On Jack Ozanich's Atlantic Great Eastern RR, Craig Wilson studies waybills as he makes up a train during an operating session. Equipment not being used is stored on shelves and in drawers. Jack Ozanich and Craig Wilson photo

Fiddle yards streamline staging

Generating all the trains you need in less space

By Paul J. Dolkos//Photos by the author except where noted

Today, many published track plans contain staging tracks. It may be one or two tracks or a hundred, the latter based on conventional wisdom: "You can't have too much staging!"

Once upon a time, trains on most layouts began their runs from a visible yard and ended in another visible yard, or even the same yard. Then we began to adopt the operating concept that trains should disappear off scene, creating the illusion that they actually were coming from and going to distant points beyond the train room. As this concept was accepted, staging emerged as a standard layout feature. It really helped to improve operations.

Not a "universal solvent"

But staging has its issues. Often it's located under the layout in dark spaces with limited access, making it difficult to terminate or initiate a run. One wonders, "Is my route aligned, is the track powered, do I have the right train, am I completely in the clear?" and so on.

Indicator lights, video screens, automatic power shutoffs, and mirrors help. But they are usually better on paper than in practice, particularly for guest operators not familiar with the layout. Ultimately, many layouts are torn down and new ones built because of awkward operations created by hidden staging.

The cure for these problems is building staging that's reasonably visible and accessible to eliminate the angst of beginning or ending a run. In the simplest form, this might be provided by a visible shelf in an aisle behind a backdrop or in a side room.

On layouts in tight quarters, there is the option of staging a train or two on the layout itself. Lance Mindheim

starts his sessions with a CSX local sitting on the beginning of his Miami Downtown Spur layout, which was featured in *Model Railroad Planning 2009*. After switching the line, the train returns to that spot and stops, in theory requesting permission to get back on the main line. It's a logical end point for his sessions.

Dynamic staging

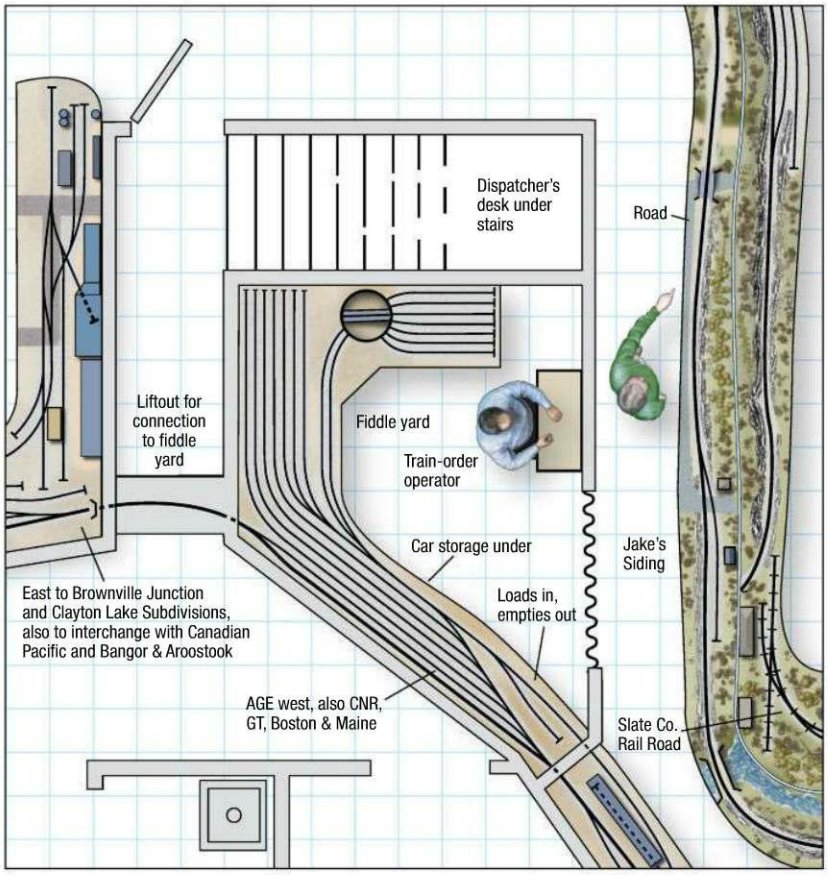
If you run lots of trains, however, allocating enough space for visible staging to accommodate the rolling stock may not seem feasible. That's why staging often ends up being stuck in hidden places, almost as an afterthought. So an alternative approach is to create a dynamic form of staging called a fiddle yard. It lets you create unlimited numbers of trains in space that is visible and accessible. It takes less space because you don't have to build enough tracks to store every train you run.

British model railroaders are often tight on space and have long used this approach with their exhibition layouts. Trains exit the primary scene through a tunnel, under a bridge, or behind a hillside [see "8 ways to hide the end of the line" on page 10 – *Ed.*] and enter a track or a handful of tracks. People manning the exhibition layout's fiddle yard remove ("fiddle with") the rolling stock, place a new set of equipment on the tracks, and run it back on to the scenic portion of the layout to continue the action. Even with relatively short trains, they use side-to-side traversers (like transfer tables), pivoting sector plates, or removable cassettes in lieu of turnouts to make the most of the space.

The Atlantic Great Eastern

Fiddle yards can work for long trains, too, and are used successfully by American modelers. One is Jack Ozanich, whose large freelanced HO railroad, the Atlantic Great Eastern, is set in New England. [See "Flexible operation with a fiddle yard," MRP 1995 – *Ed.*] The railroad's basic configuration is a loop around the basement that passes through the fiddle yard area. One entry/exit is the west end of the modeled railroad, and the other is the east end. One person, often Jack's friend Craig Wilson, makes and breaks up the trains here.

There are several tracks on which to build trains. Extra cars and locomotives are stored on shelves or in drawers. Craig follows a timetable to assemble appropriate trains. He can also get creative and put together extras if the session is a bit slow, or he may delay some trains if the railroad is getting backed up. He relishes putting together a potato extra or a second section. In essence, he is a backstage manager creating the drama out on the railroad.



This portion of the Atlantic Great Eastern track plan shows the fiddle yard (and train-order operator's desk) where train consists can be manually rebuilt to continually create new trains during operating sessions. Illustration by Jay Smith

Thanks to the fiddle yard, Jack doesn't stage trains in advance to prepare for a session or stop a session to create more trains. Either there's a train from the last session ready to depart or one is quickly assembled.

The fiddle yard tracks are on a long shelf running diagonally across an 8 x 10-foot room in the 30 x 35-foot layout space. The fiddle space also accommodates a desk for a train-order operator. The few square feet devoted to the staging function is relatively small, but it can handle an unlimited number of trains.

Jack admits that handling rolling stock in a fiddle yard subjects it to minor damage like broken stirrup steps. But the process makes it easy to cycle through a large equipment roster, and there's no need to build extra track to store the "off-road" equipment.

The Virginian & Ohio

Allen McClelland considered staging very important when he began building the first iteration of his Virginian & Ohio layout, which he referred to as the Afton Subdivision. He constructed a hidden loop on the west end of the railroad that held only three trains. Over time, he extended the main line and expanded staging capacity to five stub-ended tracks, then nine. With this expansion, the area became crowded with track, and Allen wasn't happy with the appearance and operation.

The ultimate solution was to reduce the number of open yard tracks just before entering the staging area. This provided space to locate the staging yard ladder before the track ran under a road overpass into a side room that also housed the dispatcher's Centralized Traffic Control (CTC) panel. [See "The Virginian & Ohio's new west-end staging," MRP 1998 – *Ed.*] He gained more capacity, switch alignment could be easily seen, and the ends of parked trains were visible. It looked like the end of a yard, a logical point for trains to initiate and terminate runs.

The fiddle yard on Allen McClelland's Virginian & Ohio Gauley Division occupied the interior of a peninsula with minimum impact on the layout room space. It provided an almost unlimited ability to generate trains during an operating session.

When Allen built a second V&O layout, the Gauley Subdivision, instead of passive staging, he created a fiddle yard inside a 34-foot-long peninsula. Trains exited one of eight staging tracks. If they ran across the subdivision, they entered a second staging yard either above or below the first one, depending on the train's direction. This staging area also had other staging tracks for branchline trains and a connecting railroad that serviced industries on a short segment.

Road crews avoided having to deal with hidden staging tracks by picking up their trains just outside the staging exits, one located at a tower and the other at the end of a passing siding. When entering staging, the crews looked for a clear signal aspect, indicating a staging track was open, and proceeded until the caboose was clear of the main line. Train crews talked to the dispatcher, and he communicated with the staging operator, who worked the fiddle yard.

The staging area was about 4 feet wide inside the peninsula, with shelves and drawers on either side of a 30" aisle. Portions of the modeled railroad ran on the other side of the staging alcove walls, so the fiddle yard consumed relatively few square feet of the layout room. This peninsula also concealed a row of support posts.

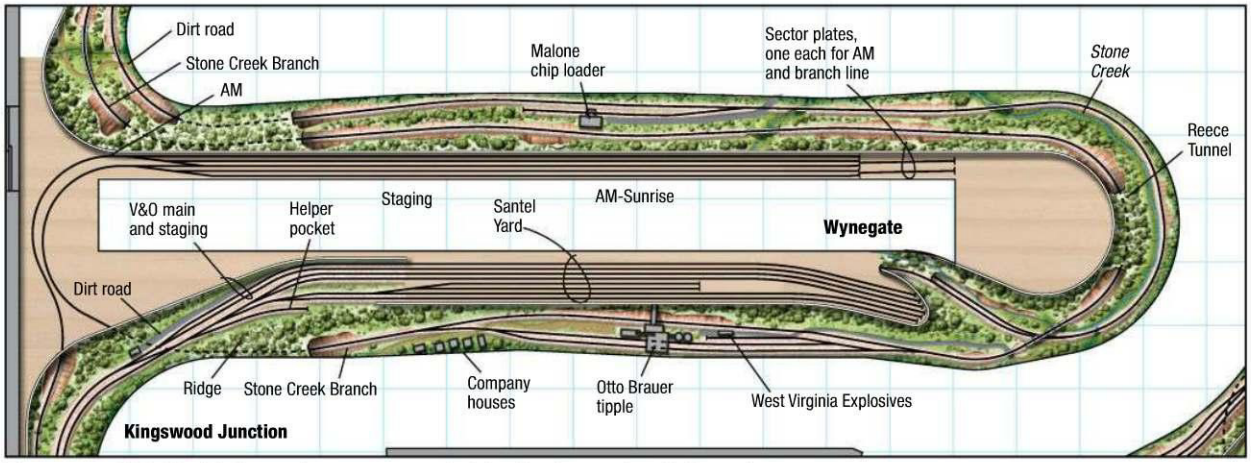
Where the "mole" was born

Lee Nicholas' HO railroad [see "Pre-staged fiddle yard" on page 46 – *Ed.*] is a good case study on how staging has evolved. The layout he began building in 1985 didn't initially have any staging. But once regular operating sessions began, the need for staging became obvious. The model route represents a mainline route between Denver and Salt Lake City, and without staging there was no way to simulate the traffic's continuation beyond those cities.

So Lee built two 10-track staging yards with reverse loops, one above the other under a peninsula. They served as the east and west destinations "beyond the basement." But with the hidden track and lack of access, the crews found it difficult to exit or enter the staging yards. They suggested stationing an operator inside the reverse loops to align routes in and out and cycle waybills.

To provide access for an operator, Lee cut out a 3-foot-square cubbyhole under the peninsula's mountain scenery. Having an operator there worked reasonably well, but the working environment was less than desirable. The position was dubbed the "mole," a name now applied to many active staging installations.

Lee has never hesitated to rebuild and upgrade his railroad. In 1995, he



The second V&O's fiddle yard was surrounded by the Stone Creek Branch. Illustration by Kellie Jaeger

Learning points

- Fiddle yards reduce the space required for staging.
- It's relatively easy to create additional trains.
- Owners don't have to pre-stage operating sessions.
- Stored equipment shouldn't take up staging space.
- Fiddle yards make it easy to rotate large equipment rosters.
- The more frequent handling of rolling stock increases the potential for damage.

and his crew made a host of track and scenery changes, as well as establishing the freelanced Utah Colorado Western as the operating railroad instead of the previous mix of western railroad prototypes.

The two hidden staging yards were replaced with a single 10-track, 18-foot-long yard on a shelf behind the scenery. A 2-foot-wide aisle provided access. Two operators could be accommodated, and it provided a comfortable environment in a relatively small footprint. Trains were made up from cars stored on shelves and in drawers. Arriving trains were taken off the track and stored until needed. The only major negative was that access required crawling under the benchwork, so the "mole" designation stuck.

But improvements are the norm on Lee's layout. Using Tom Sawyer-like persuasion techniques, Lee has recently expanded his layout area by having crew members dig out a basement crawlspace off the layout room. This has permitted moving the "mole" into a walk-in area. It's user-friendly and attractive.

Fifteen to 20 trains originate in staging during each normal 4-hour session that, at a 2:1 fast-clock ratio, represents an 8-hour shift or "trick." It's not a stressful position and is actually a sought-after job assignment.

Gains exceed concerns

These three veteran modelers had problems with hidden and inaccessible passive staging and resolved them by turning to fiddle yards. Although not everyone will want the "mole" to handle equipment as he or she makes up trains in real time, just having visible and accessible staging tracks will smooth out operations. **MRP**

Paul Dolkos is a regular contributor to MRP.

These photos show one exit/entrance to the fiddle yard on the second V&O from the perspective of a fiddle yard operator (top) and train crew (bottom).

Lee Nicholas' new fiddle yard suggests that the "mole" moniker should be retired. The departure tracks are equipped with rerailers to ease placing rolling stock on the track. Lee Nicholas photo

Pre-staged fiddle yard

Making things more comfortable and productive for the "mole"

By Lee Nicholas//Photos by the author

John Dulaney places cars selected for future trains in holding drawers. He has a computer-generated consist list to verify that the right cars for the right train are in each drawer.

What started out as an addition to my shop ended up as major changes to my HO scale Utah Colorado Western [see *Great Model Railroads 2005*. – *Ed.*] The shop was tucked in behind the crew lounge and dispatcher's office at the end of a hall in a roughly 5 x 10-foot space that ended in a load-bearing north wall. There was a crawl space that could be excavated to enlarge the shop.

As I started to open up the space, it dawned on me that I could cut into the western leg of the old fiddle yard – an active yard switched by a person we came to call the "mole" during operating sessions – and have it continue on westward to the exposed part of the layout. It would also allow extending the branch line into the new fiddle yard to expand the presence of the Chicago, Burlington & Quincy at Casper, Wyo., on my railroad.

This turned out to be quite a chore, as the shop, lounge, and dispatcher's office are located under a previous addition to our home. It required opening up a hole through an 8-inch concrete wall to reach the layout room.

Objectives

I use what we call Flex-Bill to handle the paperwork on the UCW, which is a Microsoft-Access-based program the late Steve Karas and I developed to support active mole-type staging. I've added an agent module to the program that now provides waybills, wheel reports, and switch lists. Trains are made up before each operating session and placed in drawers below the fiddle yard. Building a new train during a session is therefore simply a matter of moving cars from the drawers onto a departure track.

I had several operational goals in mind before construction started:

- Enlarge the dispatcher's office to create a space for an agent. The expanded office provides a large area for the agent to manage all the waybills by customer and prepare the paperwork for the crews.
- Enhance the presence of the Burlington Route by converting the old branch line to the CB&Q and providing real-time interchange at Jiggs, Wyo.
- Add Automatic Permissive Block signaling on the CB&Q. (My Utah Colorado Western is dispatched using Centralized Traffic Control.)
- Rebuild Jiggs, which has turned out better than expected with new industries and a CB&Q interchange yard and main line.
- Bring the dispatcher, agent, crew lounge, and mole to a central location.

Having these related jobs located within steps of each other has been the most rewarding part of the project.

After excavating tons of dirt from the basement (a bucket at a time up the stairs) and pouring five yards of concrete (a bucket at a time down the stairs), my hard-working operating crew and I completed the project in about six weeks. The excavation eliminated the crawl-under to the old mole's operating position while creating a substantially larger combination shop and fiddle-yard room.

Learning points

- Even major physical obstacles can be overcome with determination and a lot of help from your friends.
- A fiddle yard operated during an operating session by a "mole" allows sessions of any desired length, and no extensive restaging is needed between sessions.
- Storing pre-staged trains in drawers cuts the workload during the session.
- Keeping crews comfortable is important.
- A remodeling project can rekindle interest in your layout.

This view from the entry into the fiddle-yard area shows the shelves for cars not currently billed for outbound trains. Billed cars are stored in drawers below the yard. At the far end is a loop that enables empty hopper and loaded coal trains to be recycled for the next trips without fiddling the cars.

The clerk's office where the train consists are generated is on the other side of the wall from the fiddle yard. The Flex-Bill waybill system developed by Steve Karas and Lee has automated most of the billing chores.

The operating session

Operators start work well in advance of any departures. The staging operator is given a wheel report with a requested train consist, but not specific cars. For a mixed freight, the list may call for 12 boxcars, six reefers, and a pair of gondolas, some of them of a specific configuration. Each car has a barcode (generated by Flex-Bill and printed on an Avery label) attached to the underside, so the mole operator simply scans the bar code to load the car number into the database. Each waybill also has the appropriate car number's bar code, so the agent can scan the number and the appropriate move (spot, pull, set out, pick up, or move) to "fill out" the paperwork.

The locomotives and cars are stored on shelves and appropriate rolling stock selected. For open top cars, if the list says it's carrying a load, the operator inserts the proper load. The car's reporting marks and numbers are added to the train consist list and the list is returned to the clerk seated nearby. Since the staging operator is normally assembling trains well in advance of their departures, they don't put the cars on the staging tracks.

As in a prototype yard, the train being built may not depart until the next shift, or in model terms, the next session. So the selected equipment is stored as a group in a drawer. When the departure time nears, the locomotives, cars, and caboose are placed on a departure track. Since the consist has already been gathered, it only takes two or three minutes to put the train on the track and ready it for departure. Using this process and just eight tracks, the mole can generate a large number of trains, each 20 to 25 cars long, on a railroad with 800 cars.

When the dispatcher releases the train to begin its run, the staging operator moves it out of the room to a point where the road crew takes over. For trains ending their runs, crews turn the train over to the staging operator, who runs the train the final few feet. The incoming equipment is placed on shelves to await the next assignment.

Rebuilding enthusiasm, too

On even-numbered years, we host the Great Basin Getaway, a long operating weekend, during the second week of September here in Utah. I shut down my railroad after the operating weekend in 2014 and started to remodel Jiggs. We held the first post-change session on April 11, 2015, and despite a little tweaking that needed to be done, the day was a resounding success.

I will admit that the old layout was getting a little stale for me. This improvement project renewed my enthusiasm tenfold, and I look forward to sharing it with friends for many years to come. **MRP**

Lee Nicholas and his wife, Kris, live in Corinne, Utah. His family owned property around the site of the 1869 driving of the gold spike at Promontory Summit, Utah.

On Paul Dolkos's current HO scale layout, traffic to and from staging runs under his basement stairs. The overhead bridge and ample lighting behind the wall help the visual transition to the semi-hidden staging yard. Paul Dolkos photo

8 ways to hide the end of the line

Where good things come to an abrupt end

By Tony Koester//Photos by the author except where noted

All good things eventually come to an end, as the saying goes. Pessimistic though that may sound, it's literally true where model railroads are concerned. No, I'm not thinking about what to bequeath in your will, but how your railroad gracefully exits the stage – that is, how it goes from the modeled portion to the off-stage areas that represent the rest of the rail network.

Here and on the following pages are several examples of how that can be accomplished.

Other ideas?

Perhaps you've discovered other ways to disguise the transition between modeled and un-scenicked portions of your railroad. If so, please share them with us. **MRP**

Paul Dolkos photo

1 Overhead bridge

The cover of *Model Railroad Planning 1998* featured an overhead bridge scene on Paul Dolkos's former Boston & Maine layout. In "Making tracks disappear gracefully," Paul recommended that the off-stage area behind the bridge be scenicked and lighted to suggest the railroad continues indefinitely.

As is evident in the lead photo to the left, Paul's current Baltimore-based layout uses the same technique to suggest that the scenicked portion of the railroad doesn't end at a wall.

On my old Allegheny Midland layout, seen above, I added an overhead road bridge to obscure three tracks disappearing into a tunnel portal at the mouth of the north-end staging yard.

2 The bridge-and-mirror trick

I built a 1:29 scale project railroad based on New Hampshire's Claremont & Concord RR (*Model Railroader*, August through November 2005). I built the railroad on four pieces of 30 x 96-inch extruded-foam insulation board. Three of the four pieces represented the downtown Claremont area, but there was a covered bridge scene a few miles out of town that begged to be included.

Here, the problem wasn't having the railroad disappear into staging, but rather separating a very rural setting from an urban one. Between the 8-foot rural section and the other three sections, I inserted a rectangular mirror. Glass would have been too heavy and dangerous, so I had the local glass shop cut the piece from flexible plastic "funhouse" mirror material. I also had them cut a hole large enough for track and trains to pass through in roughly the center of the mirror.

On the reflective side of this divider, I butted a plastic covered bridge against the mirror, doubling its length and the width of the river. On the back of the mirror, I used densely packed trees to disguise the edges of the hole.

Paul Dolkos photo

3 Tall buildings

A mine tipple, grain elevator, cement plant, or any other tall structure may allow the train to gracefully exit the railroad by hiding the hole in the wall that leads to staging.

Industries with structures on both sides of a railroad track often linked the buildings with covered walkways and material conveyors. This offers the same potential as an overpass. The photo at top shows how Paul employed this technique on his former HO scale Boston & Maine railroad where the main line penetrated a wall.

On my former HO scale Allegheny Midland layout, in the second photo, the Otter Creek Branch continued through a wall into an adjoining room, but the opening was screened by a coal preparation plant and trees.

4 Around the bend

A mountain or even a high hill will provide a means to screen a train's entry or exit to a hidden staging yard. The yard lead at the north end of Sunrise, Va., on the Allegheny Midland, curved around the end of the central peninsula and out of sight. This allowed me to treat it as the beginning of a branch line and use it to stage an inbound local freight as the day began.

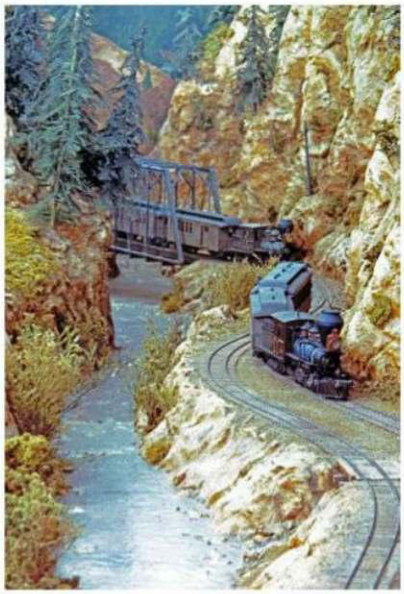
5 Grove of trees

I faced this situation when I wanted to hide one end of the long interchange track connecting the unmodeled Milwaukee Road with my Nickel Plate Road main line. I wanted to prevent crews from seeing the contents of the MILW staging track. Aerial photos and site visits proved there were no tall buildings or overhead bridges in the area. Instead, I grouped a dozen or so Scenic Express SuperTrees around the end of a low view block.

6 Snowsheds

Mark Dance photo

Snowsheds and tunnels usually went hand in hand as the railroad's engineering department coped with rocky slopes. A snowshed, like this one on Mark Dance's N scale tribute to the Canadian Pacific (see page 56 and also *Great Model Railroads 2016*), could hide the entrance to a hidden staging or fiddle yard. To extend a shed and even suggest its unmodeled far end, it could abut a mirror, as in method 2.



Andrew Dodge photo

7 Deep cut

In country where the hills weren't high enough to require tunnels, railroads often resorted to digging substantial cuts. Their engineering departments tried to equalize the amount of material dug out of the cut with that required to fill depressions on either side of the cut.

For our purposes, anything that allows a train to duck out of sight will suffice. Even in the flattest of flatlands, glaciers often left piles of gravel in drumlins or moraines, frequently more than deep enough to hide a train's disappearing act.

In mountain country, like this scene on Andrew Dodge's former On3 tribute to the Denver, South Park & Pacific, canyons offer abundant means of hiding the end of the scenicked portion of a railroad.

Learning points

- Effective transitions between modeled and unscenicked areas of the layout will help to disguise the presence of passive staging or active fiddle yards.
- The method used to create the transition should be appropriate to the area depicted.
- Continue lighting and scenery beyond the "hole in the wall."
- Prototype modelers may be restricted by the structures and terrain that actually were at the modeled location.

Paul Dolkos photo

8 Tunnels

The most commonly employed solution is to have the track disappear into a tunnel, never to come out the other side – at least not in a scenicked part of the railroad. A train-length tunnel midway along the main line can also provide a place for a train to pause for, say, 30 to 60 fast-time minutes to effectively extend its run.

I've seen a lot of poorly modeled tunnels on model railroads. It's hardly sufficient to glue a tunnel portal to the face of the opening and declare victory. Line the sides of the bore with concrete or a rock face as far back as a casual viewer can see. Flexible rock castings make this easy to do, even on a curve.

This scene on Allen McClelland's second edition of the Virginian & Ohio Ry. shows how a tunnel could mark the end of the scenicked portion of the railroad (although that was not the case here).