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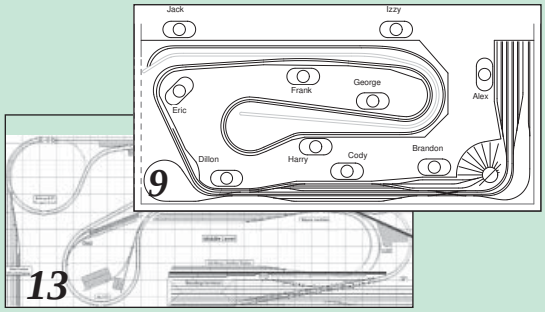
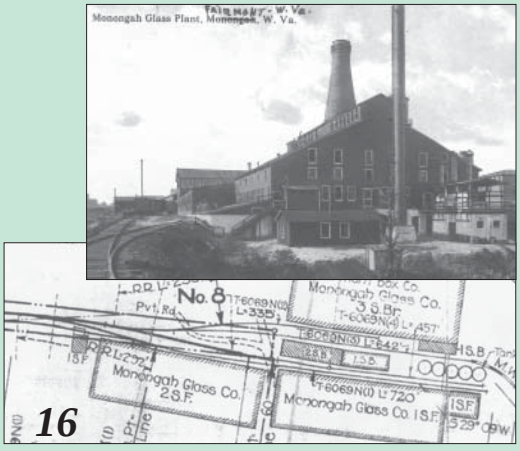
Features

News and Departments





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The Ultimate 4X8?

Prototype experience makes for great ops on HOn3 RGS

Story, photos and graphics by Dan Sylvester

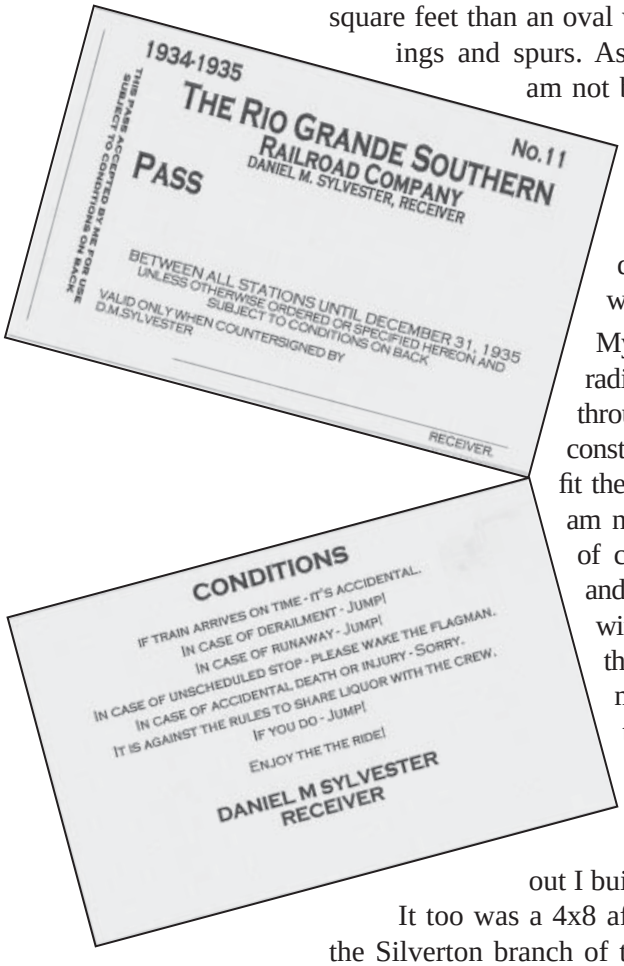
"But there had to be more one could do in 32 square feet than an oval with a couple of sidings and spurs ..."

Back in 1986 I had to abandon my dream layout. It was a 16x24 foot rendition of the Rio Grande Southern from Ridgway to Rico that I'd worked on for thirteen years (*Model Railroader*, 4/80). At the time, I worked as a conductor on the Chicago & Northwestern and changed locations to make better use of my seniority. All of my rolling stock was packed in boxes and put up in the attic of the new home.

For the next eighteen years I pondered on what I wanted to do for a layout as I finished out my 38 years of 1:1 railroading. As I drew plan after plan, I decided to go smaller rather than larger. After considering larger sizes, I finally decided to take the challenge of seeing what I could do in the space of the traditional HO 4X8. Most of us started with a 4x8 layout and that's what I decided to finish with.

Tools & tricks for going "small"

But there had to be more one could do in 32 square feet than an oval with a couple of sidings and spurs. As a scratch builder I am not bound by the size of readymade structures and switches. Even #4 turnouts take up a tremendous amount of room when space is limited.



My solution is to run the radius of the curve right through the frog. I also construct the buildings to fit the space available, so I am not bound by the size of commercial structures and kits. What I ended up with was a layout with the same operation as my former pike in one-twelfth the space.

The basic plan came from the first narrow gauge layout I built back around 1970. It too was a 4x8 affair that represented the Silverton branch of the DRGW. While it had a turntable, it did not have a way to turn an entire train and also had no staging. By the time I retired these problems were solved and the plan was complete.

Balancing key elements

Staging is a 3-track reversing loop under the main level of the layout. It represents both ends of the line, Ridgway and Rico. The second reversing loop is on the main level, camouflaged by a tunnel and a short piece of track between the mainline at Telluride and the engine house lead at Vance Junction. Minimum radius is 18" with the exception of the house track at Ophir which is 15 1/2". And as mentioned, the handlaid-to-fit track switches carry the radius right through the frog. If I need a switch with a 15 1/2" radius running through the frog (as at Ophir), that's what I build. It's not that hard and much more wallet-friendly.

A 3% grade connects Vance Junction with staging, which is 4" lower. The Telluride branch climbs 4" on a 4% grade from Vance Jct. to Ophir. Ophir is the only location on the layout that looks somewhat like the real place (although in reality it was located on the main line and not the Telluride Branch). From Ophir we drop 4" on a 3 ½% grade to Telluride. Here the branch ends operation-wise but one can continue through the tunnel and come out at the north end of Vance Junction.

The siding (middle track) at Vance Junction will hold an engine and 10 cars to clear the main line. That set the train length for the layout at ten cars max. My largest locomotive could only handle 185 tons on a four percent grade on the prototype. That's 17 empties or 5 loads and a caboose (I figure empties at 10 tons and loads at 35 tons.) If we can make the hill in one shot by leaving a few cars for the next day, then that's what we do. In reality I've put enough bird shot in my locos that even the smallest will handle eleven cars up the hill.

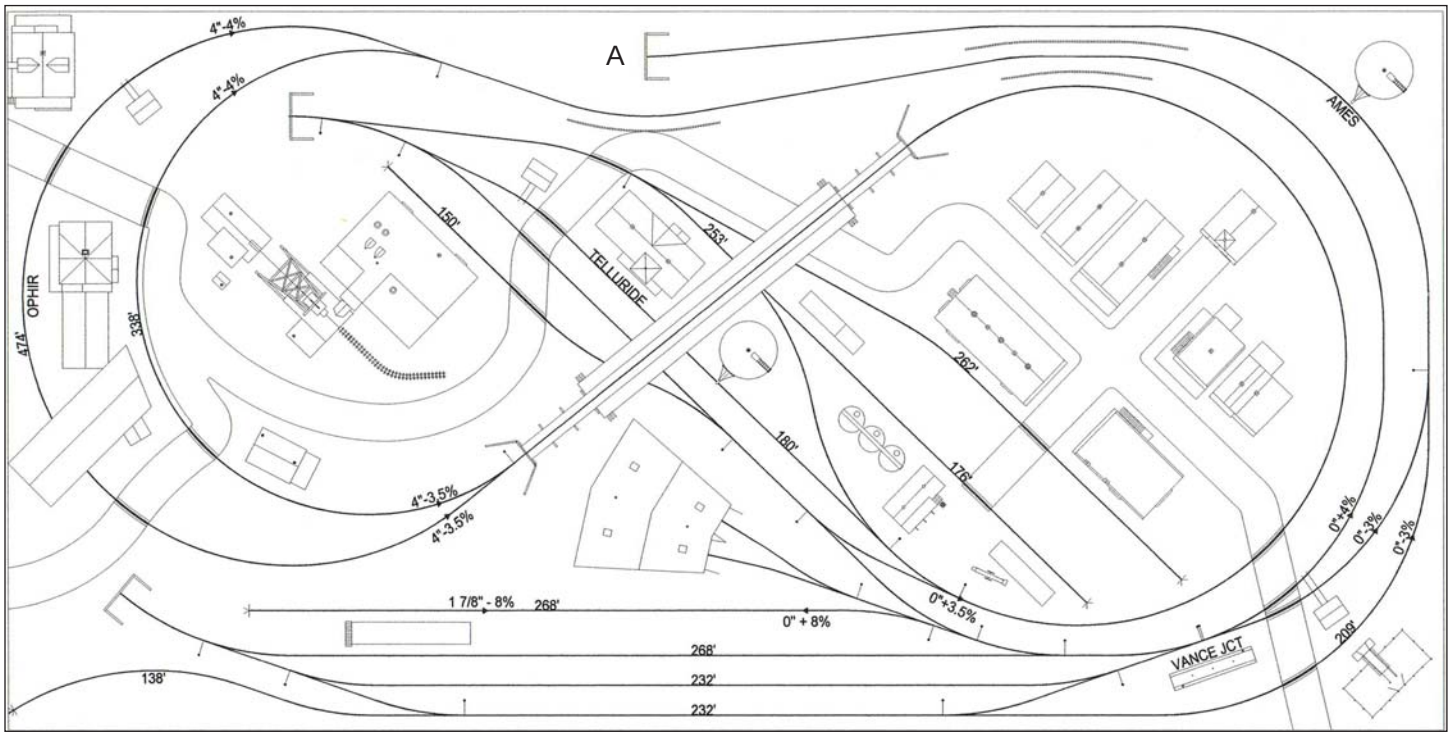
With the exception of the house track at Telluride there are no back to back reverse curves; they all have at least 6" of tangent between them. I limit trains to eleven cars in length. For the RGS or any branchline or short line that's

a fairly decent train. Now one of my standards is that if I can pull eleven cars I should also be able shove eleven cars around the entire layout in any direction – and I can.

Room to run

A train starting at Ridgway staging comes out of the tunnel, through Vance Jct. and Telluride and then enters Vance via the tunnel below Ophir. From Vance, to add distance to the run, we head up the Telluride Branch, through Ophir, Telluride and Vance before dropping down into the tunnel to Rico (staging again).

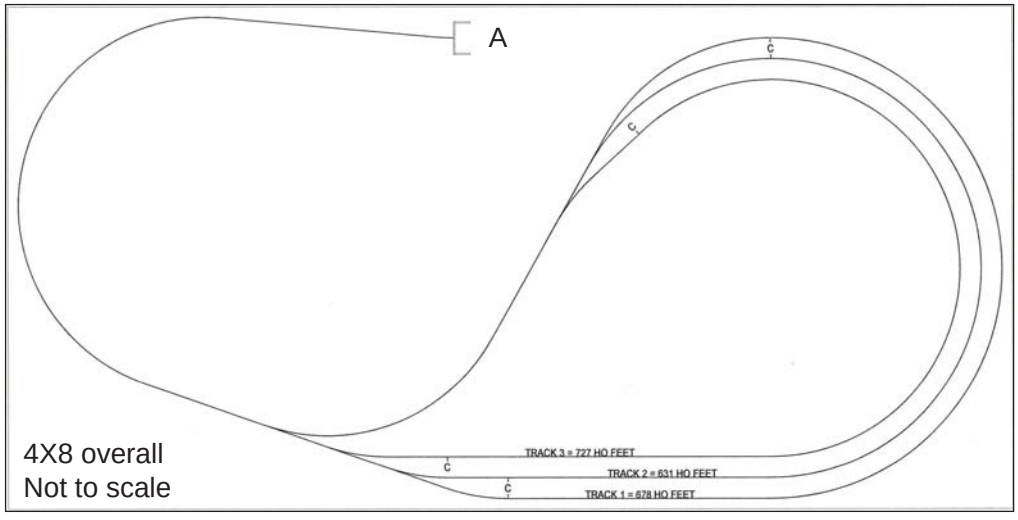
This gives a 115 foot main line run and a 26.5 foot branch line run. But an old model railroad trick makes those distances seem longer.



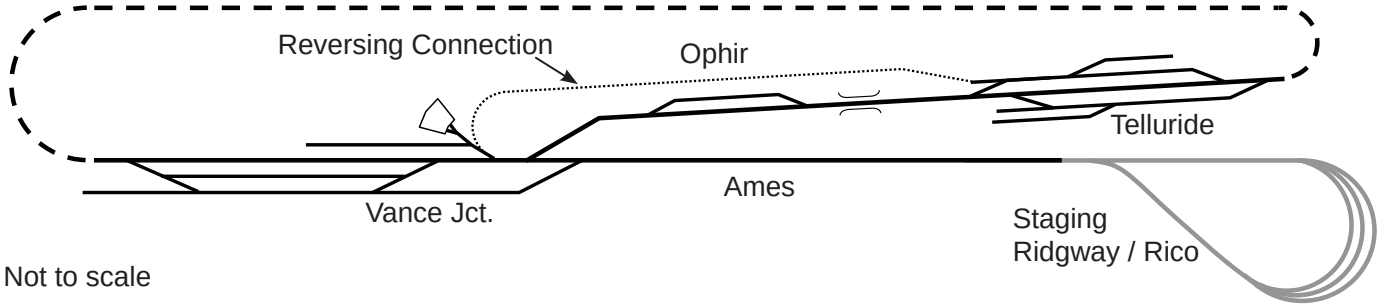
HOn3, 4'X8' overall
18" Min. Radius Mainline
Turnouts curved through frogs

Three loop staging tracks (right) are below the visible deck

Schematic (below) reveals out-and-back arrangement via branch line, with loop staging acting as both ends of the mainline.



4X8 overall
Not to scale



Not to scale

Passenger Ops Design Challenge

Bayside Commute – in a Garage Bay

N scale puts commuter, long-distance passenger and freight within reach

Story and trackplan by Dennis Drury

When I read the details of the Passenger Design Challenge (page 11), I knew I would have to submit an entry. Passenger trains, including commute operations, were to be the focus of the layout. Since I had spent several years working as a signal maintainer for Southern Pacific on the peninsula commute corridor, I knew the design I would submit. So sit back, grab a cold beverage of your choice, and follow along with me as I describe my entry.

Making design choices

Before we begin our tour, a few "Givens" are in order. This is to be an N-Scale railroad as N allows one to pack in a large amount of running into a given space. Since the focus of this layout is high-speed passenger operations, a long run is desirable and N gives us that as well. The time frame of this design is the '50s with steam power ruling, but a diesel or two may show up on occasion.

Minimum visible mainline curve radius will be a generous 18" in order to support operations of long passenger cars, although non-mainline and hidden trackage will be allowed a 15" minimum. Ruling grade is not to exceed 0.75% and vertical separation between tracks will be at least 6 inches. Aisle width may choke down on occasion to 24 inches but there are several wide areas where operators may pass each other in comfort. Track is PECO Code 55, with large radius turnouts throughout.

Names changed to protect the … innocent?

Since this is not an exact representation of the SP's actual peninsula line, I'll be making small changes in place and train nomenclature in this discussion. Let's begin our tour with the right hand side of the track plan (page 10). This is the Saint Francis passenger station of the Octopus Pacific Railroad. Saint Francis is the headquarters city of the OP and to say that an ornate station building is expected would be a huge understatement.

Unique peninsula commute power, GP40P-2 #3199 was one of only three ordered specifically for this service. Here it waits in San Francisco to hustle train #140 timetable East (compass South) in June of 1981. The single-level "suburban" commute cars remained in service long after the first bilevel cars arrived in 1955. Mark Llanuza photo.

Unfortunately, there's no room for a large passenger station here, as that would fall into the area that needs to be kept clear for a family car. But if the layout owner can't live without the station building, perhaps it could be constructed on roll-around bench work that can be rolled into position during operating sessions and then moved back out of the way when the large, four-wheeled dragon must occupy the space.

The station tracks are laid out in a paired arrangement with a wide platform between every two tracks. The outer tracks, being shorter in length, are for the commute trains that haul workers into the city each morning and back home in the evening. The longer tracks in the center of the station are reserved for the long-distance trains that run between Saint Francis and San Angelo (represented by staging) to the south. We'll talk about each of these trains in a bit, but first let's continue our tour. The final two tracks on the far right-hand side are the commissary and post office tracks, perhaps enhanced by flats on the wall. These tracks are

used to service and load the diners and mail cars for the long-distance trains. Alex is looking over the depot area.

Stepping into the layout area itself, we come upon the Cathedral Bay roundhouse and locomotive servicing area. This roundhouse only services the long-distance and local freight locomotives, as the commute power is taken care of in Saint Joseph where the commute trains spend the night.

Also in this area is the Fifth Street tower, located across the tracks from the engine service area. Brandon is checking out the double-slip switches that allow a train to move from any track to any other track. Fifth Street controls all the terminal trackage from the station down to the crossover at the east end of Bayside yard where Dillon is standing.

Dual-use yard at Bayside

Bayside yard is on both sides of the double main line. Towards the aisle is the freight yard and on the far side of the main line is the coach yard. To Dillon's left is the caboose track and off to his right is the balloon track used to turn mainline train consists and the commute power – more on that in a moment. The Bayside freight yard switching lead extends in front of Dillon along the benchwork edge.

Continuing around the layout, Eric is standing where the 0.75% down grade starts while Frank is checking out the 300+ inch radius cosmetic curve used to create a wide spot where operators can pass each other.

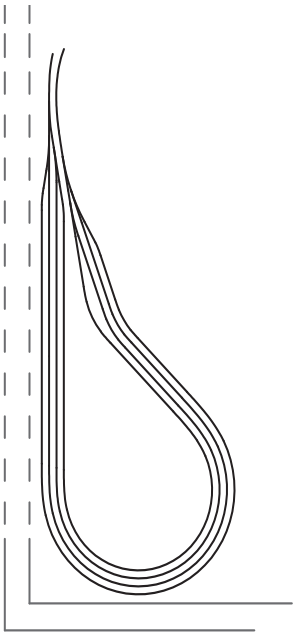
The areas next to where Frank, George, Harry, Izzy and Jack are located are prime sites for commuter stations, industrial trackage, or both. A number of crossovers between the mainlines would likely be added along with station, siding, and industrial trackage.

Jack is standing at the location where the line enters into a four-track staging yard, which saves space by sharing a footprint with the balloon track at Bayside. We'll talk about staging in a moment when we discuss operations.

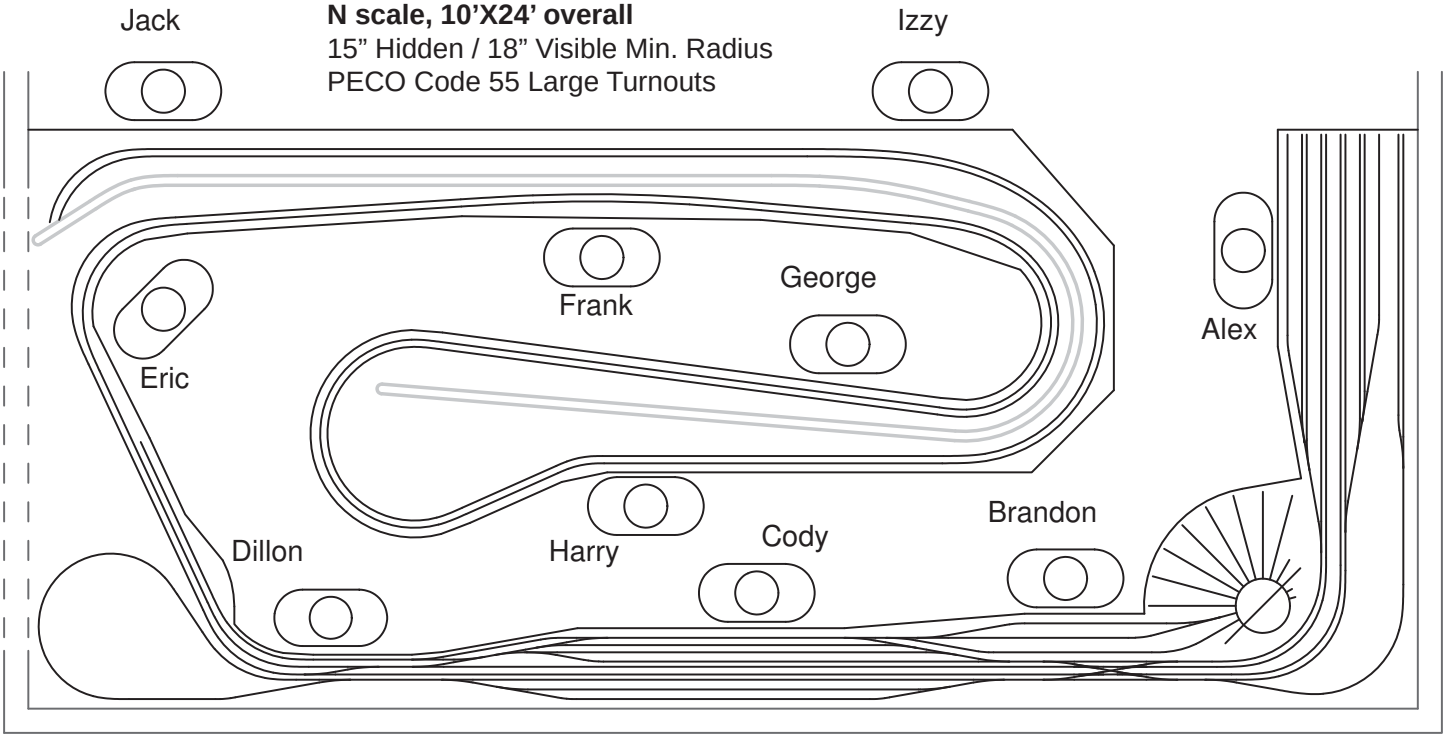
Trains, schedules, and operations

At this point it may be a good idea to look at the schedule of trains that run on the layout. Trains 1 and 2 are the flagships of the line, the Sunlights. The southbound Sunlight to San Angelo leaves Saint Francis every day at 7:50am on the dot. Its northbound counterpart is scheduled to arrive in Saint Francis at 8:00pm.

There is also a pair of overnight Pullman trains between Saint Francis and San Angelo, the Nighthawks, trains 12 and 13. Southbound train 12 leaves Saint Francis at 7:50pm while



Loop staging tracks (left) are below the Bayside balloon track in the lower left corner of the track plan. The open garage door would provide helpful access for construction and maintenance as required.



Passenger Ops Design Challenge

The Reading Lines in Philadelphia

Junctions and yards concentrate more ops in the space

Story and trackplan by Robert Reid

The Reading operations in northeast Philadelphia were a wonderful combination of busy commuter locals and named trains to eastern Pennsylvania, all running along with extensive freight service to the industrialized riverfront area surrounding Port Richmond.

This design combines all three and features the eight track train shed at Reading Terminal, the coal pier and car ferry at Port Richmond, the many commuter line end points where the daily locals originated, and even a suggestion of the steel mill at Bethlehem.

The featured yard area is at Wayne Junction, where the "tree" of commuter lines came together on their way to Reading Terminal and crossed the freight lines coming in from Reading and Harrisburg. This is also where the Port Richmond branch left for the Delaware River.

Commuters: short – and *frequent*

The layout "room" is unusual in that it occupies one bay of a multi-car garage. One side of the layout is open to the adjacent bay and may therefore be used as an aisle, which expands the operational potential significantly. This layout is envisioned to be operated by a fairly large crew, as each commuter line is expected to generate three to four morning and afternoon trains.

Trains originate from Lansdale, Doylestown and New Hope on the upper level and Olney and West Trenton on the middle level. Train lengths are kept in the one- to three-car range to maximize the number of trains that can be accommodated at each end of their run.

Lots of layover space is provided at Reading Terminal so that the coaches will be readily available for the "evening rush". In addition, this terminal will have to handle the intercity named trains like the "Crusader" to New York, the "Harrisburg Special" through Reading to Harrisburg and the "North Penn" to Bethlehem that originate in staging only to reemerge from here each day. Diners will have to be stocked from the commissary and the mail cars loaded at the post office so track space will be tight and some overflow into the yard at Wayne Junction likely will occur.

Handling the traffic

Wayne Junction will be a busy place. With coal drags headed for the pier at Port Richmond passing through, and general merchandise trains to be broken down into locals, crews will need to be on their toes to keep from interfering with the mainline passenger traffic.

This kind of traffic density certainly requires a fully functioning signal system and the double track main will be given a good workout if it is to handle all the traffic envisioned. The sea of double-slip switches at Reading Terminal is essential to keeping the platforms clear for incoming trains and also is quite prototypical of the elevated trackwork in the downtown area.

Of course, everything could not be included in this limited space – so some tough choices had to be made. The Chestnut Hill and the Norristown lines were omitted as well as many of the intervening stations and the intercity points are represented by staging but there is more than enough action packed into this layout to fill many evenings of fun.

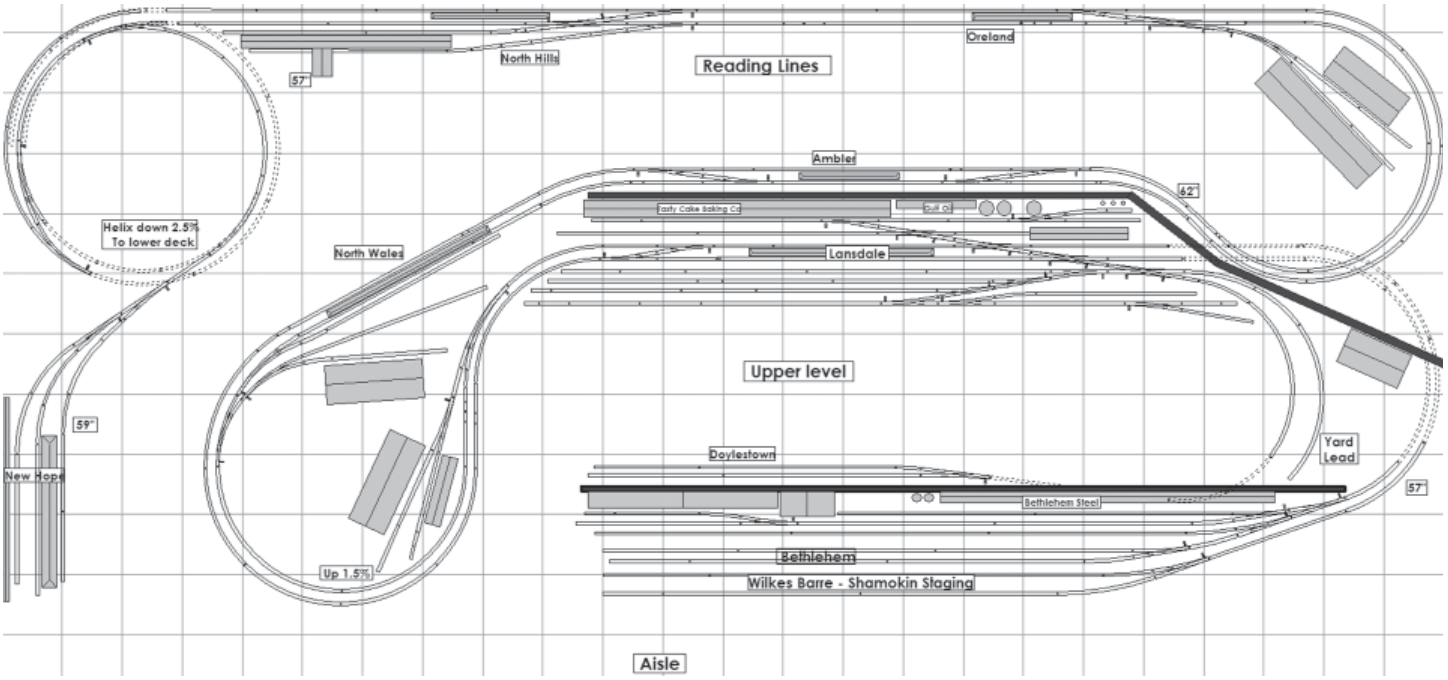
" ... Wayne Junction, where the 'tree' of commuter lines came together on their way to Reading Terminal and crossed the freight lines ..."

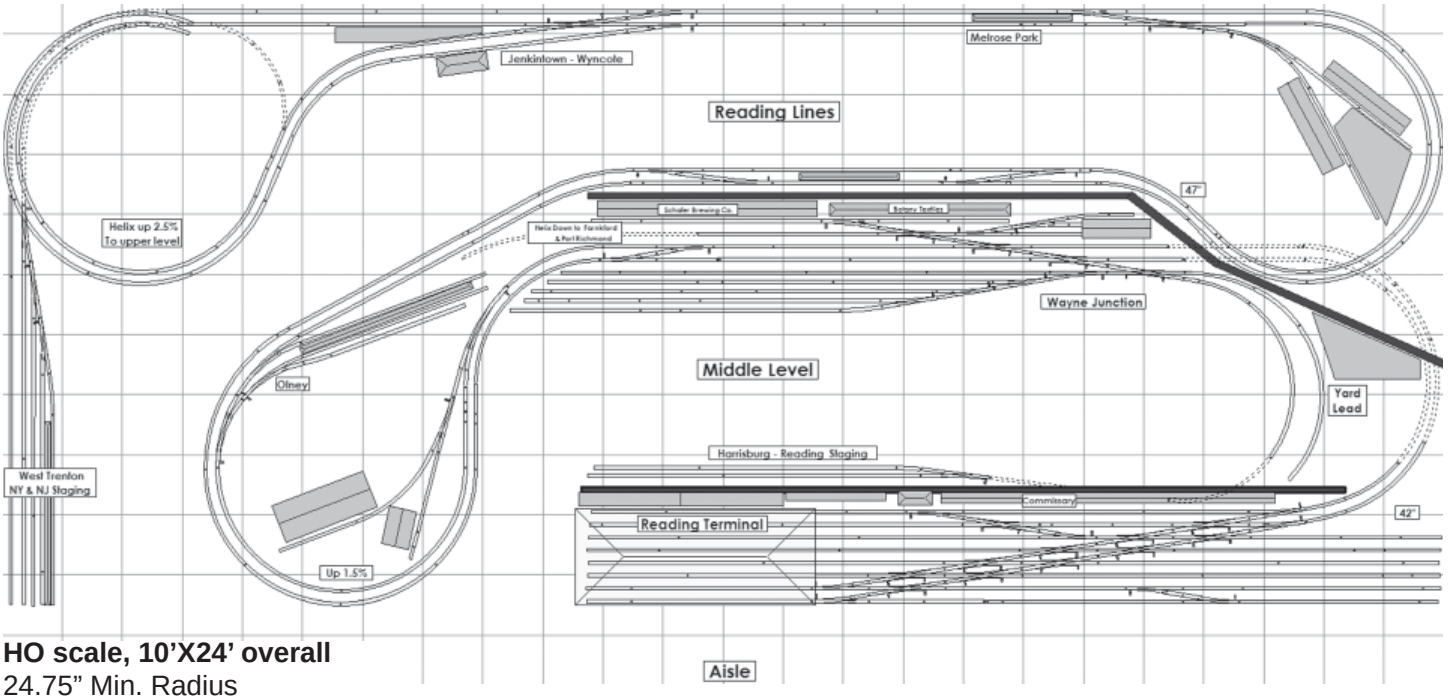
And don't forget the freight

Freight operations include at least one coal train from Bethlehem and one general merchandise train each from staging in New York, Bethlehem, and Reading. Locals will operate out of Lansdale and Wayne Junction and substantial on-line traffic will originate from the piers and from the steel mill in Bethlehem. The branch to the Port area also serves a Sears regional facility. As late as the origination of Conrail this branch had traffic levels that exceeded 6600 carloads per year, so it was a very important source of revenue for the railroad.

Track plan details

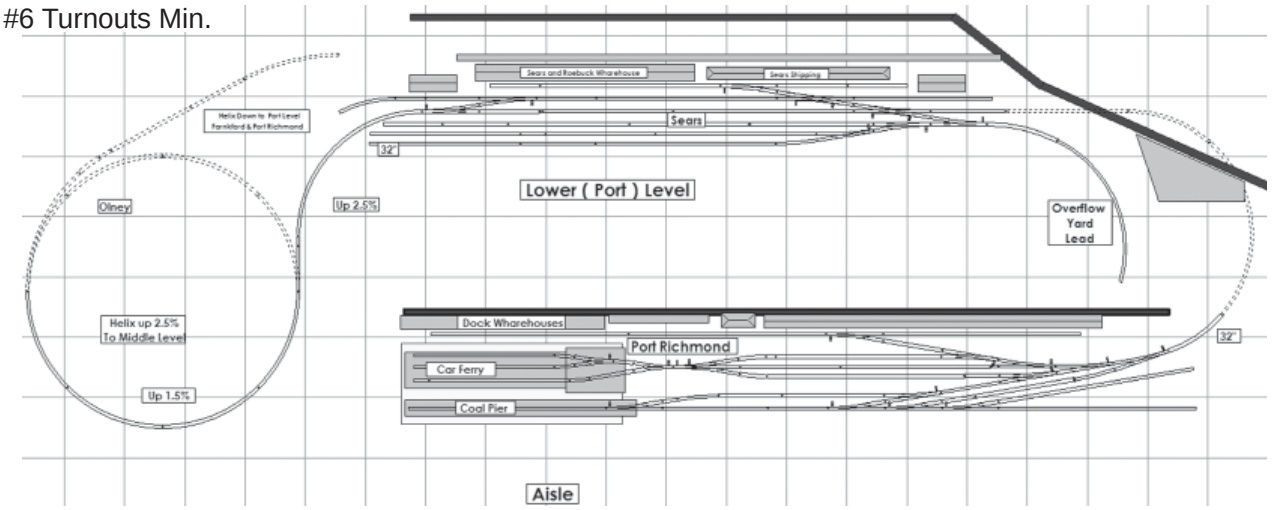
The layout is HO scale and has three levels connected by two separate helixes – each with a 2.5% grade. Main line radius is 24.75" on the inside of the curves and 27" on the outer tracks. Turnouts are typically #6 with #8s





HO scale, 10’X24’ overall
24.75” Min. Radius
Walthers C83 #6 Turnouts Min.

1 foot grid



Modeling a Mile

Short prototype segments can make for great layouts

by Eric Hansmann

Do we often bite off more than we can chew? Is our vision skewed bigger than our realities? In the case of many model railroad concepts, probably so.

Many of us have become accustomed to filling our largest available space with an intricately planned rail transportation system. I know I have. Rather, I *planned* one or two. We all dream big.

I once wanted to fill a basement with an eastern narrow gauge coal hauler. I did not get very far, as the project became more than I expected: more rolling stock, more locos, more rail and ties, more benchwork and much more time.

Smaller scope – more achievable?

I've known a few people who started their big layout plans five, ten, or fifteen years ago, with very little progress to show. And when a large layout is built, can the owner find enough people interested in regular operations? I've heard the mantra that "If you build it, they will come." But on occasion, they do not – and a large railroad sits.

Maybe we should consider smaller projects for our layout efforts, especially if this is the first or second "real" layout. For your contemplation, consider modeling a mile (or two) of a prototype, rather than a subdivision. Reducing the scope of the project makes it more manageable, which can translate to more fun, more fidelity and less hassle.

What is a mile?

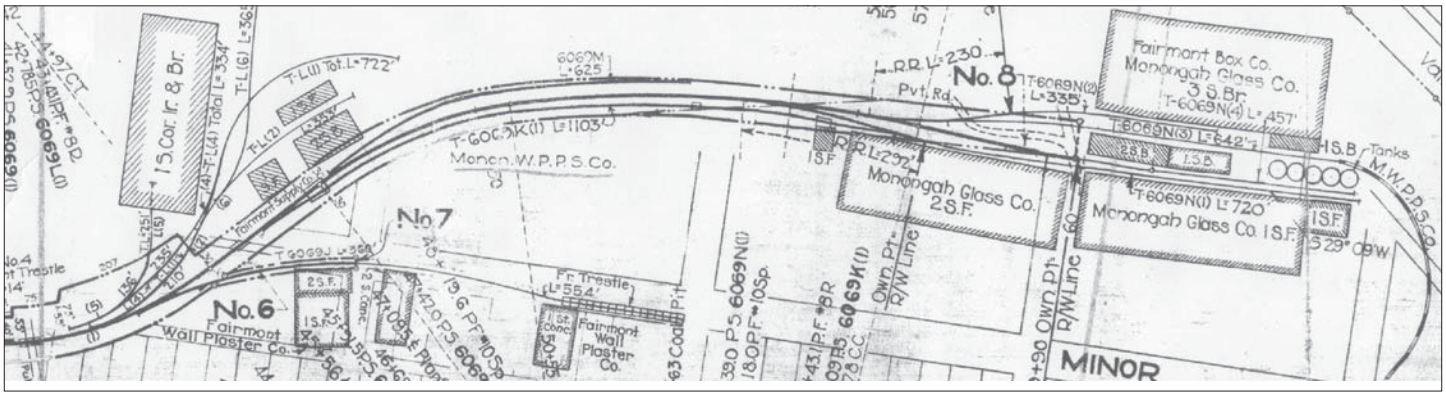
Technically, of course, a mile is 5280 feet. If we scale down exactly, this is 110 feet of railroad if modeling in O scale, almost 61 feet in HO scale, or 33 feet in N scale. As we often compress elements over many miles of real railroad to fit our spaces, modeling a mile instead can fit more reasonably in far less space.

The prototype segment is the inspiration, a veritable working drawing for the modeling efforts. If you live near an active or abandoned rail line, your mile may be close to home. Researching industries and right-of-way details on a local prototype can accelerate the build process. People in your community could be fountains of knowledge on this mile.

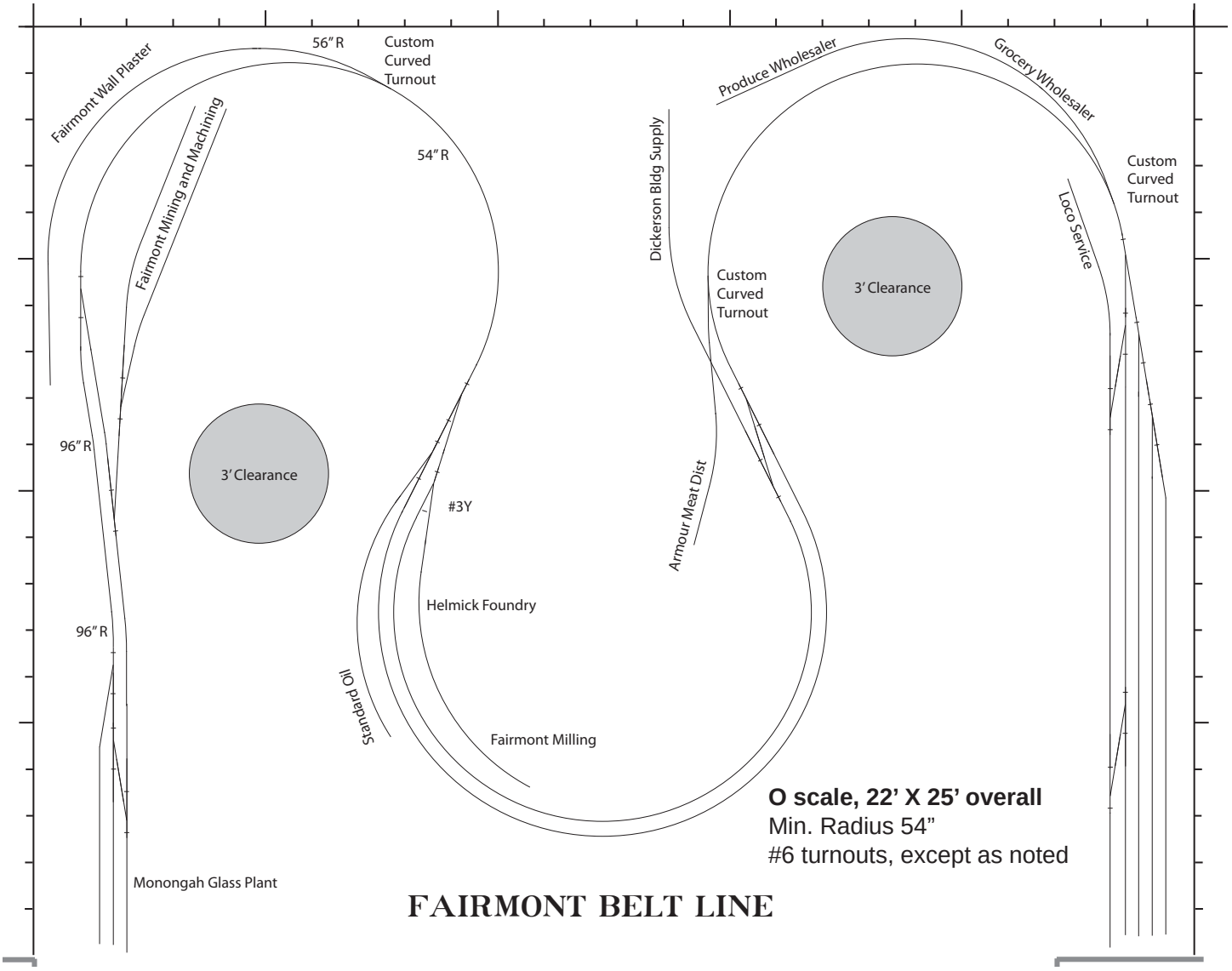
Other sources include railroad customer shipping guides, track charts, valuation maps, fire insurance maps and tax maps. Some of these resources may be found through your city or county government offices, local library, or local college or university.

Larger city maps often noted all the rail lines that crossed into the municipality. Some maps may identify interchange locations and larger industries. Just because we are limiting the consideration to a mile doesn't mean it can't be a busy stretch of rail.

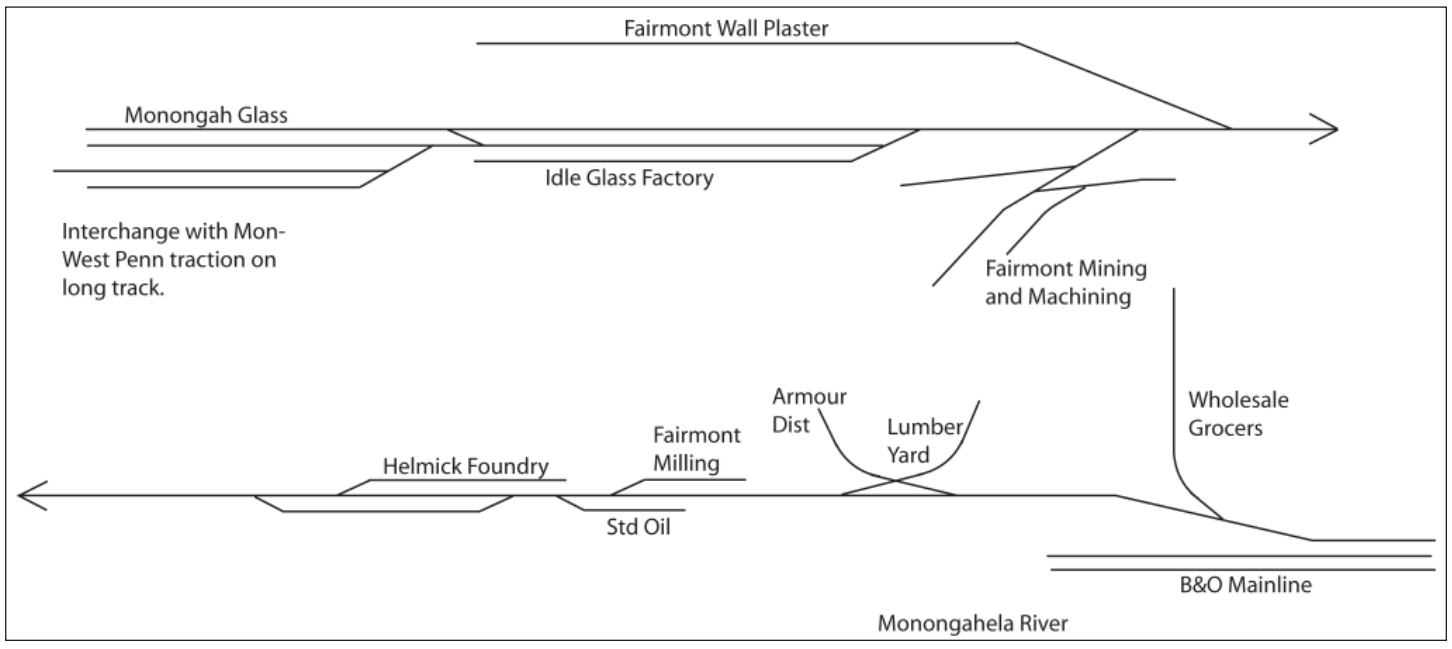
Your "mile" may have been converted to a rail trail, enabling a great opportunity to collect details. It is amazing what you can observe



This Valuation map of the Baltimore & Ohio Fairmont (W. Va.) Belt Line (first drawn in 1918) illustrates the potential richness of even a short segment of industrial branch line. Several large multi-spot industries are visible (in less than a mile of line) that would provide plenty of work for model operators. Detail view of Val map from the National Archives.



FAIRMONT BELT LINE



Planning for Signals, Part 1

An introduction to concepts and choices

by Seth Neumann, President, LDSIG; building on material by Dr. Gerry Albers

Why would you want to add signals to your layout? That's a question you might ask when seeing a title like "Planning for Signals." After all, model signals are expensive and a large signal implementation is time consuming and requires some electronic knowledge.

Signals are appealing for many reasons. Signals help communicate the story your layout is telling: because signals are very specific to each railroad, division and time period, by signaling your railroad you set it in a specific time and place. This is true whether you are a strict prototype modeler or a freelancer.

Nearly all railroads had signals

Almost all lines in the west with more than six trains a day (especially if there was any passenger service) had some kind of signaling by the transition era. Things may have been different in your region or era, but even then there would have been interlocking plants at the junctions of major lines, entrances to yards, drawbridges etc. – so your prototype, real or imagined, had signals somewhere unless it was a very sleepy branch or short line.

For the prototype modelers among us, many of the classic photos of iconic locations featured signals and getting them right will instantly draw the informed viewer into your world. For the operators among us, signals provide a means to communicate authority to occupy track or to indicate the need to pick up orders. Signals are a great form of animation that brings any layout to life and my bottom line is that they're really cool!

"Golden Age" of signal modeling

We're living in the golden age of signal modeling. We've never had a wider choice of prototypically accurate signals or as many inexpensive tools to drive them. Computer interface costs have fallen to the range of $1-$3 a line, detectors to $10-$20 a block and other key components have become similarly affordable. Where only a few years ago we had limited knowledge of prototype signaling practices, today we have documentation provided, in some cases, by industry-leading experts[1], which is also used by the prototype railroads for training.

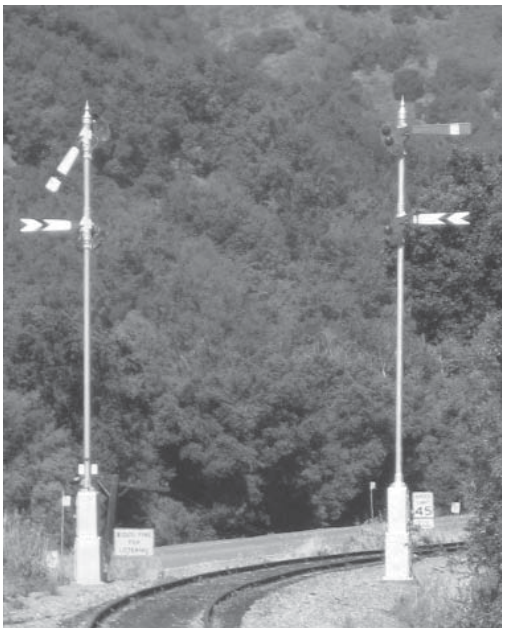
A wide variety of hardware and software building blocks are readily available to control our signaling systems and are supported by growing communities of shareware developers. Even a few years ago Semaphore controls were finicky and beyond the skills of many modelers. Today we have multiple manufacturers making servo-based controllers which operate any of the commercial semaphores. To summarize, there is no excuse for not building that interlocking plant or signaling that line: information is abundant today on what to do, how to do it and where to get reasonably-priced model signal components.

SIG-sponsored Convention Panels

The LDSIG has held panel discussions at the last two NMRA conventions on "Planning for Signals." This article is a compilation of best practices identified in those panels. At the 2011 NMRA convention in Sacramento we will have a two-day signals track which will run Thursday and Friday of the convention (page 40).

Ball signals were the earliest form in U.S. railroading (ca. 1832), and continued in a few locations into the 21st century. This O scale model (above) is by Model Rail Scenes, www.modelrailscenes.com Photo by Brian Inch.

Lower Quadrant semaphores on the Niles Canyon Railway (below). New models and controllers make it easier than ever to add signals like this to your model railroad. Seth Neumann photo.

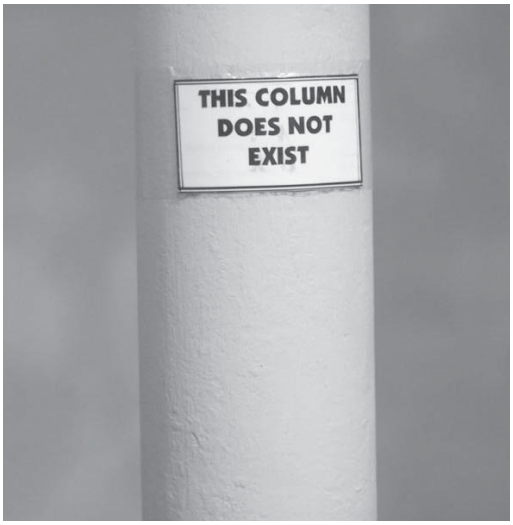


[1]*Prototype signal professional Mike Burgett reports that he will use parts of Bruce Chubb's new model signaling applications manual in CN signal-maintainer training.*

“This Column does not Exist”

Support column treatments from Hartford 2009

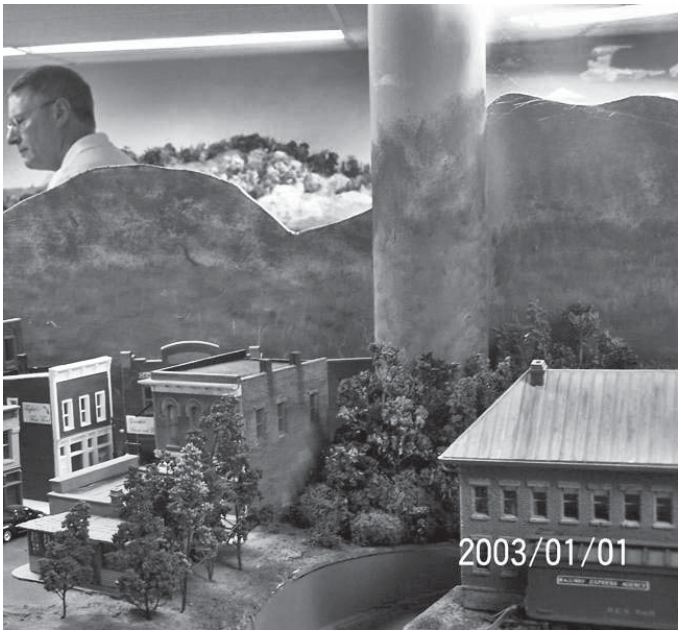
Photos and captions by K. Travers Stavac, LDSIG Treasurer



For basement layout designers and builders, support columns are a fact of life. A number of interesting ways of dealing with these pesky obstructions were on display at the Hartford Convention.

Earl Smallshaw made a clear impression on his visitors with his humorous sign (top left). However, this column actually *was* scenicked at layout level as a storage tank with spiral access ladder (middle left).

On John Grosner’s detailed New Haven layout, a column is hidden by a multistory structure built around it.



Bill Duffe took a contrasting approach on his Boston & Maine layout set in upstate NY and eastern MA. He camouflaged a column to blend it into the scenery, including a transition at the top of the nearby divider. He also placed a road in a cut dropping away from the table height near the layout deck, with trees at the top of the retaining wall.