

NMRA Clinic Descriptions

(Also see NMRA Clinician Bios List)

Note: Each NMRA clinic has a discreet number assigned to it which will be used along with the clinic title throughout the convention. You may find a few clinics listed in the wrong category due to changes after the initial categorizing but the clinics will all stay in numbered order for ease of use. The RPM clinics are found elsewhere.

Designing, Planning, & Building

1. Giving Your Model Railroad Meaning and Purpose: Presenter: Gerry Albers

[Thu: 4:00P] [Fri: 10:30A]

Meaning is personal. Why should I invest my time, my money, and my passion in this hobby? Many people can and have justified this investment but their “return on investment” (satisfaction) is very short-lived or it never materialized at all. What can build, attract, and keep your interest (and investment) alive over 10, 20 or 30 years? Answer: PURPOSE. Gerry takes this discussion of Meaning and Purpose from the philosophical to the practical. He provides examples, starting with a simple loop of track and moving through to a large enterprise layout, like his Deepwater District which was featured in Great Models Railroads 2014.

2. Building the Deepwater District: Presenter: Gerry Albers

[Fri: 9:15P] [Sat: 2:30P]

“You are what you experience” – and you build (a model railroad) accordingly. Gerry was greatly influenced by Lionel, the Virginian & Ohio RR, early layout attempts, friends’ advice, etc. They all came together when he designed and built his basement - and his wife put a house over it. This “from the ground up” clinic encompasses the many and varied elements that went into designing and building the layout. Hopefully, you will find some “nuggets” in this clinic that you can apply to your layout, even if it is an existing, fully-scenicked layout.

3. Concept for an HO Conrail Layout Serving Pittsburgh Industries: Presenter: Andrew W. Blenko

[Tue: 10:30A] [Fri: 2:30P]

This clinic tells the story of the concept and design of an HO scale Conrail layout serving the industries east of Pittsburgh, PA. The main line interchanges with three other railroads and has a heavy emphasis on steel and its related industries.

4. Using Timelines to Select Eras and Focus Your Modeling: Presenter: John Burchnall

"See an incredible number of schematic visual representations of historic events across time covering a large number of hard-to-find modeling topics. These timelines provide guidance in deciding which era and locale to model, help focus your modeling and purchases, improve realism accuracy, and help you add interest and uniqueness to your layout. Timelines include nearly all steam, diesel, and electric locomotive classes, railroad mergers and maps, automobile brands and makes, gas stations and oil companies, road signs and markings, rolling stock classes and innovations, rail safety and technology milestones, farm tractors, retail stores, and several general interest items. Now you can get all this hard to find historic data in one place. Presented in two back-to-back clinics – "

Part 1 – Rail Eras & Regulations, Rolling Stock Innovations, Steam Locomotives, Automobiles, Gas Stations & Oil Co's, Highway Signs & Pavement Markings.

[Thu: 9:00A] [Thu: 8:00P]

Part 2 – Maps & Mergers, Diesel & Electric Locos, Farm Tractors & Silos, Fast Food, Ice Cream, Grocery Stores, Soda Bottles, Trading Stamps, Retail Stores.

[Thu: 10:30A] [Thu: 9:15P]

5. Aluminum Backdrops and Valances: Presenter: Ken Chick MMR®

[Thu: 2:30P] [Sat: 9:00A]

How to use thin aluminum (35 Mil) stock available from big box stores to for smooth, easily curved and lightweight backdrops and valances. It come in roles 50' or 100' allowing for long seamless backdrops. It is easy to install and paint. It is much easier to work with than drywall or Masonite.

6. The Lehigh and Hudson River Railway: A Perfectly Proper 'Protolance-able' Pike! Presenter: John Doehring

[Wed: 9:00A]

At its apex, the Lehigh and Hudson River Railway totaled just 86 miles, but provided a strategic link between the industrial and population centers of New England and the rails and destinations both south and west. Stretching from Maybrook, NY to Easton, PA, the LHR punched far above its weight class for a hundred years – hauling freight traffic south and anthracite coal north, while interchanging with most of the key railroads in the northeast. Long trains and short distances make the LHR a super choice for prototype modeling in the transition era -or freelancing up to the present. Please join our discussion, and learn a little bit more about the LHR, and some potential proto-lance options for this secret jewel of a railroad.

7. Designing prototypical lighting for realism: Presenter: Dr. Michael Groves

[Thu: 6:30P] [Fri: 9:00A]

Prototype lighting requirements will be covered with an emphasis on how to establish the right lighting conditions, especially for roadways, buildings and parks. This will be somewhat technical as it will consider the luminous intensity requirements for real life conditions and relating that to the scale to provide good, balanced prototypical lighting.

This is aimed at helping those who want to make their lighting as realistic as possible - it is after all, the art of realism that makes model railroading so attractive. At the end of the clinic participants should be able to select and design appropriate lighting for their layout, whether in HO, N or O scale.

8. Modeling the Lehigh Valley Railroad in New York and in 1890: Presenter: Michael Hohn MMR®

[Wed: 4:00P] [Fri: 9:15P]

This clinic describes the building of a model railroad representing two locations on the Lehigh Valley Railroad around the turn of the Twentieth Century: Auburn, NY, a small city with diverse industries and commercial enterprises, and Alderson, PA, a small town in north-central Pennsylvania supported by lumbering and tourism. Track layouts, structures, and rolling stock represent the prototype in these contrasting scenes with as much fidelity as possible, based on insurance and railroad maps, historic photographs, equipment diagrams and registers, and a large dose of conjecture.

9. Important Layout Improvements and Upgrades: Presenter: Bill Neale MMR®

[Fri: 8:00P] [Sat: 1:00P]

I did a large number of layout improvements over the past year. I improved layout lighting changing to 4000k LED's. I re-did all my control panels to be more prototypical while adding detection and full signaling to the layout. In the process I had to rewire all the layout power. I also changed the fascia and valance colors, improving the overall appearance of the railroad. On top of that I changed out some of my operations and improved the rolling stock. I added some dust control measures to make the layout easier to keep clean. Added together, all of these changes could be an interesting and informative clinic on layout improvements.

10. How to Model the Town and Date of Your Choice: Presenters: Brook MMR® and Jay Qualman

[Fri: 10:30A]

With the generous use of maps and photos, the Qualmans will describe how to model any town in any time period. The older the town you intend to model, the more you need this clinic. Included will be the types of considerations and decisions you should comprehend, the information you will need, and where to find it. They will bring their approach to life by explaining how it was applied to their modeling of Milford, Michigan, in 1950.

11. Capturing the Commonwealth: Presenter: Neal Schorr

[Wed: 10:30A] [Thu: 2:30P]

How the Pennsy's Middle Division was recreated in model form. Neal's clinic focuses on how he accurately reproduced PRR's Middle Division which stretches across central Pennsylvania. The presentation will explain how both an understanding of the topography and geology of the region as well knowledge about the physical plant of the railroad were essential to his goal of accurately modeling the railroad. The clinic includes many comparison images of the prototype railroad and the model, and wraps up with an artistic segment which highlights the beautiful scenery of the region which prompted him to model the Middle Division. The layout has previously appeared in *Model Railroad Planning* and is scheduled to appear in *Great Model Railroads 2022*.

12. Engineering the Right of Way: Presenter: Neal Schorr

[Fri: 2:30P] [Sat: 10:30A]

Incorporating prototypical engineering practices into your model railroad can significantly increase the realism of your layout. Neal will share with you how he has done so on his railroad. The clinic will start with overall design considerations and will then turn to a discussion of topics such as track geometry, earthwork including cuts and fills, slopes, drainage considerations, and the correct use of bridges and tunnels. Finally, he will share his techniques for right of way modeling which will allow you to accurately portray actual civil engineering practices on your railroad's right of way.

13. "Make Only New Mistakes": Presenter: John Young

[Sat: 10:30A]

It is a Power Point presentation concerning model railroad track planning, conception and planning. A high-level view about how to define what interests you and how to model a railroad and layout that will satisfy your interests.

14. Myths and Legends of the Tillamook & Astoria Presenter: Steve Zapytowski, MMR®

[Wed: 8:00P] [Thu: 4:00P]

Does your railroad have a story to tell? Is that story rooted in historical fact, or...not so much? I began building my railroad with an idea growing out of considerations of a geographic location and a period in time. This served my purposes for a while. My railroad grew to serve a number of cities and towns in Northwest Oregon. Some of these places exist to this day while others faded from history, passing into the “mythology” of the Pacific Northwest. Eventually, realizing that I was telling a story with my railroad I started looking into the actual history of railroading in the region and found comparisons between what happened in the real world and what actually happened in my basement. Building my railroad inspired me to look more closely at the region’s railroading history, and this history gave me fuel to build my railroad with its own particular version of what happened in Northwest Oregon from 1900 to 1912. This clinic delves into some of the “true facts” of the time and those “other facts” now obscured by the mists of time.

Modeling

15. Modeling Prototype Highway/Railroad Underpasses: Presenter: Andrew W. Blenko

[Wed: 2:30P] [Fri 9:00A]

This clinic shows how the author and his son modeled two different underpasses based off measurements and photos, one a local street and one an interstate highway. Materials including 3D printed components, styrene, MDF board and brass railings were combined to create convincing replicas of the two prototypes.

16. Railroad MofW Vehicles 1950s – 1970s: Presenter: Michael L Bradley

[Wed: 2:30P] [Sat: 10:30A]

My clinic is a discussion on how to build railroad MofW trucks of all types for the 1950-1970 era. What trucks are available and from who also what additional parts and bodies can be obtained to create accurate looking trucks. There will be completed models to show. A handout will be provided with info.

17. Building the Edgar Thomson Blast Furnace Lift House: Presenter: Phillip Burnside

[Thu: 6:30P] [Sat: 1:00P]

Using historical photos to build a model using combination of 3D printing, Laser cutting and engraving, and Iron paint to get realistic rusted surface effects. This clinic will walk through the research to see what the equipment used to lift the skid cars up to the top of the blast furnace. We will then explore how we can use different tools like laser engravers and 3D printing to develop a CAD model that will used to make a very detailed model of the lift equipment that is still being used today at the Edgar Thomson steel mill in Braddock PA.

18. Constructing Craftsman Kits (2 hours): Presenter: Dave Capron MMR®

[Thu: 9:00A] [Sat: 6:30P]

Forty years ago, there were Campbell and Suydam kits. Scratch building was the only way to get great looking structures on your layout. Today there are hundreds of kits from dozens of craftsman kit manufacturers. This clinic will cover both the basics of kit construction and how to build award winning kits and dioramas. The use of basic and advanced tools, glues and adhesives, paints, stains, washes and chinks will be covered. Construction techniques and various methods will be shown. The tips and suggestions that are not in print are reviewed. Interior and exterior detail and signage is also demonstrated. We will quantify the difference between a layout model and an award-winning kit. **Finally, the diorama**

for multiple kits and scenery will be discussed. You have seen scratch building clinics – now learn how to construct the \$25 to \$300 craftsman kits that will be a center point on your layout.

19. Making and Modeling with Rocks: Presenter: Dave Capron MMR®

[Thu: 1:00P] [Fri: 4:00P]

Rocks in one form or another are on all layouts. Making and modeling rock molds is needed for those modelers who want more than a rock or two. This clinic will show you how to make long lasting molds from natural materials. Then using these castings, we will create that scenery to match the prototype. Various methods of how to attach them will be presented. Also see ways to color them to simulate the scenery you want. Rocks can be beautiful.

20. Making, and Modeling Real Coal Load Operations: Presenter: Dave Capron MMR®

[Thu: 2:30P] [Fri: 10:30A]

Making and modeling real coal loads. This clinic covers the technique of how to make coal loads of various sizes from real coal. We begin with how coal is mined and moved from the mine to Marshaling and Classification Yards to the final customer. This prototype process is why the modeler needs different sizes of coal loads. The loads are easy and fun to make and will make those coal drags really stand out on your layout. The coal operation modeling is a bonus.

21. Love Those Loads: Presenter: Bob Frankrone

[Fri: 10:30A] [Sat: 6:30P]

Most model railroaders love open loads. Bob's clinic features a variety of open load models that can be built from commercially available kits or easily scratch built from basic materials. Beginners and master modelers alike will enjoy learning how to create interesting and realistic open car loads. With plenty of photos from both the prototype and HO scale models, Bob's clinic is always a real crowd pleaser. Bob is the author of the "Love Those Loads" series featured monthly in the NMRA Magazine. (45 minutes)

22. Modeling Modern Urban Transit Systems: Presenter: John Gardiner

[Thu: 2:30P] [Sat: 8:00P]

This presentation is not just for people who like trolleys! Modern transit systems based around Light Rail, Streetcars, and DMUs are a pervasive aspect of the modern cityscape which can be integrated into normally railroad-centric layouts. Despite over 50 modern transit systems having been built in North America over the past 40 years, many being immediately adjacent to freight railroads, they are rarely modeled. This presentation presages forthcoming models of rail transit vehicles, teaching you the history, operational practices, and infrastructural requirements of modern transit systems and how such systems could be modeled alongside a typical mainline or shortline railroad. This is a fun, engaging, fast-paced presentation ideal for anyone modeling after the 1970s, representing a large club layout, or with a passing interest of urban design, local politics, and cities beautiful.

23. The Use of Color in Model Railroading: Presenter: Lawrence Goodridge

[Thu: 9:00A] [Fri: 4:00P]

Color is one of the most important elements in layout design. Very simply, it creates depth and space. For modelers, the illusion of land and sky is one of the biggest challenges. In this clinic, learn how to get more out of the use of colors on your railroad.

24. An Introduction to Static Grass; “The Eighth Wonder of the World”: Presenter: Mike Hawk

[Wed: 9:15P] [Thu: 9:15P]

A presentation on modeling grass using a static grass applicator with a variety of grasses and applicators, followed by a hands-on clinic where attendees get to try their hand at using the various applicators and grass materials.

25. Quick and Dirty Weathering with Oils”: Presenter: Mike Hawk

[Fri: 9:15P] [Sat: 8:00P]

A presentation of using oils to get a fast and realistic finish on models and equipment. This is followed by a hands-on for the attendees to try their hand at applying these weathering materials to a freight car or piece of equipment that they bring with them to the clinic.

26. “Cleanly, Accurately, and Squarely” -- Basics of Scratchbuilding Structures and Rolling Stock: Presenter: Michael Hohn MMR®

[Fri: 1:00P] [Sat: 9:00A]

Beginning to build structures and rolling stock from scratch requires knowing the characteristics of raw materials; finding sources; gathering a small collection of tools; selecting glues, paints, and weathering media; and practicing some techniques. This clinic will cover what it is like working with different materials--wood, styrene, laser board, strip, sheet; sources of parts for structures and rail cars--windows and doors, brake gear and grabirons; fundamental tools beyond knife and straightedge; and most importantly, how you do it. Skills, techniques, rules of thumb, by whatever name the goal is a car or building without a lot of glue showing, with straight lines and right angles, with a look of rightness to the builder and the admirer.

**27. Modeling Akron Canton & Youngstown's Spur 4 - Serving the Rubber Industry
Presenter: Steve Holtzheimer**

[Fri: 6:30P] [Sat: 4:00P]

Spur 4 was in Akron, OH and the AC&Y served Goodyear, General Tire and several rubber industry support industries on Spur 4. Lots of historical photos as well as the current layout build.

28. Setting the Scene: Presenter: Ron King MMR®

[Thu: 1:00P] [Sat: 9:00A]

How I tackled tough scenery areas and developed realistic and attractive scenes. Practicing “sledgehammer scenery” modification, the clinic shows how to build landforms, bridges, and roads; where and how to place buildings, and how to make trees. All the most important basics of putting together a model railroad scene are addressed in this informative and humorous clinic.

29. Producing A Museum-Quality Backdrop for Your Layout: Presenter: Norm Logan

[Wed: 6:30P] [Sat: 1:00P]

Designing scenes with the use of clipped photos from magazines, internet photos and scene design for the lower 4” to the layout deck. During this clinic, Mr. Logan will talk about using and the installing of clipped photos from magazines and internet photos. There will be a discussion of matching photos to models on your layout. We will also discuss how to paint around and over photo create a scene that will blend in with the layout on the forefront.

30. Super Detailing Techniques for Steam Locomotives: Presenter: Dave McMullian

[Thu: 9:00A] [Fri: 1:00P]

Virtually every aspect of constructing or modifying steam locomotives will be examined here. Topics include research, drive mechanism, lighting and electronics, running gear, use of commercial parts, scratch-built details, and finishing. The clinic will focus on a Boston & Maine 4-6-2 that has over 1,000 parts and 300+ hours of construction time. I will share techniques that I learned along the way related to soldering detailed assemblies, fabrication from various materials, parts attachment, creating decals, and application of “rivet decals.”

31. Care and Maintenance of a Modern Steam Engine Fleet: Presenter: Bill Neale MMR®

[Wed: 10:30A] [Thu: 1:00P]

If you want to model steam on your model railroad, what is the best way to approach building and maintaining this fleet of steam engines? Model steamers are fussy and prone to frustrate their owners. Bill offers some advice, techniques, and strategies for keeping a large steam fleet functional and in operation.

32. Weathering Steam Era Freight Cars. Presenter: Bill Neale MMR®

[Thu: 8:00P] [Fri: 1:00P]

The clinic will cover several ways to Make your freight cars look appropriate for late steam era railroading. The clinic has you looking over Bill’s shoulder as he weathers several cars. He will also cover some “do & don’ts” when weathering. We will look at several other modelers’ work as well as Bill’s, and will close with a nice video of his layout showing the effect of weathering.

33. Cars-n-trucks-n-wagons, oh my! : Presenter: Greg Rich MMR®

[Thu: 4:00P] [Fri: 6:30P]

This PowerPoint clinic covers many of the period HO & O-scale scale vehicles available and what can be done to make them truly unique “eye catchers”. Offered are sources, techniques, tips and material suggestions that will help the model builder on his quest. A lot of the models built by Greg and shown in the clinic will be on display for those interested.

34. Signature Structures for Chiefton, WV: Presenter: Richard Turton

[Thu: 6:30P] [Fri: 1:00P]

The clinic will cover the author's attempt to model the Western Maryland's Chiefton Yard, WV, on his HO layout. Background on the Chiefton Yard, its main function, and history will be provided. A discussion of several key structures and the author’s attempts to model each of them will also be presented.

35. O Scale: A Fresh Look: Presenter: David Vaughn

[Wed: 1:00P] [Wed: 9:15P]

Your present scale getting stale? Getting harder to see and work with itty bitty pieces? Need new challenges? O Scale (1/4"-Ft) Two Rail (OS2R) is alive and well. The Scale gives you detail you can see and mass you can feel. David Vaughn and Nick Bulgarino lay out the advantages of modeling in 1:48 and how to access resources to get you started. Presentation will include where and how to find locomotives, rolling stock and accessories as well as how to

connect to the OS2R community. Examine OS2R models. Take home reference material. The presentation dovetails with the John Armstrong (an accomplished OS2R modeler!) Wit and Wisdom clinic also on the program.

NOTE: At least five O Scale 2 Rail freight car kits will be awarded to attendees at each of the Introduction to 2 Rail O Scale presentations. Present OS2R modelers are not eligible.

36. Super detailing a steam locomotive: Presenter: Mike Wolf, MMR®

[Wed: 4:00P] [Thu: 8:00P]

This clinic will cover the research and modeling used to create a super detailed steam locomotive. While specific details cover the modification of a Bowser PRR L1 kit to contest winning post WW2 era locomotive, the research, tools, and techniques used apply to any super detailing project. The function of many of the appliances found on a steam locomotive will also be discussed.

Operations Clinics

37. Streetscapes: Presenter: Andrew W. Blenko

[Fri: 9:15P] [Sat: 2:30P]

Description: This clinic will discuss how to model utilities and public infrastructure to add realism to urban areas on your layout. Streets, electric lines, water lines, storm sewers, and sidewalks are just a few of the topics that will be discussed. Through the experience of a Township engineer, learn the standards that are used to lay out and install these essential elements in the real world. Many scenic details are commercially available to enhance your street scenes, and others can be scratch built.

38. Full and Complete Operations on a Room Size Layout: Presenter: Dave Capron MMR®

[Thu: 6:30P] [Fri: 9:15P]

Full and complete operation on a room size layout. This clinic will show you how to have satisfying operation on your small room size layout like the basement empires do. The ideas and suggestions presented will change the way you view your layout. There are possibilities that our discussion will permit you to find in and around your layout. The number of operators you will need along with the operational design will be reviewed. In no time you will be able to host op sessions as part of a round robin group of larger layouts. Come and see the real size of your layout.

39. Creating Traffic for Your Modeled Industries: Presenter: Rich Mahaney

[Wed: 4:00P] [Fri:6:30P]

An interesting clinic that involves group participation, to discover just what types of inbound materials and outbound products different industries deal with. It includes both normally delivered and shipped items and the unusual shipments that those industries may deal with. This is definitely a fun program and it will help you design realistic traffic for the various industries found on your layout and great for helping you plan your future layout.

40. Railroading in TT&TO Territory: Presenter: Fritz Milhaupt

[Thu: 4:00P] [Fri: 8:00P]

Join the crew of train 2BS-1 as it crosses the HO scale Wabash between Peru and Lafayette Junction, Indiana on the Operations Road Show layout. This clinic will explain how the crew applies timetable and train order operation rules as they conduct meets with other trains and perform set-outs and pick-ups along the way. It is based on trains run during Operations Road Show operating session clinics offered at National Conventions from 2003 to 2018.

41. Getting Started in Operations: Presenter: Bob Weinheimer MMR®

[Wed: 6:30P]

This is an EduTRAIN clinic written by the presenter. In this clinic, we will take a high-level approach to the sorts of issues someone starting out in operations might consider. Probably one of the most important is to determine how the operation is intended to interact with the rest of the world. Other issues include train authorization methods, how to determine where cars should go, ideas on car fleets, a consideration of era. Options to consider for each of those areas are presented, it will be up to the operator to choose what works best for him or her.

42. Operations on the Pennsylvania Southern: Presenter: Bob Weinheimer MMR®

[Wed: 8:00P]

The Pennsylvania Southern is a freelance layout set in 1980 in western Pennsylvania. The Pennsylvania Southern uses train orders but no timetable as all trains are run as extras. We use single use waybills for car routing. These and other topics for discussion include layout philosophy, train scheduling, car fleet description, train schedules, dispatching issues, and supporting paperwork.

43. Evolution of an Operating Scheme: Presenter: Bob Weinheimer MMR®

[Wed: 9:15P]

This clinic looks at how the Pennsylvania Southern and its operating scheme have evolved over the past 40 years. Any large layout grows with time to its current form and this layout is no exception. While the layout has moved twice, it has been in its present location for most of its existence. Those moves offered opportunities for development. Industrial growth over the years also led to the need for more cars, more trains to handle them, and more and different staging methods for those trains. As the crews improved their operating skills and as technology improved the methods of dispatching the railroad have also changed. All of these subjects will be discussed in this clinic.

44. Car Forwarding without using car numbers: Presenter: Mike Wolf, MMR®

[Sat: 2:30P]

A realistic car forwarding method which does not require the use of specific car numbers or waybills. This technique has been presented at several conventions in the past and in articles in NMRA Mag and OPSIG. I demonstrate 3 different implementations used in layouts (including mine) for realistic car forwarding.

Car Cards and Waybills: A three-part presentation: - Theory, Creation, Implementation

45. Part 1: Theory: Presenter: John Young

[Wed: 1:00P] [Wed: 6:30P]

This is Part 1 of a 3-part program. John will discuss how a car card and waybill system works with a bit of comparison to switch list car distribution systems. The primary focus will be on defining and implementing the location code portion of the waybills.

46. Part 2: Creation: Presenter: Ron St. Laurent

[Wed: 2:30P] [Wed: 8:00P]

Creating Car Cards and Waybills using Microsoft Word/Excel. You've seen examples of car cards and waybills and you've made up your mind that you want your railroad to run with them. Here's a step-by-step method to create great looking car cards and waybills using a combination of Microsoft Word and Excel.

47. Part 3: Implementation: Presenter: Andy Keeney

[Wed: 4:00P] [Wed: 9:15P]

With the help of John Young, Ron St. Laurent and other friends, Andy and his crew have developed an operations program with car cards and waybills that they are very happy with. In this portion of the program, you will see how the car cards and waybills allow a large layout with a high density of traffic including 6 railroads, about 1500 freightcars and 70 plus trains on the daily schedule, to operate in a very realistic fashion and adds greatly to the success of prototypical operations.

Prototype and History

48. The B&O's West End: Presenter: Keith DeVault

[Wed: 9:00A] [Fri: 4:00P]

This clinic will showcase the B & O's important and historic route from the heart of the B & O railroad at Cumberland, MD to Grafton, WV. The West End was home to some of the most serious mountain railroading in the United States. The nation's toughest grades and operating conditions with coal, freight and passenger trains. The largest and most powerful locomotives were used by the B & O into present day CSX. Come and see photos of what made this route famous.

49. Age of Steam Roundhouse from Underground to Topping Out! : Presenter: Ted Goodman

[Fri: 8:00P] [Sat: 4:00P]

This presentation covers the research, site and structure design and construction of the Age of Steam facility.

50. John Armstrong, Wit and Wisdom: Presenter: David Vaughn

[Thu: 1:00P] [Fri: 9:00A]

The Grand Master of model railroad track planning (see Track Planning for Realistic Operation, Kalmbach, Milwaukee, now in its third edition) and about 30 other track planning books), John Armstrong was also an accomplished modeler and authority on prototype railroads and their operations. His Canandaigua Southern, parts of which survive, was a laboratory for his ideas and techniques. The approaches John brought to layout design are relevant to today's design issues. David Vaughn provides a history, update and projections for John, his ideas and his models.

Electrical/Electronics

53. Things I Wish I'd Known About DCC: Presenter: Gerry Albers

[Wed: 6:30P] [Thu: 1:00P]

Experience is a horrible teacher. First you get a bad experience, then you learn the lesson. Over many years of “experiences”, Gerry has developed a guide of DCC “best practices,” which includes wire and component selection, documentation methods, a collection of appropriate tools, and more. In this clinic he briefly discusses DC and AC power, then discusses DCC in a comprehensible form with a practical list of recommended “dos and “don’ts”. This is a good clinic to learn from his “experience” and save yourself the trouble!

54. Lighting your scenes without Wiring - a Novel Approach: Presenter: Dr. Michael Groves

[Wed: 1:00P] [Thu 10:30A]

You will learn the art of implementing scenery lighting in minutes, without wiring, using a revolutionary system.

Lighting scenery adds sparkle to the detail that you have worked hard to create. However, for most of us this requires a lot of forethought and even then, we end up with a wiring spaghetti. In this talk I will cover advances in lighting, what led me to develop the Dwarvin fiber optic lighting system, and how to use it. A very high intensity light source allows the use of fiber optics for you to design lighting into your buildings, street lamps, cars, trees, ... whatever you can imagine. A hand’s-on demonstration will be provided.

55. Model Railroad Wiring Tips and Tricks One Wire at a Time: Presenter: Eric Peterson

[Wed: 2:30P] [Fri: 9:00A]

The sectional O Scale 2 rail layout is being rewired for DCC and CMRI signal system. His practices avoid under layout wiring as much as possible. He also is using fast on connectors to avoid soldering under the layout and making trouble shooting easy. Plug connections and also terminal blocks at the edge of the layout assist with connection and testing.

56. Road to MMR®: Presenters: Mike Wolf MMR® and Howdy Lamprecht MMR®

[Fri: 6:30P]

In this clinic, Master Model Railroaders Howdy Lamprecht and Mike Wolf will discuss their journey to MMR® and the lessons learned along the way. They’ll also pass along some tips you may find useful in your journey to MMR®, dispel some common misconceptions about the Achievement Program, and answer your questions.

Innovation

57. Basics of building a 3D CAD model: Presenter: Phillip Burnside

[Fri: 8:00P] [Sat: 6:30P]

Using 3D CAD to create parts to get that scaled prototypical model. This will be an interactive clinic where we will be using AutoCAD Inventor to build a small model that can be printed. We will discuss items like what are the resolution the various types of printers and how this effect the minimum size of a feature before it will be lost when you try to print it.

58. A laser for your model railroad: Presenter: Mike Deverell

[Wed: 10:30A] [Sat: 9:00A]

So, you want to get a laser for your model railroad. We will talk about what type of lasers are to be had for modelers, what size and what is involved in using a laser. What does it take to build a model? You can make various things with the laser, including models, signs, and panels. This will be a “Laser 101” class and will be open for discussion, so bring you questions and we will discuss them.

59. Scratch Building an EMD RS-1325 utilizing 3D Resin Printing: Presenter: Dan Hinel MMR®

[Wed: 10:30A] [Thu: 10:30A]

This introductory clinic will encompass the various factors in the design and printing process, plus lessons learned.

60. Making Professional Quality Control Panels Using Today’s Technology: Presenter: Bill Schoonmaker

[Wed: 8:00P] [Thu: 2:30P]

Learn how anyone can easily make professional looking control panels with little effort. This clinic provides proven used methods, processes, and procedures for generating great panels. The clinic includes information on some of today’s contemporary techniques such as push-button resistor-ladders and neo-pixel LEDs which minimize components crowding and cluttered wiring. The clinic will take you through the development of the artwork design, assembly, and provide mounting alternatives. The knowledge received from this clinic will allow you to produce outstanding control panels for your layout.

61. Printed Circuit Boards (PCBs) Made Easy – High Quality, Quick and Low Cost: Presenter: Bill Schoonmaker

[Thu: 9:15P] [Sat: 10:30A]

Discover how simple it is with today’s methods to design and have fabricated low-cost printed circuit boards (PCBs) to bring your various projects to reality. In this clinic you will learn how to utilize easy-to-use PCB design software, how to generate electronic schematics, modifying component footprints, and other design elements resulting in high quality, professional-looking PCBs. These PCBs have great specifications of double-sided tracings, two-sided silk-screening, solder-masts all with SMD pads and plated thru holes all at an extremely affordable price. Today your electrical projects have become easier than ever to design and build.

62. Signaling with LCC: Presenter: Scott Walton

[Wed 9:00A] [Sat: 2:30P]

We’ll go through what it takes to get signaling going on a railroad using LCC products. It will include a small demonstration layout (a passing siding with 2 turnouts and 8 signals, all running under LCC, with a SPROG as a command station. All the necessary steps to setup LCC devices under control of JMRI PanelPro will be shown. Once it has been setup, it all runs independently, without needing an attached computer.

63. An Introduction to Signaling over LocoNet: Presenter: Scott Walton

[Thu: 6:30P] [Sat: 1:00P]

Any installation using signals must contain several elements, one of which is communication between nodes. This clinic covers techniques based on using LocoNet as the communications protocol. Using LocoNet does not require that you use Digitrax command stations (though you certainly can). Several vendors (including Digitrax) produce products that can be used to provide detection and signaling while using LocoNet for communications. This clinic will cover designing and

installing signaling on your railroad with products communicating over LocoNet. Alternative products will be discussed and compared. Photographs and some products will be shown.

Human Element

64. A Ten-Point Manifesto for Building a Powerful, New, 21st Century NMRA: Presenter: John Doehring

[Fri: 2:30P]

For many, joining the NMRA is a ‘best decision ever.’ Participating in the Association has brought learning, growth, and progress, along with comradery, social connection, and life-long friendships. Still, for others, joining the NMRA has been less rewarding, and for some the experience has been quite poor (or even worse). Those unfulfilled members have pulled back, become disinterested, and even quit. And, of course, many, many other modelers have never even considered joining, don’t understand the real value for them, and don’t see a reason to join our tribe at all. For those of us who believe in the NMRA, this situation isn’t ok, and we desire to do much better. Please join us for this lively discussion about our path forward – and how all of us can better work together for the goals of connecting, collaborating, and enjoying model railroading –for the good of all!

65. Keeping your group engaged: Presenter: Fred Soward MMR®

[Thu: 9:00A] [Fri: 2:30P]

How we survived and thrived during the COVID-19 shutdown and how we're applying those lessons learned to our continuing engagement of the members of our division. Take a look at how we are making email, face-to-face meetings, Zoom meetings, hybrid meetings, Facebook, Instagram, and more work for us.

66. Do I Really Need to Fill Out This Form? : Presenter: Steve Zapytowski, MMR®

[Wed: 1:00P]

I’m referring specifically to Form #902IJ, the Indy Junction 2022 Judges’ Score Sheet. While the Contest Entry Form (#901IJ) is fairly transparent, the Judges’ Score Sheet may not be at first glance. Someone once told me they felt their model ought to speak for itself, and thus they didn’t feel the need to fill out the form. However, form #902IJ aids the judges working the contest in scoring the entries, and ultimately, benefits the entrant. Judges are trained to look at certain aspect of models during the contest and are often aided greatly by the written material provided by the entrants. This clinic explains how to take advantage of #902IJ to best present your work in the contest. I also talk about some techniques to make better use of the limited space on the form and how to best present supplemental materials. If taking a few minutes to fill out the form help the judges better evaluate your entry and results in a higher score, isn’t it worth the effort?

67. The Indy Junction 2022 Contest Administration Clinic: Presenter: Steve Zapytowski, MMR®

[Wed: 9:00A]

This clinic is a training session primarily for the members of the Indy Junction Contest Committee, but it is open to all interested parties. The management of the contest and its administration, the contest procedures and the software used will be covered. This clinic is required to members of the Indy Junction Contest Committee, but is open to all interested people.

68. Judging the Indy Junction 2022 Model Contest: Presenter: Steve Zapytowski, MMR®

[Fri 4:00P]

This clinic explores the process and philosophy behind the judging of models for the Indy Junction 2022 Model Contest which follows the system used for the National Contest. It examines each of the five required areas of evaluation; Construction, Detail, Conformity, Finish and Lettering, and Scratch Building. The judging matrix is described and the manner of awarding points is discussed. Also offered is a strategy for efficient judging. This clinic is different than the one offered in previous years and is strongly recommended for past judges, those who wish to judge for the first time, and all other interested people.

Modeling with the Masters® Clinics (Sold Out)**69. Modeling with the Masters®: Presenters: Sam Swanson MMR®, Bob Weinheimer MMR® and Fred Soward MMR®**

[Fri: 6:00P to 10:00P] [Sat: 8:00A to 12:00P]

Painting and Weathering with inexpensive Craft Acrylic Paint clinic. This hands-on clinic is focused on developing skills in painting and weathering models using a three-step process, including base-color painting, staining for shadows, and drybrushing for highlights. Each of these steps will be undertaken using common brushes and craft-style acrylic paints. Attendees should bring their small structures (built or unbuilt), details or figures, or rolling stock (preferably with wood sheathing, such a boxcar or stock car) to be painted. Three models maximum are recommended. Each model or components to be painted should be primed with a flat overcoat (paint or Dullcoat), particularly if the model is plastic, to facilitate adherence of the craft acrylics. Brushes and paints will be provided, but attendees can bring their own as well, should guidance on various brush and paints be desired. Practice models will also be available, should attendees want to try various techniques prior to working on their own models. The cost of the clinic is \$20, which includes all work-station materials. We'll meet over a 4-hour period to thoroughly cover the basic techniques and as time allows, any advanced techniques attendees are interested in can be worked on as well.

70. Rails to Pittsburgh 2023 Mid Central Region Convention Presentation: Presenter: Keith DeVault

[Sat: 4:00P]

Presenting "Rails to Pittsburgh 2023 Regional Convention" for the Mid-Central Region.

71. How to Add a Scene to a Layout in 15 Easy Steps: Presenter: Bob Frankrone

[Sat: 2:30P]

Unless you are one of the few model railroaders who have a finished railroad, there is a good chance you have some areas on your layout void of any scene or scenery (plywood prairies as they are sometimes called). This clinic will demonstrate how easy it can be to create a nice looking scene, regardless of one's skill level. Watch as I convert a three-square-foot plywood prairie on my layout into a complete scene in 15 easy steps. A few simple tools, one easy-to-build plastic kit, some readily available scenery materials, and various odds and ends like paint and glue are all I used to create my scene. Whether you are a beginner or a Master Model Railroader, I think you will enjoy seeing a complete scene come into existence.

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