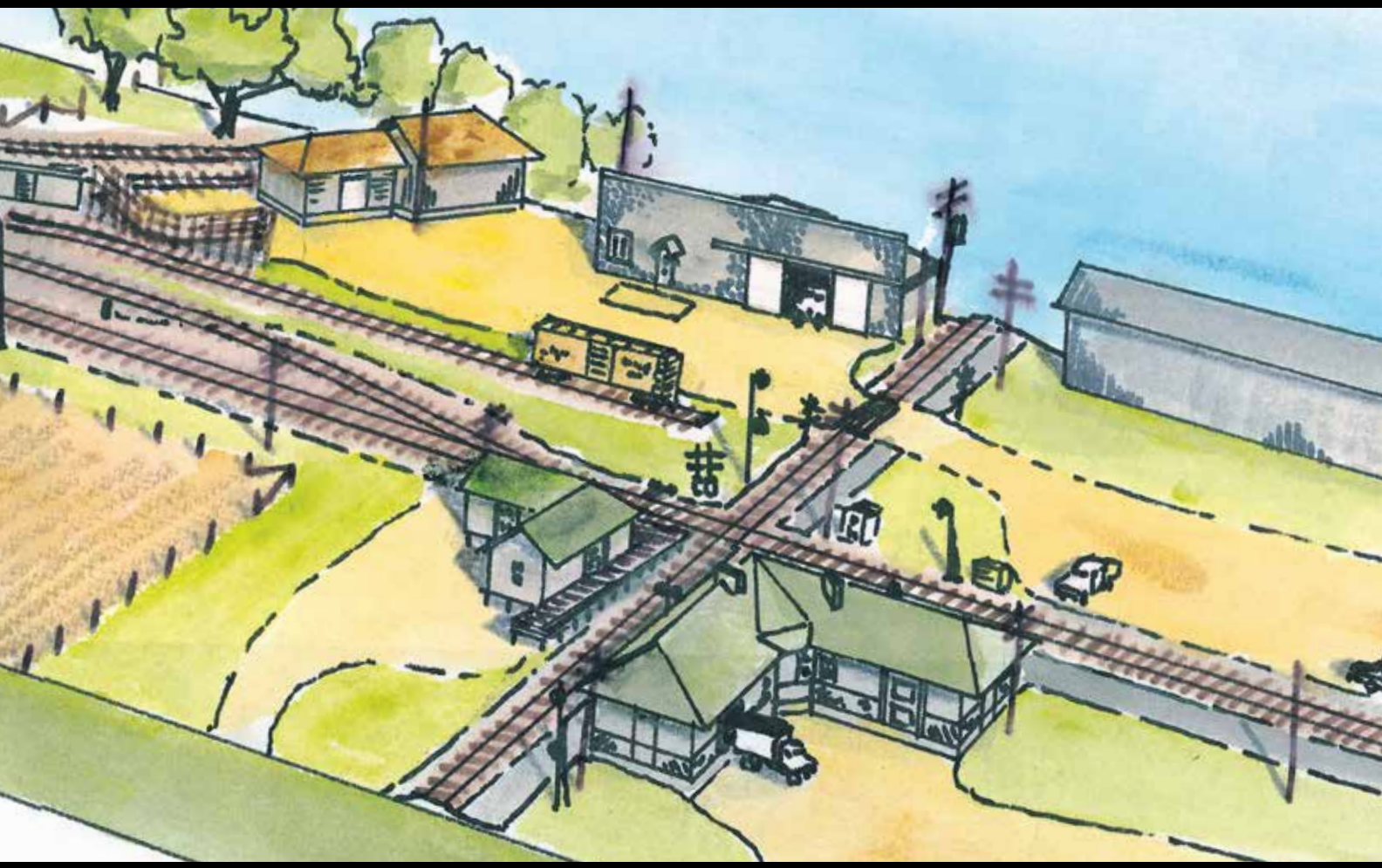
Model Railroader MAGAZINE

IDEAS FOR SMALL FREIGHT YARDS • PROTOTYPE EXAMPLES
A SUPPLEMENT TO *MODEL RAILROADER* MAGAZINE
FROM *REALISTIC MODEL RAILROAD BUILDING BLOCKS*

Workshop tips

Layout design elements

by Tony Koester



- How to use prototype railroad information to design a realistic layout
- Learn how to build accurate track arrangements for any model railroad
- Tips on building layout sections now while planning for the future

618204
2018

Fig. 1. A popular prototype for narrow-gauge modelers is the former Colorado & Southern. Here, low-slung C&S no. 70 is switching the Argo Tunnel Mine at Idaho Springs, Colo. Part of the line at Clear Creek Canyon has been restored for tourist train operation, and much of the abandoned portion is still visible. John W. Maxwell photo

Layout Design Elements

Even freelanced model railroads can draw inspiration from the prototype

As an editor of a model railroad magazine for much of my career, and as a communicator of technical concepts for all of it, I have always sought ways to make challenging concepts easier to grasp and hard tasks easier to accomplish.

One way to do this is to reduce everything to some sort of formula or matrix – a standardized approach that will get you to your goal most of the time. (There is no "universal solvent.") Model railroad track planning is no different.

LDEs for freelancing?

That led me to the Layout Design Element (LDE) approach to track planning. The idea behind the LDE is to select interesting track and structure arrangements on the prototype, reproduce them in scale, then fit those elements together in the available layout space.

This concept may seem obvious in the context of prototype modeling, although some "prototype" layouts come up short in this regard – too much inspiration (reinventing the wheel) and not enough perspiration (doing some homework), perhaps. But the more I thought about it, the clearer it became that prototype-based building blocks apply equally to freelanced railroads (see **figs. 1** and **2**).

Prototype modelers often have a tremendous advantage over freelancers in that there are benchmarks – the prototype – for everything. What color should depots be painted? Look to the prototype's example. How should tracks in Danville be arranged? Check the prototype. What did the railroad

deliver to that warehouse? Ask someone who worked there. Why was there a crossover west of 10th Street? Either include it and hope its purpose becomes clear, or ask a professional who worked that line.

The key question was whether this approach could also help a freelancer, especially someone who may not know much about how railroads made a living, yet finds model trains fascinating. Those are the folks who really need support and guidance. I'm happy to report that in the decade that has passed since I introduced the LDE concept in *Model Railroad Planning*, I've found that the answer to that question is an emphatic "Yes!"

Helping without stifling

Many modelers freelance because they don't know much about any specific prototype, or at least not enough to make modeling it faithfully seem enjoyable. Others are true free spirits who don't want to be bound by rules and regulations. They may not even be railfans, but are rather simply enamored of miniature trains and the trappings that surround them.

The problem is that, to paraphrase Jim Boyd, former editor of *Railfan and Railroad* magazine, there is a universality to railroading. Large or small, railroads are bound by many of the same physical constraints. If you want to pick up a car from a facing-point spur (where the locomotive encounters the switch points before the frog), to get that car behind the engine requires a runaround move, and therefore a runaround track. To switch a "dog's breakfast" of freight cars (Jim's phrase again) in an arriving local into blocks of cars and then into trains headed for specific distant destinations, you need at least two yard tracks (more are handy, but not required) to make put-and-take moves.

This applies to a model railroad just as much as to a full-size enterprise. Those who operate their railroads realistically have either discovered these and other "rules" through trial and error or have learned from the experiences of others.

Trends

There are several obvious trends in the hobby. Sound effects, both on and off our trains, are coming into greater use, as is command control. Prototype modeling is more popular than ever (see **figs. 3** and **4** on the next page), as is the use of couplers and wheels that are closer to scale. And although surveys indicate that less than a fifth of those who read scale model railroad magazines consider themselves "operators," the popularity of realistic operation has grown remarkably in the last quarter century. My book *Realistic Model Railroad Operation* (Kalmbach Publishing) was into its second printing within two years of its debut.

Fig. 2. Harry Brunk's HOn3 Union Central & Northern is freelanced but is accurately based on the Colorado & Southern's line at Clear Creek Canyon, as this model photo of the Argo Tunnel mine (see fig. 1) clearly shows. His entire layout is a series of Layout Design Elements strung end to end, as shown in his track plan in the 2002 issue of *Model Railroad Planning*. Harry Brunk photo

What this suggests is that many of those who now profess no interest in operation will grow into it. And that tells me that it would pay for anyone, and everyone, to use prototypical trackwork designs when building his or her model railroad. That way, should the operating bug bite, the railroad will be ready and waiting.

Ah, but there's a catch: The very folks who should plan ahead for such an eventuality are the same ones who haven't a clue as to how to design and build plausible trackwork. And the rest of us probably aren't quite as good at it as we assume. What are we to do?

Prototype plagiarism

The point of this approach is plagiarism: Copy the prototype – within reason, of course. Few of us have enough

Fig. 3. Modeling a specific prototype at a specific location is an increasingly popular approach to layout planning. This is Jeff Wilson's HO scale model of the junction in Portage, Ill., where the Illinois Central crossed the Chicago, Burlington & Quincy, about 1964. To make operations even more interesting, the Chicago Great Western had trackage rights over the CB&Q. Here, an IC freight rolls through the junction. Jeff Wilson photo

Fig. 4. Mike Nelson photographed Chicago Great Western train 91 headed westbound through the actual scene on March 9, 1966.

space to model even one town foot-for-foot in our train room. This became crystal clear to Mike Aufderheide when he overlaid an HO plan of Monon, Ind., on a same-scale drawing of his basement (see **fig. 5** on the opposite page). It consumed the entire area! Selective compression was obviously required so that Mike could also model several other towns along the Hoosier Line.

Even if we all had gymnasium-size basements and could copy our favorite prototypes inch for inch, where would we ever find the resources –the time, energy, and money – to populate them with model railroads of that size and scope? The LDE approach to layout design therefore has to be tempered with judicious selective compression – reproducing some of the prototype's elements, not all of them. By choosing towns and other LDE candidates with care and modeling only their key aesthetic and operational features, we can create a practical series of Layout Design Elements and combine them into plausible model railroads.

Taking the first steps

Let's say that you don't have a space for a complete model railroad right now. Maybe you're a student who lives in a dorm, or you're on the road and living out of your suitcase in an endless series of look-alike motel rooms. Odds are that you have a bookcase, so let's focus on the real estate you do have: its top shelf. Why not clean off the stacks of books and put a modest length of extruded insulating foam there instead? Glue some track on top of that foam to create part of a future model railroad.

Presto! We've transformed the self-defeating, no-space-for-a-layout argument into a debate about what track arrangement you could fit on that slab of foam (or, better yet, one of David Barrow's 18" x 48" plywood-capped "dominoes"). I, for one, vote for a Layout Design Element.

If you haven't done so before, this is a good time to reflect on the full-size railroad or type of railroad that most interests you. This may be the hardest part of all, as the choices are vast. Just take your best shot for the purposes of this exercise. Besides, there's nothing you can build now that you can't unbuild, modify, or re-purpose later if your tastes change. That's another advantage of domino construction.

Your library may already contain enough information to get you started. A book on your favorite prototype may illustrate any number of potential candidates for Layout Design Elements. If not, the ads in model railroad and railfan magazines will guide you to additional books, magazines, video tapes, CDs, and DVDs brimming over with LDE candidates. Maybe an example in the following pages will catch your eye. Just try to identify one good LDE candidate; it will lead you to others.

You'll want to join the historical society that focuses on your favorite railroad. Its publication alone may be worth the dues, but even more important are the contacts with other modelers who share your interests, and especially with professional railroaders who worked on that railroad. As modelers, we have a tendency to interpret what happened at a given time and place without fully understanding the rules of the game; the pros lived it and will quickly set us straight on how it was, and why.

For example, a contract agreement may have required that road crews be paid a higher rate if they had to stop at more than two towns, even if it was to make just one setout or pickup. If you choose as LDE candidates those towns where through freights often stopped to work because of, say, "hot" cars from an auto-parts plant or a busy interchange with a foreign railroad, you'll have more work for your future crews to do without ignoring normal prototype practices.

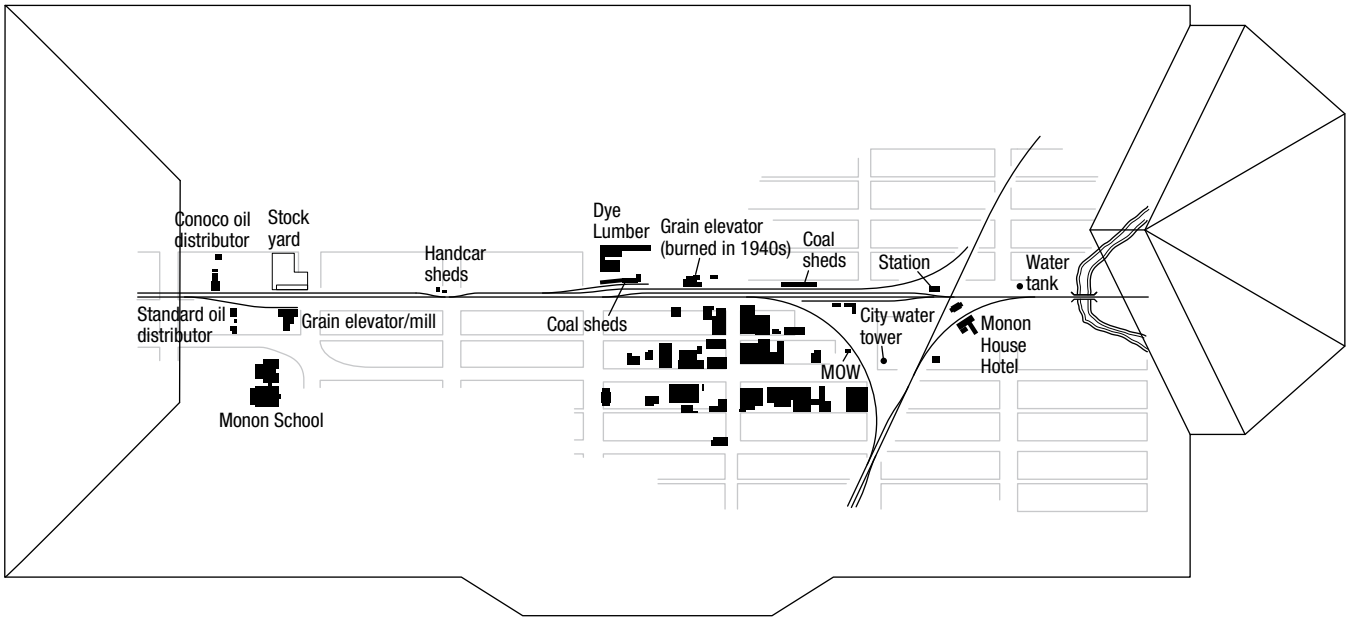


Fig. 5. Mike Aufderheide discovered that an exact-scale HO model of the Indiana town of Monon, where the namesake railroad's two main lines crossed, would consume his entire basement! Selective compression resulted in a more manageable Layout Design Element. (See *Model Railroad Planning 2006*.)

If you take but one lesson from this booklet, this is it: Whether you're a prototype modeler or a freelancer, look to the prototype for inspiration and examples. Talk to the professional railroaders who worked that line to learn how it was really done.

Play now, pay later

Layout Design Elements offer two major advantages over the conventional approach to layout design: They help ensure that what you build will look and operate like the prototype, and they let you get started now, long before you acquire a lot of knowledge about why the tracks were arranged as they were or how they were used. You know it worked for the big guys, so it should work just fine for you.

You're not entirely off the hook, however. You usually won't be able to model a complete prototype town or yard inch for inch, although converting to a smaller scale such as N may help (as Jerry Britton discussed in *Model Railroad Planning* 2005). You'll have to make some considered choices as to what to include and what to leave out. That's why it's called *selective* compression, and it applies to prototypically based track planning as much as to structures.

I had to make similar decisions of what to include and what to leave out on my own layout. I didn't have room for all the prototype's sidings and yard tracks on my HO scale Nickel Plate Road. What's important is that the trackwork still mimics the prototype.

Source of motivation

Instead of being a handicap, your search for an LDE candidate will motivate you to learn more about how your prototype looked and functioned in the era you've selected. I've found that this kind of homework is as exciting as trying to solve a mystery before the author lets the cat out of the bag.

Choosing prototype segments to convert to LDEs, and selectively compressing them to fit your available space, is not a foolproof process. But it does represent a head start, a logical step forward. For every misstep, you'll probably take many more correct steps. The net result will be positive.

A gallery of options

The following section contains examples that demonstrate how you can adapt prototype yard track arrangements into Layout Design Elements. As you read on, don't lose sight of the main point of the LDE approach: By looking to the prototype for inspiration and information, you have a reasonable degree of assurance that what you design and build will be plausible, and that it will work as the full-size railroad did.

By identifying LDE candidates and then doing a modicum of homework to gather information and pinpoint their key attributes, you'll broaden the basis of your hobby from pure model building to industrial archeology. My experience and that of many others strongly suggests that, rather than being a time-consuming obstacle, data gathering will become every bit as enjoyable a part of your leisure-time activities as model or layout building.

One caveat: You can't possibly learn everything about anything, so don't fall victim to "analysis paralysis." As long as your modeling is based on actual places on one or more prototype railroads, you can be confident the resulting LDEs will work for you just as well as they did on the prototypes.

So let's get started by taking a closer look at some small yards that are ideal prototypes for LDEs.

Illustrations by Tony Koester

Fig. 6. The small Pennsylvania Railroad (ex-Waynesburg & Washington) narrow-gauge yard at Waynesburg, Pa., looks like it was designed for a model railroad. Whether modeled in narrow or standard gauge, the yard has almost everything needed at one end of a branch or short line: small yard, locomotive service buildings, roundhouse, turntable, passenger station, and several industries. A river along the front edge would be a good boundary for an aisle.

Small and mid-size yards

Take a look at how the prototypes operated to inspire your track plan

The term "yard" refers to a set of tracks where cars can be sorted ("classified") into blocks and then into trains by destination. Yards also allow trains to be broken apart into individual cars or short cuts of cars for local delivery. Yards come in many varieties, including huge classification yards at major terminals, small outlying yards that support a large industry or industrial park, and those that provide a place for cars headed to or from a branch to be set out or picked up.

Understanding yards

This section is not intended as a primer on layout or yard design, but rather focuses on using prototype examples to make better track plans. For background information on the design and operation of yards, I recommend Andy Sperandeo's book, *The Model Railroader's Guide to Freight Yards* (Kalmbach Books). One of my books, *Realistic Model Railroad Design* (Kalmbach Books), provides an overview of layout design considerations.

After you review those yard and layout design tips, you'll then be better equipped to find a prototype yard to use as a specific example of a workable benchmark for your own yard. To help you get started, let's review several candidates for yard LDEs.

One caveat: Passive staging and active fiddle yards are also part of the mix on a model railroad. Since those kinds of yard don't occur on the prototype, they aren't proper candidates for LDEs. But it pays to treat them as such when making "puzzle pieces" to move around on a scale drawing of the train room, as I discuss in my book, *Realistic Model Railroad Building Blocks* (Kalmbach Books).

Waynesburg, Pa.

The perspective drawing (**fig. 6**) and track plan (**fig. 7**) above depict a Pennsylvania RR yard at Waynesburg, Pa. If it looks too small for the sprawling

Pennsylvania RR at Waynesburg, Pa.
(Not to scale)

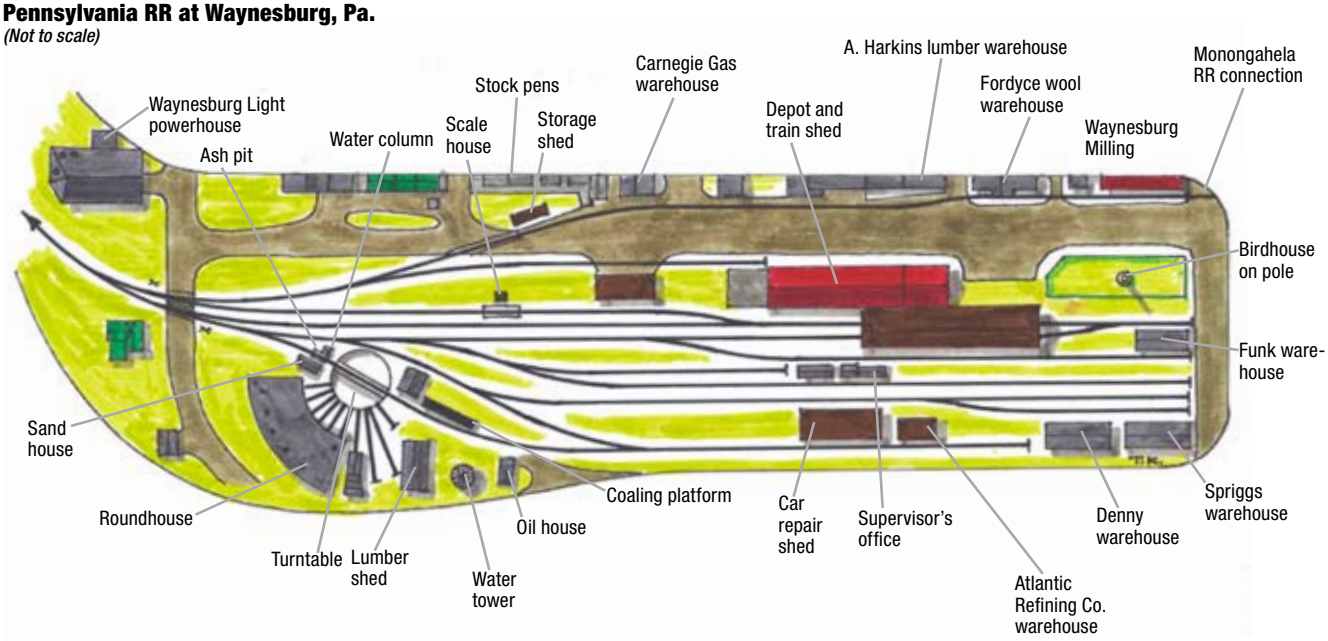


Fig. 7. This On2½ (¼" scale models running on HO-gauge track) Layout Design Element takes up about the same length as a typical HO yard, though the track spacing has been increased from 2" to 3". The resulting width favors locating it on a peninsula for easy reach from both sides. Narrow gauge car and locomotive lengths are relatively short and comparable to late-steam-era standard gauge rolling stock in HO scale.

Pennsylvania, that's because it was originally built by the Waynesburg & Washington RR, a three-foot narrow gauge line. It came under the PRR's influence early on, and most W&W rolling stock and all locomotives got PRR paint and were renumbered about 1920. Mogul 2-6-0 no. 4 became no. 9684, for example.

Most yards are double-ended, but this is a prototypical example of a small, stub-ended yard. Its basic functions don't depend on it being narrow gauge; the track arrangement would work just as well for a freelanced standard-gauge short line or the end of a branch line.

The South Fork of Ten Mile Creek abuts the south edge of the yard, an ideal location for the main aisle. There's a handsome two-story brick depot (it lasted until the mid '90s), and the commercial buildings along First Street (**fig. 8** on the next page) make great candidates for flats along a backdrop. The main connection to the standard-gauge network was at the other end of the line in Washington, Pa., although the Monongahela RR eventually connected to the PRR here (an idler flat was used so narrow gauge engines could move standard-gauge cars) and later continued through town on the track next to the mill.

My perspective drawing and On2½ track plan are based on photos and a plan that appeared in Larry Koehler's book, *Three Feet on the Panhandle* (Railhead Publications). Excellent scale drawings of most W&W locomotives and rolling stock, depots, and the Waynesburg roundhouse as well as town trackage arrangements are included in this inspiring book. A more recent book, *Narrow Gauge in Southwestern Pennsylvania: The Waynesburg & Washington* by James D. Weinschenker (M2FQ Publications), includes a drawing of this yard as well as town diagrams and more photos.

Since the yard is stub-ended, inbound locomotives on passenger trains escaped using a runaround track. Inbound freight power could escape using a double-ended siding just west (left) of the depot or a nearby crossover, then head for the roundhouse lead for turning and servicing.

The industries suggest the types of traffic that kept the W&W in business. Freight was hauled in on W&W flat cars, gondolas, tank cars, boxcars, two automobile cars, stock cars, and hoppers. The line had seven cabooses that included converted coaches and four-wheel bobbers (1000 and 1001). Passenger equipment included an excursion gondola, head-end cars, combines, coaches, and a coach-observation.

Why On2½? Bachmann has produced a 2-6-0 as well as freight and passenger cars lettered for the PRR, an excellent starting point for those who maintain the narrow gauge nature of this yard. Its O scale heft but HO track gauge allow big-time railroading in a modest area and on a modest budget.

Those of you who are used to planning yards in N or HO scales will find, as I did, that reach-in distance becomes a primary concern. Starting at the top of the LDE track plan (**fig. 7**), you can count 10 tracks. If they were all spaced 3" (12 scale feet) on center lines, typical for On2½ or On3, the most distant track would be just inside the recommended 30" maximum reach-in distance. But several tracks have wider spacing to accommodate the street, depot, and some structures, and a buffer is needed between the aisle and outermost track. I therefore put the plan on a peninsula to allow access from both sides, something that would be unnecessary in a smaller scale.

There was plenty of action on this slim-gauge railroad. Waynesburg & Washington timetable 57, dated May 25, 1919, showed four daily eastward passenger trains (actually headed north from Waynesburg to Washington) and four westward; Sunday had two trains in each direction. Running time for the 28-mile trip was just under an hour and a half. Freights ran as extras (unscheduled), and it appears that four turns per day were typical.

The last scheduled passenger run was on July 9, 1929, behind no. 9684. The last steam-powered freight run

Fig. 8. The author photographed the old PRR-W&W depot and commercial buildings along First Street in Waynesburg in July 1989. A shed straddled two tracks to the left of the depot. The roundhouse was down the street, behind the depot.

was on April 6, 1933, again behind 9684. A railcar then provided service until the line was standard gauged in 1943-44. One run between Washington and Dunn was made by a PRR B6s 0-6-0, but that apparently traumatic event wasn't repeated. The PRR built a rail truck to haul local freight, and the former W&W staggered into the Penn Central and Conrail eras.

A freelancer might imagine a model railroad that continued from where the Pennsylvania RR left off in 1933 and sustained the narrow gauge into more modern times under the original W&W banner. Perhaps the connection with the Monongahela at Waynesburg could have upped the ante enough to maintain operations into the diesel era using narrow gauge Alco and General Electric diesels based on White Pass & Yukon prototypes.

Change scales?

Thanks to a narrow gauge railroad's tight curves and short trains, modeling a slim-gauge line is a good way to fit more railroading in a small space. But for those who prefer big-time railroading, let's consider another approach.

In *Model Railroad Planning 2005*, Pennsy modeler Jerry Britton listed the space problems he encountered when he chose to model Harrisburg, Pa., as a very large LDE. He was having a tough time figuring out how to cram Pennsy's yard into his basement when a fellow PRR modeler sent him a copy of a Harrisburg valuation map.

The Valuation Act of 1913 required the Interstate Commerce Commission to determine the valuation of property and assets of every railroad in the U.S. Finished about 1921, the process resulted in maps covering every mile of right-of-way, so finding a copy of a valuation map is akin to striking gold.

Jerry realized that he could model Harrisburg yard virtually intact if he switched from HO to N scale. The only compromise he would have to make was curving the approaches to either end of the yard (**fig. 9**). He was more interested in accurately depicting a favorite prototype location as an LDE than in sticking with HO, so he did some homework, liked what he found, and switched to N.

Another plus for the LDE approach to layout design: Jerry was able to use the valuation map as a template for track laying after making a copy in 1:160 proportion (N scale).

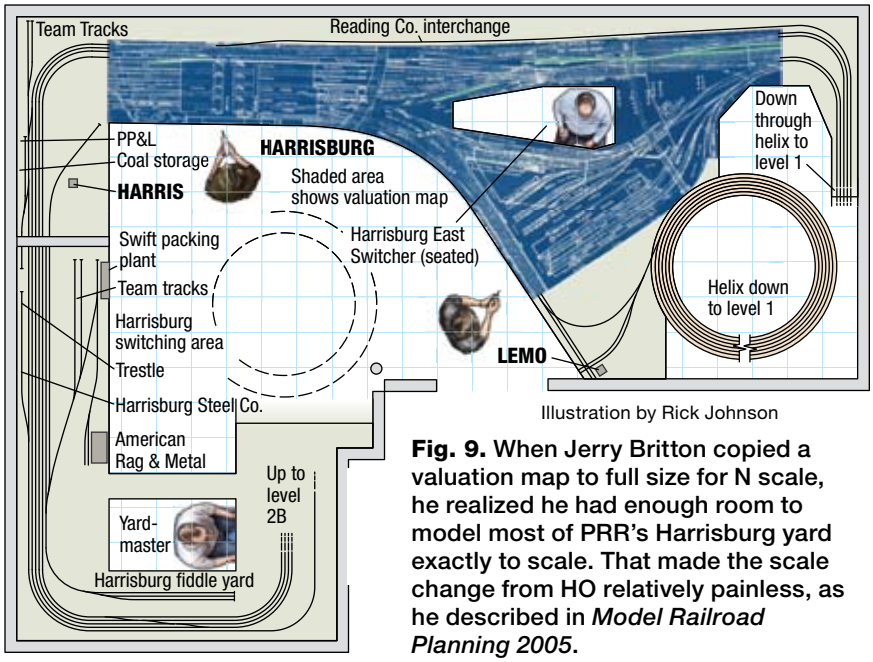


Illustration by Rick Johnson

Fig. 9. When Jerry Britton copied a valuation map to full size for N scale, he realized he had enough room to model most of PRR's Harrisburg yard exactly to scale. That made the scale change from HO relatively painless, as he described in *Model Railroad Planning 2005*.

Lead length

Before we examine other yard LDE candidates, I'd like to share something I recently learned about yard design. One long-held tenet in modeling circles is that we need to provide a yard lead as long as the longest yard track, so the yard switcher can pull an entire track as one long cut.

Handy as that sounds, it also points out a lack of understanding about how railroaders did their jobs. When I studied railroad drawings of the east end of the Nickel Plate's eastbound yard at Frankfort, Ind., which I'm modeling, I couldn't find a long track that would have served as a yard lead (**fig. 10**). The busy Pennsylvania RR crossing and, to a lesser extent, the Monon crossing just east of the roundhouse limited lead length. So how did the NKP pull an entire eastbound yard track?

When I checked with good friend and advisor Don Daily, who worked out of Frankfort as an engineer for the NKP and successor N&W, he disabused me of the notion that the lead

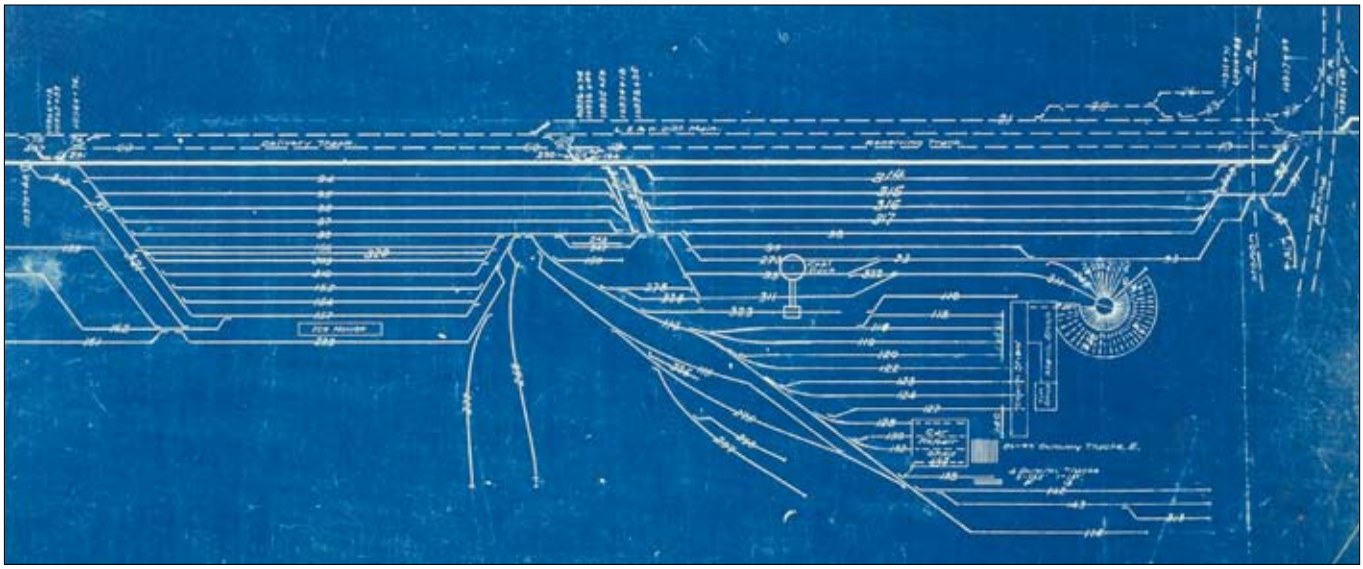


Fig. 10. Although not drawn to scale, the official track diagram for the Nickel Plate yard at Frankfort, Ind., correctly shows both east and west leads for the eastbound yard were relatively short. The Main Yard Lead, track 90, runs just above the coal dock and ties into the East Shop Lead (track 93). The West Switching Lead, track 312 at far left, connects the west ladder with the St. Louis Div. main line. Track 321 is the West Caboose Track.

should be as long as the longest yard track. It wouldn't have been safe to pull an entire track filled with cars, especially in the days before radios, Don cautioned. The engineer couldn't see hand signals more than 10 or 15 cars away as a cut curved this way and that along the ladder, so they tried not to handle cuts of greater length.

Pulling an entire track may have been done elsewhere, and perhaps it can be done safely now that radios rather than eyesight are the primary means of communication. But Don didn't do it that way in Frankfort during the steam and early diesel era. Live and learn – and ask questions!

Now that we've taken a closer look at two yards at either end of the size and complexity spectrum, let's look at some other yard LDE candidates.

The Rutland at Rutland

A fine candidate for an LDE based on a yard and adjacent engine terminal, with a junction thrown in to boot, was the Rutland RR's yard at Rutland, Vt. (**fig. 11**), which was the hub of the railroad. The Rutland RR was shaped like an upside-down Y, with Rutland at the junction of the lines southeast to Bellows Falls, Vt., and southwest to a Boston & Albany (New York Central) connection at Chatham, N.Y. It ran north from Rutland to the Canadian border, then paralleled the border west to Ogdensburg, N.Y.

The River Street overpass at Rutland, seemingly built as a railfan's photographic perch, visually separated the yard and downtown area along the north side of the yard from the junction. Inside the crotch of the Y was Howe Scale Co., itself an excellent candidate for an LDE.

The cityscape along the north edge of the yard, evident in the railroad's plan view of the yard (see **fig. 12** on the next page), would form a great background flat. On the other hand, the engine terminal and roundhouse are on

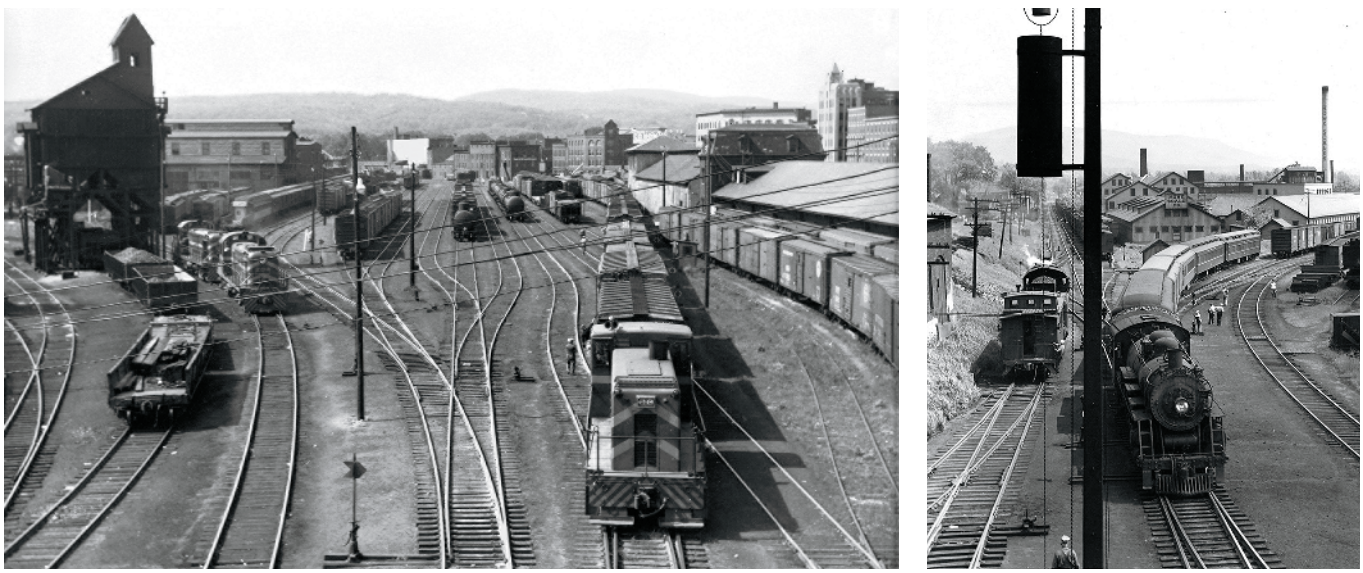


Fig. 11. W. Clifford Cottrell stood on the River St. overpass to photograph the Rutland yard in December 1954, two years after steam's demise. Looking southeast from the same bridge in June 1947, Philip R. Hastings photographed the arrival of "borrowed" B&M Pacific 3656 on Train 65, the *Green Mountain Flyer*, from Troy.

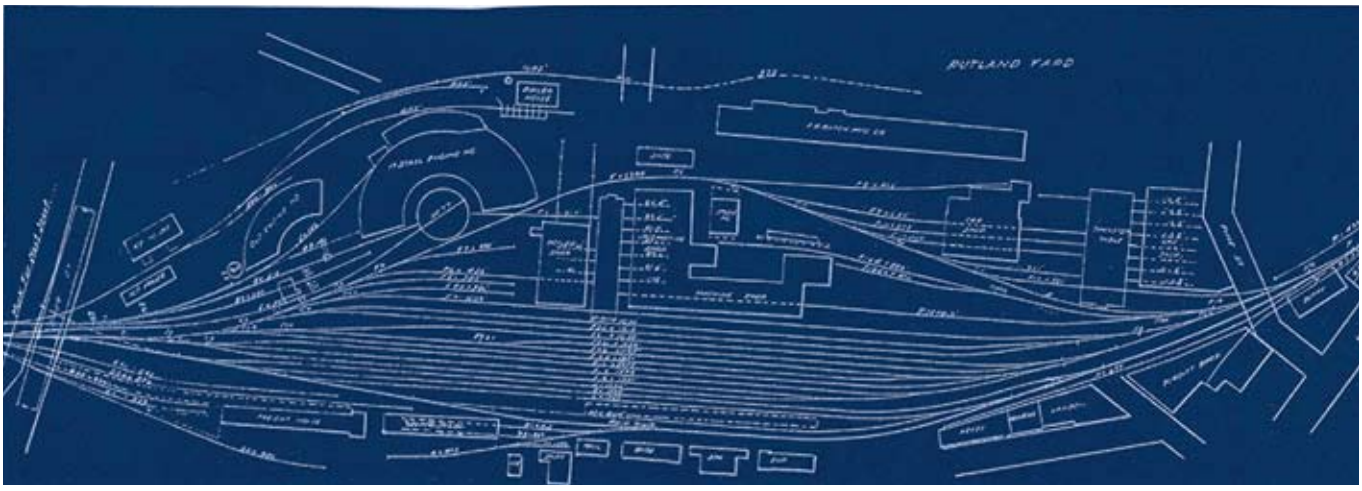


Fig. 12. Rutland Yard makes an excellent candidate for an LDE because of its compact size, natural backdrop of city buildings, engine servicing structures, and the junction between two Rutland lines.

the aisle side of the yard, forcing switch crews to work around them. As long as the operators have access to the yard throats, they should be OK.

At the turn of the century, a dozen passenger and mixed trains were scheduled in or out of Rutland each day. By the century's mid-point, passenger service was gone.

Even though Rutland was a one-railroad town, Boston & Maine power came up the Bennington Branch on No. 65, the New York section of the *Green Mountain Flyer*. This resulted from the Rutland using B&M trackage to reach Troy, N.Y., and the need to balance mileage. A careful choice of prototype may therefore allow trains or motive power from two or more railroads to be modeled. The freelancer can similarly operate trains from a prototypical railroad alongside those of his or her freelanced line, thus helping ensure that viewers readily grasp the mythical railroad's locale and era.

The Rutland was one of the first railroads to dieselize. Alco RS-1s and RS-3s arrived on the property in the early 1950s. The railroad's green-and-yellow Pullman-Standard PS-1 boxcars and wide-cupola cabooses gave it a modern look despite the company's declining fortunes.

Fig. 13. The Western Maryland yard at Elkins, W. Va., was primarily used to build coal trains from loads gathered up on branches to the south. A two-story brick depot housed division offices. The author took these photos in 1971 and 1976.

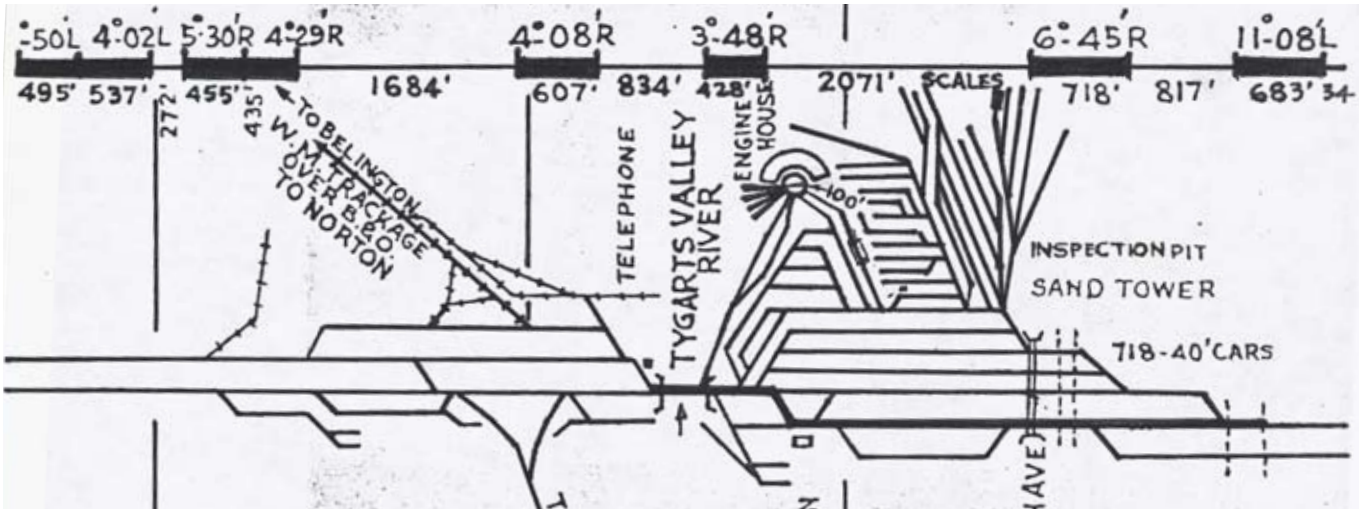


Fig. 14. This WM schematic of the yard at Elkins, W. Va., shows four ways out of town, including trackage rights over the B&O to Bellington. Coal loads went to the right (railroad east) to Thomas and Cumberland.

Fig. 15. To avoid getting coal dust in the wood chips, chip hoppers were put on the head end of the Western Maryland's local out of Elkins. The author took the photo in May 1973.

Huntsville International Intermodal Center photo

Fig. 16. The compact Huntsville (Ala.) International Intermodal Center, above and at top, is positioned between the airport runways and a small rail yard serviced by the Norfolk Southern. An Alco RS-1 handles car movements within the small yard. Its small size makes it an excellent candidate for conversion to a Layout Design Element. Bottom photo by Tony Koester

The Rutland was abandoned in 1962 after a lengthy management-labor impasse. Portions of the road were taken over by the Green Mountain Ry. and the Vermont Ry. and operate to this day, including the line past the Howe Scale Co. into Rutland. The yard and engine terminal there are gone, though.

Elkins, W. Va.

The Western Maryland's yard at Elkins, W.Va. (**fig. 13**), is a good example of a significant yard that is not overwhelming in size or complexity. The railroad's schematic drawing (**fig. 14**) shows the layout of Elkins.

Elkins was in the heart of coal country, and the yard here served primarily as a place where loaded coal hoppers from outlying branches were gathered for the trip northeast to the main line at Knobmount Yard in Cumberland, Md.

Forest products, mostly wood chips and pulpwood, were also shipped out of the central Appalachians to paper mills such as the West Virginia Pulp & Paper mill at Luke, Md. Most eastbound freights had a few hoppers piled high with wood chips coupled directly behind the locomotives to avoid contaminating them with "whiffle dust" from the coal hoppers (**fig. 15**).

At Durbin, W.Va., the Elkins line connected end-to-end with the Chesapeake & Ohio's Greenbrier branch, which left the double-track C&O main line near Whitcomb, W.Va. Though there was some through freight, this line did not become a major bridge route for either railroad.

Elkins had a roundhouse and turntable as well as a car-repair shop. Just to the south (railroad west) of the depot and roundhouse was a through-truss bridge over the Tygarts Valley River. The depot itself was a two-story brick edifice, with the superintendent's office upstairs.

It was all uphill east of Elkins, including a formidable stretch known as Black Fork Grade, which reached an astounding 3.75 percent in places with curves up to 17 degrees. In the steam era, double-headed massive and potent 2-8-0s took the train out of Elkins to Montrose, where two more Consolidations were added as pushers. Three more were cut in mid-train at Hendricks for the remainder of the run to Thomas. Beginning in 1953 and continuing into the second-generation diesel era, first-generation EMD F-unit and Alco RS-3 haulers and helpers took over the battle with the mountain.

Elkins Yard and the Western Maryland are gone, but some railroad activity continues in the area. Elkins is hard to beat as a candidate for a Layout Design Element representing a modest-sized coal-marshalling yard set deep in the mountains.

Huntsville, Ala.

Huntsville, Ala., is the site of another excellent LDE candidate: a modern intermodal yard (**fig. 16**), which Jerry Moyers described in *Model Railroad Planning 2000*. He designed an LDE based on this terminal (**fig. 17** on the next page).

The center of attention at any intermodal terminal is the mobile crane that lifts containers on and off flatcars and truck chassis. Digital Command Control decoders and motors have been used to control an operating wreck crane, so animating a container-loading crane is feasible. Heljan offers a working model that uses electromagnets to pick up and move containers.

Kansas City "Bottoms"

A recent and increasingly popular trend in layout design is a large layout that features only yard and transfer operations, almost to the exclusion of

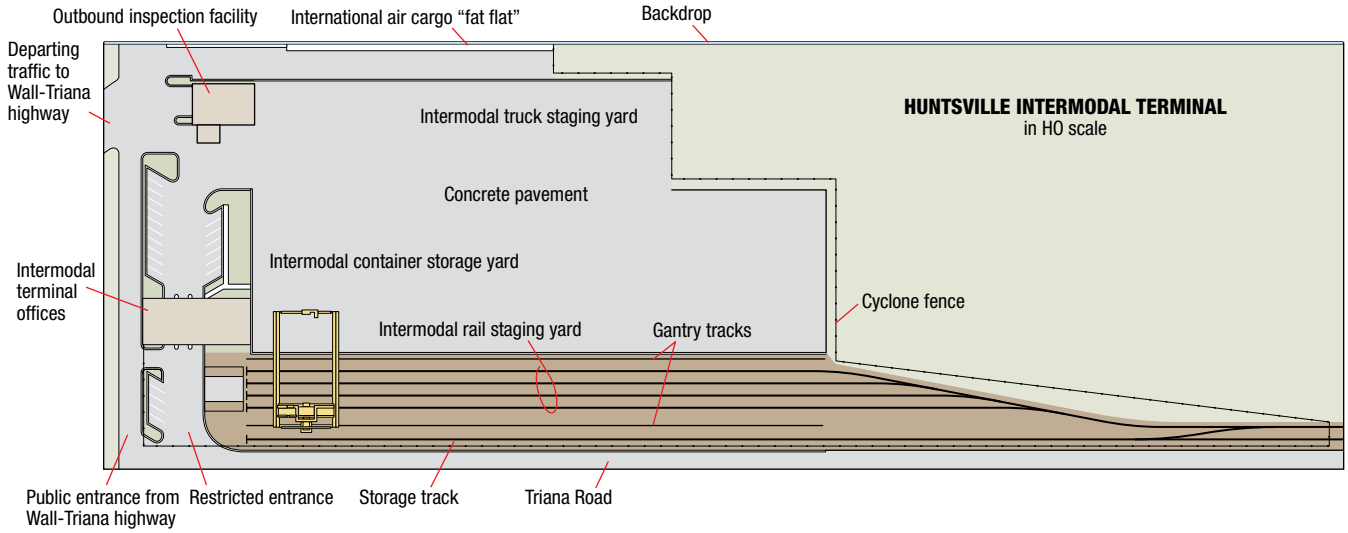


Fig. 17. Jerry Moyers designed this HO scale LDE of the Huntsville, Ala., intermodal terminal to fit in 5'-6" x 16'-0".

any main line at all. One trendsetter in this approach is Jim Senese. Jim lives in Oklahoma but models the industries and yards in the Kansas City East and West Bottoms area (**fig. 18**).

Jim's layout (**fig. 19** and *Model Railroad Planning 1999*) is essentially a series of yard and industrial LDEs supported by local switching and yard transfer runs. This allows nonstop operating sessions as well as the opportunity to model a host of local roads, including the Kansas City Terminal, Kansas City Southern, and Burlington Northern Santa Fe.

Mt. Union, Pa.

As late as the mid-1950s, the Pennsy interchanged with the three-foot-gauge East Broad Top at Mt. Union, Pa., offering the opportunity to model both standard- and slim-gauge railroads in the steam-to-diesel transition era on one Layout Design Element (see **fig. 20** on page 14). How that interchange was accomplished provides an interesting example for prototype modelers and freelancers alike.

The EBT's primary cargo was bituminous coal. The coal wasn't cleaned and sized at the mines, but was hauled out of the mountains to a large preparation plant in Mt. Union (**figs. 21** and **22** on page 14). That plant was the key to the EBT's viability years after most Eastern slim-gauge lines had folded. The coal already had to be unloaded from the EBT's hoppers for cleaning and sizing, so no extra work was required to load it into standard-gauge hoppers for the trip to market.

Inbound loads in standard-gauge boxcars, flatcars, and tank cars could have their lading transferred to narrow gauge cars, but the EBT created a more novel solution: One of their two

Fig. 18. Jim Senese looked to prototype industries and yards in the Bottoms area of Kansas City, including the Gold Medal Flour mill, as LDE candidates for his HO version of the Kansas City Terminal Ry. Jim Senese photo

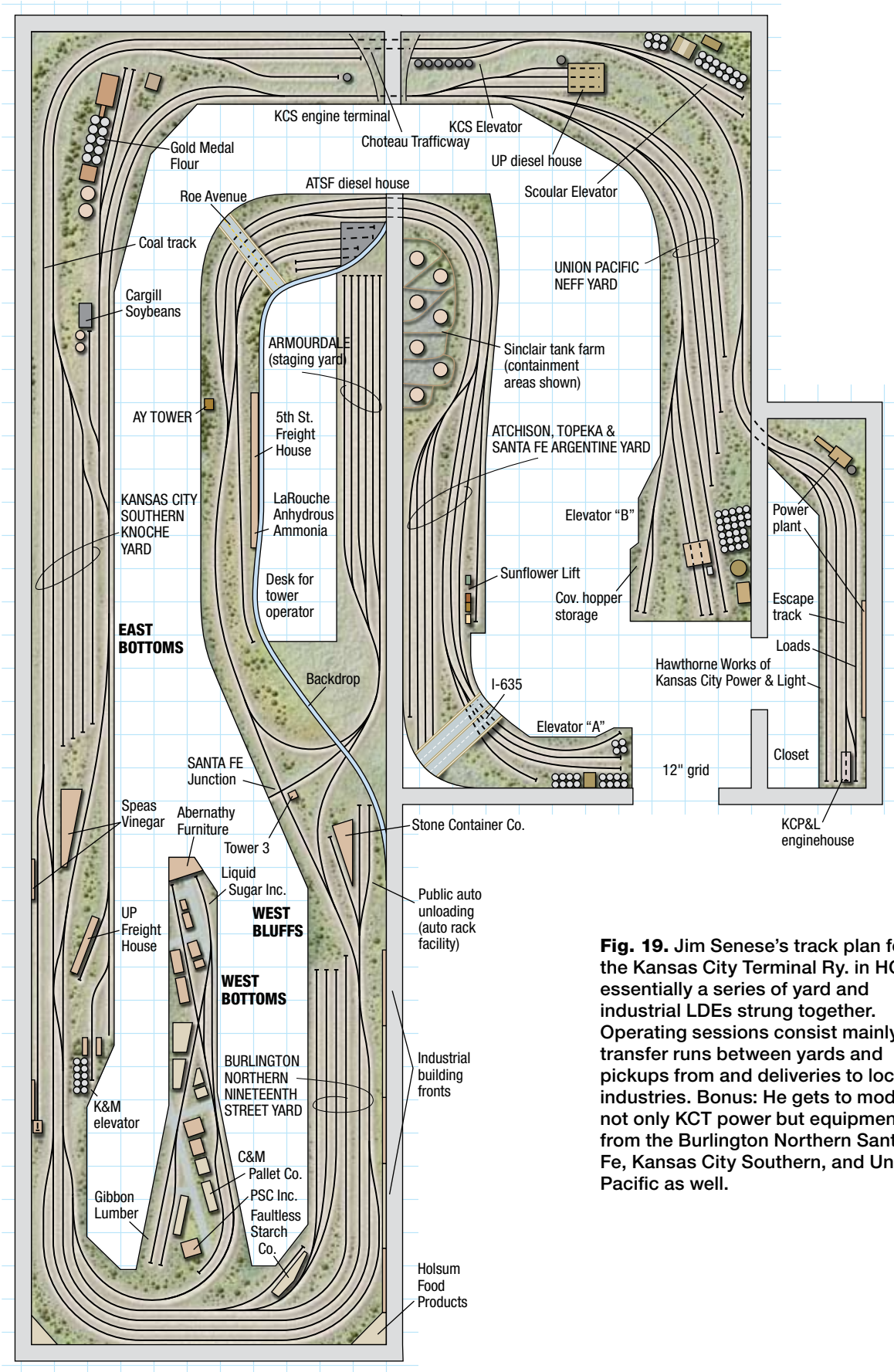


Illustration by Kellie Jaeger

Fig. 19. Jim Senese's track plan for the Kansas City Terminal Ry. in HO is essentially a series of yard and industrial LDEs strung together. Operating sessions consist mainly of transfer runs between yards and pickups from and deliveries to local industries. Bonus: He gets to model not only KCT power but equipment from the Burlington Northern Santa Fe, Kansas City Southern, and Union Pacific as well.

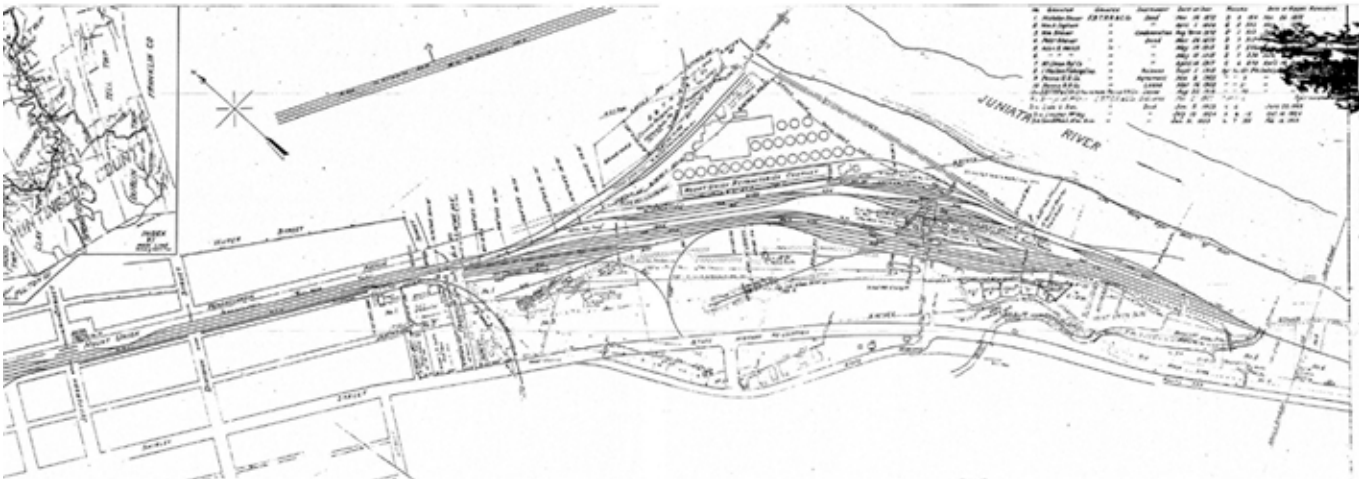


Fig. 20. Mt. Union, Pa., was where the narrow-gauge East Broad Top interchanged with the Pennsy. The EBT's coal prep plant was here. Mt. Union provides an opportunity to model both standard and narrow gauge tracks on one LDE.

Figs. 21 (above) & 22. The East Broad Top brought raw coal to the preparation plant at Mt. Union, where it was dumped, cleaned, sized, and reloaded into standard gauge hoppers for shipment to customers via the Pennsylvania RR. The photo above was shot in 1953 by Philip R. Hastings. Near the prep plant was the old timber transfer crane, seen above and in the 1949 photo at left, which was taken by Charles S. Small. This crane was used to lift standard-gauge freight cars off their trucks, one end at a time, so narrow gauge trucks could be installed for travel over the three-foot-gauge EBT.

standard-gauge 0-6-0s switched cars from the PRR to the track that ran under the timber transfer crane, where one end of a standard-gauge car could be raised and its truck rolled out of the way. Several men then rolled a narrow gauge truck under the car, then the procedure was repeated at the other end. An aluminum knuckle casting was dropped into the regular coupler to change the height to match narrow-gauge equipment. Once the car had been re-trucked, it could head south into EBT country.

In addition to coal and other freight operations, the EBT also delivered gannister rock, which looked like white coal in the hoppers, from mines below Orbisonia to brick refractories in Mt. Union. The Juniata River ran along the north side of the yard, suggesting a place to put the main access aisle.

This LDE candidate offers modelers the chance to model not only two different railroads, but also both narrow- and standard-gauge lines and several interesting industries set amid verdant mountain ridges, all in a modest area.