HUB Headlight

HUB Division Inc., Northeastern Region, National Model Railroad Association - Volume 27 Number 3, Jan. - Feb. 2011
http://www.hubdiv.org

RAILFUN TIMETABLE

PHOTOGRAPHY ALONG THE RAILS

By Doug Scott
8 PM, Friday, January 21, 2011
Cambridge School of Weston

Doug will give a presentation of his travel on the 'British Columbia Railway Tour of the Line September 1987' including, a tour of Vancouver rail facilities with lots of ALCO switchers. Doug enjoys rail travel of any sort and can often be seen hosting or chaperoning passenger rail fan trips throughout the Northeast. Some of you may know him as the past president of the Cape Cod Model Railroad Club and Module Superintendent. His work in a photography studio and love of trains has placed him in a position to capture a lot of nice shots of the changing scene in railroading. So come join us as we welcome Doug to share some of his work with us for the first time.

A map to Cambridge School of Weston appears on page 10.

RAILROAD SAFETY TRAINING

By Dick Towle
7 PM, Friday, February 19, 2011
Cambridge School of Weston

Our FRA representative, will present a railroad safety training course prepared by Operation Lifesaver, Inc. Designed for emergency responders such as fire, police, and medical teams, this course covers such topics as identifying on-scene dangers, recognizing different types of rolling stock and their hazards, and how to stop a train. A century ago, scores of people were injured or killed monthly by trains. Railroads have made great progress since then. Join us to learn about railroad safety.

Those who complete the 3-hour course will receive certificates.

We shall open our presentation room at 7 PM and pizza will be available for those who attend. The training course will begin promptly at 7:30 PM so we can finish at a reasonable hour.

INTERMODAL ORIGINS

By Mike Clements
7 PM Friday, March 18, 2011
Cambridge School of Weston

Mike, a NYC fan and modeler, will discuss the changes in transportation systems from 1955, when the courts first cleared the way for piggybacks, to 1968, when the flush deck flatcar arrived and changed everything.

The tale of PRR's TrucTrain vs NYC's Flexi-Van would be the back story. He'll cover some of the earlier equipment which lead to the development of intermodal concepts and display some of the models he's been working on.

If the school is closed, we will not have Railfun that evening. School closings are broadcast over the radio at **WRKO 680AM** and **WBZ 1030AM**, and on **TV Channels 4, 5, and 7**. The Cambridge School of Weston recording is at **781-642-8600**. Check the radio or TV stations early **on the morning of Railfun!**

A switcher spots the HUB car by the creamery on Art Ellis's module, which is part of his layout when it is not part of the HUB modular railroad. Art's layout is the Shawsheen Division of the B&M RR. It is the standard gage subsidiary of the B&B narrow gage railroad, leased to the B&M to operate.

The President's Car

By Dick Johannes

I thought of starting this installment of the President's Car with two words, but I was worried that no more than five members would get beyond them. OK, damn the torpedoes, here we go: **Higher Mathematics**. Let your heartbeat settle down and relax, this is not going to be filled with abstract ideas and daunting formulas. I want to introduce **topology** and how it bears on model railroaders. Topology comes from the Greek words for study and form or space. It is a major area of mathematics concerned with spatial properties that are preserved under continuous deformations of objects, that is, deformations that involve stretching, but no tearing or gluing.

Imagine Dunkin' Donuts gave you a rubber doughnut that you could stretch and deform to no end. You could convert it into a cylinder and even more amazing you could shape it into a human body. Yes indeed, the hole in that doughnut would be your GI tract. This ends my knowledge of topology and my strict adherence to its rules.

I'm going to break the rules by allowing us to make a cut or two before stretching. What I'm describing is not new, but a skill worth developing that can help with the operations of either an existing layout or one in planning. Almost all layout plans look good, but do they permit operations that are as good as their visual appearance? From my vantage point I would say these are two separate issues. For layouts that are set up as point to point layouts this discussion is moot. What we are doing here is describing a way to convert an oval or even bowl of spaghetti layout into a logical point to point for purposes of operations.

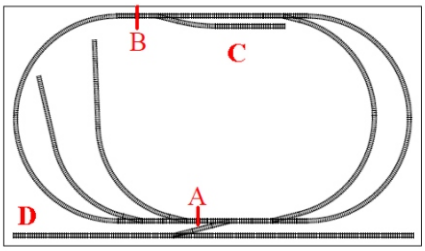


Figure 1. Kansas City Central RR

I'll focus on small oval layouts as they continue to be very popular and even with their simplicity they demonstrate the concepts well. Note that a simple oval with one cut in it converts into a straight line. That's the key.

This unwinding visualization is useful when evaluating the operations capability of a layout's design. It's not that hard. Despite my penchant for technology, I usually find this easier to do with a blank sheet of paper and printed copy of the layout design. I mark the cut point in red. Then, starting at the cut point, move either right or left and mark the track you've passed over using a yellow highlighter on the track diagram. As you move from one turnout to another, draw each segment in pencil on the blank sheet. Try not to confuse a right hand turnout with a left hand turnout. This can get you lost sometimes. However, twisting is legal so you can change a right hand turnout into a left hand turnout on your linear drawing. What is not OK is to reverse the points and the frog. The result of this process is controlled by where the cut or cuts are placed. When done, I transfer the result from paper into a computer tool such as CADrail.

All three of my examples can be found on the *Model Railroader* website in a marvelous resource called the Track Plan Database, and are reprinted here, courtesy of *Model Railroader*. As a first example, let's consider a layout

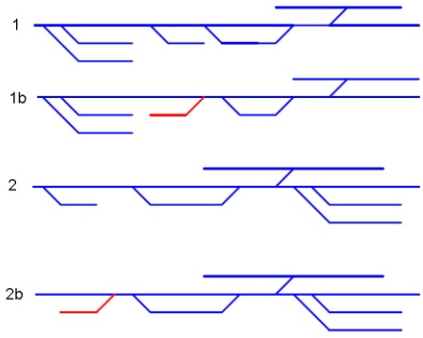


Figure 2. Schematics of Kansas Central RR.

called the Kansas City Central, which is a layout of less than 100 square feet. This is an oval railroad with few spurs designed for Bachmann's E-Z Track. I used CADrail to create an undecorated version of the track plan (See Figure 1). I put two different markers labeled A and B on the track plan. If we make our cut at the point and line labeled A, we get the schematic labeled 1 in Figure 2. If instead the cut is made at point B we get the schematic labeled 2 in Figure 2. To me, putting the cut at point B looks more interesting but this is a personal choice. Furthermore, by extending the siding at the lower left to the edge (point D) of the table to represent a connection with a mainline and by changing the spur at C from a trailing point to a facing point, this small railroad has some interesting possibilities.

I've come to believe that lack of staging is one of the most common weaknesses in layout design. For the Kansas City Central, using either a drop down leaf or the type of model cassettes that Ian Rice talks about in his books would get traffic on and off the layout, making it even more interesting.

My second example is also a layout featured on the *Model Railroader* website. It's called the Indiana and Aurora. The track plan is shown in Figure 3. This looked

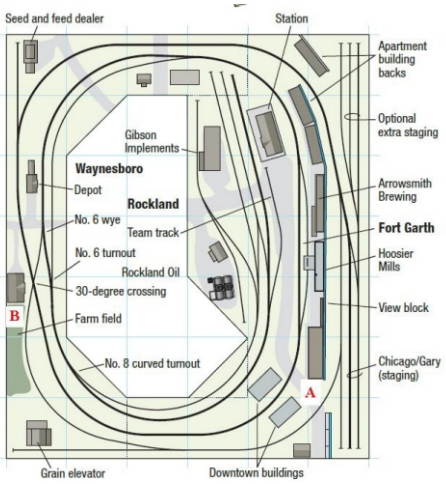


Figure 3. Indiana and Aurora RR.

pretty good to me. I like yards hidden behind buildings or backdrops as they conceptually expand the space. This compact 6x7 foot HO scale railroad unfolds very nicely by putting the cut between points A and B that connect Chicago to Waynesboro, and not using the continuous loop that this track provides. This unfolds into a interesting schematic looking like a small branch line (Figure 4) operating between Rockland and Chicago with a nice layover site at Fort Garth to support commuter traffic.

Although trains appear to fall off the edge on the schematic, in the real world they go around in a circle. I, personally, still find this to be a good thing. I enjoy operations and switching, but sometimes I just want to watch a train running around an oval. I enjoy that aspect of our Hoosac, Upton & Boston modular layout. I can deal with the fact that trains seems to pass the same site repeatedly, although eventually I tire. Nevertheless, I still like to have the opportunity for continuous operation. Again, this is matter of personal taste.

My third example is the Havaphew railroad, an N scale layout planned for the top of a door (Figure 5). It's name makes me think

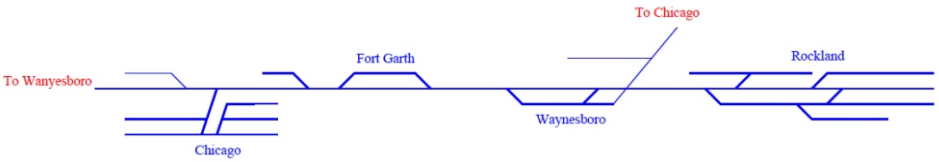


Figure 4. Indiana and Aurora RR Schematic

that Skip Farwell's Batchawana Beer Brewery would feel right at home on this layout. Having just talked about liking the availability of loops, this track plan affords not only one but two loops. It has a two track mainline that allows one to run two short trains in opposite directions at the same time. This, too, is a visual treat. For me, though, two tracks in this small space is overkill. The railroad unfolds into the schematic shown in Figure 6. I think the schematic is improved by removing the track connecting the inner loop near the station. This converts the layout to a single track main by making the inner loop into a long yard lead. I would consider extending the mainline off the upper right edge and use a removable linear section to handle full length trains. I would also add a switchback and some more industries on what started as the inner main. The red lines (see the color version of the *Headlight* on the website) on the schematic show my proposed changes. I would also add a switchback on the front edge with industrial flats. The station is better located before the passing siding, as this allows for passenger operations. I would use three of the tracks in Ashton as the yard and use the remaining two tracks for the added industries.

You can spend many useful hours perusing the track plan database on the MR website and get even more from that time by adding your own tweaks and, yes, understanding the topology that will eventually define the achievable train movements. Now that you're up the curve on topology, you are fully empowered. All you need is are a red pencil, a regular pencil, a yellow marker and blank piece of paper. Lastly, in addition to exploring your possibilities for operations, the schematic can become the basis of your CTC board.

Until next time, keep 'em roll'n.

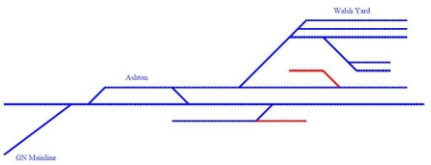


Figure 6. Havaphew Central RR Schematic

Figure 5. Havaphew Central RR

Shanty Talk

By Rudy Slovacek

I began my last Headlight column during a heat wave in September. In response to our editor's special request for early submissions, I'm beginning this column a week before it's due and boy did I pick a day. The forecast predicted a blustery rain for this 8th day of November but I awoke to a whitish reflection off the ground at 4:30 a.m. this morning. After grabbing my snow scraper, I headed to work in the slushy wintery mix. Yep, winter had arrived in New England. Good thing I removed the leaves from my lawn, turned over the snow-blower and fired up my old tractor plow this past weekend. Our weathermen of late have been alluding to snow in the mountains and I'm sure the crews in the Rockies already have those rotaries well oiled and ready to go.

Somehow, when I could see my breath while raking, I sensed that winter was coming and I wanted to be prepared. Many of you know I like to be prepared and that I have in fact lined up the Railfun Calendar almost a whole year in advance. However I was unprepared for the "Perfect Storm." You know, when several unlikely events all occur simultaneously to foil man. It happened at Railfun in October. My scheduled speaker was advised that week to be ready for work due to economic conditions and the minimum number of crews CSX was maintaining. I was fortunate enough to get a last-minute volunteer, but then he came down with a stomach virus and at the last minute he informed me that he could not make Railfun. So there we were on a Friday evening without a speaker. In all the 13-plus years I've been associated with Railfun, as a participant, clinician and finally organizer, this had never before happened. Fortunately our President had his laptop on hand, and it contained his presentation on Signals from last year's Spring TRAINing. We all had a delightful evening, since most of us had not heard the talk before. Most of the active members are usually busy helping out at conventions and shows, or giving talks, and they don't attend most of the clinics. In this case, Dick Johannes saved the day. The lesson I learned is that we must continue to plan ahead but, no matter how much we prepare, we need to also be open to the generosity of our fellow man to help us out.

Speaking of preparation, has anyone noticed the inordinate number of mice this year? Usually I buy a couple of traps from the hardware store and I'm ok. We lost our cats several years ago and now I must rely on Man's inventions. The brand I usually get has been replaced by a "better mouse trap" which just doesn't work. I finally located a source of the old fashioned kind and stocked up. Even then, it was frustrating when I found the peanut butter licked clean. However, I'm still evidently trainable, as I've learned to bend the latch to make a hair trigger. It's yielded a dozen or more and still counting. So goes the battle "of mice and men" and a test of our (or in this case my) ingenuity.

This is also the time of year when the character of the railroad employees is truly tested. Today I boarded my train to Boston and the engine died at the station. The engineer had to walk back and restart the balky thing. It must have been rebelling against that first mix of cold rain and sleet. The engine died again and again at the next couple of stations, but when it warmed up, it began humming like those EMD's often do. Our engineer was fortunate because he could walk

back through the heated train. Imagine the lot of a conductor or a brakeman of that bygone era who had to trudge a half mile through snow up to his knees to find that broken air hose on his freight train. Maybe it is the chilled lot of a rural station master hooping up orders in Montana in January or maybe it's the lineman charged with de-icing the switch in the middle of a nor'easter; no matter the task, you can find these dedicated individuals battling the elements as they do their job. Think about it a moment as you read this in the warmth of your home. The railroad employees, our soldiers, our firemen, policemen and all those who serve us often risk their comfort and sometimes lives. They all deserve a Yuletide Holiday with their family and Peace on Earth. And if not that, then at least a kind word now and then, every day of the year.

HUB Holiday Party

The 2011 Holiday Party will be held on Saturday, January 8, at The Common Market Restaurant, 97 Willard St., Quincy. Reservations received by January 3 are $40 per person. Late reservations at $45 per person will be accepted until January 6. Seating is limited; no walk-ins. If you want to participate in the Yankee Swap, bring a wrapped gift worth $15 or more. The reservation form and menu are posted on the HUB website, http://www.hubdiv.org.

The Denver & Rio Grande Southern

By Bob Brannen

The Denver & Rio Grande Southern is a freelance On3 model railroad set in Colorado and New Mexico during the late 1930's and early 1940's.

The main inspiration for my layout was images I had seen of the two main railroads of that era: The Denver & Rio Grande Western and the Rio Grande Southern. I wanted to recreate famous photographs found in many books available about these railroads.

The two most populated areas on the railroad are Chama, NM and Ophir, CO. There is also a small maintenance yard at West Durango, Colorado.

Chama is mainly a yard with maintenance facilities and MOW equipment, but it includes a depot and stockyard at one end. Many of the scientists who developed the first atomic bomb traveled through Chama on the D & RGW.

Ophir loop.

Ophir, CO was the most iconic and most photographed place on the narrow gauge railroads of this area. It was a mining town which, unfortunately, no longer exists. The highway that ran through the town was raised twenty feet in the late 50's and early 60's, which required the

Locomotive heads across a curved trestle on Bob Brennan's Denver & Rio Grande Southern

Ophir Station

destruction of all but one of the buildings. The most recognizable structures were the tram house, the depot and the long trestle. These and all other structures are scratch built from plans available from several sources. The entire area is built to scale with the exception of the long trestle, which was 488 feet long. Mine is a scale 345 feet long due to space restrictions.

The entire railroad has an elaborate painted backdrop. When I was starting to build the layout, I was advised not to let the scenery and backdrop dominate the railroad. I disagreed with that philosophy since the scenery in that area was what it was all about. The railroad was just a small part of the grandeur surrounding it. The scenery is 50% complete.

The track work is mostly code 100 (about 75%) with code 83 on the rest. Most of it is flextrack, but all the turnouts, trestles and all of Ophir are hand-laid. Almost 300 feet of track are laid on the layout. Most of the turnouts are controlled by Tortoise switch machines. The layout runs on DCC; all the motive power has sound and there are some additional sound effects.

I participate in the NMRA Achievement Program and have earned certificates in Structures and Prototype Modeling. I expect that by Tour de Chooch I will have Scenery, Electrical, Civil, and possibly Dispatcher certificates.

Train emerging from a rock tunnel

Electrifying HUB Junction

By Jeff Gerow

Watching the unwrapping and insertion of the beautiful, brass Ball Signal that James Van Bokkelen had made, I thought "It would be neat to operate that signal," and I said, "Let me take that home and make it work," without actually thinking about what I was going to do.

For the first couple of months that the crossing triangle sat in my basement, I pondered exactly what it was that I wanted the signal to "do" and how much work I was willing to do to make that happen. I visualized telescoping brass tubing with balls on the ends, powered by solenoids...no, change that to Tortoise switch motors for much more appropriate movement!

While waiting for the proper inspiration, I set about making the crossing as bullet-proof in operation as I could. Some of the joints between rails were soldered with the railheads mis-matched or mis-aligned. A few touches with a hot iron and some careful eyeballing along the track lined everything up appropriately. I also made an interlocking machine out of wire levers with a spring floor mount for the new floor in the switch tower.

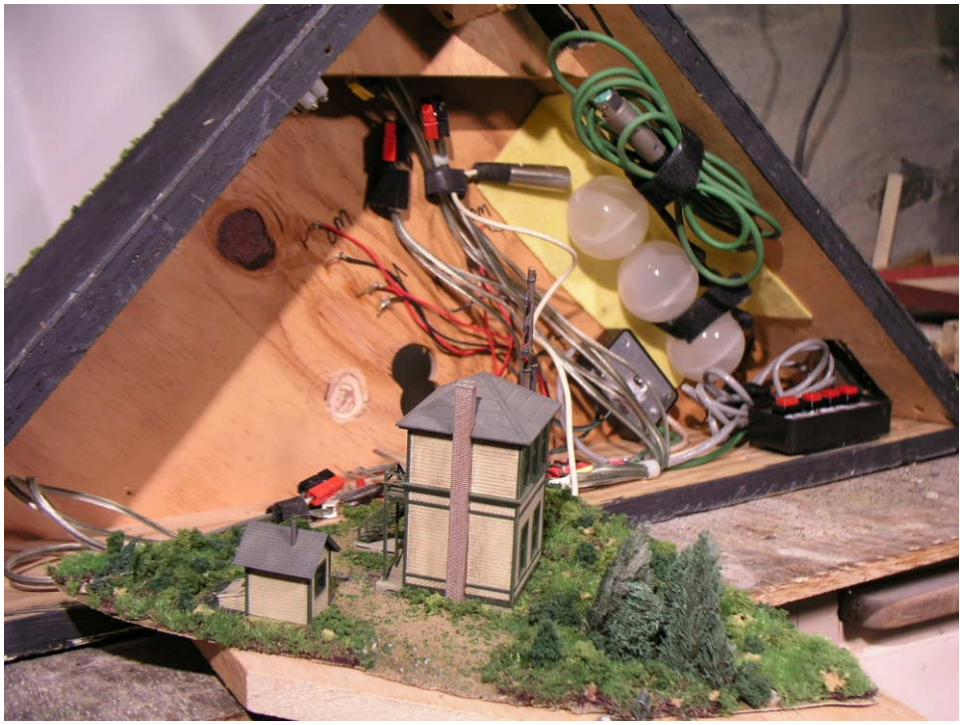
I realized that whatever was going to happen required a control circuit, so I started on that. About this time I found out from James that the lights on the mast were LED's, perhaps just lighting them would be enough for now. If I wanted to make that telescoping tubing ball riser later, I would have the circuit to drive it.

I also considered how to protect the signal tower when the module was in the trailer, it would be so unpleasant to see such a nice tower get squashed while loading. The scenic elements of the crossing, including the switch tower, extended off the edge of this triangle module and over the edge of the corner module that it attached to. So the ball signal and switch tower would have to be on a separate, removable base. With removable scenery in mind, I thought about building or buying a case for the switch tower. But wait, there is space inside the triangular module; maybe the scenery piece could fit inside? With some shortening of the signal mast and a little shaving of the bottom of the triangle, it fit!

The last obstacle was how to control the signal. We had been using James' tennis ball signal with good effect for several years should I attempt to electrify that? Or would a simple pushbutton panel suffice? I considered having those tennis balls make contact on the post when raised but keeping them in position reliably would be a problem. A button panel latching the 1, 2 or 3 balls on seemed to be the best option for operators. The scale signal is too small to be seen from any distance, so a larger display was necessary. I visited Michaels to see if I could find clear or frosted balls to replicate James' tennis balls (using LED's to light them up), and found some clear plastic split balls that were perfect after I sprayed their insides with glass frosting paint to diffuse the light.

Now that there was a plan, the actual construction could begin. I had some Fiberglas sheet used for tub surrounds left over from a home project; it is stiff, thin and flat--perfect for the base. At our next layout set-up, I checked the crossing corner module to ensure that the clearance behind this triangle would be adequate to mount the switch tower. I cut out the Fiberglas material to fit between the tracks and sanded down the edges with a Dremel drum sander. I used a hole saw to drill out a pair of overlapping holes in the top of the triangle module, inside the junction of the tracks. I saved the plugs to attach to the bottom of the Fiberglas sheet, thus making a keyed mounting. The signal's post was passed through that double-hole key with the wires coming out the bottom. I looked for prototype information about where the signal would be mounted in relation to the tracks and found nothing, so I decided that 20' looked right. Of course, about a week later, an article appeared in one of the hobby magazines, suggesting that 10' signal to track was appropriate. With the ball signal mounted and its wires dangling from the bottom, I added a cable clamp to take the stress off the signal wires.

A word about the connectors I work in the Audio-Visual



industry where many different connectors are in everyday use, and I have examples of many of them. I needed a four-conductor connector (for the three LED power feeds and a common return) and chose an XLR audio connector with 4 pins. These are very hardy and easy to use, and I had a Male/Female pair! I also needed a connector for the button panel, and wanted that one to be different from the signal one. You can't mis-connect that which doesn't mate. So for that, I used a 3-pin XLR. I still needed 4 conductors so I used the metal shell of the connector as the fourth connection.

The circuit latches outputs for each LED and clears unnecessary lights when a new button is pushed. Thus going from 3 balls to 1 ball will turn off the 2nd and 3rd balls and keep the 1st ball lit. This is a simple circuit using reliable TTL logic chips. The chips run on 5VDC, so there is a 5-volt regulated power supply chip in the box, fed from the 18VAC accessory bus passing through all the modules. Each chip's output is connected to an open-collector transistor circuit able to drive (at least) two LED's--one on the scale signal and a high output LED in the larger, more visible display. All this was assembled on a Radio Shack circuit board that fit into a small plastic project box.

The last electrical part was the large display. Fortunately the clear balls had little loops on their edges, which conveniently allowed a threaded rod to hold them. I drilled a hole for each high-output LED and mounted one in each ball with an LED mount, then glued the balls at the top of the post and cable-tied the wire. I hoped that the balls would glow uniformly, but LED's are directional, thus making one side much brighter than the other even though I filed down the LED's lens to spread the light. Perhaps I should have added some angel hair (glass wool or some other diffusion material) to better spread the light before I glued the balls closed. Maybe the next version…

Then came, for me, the really fun part; scenery. I contemplated options for weeks. The switch tower set included a speeder shed with a short, railed deck to get the speeder to the track. In actual use, it would need access to both tracks, so it needed an extension of the molded-on plank deck. There was also a crossing shanty that I thought would make a good shed for the Tower back yard. The ground is pretty flat so there could be some standing water, perhaps a pond. A few trees would be good, but not so many that the view of the trains was

blocked. This would generally be a wild area as those tower operators don't have the time (or inclination) to keep their yard neat. I had heard of pot toppers online and wanted to try them. These are inexpensive disks of what looks like miniature vegetation intended to cover the soil in flowerpots. They come in a couple of sizes at Michaels (and I'm sure other art/craft stores as well). The 6" ones I used (two of them) were less than $5 apiece -- cheaper than designed for model trains foliage products. After you cut through the edge and peel-off the backside and the cotton batting inside, you have convincing wild ground cover. Of course, natural textures are always varied, so I added various ground foams, Woodland Scenics Field Grass and some natural items twigs, stones, etc. as well. The water is EnviroTex Lite, perhaps more than I intended, the downside of water on an almost level surface. To complete the scene, I added a couple of SuperTree trees with sagebrush trunks, several shrubs some made from natural materials, lots of dirt, which I collect at the local baseball diamond, a great place for fine, clay-based dirt, and a few ducks.

It has been really gratifying to see this module in operation in a couple of shows. I want to encourage HUB members to adopt one of the Club's modules and repair/update it. But, unless it's one like this crossing module (only used a couple of times a year); plan on finishing it in a much more timely manner than this project, which took over a year.

Calendar of Events (Subject to Change)

2011

Jan 8 (Sat)	HUB Holiday Party, 6:30 PM, Common Market Restaurant, Quincy, MA
Jan 15-17 (Sat-Mon)	HUB Modular RR Display, Wenham Museum
Jan 21 (Fri)	RAILFUN Meeting, 8:00 PM, Cambridge School of Weston, Weston, MA
Jan 21 (Tues)	Deadline for submissions to *Headlight* for Mar-Apr issue
Jan 29-30 (Sat-Sun)	HUB Modular RR Display, Amherst Railway Society's Big Railroad Hobby Show, Big-E Fairgrounds, West Springfield, MA
Feb 18 (Fri)	RAILFUN Meeting, 8:00 PM, Cambridge School of Weston, Weston, MA
Mar 18 (Fri)	RAILFUN Meeting, 8:00 PM, Cambridge School of Weston, Weston, MA
Mar 26 (Sat)	Deadline for submissions to *Headlight* for May-June issue
Mar 26-27 (Sat-Sun)	HUB Modular RR Display, Greenberg Show, Shriner's Auditorium, Wilmington, MA
Apr 2 (Sat)	Spring TRAINing, Holiday Inn, Marlborough, MA. Includes HUB Modular RR Display.
Apr 15 (Fri)	RAILFUN Meeting, 8:00 PM, Cambridge School of Weston, Weston, MA
May 20 (Fri)	RAILFUN Meeting, 8:00 PM, Cambridge School of Weston, Weston, MA
Jun 17 (Fri)	RAILFUN Meeting, 8:00 PM, Cambridge School of Weston, Weston, MA

HUB Headlight

Volume 27, Number 3, January - February, 2011

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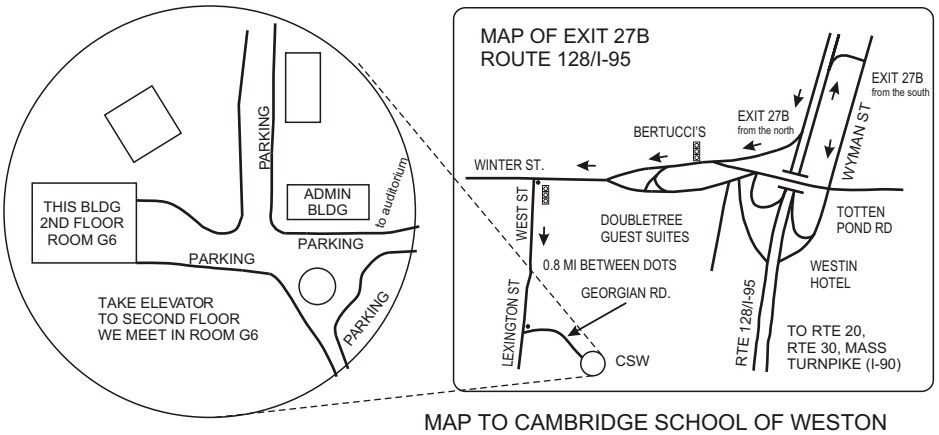

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