The Pennsylvania Middle Division

Joe Fugate visits Neal Schorr's O scale layout ...

1. A couple of Pennsy L1 MIkados slowly pull this heavy coal train across Sherman's Creek near View tower, which represents the 1930s era. The smoke in this photo is real – Neal has locos with smoke generators on them and he put smoke fluid in them for this shot.

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NEAL SCHORR HAS AN O SCALE THREE-RAIL LAYOUT IN the greater Pittsburgh area that will be open for tours during September 2024 as part of the 2024 National Narrow-Gauge Convention. To learn more about this convention / to register, please visit this website: 44nngc.com.

I visited Neal and toured the layout, taking photos and video. Don't let the three-rail aspect of this layout fool you, this layout is every bit as realistic as the best two-rail layout we've seen. And the heft of O scale makes it an even better treat!

MRH: **Neal, how did you first get started in the hobby?**

Neal Schorr

Neal Schorr: I've been involved in this hobby actively since I was 16 years old. I got a Lionel Train set as a young child of four years old back in 1960. I got into other hobbies as I grew up, but around 1973 I discovered that Lionel had gone back into business after they had shut down. I found a hobby shop here in Pittsburgh, and they had a nice O scale three-rail train set that was prototypically accurate.

I got really excited and purchased it – that's what launched me back into the hobby. I had been with O scale three rail trains for many years, but as time went on, I started to see their shortcomings – they were too toy-like. So I switched to HO Trains around 1987, had an HO layout for about 10 years.

During that time period, Lionel started making far more realistic trains, as did their competitors such as Mike's Train House (MTH). There were others, like K-Line and Atlas.

2. A steam-powered freight in the foreground leaves Enola heading west. In the distance, the L1 double-headed coal train in [1] approaches Enola.

3. The freight train in [2] rolls through Duncannon. Neal modeled the town to be circa 1944 and the end of the World War II era.

When I built my current home and moved into it in 1997, I decided to switch back to the three-rail trains, because they were now much more realistic.

MRH: **How did your hobby interests progress from there?**

Neal: I've always been interested in highways and civil engineering. My old HO layout represented the South Pennsylvania Railroad, which was started in the 1880s but never finished – and eventually purchased by the Commonwealth of Pennsylvania.

They built the Pennsylvania turnpike on the roadbed, and I thought that's what I would do when I built my new house. Then in 1975, I was looking at a Pennsylvania road map and I

4. (Left) East Altoona represents the 1950s, with lots of late era steam locos visible.

5. (Top) An early diesel era PA set with the iconic Pennsy long roof antenna blasts through Port Royal with a hot passenger train in tow.

VIEW READER COMMENTS

saw a new expressway being built in the middle of Pennsylvania – US Route 22 and 322. So I drove out there to take a look.

It wasn't the road that got me, it was the scenery. It was the most beautiful place I had ever seen on the face of the earth. I continued to go out there year after year, so I decided to model that area. The Pennsylvania Railroad ran through this area on its journey between Harrisburg and Pittsburgh. When I designed and build my new house, I decided to go back to O Scale trains and to model the middle division of the Pennsylvania Railroad across central Pennsylvania.

***MRH:* How do non-modelers react when they see your layout?**

Neal: I have friends and family who know of my model railroad and tell me they'd like to see it. I often don't tell them much about it, because I like to see the look of surprise in their face. I think they're expecting a four by eight sheet of plywood having a circle of track with a train running merry-go-round style and featuring something like Bozo the clown.

Instead, they see a museum-quality model of central Pennsylvania, and they are shocked! I like watching their reaction and seeing the look on their face when they step in here.

***MRH:* How did you arrive at this particular layout setting?**

Neal: I based my era on my decision to model this area from my initial trip out to central Pennsylvania in 1975 – I had just finished my freshman year of college.

I had no idea what was out there – but I found out – lots of rural scenery. As a kid, I always liked farmland, barns, and scenery outside the city. I didn't want to model a lot of big industries and factories.

6. A transition-era RS-11 lashup rumbles across the Juniata River on its way toward Port Royal.

I wanted to capture that beautiful rural scenery that defined the Pennsylvania Railroad in western Pennsylvania. Although, by the time I got out there in the mid-seventies, it was near the end of the Penn Central and soon to be Conrail.

But that's why I model this area and this railroad.

***MRH:* So what era are you modeling?**

Neal: I started designing my house around 1990, and I didn't start building it until 1996, so I had a long time to think about the design of my railroad. I was active in the National Model Railroad Association, and I really wasn't interested in operation, I was interested in scenery.

I couldn't decide on one era, so I decided to take a novel approach. I aged the layout as went from east to west, so I start out back to the steam era around 1930 or so. I made the eastern-most town Enola represent the 1930s.

The next town, which is Duncannon, models the World War II years. It's 1944 and you can see that by the crowds on the passenger platforms. As you have shot the layout here today, we started the same way – we started

7. (Left) The Works area has a diesel enginehouse with 1960s era diesels on view.

8. (Top) Here's another view of the Works diesel enginehouse.

with steam engines at Enola [2], and shot another steam engine at Duncannon [3].

Moving further west, I represent the railroad where it hangs onto the banks of the Juniata River – with a mountain on one side and the river on the other. And as we proceed further west, we get to the town of Port Royal and one of my favorite scenes in the layout [5, 6]. Port Royal represents the end of the steam era. The old Pennsylvania railroad still had four tracks at that time.

They're about ready to rip out track number three, but there you see early diesel units mixed with later era diesel freights. Then we move further to the west to Mifflin, Pennsylvania [3]. It's late Pennsy, moving into Penn Central. That's the first time we vary from Pennsylvania Railroad engines to something else – in this case Pennsy mixed with Penn Central.

Then we reach Longfellow [23]. Longfellow to me is classic central Pennsylvania. People view this scene [16] and they say, "that looks just like the mountains of Pennsylvania" and I love it. Further west, we have the rural grade crossing at Anderson Road

9. A lashup of three RS11s pulls a mixed freight through Mifflin, PA.

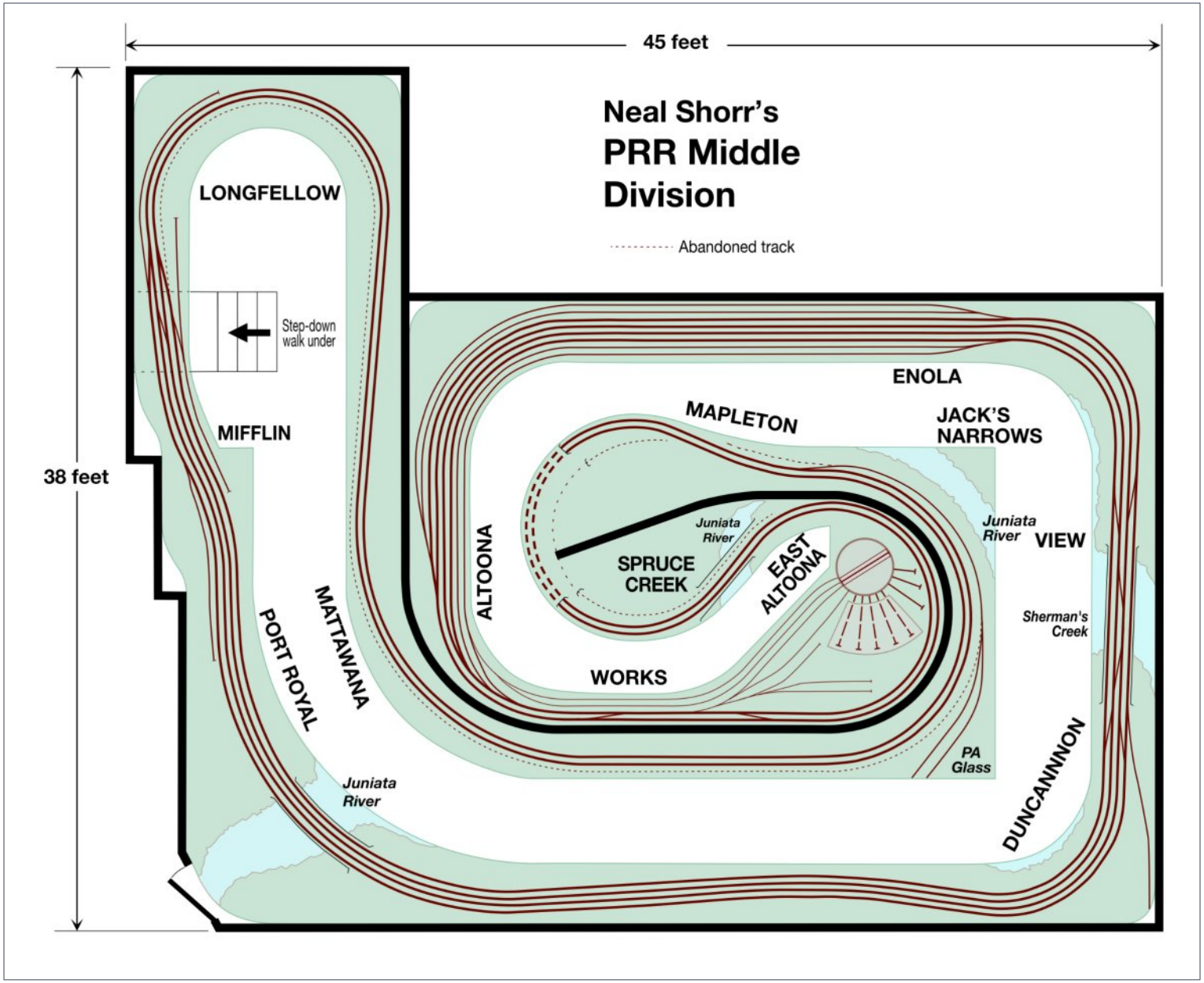
10. Neal designed this house himself and deliberately added basement features to accommodate his layout.

[17], which is about five miles west of Lewistown, PA. There you shot more Penn Central equipment.

Next, we get to one of my favorite scenes, which is Mattawana, with working crossing gates [18]. There we're into the early Conrail era – and we reach my time. I went out there many times with my kids while doing research.

Moving further west we reach an area of woodlands, and that's now pure Conrail. On the track plan [7], there's just two tracks left. You can see the right of way where tracks three and four were previously, but one was taken out by the Pennsy and then Conrail removed a second track.

Next, we come around past Jack's Narrows, which is a gap in the mountains and a real favorite of mine. Then comes the town of Mapleton [13], the one scene on the layout that's not done.



11. Track plan of Neal Shorr's Pennsylvania Railroad Middle Division.

Finally comes Spruce Creek, Pennsylvania, which is contemporary, like 2010. It involves Norfolk Southern [25], which my son who loves trains wanted included on the layout.

I've modeled Altoona on the layout too, as well as an engine servicing area at Works [4, 7, 8] but that drops back again into the 1950s to early 1960s.

***MRH:* How did you develop the track plan?**

Neal: I developed my track plan along with my house. I knew the type of house I wanted, and although I live in Pittsburgh, my house looks more like what you might see in eastern Pennsylvania [10]. I wanted the house to have a long floor plan and a big basement.

Ever since I was a kid, it was always my goal to design and build my own house. So I had the privilege of not only designing my house but to design the layout going into the basement at the same time.

I was able to design in features that enhanced the layout. The biggest thing I did

was run a steel girder the length of the house. While it did need support columns, the contractor told me I could space the support posts up to 24 feet apart because I used an extra heavy girder.

I knew right where the backdrop would be on my layout design. I designed it so the two support posts would fit right into the backdrop.

As they began building the house, I noticed the footer for one of one of the posts was off four feet, which would put a support post *right in the middle of the aisleway.* I talked to the contractor, and he moved it.

I also put an extra course of blocks in the basement so I wouldn't have a real low ceiling in here. Since I didn't want to duck under, designed a stair pit which drops you down about four steps some 36 inches below the floor level. You walk underneath the layout without having to bend over, and then you just come back up those four steps and pop into the middle of the layout [12]. It just saves so much aggravation.

An additional feature I put into the house was a specialized HVAC. The contractor who worked on the house had done a railroad museum here in Pittsburgh, and he told me the correct way to do it was to have the fresh air vent for the heated and the cooled air be at the far end of the basement, and have the return air vent on the near end of the basement closest to the furnace.

That way all the air would be coming across the room and would go into the return and back to the furnace. It's worked extremely well. I can heat or cool this room to an ideal temperature within five minutes.

I knew from studying track plans and reading about model railroad planning, the most efficient way is to build an around-the-wall layout and to have a center peninsula. In this way, all of your aisleways do double duty. They have layout on both sides, so you're getting maximum efficiency and you're getting the most layout per square foot.

12. Since Neal designed this house and basement, he had the contractor build this step-down walk-under specifically with the layout in mind.

13. The town of Mapleton is currently the only unfinished part of the layout left. Note the way Neal runs all the wiring along the front of the layout for easy access. Saves from having to crawl under the benchwork to run feeders to the track.

I believe the main line is 360 feet long. I don't have a large number of turnouts because I wanted to keep it simple. My guess is there's maybe 25 or 30 turnouts, which is plenty. My minimum radius is 60 inches.

I had two curves where I had to drop down to 54 inches. One's buried in a tunnel. The other is behind the roundhouse, so you don't really see them. I've tried to put in large radius curves where I could.

My largest curve is 156 inches, which is huge in either two or three rail, and the trains just look wonderful going around that. I have another one of 120 inch radius, another broad curve. I do have a few reverse curves, but I've tried to stick to prototype railroad track geometry practices to avoid any toy-like look.

***MRH:* When did you start construction?**

Neal: The layout has been under construction for 26 and a half years. I moved into the house in February of 1997. I needed about six months to settle into the house. I started layout construction on September 13th, 1997. I made the first cut in the wood and I started the benchwork.

I had trains running within about three years.

***MRH:* How did construction go? Did it go like you expected, and did it progress as fast as you anticipated?**

Neal: The layout has progressed pretty much as I had anticipated. I built it in three phases.

Phase one was just a U near the entrance to get some trains up and running. For the second phase, I made the complete loop around the room. By 2004 I had the center peninsula up and running.

Once the whole main line was in, I finished all the wiring and started scenery construction a couple of years later. My initial guess was the scenery would take about 20 years to get done. Well, I've taken a little longer.

14. Each town on Neal's layout has a nice mini-panel for controlling the turnouts like this one at Altoona.

15. A Conrail freight rumbles around the curve at the rural PA Glass plant.

I've been working on it 26 and a half years and as of today it's 95% done. I did most of it myself. My friend Mark Vinsky did the engine servicing area and my son Steven did a lot of the scenery around Duncannon.

MRH: **Did you encounter any unexpected challenges with this layout?**

Neal: The greatest challenge in building this layout is managing all the junk I have to accumulate to build it. There's all kinds of junk under the layout.

Now that the layout is nearing completion, I swear when it's done I will get a dumpster and get rid of all of that junk. I want this layout room to look really nice.

While the construction process has been very pleasurable, my favorite part is backdrop painting.

I would say the ceiling and the original lighting, it was not good. I had a suspended ceiling has been aggravating. I just put the two by four light fixtures over where the aisles would be. I didn't think it looked good, so I eventually replaced it with panel lighting.

I did have a pinhole leak develop in a pipe in the ceiling, and I never really thought about access, so that was disconcerting. I worry that it may happen again, so that's probably been my biggest concern with the layout.

Oh, one more thing – I didn't have a clear understanding of perspective, so I painted a few structures in the town of Duncannon, and they didn't look right, so I painted them again properly. I do have a couple other areas where I would have dropped the distant farm land a little bit lower. Those are the main things.

In hindsight, I would have made the house a foot deeper and a few feet longer – my aisles are mostly a very wide four feet [19], but I have a couple pinch points in the

16. Neal loves this iconic rural Pennsylvania scene at Longfellow. He says people see this scene and immediately remark how it's so typical of western Pennsylvania.

center, and I wish I had given consideration to that. Making the house a bit larger would have eliminated those pinch points.

When I built this thing, I didn't have the fascia on it yet. The risers hold the subroadbed up about eight inches above the base benchwork, so I can wire it all from the front. I just sat in a store chair and wired it up.

Now if I have to fix it, I must crawl underneath. But without that fascia, it was a piece of cake to wire [13].

I drilled one and a half inch holes on all the risers, an upper hole and a lower hole. The upper one's all the track power, the lower one has signal controls and other stuff.

I sat there and threaded the wires through the risers. It was a piece of cake, for whatever that's worth.

***MRH:* Why three rail track? Isn't that extra center rail something of an eyesore?**

Neal: People often ask me why I went with three rail and that's actually a very easy question to answer. If they were still making three-rail trains like they did when I was in high school, I would never have done it. They look like toys. But today, they're scale models, but meant to operate on three-rail track.

The biggest single reason I went three rail is the signals. I love signals and I've been modeling signals since I was in high school. By having that extra rail, my signals operate just like the prototype. I ground the two outer rails and it activates a relay controlling the signals just like what the prototype does.

I don't have to deal with current sensing units, and I don't have to deal with resistance wheel sets. When I was an HO, doing signaling was a big pain in the neck.

In HO, I might have one short block with trains that were longer than a block. This extra long train had a lighted caboose and a powered engine. So the middle of train was on the short block – but the engine and the caboose weren't, so the train wasn't detected. Three rail makes it so much easier.

17. A Penn Central train blows the rural grade crossing at Anderson Road. The crossbucks are fully animated with lights and sound.

18. The crossing gates at Mattawana are fully animated with sound, lights, and motion. Neal has modeled this scene to represent the early Conrail era of the late 1970s.

The second reason for three rail is the Lionel command control system. I think now the two rail DCC ones have progressed and they're easy to use, but back in the day they weren't. In that day, the Lionel command control was a piece of cake. You can hook it up in 90 seconds, and the thing works flawlessly.

My last reason is something a scale modeler won't understand. It's just love the look of the trains on three rail track. Like so many people, I got a three rail Lionel train when I was a kid, and I really enjoyed them.

But the single biggest reason is those signals are super simple and they work flawlessly.

Most of my track is Atlas three rail flex track. There was a fellow at Atlas who loves three rail but he was also a scale guy, so Atlas came out with very realistic three rail track, which looked better than anything else that was available in the market.

When the new Atlas three rail track first came out, I got the first run, but turnouts weren't available. For my initial turnouts, I used Ross custom switches, which are similar to GarGraves track. The ties are a little too wide, but the turnout quality is perfect. They're reasonably prototypical looking.

I used number sixes and eights. Then over the next year or two, Atlas did come out with scale turnouts, and I started using those in their place. I used the Ross custom switches as they came out with wide radius curve turnouts. I used them in the throat to my main yard and was able to extend it, adding another 25 car capacity to it.

***MRH:* How did you determine your layout height?**

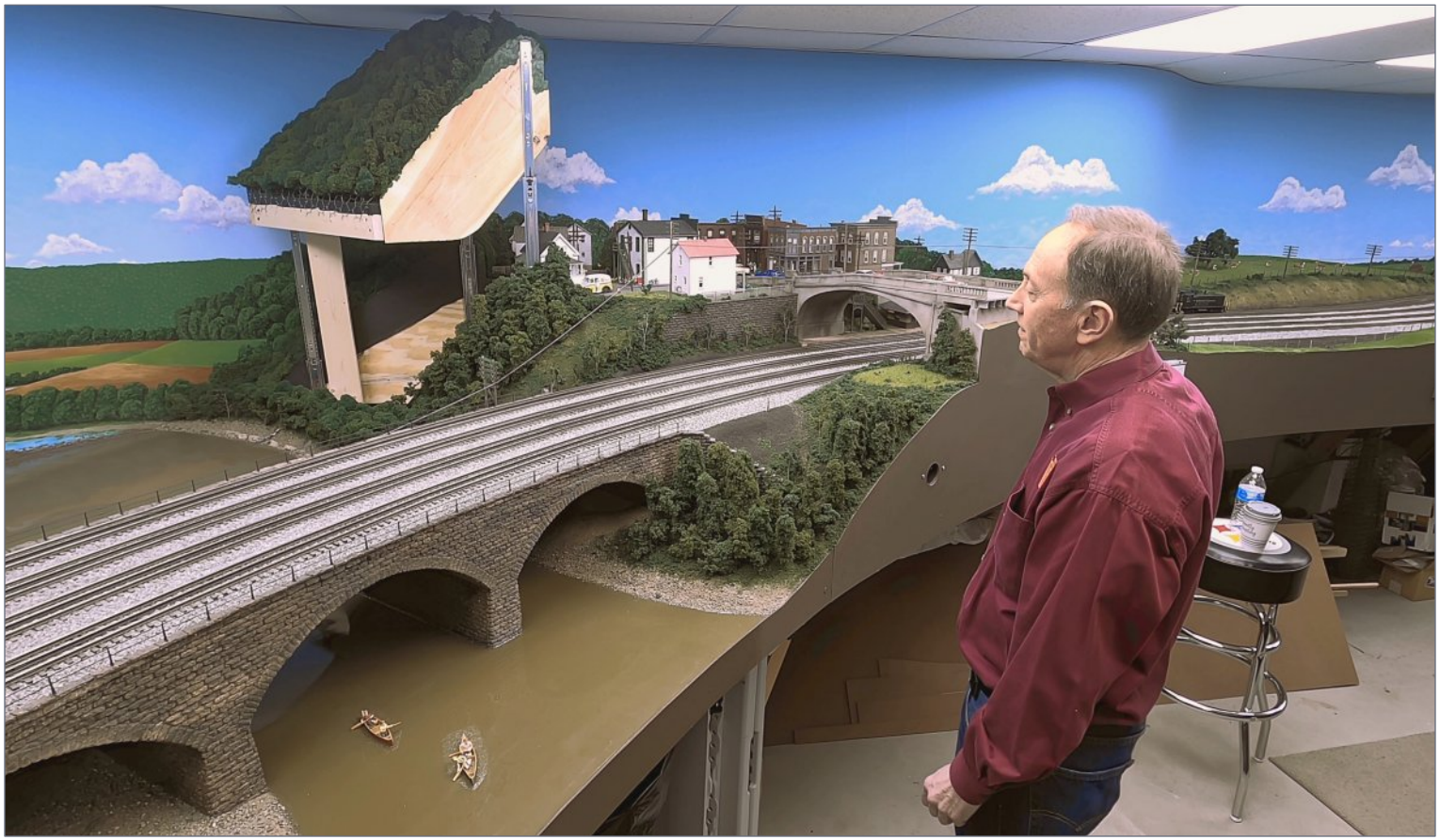
Neal: I selected my layout height based on prior experience with model railroads. When I was a kid, I

19. One thing we really liked is Neal's generous four-foot aisles. That's View and Sherman's Creek on the left, and almost to Jack's Narrows at the far right edge. In the distance is a rural glass plant that's between Jack's Narrows and Mattawana.

used to build them 18 inches off the floor and they were no fun to wire. I had to lay flat on my back, but I was 17 years old. What did I know?

When I switched to my first HO layout around 1985, I made it a lot higher. The railhead was probably about four feet off the floor. As I visited more layouts and got more experience, I finally decided to set the railhead to about 53 inches off the floor, which is great.

I wired the layout from the front. If I have to crawl underneath, there's lots of space plus that extra height gives more storage space.



***MRH:* What is your ruling grade?**

Neal: My ruling grade is zero. I purposely chose the Middle Division because the thing is almost flat. It follows the Juniata River. I had grades on my old HO layout and I just didn't want to deal with them. I like to watch the trains run and not worry about turning the throttle up or down.

I suppose nowadays with Lionel cruise control it's not necessary, but when I designed my layout, that wasn't available. Now there are some grades on the real Middle Division, with the steepest one being half of 1%, but for the most part it's flat. So I've done what the prototype did.

***MRH:* You have a lot of deep scenes on this layout, and the fact your layout is O scale means accessing everything must be a challenge. How have you managed that?**

Neal: I have several approaches to accessing deep areas of the layout where I can't just reach in. In the early areas I scenicked, I made all my scenery out of layered pink foam.

I built them in my workshop, including all the buildings, and

20. Neal has areas where the O scale benchwork gets rather deep. For access, he has several powered hatches where he just throws a switch and the hatch raises itself, such as this hatch at Port Royal.

I made them with little hooks on the bottom. With the assistance of my children, I dropped them into place and I used bungee cords to anchor them down.

In several other locations, I have hatches so I can get access, but I didn't want to lift them out, so I added a motor drive. The motor pushes them up, and I can come up through them and work on the surrounding scenery [20].

I also have two large square corners (PA Glass [15] and Jack's Narrows) that I wanted to have scenery. But when you do that, you can't reach back to the track. So I built the corners and I framed

them out of wood in a triangular shape, and added a piano hinge on one end so I can actually swing them out of the way.

I have storage underneath the layout [21], and in most areas I can easily access the track from the aisle.

I only have one tunnel. It's Spruce Creek tunnel, and I'm currently working on the scenery above Spruce Creek tunnel. The scenery is just about finished.

To access the track in the tunnel, I put in two hinged doors, All I have to do is pull open the doors, and I can access the track in the tunnel [22]. I need to finish the fascia by adding some one eighth inch Masonite so the fascia that matches the rest of the layout.

***MRH:* Tell us how you control the trains – it's not DCC, is it?**

Neal: The Lionel command control came out 20-25 years ago. When it first came out, it was called Odyssey and was pretty basic. The engines didn't necessarily lash up well and it didn't have a whole lot of features, but they continuously improved it.

After it had been out, maybe six to eight years, they revised it to what they call the Legacy System, which is much better.

21. For storing all his equipment, Neal built these boxes with slots in the shelves at track gauge. He added rollers to make them easy to roll under the layout here below Enola yard.

It now has cruise control, so you can lash up the engines together. Everything runs well together and it has many more features. They came out with a more advanced handheld, and they did make the loco electronics available in the aftermarket so you can retrofit older engines.

There are locos coming out now that have the Lionel command control installed, so there's not that much need unless you have an older engine you want to upgrade. I have upgraded my older engines to Lionel command control.

Lionel command control uses a handheld throttle, which is wireless. You don't have to plug it in anywhere. The first one, which

was called Cab one, did have an antenna, some found it bothersome and kept breaking them off.

Then they came out with the Legacy System with a CAB 2 and a CAB 1L, which was like the initial handheld. The more advanced one was complicated, and people didn't like it, so they no longer make it.

The new Legacy 1 looks like the original Odyssey 1, but it has more features built into it. It doesn't have any external antenna either. I don't think the range is quite as good. I have one area of the room that's a little dead, but overall it works very well.

The Lionel command control system also has sound, and the sounds have gotten better and better. The new sounds are tremendous because it's O scale the speakers are big.

For the most part, they go out and record accurate sounds. The sound is not perfect, but it's really good and has improved over the years.

MRH: **What's your least favorite part of doing this layout?**

22. For tunnel access, Neal built sections of the fascia between Mapleton and Spruce Creek into little walls on hinges, with a supporting wheel at the other end. He plans to add fascia paneling to the front of these hinged doors, giving them a finished look.

Neal: I suppose my least favorite part of doing a layout is airbrushing the track. It's not that I don't like airbrushing, but my airbrush clogs frequently and it just frustrates me. My friend Mark Vinsky will do it for me, so that's the one part I'm happy not to do.

Compared to most layouts, my layout is pretty big, and sometimes I think it's too big. I certainly would not want it any bigger than this.

I would tell others that unless you know you're going to be in the same place for a long time and you're a driven person who will go down and work on that layout a lot, you don't build a real big layout. You'll never get it done.

I knew that as a physician, I didn't have to leave Pittsburgh. I would live here my whole life. I love Pittsburgh and I designed my own house and I wanted to stay here. I am driven, and I do come down here and work on the layout regularly.

But if you're not sure that you're going to stay in a place long, or you don't have sufficient time available, I would not build a real big layout.

MRH: **Tell us about the locomotives and rolling stock you run on this layout.**

Neal: If it ever ran on the Pennsy, I will run it here. Basically that includes steam engines from about the 1920s on and then going to the Penn Central era, the Conrail era, and the contemporary Norfolk Southern.

My favorites are GP40-2s and GP38s. That's what I saw when I started railfanning as a teenager. I think those are the ones I like the best.

As the years have gone by, the fidelity of the train models improve. So I get rid of the older ones, and I get

23. Neal runs a first-generation RS11 lashup (with sound) through Longfellow pulling a mixed freight consist behind. Note the wireless Lionel command control throttle in his hand.

the new ones, which have road specific details and very accurate graphics, very much like HO and the other scales.

There are many loco brands available in three rail. Mike's Train House (MTH) was the manufacturer that really pushed the movement to scale type trains starting late 1980s and early 1990s. I got to know Mike well, he's actually been over to the house, but he's now retired.

This brought other manufacturers into making scale models, there was K-Line and Weaver models who I worked with. Eventually Lionel themselves got the message and they started making high-end scale trains.

Because I use the Lionel command control system, their command control system (MTH DCS) was incompatible with mine.

My rolling stock has to be realistic. I don't want fake paint schemes on realistically molded plastic rolling stock. I buy rolling stock that will fit any era. I run steam era trains with the Pennsylvania Road steam engines and then with the Norfolk Southern engines I will run stack trains.

My son Steven upgrades the well cars so they're extremely accurate, including the paint schemes. He drops the height on the trucks so they look more realistic.

But in general, I will only go with things that are realistic. Fake paint schemes, I'm not interested in. I don't do toy trains. I assure you there will not be any exploding box cars on this layout!

My favorite brand of rolling stock is probably Atlas. They make extremely accurate models. The paint schemes are accurate, and the tooling is accurate. I think Atlas sort of forced the other

24. An early Conrail-era freight rolls west out of Enola yard. Neal's era changes as you walk around the layout, which enables him to run anything from 1930s Pennsylvania Railroad steam to modern-day Norfolk Southern diesels, and everything in between.

manufacturers to up their game. I'd say in the last few years it's been more Lionel driving more accurate models in the O scale three rail market.

I have a lot of trains here because I run many eras, so I need a lot of storage capacity. Keeping them in boxes is not the way to do it, because the need to unpack them is a huge disincentive. So I came up with the idea of building a train storage rack [21].

Each rack, if it's double-sided, can actually hold 120 trains. If they're single-sided for long cars, such as passenger cars, a storage rack can hold 60, which is still a lot. Every summer, Steven and I build one or two of them and we're up to about 15 now.

My total storage capacity is about a thousand cars. We just store the trains in these racks underneath the layout and it's very easy to swap out trains – my son has kind of taken charge of that. He's reorganized, everything so he knows where everything is.

I intend to keep building more storage racks, and eventually get all the trains stored in boxes out from under layout and have nothing but the custom storage racks in here.

***MRH:* How have you done the scenery on this layout?**

Neal: My favorite part of the hobby is scenery, as you can probably tell from looking at the layout. I'm not into operations and I'm not into rivet counting, but my scenery had better look like central Pennsylvania.

I think the most important part is a backdrop. Not everyone is artistic. I was blessed with some artistic ability. I used to go out to central Pennsylvania all the time and take pictures.

I've been doing backdrops for years and it's my absolute favorite thing to do.

25. A modern Norfolk Southern freight pulled by ES44s in the legacy paint scheme rolls across the Juniata River at Spruce Creek.

I also like modeling properly shaped terrain. I make mine all out pink foam. This way I can rough-cut it, and then shape it with a rasp to get accurate land forms.

I don't have little pits and dimples like when you get when you crumple up newspapers and then put the hydrocal soaked paper towels on it. All those little dimples would all be little ponds.

The other thing I like to do is stick to proper civil engineering practices. My cuts and fills are all accurate, and that adds to the realism of the layout.

I am modeling late spring, early summer. I like the vegetation green. I don't want it just sprouting out of the ground, but I don't want it to be starting to dry up either. I also painted everything so it's around 11 o'clock in the morning, and the sun is coming over my left shoulder. I tried to keep all the shadows consistent and to keep all the lighting consistent throughout the layout.

My water is simple – I just use a two-part resin. I don't buy the stuff intended for model railroad use. I just go to the craft store and buy it. It's a two-part epoxy, you just mix it together and pour it in. I add some ripples in it. I also bury rocks along the banks of the streams and waterways as well.

MRH: **What about the structures on this layout?**

Neal: I have lots of structures on here, and as far as buildings go, I have a variety. Some of them are a craftsman kit, some are scratchbuilt, others are commercial models but significantly upgraded. I'll tear them apart, repaint them, and add details. I'm what you would call a frustrated civil engineer.

Civil engineering is a favorite interest area, so I scratchbuild all my bridges. I aim to make my bridges to be highly accurate.

My railroad bridges are all stone arch bridges, which is what the Pennsy used. I don't have any wooden trestles. I don't have any giant steel arch bridges because Pennsy didn't have them.

I also love highway engineering. I used to work for the Pennsylvania Department of Transportation in the summers, even when I was in medical school.

For my bridges, I've gone out and photographed them, and measured them. Probably none is more accurate than my Route 35 overpass at Mifflin. I got tons of pictures for reference. I went out there with my kids and we measured them.

In recent years, when I did the last stone arch bridge, my son Steven, now a conductor for the Reading and Northern, went out with me. We took tape measures, and we did measurements. I strive to make my bridges extremely accurate.

26. Neal's son Steven grew up loving trains and now works for a railroad. He remains an avid model railroader, still coming over to help his dad with his layout.

***MRH:* Do you host regular operating sessions?**

Neal: A lot of scale model railroaders are into operating but that's one area that never really got my attention. Being in the NMRA made it easy to find layouts to operate on, but I never found it interesting.

I did design this layout, however, so it really could be run by operators. I have towers scattered along the length of the main line and I've set it up so that every tower would have a tower man sitting there flipping the turnouts. And there could be a dispatcher in the other room giving him instructions. Then the engineers could walk along with their train and follow it the whole way.

Even today when I run a train, the layout's so big I can't see the whole thing. On the first run around, I walk with the train and I make sure all the switches are set correctly. Furthermore, the signal system tells me that the route is clear, so I can just look at the signals and that's all I need to know. I can see the route is clear.

So this layout *could* host formal op sessions. But I normally just like to railfan it and watch the trains run.

***MRH:* Would you ever consider doing a layout in a different scale or gauge?**

Neal: I made a firm decision to go with the O Scale three-rail trains back in the mid-1990s, and I've never regretted the decision. They work reliably, they're easy to use, the signals work great, the command control works great, and this is the way I want to get pleasure out of the hobby.

I don't want to be using computers to run the train. Computers are not my hobby, so I would stick with what I have here. They're simple, they work reliably, and I've been quite satisfied with them. ☑

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