



# UP THE HOLLER

Newsletter of Division 9  
**THE COAL DIVISION**  
 MID CENTRAL REGION NMRA INC  
 February 2019



### DIVISION OFFICERS

Superintendent  
 Dan Mulhearn  
 304-466-9188  
 super@coaldivision.org

Assistant Superintendent  
 Robert Osburn  
 asstsuper@coaldivision.org

Clerk- Jerry Doyle  
 304-638-2826  
 clerk@coaldivision.org

### COMMITTEE CHAIRS

Achievement Program Chairmen  
 Ed Keith MMR  
 740-867-5264  
 Bob Weinheimer MMR  
 304-343-1428  
 ap@coaldivision.org

Clinic  
 Sam Delauter  
 clinic@coaldivision.org

Contest  
 Dale Osburn  
 contest@coaldivision.org

Education  
 Vacant

Election  
 Bill Wadsworth  
 304-768-3266  
 nominating@coaldivision.org

Membership  
 John Harris  
 membership@coaldivision.org

Raffle  
 Tom Harris  
 raffle@coaldivision.org

T-Trak  
 Sam Delauter  
 samdelauter@gmail.com  
 304-377-1136

### DIVISION STAFF

Editor  
 Bob Weinheimer MMR  
 editor@coaldivision.org

Webmaster  
 Bob Weinheimer MMR  
 webmaster@coaldivision.org

## FROM THE HEAD OF THE HOLLER

### Dan Mulhearn, Superintendent

Hey, what happened to January? Welcome to another month of good weather for train room activities. We will see what the ground hog has to say about the rest of winter. I was sorry to miss the January meeting, but I believe Tom Harris and I made the right call as we had freezing rain and the roads were a skating rink by mid afternoon.

I understand it was a good meeting and I really appreciate Dale Osburn and Sam Delauter for stepping and taking on committee chair slots.

I have been thinking about operations as a vital part of our hobby. I would like to see our members weigh in on how operations affect their enjoyment of the hobby. I have said before that my enjoyment in the hobby is reflective of my intense interest in the prototype. So, where is your interest? Is it the prototype, enjoying building or scratch building, or any one of so many facets of our hobby? Put your thoughts together and submit them for the newsletter.

Speaking of operations, the current issue of *The Arrow*, the magazine of the N&W Historical Society, has an article on operations on the Portsmouth to Columbus Ohio main line. It is amazing to see the well choreographed dance that was railroad interchange in the 1950s. Just for an example is N&W time freight 84. The train was built at Columbus from cars off four separate Pennsylvania RR trains from Detroit, Chicago, St. Louis, and Cleveland plus local traffic. While en route from Columbus to Portsmouth, 84 picked up traffic off the NYC and B&O at Watkins Yard, the B&O at Renick and the DT&I at Glen Jean. Upon arrival at Portsmouth 84 was reshuffled into three blocks for forwarding east. They were a Bluefield/Norton, a Bluefield/Bristol, and a Roanoke block. This was all done, pre computer, by thousands of freight agents, clerks, and train crews working off paperwork prepared by hand. What a time..

### Saturday February 9, 2018

#### NOTE THE NEW WINTER MEETING TIMES AGREED TO AT THE DECEMBER MEETING:

12:00 - Depot open  
 Buy raffle tickets, etc.  
 Socialize  
 Contest: Steam Locomotives

1:00 - Superintendent's Briefing

1:30 - MADD Discussion of Steam Engines

1:45 - Raffle results, contest results

2:00 - Clinic: David Oliverio "JMRI Operations"

## FROM THE OFFICE DOWN THE HALL

### Bob Osburn, Assistant Superintendent

Modelers in HO Scale are a lucky bunch. It seems you have an unlimited selection and supply of vehicles, figures, and detail parts. We working with N scale are not as fortunate. Yes, there have been a lot of new products introduced into this market but finding just the right item is sometimes quite difficult. Our local hobby shops do a great job of stocking many of the items we desire and are more than willing to order the things we want. Unfortunately, it seems a lot of the pre-finished vehicles, painted figures, and detail parts are either not available, sold out, or not in production any more. This situation leaves us to search on the internet for another source, sometimes successful, sometimes not. Vehicle kits are available but are a real challenge and figures also fall into this category. As for vehicle kits, I have ventured into this challenge with some success but most attempts have only resulted in learning what I did wrong. Painting figures is something only for the steady handed ones, but the old saying, "good enough" applies here. Another possible supply of detail parts come from structure kits purchased at train shows. A quick look at the box could reveal many items you could obtain with a small outlay of money. Other detail parts such as downspouts, roof vents, outdoor lights, signage, and grade crossings I have found I can scratch build most of these items which is much more rewarding and easier on the hobby budget. I guess the unfortunate supply of detail parts has a positive effect: it attempts to makes us better modelers.

The recent introduction into T-Trak within Division 9 has given me the opportunity to indulge in one of the areas of model railroading I really enjoy, building and detailing modules. Each module gives the opportunity to create a completed scene in a short period of time with structures and all the little extras that attempts to tell a story. This month I would like to share some of my approaches on how I like to model.

First, when I present a module I want the viewer to recognize what the whole scene represents. I don't want one single feature to capture their attention; I want them to see a believable story. To avoid the eyes going to only

one thing I don't use any glossy or bold colors (flat paints and lots of dull cote used here). Next, out of scale items can really stand out, too small or too large will attract their attention almost immediately.

Land contour should be a consideration. Anywhere you go, even in Kansas, the terrain is not flat. The T-Trak modules we use do not give us a lot of leeway in this area. Think about if it would rain on your module, where would the water go? Small ditches, wetland areas, and minor elevation changes can make a big difference. At the rear of the module small wooded hills can butt up against the backdrop, giving the illusion of depth and contour.

Texture is another feature that can give the allusion of depth and reality. A groomed yard to a brushy area then into a wooded area can create realistic depth to a scene. Larger trees and ground cover to the front are followed by smaller toward the rear. I have also found the use of a few cardstock buildings to be acceptable in N scale. Siding, brick work, windows, doors, and roofing lacking texture is not as easily detectable in this smaller scale.

An interesting article I recently read about electric poles and wiring on our model railroads really got my attention. The author explained that when in real life you drive down the road and in the distance you see the electric poles but the wires are not that visible, and all poles are not brown. Sure enough, he was right. I have started painting electric poles a drift wood color and dry brushing with browns, grays, and moss green. I also don't attempt to add wire between the poles, nothing I have found is small enough or realistic enough to accomplish this without being to noticeable (back to my first point).

Finally, I avoid putting features on modules parallel to the front. Again, nothing in real life always follows a straight line. By giving a road some curvature or angling structures can really make a difference (thanks to Larry Richards for sharing this with me).

HAPPY MODELING

## MONTHLY MODEL CONTEST

### 2019 SCHEDULE

January	Modeler's Choice	August	Freight Cars
February	Steam Locomotives	September	Photo, Model or Prototype
March	Locomotives Other Than Steam	October	Open Loads (flats, gondolas, hoppers)
April	Cabooses	November	Passenger Cars
May	Anything Steel Related	December	Third Annual Gary Burdette Memorial
June	Non Revenue Except Cabooses		Modeling Challenge. Details and kick
July	Structures		off in October



**Coal Division**  
**Monthly Railfun Event**  
*“Steam Locomotives”*

***Saturday February 9, 2018***

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## NMRA MCR DIVISION 9 *THE COAL DIVISION*

St Albans Depot  
St Albans, WV  
January 12, 2019  
Minutes

Meeting called to order at 1:00 pm by Assistant Superintendent Bob Osburn.

show of hands indicated a preference for the lunch option. John will get more info on this in the next newsletter.

Minutes of the previous meeting were approved as published in the newsletter.

Old Business – None

Treasurer's Report – No report as clerk was absent.

New Business –

Superintendent's Report – No report as the Superintendent was absent.

A motion was made and approved to reschedule the May meeting to May 18<sup>th</sup>.

Assistant Superintendent's Report – Bob Osburn thanked the members for their participation in 2018 and hoped this year would be even better.

Sam Delauter moved that the donated layout be raffled at the St. Albans train show in February with the show getting 10% to a maximum of 20% of the proceeds and tickets at \$1 each. This was approved.

Newsletter Chair – There will be a series on signaling systems, as it is too long for one issue it will be spread over four issues. The Region Kingpin will be promoting the Mid- Central convention which will be in Boardman, OH this year in early May. Sam Delauter noted there will be a 20' X 30' space available for T-Trak setup as well as a module contest.

Sam Delauter also asked if there was any interest in presenting a clinic at the show by our members.

New Chairs are needed for the Contest and Clinic committees. Dale Osburn and Sam Delauter were appointed respectively.

Achievement Program Chair – Bob Osburn has met the requirements for Association Volunteer Certificate, his Statement of Qualifications will be submitted.

Sam Delauter passed out NMRA T-Trak requirements and standards for Division 9 to use, so that our modules will readily integrate with those from other locations. It was moved and approved to accept these standards.

Library Chair – The Librarian reported he will be unable to attend the February meeting but hopes to be present in March. He noted that additional clinics from Orlando and Kansas City are now available on the NMRA website.

Announcements – There will be a train show in St. Albans sponsored by the Kanawha Valley Railroad Association Feb. 23 & 24, 2019.

Contest Chair – No report

Next Meeting – Feb. 9 – St. Albans depot  
Mar. 9 – St. Albans depot

Clinic Chair – There will be a JMRI demo by David Oliverio on operations in February, and in March Sam Delauter will talk about T-Trak.

The meeting was adjourned at 1:58 pm

Raffle Chair – No report

Respectfully submitted by Bill Wadsworth, Acting Clerk

Membership Chair – John Harris reported on a group tour train out of Elkins with either a lunch or dinner option. A

## CONTEST Dale Osburn

In January 2019, the contest was modelers choice. Four modelers had entries in the contest.



FIRST PLACE: Robert Osburn

Using a paper kit from scaleplans.com, Robert spent numerous hours making the drive-in movie speaker stands. Also, he said it was difficult to find enough N scale vehicles to represent that era.

SECOND PLACE TIE: Larry Richards

Using a BC&G Railbus Jordan products model AC Railbus Kit, Larry stated that he had scratch built numerous items and had used the correct paint and lettering for post rebuilt look of 1946.



SECOND PLACE TIE: Dale Osburn

Dale used a Barmills Kit to build Waterfront Willy's. Dale kitbashed the upper porch level and added Woodland Scenics figures and scrap box details on dock

THIRD PLACE: Sam Delauter

The model was built from a Funaro and Camerlengo kit. The car features hand bent wire for all of the piping on the undercarriage. The wire had to be cut to size and bent before the mounting brackets could be added. The wire also had to be symmetrical as in the prototype it would meet at the same spot on the fins.



## PASSENGER MANIFEST

### John Harris, Membership Chair

While most of us choose to model railroads in a specific scale, O, HO, N, etc., I believe that most of us are also fascinated with the one to one scale trains. At our January meeting, we discussed the possibilities of taking a rail fan excursion to Elkins to ride the full size prototype. One of the possibilities was to take the dinner train one evening in June or August; however, it appears that the majority of those present preferred the mid-day train. Accordingly, we are looking at taking the Durbin and Greenbrier Valley Railroad out of Elkins and riding in the new Tygart Flyer from Elkins to the High Falls of Cheat. This wilderness excursion features mountain grades, an S-curve tunnel, a high bridge, and mountain views along the cascading 48 mile round trip on the Shavers Fork of Cheat

River. It has been suggested that we do Saturday, June 8, and make this our June division meeting.

If we have enough interest and make reservations, we should be able to fill the parlor car. Lunch will be included; a buffet with adult beverages or soft drinks will be available. Price will be \$71 range for the Parlor car or less should we qualify for the group discount or choose the Coach. All Division 9 members are encouraged to attend and bring a guest or two. Additional details and final arrangements will be discussed at both the February and March meetings. For additional information see [www.mountainrailwv.com](http://www.mountainrailwv.com) or contact John Harris at [AandNRR@aol.com](mailto:AandNRR@aol.com).



## MY WORD

### Bob Weinheimer, Editor

This month we begin a four part series by Tom Harris on signals for his layout. This month is an introduction to Tom's system. In the following months we will see how to fabricate signals and how to install them. Unfortunately, these articles are long and will not work well in the printed version of this newsletter. That's the bad news. The good news is that the circulation of the printed edition is small. They will appear in full in the electronic version that nearly all of you read. For those who see a printed edition, there will be a link printed showing the location of the electronic version. Tom has put a considerable amount of effort into producing this series of articles and I hope you enjoy them.

This issue also contains information about one of the many Railroad Prototype Modeler (RPM) meets that have grown in popularity. This event is in suburban Pittsburgh and is hosted in part by the Mid Central Region's Keystone Division. These are relatively low cost events that let you see some very good modeling. There are also clinics and layout tours. I do suggest you consider this in addition to, not in place of, the MCR convention in May.

By now you should have received the Kingpin issue describing the convention. The members of Division 1

have been working hard to bring us the first convention in that area in recent memory. The tours and clinics look interesting. The banquet is reasonably priced, think about a trip to Boardman (suburban) Youngstown, Ohio at the beginning of May.

Sam Delauter has been working hard with the T-Trak group and the big train show sponsored by the Kanawha Valley Railroad Association is the debut of many of our modules in conjunction with some of those from Lexington. Sam has more details in his column.

NMRA elections are about to happen. On the National level we will be voting for the World Wide At Large Director on the NMRA board. The candidate statements were in the recent NMRA Magazine issue, review them carefully so you can make a well informed choice. If you have an email address on file with the NMRA you will receive an invitation to vote electronically. If not, or if you prefer not to vote electronically, paper ballots will be available. At the Mid Central Region level you should have received your ballot for the current officer election. Please read the candidate blurbs, vote, and mail your ballot to the teller as directed.

## ACHIEVEMENT PROGRAM

### Bob Weinheimer MMR

As noted in the minutes, Bob Osburn and I recently discovered that after having served for nearly four years as the Clinic chair and nearly two years as Assistant Superintendent he had more than enough time units to qualify for the Association Volunteer Certificate. We filled out the paperwork at the meeting and I sent it off to National. I have already received the certificate and will present it to him at the February meeting.

Bob then sought replacements for the clinic position so someone else can start earning credit, Sam Delauter is the new Clinic chair. Larry Richards has also passed the torch and Dale Osburn is the new Contest chair both are now earning credit toward Association Volunteer.

Superintendent Dan Mulhearn is getting close to

earning the Association Official certificate, it will be another year or so. At that time he will have five certificates. I've already been talking to him about how to grab the next two.

Clerk Jerry Doyle is in a similar position. If he's not careful, he may become one of those who earns seven certificates but doesn't qualify as a Master Model Railroad-er® due to a lack of diversification among his efforts. I would very much like to be able to hand out MMR credentials to these members.

Take a look at your modeling efforts. Have you met any of the Achievement Program requirements? If so, let me know so you can be recognized for your achievement.

## T-Trak Update Sam Delauter

At the latest T-Trak meeting we discussed the upcoming Kanawha Valley Railroad Association show. At the February meeting, I will have a sign up sheet for the NMRA booth and also for the T-Trak layout. At Huntington we had a good turnout for our booth and to watch the layout but there were a few times that we were understaffed. Having sign up sheets will allow us to be better staffed and ultimately be able to reach the public better. Please be thinking about what times and days you are available to watch the booth and T-Trak layout.

We are still revising the standards. We removed two sections of the requirements for membership into the group. We removed points two and three from the follow-

ing section. These were used to insure the group was active prior to the group joining the NMRA. We feel these are outdated.

- Must be member of NMRA
- Each member must own or build a module with within a period of three months. Exemptions will be made on an individual basis
- SIG will meet after monthly Division 9 meeting

We are also in the process of rewriting the standards for wiring and adding a section of club provided items. We will update these at a later date.

The goal of the newsletter team is to have this document reach you by email or snail mail at least one week prior to our meetings. We typically start the layout work the Monday 12 days before the meeting. This allows a day of review by the officers and a proofreader before the electronic version is issued, usually on Wednesday. The paper version is mailed Thursday or Friday. For this to happen reliably, we need all items for publication by that Monday 12 days prior to the meeting. If we don't get it on time we can't print it. Please help us give you the most

up to date information possible. Here are the deadlines for the next few issues

March	February 25
April	April 1
May	May 6
June	May 27
July	June 24
August	July 29
September	September 2
October	September 30

## RPM EAST

Eric Hansmann

### RPM-East web and publicity guy

Make plans to attend RPM-East!

It is time to make your RPM-East plans and rekindle your modeling efforts after a long, cold winter! Two months remain until this prototype modeler gathering in suburban Pittsburgh, Pennsylvania. There will be plenty of action March 22 & 23.

- Two days of prototype and model presentations
- A large display room to share your modeling efforts and learn new techniques
- A variety of vendors selling goods for prototype modeling
- Thursday evening operating sessions on local model railroads
- An informal Saturday buffet
- Sunday model railroad layouts to visit

Early bird registration is only \$35 (until March 1), with an additional banquet cost of \$29.

There is a special hotel room rate of \$95 per night.

Registration forms, hotel information and more can

be found at the RPM-East website:

[http://www.hansmanns.org/rpm\\_east/index.htm](http://www.hansmanns.org/rpm_east/index.htm)

RPM-East is sponsored by Division 2, MCR-NMRA.

The following modelers and historians are committed for our meet.

John Albert, Keith Albright, David Bott, Brian Carlson, Ted Culotta, Larry DeYoung, Jim Elster, John Greene, Bill Hanley, Eric Hansmann, Ron Hoess, Bernard Kempinski, Dennis Lippert, Rick Mahaney, Bob Meier, Bill Neale, David Owens, Jim Panza, Dave Ramos, Ramon Rhodes, Greg Smith, Robert Sprague, Steve Stewart, Mont Switzer, John Teichmoeller, David Wilson, and Kaylee Zheng.

Presentation titles will be posted soon to the RPM-East website. A tentative presentation schedule will be posted to the website in February.

[http://www.hansmanns.org/rpm\\_east/index.htm](http://www.hansmanns.org/rpm_east/index.htm)

Set your schedule and register now for RPM-East!

## **FEBRUARY CLINIC**

### **Bob Osburn, Outgoing Clinic Chair**

The January clinic was a series of mini presentations highlighting different modeling techniques and processes. Bob Weinheimer explained how he makes his own ballast, Dale Osburn explained several modeling techniques and tools he uses, and Jesse Smith demonstrated a very ingenious way to change window placement in passenger cars. Thanks to Bob, Dale, and Jesse. We really enjoyed and learned from your presentations.

The clinic for February will focus on JMRI Operations, a computer generated train manifest for your railroad. Many members have shown interest in knowing more about JMRI and David Oliverio has agreed to present the clinic. The clinic for March will be presented by

Sam Delauter and focus on T-Trak modules.

Remember, the Company Store will be open for the February meeting. Sales have really been picking-up with lots of items to choose from. If you have something to sell, please bring and add to the collection. The MADD session will focus on steam locomotives.

Lastly, I would like to thank everyone who presented clinics during my tenure as Clinic Chair. Sam Delauter will be taking over this duty for our Division and I am looking forward to many interesting clinics in the months ahead.

Thanks, Sam.

## **UPCOMING CLINICS**

### **Sam Delauter, Incoming Clinic Chair**

Hello everyone. No, I have not hijacked the monthly update on clinics in favor of T-Trak. Starting in February, I have been appointed the new Clinic Chair. I would like to say thank you to our former Clinic Chair, Robert Osburn, I hope that I can fill his shoes. Robert was always organized and prepared and kept good clinics lined up.

This month, the clinic will be presented by David Oliverio. His presentation will be on using JMRI and how it can be used in operations. In March I will be presenting a clinic on T-Trak.

The timing of my appointment to Clinic Chair couldn't have had better timing. As many of you know, I am also a member of the Kanawha Valley Railroad Association and in many ways function as a liaison between the two groups. As I mentioned at the January meeting, the KVRRA has shown interest in the NMRA giving some clinics

at their February show. I have spoken with them and they have given me a list of proposed clinics for the show. They are also open to ideas for clinics not on the list. Please let me know if you have any interest on giving a clinic at their show.

- Changing sound CV's
- Plug and play decoder
- Hard wire decoder
- Lay and ballast track
- Weather with pan pastels/chalks
- Weather with air brush
- Presentations on historic items, operations, etc.
- Making trees

## THE NEW KID ON THE BLOCK

James Porterfield

Photo by Karen Wilmoth

We all know model railroading is fun - although my first wife did once ask me, "How can you call it a hobby when you swear at it so much?" The challenge posed by making brass HO-scale double-bolt stake pockets aside, the hobby offers fun and satisfaction while it allows us to explore numerous specialty crafts. Just ask any MMR recipient.

For the Center for Railway Tourism at Davis & Elkins College in Elkins, it is to be more than fun. The fictitious HO-scale West Virginia & Atlantic Railroad - see our new ad elsewhere in this issue - now joins the list of model railroads in West Virginia open to the public on a regular schedule - Wednesday, 6:00-9:30 p.m., and Saturday, 1:00-5:00 p.m.. Located in the Robert C. Byrd Center for Hospitality & Tourism on campus, the railroad is set in the early 1950s. It will depict how timber and coal was marshaled and moved out of West Virginia to markets elsewhere, and how those resources were used in industry and by ordinary citizens. Funding comes from dues, donations and the sale of gifted items deemed inappropriate for the concept and era being modeled. No GG1's here.

Intended to eventually move to larger quarters, the layout currently consists of ten 30" x 4' modules. In an effort to achieve the highest quality possible, it aspires to standards similar to those of the Four County Society of Model Engineers in Maryland. You may have seen some of its modules at train shows in the region.

If you can participate on a regular basis, your membership is welcome. If you can pitch in from time to time and share your specialty - structures, customizing and weathering motive power and rolling stock, DCC installation, scenery, etc. - you'll be greeted like a boomer in season.

Membership benefits include access to the Center's large library of back issues of Model Railroader, Railroad Model Craftsman, and other publications. The library includes more than 100 specialty how-to titles published by everyone from Floquil to Paul Mallery and Art Curran (remember them?). The Center subscribes to Model Railroader's back issue access on

line, and to its video library. As a member of the NMRA, the WV&ARR has access to hundreds of that organization's video clinics.

Finally, the layout is intended to aid in recruiting students to attend Davis & Elkins College, itself rich in railroad history, and minor in Railway Heritage Tourism Management. One of that program's electives is titled Model Railroading in a Museum Setting. The end result, in addition to the fun experienced building a layout, is a learning experience for the visiting public, and a possible career for undergraduates attending D&E.

For more information, contact Jim Porterfield at [porterfieldj@dewv.edu](mailto:porterfieldj@dewv.edu) or by calling 814/574-5586. Until membership assures adequate staffing, please call before planning a visit to insure someone will be present on site when you arrive. And if the extent of your interest is to donate to this educational venture, you'll earn our undying gratitude. We may even name a street, commercial building, factory, or entire community after you. Inquire for details.

Now back to the &@#&^% fun.



## SIGNALING THE LAKESIDE LINES

Tom Harris



The signal aspect displayed here tells the crew of the eastbound manifest freight they will be crossing over from Main 2 to Main 1, and that they must reduce speed, prepared to stop at the following signal.

My Lakeside Lines HO scale model railroad is fully signaled. During operating sessions the train crews call out and follow signal indications, just as do real railroaders, as they go about the business of running on their respective railroads. Lakeside Lines trains are authorized to move by a Tower Operator (Read dispatcher, but for the small visibly modeled territory represented by my model railroad.) The present signal system we use did not appear on the railroad suddenly after one inspired work session. Rather, it was developed and installed little by little, over a time span of years, and in distinct stages.

It has been suggested to me by several modelers I respect that I should describe in an article how the signal system functions with such information as might be needed to construct another similar to it. I can see that the knowledge I have cobbled together over a long career of modeling might help other modelers get their signal systems up and running in considerably less time. The challenge is to successfully put it all on paper! I am going to try, but bear with me, it is a lot. I will divide the effort into parts which, after this introductory offering, will roughly follow the stages of signal implementation on my railroad.

## Designing A Signal System

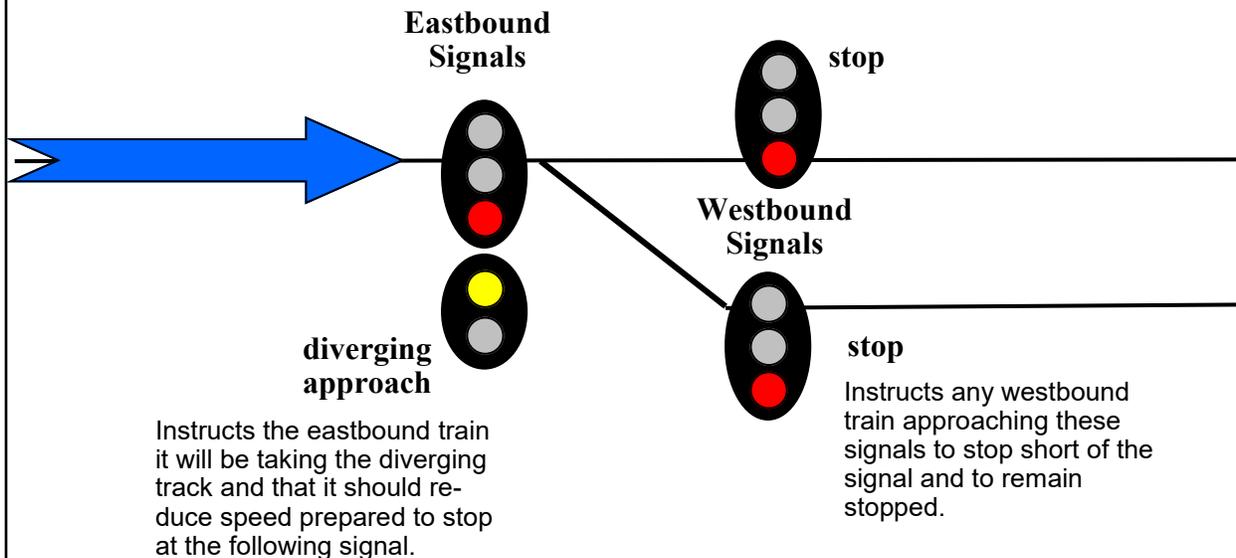
The signal system described here is built of simple, inexpensive, components utilizing simple yes/no logic. Each part of it is easy to understand, and therefore quite trouble shootable, when something goes awry. It is possible that there may be others wishing to install a working signal system which they can easily understand the workings of. Admittedly, by the time all the wiring for a complete control point is in place, things can start to look quite confusing, but taken bit by bit, everything is very straightforward.

There are certainly other solutions to the signaling problem. Bruce Chubb's C/MRI, JMRI, Digitrax's loco net, and the coming commercial Layout Command Control components, all provide signaling possibilities. Each of these solutions comes with its own considerable learning curve and its own price tag. The system I will present may well not be the best choice for signaling and certainly is not the most up to date. It is, however, something an electrical dummy like myself can understand. Even if you should ultimately decide to implement a computer based system, the steps described in the initial two phases of work will pretty much need to be accomplished anyway.

The signals installed on the Lakeside Lines reproduce the most common aspects of the signaling I have seen of the ex N&W/NS lines of southwestern Virginia and West Virginia. These are route based signals. If you wish to reproduce the speed based signal of the ex C&O/CSX lines, be mindful the two systems are in many ways different and you will need to study CSX signaling further.

Let's begin by discussing how the route based signaling I have installed functions in operation. I'm sure most modelers reading this are reasonably familiar with common railroad signal indications. I apologize in advance, nevertheless, I do need to clarify from the start how my signals are designed to function.

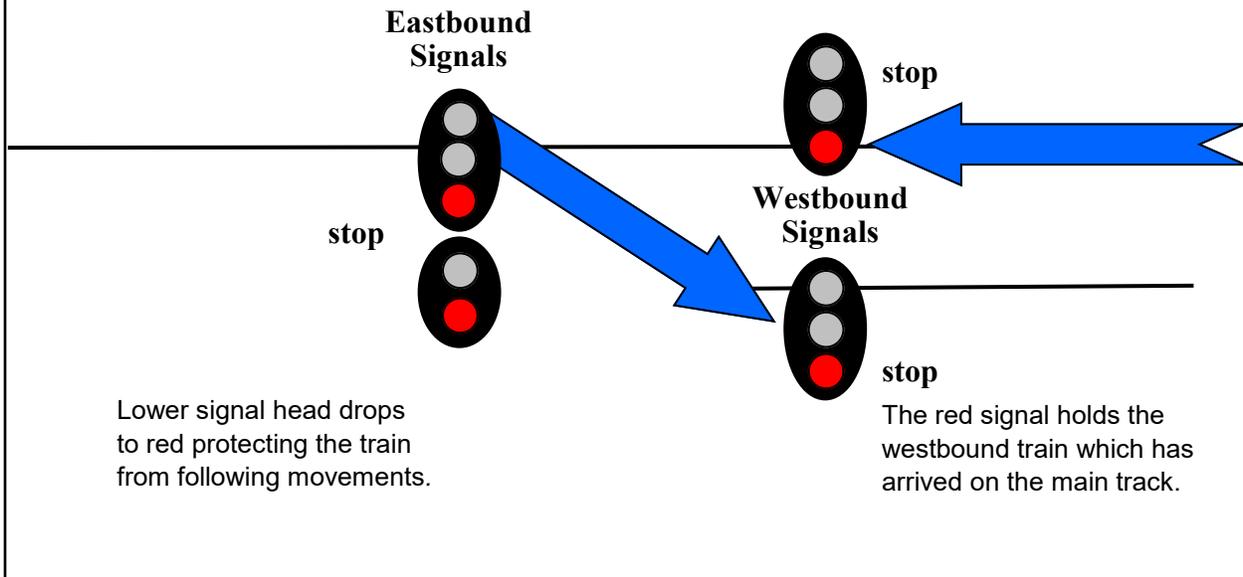
The following diagrams show how the signal aspects of a typical control point, located at the end of a passing siding, change as two trains meet and pass one another. As an eastbound train approaches the control point the following signal aspect is displayed:



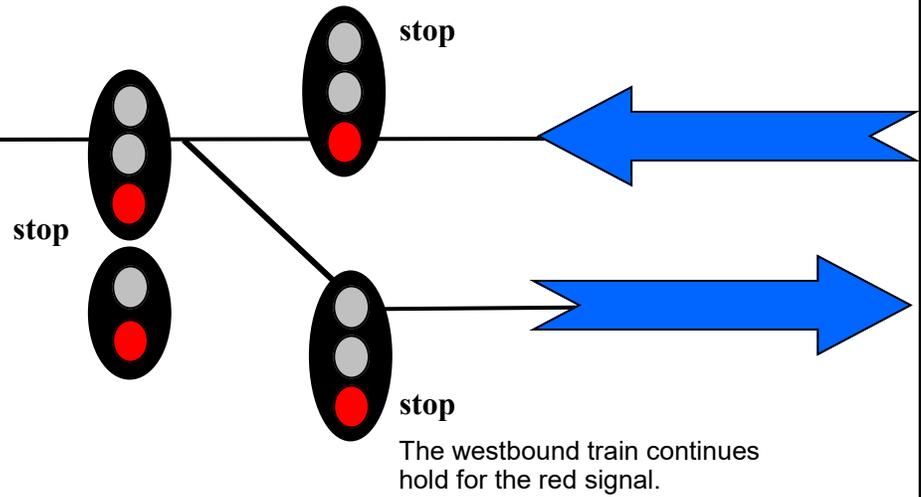


Signal Bridges are often used to support the heads for multiple track situations. Each of these tracks requires but one head as each track may only access one route ahead. The track at the far end of this control point (behind the electrical shed) has two heads mounted vertically on one mast, a typical arrangement for a single track diverging into two possible routings. The center track is a stub for setouts and is not signaled.

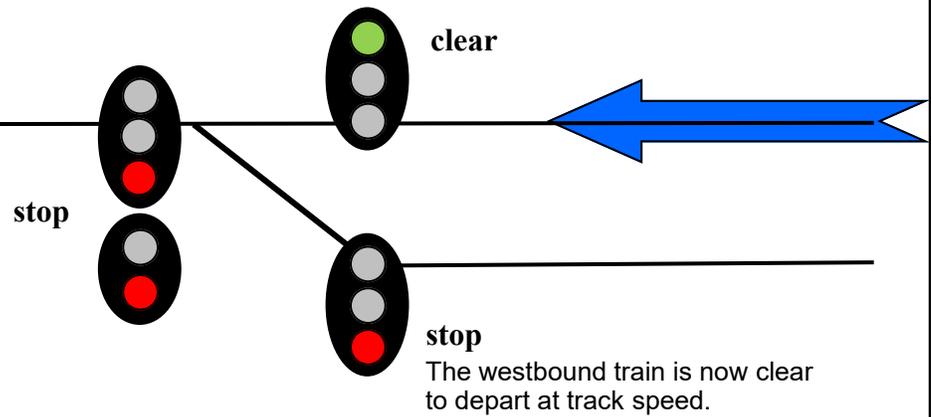
The number of vertical signal heads facing each track matches to the number of possible routings ahead. The upper head corresponds to the route straight ahead, the lower head corresponds to the diverging route. The aspect of the lower head will drop as the eastbound train proceeds through the switch and fouls the route.



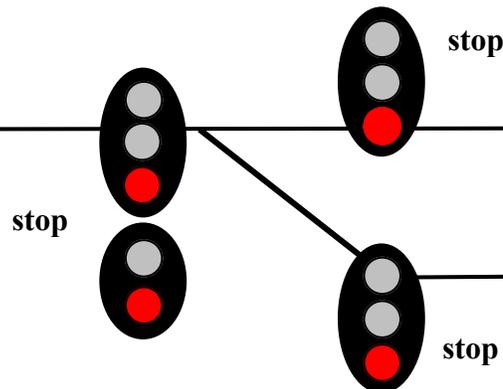
In time, the eastbound train clears the control point, but the signals remain red as the westbound awaits action by the dispatcher to clear its signal.



If the line to the west is unoccupied, the dispatcher may set up the route for the waiting train and clear its signal. The eastbound train has moved on towards the next control point.



The westbound train may proceed when the signal clears. The signal will drop to red as the train proceeds through the switch.

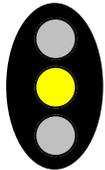


Once the sequence of signals above is understood, the signaling for any number of other situations is completely derivative and need not be detailed here. I can however provide a chart of the most common signal indications used, their names used as called by crews during operation, and their interpretations. See below.



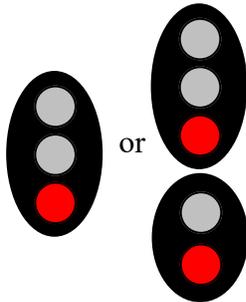
**clear**

The line ahead is clear, proceed at track speed.



**approach**

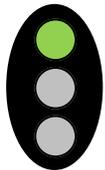
The signal may be passed, reducing speed as needed in order to be prepared to come to a stop at the following signal.



or

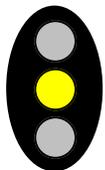
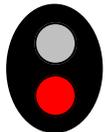
**stop**

Stop and stay stopped. This signal must not be passed unless given explicit permission by the dispatcher, and only then at restricted speed.



**clear**

The line straight ahead is clear, proceed at track speed.



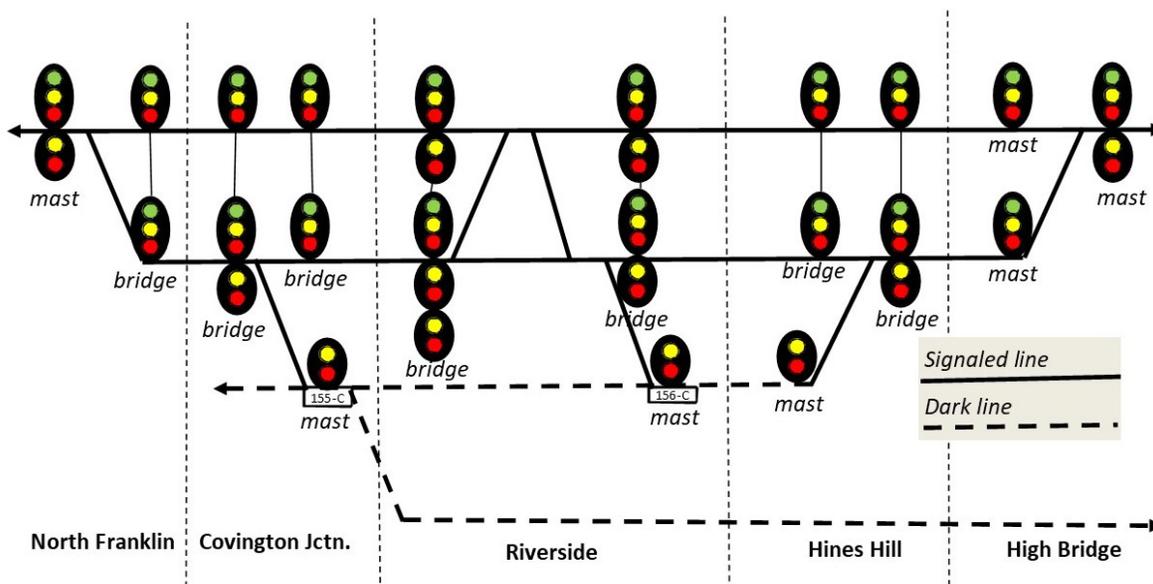
**approach**

The signal may be passed, following the route straight ahead, reducing speed as needed in order to be prepared to come to a stop at the following signal.



Let's talk about the signals for your railroad. Every railroad's track schematic will be unique, and your signal head arrangements will be dependent on your individual track layout. For this reason I have to recommend eschewing the use of ready built up signals and instead recommend constructing your own signals from kit components. On my Lakeside Lines, Oregon brand components were used and have proven most satisfactory and flexible. Prior to signal construction look at the schematic of your track plan and figure out in advance the arrangements of signal heads you will need to fabricate. Decide where mast signals and signal bridges will be most appropriate. You will then be ready to purchase the necessary components and start building your system.

The following example is the schematic plan for my own Lakeside Lines railroad. This schematic drawing shows all of the signal heads used. Notice that only tracks impacting signal operation are shown. Yards and spur tracks are normally irrelevant to the signal plan and are not included here.



One further note is in order. You might notice in the field that NS style signals have one more head than I am using. That bottom head is normally illuminated with a red light indicating that the signal is absolute. That means you always must obey it. I use another system common to many railroads, that is if there is no number plate mounted on the signal, than the signal is considered absolute. You will notice two of my signals, (find them at Covington Junction and Hines Hill), do have number plates below the head. The number plates indicate the signal is permissive. Crews finding these signals at a stop aspect must stop, but then, after checking to be sure the associated crossover is not aligned for the main, the crew may pass the signal, at restricted speed, and being prepared to stop within a distance half of the line of sight.

With this signal design in hand it is quick to see that 7 signal masts and 7 signal bridges were necessary to install this system. With such a plan for your own layout, signal fabrication may confidently commence. I'll pick things up next time from the point where signals have been assembled and are ready for lighting.

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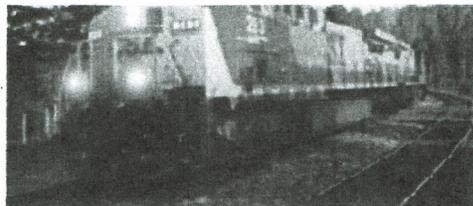
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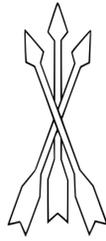
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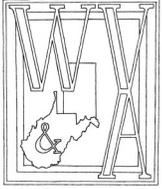


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**February 9**  
**St. Albans Depot**

**March 9**  
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