.

As the NCR Model Contest Chair, I was able to identify and work with a great bunch of modelers, some of whom were outstanding model makers while others were both great modelers and had the ability to constructively critique the works of others. As their leader, I insisted on viewing the work of those who wished to be evaluated in the same manner as described by Jack Hamilton (I am not a rivet counter).

We have a unique challenge, as we, in Montana, are separated by miles, and do not have much of an opportunity to see each other on a regular basis. I believe the following things, which I would like to see happen in Montana should help address this issue:

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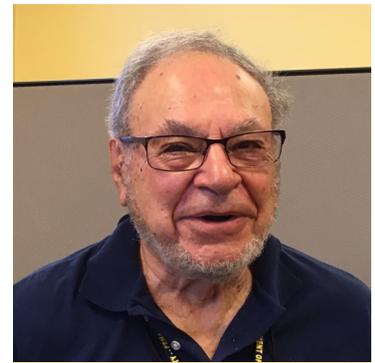
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- Meeting other modelers in our state;
- Develop a list of evaluators (modelers) who would be willing and able to evaluate the works of others, as they qualify for AP awards;
- Develop some area meetings, perhaps once a year, throughout our state; and
- See more NPR names appear on the NMRA's magazine AP listings each month.

You will hear more from me in the future. If you wish to contact me, my email is: joelgoldb@yahoo.com and my home phone is 406-837-0580.

I'm looking forward to a wonderful experience as we move ahead together.

Joel has been a member of the NMRA (#10752) since early in the 1950s and he's built several HO layouts after moves around southeastern Michigan. Three years ago, he settled in Bigfork, Montana. For the North Central Region (NCR), he served as Model Contest Chair. He's also an avid amateur radio operator and has served as the volunteer Amateur Radio Emergency Coordinator for his Michigan county for 20 years, retiring when he moved to Montana. His working life was spent in electronics, teaching at the community college level for close to 30 years including writing textbooks.



Joel Goldberg MMR, Division 5 AP co-chair.

Take it outside - Garden railroading in the Inland Northwest - by

Joe McCummins

Frank contacted me about writing an article on Garden Railroading for *The Goat*. I am not sure I am the correct person for this job because I have only been involved with Garden Railroading for six years. These six years have been full of learning and much enjoyment. Part of our backyard has changed from grass I needed to mow to a wonderland of hills with scale vegetation, a water feature, and track tying it all together. Best of all, both my wife Sue and I are actively involved in making this dream come true. Sue loves gardening, is very creative, enjoys constructing buildings, painting figures, provides inspiration for the big picture, and keeps challenging me with new ideas.



Steve and Liz Hughes' "Spokane Division of the Southern Pacific Railroad" engine yard under towering Ponderosa pines.

Another big help in making our garden railroad a reality was becoming members of the Inland Northwest Garden Railroad Society. This is a family-oriented garden railroad club with members from Eastern Washington, Northern Idaho and Canada. The club meets every third Saturday of the month at a member's home. A typical meeting involves running trains, a pot luck lunch, fellowship, a brief informational meeting, a raffle, and did I mention running trains. Throughout the year the club holds workshops on a variety of topics to inform and challenge members. I have learned

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and received much help from other club members. Twice a year the club participates in the local Spokane Model Train Show. During the annual Garden Expo, the club sets up a layout to share our hobby and love of trains with the public. More information about the club and its activities can be found at the club website:

inlandnorthwestgardenrailroadsociety.org/index.html.

The term Garden Railroad can take on many different looks. A railroad can be placed in an existing garden with full size plants, shrubs and trees where the garden is the focal point and the railroad blends into the garden. It can be a railroad with a garden in which the railroad is the main focus and the plants provide a realistic scale setting. There are many in-betweens, mostly dictated by available space. A good friend has an amazing layout built in a wash in the middle of a wheat farm. Others, because of physical issues or convenience choose to build raised railroads through their gardens. Finally, there are those without gardens, they take it all inside where the elements are no longer a challenge and details last longer.



Steve and Liz Hughes' "Spokane Division of the Southern Pacific Railroad" layout under towering Ponderosa pines.



John Hair's "North Powder and Western Railroad" built in a wash between wheat fields depicting the arid high desert.

realized this had to do with the size of the equipment and how it would compare when placed side-by-side, or the visual impact of mixing scales. Also, the scale could limit the equipment available, depending on choice of era and mainline vs narrow gauge.

The next decision was how to power the locomotives; whether to use track power, DCC or radio-controlled battery, as all are available in these scales. This decision is really a personal preference and what you want to accomplish with your railroad. DCC, by far gives the greatest flexibility and variables that can be incorporated into a lay-

Railroading outside has all the challenges of the 1:1 scale railroads; weather, misguided vehicles, animals, expansion and contraction of track, wood rotting, washouts, flooding, frost heave, etc. It also has the beauty of the large railroads; the sky, changing light, various backgrounds, sounds, and space. Garden Railroads require the same ongoing maintenance as the big boys to remain operational; this includes replacing ballast, repairing washouts, fixing track separations, removing or cutting back vegetation, repairing switches, and maintaining or replacing deteriorating structures.

One of my first challenges was understanding all the scales that use the same gauge track; 1:32, 1:29, 1:24, 1:22.5 and 1:20.3, and what this meant to my planning and purchasing. After reading books, articles and on-line forums, I finally



Joe and Sue McCummins' "Quiver River RR" three truck Shay emerging from a tunnel.

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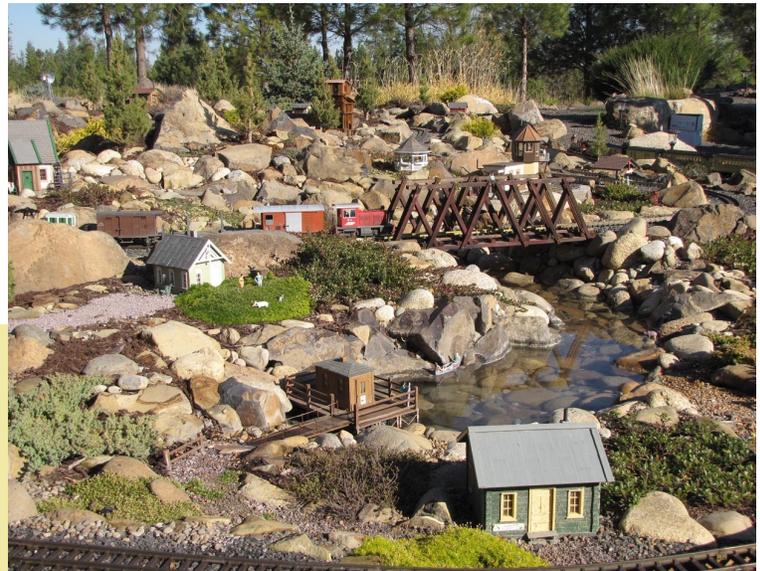
out. My decision was dictated by my budget for track and having the ability to operate on other’s layouts (i.e., bring my toys to run at friends). I chose battery power/radio-control which allows me to use aluminum track for my layout, and brings independence from track power, or DCC. In terms of expenses, aluminum track is about half the price of brass track, while the battery powered radio-control makes operating on other layouts hassle free regardless of what’s coursing through their tracks.

Then there is the whole gardening challenge. My wife has enjoyed learning about the appropriate plants to purchase, how to prune them to maintain the desired scale, and how best to nurture the plants. Garden shops and nurseries are no longer a place to buy pretty plants but a place of learning, where labels are read to determine expected growth-size or spread, whether the plant will survive in our growing zone, the sun/shade requirements, and required watering. This in turn creates a large “Fairy Garden” with trains running through it.

My greatest joy with our layout is being able to share it with other operators and with people who are just intrigued with trains. I love to watch children’s eyes light up when the whistle blows or they spy a creature in an unsuspected place or better yet, they are handed the controller to run the train. I’m delighted that my grandchildren are sharing in Grandpa’s love and want to “run trains.” We spend many summer evenings sitting on the patio watching the trains run, and listening to the water cascading down the water feature to the music of the crickets and the frogs.



Ron and Wendy Spencer’s Canadian “Kaslo and Slocan Railway” layout. Because of large animal traffic through their property in the winter, Ron removes the track in the fall then re-lays it in the spring.



Steve and Debbie Tabacek’s “Buckeye Valley RR”, which is an outdoor DCC layout.



Joe McCummins, conductor of the Inland Northwest Garden Railroad Society.

Joe McCummins and his wife Sue live in Deer Park, WA. He retired from the California State Parks where they lived and worked in a wide variety of settings, including the remote Mojave Desert and a historic Spanish mission. He inherited his love of trains from his dad, who collected HO trains and had a small layout. Joe’s interest in garden railroading began with the surprise inheritance of some “train stuff” from Sue’s uncle, which turned out to be some LGB engines, an LGB starter set with expansion sets, and G scale Bachman rolling stock. Joe and Sue enjoy exploring the Pacific Northwest, especially when it involves train rides and museums. Joe has been a full-time Grandpa, babysitting their two granddaughters



Inland Northwest Garden Railroad Society, Inc.

11 West - a new layout begins—an update from the Tri-City Model Railroaders

Introduction

The Tri-City Model Railroaders (TCMR) organization was founded as a non-profit corporation in 1972 and has enjoyed a number of layouts (both permanent and portable) during its long existence. Its last permanent layout remained in use until late 2004. Public shows have continued to this day with a large modular layout at various venues.

After a long search, a favorable permanent site was identified in late 2015 at 11 W. Kennewick Avenue in downtown Kennewick. The 26-foot-by-80-foot building is a block away from BNSF mainline and Union Pacific branchline tracks. Members appropriately refer to their new site as **11 West**.

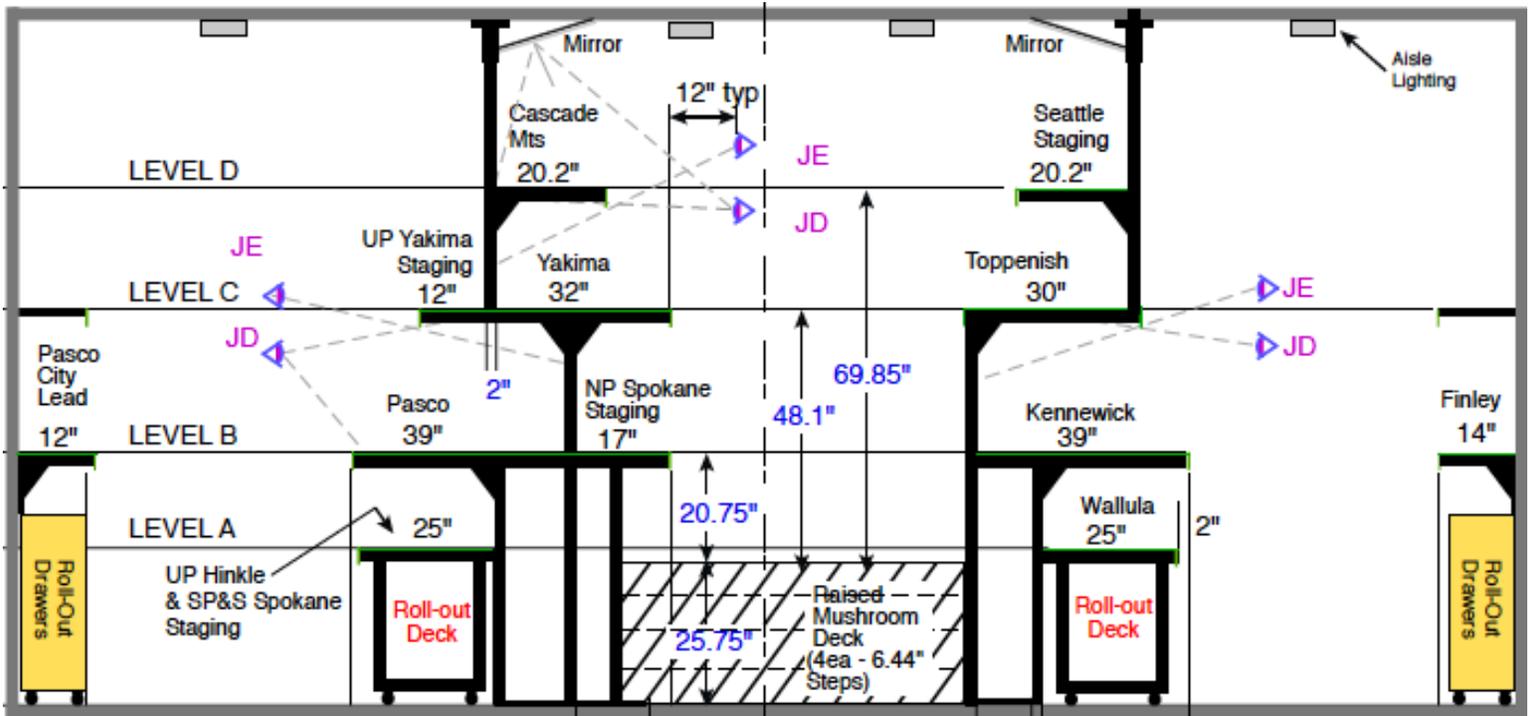
Concept and Design

The members reviewed a number of possible concepts before deciding on a “mushroom” scheme that also takes advantage of the building’s 10-foot high ceiling. For those unfamiliar with “mushroom” layouts, they provide for stacked levels of layout construction in reverse viewing orientations and use of dedicated viewing platforms.

The new layout will depict Northern Pacific trackage from Spokane via Pasco and Yakima to Auburn with interconnecting SP&S traffic between Spokane and Wishram and Union Pacific operations between Pasco and Hinkle. The time period of formal operations, buildings and other scenic elements will be from the 1950’s to 1970’s.



Tri-City Model Railroader’s new storefront in downtown Kennewick, WA



Elevation cross-section through mushroom layout of TCMR’s new 11 West

The best way to understand TCMR’s track plan is to initially review the elevation diagram above. As you can see, the layout has 4 levels. Levels A & B are viewed from the outside aisles around the layout while Levels C & D are

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viewed from an interior platform area via a special stairway. Detailed views of the levels can be obtained by downloading the design drawings at the following links:

[Level A Track Plan](#) [Level B Track Plan](#) [Level C Track Plan](#) [Level D Track Plan](#)

The design requirements for the mainline include minimum 30" radius curves, maximum grades at 2%, and turnouts of either No. 6 or No. 8, depending on orientation. The overall plan provides for a single track mainline with appropriate sidings and major staging areas. Reverse loops are also provided for each level to allow for sustained, continuous running.

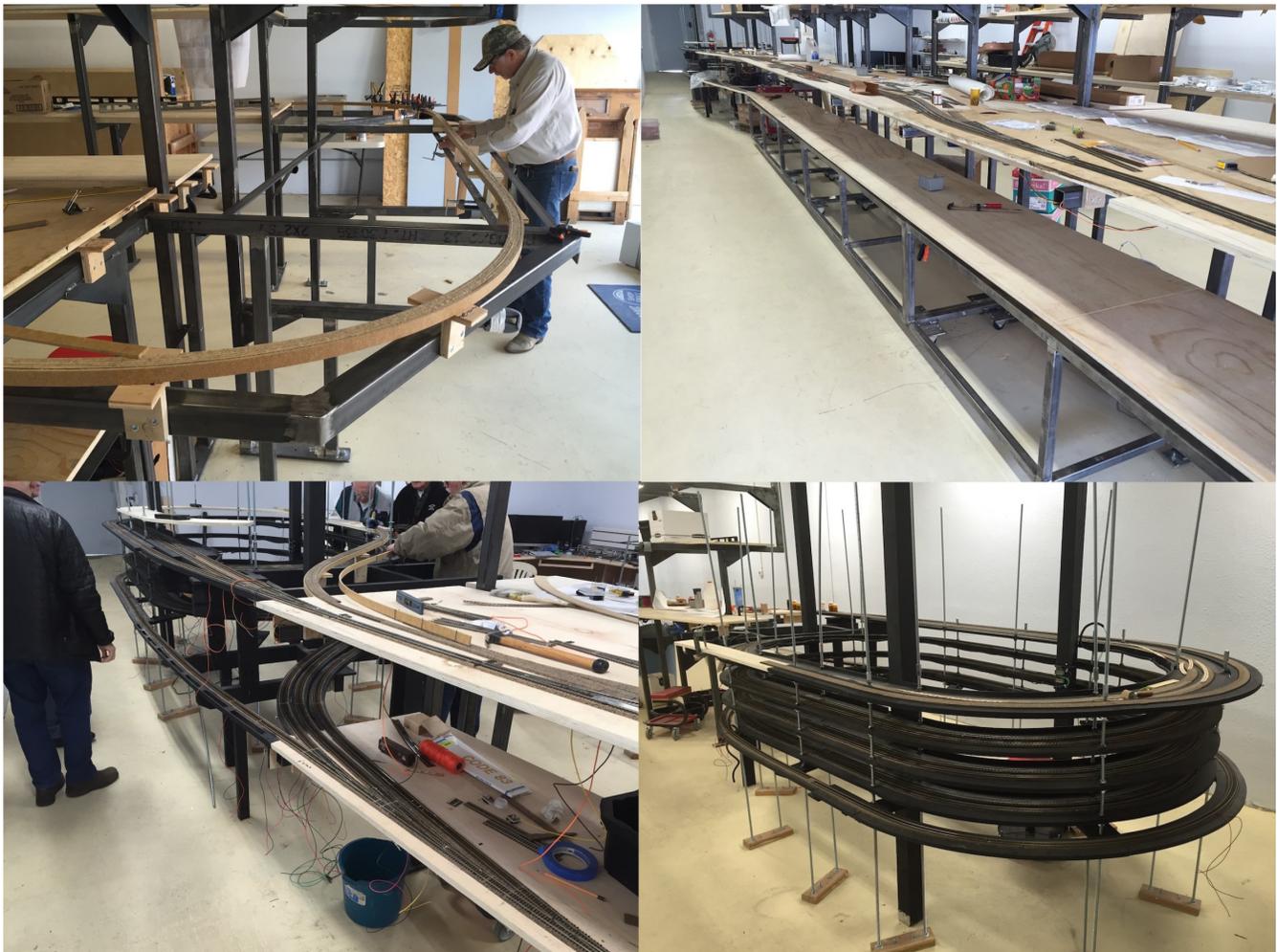
Construction

After some extensive site preparation, construction of the layout started in Fall 2016 with the first helix and the benchwork system. The benchwork frames are unique and use 2-inch square steel tubing all of which were fabricated by the Columbia Basin College's welding program. The framed sections (total: 20) were anchored to the floor and ceiling truss members with steel plates and sleeves.

In expansive switching areas and along the helix loops, subroadbed will consist of 3/4-inch plywood sheeting raised above the structural cross-members. For other connecting reaches, subroadbed is being formed by 1-inch-high fabricated spline on risers.

Initial mainline trackage on Level B is expected to be operational by late Summer 2018 with connections to Level A for interim staging and continuous running following soon thereafter. Trackwork to Level C may be ready in a year or so and trackwork to Level D would be installed several years later. Detailed scenery work will be started as particular areas of each level become fully operational.

The construction progress can be seen in the following pictures:



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Power and Controls

Layout power will be provided by a NCE digital command system with appropriate power boosters and a liberal use of power districts. Planning is also underway for a future Layout Command and Control (LCC) system to integrate signaling and possibly a computerized dispatcher interface.

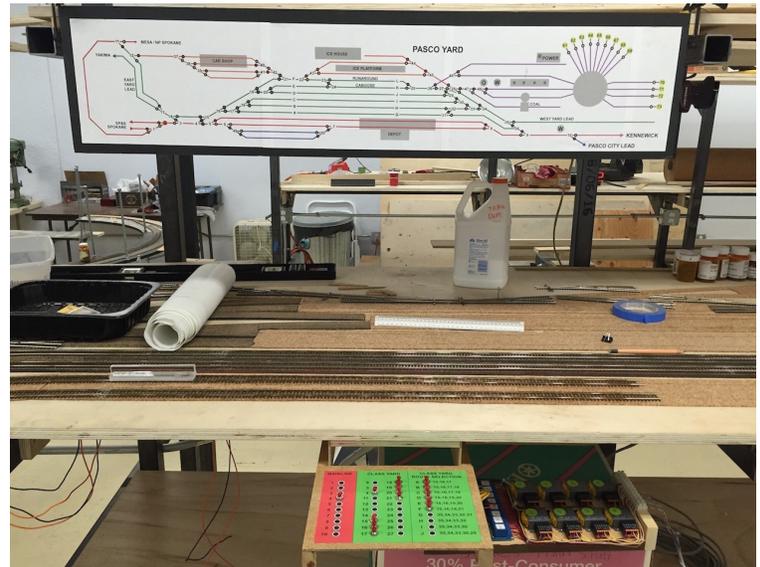
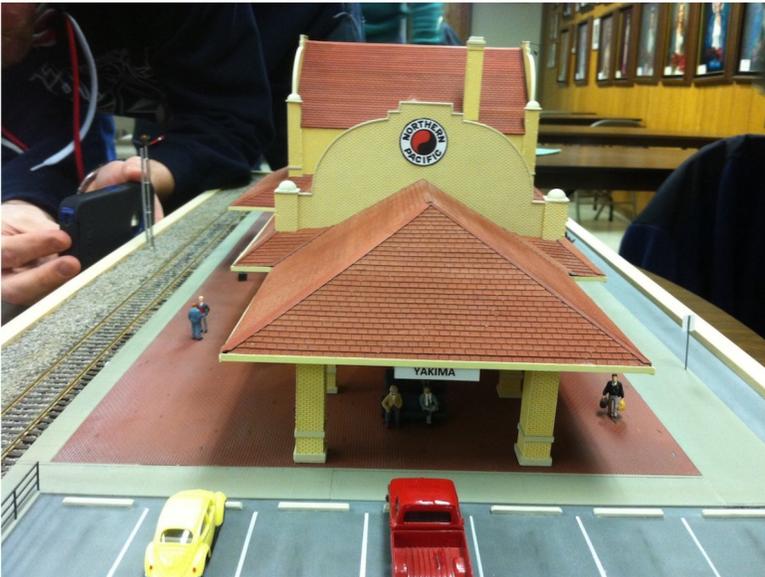
Control panels are receiving special consideration. At this time, the panels would provide an overhead display of the track schematic, turnout position indication and uncoupling locations. Control panel drawers would also be provided to activate turnout changes, and to route control and uncoupling magnets.

Operations

Layout operations will provide for formal, rail-fan running, and public show event modes. In a point-to-point mode for formal operations, a run distance of over 500 feet will be provided from Auburn staging on Level D to Spokane Staging on Level B. For the rail-fan operators, continuous runs between Pasco and Yakima will use over 400 feet of track. The scheme for formal operations (and car forwarding) is currently being evaluated based on a recent membership survey.

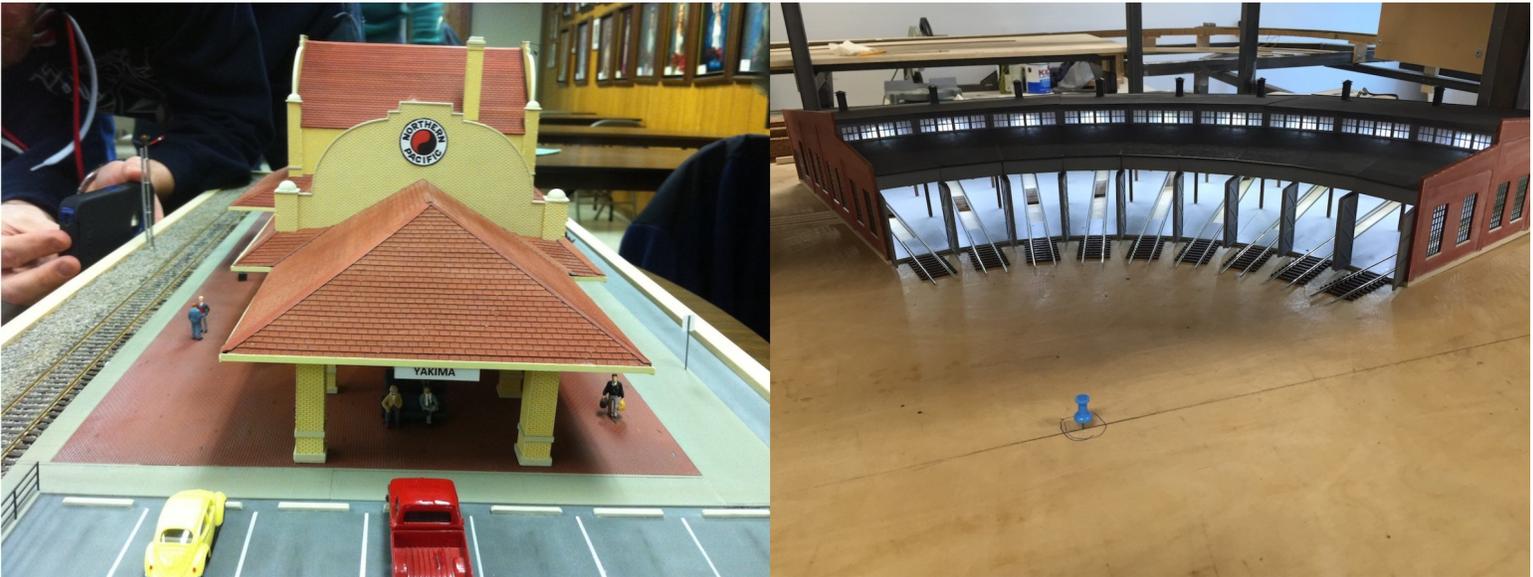
Structures

Structures will follow prototypical examples for the time period of the layout. The first two modeled structures, the Yakima Station and the Pasco Roundhouse are shown below.



The picture above shows a demonstration set-up for Pasco Yard operations.

The scheme for formal operations (and car forwarding) is currently being evaluated based on a recent membership survey.



Related Activities

The new site and its layout will be an important part of TCMR's educational programs under its Section 501(c)3 non-profit status. Along with the historical accuracy of layout details, 1:1 scale railroad artifacts will be on display during future events open to the public.

Funding for the entire endeavor (including the building's acquisition loan and layout construction costs) is being accomplished through a combination of membership dues, pledges, and ongoing fundraising efforts. A small retail sales operation is also planned.

Progress Updates

The continuing layout progress and the schedule of the organization's public activities are readily available via the TCMR website at: www.owt.com/tcmr. Members hope that readers of *The Goat* will visit **11 West** to check out the club's progress.

Inland NW Rail Museum restoration of UP 4047 Dining Car

By Bill Fassett, Division 5 Superintendent, and Dale Swant, INWRM President

One of the most popular exhibits at the Inland Northwest Rail Museum in Reardan, WA, is the Union Pacific Dining Car number 4047. Built in 1914 by the Pullman Company, it was used in UP passenger service. According to INWRM records, the car was refurbished with air conditioning in the late 1930s, and again refurbished as a lunch counter/cafe/teria car in the 1940s. The car was last used out of Hinkle, OR, as a car to feed UP work crews, and was donated to the museum in 1986.

Interior restoration of the car was undertaken by the museum and it became part of the museum's display train at the Spokane Interstate Fair in 1998.

Since the museum's move to Reardan in August 2016, the 4047 has been housed in the Lee Tillotson Conservation & Restoration Center on the museum's current grounds. The center is named after Lee Tillotson, a founding member of the Inland Empire Railway Historical Society, and an early figure in model railroading in Eastern Washington.

The 4047 is a wonderful period piece; even though it was converted to a cafeteria car, it retained some of its original finery, including some stained-glass windows. The museum's initial restoration included displays of railroad china used during the period of the car's active service. Fully open to the public is the car's galley, with its wood-fired stove and stainless-steel kitchen facilities.

While housed at the Spokane Interstate Fairgrounds, continued maintenance of the museum's rolling stock was difficult, and the museum has chosen the 4047 as among the first to be updated using its new facilities in Reardan. Over the winter months, volunteers have cleaned and refurbished the interior, have replaced broken glass and window shades, and begun work to prep the car for repainting the exterior.

The Inland NW Rail Museum is an NMRA sustaining member and offers NMRA members a discount on admission. More important, the museum invites NMRA members to become volunteers, as docents, guides, participants in 1:1 reconstruction, or as historians. The museum is open from April through November on Fridays, Saturdays, and Sundays from 10:00 am to 5:00 pm. Its grounds occupy 30 acres on U.S. Highway 2, west of Reardan, about 20 miles west of Spokane. Contact us at:

info@inlandnwrailmuseum.org, or call/email Dale Swant, at: daleswant@yahoo.com.



Restoration of UP 4047 at the Inland Northwest Rail Museum at Reardan, WA. Top and middle from left to right, Ryan Wilder, Jerry Fey (NMRA life member) and John Simanton, work on the interior, while John Simanton and Ed Wattawa work on windows, (bottom).

Weathering a tracked crawler – Alan Ashton

This 1940's era tracked crawler provided over two decades of service but now, in the mid-1960s, sits neglected, and rusting, with its life near an end.

I assembled this tracked crawler using a *GHQ Models* kit (www.GHQModels.com) and brush painted it using various *Polly Scale* and *Floquil* colors.



After assembly, all parts except the tracks and operator's seat were painted with *Polly Scale Signal Yellow*



After the yellow paint was applied, the tracks and seat were painted with *Polly Scale Grimy Black*.



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Grimy Black was then dry brushed on selected engine parts.



Initial rust spots were dry brushed using *Polly Scale Roof Brown*.



The final rust was dry brushed with *Floquil Box Car Red*. Interesting to note, this bottle of paint was over 30 years old and appeared to be completely dried up. Some thinner was added and the gummed up paint was stirred with a stick. The end result was a lumpy, ugly mess that clumped up on the brush. Yet, it created a rather interesting rust effect.



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An overall dirty appearance was achieved with an application of various artist's pastels. Finally, the model received a light coat of *Testor's Dullcoat*[®]. It is now ready for placement on the layout.

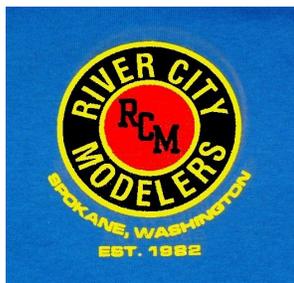


In May, 2013, *Testor Corporation* announced the discontinuance of their *Polly Scale* and *Floquil* paints. These brands are rapidly becoming hard to find, especially for the colors more commonly used by model railroaders. I am gradually switching my focus to various acrylics, especially for weathering, and learning more about how to mix paints to get the colors that I want.

So far, so good. Here is an "out of service" rooftop air conditioning unit, rusted and weathered with acrylics and powdered artists' pastels. I used FolkArt #231, Real Brown, and Americana #DA219, Heritage Red, and mixed them as needed on my palette. I then brushed on some powdered pastels in various "dirty and grimy" shades.



Alan Ashton is the previous editor of *The Goat*, and continues to contribute as co-editor. He's building a home model railroad depicting New England, and he also participates in the Inland Washington Free-mo group. He participates at meets by giving clinics and is a deep well of model railroad knowledge.



Model Trains
419 East Sprague
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Speeder Day—July 14, 2018—Washington, Idaho & Montana Railway Historical Preservation Group, Potlatch Depot, Idaho.

Building a Free-moN 45° module Part 2: Spline sub-roadbed, scenery start, and track – Frank Wilhelm

In the last installment, I covered the jig used to build the curved side frames using glulams and ended with the module ready for sub-roadbed and foam for scenery. Here I'll detail my general approach for building the spline sub-roadbed (this works well for HO and N scale as I've used it in both scales), and I'll, cover track laying and get to the start of scenery; so let's go.

I decided I wanted a river canyon to feature a bridge on the module, but I also wanted a chance to provide at least one switching opportunity (I'm not a big fan of a single track across a module without having something to do). I decided to have a spur to a grain elevator which required a curved turnout (more on the trackwork later) - Figure 1 shows the concept. Given the minimum Free-moN radius of 22" and the 4" of perpendicular track at each end of the module (see the Free-moN standards here:

<http://free-moN.wesleysteiner.com/reemoNStandards.pdf>), required some creative arrangement of the design elements – including the mainline on the diverging route. I wanted the switch to be on firm ground, although there are prototype examples of switches on bridges (e.g., a good example in the Pacific Northwest is the rail bridge at Wishram over the Columbia River (see:

<https://www.trainmaster.ch/Pics-c5/7531-22-MF-06-24-172.jpg>). However, placing the bridge immediately after the switch required it to widen as the tracks diverged (OK, all structural engineers cut me some slack here - details on the kitbash in a future issue). This arrangement would allow one 60' car beyond the elevator and one to be loaded – so two or three switching opportunities, depending how one wants to approach loading of cars.

Sub-roadbed

Once the module frame was completed, I laid it on 1-1/2" blue foam and traced the outline, followed by cutting and fitting to ensure a snug fit (Figure 2). This presented a level surface on which to build the spline sub-roadbed. The centerline was established with a soft spline clamped 4" straight at each end, and allowed to flex naturally through the center, making sure that it did not go below minimum radius. This did two things, it gave a pleasing curve, and the spline automatically included the spiral easement from straight to curve at each end. Once satisfied, the position of the first spline was carefully traced onto the foam and fixed with BBQ skewers simply pushed through the foam. I've found that sharpening commercial BBQ skewers a little more with a belt sander allows them to slice into the foam easily and straight. The next order of business was to put down a piece of waxed paper, and glue on additional splines to the side of the original center spline ensuring everything remain in place. I used spacers between the solid center splines to save some material and built the spline roadbed right to the ends of the module (Figure 3) because it's easier to work with full length material to achieve a nice bend. Splines were the same as those used to make the module frames (see last issue). I then glued up the sub-roadbed for the elevator spur (Figure 4) and glued it to the mainline sub-roadbed (Figure 5). Next the sub-roadbed was traced onto the foam, the foam removed and cut, and the sub-roadbed glued into the module (using 3/4" supports at

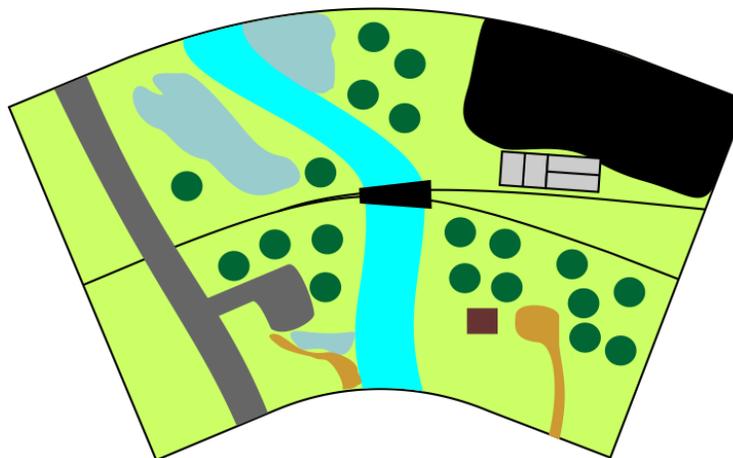


Figure 1. General design plan for the 45° module: road on left; river through center; parking lot and trail access from the road; a switch before the bridge; grain elevator industry after the bridge; and small A-frame cottage in right foreground.



Figure 2. Module outline traced onto 1-1/2" blue utility foam, which will be scenery base.

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each end (Figure 6). The next step was to outline the river, cut the foam again, glue supports under the sub-roadbed on either side of the bridge, and cut it too (Figure 7).

Trackwork

The trackwork was a little ticklish on this module – first the mainline would be on the diverging leg on a curved turnout with a radius of approximately 22”-24” (exact dimensions not known given I used a spline to lay out the curve), and a main route radius in the vicinity of 26-30” to the elevator. Off course there’s nothing available commercially, but I figured I could get away with hand-laying on a code 55 #10 Fast Tracks template

(<https://www.handlaidtrack.com/track-templates>). Not so, while the one I built was spot on on the template, the diverging leg bent too sharply, even at a #10. So back to the drawing board, I put down paper, pegged down code 55 flex track, and traced it (Figure 8 and 9), then built on that. The custom build gave me the chance to have continuous rail (no joiners) through the switch, which I believe will allow it to hold up for having the mainline in the diverging leg. I finished up by tracing the outline of the switch on to the (by now painted) roadbed, gluing on wood ties, sanding them even to the flex track height, painting them, and then installing the trackwork with a light (emphasis on light) coat of Dynaflex 320™ clear caulk (Figure 10). Light and heavy cars easily rolled through the turnout both ways and legs, and once powered, the same was true for the engines. This trackwork should hold up to heavy use, even if the mainline is on the diverging leg.

Start of scenery

The river bottom was made out of a leftover piece of door skin cut to shape, and glued in place. I then carved the canyon sides to their final form using sharp implements and sandpaper – I desired to have an overlook on the west side with a path to the river. Rocks for the sides of the canyon were cast from lightweight Hydrocal plaster (Woodland Scenics) in a variety of commercial and homemade molds. Rock pieces were laid out, broken up, arranged, rearranged, and finally glued in place with Dyanflex 320™ clear caulk (Figure 11). I find that for modules which travel, the caulk provides some flex and prevents cracking of the rock scenery. Next came the fun part of ‘pointing’ the rocks – filling in all the nooks and crannies. I use a variety of tools (Figure 12) to aid in this task, the favorites being a small stainless steel oil painting spatula and dental picks to get into the very small spaces between the rocks. I like to use lightweight acrylic spackling compound because it is light, and also retains some flexibility when set (it’s acrylic - Figure 13 – but it’s not cheap). The end results (Figure 14), although time consuming – don’t hurry on this part, are worth the effort, and ready for the first basecoat of paint.



Figure 3. Gluing of sub-roadbed splines.



Figure 4. Sub-roadbed for elevator spur being glued.



Figure 5. Joining sub-roadbed for spur track and mainline.

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In the next installment I'll finish with the river, cover ballasting, base ground cover, static grass, and the scratch-built buildings.

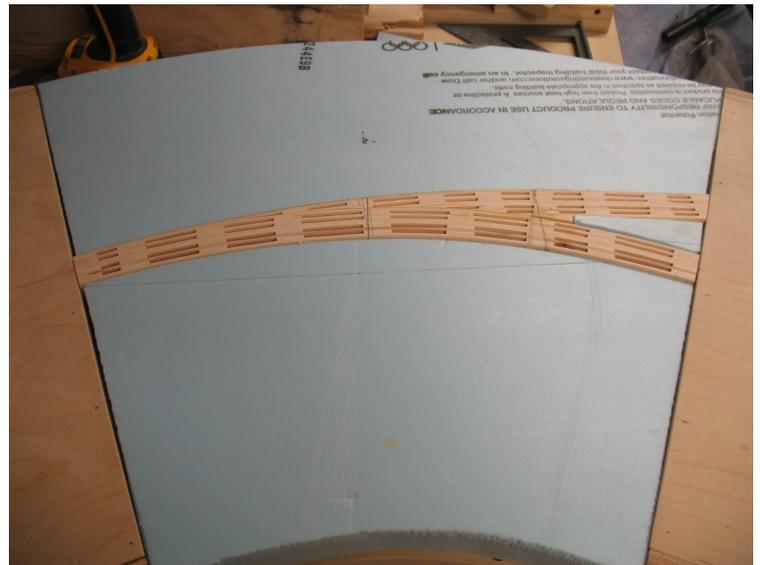


Figure 6. Sub-roadbed installed and foam cut.

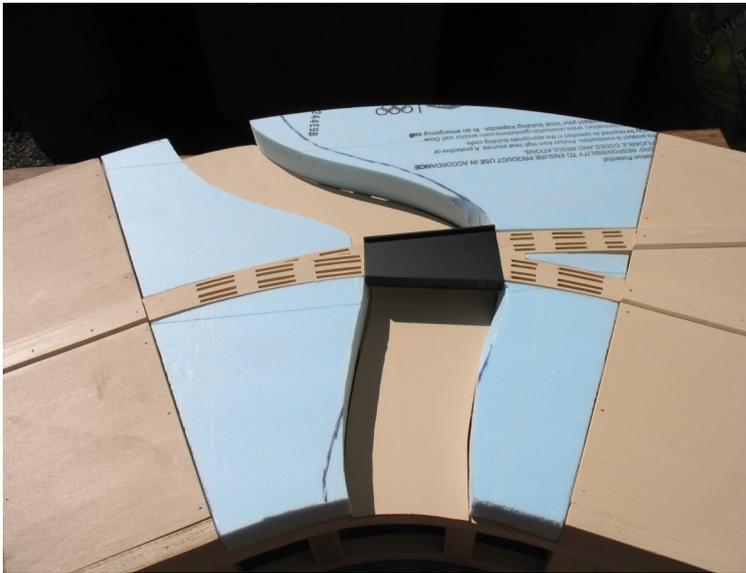


Figure 7. Trial fitting of bridge, sub-roadbed cut, and river bottom installed.

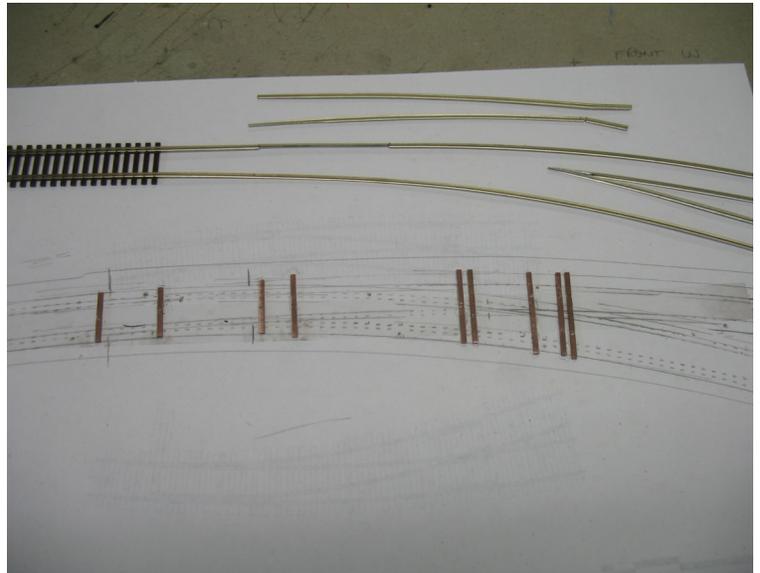


Figure 8. Tracing of flex track layout of switch, and initial build.



Figure 9. Switch build complete, without any joiners.

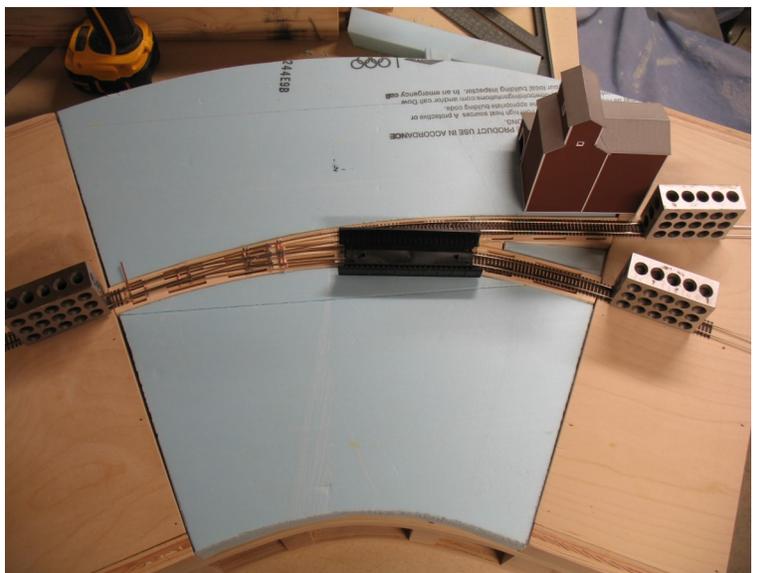


Figure 10. Installation of trackwork using light layer of clear caulk.



Figure 11. Installation of initial rocks from molds on canyon walls.



Figure 12. Pointing tools to fill spaces between rocks.



Figure 13. Lightweight acrylic spackling putty, while more expensive than drywall putty, it remains flexible after it dries, thus minimizing the chance for breaks.



Figure 14. Rock face after pointing all the rocks with lightweight acrylic spackling putty.



Frank Wilhelm is the current editor of *The Goat*. He participates in Free-mo setups in HO and N scales. The interest in N-scale is recent and will allow building of an around-the-room switching layout in his small basement room.



8537 MT Hwy 35, Bigfork, MT 59911
406-837-5731



5th Division Calendar of Events

Date/Time	Event
July 14, 2018 08:00 am—5:00 pm	Speeder Days—ride a speeder for 20 miles (return) WI&M Historical Preservation Group, Potlatch, ID PO Box 181m Potlatch, ID 83855 208-819-9078
August 15-19 Around the clock	Alberta Free-mo meet in Big Valley Alberta Register with Calgary Free-mo Information: http://calgaryfreemo.ca/events.php
TBD, September 2018 10 am—4 pm	Missoula: 38th Train Show & Swap Meet Big Sky High School, 3100 South Ave. W., Missoula, MT Information: email show@missoulamodelrail.org
October 14, 2018 09:30 am—3:30 pm	Spokane Model Train show hosted by River City Modelers Contact Shirley Sample (shirley@busnws.com)

Starting on Saturday, April 14 the Railroad Museum (Great Falls, MT) will be open from Noon to 4 PM as our regular open hours every Saturday until mid-October. Admission is Free. Both the Great Falls Model Railroad Club layout and the Pete Ellis layout will be open for viewing and the Great Northern Caboose will be open for visitors. Special Tours can be arranged with enough advanced notice (usually about two weeks) and can include visitors operating their HO scale equipment on the club layout. Dean Zook, President, Montana Museum of Railroad History

WE ARE OPEN FOR THE SEASON!

2018 HOURS

10 a.m.-5 p.m.
Fri.-Sun.

ADMISSION

Ages 13 and up: \$10
Seniors and military: \$8
Ages 5-12: \$6
Ages 4 and under: FREE
Includes one narrow gauge train ride. Additional rides are \$3.
Group rates available.

Reardan, WA

25 miles west of Spokane
on State Highway 2



Submit your modeling articles and news to fmwilhelm68@gmail.com. Next publication of *The Goat* is slated for middle of 3rd quarter of 2018.





GN and SP&S Meeting for Modelers

June 16th, 2018

9:30 AM - 3:30 PM

Pacific Northwest Railroad Archive

425 SW 153rd Street, Burien, WA 98166

Modeling Presentations

Tour of PNRA

**Boeing club layout will be open to
run your GN and SP&S DCC engines
Space for displays available**

Information or questions:

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