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SPECIAL ISSUE

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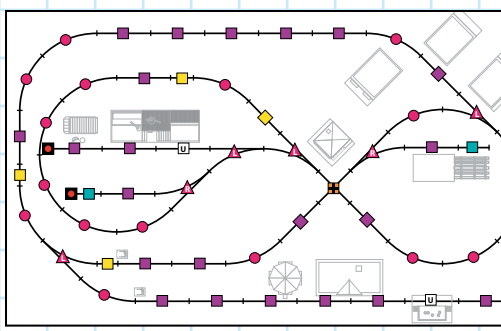

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CLASSIC TOY TRAINS MAGAZINE

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Small and smart, midsize and manageable

Whether you've just received your first train set or you're a veteran of the toy train hobby, you probably have big dreams about someday creating your own three-rail empire. Me too. But like so many other dreamers, I've personally found that building and operating an O gauge layout that's a little less ambitious can be just as much fun as developing a larger, more involved railroad.

That's why I'm excited to present you with some of my all-time favorite small and smart to midsize and manageable O gauge track plans culled from the pages of *Classic Toy Trains* magazine. With every plan you'll find complete layout dimensions, a list of required track, and a color-coded diagram that helps you properly position each section when you're ready to build. And to help you grasp the full potential of a layout, these plans also feature specific construction, scenery, and operating tips that promise to extend your interest well beyond the borders of a 4 x 8-foot sheet of plywood – the building block most often associated with a "small" layout.

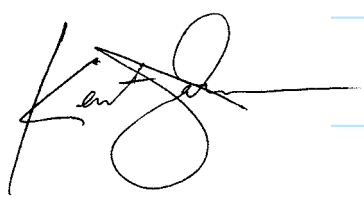
However, when it comes to the actual footprint required to operate and maintain a 4 x 8-foot layout, many unsuspecting builders discover that an additional foot or two around the entire perimeter is essential. Why so? In most cases, a builder's arms can comfortably reach only 3 feet into a layout. That makes it rather challenging to reach trains or operating accessories from just one 8-foot length of a layout.

While you'll find an array of traditional small and midsize layouts in this special issue, I've also made a point to include track plans that are designed specifically to make the most of a given space. Schemes with simple lift-out sections, walk-in access, and around-the-walls orientation abound.

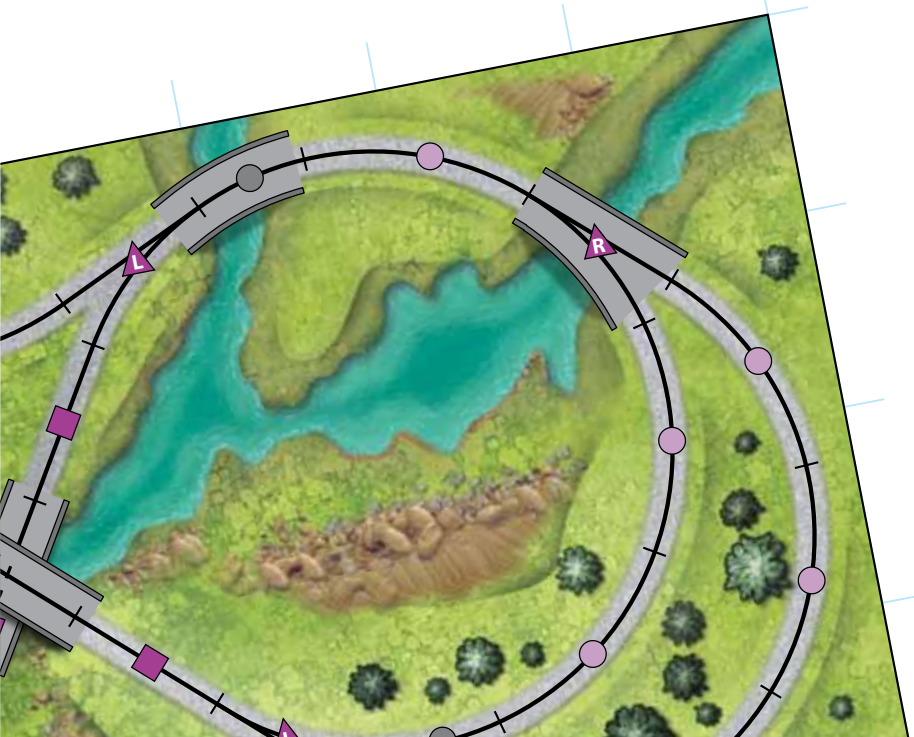
As you peruse this compilation of track plans, I suspect you'll also be fascinated by the operating possibilities that arise once you stretch beyond the ubiquitous 4 x 8 footprint. Many of the designs included in *Small & Midsize Track Plans for O Gauge Trains* afford room for multiple routes, trains, and operating accessories that go far in defining the purpose and character of a toy train layout.

Even if you don't intend to build a layout immediately, you'll find that the insightful description included with each plan provides the inspiration you need to set the wheels in motion. And because this is indeed a hobby for dreamers, I've added a few "big" bonus track plans that share some traits with their small and midsize siblings.

Once you've selected a plan from this special issue, you can progress confidently into construction, knowing that you've got a trusted design at your fingertips and a full complement of instructional articles, books, and online assets available from the publisher of *Classic Toy Trains* magazine. Have fun and stay on track!



Kent Johnson, Editor



◀ You'll find a detailed description of this 4 x 8-foot track plan on page 12.

▶ Details about this more ambitious around-the-walls plan appear on page 76.

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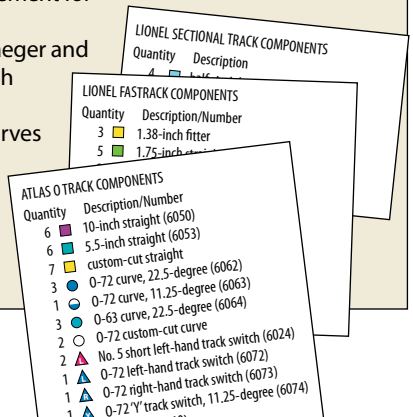
SHAPES, SHADES, AND SYMBOLS: ABOUT THE TRACK COMPONENT KEY

Perhaps the greatest benefit of a printed track plan is the guidance it provides when assembling specific track components. Since 2005, *Classic Toy Trains* magazine has published a handy track component key with nearly every plan in our Toy Train Track Plan series. This handy color-coded key shows readers every type of track section required to assemble a given plan. But more importantly, this key guides readers to the precise placement for each section of track in a plan.

Thanks to the diligent efforts of Kellie Jaeger and other top-notch Kalmbach illustrators, each track component key, regardless of track brand, reflects straight track as squares, curves as circles, and track switches (turnouts) as triangles. Unique colors and symbols within these shapes are also used to help readers quickly identify special track sections.



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SPECIAL ISSUE

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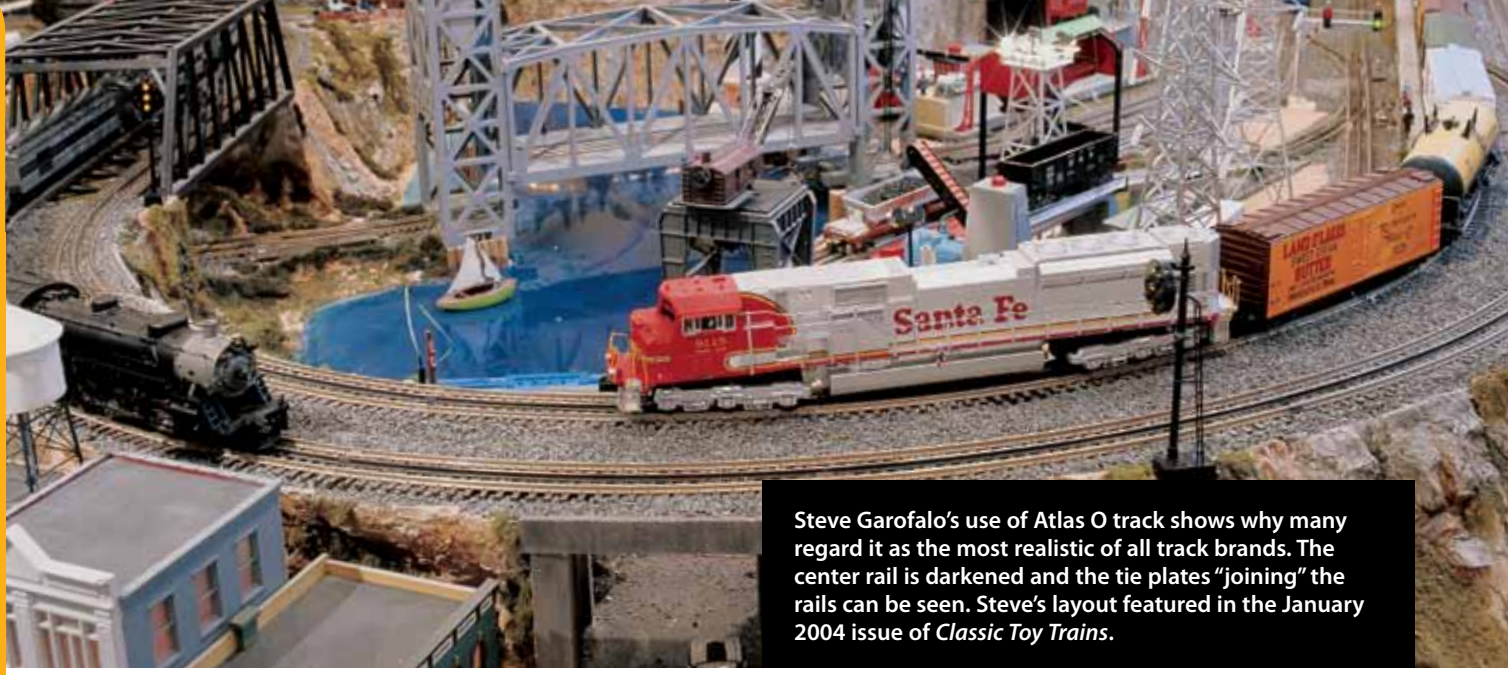


Steve Garofalo's use of Atlas O track shows why many regard it as the most realistic of all track brands. The center rail is darkened and the tie plates "joining" the rails can be seen. Steve's layout featured in the January 2004 issue of *Classic Toy Trains*.

Track buyer's guide
O gauge track & switches

by Bob Keller

Walk into a toy train shop today, and you may find eight brands of O gauge track in 15 different varieties. Which one do you choose? It depends on three points:

- What you want your railroad to look like – a postwar Lionel layout or a scale-detailed empire.
- Which locomotives you want to run – small locomotives with semi-scale rolling stock or long articulated monsters with full-length cars.
- How much you want to spend.

O and O-27 track

Before you start, you need to know the language of O and O-27 track, and tubular and solid-rail track.

Lionel began producing regular O gauge straight and curved track sections way back in 1915. Regular O gauge track's all-metal construction – three tubular rails held together by widely spaced, folded sheet-metal ties – hasn't changed since.

Curved sections are typically found in one of four sizes – O-31, O-42, O-54, and O-72. A circle of O-31 curved track is 31 inches in diameter, O-42 is 42 inches in diameter, and so forth.

Lionel and other companies also produce O-27 track. It looks like a less-rugged version of regular O track. At a glance the two track styles may appear to be the same, but O-27 track uses rail and ties with a slightly lower height. O-27 track usually has brown-painted metal ties, whereas regular O track has black-painted metal ties.

Originally, O-27 curves were sold in only one size, which produced a 27-inch-diameter circle.

Many O gauge locomotives cannot negotiate such a sharp curve, although all O gauge locomotives will operate just fine on O-27 straight sections. The confusing part is that you can buy O-27 style curved track sections that actually form 42- and 54-inch circles, although the track is still called "O-27."

If you build a layout with O-27 track, we strongly suggest you use these wider-diameter curves (and track switches), or your selection of locomotives and rolling stock will always be limited.

Tubular and solid-rail track

Two basic types of track are found on the O gauge market: tubular and solid rail. Distinguishing between the two is simple.

Tubular track – bright and shiny – is hollow and made from a ribbon of thin sheet steel bent to the shape of a rail. If you wrapped a piece of aluminum foil around your finger and then removed your finger, you'd have a rough-looking section of tubular rail.

Several companies, including Lionel offer tubular track in O and O-27 styles. GarGraves makes a style of tubular track with flatter-topped rails that look more realistic than does track with round-topped rails.

This tubular-rail style is also the essence of specialty track products made by Curtis HiRail (no longer in business) and Ross Custom Switches. And, believe it or not, Lionel's FasTrack rails qualify as tubular, since they are sheet metal.

Solid-rail track is just that – solid metal. A bar of metal, usually a nickel-silver alloy, is drawn through a milling machine to create a rail with a T-shaped cross section, just like real railroad track.

Atlas O and MTH are the only companies that make solid-rail track. Atlas O rails are mounted on plastic ties (simulating wood or concrete ties). MTH has two styles of solid-rail track – RealTrax, with its rails affixed to a gray plastic base with cast-in ties, and ScaleTrax, which uses plastic ties like Atlas O track.

Tubular track

Lionel LLC

Lionel offers tubular track in three styles: traditional O-27, traditional O gauge, and FasTrack with a solid plastic roadbed. Lionel's website is Lionel.com.

FasTrack

Straight track: 10- and 30-inch sections; as well as 5-, 4½-, and 1¾-inch fitter sections
Curved track: O-36, O-48, O-60, O-72, and O-84; O-36 and O-72 half-sections
Specialty items: Track power lock-on, FasTrack-to-tubular transition, block, uncoupling, operating, railer, and accessory-activator sections
Switches: O-36 manual; O-36, O-60, and O-72 remote-controlled O gauge switches
Other: Grade crossing, grade crossing with lights, bumper sections, and crossovers
Comments: FasTrack looks sharp and has a good record with users. The appearance of the gray plastic roadbed base is attractive. In a break from the past, Lionel does not make FasTrack in 31-inch-diameter pieces.

Traditional tubular track

Straight track: O-27 style in half, 8¾, and 35-inch sections; O gauge in half, 10-, and 40-inch sections
Curved track: O-27 style in half, 27-, 42-, and 54-inch diameters; O gauge in half, 31-, 42-, 54-, and 72-inch diameters
Specialty items: Insulated, uncoupling, RCS/UCS, O gauge insulated, RCS
Switches: O-27 in manual and remote, O-27 style O-42 remote; O gauge O-31 and O-72 remote
Other: Crossovers
Comments: The mainstay of O gauge layouts for nearly a century. Easy to use and work with; creates toy-like appearance. With Lionel's emphasis today on FasTrack, supplies of new O and O-27 track may not be as plentiful in years to come, but they are still very easy to purchase today.

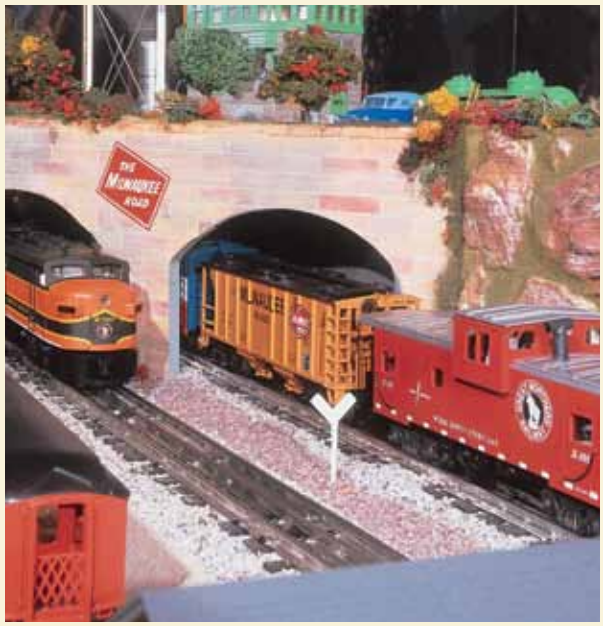
K-Line Electric Trains

K-Line as an independent company is gone, but there are truckloads of new and used K-Line track still available.

K-Line's lineup includes traditional O and O-27 gauge tubular track that looks just like Lionel's, Shadow Rail with the same tubular rails (the center rail is darkened) mounted to black plastic ties, and SuperSnap track that looks like Shadow Rail but snaps together using tabs and metal strips on the ties instead of pins in the hollow rails.

Traditional tubular track

Straight track: O-27 style in half, 9-inch, and "extra-long"; O in half, 10-inch, and "extra-long"



▲ **Earl Remmel's layout (November 2004 *Classic Toy Trains*) combines realistic scenery with tried-and-true tubular track. Adding extra ties and a good covering of ballast prove that there's still life in this track style.**

TUBULAR TRACK TIPS

Assembly: Using traditional tubular track is simplicity itself. Take one section, align the steel pins with the holes in the next section, and insert! Be advised that on newly made traditional tubular track, this can be a tough prospect since the holes are tight. And, since you're working with sharp metal edges, work gloves aren't just for wimps.
Track tricks: With traditional tubular track, you can electrically insulate an outer rail to automatically activate trackside accessories by installing small pieces of cardboard or another insulating material between the underside of the rail and its metal ties. GarGraves track, with plastic or wooden ties, already provides insulated outer rails. Also, with all tubular track except for FasTrack, you easily can cut odd-sized "fitter" sections with a hacksaw, tin snips, or power tools, and simply insert the pins of the adjacent track section into your newly cut section. FasTrack can be cut, but it will take extra effort to join the cut section mechanically and electrically to an adjacent piece of track.
Power: With solid-steel connecting pins, tubular track is a good carrier of electricity.
Care and feeding: The track's lifespan depends largely on how you care for your layout. In damp conditions it will rust. Also, it is possible to wear out tubular track, but that requires an awful lot of wheel spinning!
Extras: Tubular track comes in a wide variety of curves and switches, and every style of accessory activator track has been produced in a traditional tubular version. GarGraves offers flextrack sections that can be bent into any size curve. Lionel FasTrack has a built-in roadbed base.
Cost: Traditional tubular track, either regular O or O-27, is the least expensive style of O gauge track. Good used track can be found for a fraction of the cost of new track. GarGraves' prices are in the middle of the pack, and Lionel's FasTrack and Ross products command premium prices.

Curved track: O-27 style in half, 27-, 42-, 54-, and 72-inch diameters. O gauge in half, 31-, 42-, 54-, 63-, 72-, 81-, 96-, and 120-inch diameters
Specialty items: O and O-27 uncoupling sections
Switches: O-27 style O-42 remote, O gauge O-42 manual and remote switches are available
Other: O and O-27 90-degree crossovers
Comments: Complements Lionel's lineup of tubular track.

Modified tubular track

Straight track: SuperSnap style in half, 3½-, 4-, 10-, 20-, and 40-inch sections. Shadow Rail style in half, 10-inch, and "extra-long" sections
Curved track: SuperSnap in 31-inch half and full, 42-inch half and full, and 54-, 63-, 72-, 81-, 92-, and 120-inch diameters. Shadow Rail in 30-inch half and full (not 31) and 54-, 63-, 72-, 81-, 92-, and 120-inch diameters
Specialty items: SuperSnap terminal/lockon track, and illuminated bumper. Shadow Rail surge protector track
Switches: O-31 and O-72 remote switches
Other: 60- and 90-degree crossovers
Comments: K-Line modified tubular track was made in a large variety of curved sections. Both are a good compromise between the functionality of tubular track and the realism of solid-rail track. O gauge track pins can be inserted into SnapTrack to mate it with other brands of tubular track. [K-Line is now a Lionel licensed brand, and future Shadow Rail/SnapTrack production will be determined by Lionel.]

GarGraves Trackage Corp.

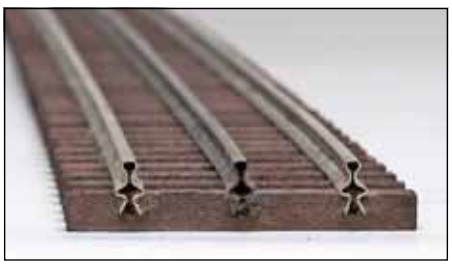
GarGraves offers two track lines: Regular and Phantom. The main difference is that the Phantom line features a blackened center rail. Either type of track is available with tinplated or stainless-steel rails, and as rigid sectional track with plastic or wooden ties or flexible 37-inch-long pieces with wooden ties.

Magne-Traction functions on the tinplated rails (but not as strongly as on traditional metal-tie track). The stainless-steel rails are responsive to the system's magnetic pull.

GarGraves track is connected just like traditional tubular track – simply insert pins into the hollow ends of the rails. One of the great selling points of GarGraves is that the line features flexible track – track that you can bend to suit the needs of your track plan.

There is no denying that GarGraves flexible track looks terrific on toy train layouts and offers good electrical connections between sections.

GarGraves' website is gargraves.com.



Straight track: 6.2-, 12.4-, 24.8-, and 37-inch sections
Flextrack: 37-inch sections
Curved track: Diameters are 32, 42, 54, 63, 72, 80, 89, 96, 106, 113, 120, 128, and 138 inches
Switches: O-42, O-72, and O-100 manual and remote
Other: Terminal, accessory operation, uncoupler, and uncoupler/unloader sections
Comments: GarGraves has been the alternative to traditional tubular track since the 1940s because it looks superb, offers first-rate electrical connectivity, and is widely available. Care must be taken to avoid kinks when bending flexible track.

Curtis HiRail Products

No longer in business, you may find Curtis products on the secondary market. Curtis made a line of sectional track, switches, and crossovers that used GarGraves rail. Switches featured Delrin frogs, nickel-coated brass bushings, and metal guardrails, with rails spiked and bonded to the ties.

Switches: Excel line nos. 4, 6, and 8; Hi-Quality line O-31, O-42, O-54, O-72, and O-72/O-54; standard wye; three- and four-way; eight-track yard; double slip; and double crossover
Other: 45-, 60-, and 90-degree crossovers.

Ross Custom Switches

Ross offers a line of sectional track, switches, and crossovers using GarGraves-style rails. Switches feature an all-aluminum frog, metal guardrails, and brass bushings for point swivels. Wooden ties are locked in place, and rails are spiked and glued to the ties.

Ross has two switch lines: Super-Line switches, which feature curved diverging routes in traditional toy train diameters, and Premiere switches, which feature straight diverging routes. Switches are available without a switch machine or as "RossReady," which includes wiring and a Z-Stuff for Trains switch machine.

Ross products are available through a select dealer network or direct from the company at 800-331-1395. To find a dealer, check out rossswitches.com.

Straight track: 3-, 10-, 14½-, and 29-inch sections
Curved track: Diameters are 31, 42, 54, 64, 72, 80, 88, 96, 104, 112, 120, and 128 inches.
Switches: Super Line includes 11-degree, O-31, O-42, O-54, O-64, O-72, O-80, O-96, O-54/O-31, O-72/O-54, double crossover and four-way products, plus wyes in 11-degree, O-31, O-42, O-54, and O-72. Premiere Line includes no. 4, no. 4 three-way, no. 6, no. 8, no. 6 curved, no. 8 curved, no. 10, and double-slip switches, plus no. 4 yard and no. 8 double crossovers
Other: 11-, 22.5-, 30-, 45-, 60-, and 90-degree crossovers
Comments: Ross products are the pinnacle of O gauge tubular track and switches. Ross offers a stunning variety of switches and is a favorite of professional layout builders.

Williams Electric Trains

Williams by Bachmann offers traditional O gauge track. The track has five ties per section for a nicer appearance than the three tie-per-section style that traditional Lionel tubular sections use. The track is also sold in boxes, which helps ease pre-construction movement and storage of loose

sections. The firm's track is fully compatible with traditional tubular track by Lionel or K-Line.

The Williams product line can be found by going to bachmanntrains.com.

Straight track: 10-inch track sections

Curved track: O-31 and O-72

Comments: Looks nice, and the extra ties complement Lionel's line of traditional O gauge track.

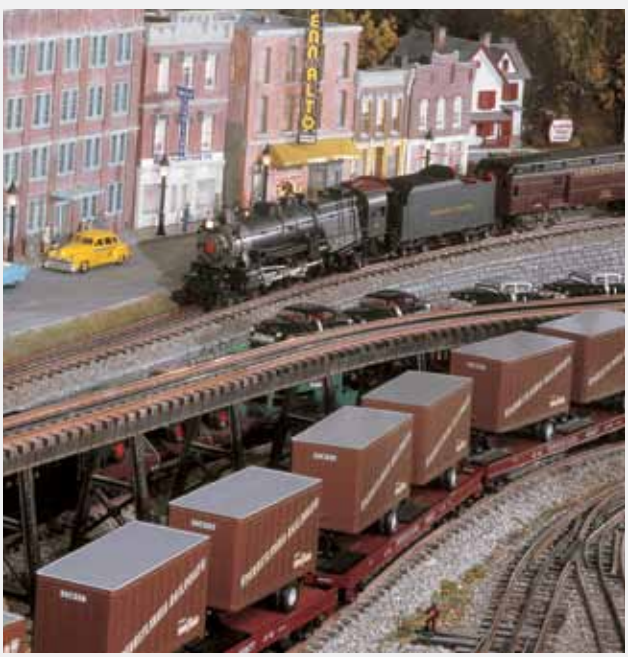
TUBULAR TRACK: PROS & CONS

Pros:

- Excellent electrical connections between track.
- Easy to configure or modify for control blocks and for accessory activation.
- Traditional tubular track is inexpensive and available everywhere.
- All sorts of special accessory-activation track sections have been produced.
- Most types work with Lionel Magne-Traction.
- Easy to create odd-length sections.
- Pin-and-tube connections are more forgiving when building a layout from an imprecise track plan.

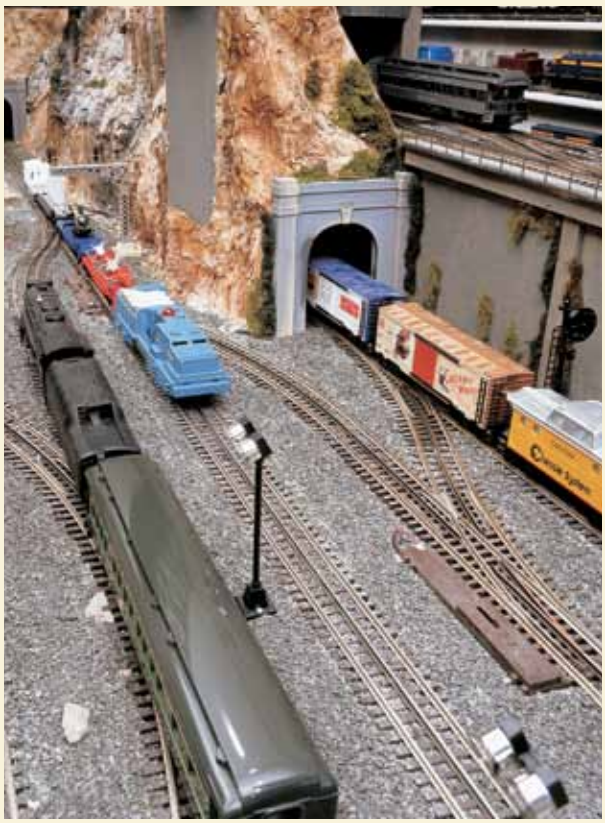
Cons:

- Traditional Lionel tubular track looks unrealistic due to shape and tie spacing.
- Track sections don't hold together as well if track is continually disassembled and reassembled.
- Sharp edges can be tough on your hands.



▲ **Don Williams' layout (October 2004 *Classic Toy Trains*) shows the prototypical look of GarGraves track. The painted rail sides and good ballasting maximize the authentic look of the flextrack that Don used.**

Solid-rail track



▲ **As Steve Garofalo's layout illustrates, solid-rail track like the 21st Century Track System by Atlas O can handle trains of any vintage. The track looks great and is built to last.**

ATLAS O TRACK TIPS

Assembly: The plastic base and ties of Atlas O track interlock with adjacent sections. Sheet-metal joiners, like those used in HO and N scales, connect the rails.

Track tricks: Electrically insulated sections are made by inserting non-conductive rail joiners between track sections. Atlas O offers a line of track made of steel rails for improved operation with Magne-Traction-equipped locomotives.

Power: Easy to add using rail-joiner track feeder connections.

Care and feeding: If any O gauge track can be described as "lasting forever," it just may be the Atlas O system. Used continually on my home layout since 1998, it has not shown wear on the rails; neither has its flat-top profile damaged pickup rollers, as feared by some when the track was introduced.

Extras: Atlas O offers a variety of fitter and specialty sections. I installed several track switches on my home layout, and they look fine and operate well. I love their spring-operated non-derailing feature, which is akin to "Look Ma, no wiring." Be forewarned: Atlas O switch machines are delicate and will pop open if handled roughly.

Cost: Pricier than traditional tubular track.

Atlas O

Atlas O's 21st Century Track system is visually stunning. It's the greatest improvement in the appearance of toy train right-of-way since GarGraves entered the market more than half a century ago. Atlas O markets its nickel-silver rail track in a variety of curve diameters, switch sizes, and fitter sections that virtually eliminates having to break out a saw.

Atlas O also offers track with steel rails for operators with Magne-Traction locomotives, but the steel track is not available in all of the nickel-silver sizes. Like GarGraves, Atlas O also offers its track in long, flexible sections that can be bent to nearly any curve diameter.

On a temporary floor layout, Atlas O track does not stay together nearly as well as traditional tubular track, but fixed to a layout surface the track holds together fine. If Atlas O track has a weak point, it's the sheet-metal rail joiners. They don't always slide onto the ends of the rail smoothly.

Atlas O offers a video introduction to the track system, a layout book, and track-planning software. It also puts out pre-selected track packages to build specific layouts in its book of track plans. Atlas O track is available at many retailers or direct from Atlas O's website at AtlasO.com.

Straight track: 1¼-, 4½-, 5½-, 10-, and 40-inch sections
Flextrack: 40-inch section (cement- or wooden-style ties)
Curved track: O-27 half and full; O-36 and O-45 quarter and full; O-54 half and full; O-72, O-90, and O-99
Specialty items: 10-inch straight activator section, 10-inch straight terminal track (lockon), and 1¾-inch uncoupling section
Switches: No. 5 double slip, no. 5, O-36, O-54, O-72, and O-72/O-54 curved
Other: Track also available in a stainless-steel version that works with Magne-Traction
Comments: Outstanding in appearance with an ample number of fitter sections to make layout building easy. Over time, attention to rail joiners may be needed for good electrical connectivity. These rails may "last forever."

MTH Electric Trains

MTH's RealTrax brand of track (part of its RailKing line) first brought to O gauge what HO and N scale have had for several years: solid, T-shaped rails mounted on a simulated roadbed that snaps together. The track is seated on gray plastic with simulated ties and ballast.

The appearance of the roadbed may suggest "kid stuff," but MTH is offering enough different straight lengths and curve diameters to suggest that the target audience is established hobbyists.

While a long RealTrax main line looks impressive, the appearance of the base may not appeal to everyone. We've heard of some hobbyists who install the track and then cover it with ballast to help it blend into existing scenery.

Sections of RealTrax can be pressed together and be disconnected by lifting the sections into a "V" shape. The plastic nubs and electrical tabs on the ends of each section mate with the next piece of track. You may bend some tabs if you're careful, but they can be bent back into shape with a pair of needlenose pliers.

Because of its roadbed, RealTrax, like Lionel FasTrack, is both higher and wider than other tracks. Some Lionel trackside accessories built for tubular track may need adjusting for a good fit with RealTrax.

RealTrax uses a clever system for track power lockons and accessory-activation devices. A scored section of roadbed can be snapped out, and then the lockon or accessory activator simply slips into the hole, its metal prongs touching the underside of the rails.

RealTrax is packed with MTH starter sets, and the track is ideally suited for first-timers. Like Atlas O, MTH offers track-planning software for your home computer. Go to MTH-RailKing.com for more information.

Besides RealTrax, MTH markets an O gauge track system in its Premier line called ScaleTrax. It features two solid,

▲ **MTH RealTrax features a plastic roadbed base, dark crossties, and a blackened center rail. This busy scene, from Dick Teal's layout, was in the February, 2002 issue of *Classic Toy Trains*.**

MTH REALTRAX TRACK TIPS

Assembly: Can be a challenge to mate sections unless you follow the instructions.
Track tricks: Insulating an outside rail section is as easy as crimping the copper tabs to prevent the rail from contacting the adjacent sections.
Power: Generally good electrical connectivity unless contact tabs are bent from handling.
Care and feeding: I wouldn't want to try cutting this track with a hacksaw.
Extras: RealTrax offers a variety of fitter and special sections.
Cost: Pricier than traditional tubular track, but the realistic railheads on sections look cool snaking through a layout.

T-shaped rails and a narrow center rail that evokes the look of Lionel's postwar Super O track. ScaleTrax sections are mounted on plastic ties, but without a roadbed.

RealTrax

Straight track: 3½-, 4¼-, 5-, 5½-, 10-, and 30-inch sections
Curved track: O-31, O-42, O-54, and O-72 half and full; and O-82
Specialty items: Operating track section, RealTrax-to-tubular transition
Switches: O-31, O-42, O-42/O-31, O-54, O-72, O-72/O-54, and O-72 wye (all remote)
Other: 90-degree crossover, lighted bumper section, grade crossing, and catenary system
Comments: Generally good electrical connectivity once installed. Frequent assembly/disassembly may result in bent contact tabs and create power gaps. Numerous fitter sections are available. Recent production rails are tubular in style.

ScaleTrax

Straight track: ¾-, 4¼-, 5-, 5½-, 10-, and 30-inch sections
Flextrack: 30-inch section
Curved track: O-31, O-54, O-72, and O-80
Specialty items: activator section, lockon
Switches: O-31, O-54, O-72, no. 4, and no. 6
Other: 22.5-, 45- , and 90-degree crossovers and track bumper section
Comments: Among the most impressive looking styles of O gauge track, its center rail is as thin as anything this side of Lionel postwar Super O track.

The outside rails aren't as high as Atlas O's or as wide as RealTrax, so there is a true ability to de-emphasize the appearance of the center rail.

The ties are a bit too widely spaced for some tastes. You may want to wear gloves when assembling, because it can be difficult to join some track sections together.

SOLID-RAIL TRACK: PROS & CONS

Pros:

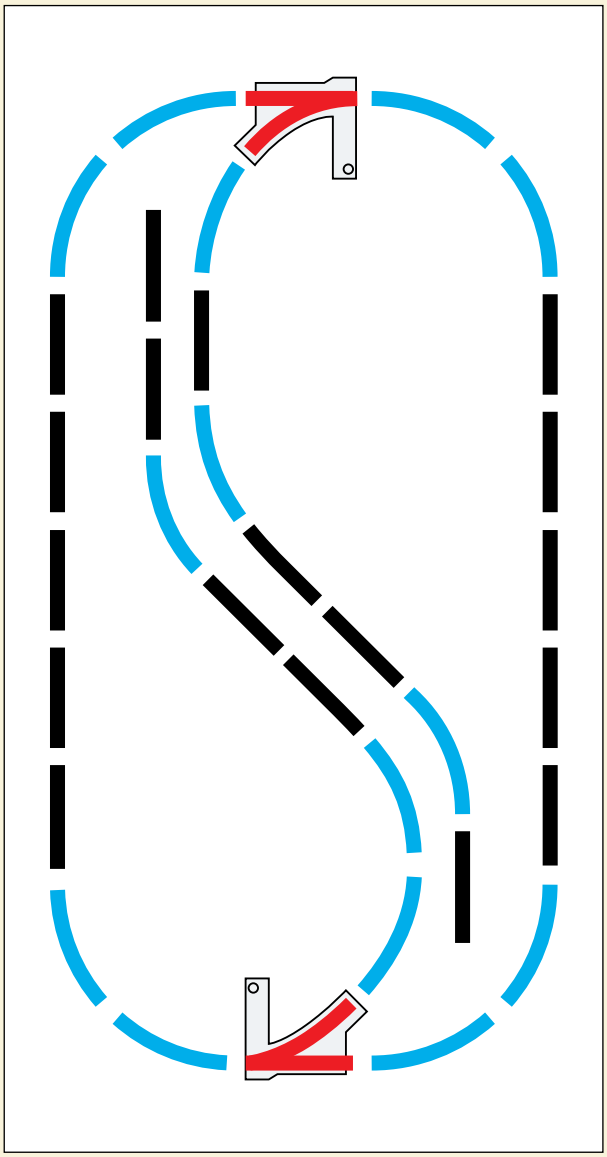
- Looks like real railroad track.
- Rugged construction.
- Great variety of fitter sections as well as curves and switches.

Cons:

- More expensive than most tubular track.
- Requires a more precise track plan (no fudging).
- Electrical connections between sections aren't as "bullet-proof" as with tubular track.
- Magne-Traction locomotives don't "stick" to solid track's nickel-silver rails (Atlas O also sells steel solid-rail track that is magnetic).

TRACK COST COMPARISON

We took a simple O gauge track plan consisting of 32 pieces of track and two O-31 remote switches (O-36 in the case of FasTrack and Atlas O track), and priced it using five different types of sectional track. Prices cited are taken from manufacturer catalogs at the time of this story's initial publication.



Lionel FasTrack – 14 O-36 curved and 18 straight sections, and two switches: $256

Lionel tubular track – 14 O-31 curved and 18 straight sections, and two switches: $185

MTH RealTrax – 14 O-31 curved and 18 straight sections, and two switches: $211

MTH ScaleTrax – 14 O-31 curved and 18 straight sections, and two switches: $211

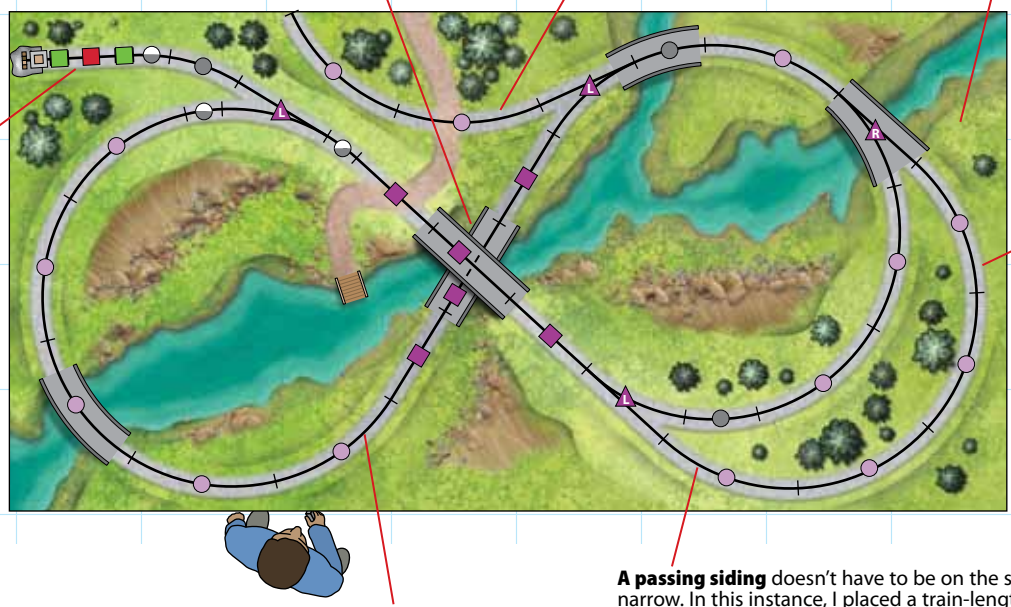
Atlas O 21st Century Track System – 14 O-36 curved and 18 straight sections, and two O-36 switches: $252

Figure-eight schemes can be more than just a gimmick. Here, a 5½-inch-high overpass helps keep trains in continuous motion, without the peril of operating through a 90-degree crossing

Room to expand this railroad comes by way of a spur that runs to the edge of the layout. If you have space in the corner of a room, you can easily form an L-shaped pike by adding another 4 x 8-foot board

Scenery and structures for the railroad should fit the mountain railroad theme dictated by the tight-radius curves and changing elevations. Also consider using smaller Plasticville structures to make the most of the limited space

This short industrial spur also provides means for point-to-point operation to the spur situated below. With the addition of a command-control system, you can even consider two-train operation



Lionel FasTrack O-36 curves form the majority of the layout, so it seems logical to develop a layout theme and scenery where sharp curves are expected – a rustic setting in the hills and a busy mine operation are two fitting choices

1

A 4 percent grade routes trains up, down, and around the curves at each end of the layout. Don't have a computer or slide rule handy to calculate the proper track elevations? Simply use Woodland Scenics' foam incline and riser components

A passing siding doesn't have to be on the straight and narrow. In this instance, I placed a train-length siding along a curve. It's near the outer edge of the layout, so restricted speed operation is a must. Don't forget, you can also use this location to reverse the direction of your train – just be sure to use a locomotive with operating couplers on each end

7 proven plans for small spaces

LIONEL FASTRACK PLANS RANGING FROM 4 X 8 TO 6 X 7 FEET

by Kent Johnson and David Baran • illustration by Kellie Jaeger

Nearly all of us have dreamt of building a large toy train layout. The stark reality is that many of us lack the real estate, resources, or time for such an endeavor. But there's no reason to be disappointed. The process of designing, building, and operating a small layout is often more fulfilling than the long grind to completing a large layout!

Small layout smorgasbord

For the purpose of this salute to the small layout, David Baran and I present a smorgasbord of compact O gauge track plans using Lionel FasTrack. For starters, I composed a 4 x 8-foot plan that has the initial appearance of a simple figure-eight scheme, but look closer. You'll see that the Blue Creek Ry. features an overpass rather than a typical 90-degree crossing section that limits the length of your trains.

In addition to my simple scheme, David presents a spread of six other plans that are deceivingly basic. Be sure to read the annotations – they'll help you find many of the simple pleasures associated with building and operating a small layout! CTT

LIONEL FASTRACK COMPONENTS

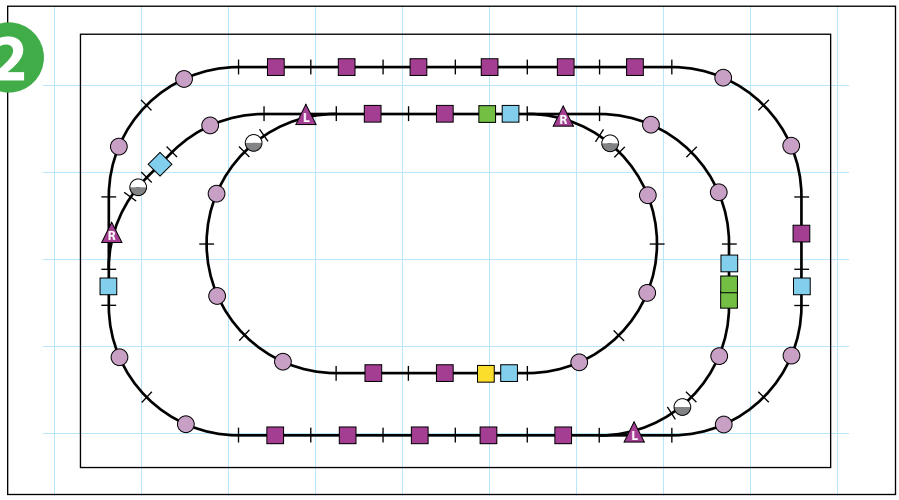
Quantity	Description/Number
2	1.75-inch straight (12026)
1	4.5-inch straight (12025)
6	10-inch straight (12014)
14	0-36 curve, 45-degree (12015)
3	0-36 curve, 22.5-degree (12022)
3	0-36 curve, 11.25-degree (12023)
3	0-36 left-hand track switch (12045)
1	0-36 right-hand track switch (12046)
1	bumper (12059)

ON THE WEB

CTT+

Download a template of the Blue Creek Ry. by going to ClassicToyTrains.com and clicking on "Operating." And then clicking on "How to."

2

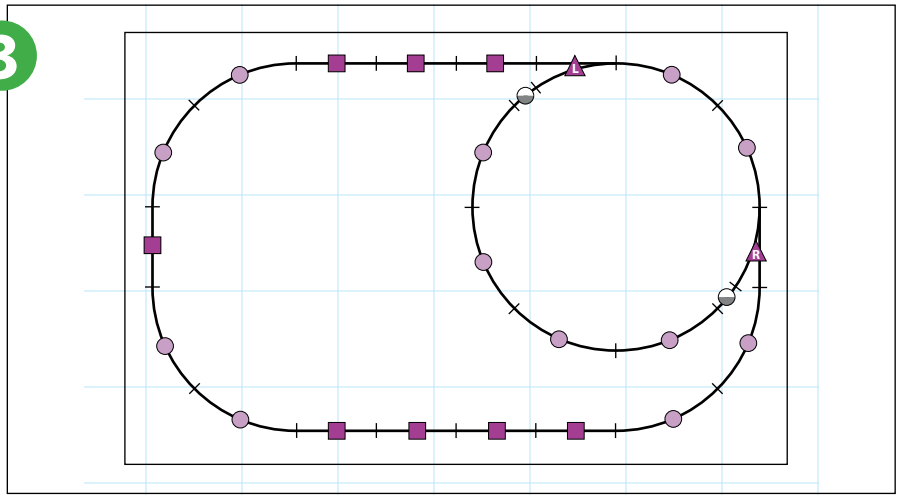


LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
1	1.375-inch straight (12073)
3	1.75-inch straight (12026)
6	5-inch straight (12024)
16	10-inch straight (12014)
4	0-36 curve, 11.25-degree (12023)
18	0-36 curve, 45-degree (12015)
2	0-36 left-hand track switch (12045)
2	0-36 right-hand track switch (12046)

Two loops make up this 5 x 9-foot layout that can easily run two trains at once. With connecting track switches, trains can move between the loops for plenty of action. There's even room to include operating accessories.

3

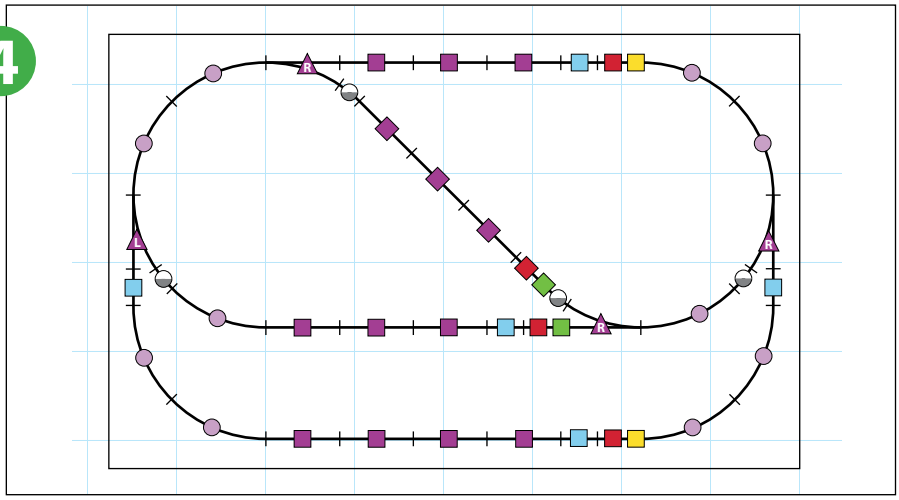


LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
8	10-inch straight (12014)
2	0-36 curve, 11.25-degree (12023)
12	0-36 curve, 45-degree (12015)
1	0-36 left-hand track switch (12045)
1	0-36 right-hand track switch (12046)

This simple 5 x 7-foot oval with a secondary loop is perfect for construction under a Christmas tree. Place the tree stand inside the small circle of track and add a Christmas village. Santa will never want to leave your house!

4

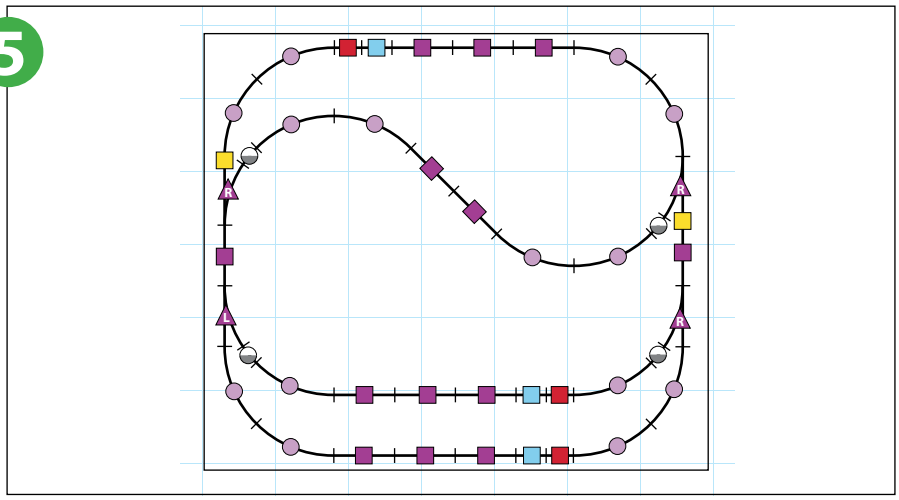


LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
2	1.375-inch straight (12073)
2	1.75-inch straight (12026)
4	4.5-inch straight (12025)
5	5-inch straight (12024)
13	10-inch straight (12014)
4	0-36 curve, 11.25-degree (12023)
10	0-36 curve, 45-degree (12015)
1	0-36 left-hand track switch (12045)
3	0-36 right-hand track switch (12046)

A large oval with an inner siding and reversing loop will provide plenty of action on this 5 x 8-foot layout. By installing a few track switches along the reserving loop cut-off, you can add a small yard on the inner loop.

5

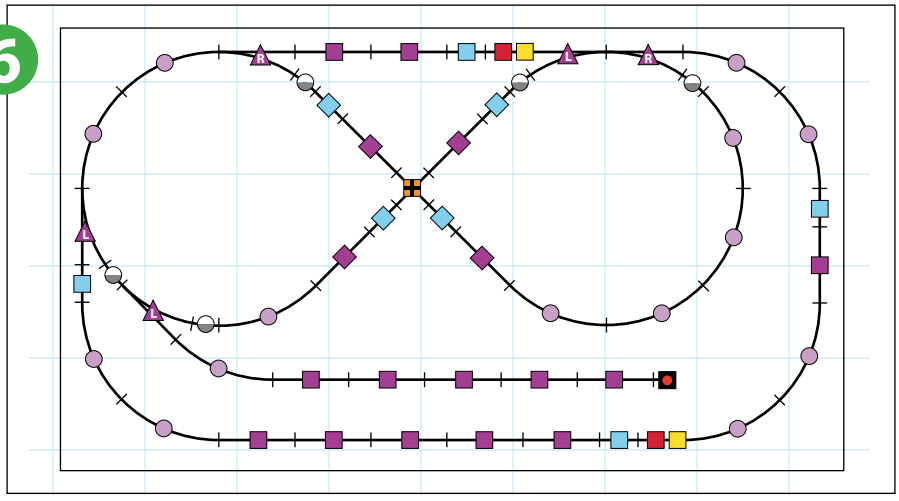


LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
2	1.375-inch straight (12073)
3	4.5-inch straight (12025)
3	5-inch straight (12024)
13	10-inch straight (12014)
4	0-36 curve, 11.25-degree (12023)
14	0-36 curve, 45-degree (12015)
1	0-36 left-hand track switch (12045)
3	0-36 right-hand track switch (12046)

This 6 x 7-foot layout is a great starting point. It provides lots of open space at the center of the layout, so you can consider adding yard tracks or building a town or industry. By including a reversing loop and passing siding, nothing gets shortchanged here!

6

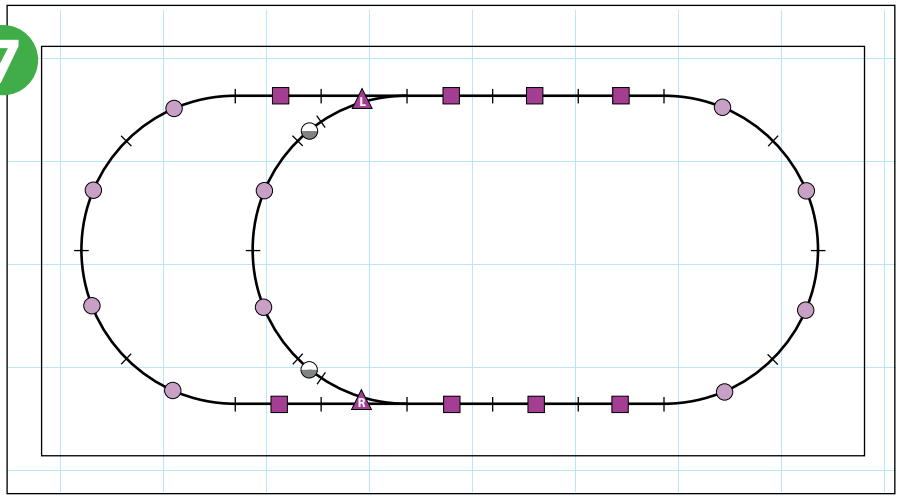


LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
2	1.375-inch straight (12073)
2	4.5-inch straight (12025)
8	5-inch straight (12024)
17	10-inch straight (12014)
5	0-36 curve, 11.25-degree (12023)
14	0-36 curve, 45-degree (12015)
3	0-36 left-hand track switch (12045)
2	0-36 right-hand track switch (12046)
1	90-degree crossing (12019)
1	bumper (12035)

What began as a Lionel no. 12030 figure-eight add-on pack has expanded to include a large siding and loop in a 5 x 9-foot space. A long straight section and extra switches offer reversing options and multiple routes for your trains. Add accessories for more fun.

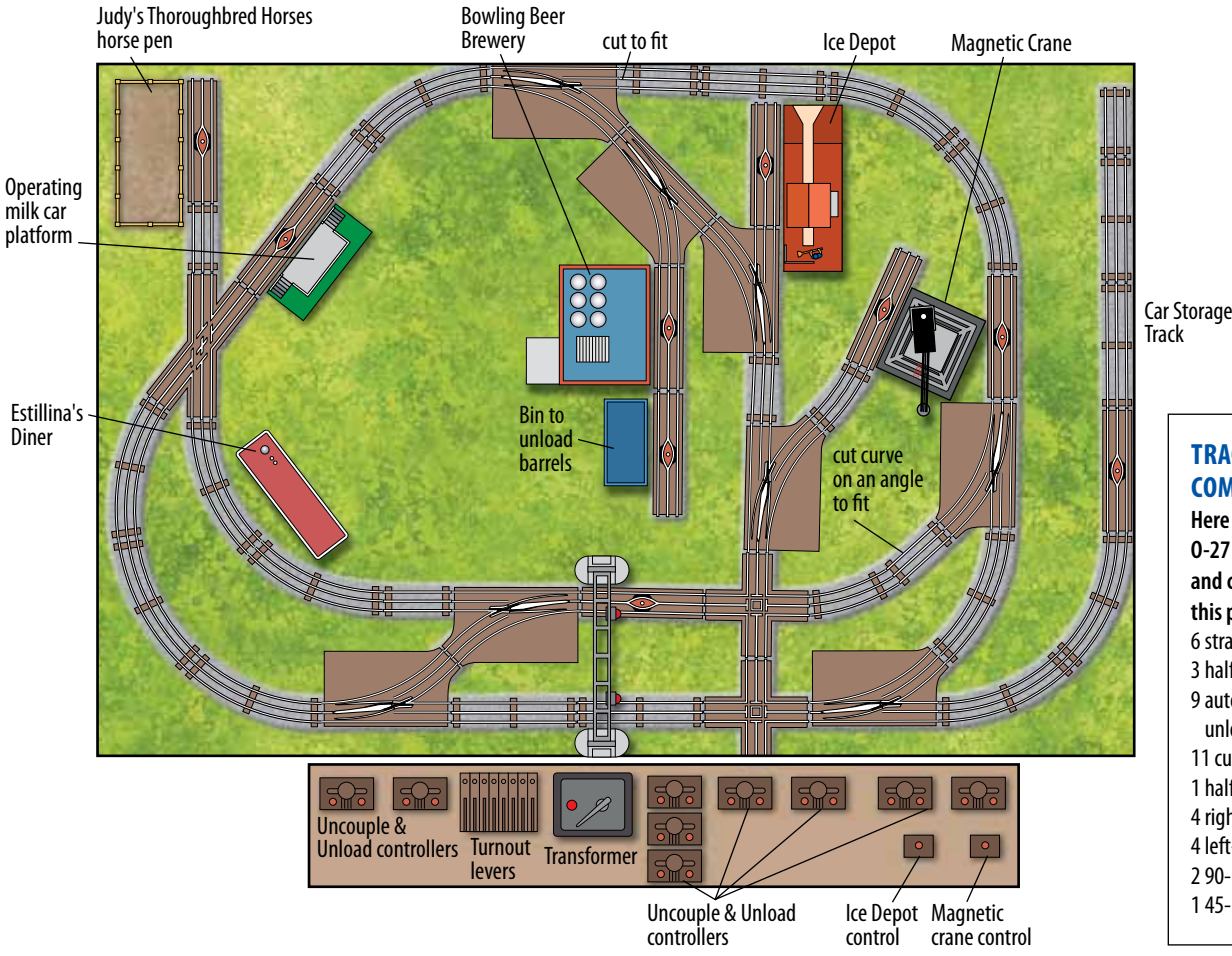
7



LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
8	10-inch straight (12014)
2	0-36 curve, 11.25-degree (12023)
10	0-36 curve, 45-degree (12015)
1	0-36 left-hand track switch (12045)
1	0-36 right-hand track switch (12046)

This 4 x 8-foot layout will fit on a single sheet of plywood or foam insulation board and offers a wide variety of options for future expansion. Add another sheet of plywood to form an L-shaped railroad that fits nicely into a corner.



TRACK PLAN COMPONENTS

Here is a list of 0-27 track, switches, and crossings to build this pike:

6 straights
3 half-length straights
9 automatic uncouple/unload tracks
11 curves
1 half-curve
4 right-hand switches
4 left-hand switches
2 90-degree crossings
1 45-degree crossing

Industry at work

A 4 X 6-FOOT EASY-TO-MOVE LAYOUT THAT'S HEAVY ON OPERATION

by Dick Wise • illustration by Kellie Jaeger

Living alone in a one-bedroom apartment, I had to design a interesting pike that would be small enough to store in my bedroom and easy enough to move into my living room. Remembering the joy I had as a boy with my Lionel trains, I decided on an O-27 floor switching layout on a 4 x 6-foot plywood board.

On a switching layout, businesses are the key. My layout, Peachtree Industrial Park, features businesses named after friends plus an imagined connection with the Norfolk Southern.

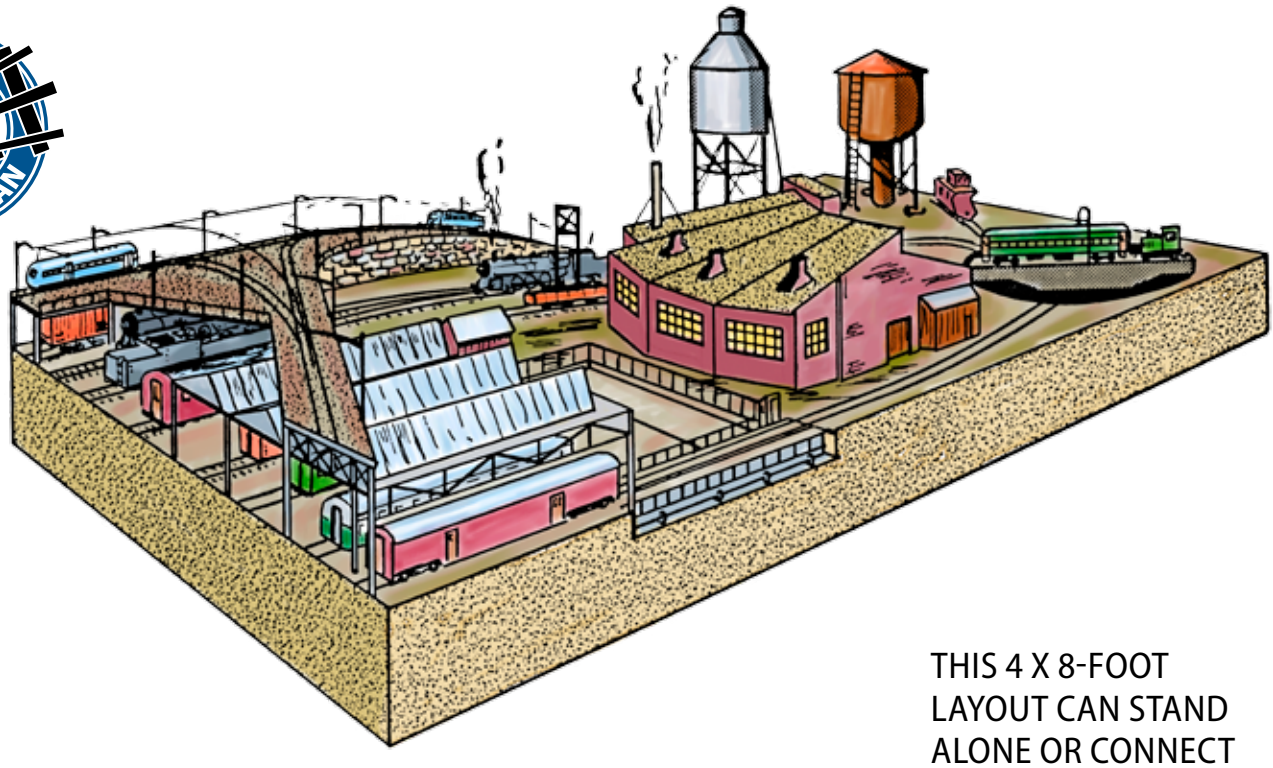
A switcher runs clockwise on the main line serving Judy's Thoroughbred Horses (a corral and a Lionel operating stockcar), Peachtree Dairies (aided by a Lionel operating milk car), the Bowling Beer Co. (with an unloading bin that receives empty barrels from a Lionel operating gondola car), and Peachtree Metals Scrap (which uses another gondola and a Lionel no. 182 or similar electromagnetic crane).

Some operations become pleasantly complex. When I switch a refrigerator car to an ice depot, where a worker moves a plastic block of ice to a hatch on top of the car, the locomotive pulls one car through two switches and then backs through a third, dropping the car at its designated siding. The real fun begins when I switch both the operating gondola from the main line and the freshly iced refrigerator car from the ice depot to the Brewery. These both require run-around operations, with the gondola and a stockcar moving through eight switches and the refrigerator car through 11 switches.

The car storage track on the right side of the layout serves as the industrial park's connection with the Norfolk Southern main line.

The track plan depicted here requires two custom-cut track pieces (one straight and one curve) to accommodate the tight design. You may have to cheat a bit at the joints to get the desired alignment in spots.

I've left plenty of room for the layout to grow. Both the horse corral spur and the car storage track can be used for future expansion. CTT



THIS 4 X 8-FOOT LAYOUT CAN STAND ALONE OR CONNECT TO A LARGER EMPIRE

An engine terminal with a future

by Kent Johnson • illustration by Kellie Jaeger

Show me a toy train locomotive painted candy-apple red and lettered for the Canadian Pacific Ry. and I probably own it. Like so many other hobbyists, I find it's hard to resist buying engines when they're decorated for my favorite railroad.

As a result, I've amassed more motive power than I'll ever be able to operate on my O gauge layout. With no room to run or store them on the rails, most of the surplus engines sit idly on a display shelf. It's not really my preference, but it beats keeping them boxed in a closet.

PHOTO BY K. JOHNSON

The more I thought about my dual-motored, command-controlled, and sound-equipped fleet sitting dormant on a shelf, the more motivated I became to come up with an alternative. The best solution I found was an O scale plan sketched by the late John Armstrong for the February 1953 issue of *Model Railroader* magazine.

For the most part, Armstrong's legendary name is typically associated with large, yet logical track plans. At only 4 x 8 feet, this plan doesn't necessarily reflect the grand scope of John's usual projects, but it certainly represents a logical approach to keeping a collection of locomotives in operation. With that in mind, I redrew the plan you see here using Atlas O three-rail track and a variety of operating accessories.

Small plan, big facility

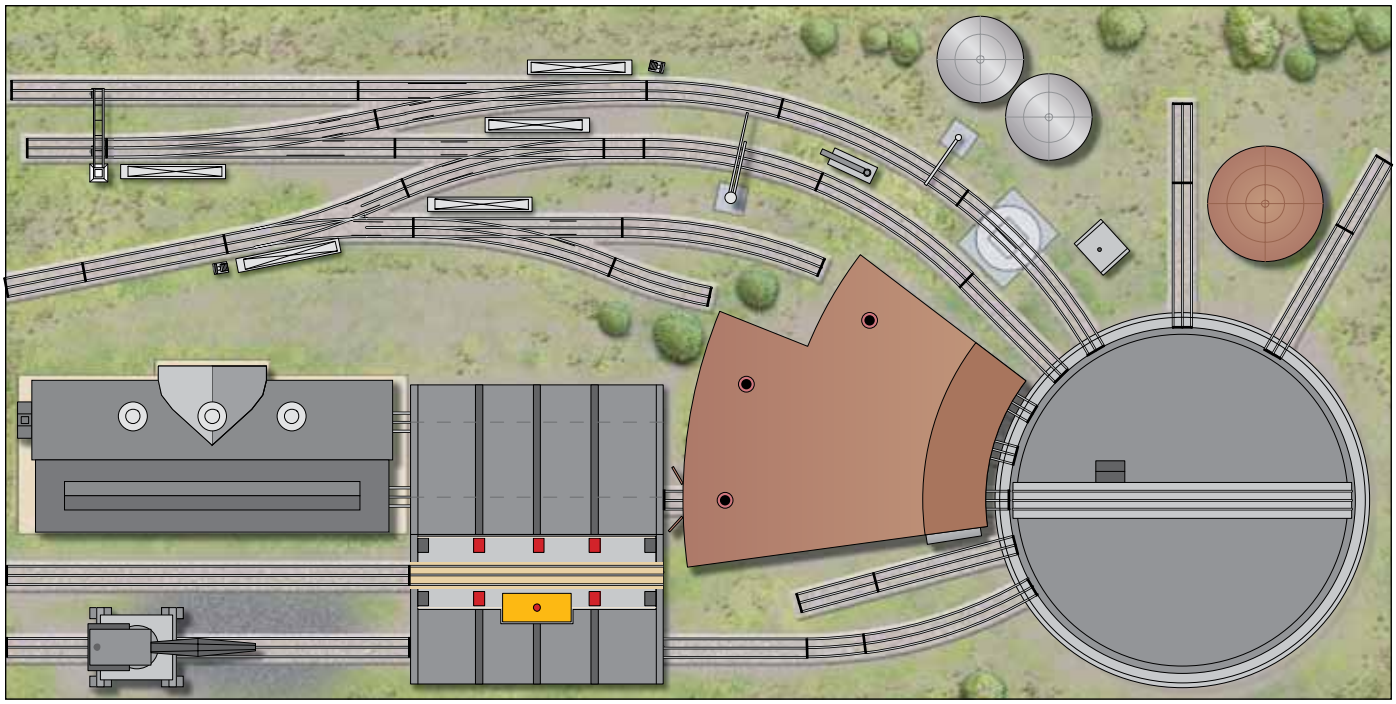
Locomotives are often focal points of an operating layout. That's what makes it so hard for me to pull engines from service when things get too congested on the tracks. But when I'm finally forced to remove them, I can't think of a more logical place for motive power to settle than a well-equipped locomotive-servicing terminal.

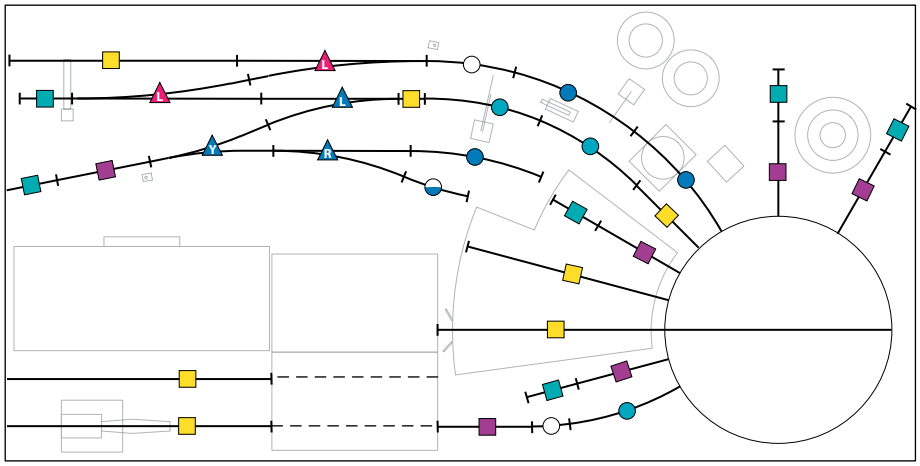
LIONEL ACCESSORIES

Number/Product
12953 Linex oil tank, tall (two)
12954 Linex oil tank, wide
14113 no. 350 engine transfer table
14114 no. 350-50 table extension
22918 locomotive backshop
22936 coaling tower
24114 TMCC gantry crane

MTH ACCESSORIES

Number/Product
30-11007 water column
30-11009 cantilever signal bridge
30-11024 3-over-3 signal (two)
30-11037 fuel column
30-11040 sanding tower





ATLAS O TRACK COMPONENTS

Quantity	Description/Number
6	10-inch straight (6050)
6	5.5-inch straight (6053)
7	custom-cut straight
3	O-72 curve, 22.5-degree (6062)
1	O-72 curve, 11.25-degree (6063)
3	O-63 curve, 22.5-degree (6064)
2	O-72 custom-cut curve
2	No. 5 short left-hand track switch (6024)
1	O-72 left-hand track switch (6072)
1	O-72 right-hand track switch (6073)
1	O-72 'Y' track switch, 11.25-degree (6074)
1	turntable (6910)

An engine terminal, be it for steam or diesel power, can include a variety of impressive components. Multiple-stall roundhouses, 100-foot-long turntables, around-the-clock repair shops, heavy-duty gantry cranes, skyscraping coal towers, and massive bulk fuel and water tanks can be just as fascinating to observe as the locomotives moving around them.

In some instances, these locomotive-servicing terminals can sprawl across several acres. It's hard to imagine that even an O gauge version would be a small undertaking. Well, think again.

Even though a typical 4 x 8-foot layout is barely large enough to accommodate a single loop of O-27 track and a small, semi-scale train, this plan packs in a 24-inch turntable, a custom-built roundhouse; an operating transfer table (with extension), a working backshop, a remote-controlled gantry crane, and all the appropriate tanks, towers, and service-facility details into the same space. All that, and I didn't even mention that the plan includes wide O-72 curves, several broad track switches, operating track signals, and enough trackage to hold four, five, or even six mid-sized steam or diesel locomotives.

Part of a bigger layout

Unlike a display shelf, the locomotives you maintain on this terminal layout aren't likely to collect dust – unless it's coal dust. Here, you can move a locomotive from one service area to another in the same manner that a real terminal works to prep or repair outbound and inbound power.

Whether you keep one or six engines on the layout, the addition of a command-control system will help keep operating speeds slow enough to inspect the functioning mechanisms and realistic details of your fleet. If you opt to include MTH's Digital Command System or Lionel's TrainMaster Command Control, you can easily connect the turntable, transfer table, backshop, gantry crane, and track switches to put all of the action at your fingertips.

In a sense, this layout is an operating showcase. If you build it as a lightweight, stand-alone display, it's interesting enough to maintain as a primary operating layout in a spare room. With a mini-van or truck bed that's big enough to enclose a 4 x 8-foot sheet of plywood or insulation foam board, you could even take the layout for public showings or to connect with other portable layout segments.

You also can build this as a 4 x 8-foot addition to an existing layout or as the first phase of a future layout in your present home or in anticipation of your next home. CTT

Photo by K. Johnson

A small, simple, and amazingly sensible 5 x 9 plan

7 TIPS TO DESIGN A MORE SATISFYING SCHEME

by Kent Johnson • illustration by Kellie Jaeger

Recently, my father informed me that he planned to dismantle his 35-year-old O gauge layout. While I was pleased to hear he was ready to make room for a brand-new railroad, I also knew he would need my assistance – especially when it came to selecting or creating a track plan.

Quite frequently, I hear from hobbyists who are ready to build a new or improved layout. Like my dad, many of them are eager to try something different, but they're missing the most important thing to ensure they start down the right track – a good track plan.

Just as you wouldn't want to build a new home without a well-conceived plan, I can't imagine constructing a permanent layout without first giving some thought to where and how your trains will operate. While a rudimentary plan suggests where to place tracks, a good plan should also reflect how you intend to operate and enjoy your trains.

It doesn't matter whether you select a plan from the pages of *Classic Toy Trains* magazine, a Kalmbach book, or an Internet download packet (now available at classictoytrains.com, look for the words "Information Station"). Even if you draft a plan of your own creation, I've found that there are several key factors that can help to ensure a layout will provide years, possibly decades, of operating enjoyment.

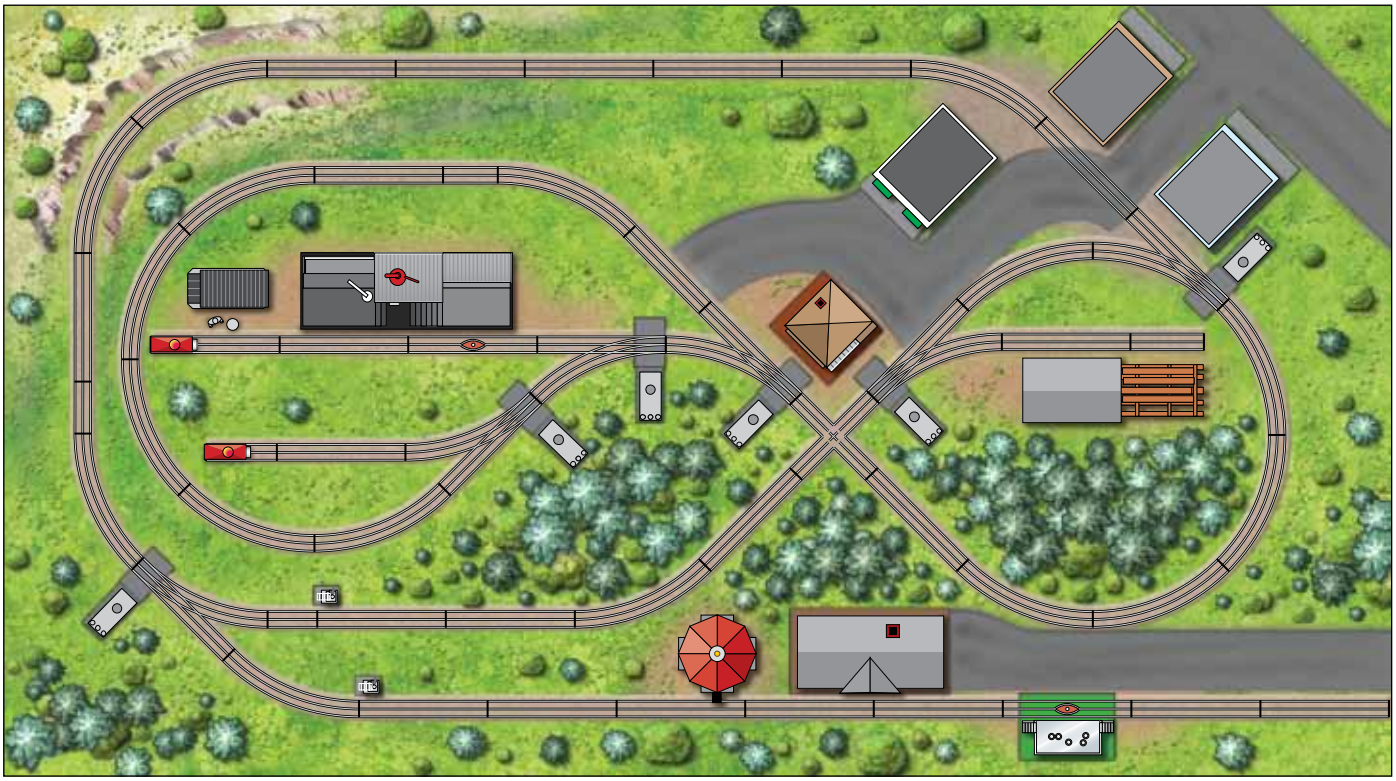
To help my father identify what he needed to consider when planning his new layout, I dug up a small, simple, yet amazingly sensible tabletop plan, originally rendered by famed editor Linn Westcott for *Model Trains* magazine. The plan reproduced on these two pages is more than 50 years old, but it includes all the right features you can still appreciate today. To help you understand what makes a good plan "good" or a decent plan even better, I've added annotations that highlight a few factors I think are significant. CTT

SUGGESTED LIONEL ACCESSORIES

Number	Product
9220	milk car platform
12705	lumber shed
12734	passenger/freight station
12774	lumber loader
12873	operating sawmill
12916	water tower
12917	operating switch tower
22944	operating semaphore (2)
34126	market
34127	O'Grady's Tavern
34131	Al's Hardware

INFORMATION STATION

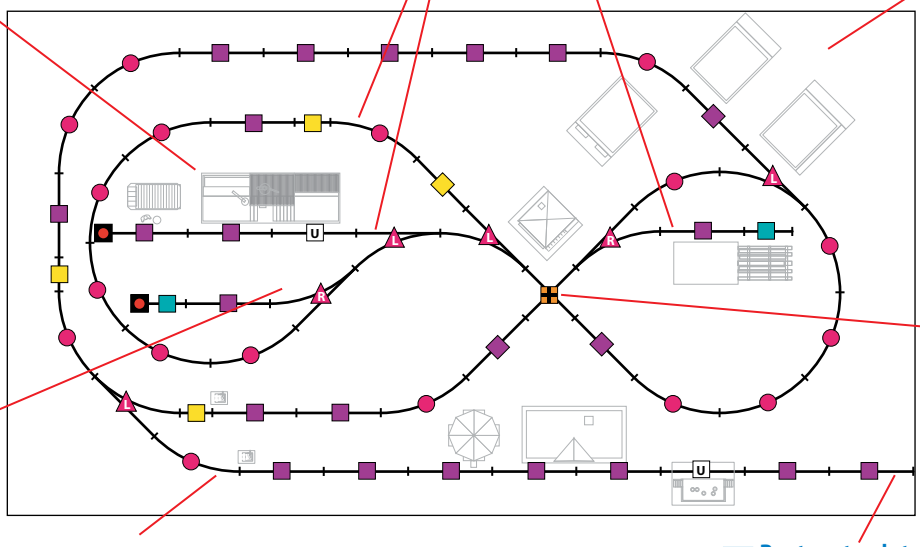
Go to ClassicToyTrains.com and click on "Shop" to purchase other track plans, stories, and books with additional layout planning tips.



1 Work and play
Like a real railroad, this plan has spurs designed to service a working industry. In this case, trains haul logs from the forest to the sawmill and then to points down the line. I recommend reading *Lionel Accessories at Work on Toy Train Layouts* (Kalmbach Publishing Co., 800-533-6644), which offers good ideas about other suitable industries and accessories

2 Non-stop action
The continuous loop of track keeps trains going around and about, but this plan also features a few point-to-point routes that keep a train bouncing back and forth. Trolley and subway lines can also provide a similar type of point-to-point operation

3 Green piece
This plan could fit in a 4 x 8-foot area. However, expanding to a 5 x 9-foot space provides room to add terrain, scenery, and structures. Sometimes situating the track plan at an angle will create even more room and interest



4 Mystery and intrigue
A plan that adds some degree of unpredictability or hidden peril is bound to entertain. This plan includes a 90-degree crossing and reverse loops. Adding a tunnel, an operating bridge ("Bridge out," CTT July 2005), or tricky track-switch wiring ("The quick switcharoo," CTT October 2005) will also keep you on your toes

5 Route extends to layout edge … and beyond
The route here runs right to the edge of the layout. This helps create the illusion that your railroad connects to towns and industries farther down the line. Additionally, you can easily turn this illusion into a physical connection to another layout section

6 Spur or siding long enough to hold a train
A plan with a lengthy spur makes it quick and easy to vary the trains you operate on the layout. The passenger/freight depot, water tower, and track signal each provide reason for any type of train (steam or diesel, passenger or freight) to pause here

7 All within easy reach
On a small layout like this one, it's fairly easy to keep everything on the layout within arm's reach – no more than 3 feet from the edge of the table. On larger track plans, it's often tempting to bend this rule, but it's never worth the agony in the long run

LIONEL O GAUGE TUBULAR TRACK COMPONENTS

Quantity	Description/Number
23	10-inch straight
2	5.5-inch straight
4	custom-cut straight
17	0-31 curve
4	0-31 left-hand track switch
2	0-31 right-hand track switch
1	90-degree crossing
2	260 track bumper
2	UCS uncoupling track

The Wild West in a 5 x 9-foot space

LIONEL FASTRACK HELPS TAME THIS FRONTIER RAILROAD

by Kent Johnson • illustration by Kellie Jaeger

The vast expanse of America's western regions probably isn't the first thing you'd expect to re-create in a space that's only slightly larger than a sheet of plywood. But before you dismiss the possibility of an O gauge layout that's born of the Old West, you'll want to explore the features of this 5 x 9-foot track plan.

Based on an HO scale scheme for the Hazard County Short Line (featured in the Kalmbach book, *48 Top-Notch Track Plans*) and inspired by several new O gauge models of 19th-century American railroad equipment, this plan features rugged western scenery and plenty of rootin', tootin' railroad action to boot. Aside from the hills that are full of "gold" (copper, in this case), a bubbling mountain brook, and hearty, high-country landscape dotted with Ponderosa pines, there's a railroad battling the terrain, the elements, and sometimes even renegades and robbers!

Although this plan features a continuous oval design, it's not likely you'll forget the railroad exists to keep supplies, people, and livestock headed into the new frontier. Take a close look at the shifting "high line" route – assembled from O-36, O-48, and O-72 FasTrack curve sections and laid on a variable 2 to 4 percent grade – and you'll begin to appreciate exactly how wild the ride into the Old West must have been!

On a route this treacherous, you'll want to be sure you're operating the appropriate equipment. Lionel's postwar General old-time 4-4-0 steam locomotives and mixed train sets (featured in the July 2006 issue of *Classic Toy Trains*) may have been the first to suit the period and western locale, but there are now countless others built to even higher standards.

If it's museum-quality detail you're after, then SMR Trains (smrtrains.com) offers historically accurate, scale versions of the 4-4-0 American-type locomotive. MTH's RailKing and Premier lines offer the broadest range of items that would've worked the western rails in the mid- to late 19th century, including 4-4-0, 4-6-0, and 2-8-0 steam locomotives, assorted freight car types, and Overton passenger cars.

If you're willing to relax the rules of period accuracy, then you may just consider the Lionel no. 31990 Copper Range Mine set. This starter set comes complete with FasTrack sections, a transformer, and an appropriately named steam-powered mine train. CTT

SUGGESTED ACCESSORIES

LIONEL: Number/Product

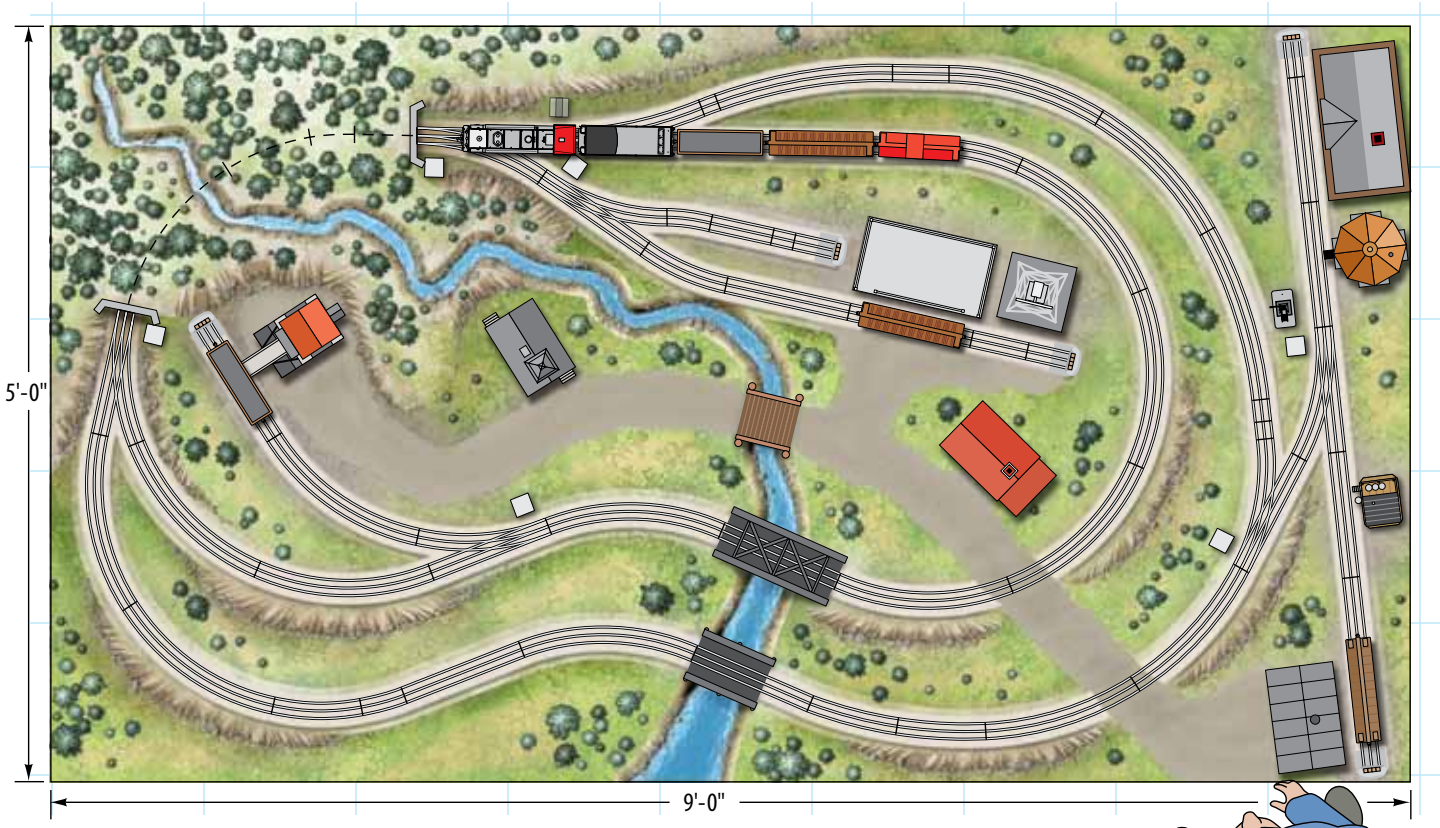
2175	gravel loader
12718	barrel shed
12734	passenger/freight station
12773	freight platform
12828	stockyard
12889	motorized windmill
22944	semaphore
62716	short extension bridge

MTH: Number/Product

30-9002	country church
30-11028	water tower
30-90008	work house

LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
3	1.38-inch fitter
5	1.75-inch straight (12026)
2	4.5-inch straight (12025)
4	5-inch straight (12024)
9	10-inch straight (12014)
3	0-36 curve, 11.25-degree (12023)
4	0-36 curve, 22.5-degree (12022)
4	0-48 curve, 30-degree (12043)
2	0-72 curve, 22.5-degree (12041)
2	0-72 curve, 11.25-degree (12055)
12	0-36 curve, 45-degree (12015)
3	0-36 left-hand track switch, manual (12017)
3	0-36 right-hand track switch, manual (12018)
1	0-60 left-hand track switch (12057)
1	operating track (12054)
5	track bumper (12059)



SMALL TRACK PLAN

Copper Mountain Mine is a dangerous place to earn a day's keep. Aside from hauling mineral loads out, the railroads have the dubious task of hauling boxcars loaded with the explosives used for blasting

COPPER VALLEY (The High Country) Set at an elevation 6 inches above the valley floor (tabletop height), the upper reaches of the town are accessible by rail only or a steep dirt trail. Creating this lofty elevation and a rising grade for the track is easy if you use foam-board components from the Woodland Scenics SubTerrain system (woodlandscenics.com)

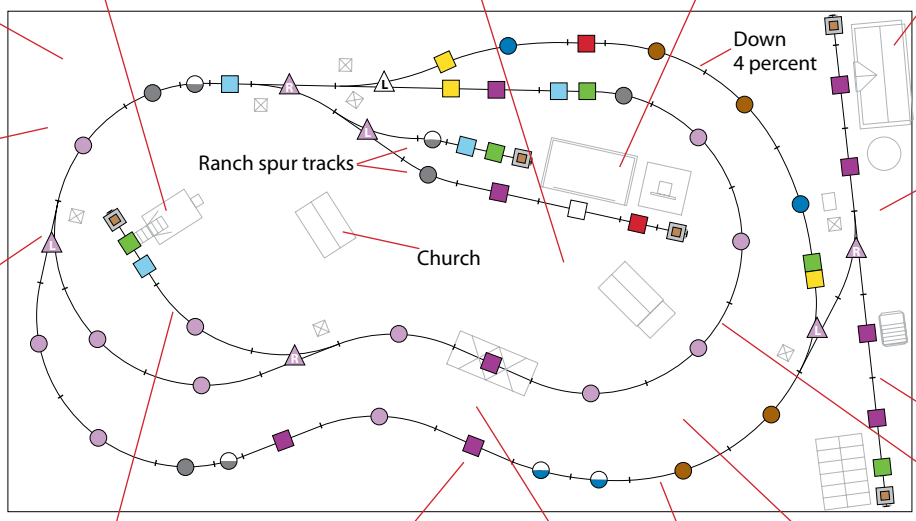
Copper Mountain Ranch keeps them dogies corralled when it's time to bring 'em down out of the high country

Copper Valley Depot

Copper Mountain

Beware of bandits! Trains cautiously climbing or descending are particularly vulnerable to bandits waiting to jump the train as it breaches the tunnel

Portals and retaining walls on each end of the short tunnel should be timber assemblies. Hunterline (hunterline.com) offers basswood kits for these locations, in addition to timber truss bridges, trestles, and tunnel liners



COPPER VALLEY Thanks to the endless riches Copper Mountain has offered since the mid-1800s, this frontier town continues to thrive. A pair of track switches connects the main line to the ascending high line. Remove the bumpers at the ends of the mainline route and you can expand the railroad to towns farther west or back east

Main line

High line

Mine spur tracks

Copper Creek Trestle can be assembled from a Lionel no. 12038 FasTrack elevated trestle set or constructed using pre-assembled wooden bents and bridge decks from Grand Central Gems (grandcentralgems.com)

Copper Creek

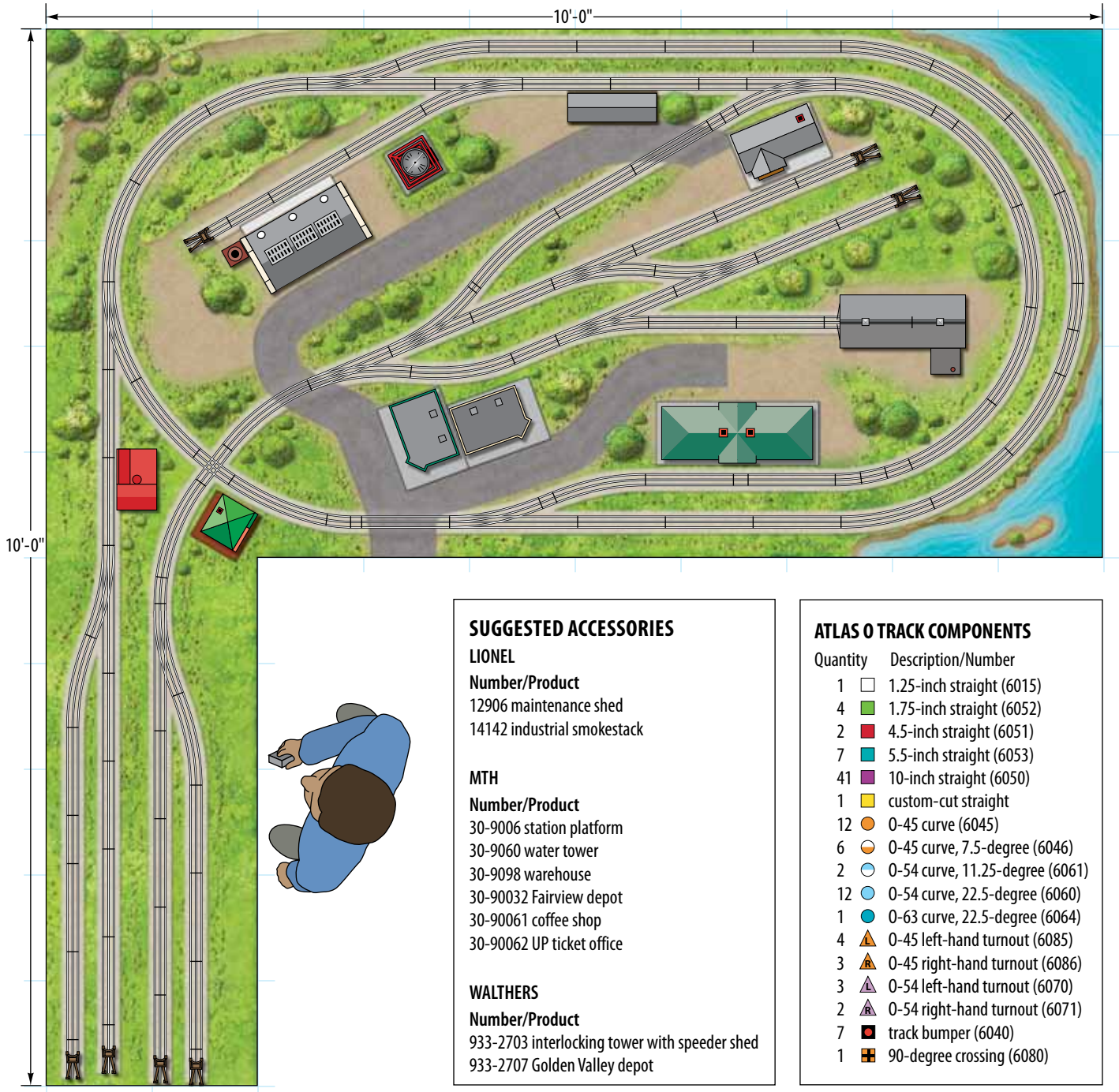
Up 2 percent

Copper Mountain Trail

Midsize layout
with a compact yard

THIS 5 X 10-FOOT O GAUGE PLAN INCLUDES A 2 X 5-FOOT EXTENSION

by Kent Johnson and Dana Kawala • illustration by Kellie Jaeger



SUGGESTED ACCESSORIES

LIONEL

Number/Product
12906 maintenance shed
14142 industrial smokestack

MTH

Number/Product
30-9006 station platform
30-9060 water tower
30-9098 warehouse
30-90032 Fairview depot
30-90061 coffee shop
30-90062 UP ticket office

WALTHERS

Number/Product
933-2703 interlocking tower with speeder shed
933-2707 Golden Valley depot

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
1	1.25-inch straight (6015)
4	1.75-inch straight (6052)
2	4.5-inch straight (6051)
7	5.5-inch straight (6053)
41	10-inch straight (6050)
1	custom-cut straight
12	0-45 curve (6045)
6	0-45 curve, 7.5-degree (6046)
2	0-54 curve, 11.25-degree (6061)
12	0-54 curve, 22.5-degree (6060)
1	0-63 curve, 22.5-degree (6064)
4	0-45 left-hand turnout (6085)
3	0-45 right-hand turnout (6086)
3	0-54 left-hand turnout (6070)
2	0-54 right-hand turnout (6071)
7	track bumper (6040)
1	90-degree crossing (6080)

Developing a track plan that suits a variety of operating styles can be a challenging task for many layout builders. Even when there's plenty of space and a variety of designs to consider, it's still not easy to host fast-running, continuously operating trains and slow-speed switching on the same layout. One of the easiest ways to accommodate two operating styles is to maintain two separate routes for trains.

This 5 x 10-foot plan occupies a moderate-size footprint for an O gauge layout. However, it's large enough to include a pair of railroads, with each geared for a different operating pace.

The inspiration for this plan stems from the HO scale 4 x 8-foot Black River Junction project railroad that appeared in the January 2007 issue of *Model Railroader* magazine. With only a minimal number of modifications, the original plan scales up nicely without doubling in size.

Like the original HO scale project layout, this O gauge scheme is based on a fictitious river town that's home to two railroads. In addition to the meandering Black River, a bustling branch of the New York Central railroad and a secondary division of the Baltimore & Ohio railroad each route through the quaint Ohio community.

On the layout, the New York Central route is represented by a single loop of Atlas O track. A 5-foot width is just enough space to include an O-54 curved siding that routes around the O-45 curves on the main line. These curves aren't especially broad, but they do provide a slightly wider path to help sustain higher operating speeds than you'd typically expect on a small layout.

The B&O claims a share of Black River's railroad action by means of a route to the passenger/freight depot and a principal industry. Here the action slows to a snail's pace, but that may be all that you'll need from your layout.

While these routes can operate independently, a pair of O-45 track switches and a few straight sections make it possible for the two railroads to interchange with each other. If you're ready for even more activity on the layout, you'll want to add the 2 x 5-foot yard extension. The extension isn't much more than a narrow shelf, but the storage space it provides for additional locomotives and rolling stock is absolutely priceless.

To give this layout an appropriate sense of place, you'll want to model a small segment of the Black River. Try using tinted Plexiglas to make a calm body of water. Lay a few acrylic sheets in place on your tabletop, and then top them with 2-inch-thick foam board to raise the tracks above water level.

Trim the foam to expose the Plexiglas, but don't discard the cut pieces. Use these pieces to form a hill that descends into your small yet bustling re-creation of a river valley. GTT

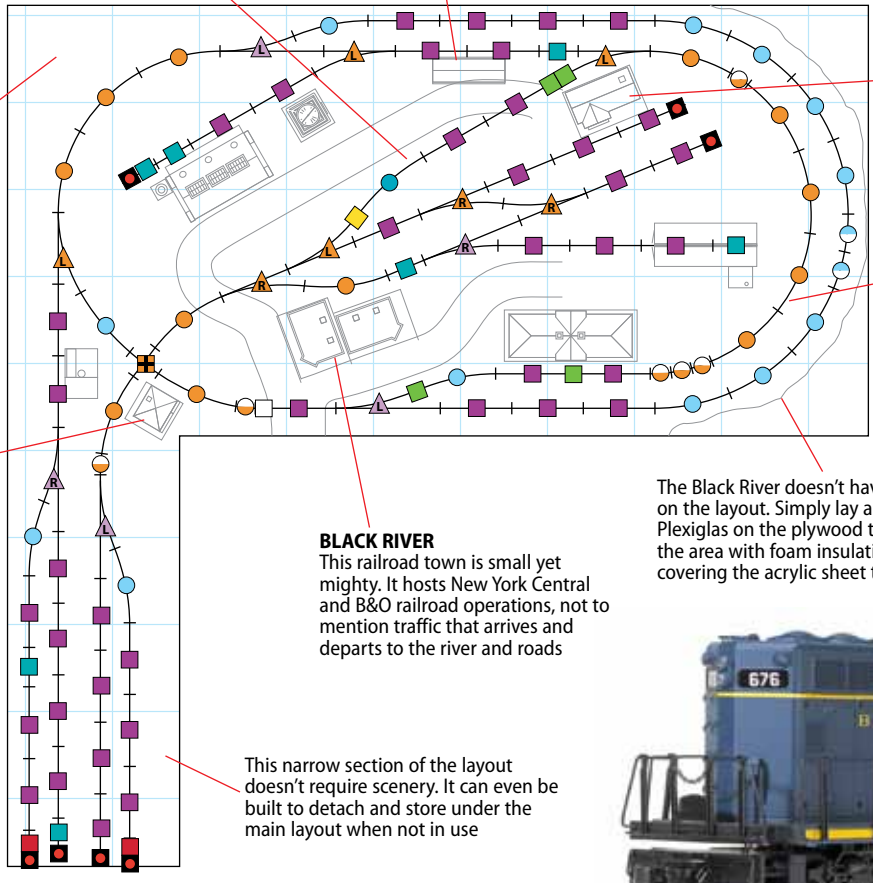
Two railroads can easily interchange equipment along this segment of track. Install a command-control system on the layout and you'll eliminate the need to install independent electrical blocks

EAST VALLEY
This commuter depot along the New York Central main line provides a place for passengers to transfer to B&O trains (via the B&O passenger/freight depot) heading beyond the cozy confines of Black River

Tempting as it may be to move this side of the layout against a wall, you'll need to leave a bit of space to access the track switches. No matter how well you install your trackwork, derailments can occur in remote locations

B&O depot and siding

Add dimension to the layout by stacking and shaping cutout foam board into a gentle hillside



The curved passing siding (O-45) doubles as a place to park a commuter train or a switch engine used for local switching or industry service

BLACK RIVER JUNCTION
From his perch in the tower, the B&O operator controls the action in the yard and across the busy crossing

BLACK RIVER
This railroad town is small yet mighty. It hosts New York Central and B&O railroad operations, not to mention traffic that arrives and departs to the river and roads

The Black River doesn't have to occupy much space on the layout. Simply lay a narrow strip of tinted Plexiglas on the plywood tabletop, and then cover the area with foam insulation board. Cut out the foam covering the acrylic sheet to expose the riverbed

This narrow section of the layout doesn't require scenery. It can even be built to detach and store under the main layout when not in use

DREAMWORKS

A holiday layout inspired by scenes depicted in *The Polar Express* animated film.

Three times around the tree

THIS 6½ X 6½-FOOT LAYOUT EVOKES HOLIDAY MEMORIES

by Neil Besougloff • illustration by Kellie Jaeger

We all saw the movie *The Polar Express*, right? In one scene, the *Polar Express* passenger train spirals up a towering mountain peak like a red stripe twisting around a barber pole.

Here's an O gauge track plan in which a train spirals up and down a white slope beneath the boughs of a Christmas tree. The track plan you see here features O-42 tubular track curves, a tunnel, and a 45-degree crossing. It all fits in a 6½ x 6½-foot space.

Elevation plays a key role in this plan. One of the three loops is flat but at a height 5½ inches above the base of the layout. The other two loops are split between climbing to the upper level of the layout and descending to its base.

The best way to build this layout is by using the "cookie-cutter method." First, fit pieces of plywood together to create a 6½-foot square. Then set down your track, and use a permanent marker to trace its roadbed path (about 1 inch to the left and 1 inch to the right of the ties) on the plywood.

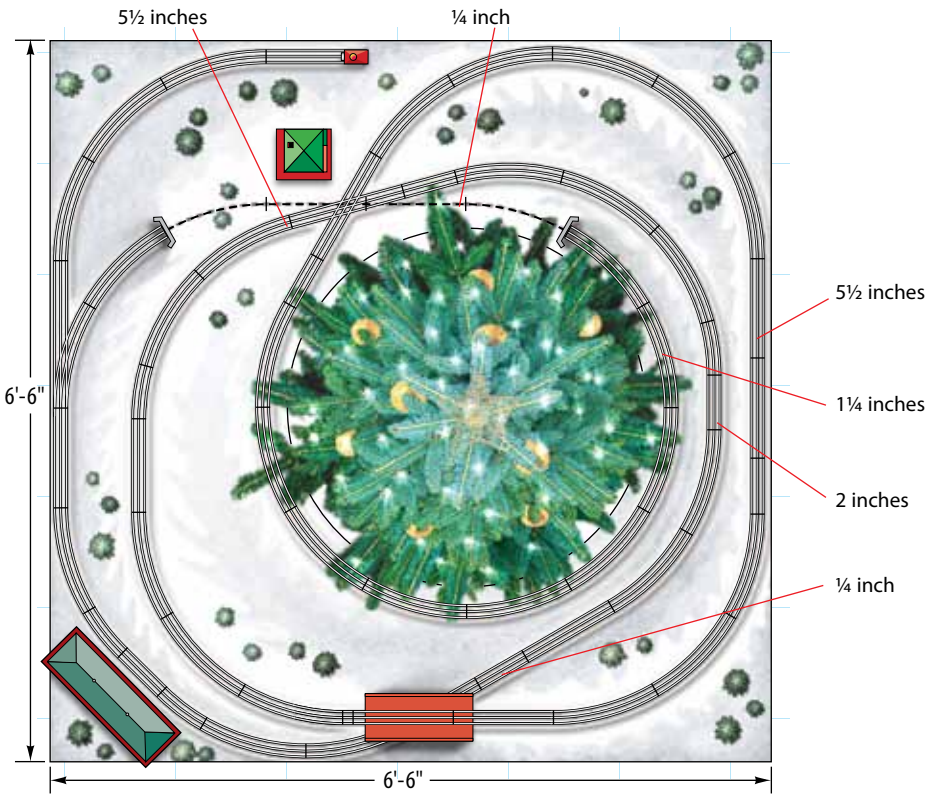
Next, where the track climbs or descends, use a saber saw to cut those lines. Don't, however, completely cut out those pieces. Lastly, use shims below the cut sections to raise the track roadbed to the necessary height.

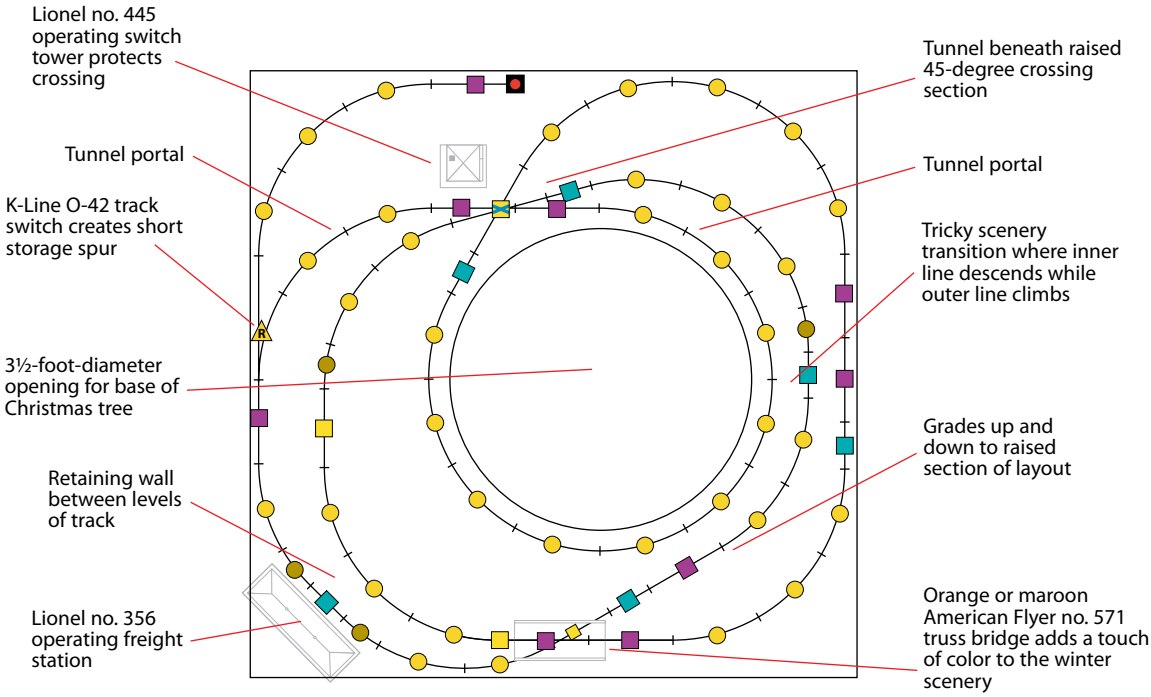
If you are still confused, look at the diagram on the next page, which shows how the cookie-cutter method works for a figure-eight layout.

If you're not into cutting cookies, you can use Lionel or MTH graduated trestles to create your grades, or simply elevate appropriate sections of track with blocks of wood draped with a white cloth to represent snow.

For hands-free operation, use one of the Christmas RailKing starter sets from MTH that come with a cruise-control-equipped locomotive. This electronic feature will automatically take care of the grades. Atlas O, Lionel, and Weaver also sell locomotives with cruise control that can negotiate O-42 curves.

Regardless of which locomotives you run, this triple-loop layout is designed to raise your Christmas display beyond an ordinary oval of track. CTT





SUGGESTED ACCESSORIES

Lionel

Number/Product

356 operating freight station

445 railroad switch tower

Gilbert

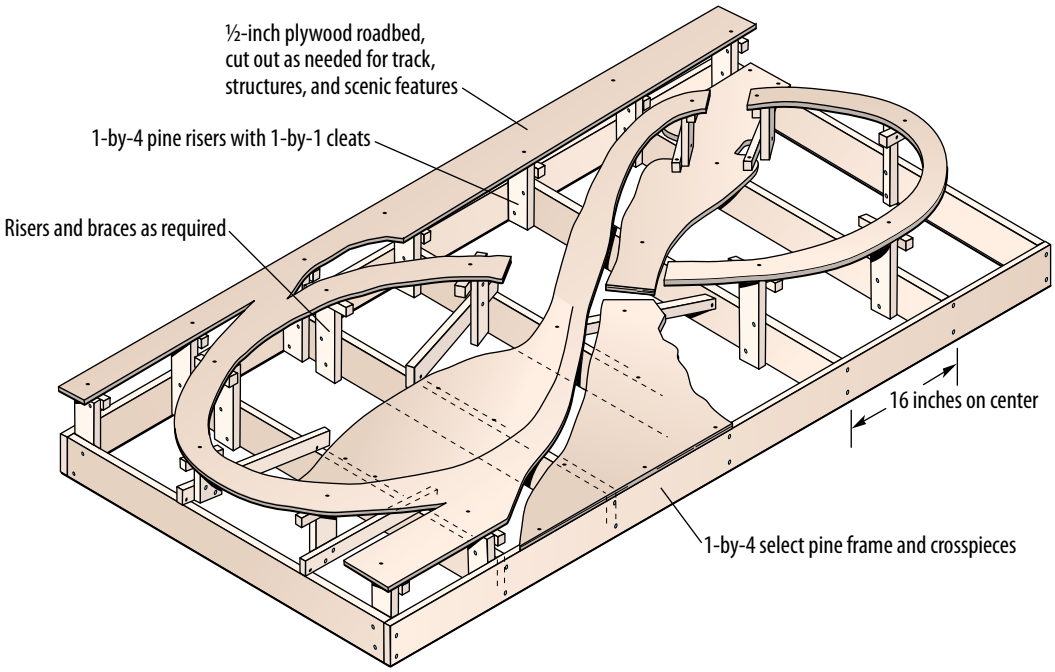
Number/Product

571 truss bridge

LIONEL O GAUGE TUBULAR TRACK COMPONENTS

Quantity	Description/Number
6	half-straight (65505)
9	single straight (65500)
3	custom-cut straight
36	O-42 curve (12925)
4	O-42 custom-cut curve
1	K-Line O-42 right-hand track switch (K0374)
1	45-degree crossing (65545)
1	track bumper (260)

"COOKIE-CUTTER METHOD"



An O gauge layout for a not-so-big bedroom

SMALL TRACK PLAN

THREE WALL-HUGGING TRACK PLANS LEAVE ROOM TO LIVE

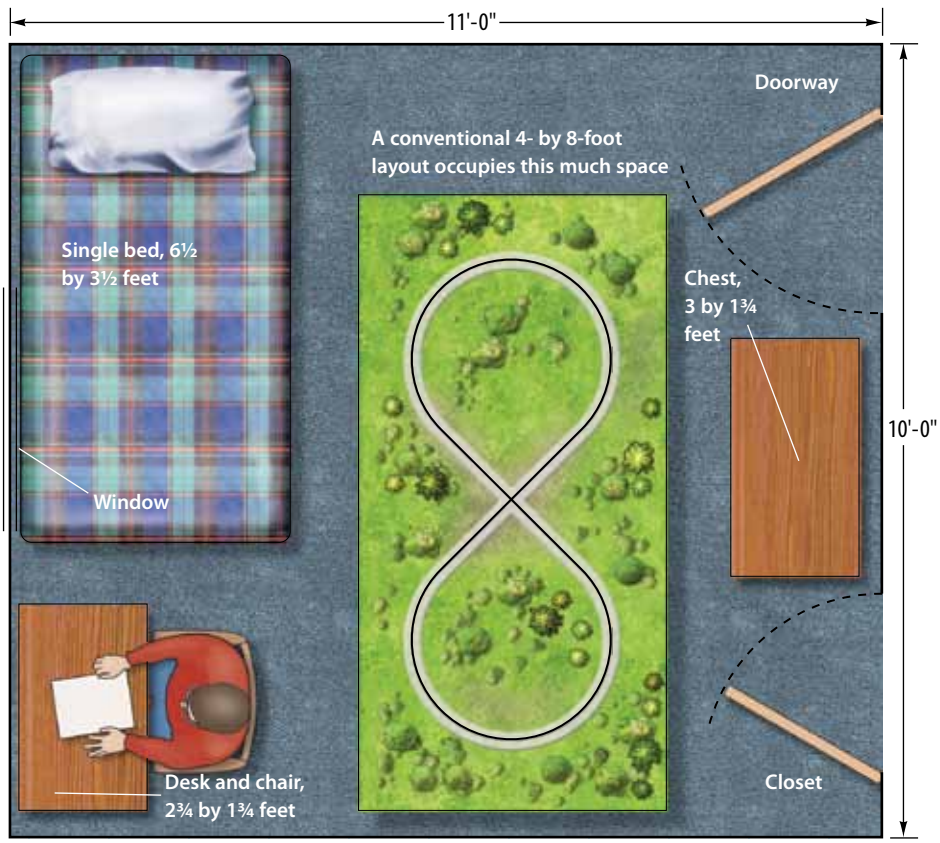
by Peter H. Riddle • illustration by Peter H. Riddle and Kellie Jaeger

In an ideal world, everyone would have a large spare room or a full basement in which to build a railroad empire. However, the reality is that many of us live in small homes or apartments, where every available space is already occupied.

When space is at a premium, toy train layouts often take the form of a temporary display. But with a little imagination you can enjoy a permanent layout all year round. A modest layout can fit into a small guest room without entirely compromising the use of the space.

In a bedroom that measures about 10 x 11 feet, the furniture might be arranged as shown in the room diagram. The simplest way to build a small layout would be on a 4 x 8-foot sheet of plywood, but no matter how you arrange the furniture, it makes the room much too crowded. In addition, developing an interesting track plan is tricky because the trains can do little more than run around an oval loop.

As an alternative to such a simple layout design, I elected to create a point-to-point track plan around the perimeter of the room. This design leaves much more available floor space and allows a much longer main line and two separate destinations, or "points," for the trains.



▲ **When space is at a premium, it can be challenging to incorporate a conventional 4 x 8-foot train table and still maintain adequate living space. There are numerous solutions to the space dilemma, especially if you're willing to think outside the box or, in this case, the shape of a plywood sheet.**

A point-to-point with potential

I designed the O gauge layout to fit around the perimeter of the room and sit at a height tall enough to pass over the furniture. It will still be possible to open the window by kneeling on the bed. Older children will find the trains close to eye level, which is an excellent angle for viewing, while younger ones can stand on a stool to operate the layout.

Be sure to place doorstops on the tables to prevent damage if someone opens the doors too far.

The track plan uses MTH RealTrax components to take advantage of their

narrow, 31-inch-diameter curves and the integrated roadbed. You can substitute other manufacturers' products as well.

If you use Lionel O-27 track, your curves will be about 27 inches in diameter. If you use Lionel FasTrack, however, the smallest curves you can make are 36 inches in diameter. Ross or GarGraves track would occupy the same amount of room as MTH RealTrax, and Atlas O track duplicates the FasTrack footprint.

The track plan is comprised of a single main line with passing sidings at both ends, each containing an uncoupling section. There's also a siding in front of the window for rolling stock, but if space is at a premium, you can eliminate the siding and make that shelf narrower.

Most of the table consists of a narrow shelf, suspended from the wall by 90-degree angle brackets screwed through the wallboard into the studs. I recommend that you add an additional leg under each of the two wider tables where the passing sidings are located.

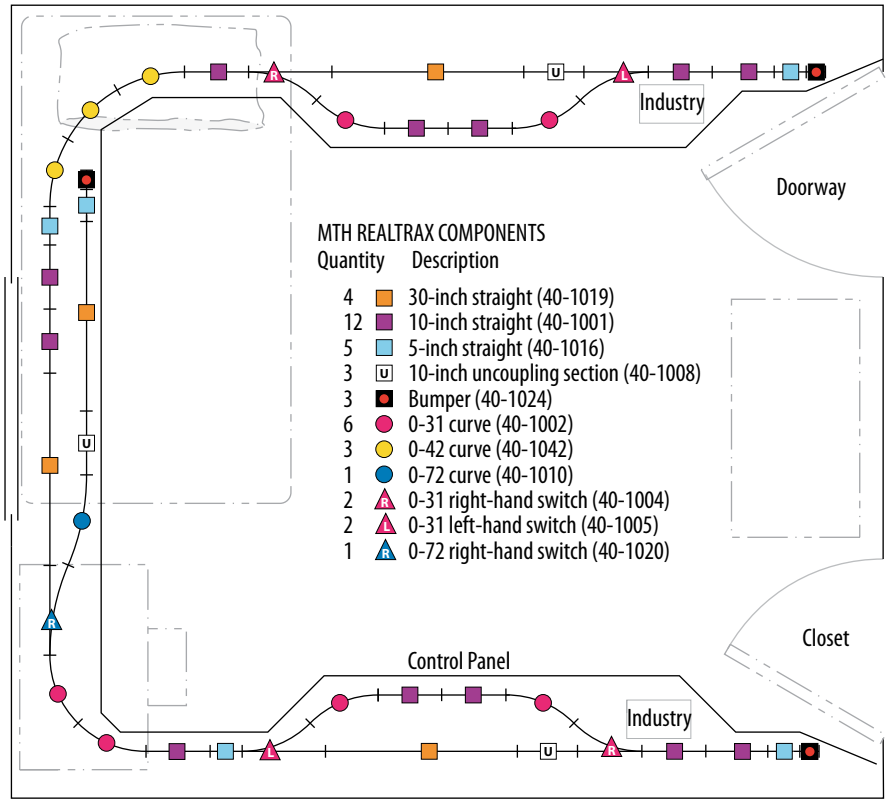
Operation favors short trains and double-ended locomotives or switchers that can be run in either direction, since there's no provision for turning a locomotive around. At either end of the layout, a locomotive can uncouple from its cars on the operating track section, proceed through the turnout to the end of the line, and then reverse through the passing siding to return to the rest of the layout. It will take some ingenuity, but it is possible to shuffle rolling stock among the three sidings.

Opportunities for scenery are limited by the width of the shelves, but you can squeeze in a narrow station platform next to each passing siding. There should also be a small industry or operating accessory at each end to give the trains a purpose. A small mountain with a tunnel would fit nicely in either of the two corners that flank the window.

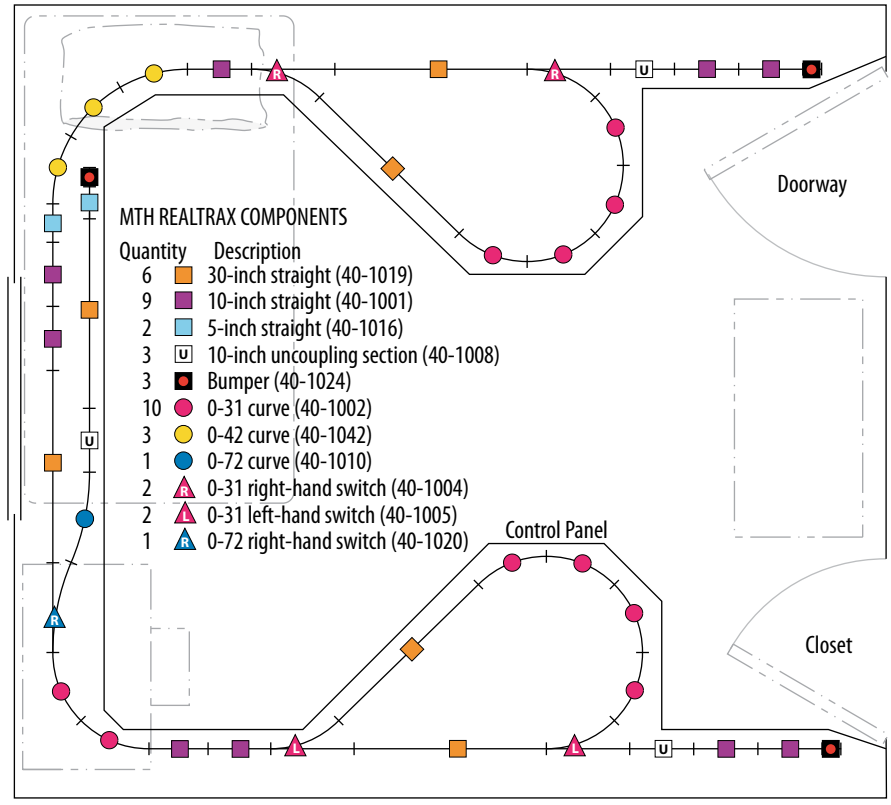
Ongoing developments

If continuously operating trains is more to your liking, replace the passing sidings with a reverse loop near each end of the plan. Be sure to support the tables under the reverse loops with one or two sturdy legs. Lionel O-27 track would be ideal for this plan, since the reverse loop tables would need to be only about 2½ feet wide. Even though the new loops eliminate two sidings, the plan still retains three sidings that you can use to store rolling stock.

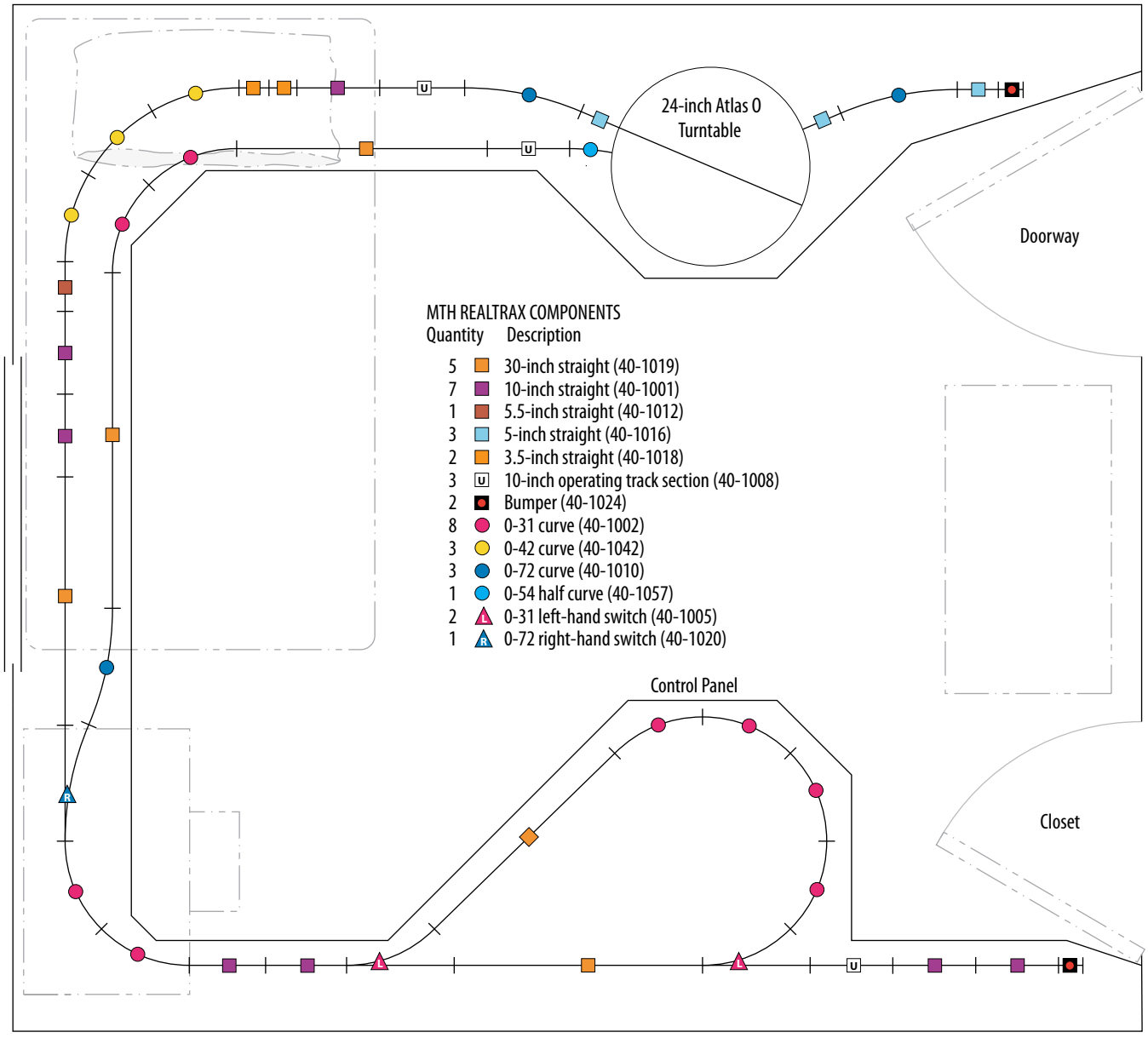
There is extra room for scenery in this plan, and it can be as simple or as complex as your imagination dictates. The reverse loops are large enough to



▲ **A basic point-to-point scheme allows you to operate trains across a longer stretch of mainline track than normally afforded on a simple 4 x 8-foot layout with a continuous run. On this layout, trains run from one point to another, similar to a real railroad.**



▲ **This loop-to-loop scheme allows you to continuously run a train over the entire layout without the intervention of an operator. By retaining the two spurs at each end of the layout, you can still operate a train from one point to another.**



▲ **A point-to-loop scheme is a combination of continuous-run and point-to-point designs. In this design, you'll use an Atlas O 24-inch operating turntable to swap the locomotive from one end of the train to the other.**

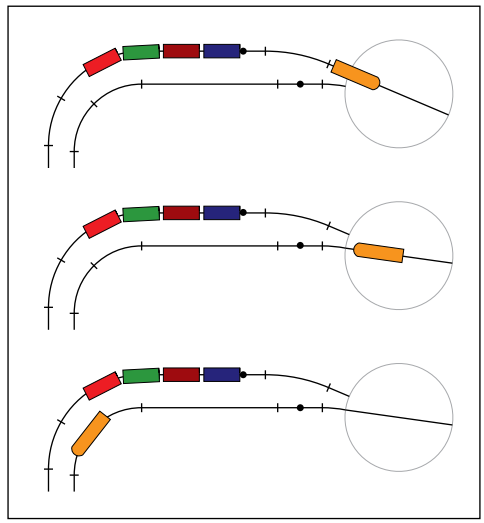
contain a few houses or operating accessories, such as coal and log loaders. You'll want to provide a station or industry at each reverse loop to give the trains logical destinations. Once again, consider building a small mountain with a tunnel over each of the curves on either side of the window.

360-degree turnaround

A variation of the track plan, one that provides more interesting operation, substitutes an Atlas O (atlasO.com) no. 6910 24-inch self-indexing turntable for one of the reverse loops [Ross Custom Switches makes turntables in various sizes – *Editor*]. This option saves almost an extra foot of floor space and gives the operator more to do. Trains can approach the turntable on either of two parallel tracks. There is also an extra track to the right of the turntable to store a spare locomotive.

In a larger room, you could expand the number of tracks to create a small yard, and even include an engine house and various service items, such as a water tower, a sanding facility, and a diesel fueling station.

Don't let a small house or apartment keep you from enjoying pleasures that model railroading has to offer. If a bedroom layout is impractical, consider a dining-room pike or even one around the perimeter of a living room or family room. The trains will be available whenever you want to run them, and they make a great conversation piece. CTT



▲ **A turntable allows two-way operation. The locomotive enters the turntable, rotates to face in the opposite direction, and exits via the parallel track.**

Long run track plan

Scale of plan: ¼" = 12"

3 Elevation in inches

MTH RealTrax

0-42 curve - 3
0-31 curve - 26
10-inch straight - 26
4.25-inch straight - 12
3.5-inch straight - 4
90° crossing - 1
0-31 left-hand switch - 1
0-31 right-hand switch - 1
Deck girder bridge - 5

Color-coded sections

4.25 inches
3.5 inches

Long run, with a twist

THIS 6 X 8-FOOT PLAN OFFERS CONTINUOUS OPERATION AND SCENIC POSSIBILITIES

SMALL TRACK PLAN

by Neil Besougloff • illustration by Robert Wegner and Roen Kelly

Not all toy train operators are looking for prototype action with lots of switches, spurs, and passing sidings. Some just want to sit back and let their trains run continuously. Here's a track plan that allows continuous operation, with an added twist.

Inspired by a plan originally published 50 years ago in *Toy Trains* magazine, this 6½ x 8-foot O gauge track plan has a long run and interesting scenic possibilities. Unlike the original, this modern version uses MTH RealTrax, adds a passing siding, and makes a few changes in some of the curves.

It's the twisted loop in the center of the layout that ultimately makes a once-around train run unusually long. This center area can be the focal point of your layout – say, the top of a mountain or a raised urban area.

Traveling counterclockwise on the outer track at the top of the layout, a train goes under three bridges and completes a lap around the entire layout as it gently climbs 5 inches before crossing over the same three bridges. Then the train slowly descends back to its starting point.

Elevations are shown in inches on the track plan, but make sure your tallest rolling stock will fit beneath each of the three bridges. Don't forget to factor in the height of the MTH RealTrax roadbed (about half an inch).

This track plan shows a passing siding with two switches (not part of the original 1950s design) that, optionally, can be deleted. On the other hand, additional switches and sidings can be added to the inside or the outside of the straight sections of the track plan.

You can also reproduce this plan using O gauge tubular track, although you'll need to cut a few straight sections to match the 4¼ -inch and 3½ -inch MTH sections. CTT

2 sheets to grow on

THIS 8 X 12-FOOT LAYOUT CAN BE BUILT IN STAGES

by Neil Besougloff • illustration by Kellie Jaeger

Toy train layouts and plywood often go hand in hand. This O gauge plan is specifically designed to fit on two 4 x 8-foot sheets of plywood. Even better, it can be in operation as you build.

The inspiration for this L-shaped plan comes from the 68-page booklet *How to Operate Lionel Trains and Accessories*, published by Lionel in 1960. The overall dimensions of this plan are 8 x 12 feet. It features basic Lionel tubular track: straights, half-straights, O-31 curves, O-31 track switches, and only four custom-cut straight sections (two in the reverse loops and two more along the backstretch).

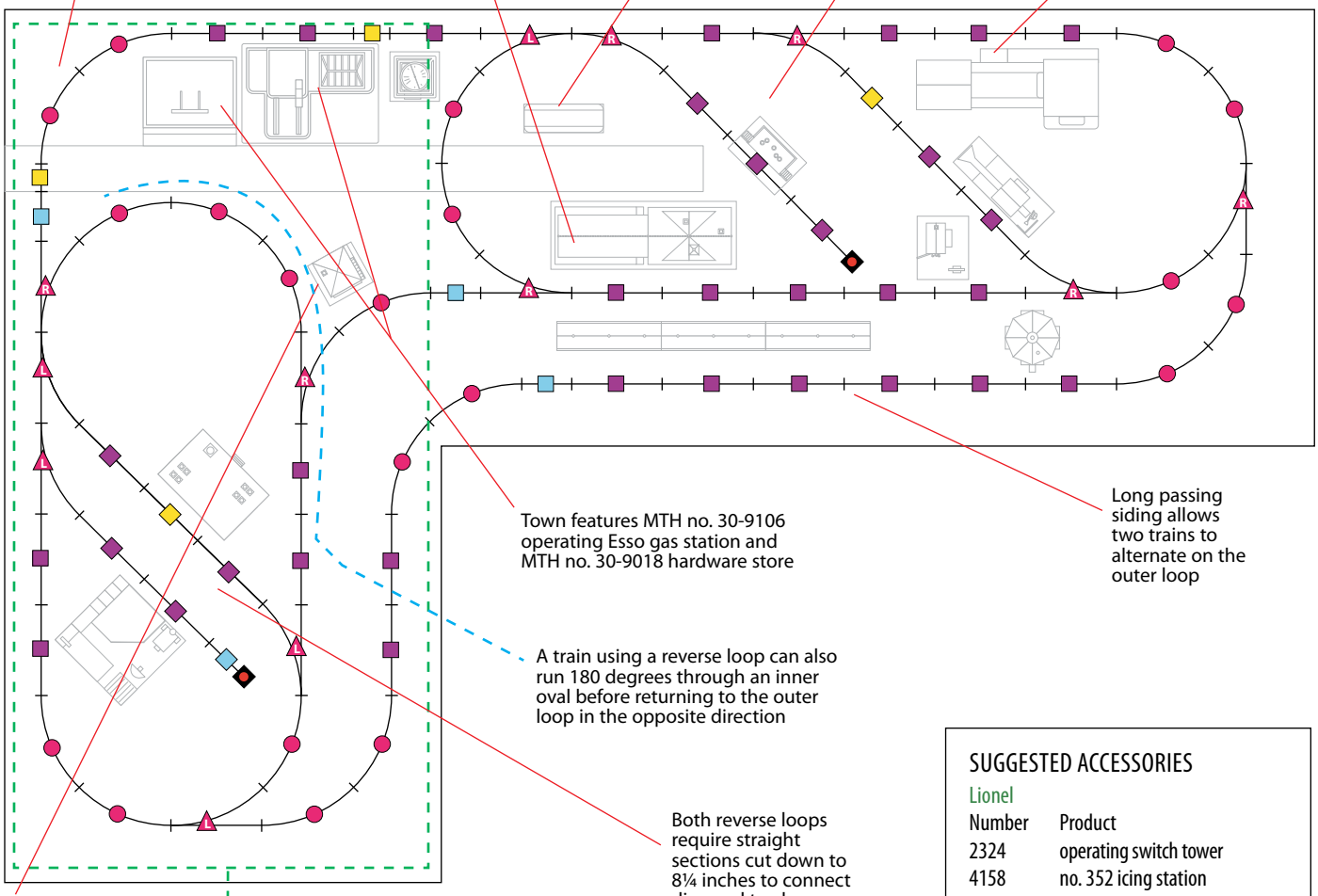
The plan offers three distinct routes for operating trains.

First, two trains can run at the same time on the inner ovals, both of which have short spur tracks for accessories. You'll need to separate these ovals electrically from other parts of the layout using two transformers and plastic pins in the center rails.

Second, the outer loop is designed with a long siding to allow you to alternate between two different trains traveling the perimeter of the layout in the same or opposite directions.

Third, each of the inner ovals features a reverse loop. Using both reverse loops, a train would follow a dog-bone pattern back and forth along the rear edge of the layout.

This is a great starter plan because you can operate trains throughout any phase of construction. Start with one sheet of plywood and one of the inner ovals. Then add a second sheet of plywood and the outer oval. In time, and as your budget allows, add the second inner oval, the passing siding, the two reverse loops, and the two spur tracks for accessories. CTT



Start construction with this inner oval and one sheet of plywood. The reverse loop and the accessory spur can be added at a later date. After that, add a second sheet of plywood for the outer loop. Then save up for additional O-31 track switches to add a second inner oval and finally the passing siding and reverse loops

LIONEL SECTIONAL TRACK COMPONENTS

Quantity	Description
4	half straight
33	straight
4	custom-cut straight
20	0-31 curve
5	0-31 left-hand switch
7	0-31 right-hand switch
2	track bumper

SUGGESTED ACCESSORIES

Lionel

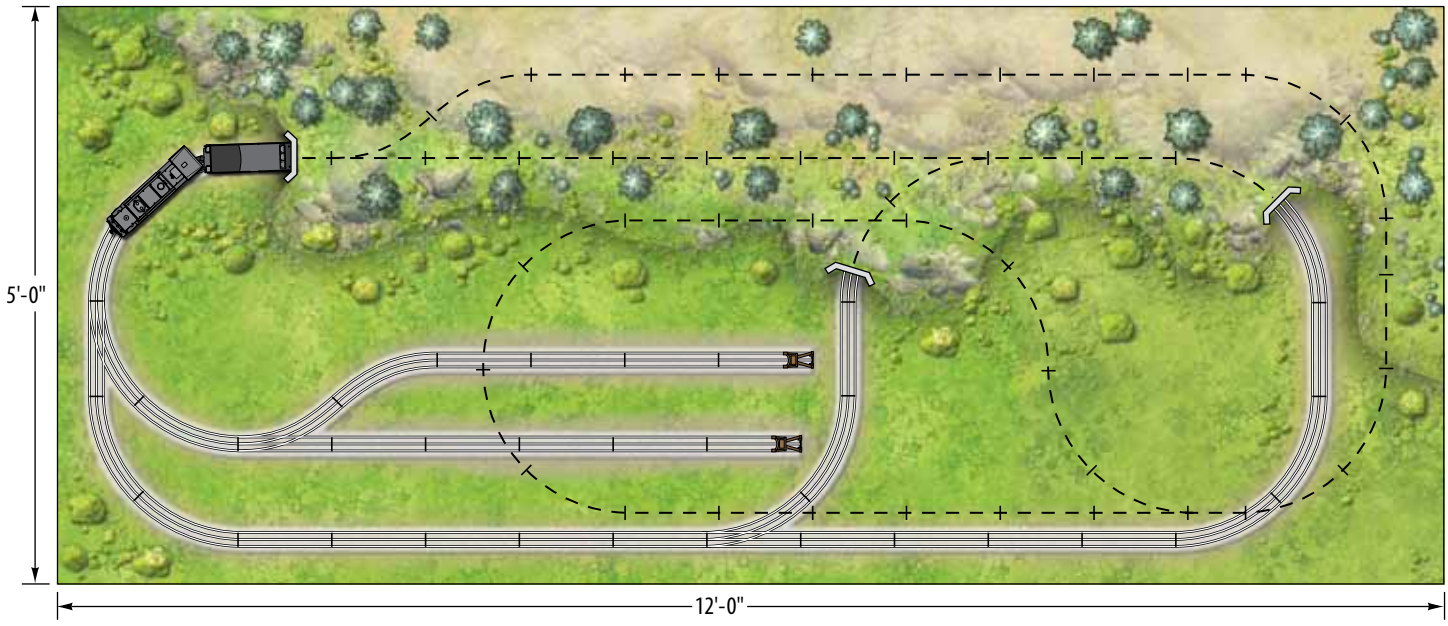
Number	Product
2324	operating switch tower
4158	no. 352 icing station
9220	milk car platform
12713	gate man and shed
12916	no. 138 water tower
12943	illuminated station platform (3)
24102	no. 193 water tower
22997	no. 2300 oil drum loader
62709	Rico station

MTH

Number	Product
30-9018	hardware store
30-9106	operating Esso service station
30-9110	operating transfer dock
30-90046	grainery

Plasticville

Number	Product
1500	diner



The case of the disappearing train

A TRICKY 5 X 12-FOOT PLAN FOR O GAUGE SECTIONAL TRACK

by Peter H. Riddle • illustration by Kellie Jaeger

Here's a compact 5 x 12-foot O gauge track plan with an air of mystery that will fascinate visitors to your layout. It's ideal for the modeler who wants plenty of layout space for buildings, accessories, and scenery, yet is content with having a modest amount of visible track. Thanks to a clever secret, it also gives your trains a good long run.

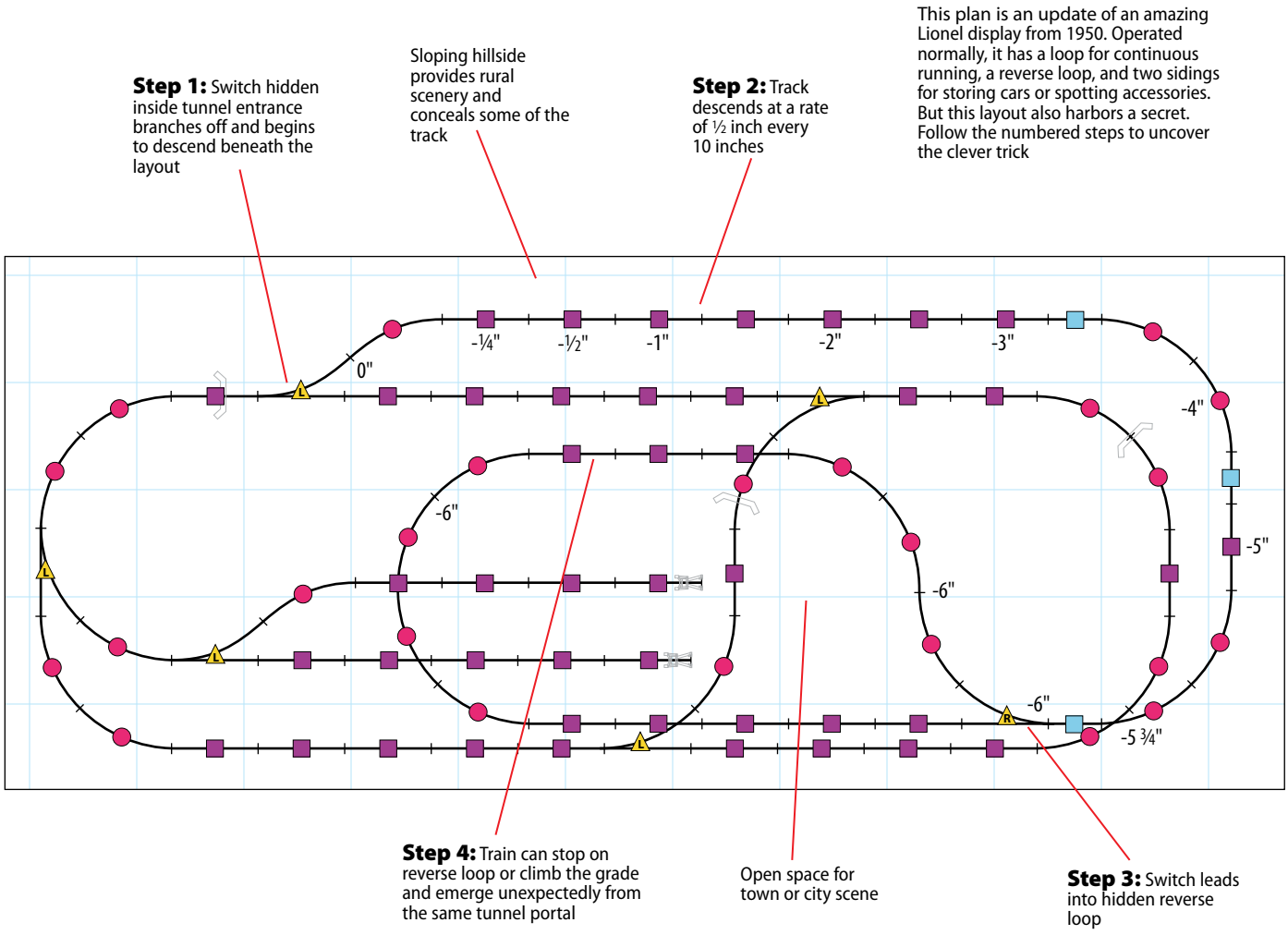
Updating a classic display

Almost 60 years ago, Lionel introduced Magne-Traction, which allows trains to climb relatively steep grades. To publicize this innovation and demonstrate its advantages to the public, Lionel's display department created the no. D-27 "Disappearing Layout." [The story behind this brilliant display, in which it seemed as if a train would vanish completely after entering a tunnel instead of coming out the opposite end, appears in the November 2001 issue of *Classic Toy Trains*. – *Editor*]

My "Disappearing Railroad" is an updated version of that amazing display from 1950. On the surface it looks like a relatively simple track plan with a loop for continuous running, a reverse loop, and two sidings for storing cars or spotting accessories. A hillside provides scenic interest and hides some of the track, and there is plenty of space in front for town or city development.

Anyone watching a train run on this layout can easily predict where it will emerge after entering the tunnel at the upper left. However, the mountain conceals a secret that also creates the illusion of travel to distant points.

A fifth left-hand switch, located just inside the tunnel entrance, branches off from the main line and begins to descend beneath the layout, where it passes through a right-hand switch into another reverse loop. You can stop a train there, as if it has gone to parts unknown, or let it climb the hill again and come out of the same tunnel portal, as if it's completing a round trip.



TRACK COMPONENTS

Quantity	Description/Number
44	straight
3	half-straight
24	O-31 curve
5	0-22 left-hand switch
1	0-22 right-hand switch

The track descends at the same rate as would be provided by a Lionel graduated trestle set, ½ inch every 10 inches, which is also the length of a normal section of straight track. Most modern locomotives have traction tires or are heavy and powerful enough to manage this relatively steep grade, even if they lack Magne-Traction.

Building the layout

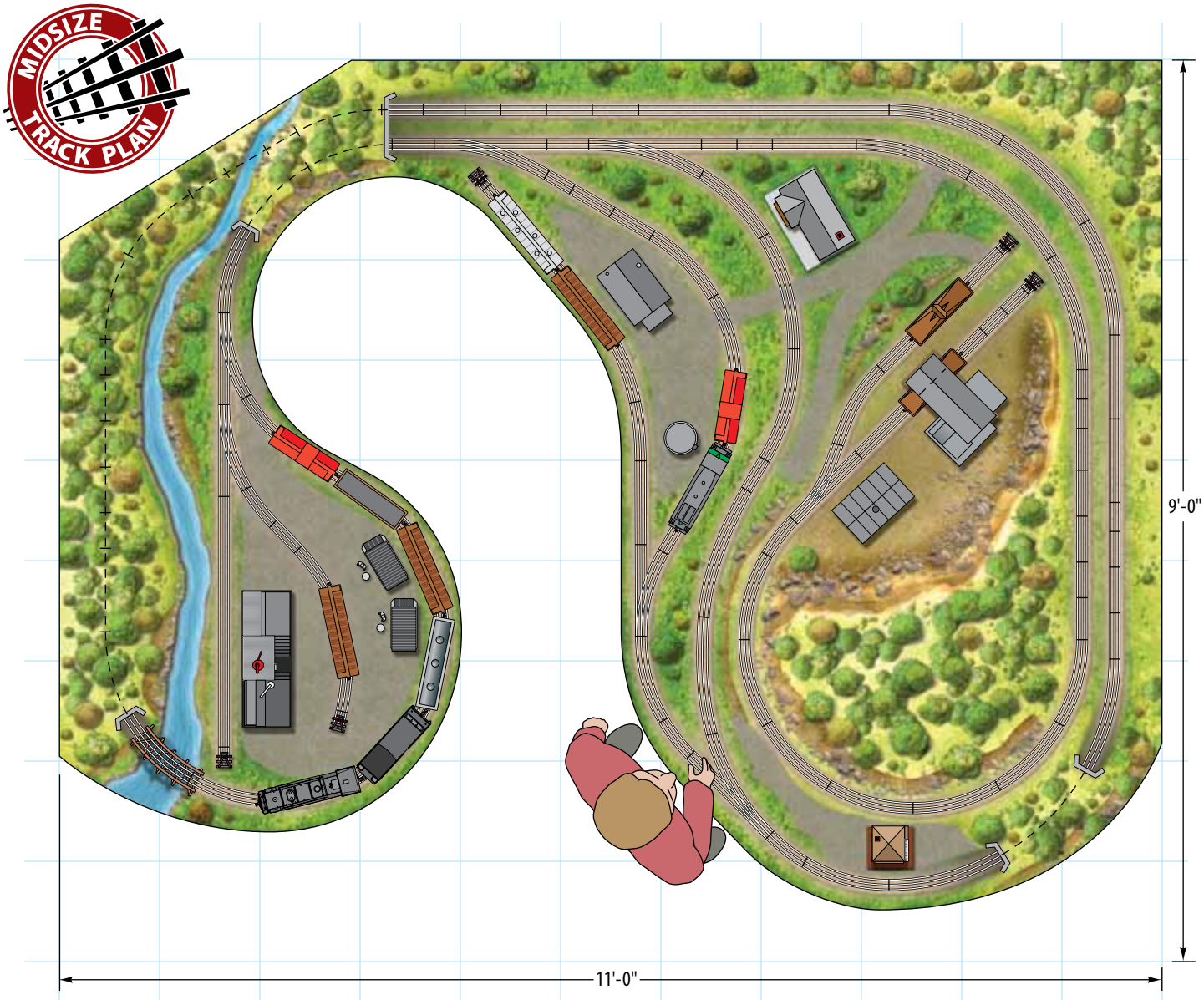
The numbers on the track plan indicate the depth of the track below the layout surface measured in inches. The tabletop is labeled "0." Note that there is an intermediate step of ¼ inch at both ends of the grade. This gradual transition is necessary to prevent overhanging locomotive pilots from touching the rails at the bottom of the grade as well as pilot wheels lifting and derailing at the top of the climb.

The lower-level reverse loop may be made as large as you like; you're limited by only the amount of space available. The larger the loop, the longer the train will stay hidden. Be sure you use remote-controlled non-derailing switches to guard against derailments on the hidden track.

Note that there are three fractional sections of straight track, which provide proper clearance for the descending line. Track manufacturers make short sections in various lengths, and the ones you choose will depend on the brand of track you use. A good choice would be 5 inches long, a size available to match Lionel FasTrack and MTH RealTrax. Comparable Atlas O sections measure 5½ inches. [Information about the many available types of O gauge track can be found in the author's book *Trackwork for Toy Trains*. Order by calling 1-800-533-6644, or via the Internet at kalmbachstore.com. – *Editor.*]

Using O-31 curves, this design fits easily into a 5 x 12-foot space. If you opt for larger diameter curves, you will need to allow additional space. You may want to consider building this layout in portable modules, which will enable you to take it to train shows and other public gatherings.

The hidden track concept can be incorporated into larger layouts as well, such as a club pike or a youth group project. The possibilities are limited by only your imagination. CTT



Room-size branch line

THIS 9 X 11-FOOT TRACK PLAN MIXES SPIFFY SCENERY AND FUN OPERATION

by E.A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

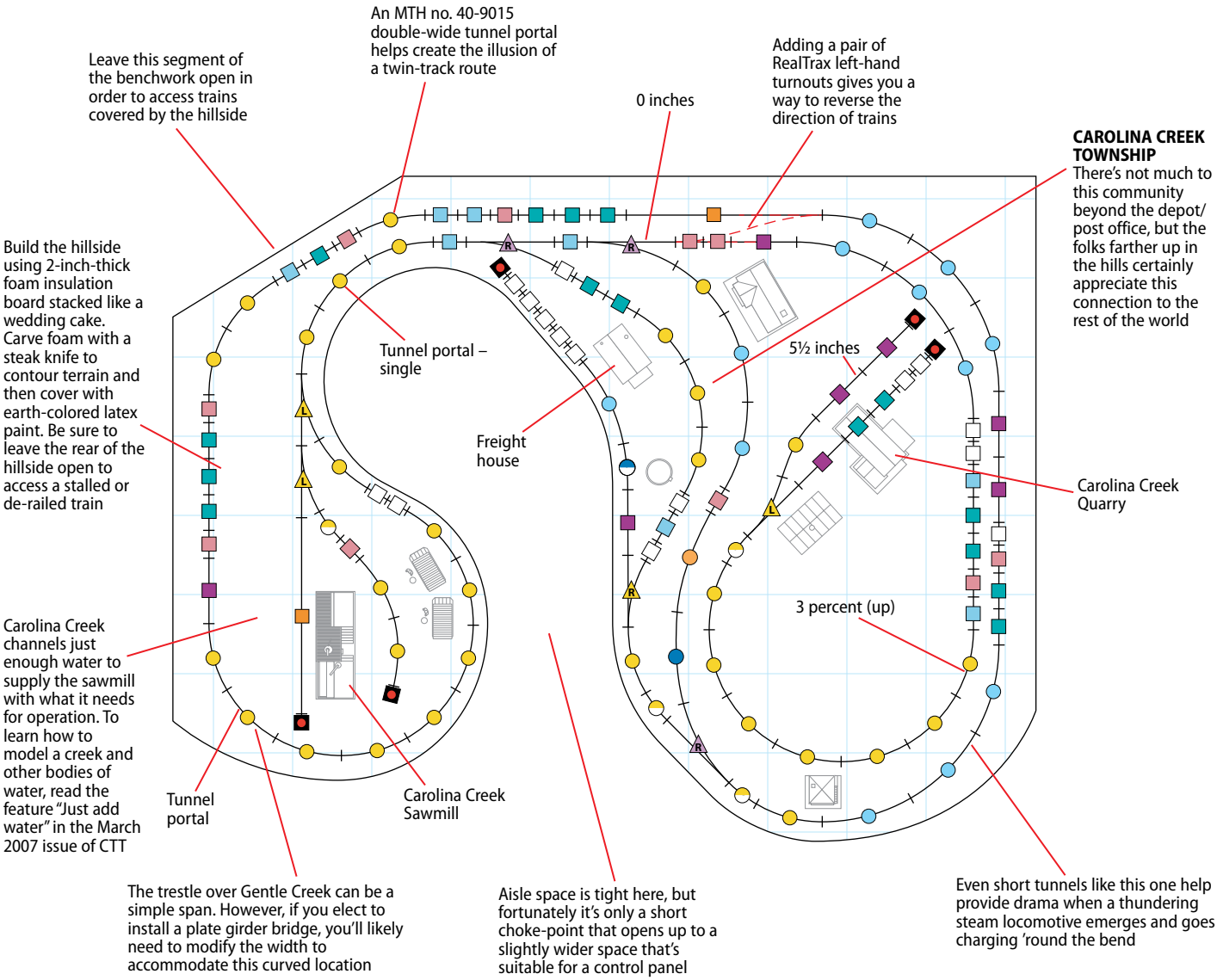
When building a toy train layout, it isn't always essential to include as much track as the space will allow. There are times when less is more.

Such is the case with this 9 x 11-foot O gauge track plan that re-creates a plausible rural setting appropriate for uncomplicated railroad operations.

Using a folded dog-bone design, this scheme exchanges a complex network of track for plenty of Carolina character and scenery. But even with beautiful blue hill country providing most of the inspiration for this plan, a riverside lumber mill and a hilltop quarry also add a bit of operational interest.

These operations are timeless and will suit just about any era of railroad operation. If you prefer steam-era operations, the setting offers plenty of opportunity to showcase Norfolk & Western steam power, such as an MTH RailKing no. 30-1411 0-6-0 or Premier line no. 20-3123 0-8-0.

Advance the calendar into the steam-to-diesel transition era and you can rely on a Lionel no. 28244 N&W C-420 diesel to pull heavy loads from the quarry.



Even in modern times an Atlas O Trainman no. 0330 Norfolk Southern GP15 would provide a good show.

Regardless of what type of motive power you select, the route your locomotives will travel is a continuous loop of MTH RealTrax. The O-42 and O-54 curves help foster a gentle flow that befits a rustic railroad.

In an effort to keep things simple, the main route doesn't change elevation. Most of the intrigue along the right-of-way is provided by scenery elements ranging from a few short tunnels, a trestle, and track hidden under or behind hills. Although the layout can be built without a change in elevation, it's hard to resist incorporating a manageable 3 percent grade up the spur to the quarry.

At the quarry and the lumber mill sites, you'll find separate tracks intended for departing loads and arriving empties. Switching cars in and around these two industries can easily occupy the interest of one operator, while another controls a train continuously running over the main route. The two trains can even cross paths along the passing siding included at the township of Mayberry … or make that Carolina Creek. CTT

SUGGESTED ACCESSORIES

LIONEL

Number/Product

12705 lumber shed (2)
12733 watchman's shanty
12773 freight platform
12904 coaling station
24147 sawmill

MTH

Number/Product

30-11028 water tower
30-90004 freight station
30-90032 Fairview depot

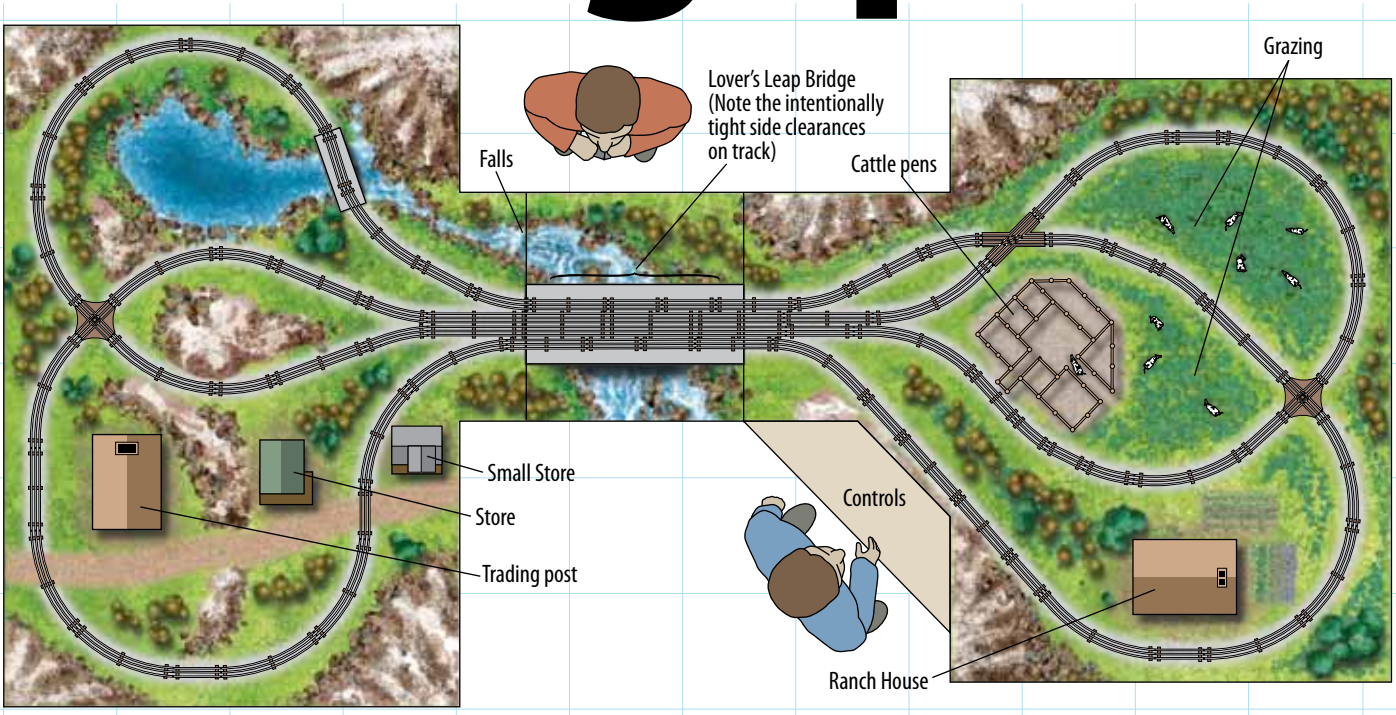
MTH REALTRAX COMPONENTS

Quantity	Description/Number
15	3.5-inch straight (40-1018)
10	4.25-inch straight (40-1017)
8	5-inch straight (40-1016)
15	5.5-inch straight (40-1012)
8	10-inch straight (40-1001)
2	30-inch straight (40-1019)
31	0-42 curve (40-1042)
4	0-42 half curve (40-1045)
12	0-54 curve (40-1054)
1	0-72 curve (40-1010)
1	0-72 half curve (40-1049)
1	0-82 curve (40-1082)
3	0-42 left-hand turnout (40-1043)
1	0-42 right-hand turnout (40-1044)
3	0-54 right-hand turnout (40-1055)
5	track bumper (40-1024)

Bridging the gap

OVERLAPPING ROUTES HIGHLIGHT THIS 6 X 12-FOOT TRACK PLAN

by Arthur O'Connor
illustration by Kellie Jaeger



All train layouts need a bridge, and most bridges have a story behind them.

In New Milford, Conn., Lover's Leap Bridge – and its romantic legend involving a young Native American woman and a New England settler – inspired me to design an O gauge track plan focusing on a bridge.

This 6 x 12½-foot track plan is squeezed in the middle to create a dog-bone shape. In the middle, a four-track bridge spans a river that creates two distinct communities on either side of the layout.

The 2-foot-long bridge can be represented in many ways. When I built a layout from this track plan for a show in New Milford, I used parts from an Erector Set to create an arch bridge of sorts.

While the bridge can be simple or elaborate, its purpose is not merely esthetic. The track plan dictates that every time a train crosses this bridge, it does so on a different track until it has crossed the gap four times. Then the train returns to its original track.

The key to this movement is three crossings – two 90-degree track sections and one 45-degree section. They allow the paired loops on either side of the bridge to overlap each other. The geometry assumes you are using Lionel O gauge track with 31-inch curves, but with some planning and cutting you can adapt this design to other track systems.

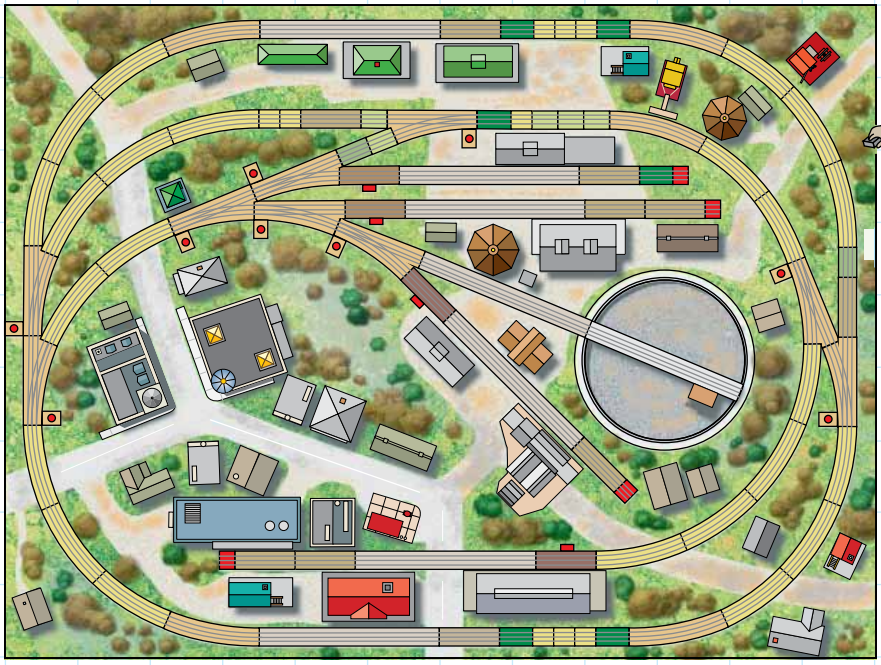
As shown here, this plan allows you to run only one train at a time. That's because the four tracks on the bridge literally abut each other (tie end to tie end), leaving no side clearance for two trains if they pass on adjacent tracks. However, with no switches to cause derailments, a train can run continuously on the plan's varied paths.

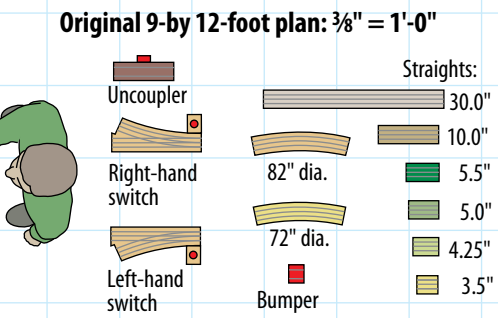
The layout has 4-foot-wide wings, so you can use two 4 x 8-foot sheets of plywood cut down in length. The cut-off pieces can be used for the middle section, which should include a steep drop to create a plausible gap for the bridge to span.

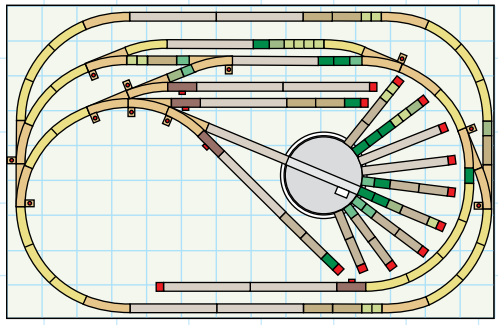
If you are inspired to add switches, the plan also leaves room for expansion on either end. But the bridge, being the storyteller it is, will likely remain the focal point. CTT

LIONEL TRACK COMPONENTS

- 10-inch straight (13)
- 40-inch straight (2)
- half-straight (17)
- 0-31 curve (26)
- 0-31 half-curve (12)
- 45-degree crossing (1)
- 90-degree crossing (2)
- No. 22907 girder bridge (1)







Modified 9-by 14-foot plan: not to scale

Model Builder, via MTH

UPDATING A FLEXIBLE, 9 X 12-FOOT PLAN USING REALTRAX

by E.A. Engebretson • illustration by Robert Wegner

Originally published in a prewar issue of Lionel's *Model Builder* magazine and later in the *Handbook for Model Builders*, this O gauge track plan naturally built itself around Lionel tubular track. But time has given today's hobbyists more track options that can make good ideas even better.

Impressed by the merits of this plan – defined by gentle curves and operational flexibility in a 9 x 12-foot space – I decided to redesign it using MTH RealTrax sections.

Why RealTrax? MTH's train-set-oriented track system offers a wide variety of lengths and curves that eliminates the need to cut sectional track in this plan. Plus, with its built-in roadbed, RealTrax is rugged yet easy to assemble.

Revised for RealTrax

Lionel designers get the credit for the inherent benefits of this design. It's unique in that it addresses three important considerations for a small space.

First is the use of large-diameter track for gentle curves. When the original plan was drawn around 1940, Lionel made only a handful of trains that didn't negotiate O-31 curves, so the broad curves were a luxury. Today, many O gauge locomotives won't accept anything less than O-72.

In my redesign, the curves remain gentle. The curved sections and turnouts are O-72, except in some areas where I created an easement using O-82 curves.

Second, the plan offers the ability to reverse a locomotive's direction. Small, single-level layouts using large curves too often fail to offer this possibility. This layout, which runs basically counterclockwise, can run in the opposite direction with a little planning.

The key is the turntable. A locomotive that backs into the turntable can be turned 180 degrees so that it can return to the main line running clockwise.

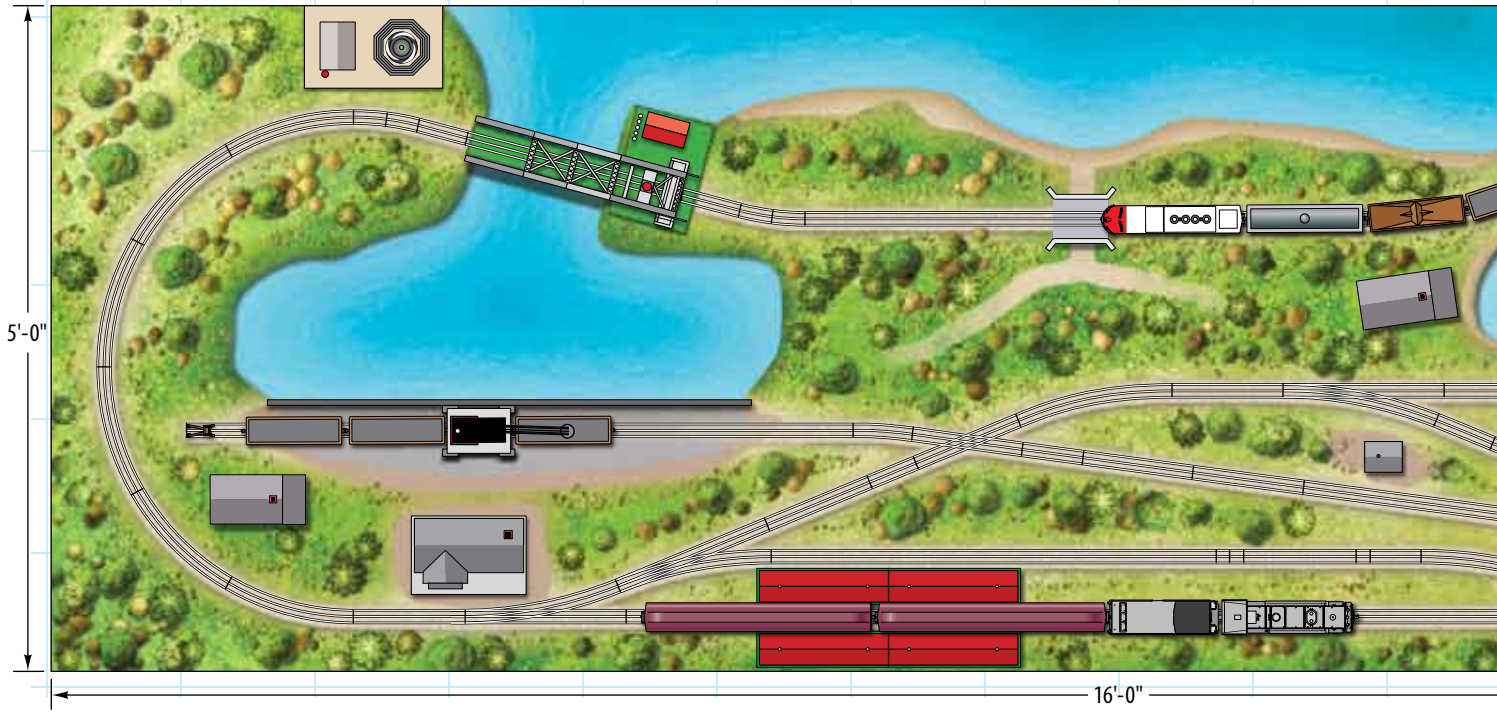
Finally, this plan offers opportunities for minor changes while retaining its basic characteristics. The lower left corner, in particular, is open for track additions. It also has room for a fan-shaped array of storage tracks reached by the turntable. My modified 9 x 14-foot plan is one alternative.

This 70-year-old *Model Builder* track plan was certainly a forward thinker in its youth, and it still gives us something to build on today. CTT

MTH REALTRAX TRACK COMPONENTS

(quantities listed are for 9 x 12 or 9 x 14 plan)

- 40-1001 10-inch straight (10 or 21)
- 40-1008 uncoupling track (4)
- 40-1010 O-72 curve (23)
- 40-1012 5.5-inch straight (6 or 12)
- 40-1016 5-inch straight (2 or 6)
- 40-1017 4.25-inch straight (5 or 7)
- 40-1018 3.5-inch straight (9 or 12)
- 40-1019 30-inch straight (7 or 15)
- 40-1020 O-72 right-hand switch (7 or 8)
- 40-1021 O-72 left-hand switch (2 or 3)
- 40-1024 track bumper (4 or 13)
- 40-1082 O-82 curve (5)
- Bowser 30-inch turntable



Trains, bridges, and a beach

THIS 5 X 16-FOOT O GAUGE PLAN IS DESIGNED FOR LONG AND NARROW SPACES

by Neil Besougloff • Illustration by Kellie Jaeger

Common wisdom says that the best ideas aren't original – they're stolen. This long and narrow 5 x 16-foot O gauge track plan was "stolen" from an N scale plan published in *Model Railroader* magazine. Named Buzzard's Cove, this beachfront plan is an easy project for newer hobbyists who want to get their feet wet before starting work on the gymnasium-sized layout that we all dream about.

The Buzzard's Cove track plan uses Atlas O track with O-45 curves on each end, a 30-degree crossing amid two spur lines, a generous 6-foot-long passing siding, and mostly O-72 track switches. Highlights of the layout include Lionel's reissue of its operating bascule bridge, a Lionel or Model Power O gauge operating lighthouse (you can also substitute a ceramic lighthouse purchased at a gift shop), and a Lionel magnetic gantry crane.

There's a specific purpose behind the 5 x 16-foot shape of the layout. It can fit into the "half" of a 1½- or 2½-car garage, or it can fit against a wall in a basement without taking up excessive floor space in a room.

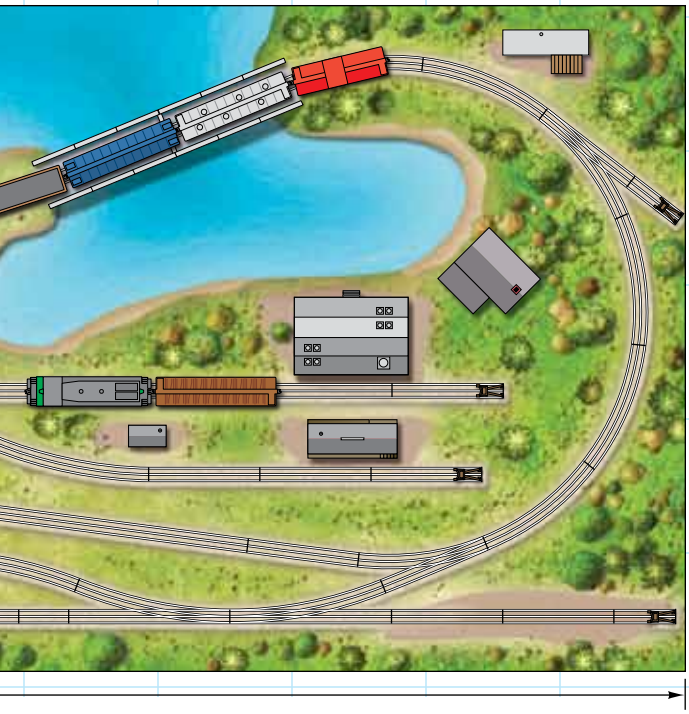
In either case, you should build a rugged framework with plenty of diagonal bracing and put casters under all the legs. Also recommended is a helper when it is time to roll the layout away from the wall to reach its back side during construction (and in the event of a catastrophic derailment).

If you have a large train room, you can exchange the O-45 curves for wider Atlas O 63-inch-diameter or even 72-inch-diameter curves, creating a walkaround layout. Conversely, if the layout's 5-foot depth is just one foot too many, try the 36-inch-diameter curves from Atlas O.

Regardless of what you decide, you'll need to slightly modify the bridge line along the front of the layout to meet the new curve-end points.

If you stack two 1-inch-thick pieces of blue or pink extruded foam insulation board on top of the layout, you'll be able to carve out the waterfront, as shown in the diagram, and use the leftover pieces to create sand dunes, rock cuts, and other terrain features.

You can use Liquid Nails Foamboard and Projects adhesive (check the tube label or the liquidnails.com website for foam compatibility) to secure the Atlas O plastic track ties to the foam surface. Or you can look for 2½-inch-long specialty screws to reach through the holes on the Atlas O track ties and down to the plywood surface. GTT



ATLAS O TRACK COMPONENTS

Quantity	Description/Number
3	1.25-inch straight (6015)
3	1.75-inch straight (6052)
5	4.5-inch straight (6051)
6	5.5-inch straight (6053)
17	10-inch straight (6050)
7	40-inch straight (6058)
4	0-45 curve (6046)
11	0-45 curve (6045)
3	0-72 curve (6062)
1	0-81 curve (6012)
1	0-81 curve (6011)
2	0-45 right-hand turnout (6086)
2	0-72 left-hand turnout (6072)
3	0-72 right-hand turnout (6073)
3	snap-on bumper (6040)
1	30-degree crossing (6084)

MIDSIZE TRACK PLAN

Lionel no. 24119 operating lighthouse

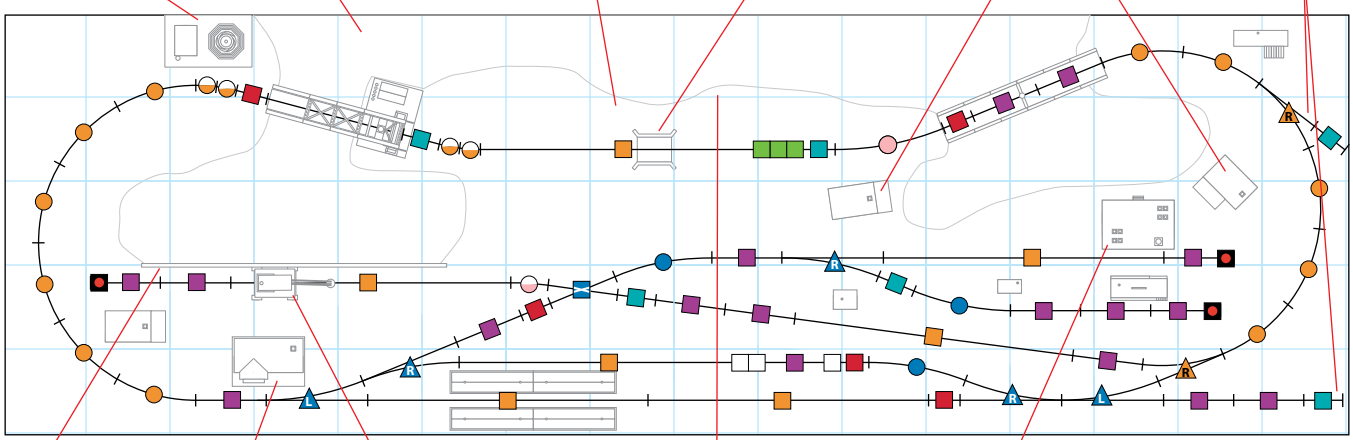
A sheet of Plexiglas, with its underside painted deep blue, can be sandwiched between the plywood tabletop and foam insulation to quickly create the water surface; brush on Woodland Scenics no. C1212 water effects to simulate waves rushing to shore

KELLY BEACH can be populated with Arttista and Preiser O scale beach figures. If you are especially ambitious, a wooden Coney Island-style amusement pier can stretch out over the water, and two or three of Lionel's amusement-park rides can be placed on the deck of the pier

Scratchbuilt walk-under to keep beachgoers off the track

MTH nos. 30-90009 and 30-90010 workhouses are used as beach bungalows

These tracks and switches are for future expansion



A steel bulkhead separates the bay from the crane track

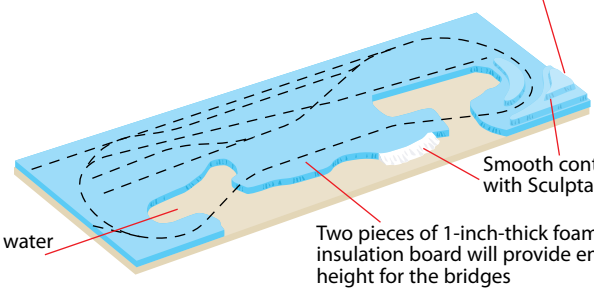
BUZZARD'S COVE village uses an MTH no. 30-90032 Fairview Depot building, along with four Lionel nos. 156 or 157 station platforms (or any of the modern-era reissues), to keep vacationers dry during summer thunderstorms

Scrap metal, pipes, and other cargo can be transferred from barges to gondolas with a Lionel magnetic gantry crane

Home centers sell bags of playground sand that can be used to scenick the shoreline and the dunes

MTH no. 30-90046 grainery building can be repurposed as a fish cannery

Dunes and hills can be built up with scraps of foam



Smooth contours with Sculptamold

Plexiglas water surface

Two pieces of 1-inch-thick foam insulation board will provide enough height for the bridges

High speed in 6 x 12 feet

TWO CONNECTED OVALS WITH WIDER CURVES

by Anthony DiLapi
illustration by Kellie Jaeger

Like many of you, I want to operate postwar Lionel O gauge trains and some of the larger new locomotives, but I don't have room for a layout using O-72 curved track. So instead of accepting defeat by using only O-31 curves, I took advantage of Lionel O-42 and O-54 curves to design a 6 x 12-foot railroad that lets me run the best of yesterday and many of today's larger scale-size locomotives.

Two ovals

My goal was to design a double-track main line with high-speed crossovers, a passing siding, reversing loops, and some yard tracks. I used O-42 curves on the inner oval and O-54 sections on the outer one.

The inner oval has two reverse loops, a passing siding, and several yard tracks. The switches on this inner loop of the layout are Lionel O-22 remote-control track switches with a curved leg that matches O-31 curved track.

Back-to-back O-72 switches serve as crossovers connecting the two ovals. You'll note on the track plan that I needed to move the O-72 switch motors to the outside of the straight leg of the switches (the mechanisms are designed to be moved to either side of the switch). When used as crossovers, O-72 switches create a center-to-center track spacing of 5½ inches, which is really too narrow for the switch motors.

To solve this problem, I located the centerline of the outer oval 4 inches from the back edge of the tabletop and allowed two of the switch motors to hang 2 inches beyond the edge of the layout. I felt this was an acceptable compromise to keep my center-to-center track spacing at 5½ inches.

Accessories and power

I incorporated as many Lionel postwar accessories as possible on my compact layout. Lionel and MTH have reissued several of these items. I also added lampposts, floodlight towers, block signals, semaphores, station platforms, crossing gates, and a billboard. A few Plasticville structures, a waterway, and a hill with two-track tunnel portals completed the railroad.

The Lionel no. 313 bascule bridge deserves a larger waterway to cross than I created. It looks all right, although you could substitute no. 314 girder bridges. I scratchbuilt the dual-track bridge in front of one of the tunnel portals because no commercial item would fit.

A Lionel no. 282 portal gantry crane straddles one of the yard tracks. You can also use a no. 182 magnet crane – just install it between the two yard tracks.

Similarly, a Lionel no. 256 or 257 freight station can be used instead of the 356 operating freight station that's shown. And no. 156 station platforms

O GAUGE TRACK SECTIONS

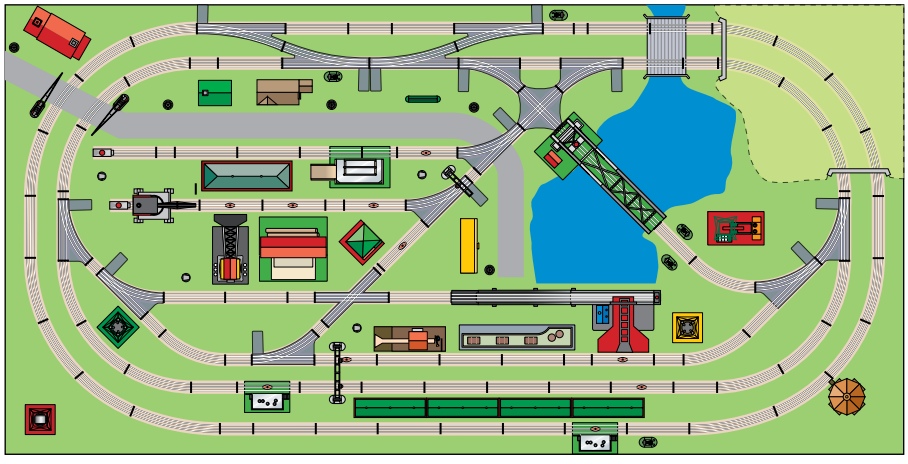
Curved
0-31 (3)
0-42 (12)
0-54 (10)
0-72 (2)

Straight
10-inch (30)
5½-inch (2)
4½-inch (24 – cut to various sizes)

Special
45-degree crossing (1)
90-degree crossing (1)
260 bumper (2)
0-31 left-hand switch (4)
0-31 right-hand switch (5)
0-72 left-hand switch (2)
0-72 right-hand switch (2)
UCS uncoupling (10)

look as nice as my 157 platforms.

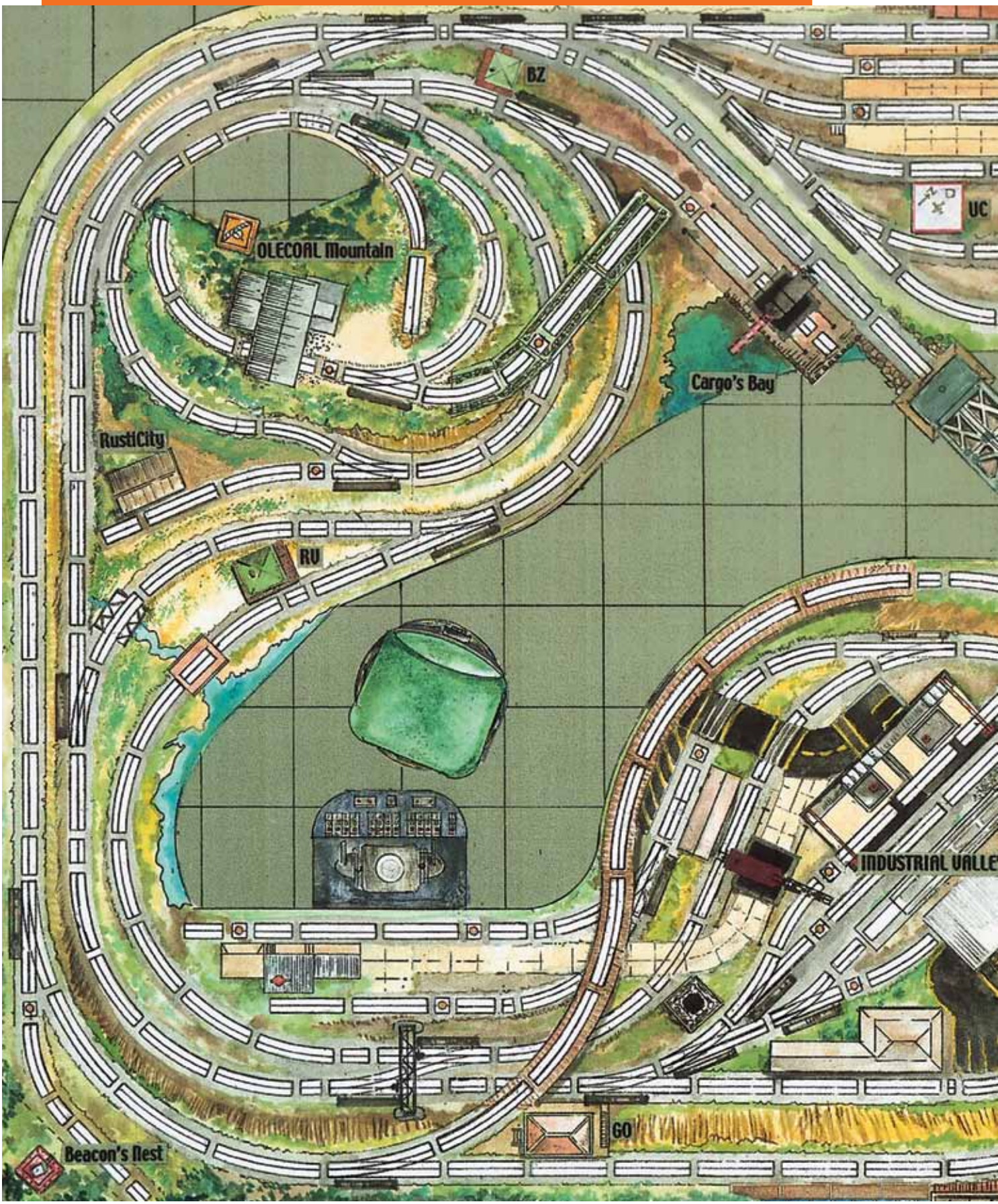
You'll do well with a Lionel ZW, an MTH Z-4000, or the MRC Dual Pure Power transformer to operate this layout, especially if you favor conventional-control postwar trains. Each loop can then be assigned its own throttle handle. A second transformer would be a smart choice to provide power for accessories and lights. CTT

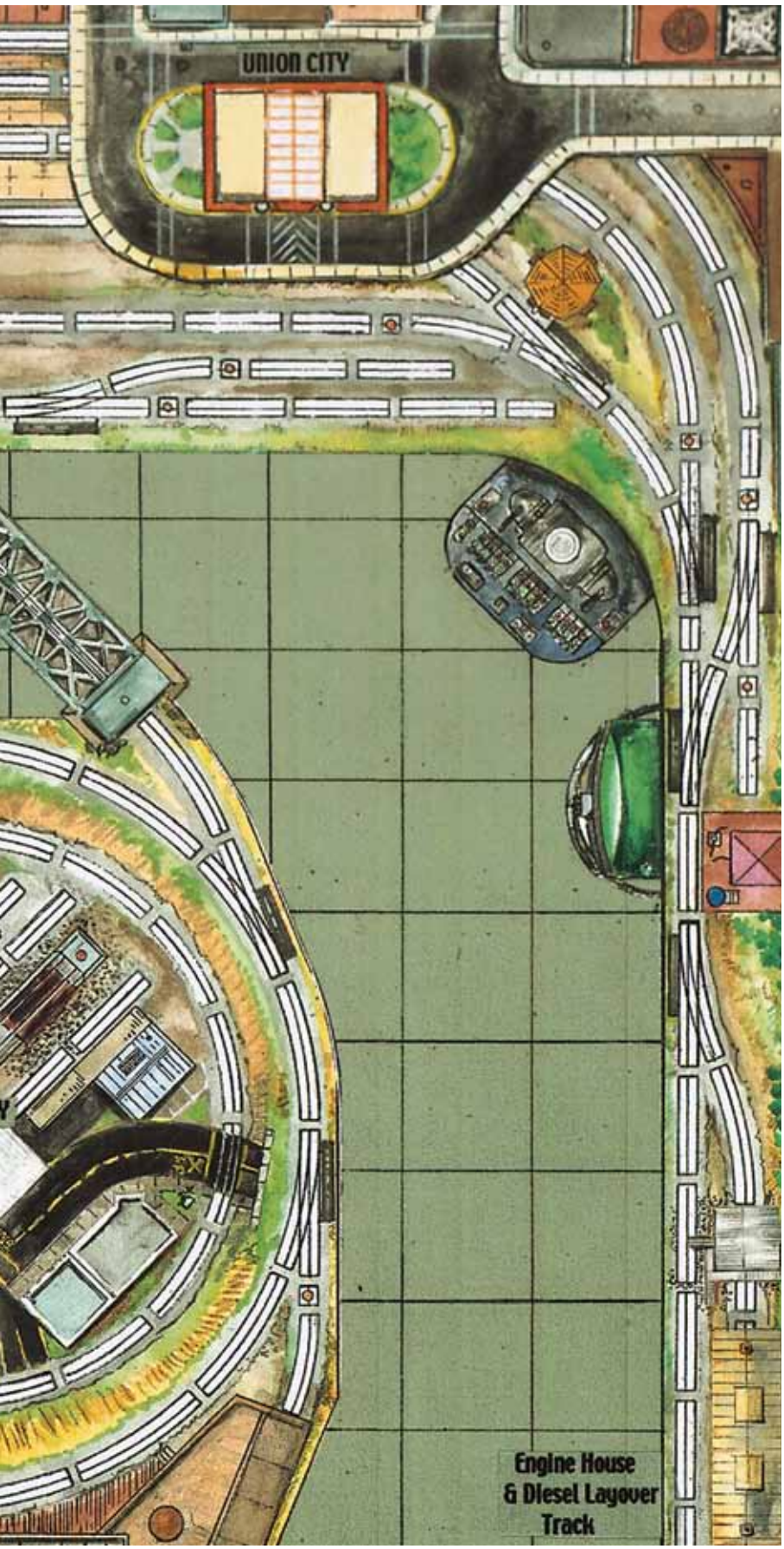


POSTWAR LIONEL ACCESSORIES OR MODERN EQUIVALENTS

30 water tower
70 yard light (4)
71 lamppost (4)
97 coal elevator
151 semaphore (2)
152 automatic crossing gate (2)
153 automatic block signal (3)
157 station platform (4)
164 operating log loader
282 portal gantry crane
310 billboard
313 bascule bridge
352 icing station
356 operating freight station
362 barrel loader
395 floodlight tower (2)
397 operating diesel-type coal loader
445 operating switch tower
450 operating signal bridge (2)
455 oil derrick
456 coal ramp
494 rotary beacon
3462P milk car platform (3)

This 12 x 16-foot plan puts you inside the action





Big- and small-time operation

by Thomas Meleck
illustration by the author

My friends have impressed upon me the desire to run big new steamers and scale-like streamliners, so you could say I've designed my Industrial Valley & Union City Railroad with my friends in mind. But realistic operation, another key to fun, reminded me not to forget the value of smaller trains either.

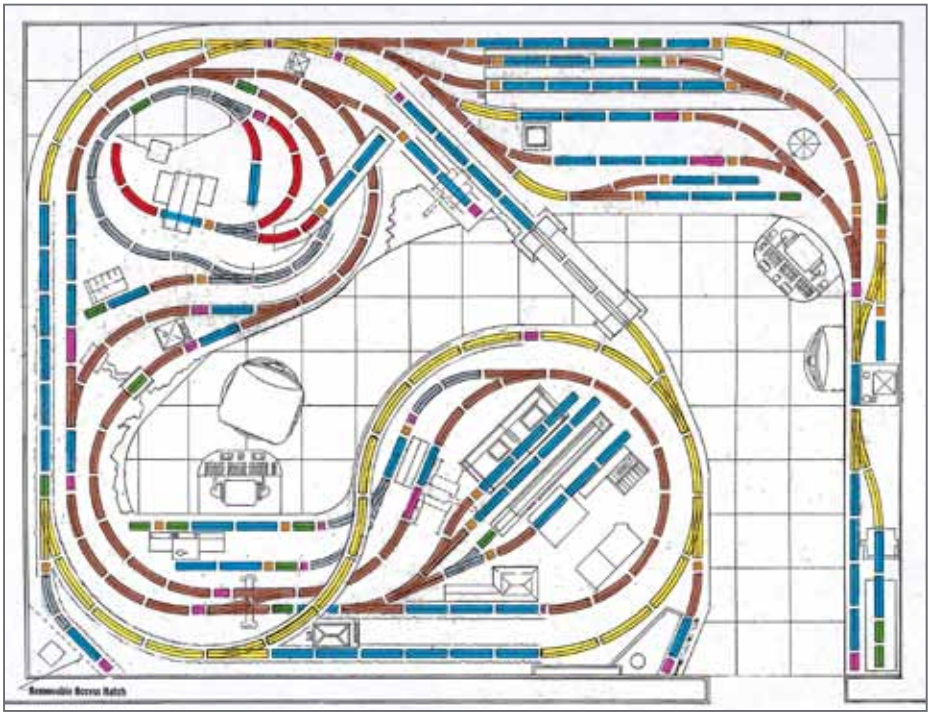
My objectives in designing this plan to fit in a 12 x 16-foot room (the same room that was used in CTT's 2000 layout-planning contest) were simple. I wanted a realistic railroad using Atlas O track that includes enough O-72 diameter curves to ensure that longer equipment would look natural and operate gracefully in a limited space. I also wanted to give this equipment somewhere to go, and a reason to go there.

My train operating experiences have convinced me that it is not necessarily a bad thing to surround an operator with the layout. Rather than feeling claustrophobic, you actually feel as though you're "inside" the action.

You're in the cab

Imagine you're behind the throttle of one of those steamers pulling out of the engine house (shown here on the lower right corner of the track plan).

Passing the Lionel diesel fueling facility on your right, you look ahead to the lead unit of one of those newfangled diesels just poking its nose out of the tunnel under the Union City Terminal. It has completed its run and is uncoupling from its passenger train. It will be leaving those streamlined beauties under Union Terminal to be emptied and



COLOR LIST FOR TRACK

- 1.75-inch uncoupler
- 10-incch straight
- 5.5-inch straight
- all fitter pieces
- 0-72 curve and switches
- 0-54 curve and switches
- 0-36 curve, half-curve, switches
- 0-27 curve, half-curve

ATLAS O TRACK COMPONENTS

- 26 1.75-inch uncoupling sections
- 82 10-inch straight sections (add three more if lift bridge isn't used and four more if coal unloader ramp near Olecoal Mountain isn't used)
- 18 5.5-inch straight sections
- 21 straight fitter sections (two 1-inch, one 1.5-inch, one 2-inch, one 3-inch, seven 3.5-inch, four 4-inch, one 4.5-inch, one 6-inch, and three 8-inch)
- 29 0-72 curves
- 56 0-54 curves
- 17 0-36 curves
- 2 0-36 half-curves
- 3 0-36 quarter-curves (fitters)
- 6 0-27 curves
- 1 0-27 half-curve
- 5 left-hand 0-72 switches
- 4 right-hand 0-72 switches
- 12 left-hand 0-54 switches
- 8 right-hand 0-54 switches
- 2 left-hand 0-36 switches
- 3 right-hand 0-36 switches

cleaned. Later on, a local switcher will be along to pull these cars out of the tunnel and around the Industrial Valley reverse loop to reposition them for their next trip from Union City.

Meanwhile, you pull up and top off your tender at the old water tower. Your waiting freight cars fill the three sidings below the yardmaster's control tower. You inch forward past the tower, your brakeman throws the switch, and you back up, coupling to your head-end cars. After some more backings, couplings and forwarding, you collect the whole freight and are ready to highball westward.

The first landmark you pass is Cargo's Bay on the left. You'll be comin' 'round Olecoal Mountain next, chuffing up the 2 percent grade to Beacon's Nest. Clearing that grade, you cruise past GO Tower.

Here, you can signal the tower man to throw the turnout taking you into a clockwise loop around Industrial Valley and back towards Union City, but today you continue traveling counterclockwise through Cargo's Bay Bridge (perhaps better known as Lionel's LTI-era lift bridge) and across the aisle. You could cruise this hi-rail O-72 loop until you tire of it, but instead, you switch at BZ Junction to the Industrial Valley Division and its O-54 curves, where you'll drop off your consist.

At the rail truck siding, you uncouple and wait for the local switcher to clear your cars. You then back out onto the main to Industrial Valley Signal Bridge where you cross over, thereby changing your locomotive's direction. You pull forward, running light around the loop to RV Tower awaiting your next load for Union City.

The little engine that should

While this layout allows for longer new equipment on its O-54 and O-72 curves, it also keeps smaller equipment in mind. In fact, the layout's operations depend on it.

The Olecoal Mountain Division is an example. The Industrial Valley's main industry involves coal from the mountain. The operator must use engines and cars that can negotiate the O-27 and O-36 curves in this division. Its 4 percent grade demands shorter but more frequent trains to deliver coal to Industrial Valley.

Design driven

Oddly enough, the decision to include O-72 track actually simplified the whole design process. Once the decision was made, all subsequent design decisions fell under the physical limitations created by those curves.

I did not want to force operators into an immediate duck-under as they enter the layout room, so my mainline dog bone curves at the last possible moment, leaving enough room for a 2½-foot aisle. Again the O-72 diameter dictates the only way this is possible, so it made the design process easier. This aisle widens at Union City to allow space for an operator and an operating table. (I could have used a drop-leaf passage at Cargo's Bay, but finding a legitimate reason to use the Lionel Lift Bridge was too cool to resist.)

The plan allows for the option of continuous running, giving bystanders some time to admire those long, powerful engines as they circle the room.

It seems a layout never has enough siding space so, wherever possible, I added sidings for more industry and interest. This explains Beacon's Nest and Cargo's Bay, where only one or two cars can ever rest.

My design owes a lot to the works of Kalmbach book author and renowned model railroader Dave Frary. I was especially encouraged by a book in which he successfully gave the impression of modeling the entire mighty Pennsylvania RR Middle Division in no more than a 12 x 16-foot space. Though Dave did it in HO scale (1:87), he used 30- and 32-inch radius curves, and O-72 is, after all, only 36 inches in radius. Knowing that, I simply couldn't resist the challenge of designing a similar layout for O gauge toy trains. CTT

A three-stage plan that grows

THIS 9 X 12-FOOT MTH REALTRAX PLAN LETS YOU RUN TRAINS AS YOU BUILD

by E. A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

Thanks to a wide array of published track plans and a near-glut of new locomotives, track, and accessories, building a permanent toy train layout can be about as simple as any home improvement project.

Dividing a do-it-yourself project into multiple phases is one way to anticipate construction requirements and help you complete your plans. This approach works just as well for building a model railroad as it does for managing projects around the house.

Building a layout in multiple stages isn't a new approach. In fact, the plan featured here stems from a 9 x 12-foot scheme that first appeared in the late 1930s in the pages of Lionel's *Model Builder* magazine. While we've tuned the plan a bit, the approach remains the same – build a new layout without breaking the bank, your back, or your dreams of a toy train empire.

Stage one

No matter how large or small their plans, nearly all layout builders are eager to see a train run soon after they begin construction. The first phase of construction of this layout gets you to that goal quickly.

The pinched-oval shape of the plan is simple and easy to assemble (and later disassemble) using MTH RealTrax components. Although it didn't appear in the original design, adding a small yard in one corner enables you to run one or possibly two trains shortly after you construct the layout table or benchwork.

Stage two

Stemming from stage one's humble origins, this stage of construction introduces an inner route, a track spur, and an intriguing pair of reverse loops. These additions may not seem all that significant on paper, but once in operation they transform the layout into a fully functional railroad.

Even though the inner route connects to the original route through a single O-31 track switch, two trains can now operate independently on the layout. A spur long enough to hold an entire semi-scale train and one of the two reverse loops are also integrated into the inner route.

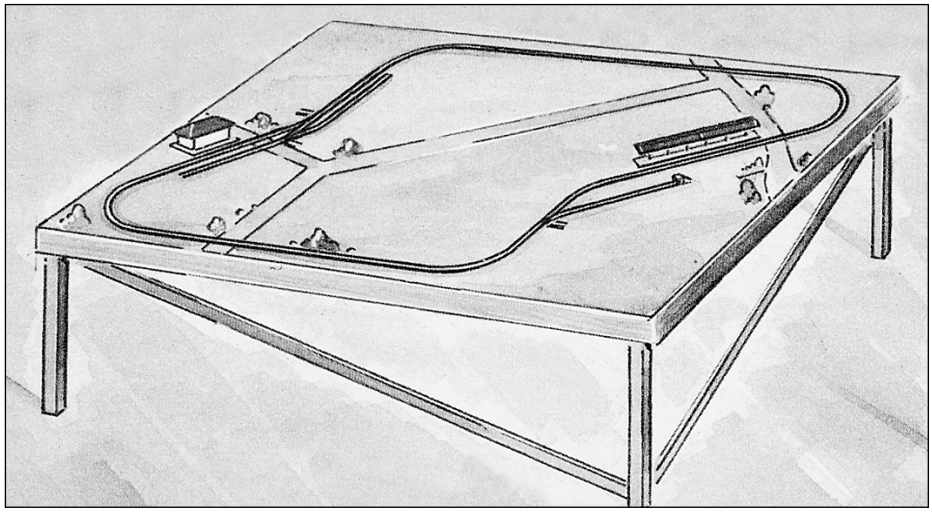
The second reverse loop adds significantly to the stage one plan. Working in conjunction with the other reserve loop, trains can easily travel in either direction around the layout.

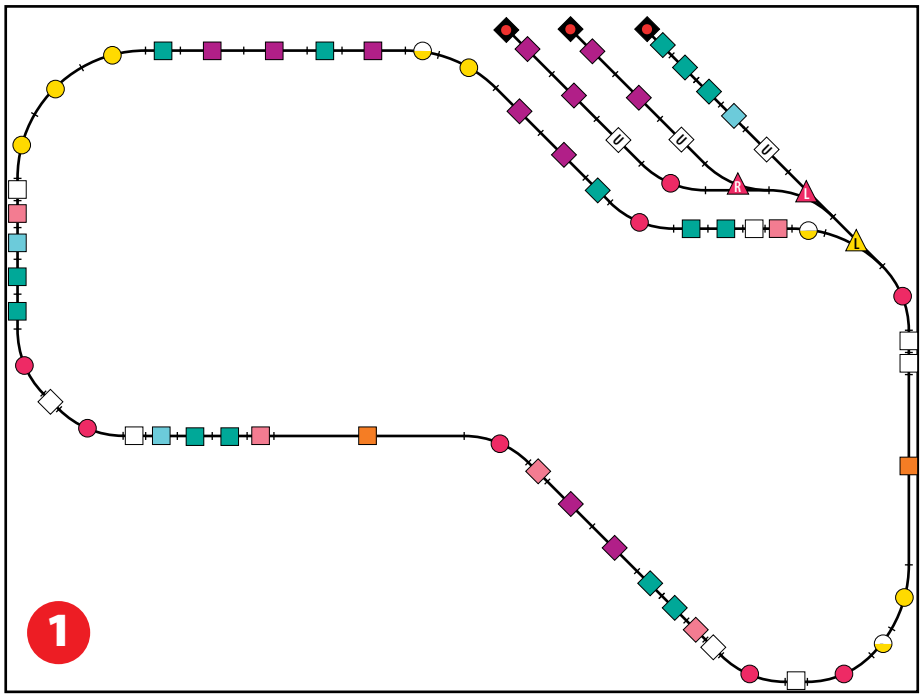
Stage three

The third stage of this plan is designed to enhance the operating intrigue added in the previous stage.

At the center of the plan, you'll find yet another reverse loop that stems from the inner route. This addition is more than just a reverse loop, as it also disguises a passing siding and two more spurs. Now, two or more trains running on the inner loop can reverse direction and duck into a passing siding or spur to let another train roll by – all without interfering with the action on the original stage one oval.

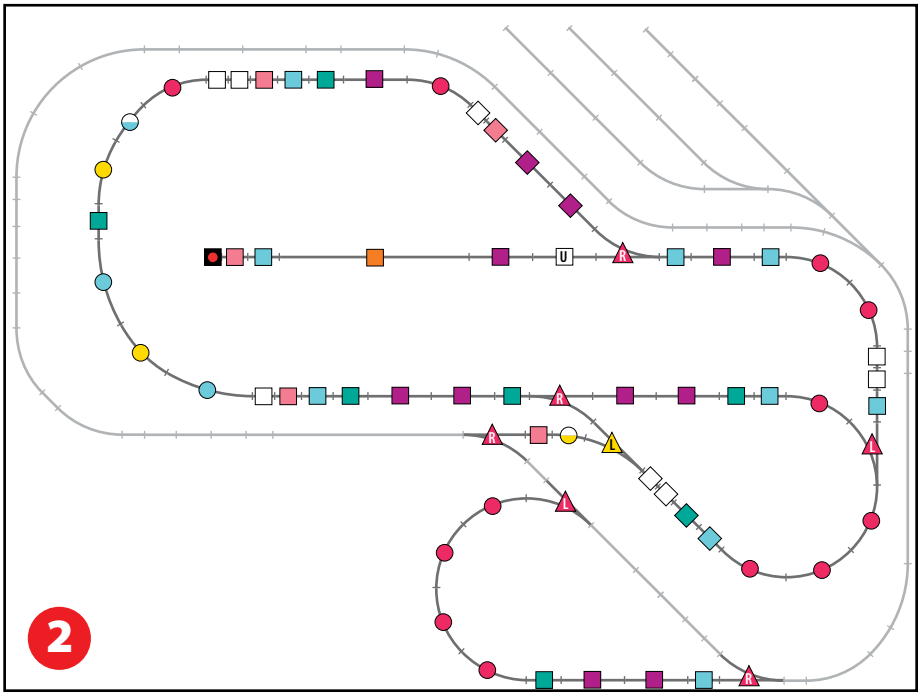
This stage also adds a new bridge route that connects the inner and outer routes. The highlight of this new route is the 45-degree crossing that intersects the original main line and keeps operators on the lookout for fast-approaching trains from all directions.





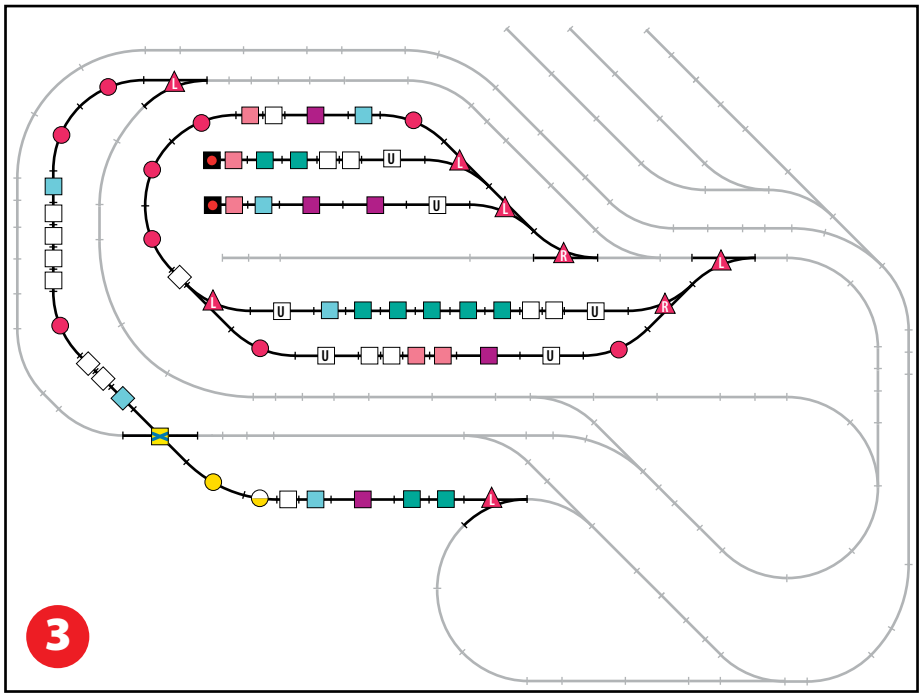
PHASE 1 COMPONENTS
RealTrax Components

Quantity	Description
2	30-inch straight (No. 40-1019)
11	10-inch straight (No. 40-1001)
14	5.5-inch half straight (No. 40-1012)
3	5.0-inch straight (No. 40-1016)
5	4.25-inch straight (No. 40-1017)
8	3.5-inch straight (No. 40-1018)
3	uncoupling section (No. 40-1008)
5	0-42 curve (No. 40-1042)
3	0-42 half curve (No. 40-1045)
8	0-31 curve (No. 40-1002)
1	0-42 left-hand switch (No. 40-1043)
1	0-31 right-hand switch (No. 40-1004)
1	0-31 left-hand switch (No. 40-1005)
3	track bumper (No. 40-1024)



PHASE 2 COMPONENTS
RealTrax Components

Quantity	Description
1	30-inch straight (No. 40-1019)
11	10-inch straight (No. 40-1001)
7	5.5-inch half straight (No. 40-1012)
9	5.0-inch straight (No. 40-1016)
5	4.25-inch straight (No. 40-1017)
8	3.5-inch straight (No. 40-1018)
1	uncoupling section (No. 40-1008)
2	0-42 curve (No. 40-1042)
1	0-42 half curve (No. 40-1045)
12	0-31 curve (No. 40-1002)
2	0-54 curve (No. 40-1054)
1	0-54 half curve (No. 40-1057)
1	0-42 left-hand switch (No. 40-1043)
4	0-31 right-hand switch (No. 40-1004)
2	0-31 left-hand switch (No. 40-1005)
1	track bumper (No. 40-1024)



PHASE 3 COMPONENTS
RealTrax Components

Quantity	Description
5	10-inch straight (No. 40-1001)
9	5.5-inch half straight (No. 40-1012)
6	5.0-inch straight (No. 40-1016)
5	4.25-inch straight (No. 40-1017)
15	3.5-inch straight (No. 40-1018)
6	uncoupling section (No. 40-1008)
1	0-42 curve (No. 40-1042)
1	0-42 half curve (No. 40-1045)
9	0-31 curve (No. 40-1002)
2	0-31 right-hand switch (No. 40-1004)
6	0-31 left-hand switch (No. 40-1005)
1	45-degree crossing (No. 40-1007)
2	track bumper (No. 40-1024)

Scenery stage

With so much action on the rails, this plan doesn't need much scenery to complete the layout. If you add scenery, structures, and accessories from the start, be sure to account for the new routes you'll add in later stages.

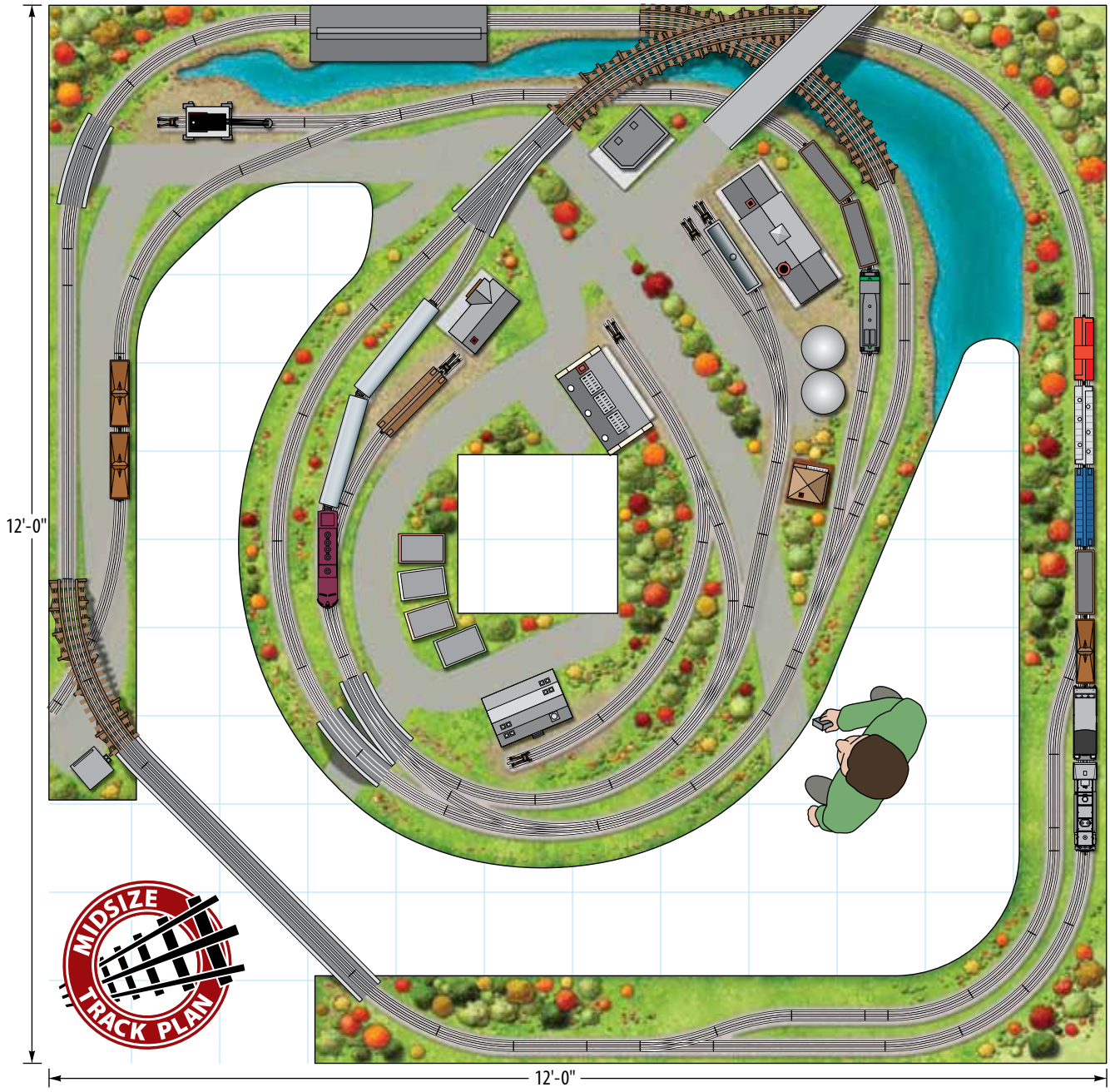
In the first stage you might scenick only the area near the small yard. Add a tugboat and gantry crane to make a waterfront yard.

When you get to the second stage, you may consider starting a small town adjacent to the second reverse loop. Lionel's Lionelville buildings or MTH's RailKing structures will work nicely here. You'll also want to place a freight or passenger depot near or inside the loop to serve the township.

By the time you get to the third stage, there won't be much room for anything besides track, but don't let that deter you. The 45-degree crossing provides the perfect justification for a junction tower, a few operating signals, or even a complete signal system from Atlas O.

No matter how you decide to finish the layout, be sure to manage scenic developments just as you did the earlier stages. You'll end up building a fascinating layout in good time and within your defined budget! CTT

Go to Kalmbachstore.com and click on "Digital Downloads" to purchase other track plans like you see here.



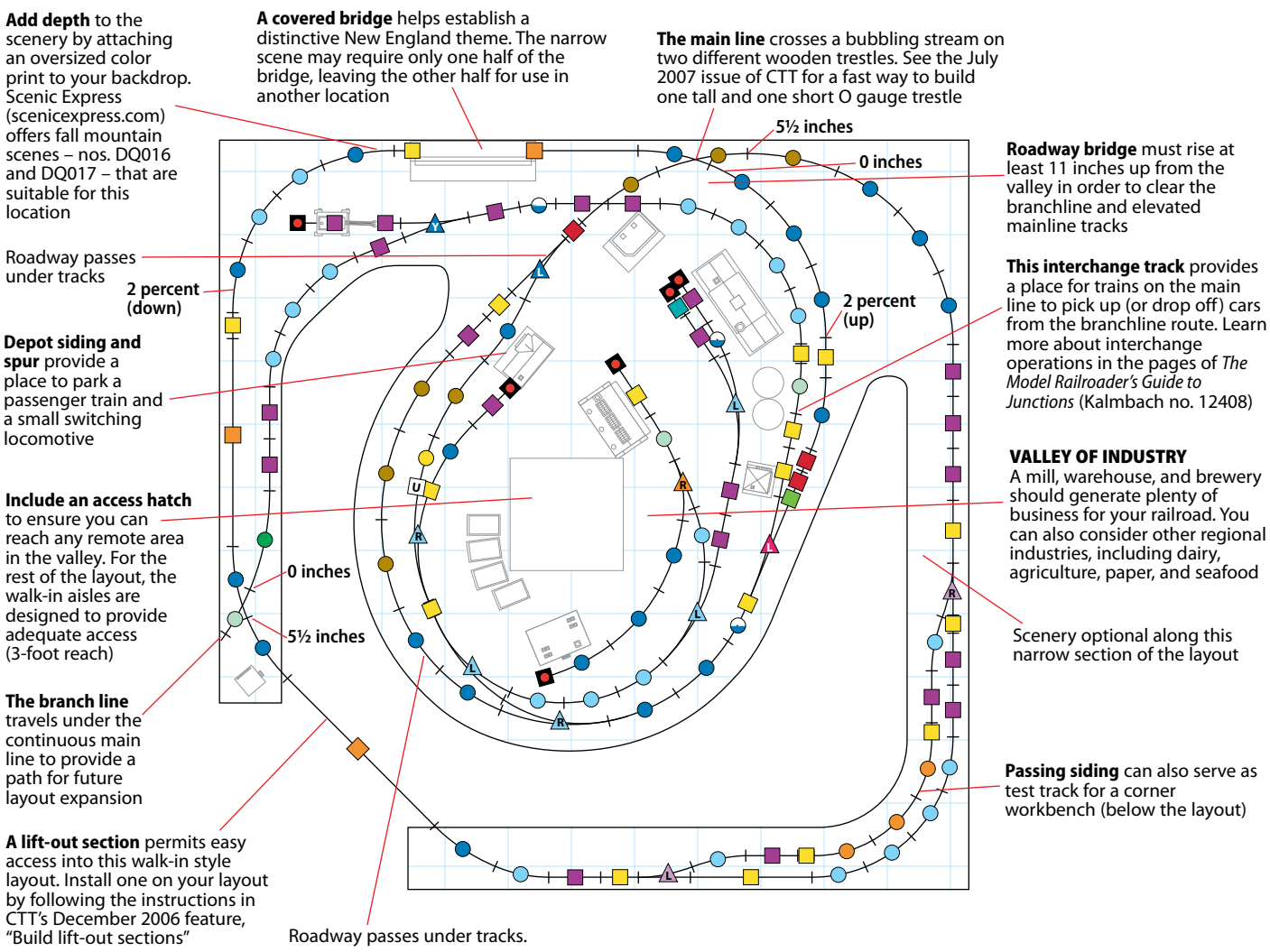
New England in a room

THIS 12 X 12-FOOT O GAUGE PLAN FEATURES BRILLIANT FALL FOLIAGE

by E.A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

Some builders erect a layout featuring nothing more than track, trains, and operating accessories. Others fill a layout with details and scenery that reflect another time or place. And then there are the builders who construct a layout that captures the best of both approaches, regardless of the amount of space they have to build in.

This 12 x 12-foot walk-in track plan exemplifies a well-balanced approach, featuring both intriguing operating possibilities and inspiring autumn scenery. Although Iain Rice, a contributor to



Model Railroader magazine, originally designed this plan as an HO scale layout, its New England theme and overall footprint are virtually unchanged for our O gauge version.

Iain's scheme was inspired by the railroad operations in and around Woonsocket, RI, a northern region of the state that is home to textile, woodworking, engineering, and other industries serviced by rail.

Our track plan puts industrial switching operations in the middle of the layout and at the center of the room itself. After you enter the doorway and travel through the lift-out section, you'll look down into a valley of industry. This area includes an MTH no. 30-90046 mill (grainery), no. 30-9098 warehouse, and a no. 30-9084 brewery, along with spurs and sidings used to spot a variety of freight cars.

The Atlas O curves in this section are generous, but you'll need a small and powerful diesel switcher (for example, an Atlas O SW or Ready Made Toys Beep) to move cars on the short spurs and up the valley grade (approximately 3 percent) to the main line. If you want more switching action, work an engine over the branch line that follows along the stream. Pick up a few loaded cars, and then move them into position for the local to haul off.

Back on the main line, you can keep a couple of trains continuously operating on this around-the-walls route. The wide-radius over-and-under loop at the center of the room extends the length of the main line and also features a siding at the passenger depot. From the depot you can run a commuter or passenger train to the siding on the opposite side of the layout.

Like the state of Rhode Island, this layout isn't large, but it boasts some spectacular autumn scenery. The fall in New England brings with it brilliant burgundy and amber foliage that you can easily re-create by gluing green, yellow, orange, red, and brown hues of ground-foam clumps to tree armatures.

In addition to the explosion of natural colors, this plan features a covered bridge and varying elevation – all of which help establish a unique New England setting that's seldom modeled on an O gauge layout. CTT

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
1	1.75-inch straight (6052)
3	4.5-inch straight (6051)
1	5.5-inch straight (6053)
22	10-inch straight (6050)
3	40-inch straight (6058)
17	custom-cut straight
3	0-45 curve (6045)
20	0-54 curve (6060)
22	0-72 curve, 22.5-degree (6062)
3	0-72 curve, 11.25-degree (6063)
7	0-90 curve (6013)
1	0-90 custom-cut curve
1	0-99 curve (6014)
3	0-99 custom-cut curve
1	0-45 right-hand turnout (6086)
1	0-54 left-hand turnout (6070)
1	0-54 right-hand turnout (6071)
1	0-72 left-hand turnout (6072)
1	0-72 wye turnout (6074)
3	0-72-054 left-hand turnout (6077)
2	072-054 right-hand turnout (6078)
1	no. 5 left-hand turnout (6024)
6	track bumper (6040)
1	uncoupling track (6059)

Bridge out!

MISSING BRIDGE ADDS INTEREST TO THIS 12 X 12-FOOT PLAN

by Neil Besougloff • illustration by Terri Field and Kellie Jaeger

Bridge out! If you're a railroad dispatcher trying to keep trains running on time, those two short words can only mean big trouble.

In the case of this walk-in-style, O gauge track plan, which fits within a 12 x 12-foot space, you'll be challenged to keep rail traffic from two main lines running smoothly over just one bridge. While a key bridge is under construction, trains on either side of the river must first cross over from one main line to another before squeezing through a single Lionel bascule bridge.

In addition to the bascule bridge – which literally divides the layout into two sections – there's a town at one end of the layout and a rural area at the other. While the company town isn't quite as big as Houston, it hosts plenty of oil-themed accessories, including oil pumps, oil derricks, oil tanks, and an oil-drum loader, that help set the scene deep in the heart of Texas.

As shown, this track plan uses traditional tubular track with Lionel and K-Line O-72 and O-42 track switches. It can be built with any brand of track that offers O-42, O-54, and O-72 curves and the before-mentioned track switches.

There's plenty of flexibility in this track plan at the bridge. While I've

LIONEL ACCESSORIES

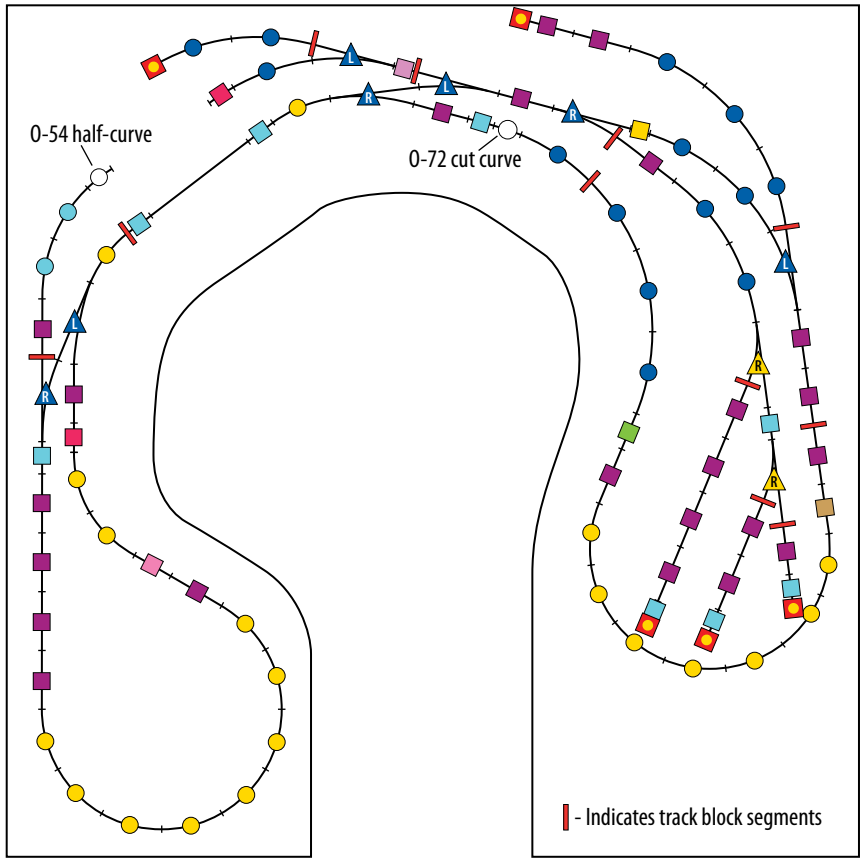
Number/Product
115 city station
128 animated newsstand
156 freight platform (2)
2300 oil drum loader
2324 operating switch tower
9220 milk car platform
12847 icing station
12902 Marathon oil derrick (2)
12912 pumping station
12927 yard light (7)
12948 operating bascule bridge
12953 tall Linex oil tank (4)
12954 wide Linex oil tank (2)
14154 "193" water tower
14155 "395" floodlight

MTH ACCESSORIES

Number/Product
30-9018 hardware store
30-9096 CJ's textile factory
30-9106 Esso service station
30-9116 oil storage tank
30-9117 storage tank station
30-11030 PRR signal bridge (2)
30-50002 16-inch fence
30-90032 Fairview Depot

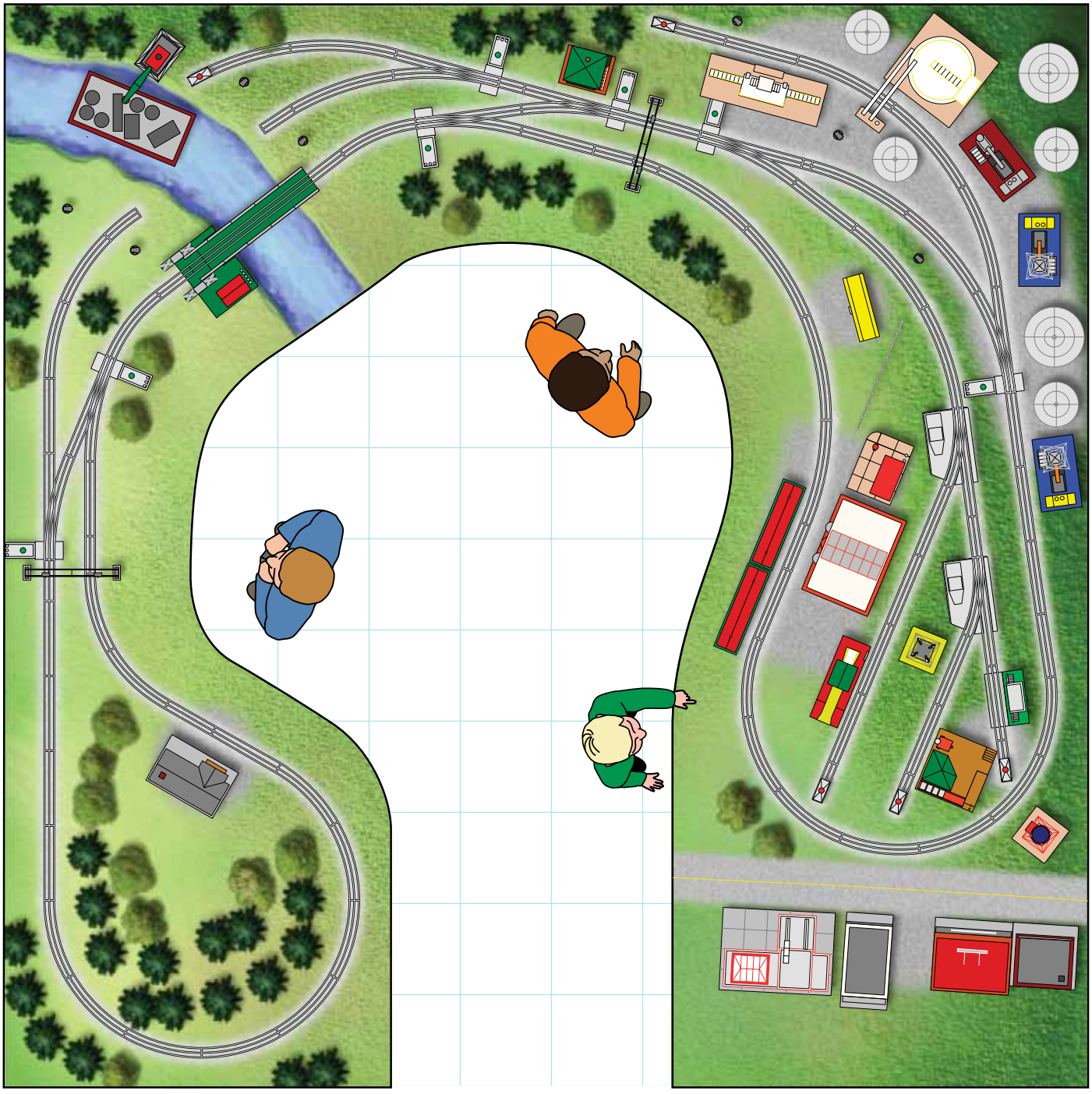
OTHER ACCESSORIES

Gilbert 583 magnet crane
Plasticville1500 diner



Lionel O gauge track components

Quantity	Description	Quantity	Description	Quantity	Description
23	single straight	19	0-42 curve	4	0-72 left-hand track switch
8	half-straight	14	0-72 curve	3	0-72 right-hand track switch
7	custom-cut straight	2	0-54 curve	2	K-Line 0-42 right-hand track switch
1	8.5"	1	0-72 cut curve	5	260 track bumper
1	6.75"	1	0-54 half-curve		
1	7.10"				
2	3.5"				
2	5.0"				
1	1.0"				



selected a modern-era reproduction of Lionel's operating bascule bridge, you can use a Lionel lift bridge, Lionel or K-Line swing bridge, or even an MTH or Lionel Hell Gate bridge. You also can swap bridge locations, moving the existing bridge to the back and the missing bridge to the front. If you do that, you'll need to reverse the two sets of crossover (back-to-back) switches.

Conventional-control wiring calls for electrical blocks at the missing bridge, the tracks behind the passenger station, and the oil-refinery line. You'd also be wise to block the main line into three sections to accommodate a train in the passenger-station loop or the rural loop at the far end of the layout.

This is oil country, so O gauge tank cars from postwar Lionel to contemporary MTH will be right at home on this track plan. There's also a first-class passenger station, which calls for premier passenger service or at least a few nicely outfitted private cars for entertaining oil company VIPs.

The design of the oil accessories, station, and bridge allow plenty of era flexibility. Steam, transition-era, or contemporary locomotives fit this track plan, although you'll need to add a pair of water towers for those thirsty steamers.

At one end of the layout a town features a Lionel no. 115 city station, an animated newsstand, an operating icing platform, and other accessories, all within sight of the busy refinery.

Even with all of these accessories, there's still room for greenery and plenty of fast-paced railroad action. CTT

FasTrack up-and-over oval

THIS LEGENDARY 8 X 14-FOOT O GAUGE PLAN RECALLS MODEL RAILROADING'S ORIGINS

by Neil Besougloff • illustration by Kellie Jaeger

The track plan shown on these pages is famed model railroader John Allen's first HO scale Gorre & Daphetid layout, which dates to the late 1940s.

John, as many hobbyists know, was a groundbreaking model railroader who inspired literally tens of thousands of layout builders over two generations with his serious, yet whimsical Gorre & Daphetid Railroad (pronounced "Gory and Defeated").

While many hobbyists recall John's rugged floor-to-ceiling scenery and soaring bridges thanks to dozens of photos published in model railroading magazines over three decades, not all realize that the origin of his 24 x 32-foot empire was an up-and-over oval smaller than a sheet of plywood. John built it before he moved to a hillside California residence that became home to the ultimate Gorre & Daphetid.

This Lionel FasTrack O gauge plan, fitting into an 8 x 14-foot space, is fairly faithful to the original (featured in the Kalmbach book *101 Track Plans for Model Railroaders*). However, some small tweaks were necessary to adopt John's plan to sectional track.

Enlarging the original HO plan to O gauge has put the center of the layout well beyond arm's length. At the very least, you'll want to make the lake bed a hinged access hatch or omit the "water" material as a matter of convenience.

FasTrack is tricky to work with for this plan. FasTrack curves, like other types of sectional track, follow a specific geometry in which standard curve sections are measured in increments of 22.5, 30, or 45 degrees. For example, four 45-degree curves would equal a half-circle (180 degrees) and six 30-degree curves would equal a half-circle. But a rambling half-circle made of three 45-degree curves and two 30-degree curves will never equal a complete 180-degree turn without turning to a hacksaw.

Keeping faithful to the original Gorre & Daphetid requires an asymmetrical mix of FasTrack O-48 (30-degree) curves and O-72 (22.5-degree) curves. Mixing those sections means everything doesn't always add up to 180 or 360 degrees, resulting in some joints where the track needs to be "fudged" just a tiny bit to connect.

Track without built-in roadbed can be "fudged" more easily than FasTrack and MTH's RealTrax. On this plan, there are enough track joints surrounding the "fudged" areas (in front of the Gorre depot and just to the right of the turntable) to get the job done. CTT

ON THE WEB CTT+

To purchase information on John Allen's second Gorre & Daphetid, go to Kalmbachstore.com, click "Model Railroading," click on "Digital Downloads," click "Layout Visits."

SUGGESTED ACCESSORIES

ATLAS O

Number/Product	
6910	turntable

LIONEL

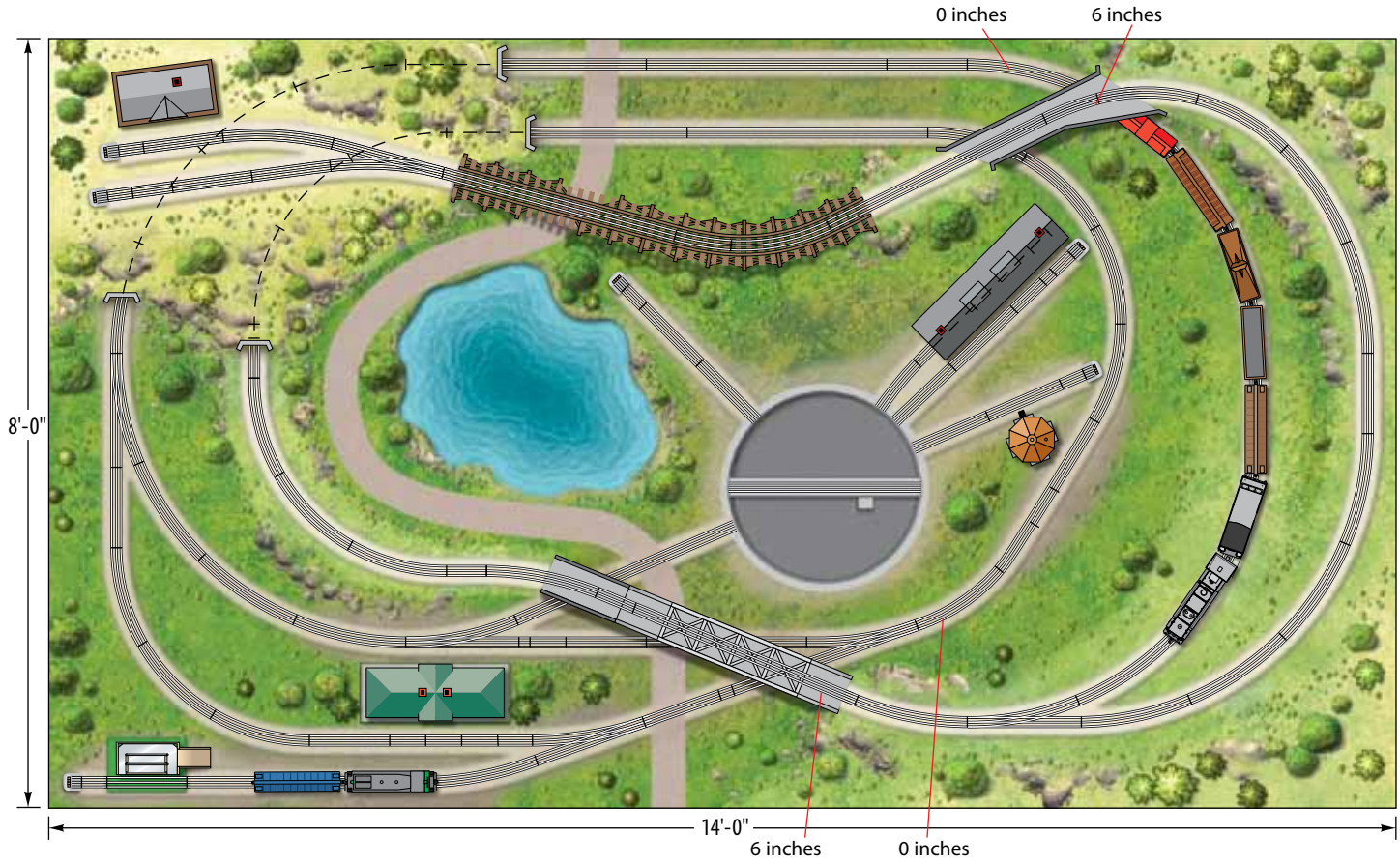
Number/Product	
12734	passenger/freight station
12773	freight platform
12897	engine house
14086	no. 38 operating water tower

MTH

Number/Product	
30-9087	country train station
40-1013	30-inch truss bridge
40-1014	10-inch girder bridge

LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
1	1.38-inch fitter
3	1.75-inch straight (12026)
5	4.5-inch straight (12025)
6	5-inch straight (12024)
23	10-inch straight (12014)
9	30-inch straight (12042)
17	0-48 curve, 30-degree (12043)
4	0-72 curve, 11.25-degree (12055)
24	0-72 curve, 22.5-degree (12041)
4	0-72 left-hand track switch (12048)
2	0-72 right-hand track switch (12049)
7	track bumper (12059)

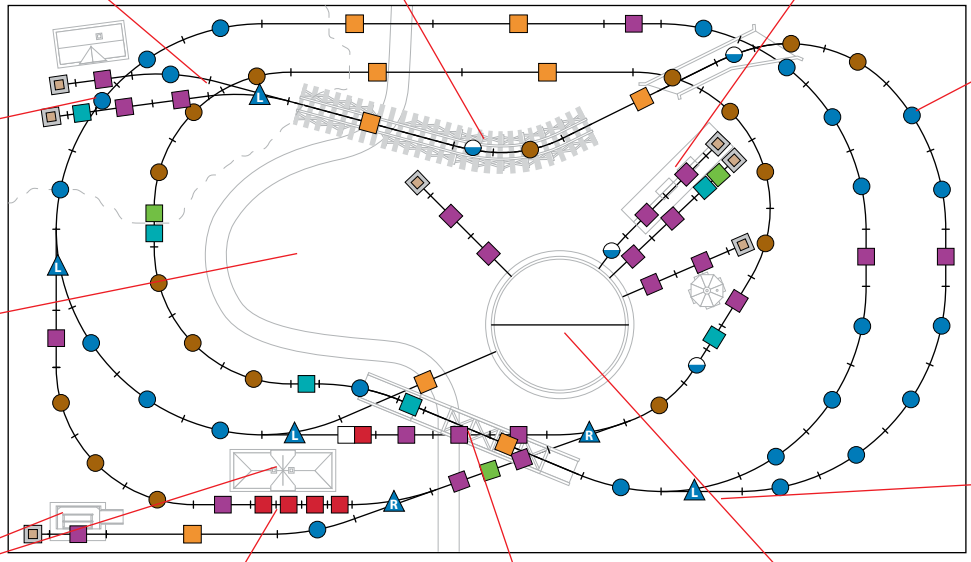


Make sure there are at least 5½ inches of vertical clearance here, and don't forget to compensate for the height of the FasTrack roadbed

This curve is the site of John's wooden trestle overlooking a lake. See the July 2007 issue of CTT for a fast way to build O and S gauge trestles

John's scratchbuilt two-stall engine house won a modeling award for its groundbreaking interior details. MTH has produced a two-stall engine house in O gauge, but combined with the 24-inch turntable it was just too massive for this part of the track plan. A Lionel no. 12897 one-stall engine house was substituted

DAPHETID
Daphetid, pronounced "Defeated," is at an elevation of 8½ inches. If space allows, one or both of the spur tracks should be lengthened



This curved spur track must climb continuously to the depot at Daphetid to clear two sections of mainline track below that are descending and ascending

The lake surface offers a good place to create an access hatch. The edges of the hatch can be hidden by the shoreline

All switches are O-72 for smooth operation

GORRE
Gorre is pronounced "Gory." The small town was one of two on John Allen's original HO layout. An MTH no. 30-9087 country train station is narrow enough to fit between the siding and main line, and a Lionel no. 3656 stockyard substitutes for John's scratchbuilt stockyard

Four 4½-inch FasTrack sections are used to fill an 18-inch gap. If a 10-inch straight section were used, there is no combination of fitter sections that would complete the remaining 8 inches

Here John scratchbuilt a stone-arch viaduct. For this O gauge plan, we've substituted an MTH no. 40-1013 30-inch truss bridge and an MTH no. 40-1014 10-inch girder bridge

Atlas O no. 6910 turntable may require transition tracks to align with Lionel FasTrack sections

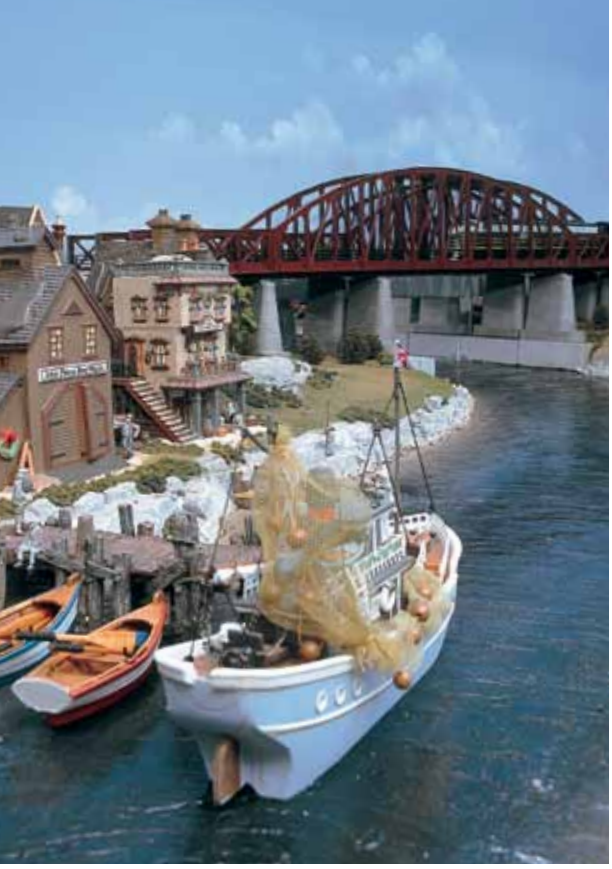


Photo by Jim Forbes

Hills & harbor track plan

THIS 14 X14-FOOT LAYOUT BOASTS TWO SCENERY THEMES AND TWO OPERATING SCHEMES

by E.A. Engebretson and Kent Johnson
illustration by Kellie Jaeger

Imagine the craggy terrain you might find along America's eastern coastal shoreline, and you're set to explore the diverse possibilities of this 14 x 14-foot track plan. You wouldn't ordinarily expect to find both a seaport and steep, sloped landscape on the same O gauge layout. However, this plan easily accommodates both – along with plenty of toy train action.

While this track plan includes a number of captivating intricacies, the two concentric ovals at the heart of this layout aren't among them. Amid steep grades, numerous water crossings, tunneling, and precarious dockside operations, these ovals represent a double-track main line that simply routes trains to places of much greater importance. Although elevation around each mainline loop varies by 1½ inches, there's essentially nothing to prevent you from letting trains run continuously, without operator intervention.

If you're looking for more operating variety, you'll find many opportunities throughout the layout. The simplest instance comes by way of two crossovers positioned on opposite sides of the mainline ovals. These paired track switches allow you to move trains traveling in either direction from one main line to the other and then back again.

On the other extreme, this plan uses a pair of Atlas O 45-degree crossings and track switches to create a junction to an entirely different type of operation. Through this connection, you can operate trains from one point to another. That may sound simple, but this point-to-point route must rise 8 inches above the Harborton shoreline to reach Hillsville. Unlike the trains running continuously around the mainline ovals, operation over this route requires the skill and patience of an attentive operator and possibly even a steady-running, command-controlled locomotive.

Another way to vary the operations on this layout is to include a wide range of railroad equipment. Along the outer mainline oval there's a hidden track switch that leads to lower-level storage tracks. From these tracks, you can easily introduce trains of any type or vintage.

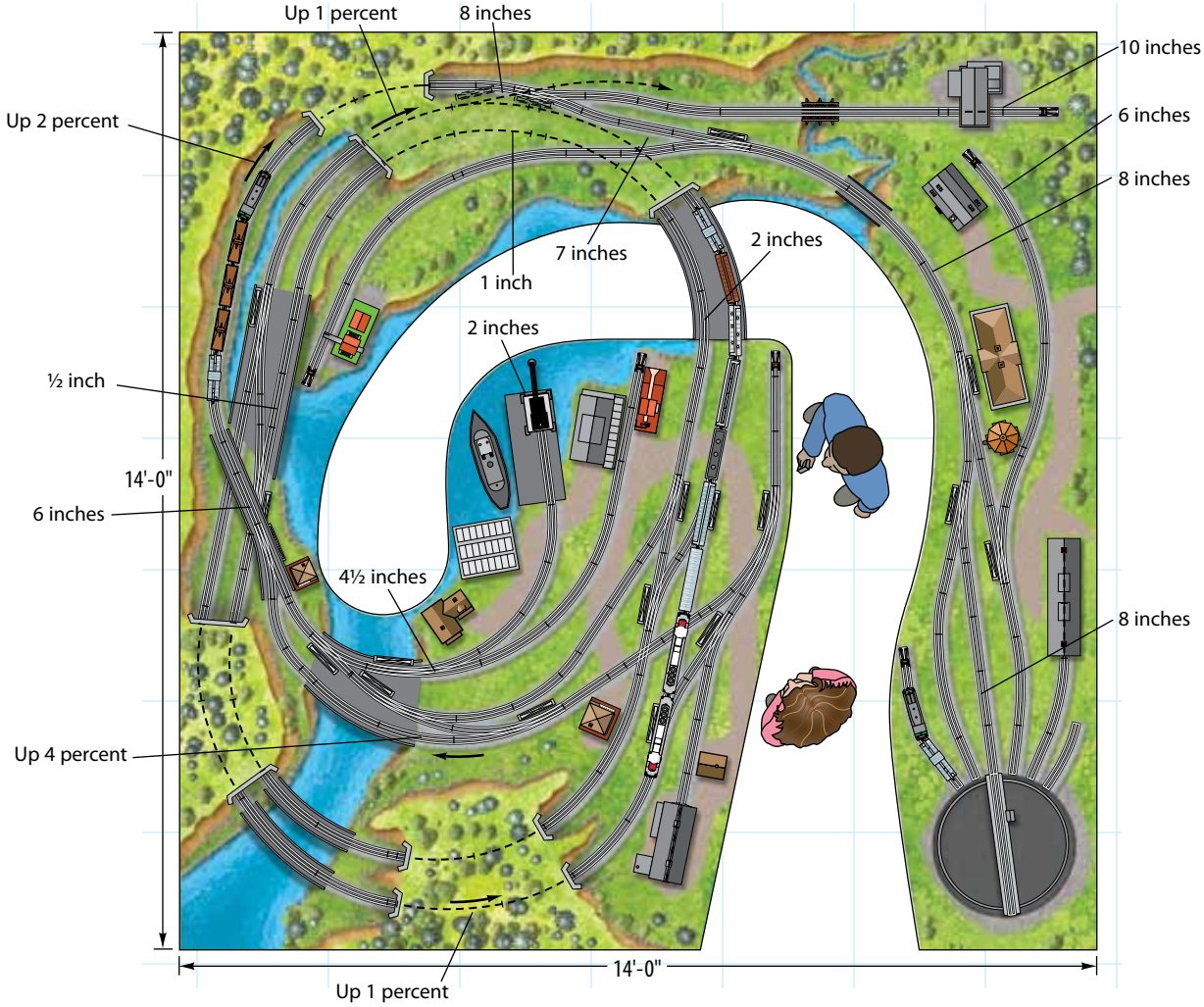
Regardless of which era you choose to model, you'll want to keep trains relatively short. A number of MTH RailKing and Atlas O Trainman products immediately come to mind. Any small locomotive (SW8, GP15, Beep, etc.), freight car (40-foot boxcar, 50-foot flatcar, two-bay hopper, etc.), or passenger car (RDC, Doodlebug, Buddy, etc.) you select should be able to navigate the dockside, trudge the grades, or zip over the main lines – all in an effort to keep operations on this layout ever so interesting. CTT

INFORMATION STATION

Go to Kalmbachstore.com and click on "Digital Downloads" to purchase articles related to building and finishing a layout.

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
40	10-inch straight (6050)
2	4.5-inch straight (6051)
2	1.75-inch straight (6052)
3	5.5-inch straight (6053)
2	40-inch straight (6058)
3	uncoupling track (6059)
22	cut-to-length straight
2	0-36 30-degree curve (6066)
2	0-36 custom-cut curve
6	0-54 22.5-degree curve (6060)
1	0-54 11.25-degree curve (6061)
2	0-54 custom-cut curve
31	0-72 22.5-degree curve (6062)
2	0-72 11.25-degree curve (6063)
3	0-72 custom-cut curve
5	0-81 22.5-degree curve (6011)
13	0-99 22.5-degree curve (6014)
5	0-99 custom-cut curve (6014)
2	0-90 22.5-degree curve (6013)
1	custom-radius curve
1	0-45 left-hand turnout (6085)
1	0-54 left-hand turnout (6070)
1	0-72 left-hand turnout (6072)
1	0-72 custom-cut left-hand turnout
7	0-72 right-hand turnout (6073)
1	0-72 'Y' track switch, 11.25-degree (6074)
2	0-72/0-54 left-hand turnout (6077)
2	0-72/0-54 right-hand turnout (6078)
2	no. 5 left-hand turnout (6024)
1	no. 5 right-hand turnout (6025)
2	45-degree crossing (6082)
6	snap-on bumper (6040)



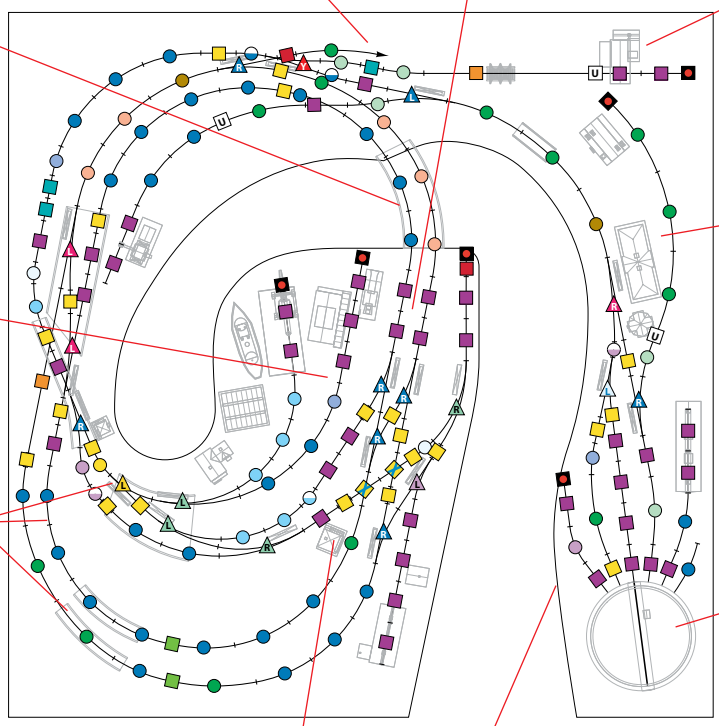
Duckunders, liftouts, and **swinging gates** are all options commonly used to access remote areas of a layout. *Basic Model Railroad Benchwork* (Kalmbach no. 12241) is a helpful reference that includes instructions for building a lift-out section

HARBORTON
This safe harbor is surrounded by hills, making it a tough spot to situate and operate a railroad. To reach the busy docks, trains must navigate tight curves and steep inclines. The going isn't any easier on the opposite shoreline, as trains from the mine must ease down the grade to deliver loads to the Lionel no. 49807 Seaboard coaler

Bridges, **trestles** and **tunnels** are essential for accommodating the varied terrain of this track plan. While some commercial items are suitable, you may still need to build a few of your own. *The Model Railroader's Guide to Bridges, Trestles & Tunnels* (Kalmbach no. 12452) includes information for constructing custom bridges and trestles

To lower level (storage tracks)

Double-track main line allows two trains to run in a continuous loop



The Hilltop Mine Co. spills out enough coal to keep a switcher busy shuttling hoppers between the mine (Lionel no. 12904 coaling station) and the coal-loading pier (Lionel no. 49807 Seaboard coaler) at the waterfront port

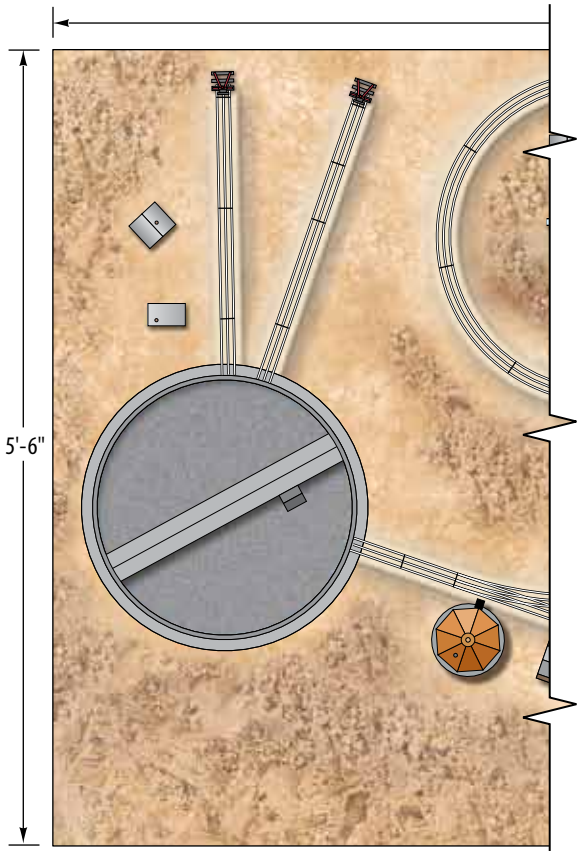
HILLSVILLE
If you tire of watching trains run in circles, you can route a train up to this hillside community. Positioned 8 inches above the water level, an MTH no. 30-9051 station is a welcoming sight for daily commuters. The small engine terminal has enough accessible space to keep a few locomotives on display. Just be sure to keep the turntable lead clear so the local can still access the MTH no. 30-90046 grainery

An Atlas O no. 6910 turntable features a 24-inch-long table that you can use to turn mid-size steam locomotives or passenger cars. Atlas O designed the turntable to sit directly on the layout surface, so you won't have to compromise access to the tracks on the level below

An operating switch tower and **45-degree crossings** allow trains to operate from Hillsville to Harborton without interfering with the main line

Storage tracks (lower level)

Dusty Dogbone Design



SWING-OUT SPUR LINES AND A SCENIC DIVIDER HIGHLIGHT THIS 5 X 15-FOOT TRACK PLAN

by Neil Besougloff • illustration by Kellie Jaeger

Inspiration often comes unexpectedly, as it did for this track plan, derived from a narrow gauge mining layout featured in the December 2006 issue of *Model Railroader* magazine.

Tom Knapp's N scale layout focuses on a real Mojave Desert way-station with the dusty name of Stovepipe Wells. This O gauge track plan, inspired by Tom's track plan, measures 5 x 15 feet and focuses on two desolate towns – Stovepipe Wells and the fictional Clementine. Each town is at the end of a spur, and the two are connected by sections of MTH RealTrax in the shape of a wobbly dogbone. Both ends of the dogbone are situated on moderately sloped terrain, which allows the track to cross over the Stovepipe Wells spur found at the center of the layout.

A sky-blue scenic divider (24 or 30 inches tall and made from hardboard) runs down the spine of the layout in a slight arc, creating more separation than the two O-31 return loops would normally suggest. Coupled with a lack of major structures, the layout seems larger than two sheets of plywood placed end to end primarily because you can't see the entire tabletop all at once.

At the end of one spur track you'll find an operating turntable. Railroad turntables weren't always associated with roundhouses; they often were used simply to turn locomotives. Such is the case in Stovepipe Wells, which features an Atlas O 24-inch-diameter turntable.

As a short train enters town, its consist can be uncoupled on the siding as the locomotive heads for the turntable. Once turned, the locomotive is then re-coupled to the new "front" of the train for departure.

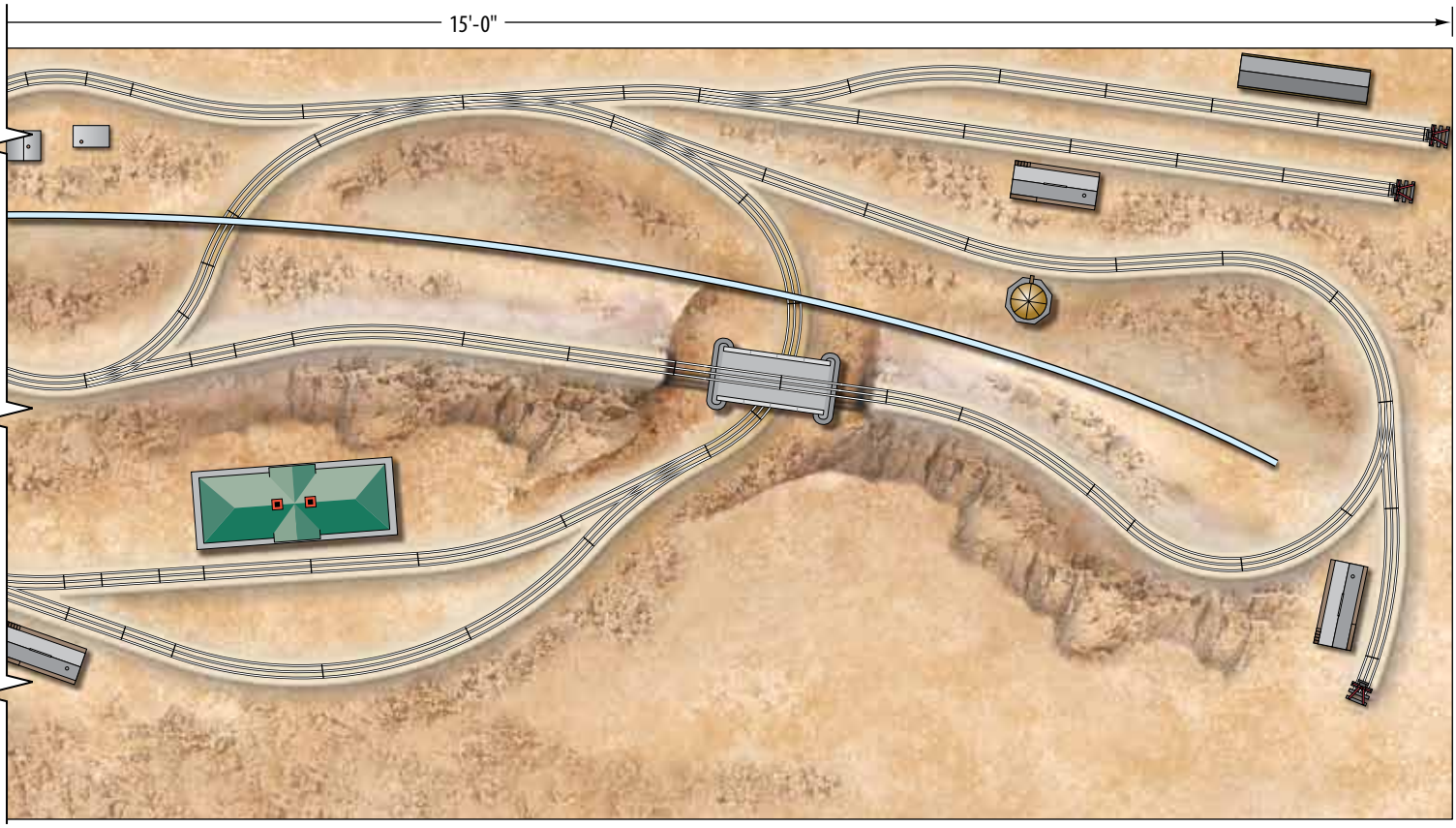
Unfortunately, the railroad regents weren't quite as generous with their capital in Clementine. This end of the railroad doesn't have a turntable, so trains must be backed out.

This track plan is quite flexible. One or both of the town spurs can be pulled away from the dogbone to create an L-shaped or T-shaped layout. Either spur can incorporate a return loop, and the dogbone itself can be modified. There are plenty of spots to add spurs to mines or other industries. And the scenery doesn't have to be southwestern. This layout could easily be set in the Appalachian Mountains.

Be careful using RealTrax or Lionel's FasTrack for this plan. Track with built-in roadbed doesn't lend itself to cutting and/or fudging the way tubular track does. Also, matching up some of the fitter sections of track can be tricky. GTT

MTH REALTRAX COMPONENTS

Quantity	Description/Number
3	adapter straight (40-1011)
2	3.5-inch straight (40-1018)
3	4.25-inch straight (40-1017)
3	5-inch straight (40-1016)
5	5.5-inch half-straight (40-1012)
21	10-inch straight (40-1001)
10	0-31 curve (40-1002)
2	0-31 half-curve (40-1022)
1	0-42 curve (40-1042)
2	0-42 half-curve (40-1045)
8	0-72 curve (40-1010)
2	0-72 half-curve (40-1049)
2	0-82 curve (40-1082)
1	0-31 left-hand switch (40-1005)
1	0-31 right-hand switch (40-1004)
2	0-72 right-hand switch (40-1020)
4	0-72 left-hand switch (40-1021)
4	track bumper (40-1024)



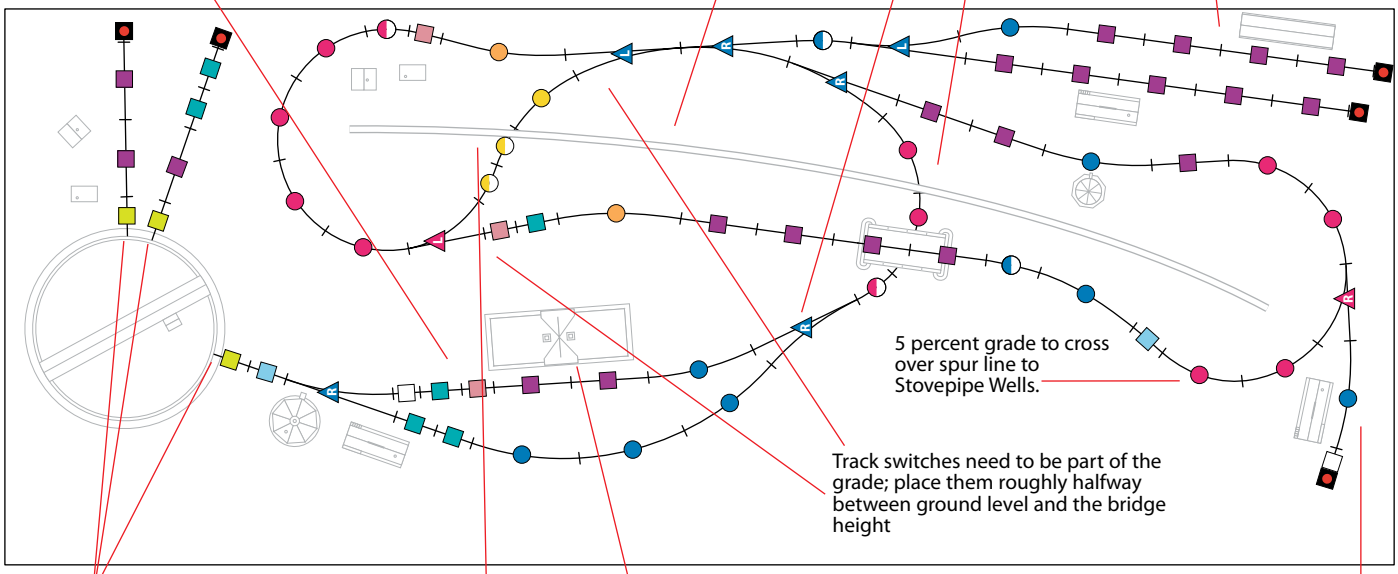
STOVEPIPE WELLS
The main town on the layout has a turntable (Atlas O no. 6910) and a siding to allow a locomotive to drop off a train, turn around, and then re-couple to its train in the opposite direction. Additional spurs can be added for industries, and the siding can be lengthened as space allows

Scenic divider running the length of the layout breaks it into two sides, creating the appearance of a much larger layout; ends of divider can be squared off and painted sky blue with a nondescript rocky area at the bases. Scenery elsewhere will distract visitors' eyes; so don't be too concerned that the divider "ends" before the outer edges of the layout

Spur track to Stovepipe Wells can be moved outward by changing this angle, creating an L- or T-shaped layout instead. Spurs can also incorporate return loops

Tunnel portal cuts through scenic divider just beyond bridge (MTH no. 40-1014)

CLEMENTINE
This small-town stop hosts an MTH no. 30-9006 platform



5 percent grade to cross over spur line to Stovepipe Wells.

Track switches need to be part of the grade; place them roughly halfway between ground level and the bridge height

MTH no. 40-1011 transition sections are shown here, but you may be able to skip the transition pieces by cutting off RealTrax pins and clips and carefully aligning sections to meet the Atlas O rails on the turntable

Additional portal through scenic divider

MTH no. 30-9087 country station

For future expansion or imaginary connection with other lines

Photo by Jim Forbes

Big, fast, & basic

THIS 8 X 16-FOOT OVAL TRACK PLAN LEAVES PLENTY OF ROOM FOR TRAINS TO RACE

by E.A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

Some readers will take one look at this track plan and see something more akin to a NASCAR super speedway than a toy train layout. No offense taken. In this case, the plan is designed to let our high-velocity O gauge trains enjoy scale speeds comparable to a supercharged racing car.

Inspired by a 4 x 8-foot HO plan presented by Tony Koester in the 1996 issue of *Model Railroad Planning*, this scheme uses Atlas O sectional track to form a basic oval with O-63 curves. Adding a pair of track switches on each side of this oval provides a means for trains to depart the circular pattern, albeit to another, larger loop.

On the fast track

There's no place for slow-moving freight trains on the main line – passenger trains rule the rails on this railroad. More specifically, fast-moving commuter trains are ideal subjects on a layout designed for speed.

On the layout, commuter trains depart the terminal, race around the inner and then the outer loop, stopping to drop off passengers along the way. At the last station on the line, modern bi-directional cab cars, such as the Bombardier passenger sets from MTH, make it possible to either continue traveling in the same direction or reverse back to the main terminal.

Round and round they go

Let's be honest – watching trains running circles around each other can quickly grow tiresome. However, there are features you can add to a simple oval to help increase your enjoyment.

The predominant feature is the downtown commuter terminal. Each of the four terminal tracks is a bit more than 5 feet long. That's not very long, but it's ideal for holding two O scale (18 to 21 inches long) commuter cars and a locomotive. With four trains coming and going, you'll soon see why the notion of a railroad racetrack isn't too farfetched.

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
1	1.25-inch straight (6015)
4	1.75-inch straight (6052)
1	4.5-inch straight (6051)
2	5.5-inch straight (6053)
24	10-inch straight (6050)
7	40-inch straight (6058)
12	cut-to-length straight
2	0-54 22.5-degree curve (6060)
1	0-54 11.25-degree curve (6061)
17	0-63 22.5-degree curve (6064)
11	0-72 22.5-degree curve (6062)
1	0-72 11.25-degree curve (6063)
1	0-72 custom-cut curve
5	0-81 22.5-degree curve (6011)
4	0-90 22.5-degree curve (6013)
2	0-99 22.5-degree curve (6014)
2	0-99 custom-cut curve
2	custom-radius curve
1	0-54 left-hand turnout (6070)
1	0-54 right-hand turnout (6071)
9	no. 5 left-hand turnout (6024)
1	no. 5 right-hand turnout (6025)
5	snap-on bumper (6040)

The function of the next feature may not be as apparent as that of the terminal, but it's equally significant. Opposite the terminal, a track switch on the inner loop begins a spur that rises 6 inches to fly over the mainline routes.

What seems like a path to nowhere could end up being your best means to escape the big ovals and expand the layout. Perhaps the line could even run through the wall to an adjacent room.

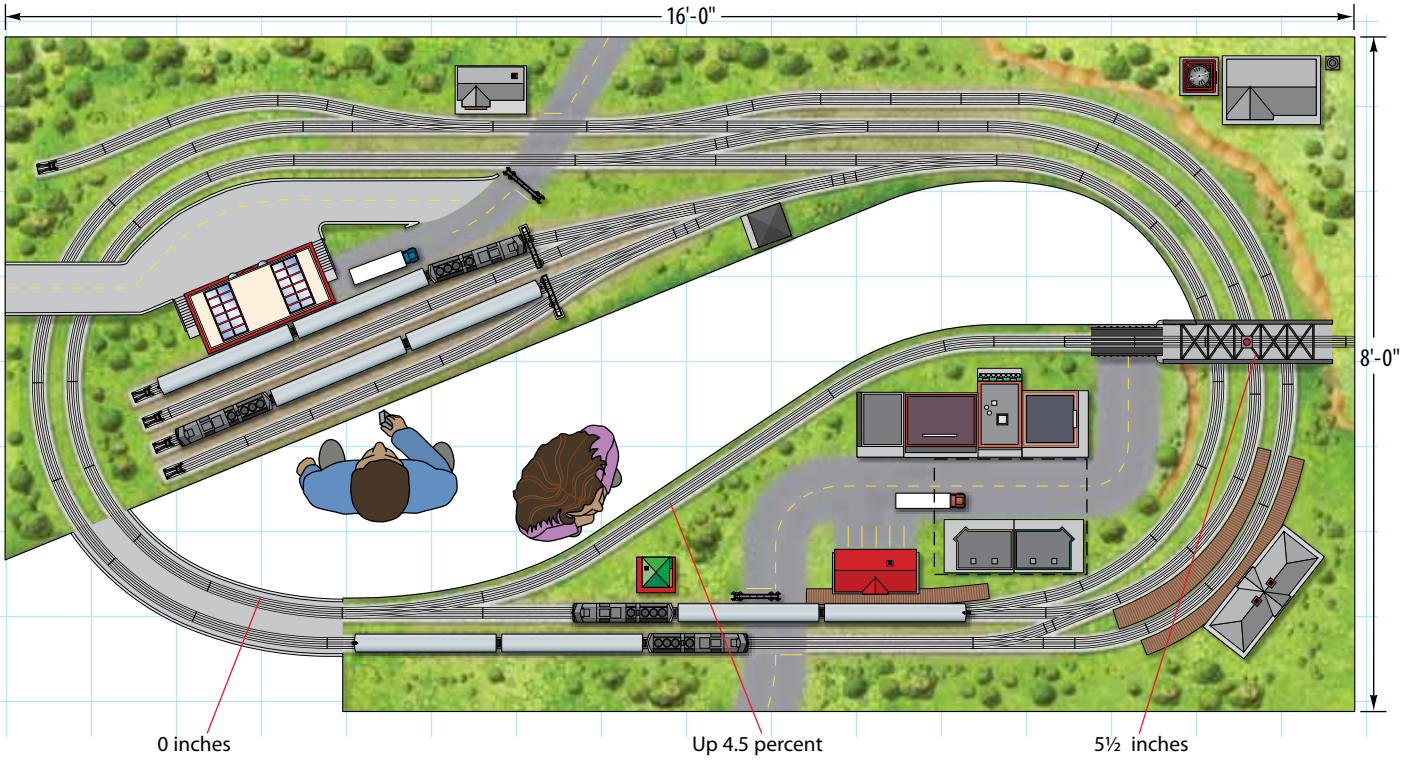
The last key feature is the siding that curves around one end of the outer loop. While it may seem like an afterthought, this side track and station are the destination for most passengers.

High-performance equipment

If a present-day commuter operation doesn't strike your fancy, several manufacturers have offered locomotives and passenger cars appropriate for past eras and various regions.

Intriguing equipment, such as an Atlas O no. 6252 NJ Transit Comet II cab car, MTH no. 20-6558 Chicago & North Western bi-level set, and Lionel no. 18328 New Haven M.U. commuter cars, help set the era back 30, 40, or even 50 years.

A single diesel locomotive (E8, F40PH, or F59PHI) offers fast power for short trains, but don't overlook electric and light steam locomotives. Regardless of which type of train you choose, it'll be an exciting day at the races. GTT

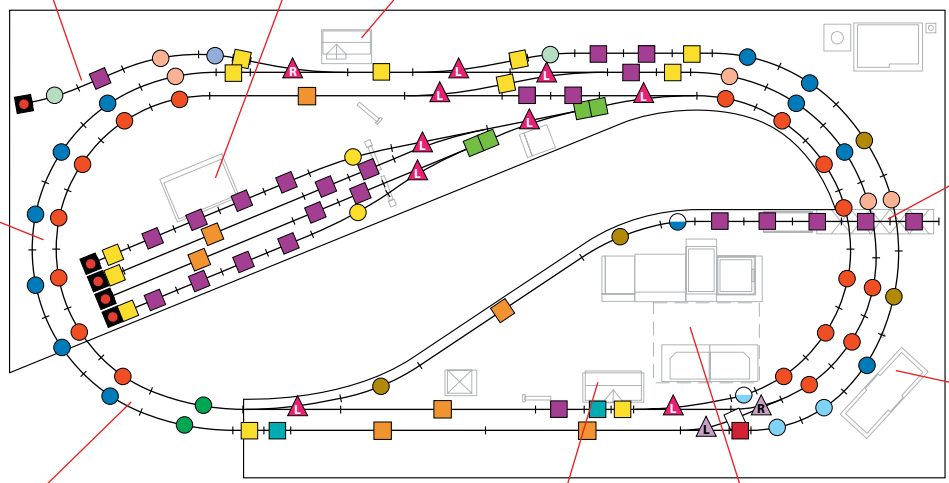


EARNHARDT TRANSPORTATION CENTER
This downtown commuter terminal is the hub for trains running in and out of the city. You can install an Atlas O no. 6027 double-slip turnout (see CTT's October 2006 special trackwork feature, "Double-duty double-slip track switch") to add operating interest. However, if your commuter trains include a bi-directional cab car, then there's no need for an escape switch at the end of terminal tracks. Learn more about prototypical passenger train operations in the pages of *The Model Railroader's Guide to Passenger Equipment & Operation* (Kalmbach no. 12244)

A short spur isn't long enough to park an entire train, but it will easily accommodate a few maintenance-of-way cars

Station

Concentric loops of track help form a double-track main line that's able to handle as many as four fast-moving trains independently operating using a Lionel TMCC or MTH DCS command-control system



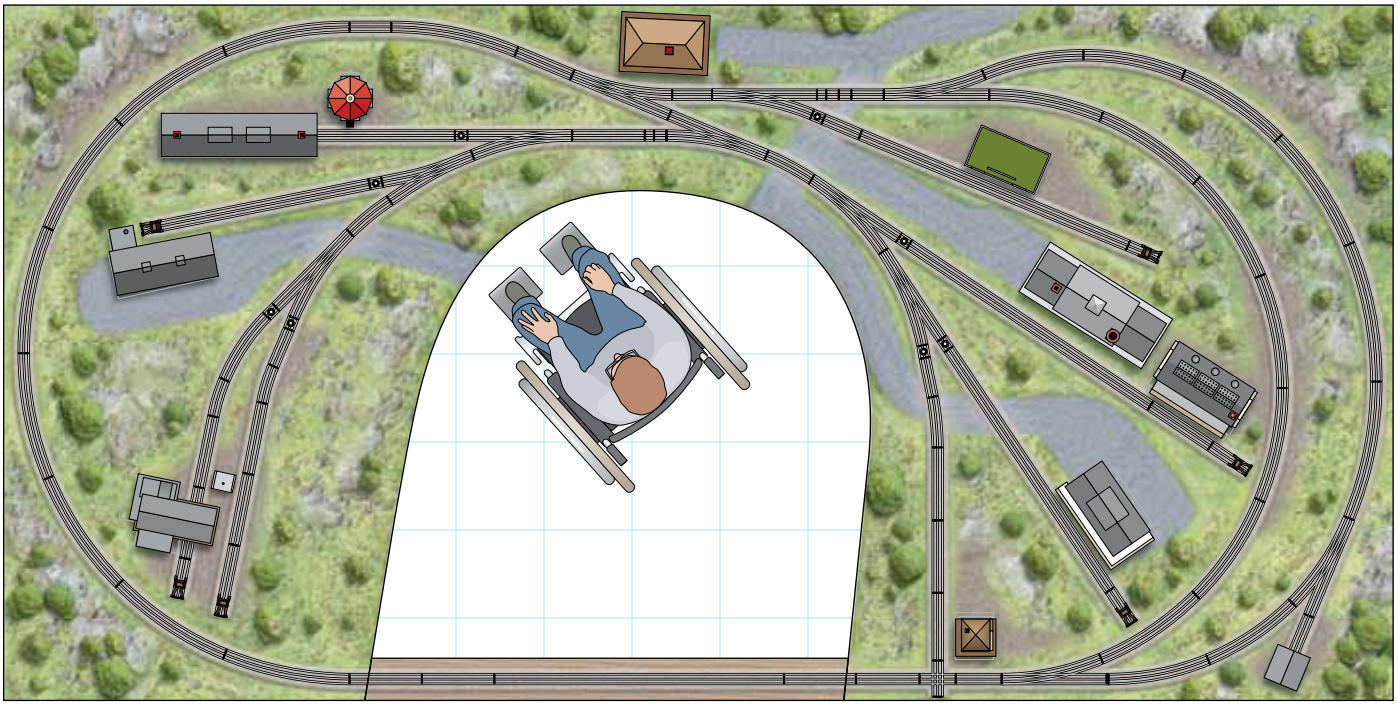
A flyover route crosses the main line to provide a path for layout expansion

SUBURBAN STATION
This location can be either the last or the first stop on the line. You'll want to add plenty of station accessories and figures in business attire along the platform. Also, be sure to include room for a taxi stand and parking lot adjacent to the station so commuters can make it all the way home

Though this plan is presented in a walk-in style with a duckunder or lift-out section at the room entrance, you can easily construct it as a stand-alone layout at the center of a large room or garage space. Just be sure to provide 2 to 3 feet of aisle space for visitors and operators to move about the perimeter. Additionally, you may want to erect a vertical view-block (positioned diagonally) to create two different scenes

Station

An access hatch used to reach remote track switches can be installed following the instruction in CTT's November 2005 feature, "How to hide access hatches"



A walk-in, sit-down, standout plan

MIDSIZE TRACK PLAN

YOU WON'T HAVE TO LEAVE YOUR SEAT TO ENJOY THIS 8 X 16-FOOT O GAUGE LAYOUT

by E. A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

What toy train operator hasn't ever bellied up to the edge of a layout, lowered down beside the main line, and then sighted down the track just as the Lionelville Express roars past?

Finding ways to get right down into the midst of the action has always been a top objective for layout builders and operators. However, accomplishing that objective hasn't been easy.

Getting disconnected

One of the most significant obstacles has been the need for operators to be within reach of essential toggles, accessory controllers, track switch levers, and transformer handles, all typically found on a centralized control panel. With the advent of Lionel's TrainMaster Command Control (TMCC) and MTH's Digital Control System (DCS) wireless layout control components, operators can now move alongside trains in motion. As the popularity of these systems grows, so too do the number of "walkaround" layouts specifically designed to bring operators along for the ride.

Sit down and stay awhile

While walkaround, walk-in, and other variant designs offer a perspective on the railroad action that previously wasn't possible, not all operators are eager to continually trek around their layout. But even for those not so willing or able to keep on the move, there's still another effective way to bring you closer to the action – or should I say, bring the action closer to you.

As originally sketched by Iain Rice, an HO scale modeler, this 8 x 16-foot, single-loop O gauge plan was literally designed to run circles around the operator. At first glance, this plan may resemble a simple tabletop plan. Take a second look, and you'll see that this walk-in scheme carves out a large chunk of the framework, giving an operator extraordinary access to the entire layout. When seated on a stool, in an office chair, or even from a wheelchair positioned at the center of this layout, you're never farther than arm's length away from most of the track.

Develop an alternative view

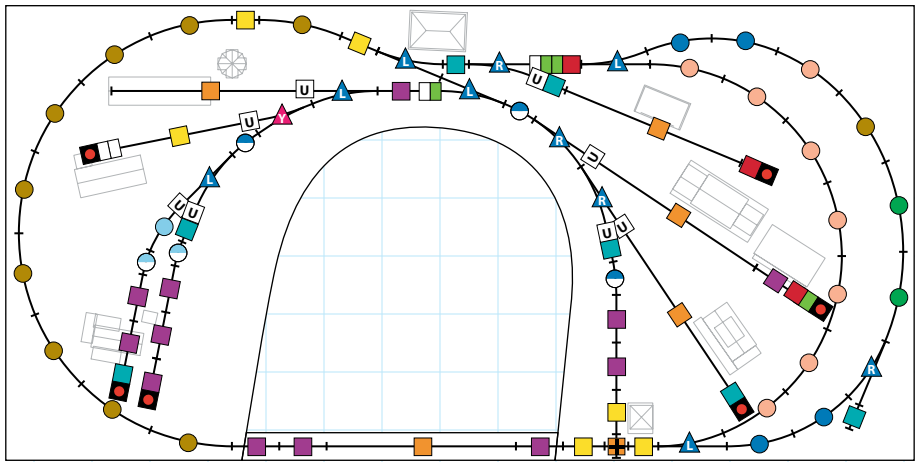
Due to the dimensional nature of this track plan, you can easily construct the layout using 3½ or 4 sheets (4 x 8 feet) of plywood or foam insulation board supported by wood framework.

To get in and out of your seat at the center of the layout, you'll need to

SUGGESTED ACCESSORIES

LIONEL
12728 freight station
12768 burning switch tower
12828 stockyard
12897 engine house
12904 coaling station
12905 factory
12916 water tower
22936 work house
34162 speeder depot

MTH
30-9098 warehouse
30-90047 Fairview Feeds
30-90079 Pittsburgh Brewing (used as meat-packing plant)



ATLAS O TRACK COMPONENTS

Quantity	Description/Number
5	40-inch straight (6058)
12	10-inch straight (6050)
7	5.5-inch straight (6053)
3	4.5-inch straight (6051)
4	1.75-inch straight (6052)
4	1.25-in straight (6015)
6	custom-cut straight
8	uncoupling track (6059)
1	90-degree crossing (6080)
6	snap-on bumper (6040)

Quantity	Description/Number
8	0-81 curve, 22.5-degree (6011)
10	0-90 curve, 22.5-degree (6013)
2	0-99 curve, 22.5-degree (6014)
1	0-54 curve 22.5-degree (6060)
2	0-54 curve 11.25-degree (6061)
4	0-72 curve, 22.5-degree (6062)
3	0-72 curve, 11.25-degree (6063)
6	0-72 left-hand track switch (6072)
4	0-72 right-hand track switch (6073)
1	0-72 'Y' track switch, 11.25-degree (6074)

build a 4½- to 5-foot-long removable bridge. This doesn't have to be massive or complicated, as the span really only needs to support the weight of a train. A leftover section of plywood could easily do the trick. You may want to cut the two ends of the bridge span, including the Atlas O track pieces, at a 45-degree angle to provide a better fit.

For most walkaround designs it's advantageous to keep the height of the layout between your elbow and chest. Although a higher layout helps bring your eyes closer to track level, your effective reach also becomes shorter.

The elbow-to-chest rule also applies to our walk-in, sit-down plan, but just be sure to measure when you're seated. Depending on the type of chair you're sitting on, a reasonable layout height ranges between 24 and 36 inches from the floor to the top edge of the layout. Build it much lower and you'll ruin the perspective – not to mention your back, as you struggle to make wiring connections underneath the layout!

Seated in the midst of the action

Take your seat at the middle of the layout, and you'll be surrounded by a number of operating options. Using a TMCC or DCS remote control, you can pull a smallish (0-4-0 or 0-6-0) steam locomotive from the enginehouse and prepare to work the local industries.

For starters, the mine needs loaded Weaver two-bay coal hoppers swapped for empty cars, and the factory has an Atlas O gondola full of widgets ready to ship over the main line. Don't linger, because the meat-packing plant needs to keep them dogies rollin' off the Lionel stockcars spotted along the cattle pens.

Another train is due to arrive on the mainline loop, so the K-Line refrigerator cars packed with sides of beef need to be set for pickup. The local arrives just as you leave to replenish the water for your locomotive. As much as you'd like to call it a day, the feed and supply store still awaits a boxcar that the local just set out from its train.

When all the railroading action concludes, you'll probably want to rest a bit. The best part about it, you won't have to go very far to find a comfortable seat! CTT

PHOTO BY K. JOHNSON

INFORMATION STATION

Go to Kalmbachstore.com and click on "Digital Downloads" to purchase articles related to building a layout.

Central City Railroad

AN 8 X 16-FOOT PLAN THAT GROWS TALL TO AVERT URBAN SPRAWL

by E.A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

Grit, grime, and glory – three words that characterize what you might expect to find in the center of a big city. While hard-nosed commerce, bustling industry, and crowning architecture may be at the heart of every metropolis, it's the railroads that keep a city's pulse strong. Each and every day of the year, railroads shuttle commuters to and from work, haul freight from factories, and usher in visitors from faraway places.

Conventional wisdom tells us that modeling the hustle of a huge city and the bustle of a big-time railroad requires a huge area. Not necessarily so. By doubling the dimensions of an urban-themed 4 x 8-foot HO scale track plan (published in *Model Railroader* in January 1985), the resulting 8 x16-foot O gauge scheme easily accommodates city essentials, including a railroad that runs through it.

Going uptown

When challenged to arrange wide-radius trackwork, numerous accessories, and an array of towering buildings into one midsize layout, you'd likely start looking for a way to compromise.

Oddly enough, the compromise comes from making the space larger, not smaller. However, rather than expanding outward, this plan builds upward.

Photo by K. Johnson

Confused? By embracing the concept of air rights – a raised platform over half of the layout – this scheme retains enough real estate to model a robust city center.

At 8 inches high, 4 feet wide, and 16 feet long, the raised platform is large enough to host both a newer "uptown" area with modern, high-rise buildings and an older "downtown" area with period construction. Additionally, you'll probably recognize the impressive passenger terminal at the center of the city, which was constructed in CTT's May 2006 feature "Merge two big banks into one Grand Station."

A railroad runs under it

Raising the city up and over the layout leaves plenty of room to lay down a dense network of Atlas O track below. Although the plan is essentially a basic oval with two passing sidings, it incorporates 16 O-72 track switches. While most of these connect the main line to numerous industrial spurs, there's also a nifty cluster of switches used to access the passenger terminal tracks.

On real urban railroads, the space available for routing rails is often hard to come by. This plan is no different, as a number of railroad-served operations occupy most of the available space in the industrial valley. The spurs leading to the industries may be only three or four track sections long, but they still provide plenty of room for a small diesel switcher (Atlas O SW8, Weaver VO1000, or MTH and Lionel S-2) to work with moderate-length freight cars.

Consequently, keeping the industrial spurs compact helps make room for the O-72 curves used on the main line. Curves this broad easily accommodate scale-sized passenger cars and commuter trains.

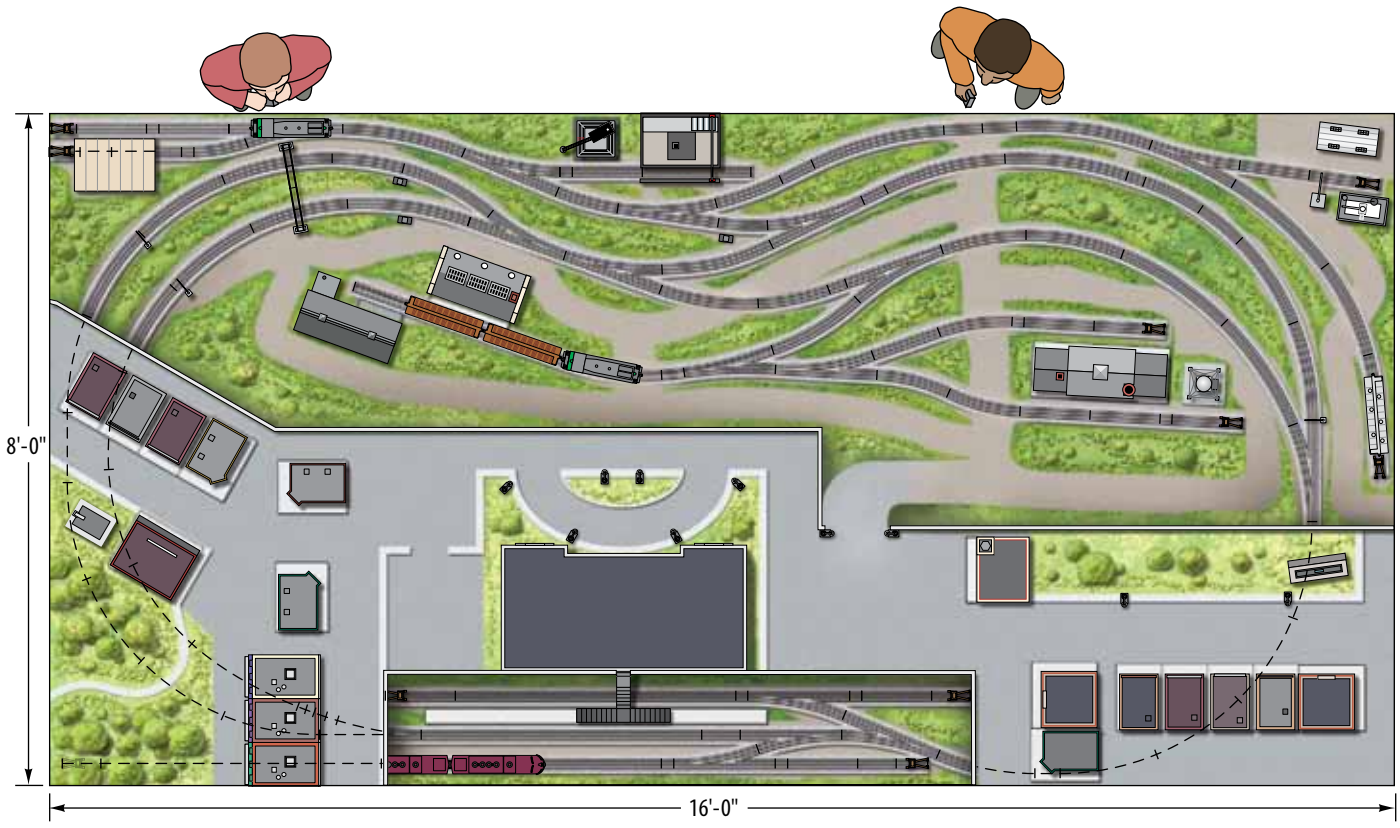
Tale of two cities

While the grit and glory reside in the elevated section of the plan, you'll still find plenty of grimy industrial and railroad operations in the valley below. Here, you can get your hands dirty operating a Lionel no. 182 magnetic crane to unload gondolas full of scrap metal. Next, you can hoist steel culverts into the empty gondolas with the aid of a Lionel no. 12982 culvert loader.

Additionally, then the ubiquitous Acme Manufacturing requires a constant flow of freight cars When you're ready to call it a day, just park your locomotive on the servicing spur and wait for the parade of commuter trains to roll past. CTT

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
3	1.25-inch straight (6015)
5	1.75-inch straight (6052)
3	4.5-inch straight (6051)
6	5.5-inch straight (6053)
20	10-inch straight (6050)
4	40-inch straight (6058)
7	custom-cut straight
1	O-45 custom-cut curve (6045)
3	O-54 curve (6060)
26	O-72 curve (6062)
6	O-72 custom-cut curve
3	O-72 curve (6063)
1	O-81 curve (6011)
8	O-90 curve (6013)
2	O-99 curve (6014)
1	O-99 custom-cut curve
1	general curve (6056)
7	O-72 left-hand track switch (6072)
3	O-72 custom-cut left-hand track switch
2	O-72 right-hand track switch (6073)
2	O-72 custom-cut right-hand track switch
2	O-72 wye track switch (6074)
10	snap-on track bumper (6040)
10	uncoupling track (6059)



Team tracks make this a useful location for moving rail freight to and from commercial trucks

Operating accessories used in heavy industry are situated at the edge of the layout for easy access.

INDUSTRIAL VALLEY
Down in the valley, you'll find city grime galore. Passenger trains quickly pass through this part of town, while a diesel switcher shuttles freight cars from one industry to the next

Acme Manufacturing – if you can name it, they ship or receive it here. You'll find boxcars packed with explosives, flatcars hauling radioactive waste, tank cars filled with bio-hazardous liquid, stock cars loaded with Tasmanian Devils, and an array of other cool stuff your mother cautioned you *not* to play with

Passing siding

Passing siding

Tunnel portal – double

Shoe factory and warehouse

Locomotive-servicing area

Holdover track

Tunnel portal

Downtown represents an older historic business district with a city park

Grand Central Station assembled using multiple MTH no. 9017 bank buildings. A modified MTH no. 30-9053 pedestrian crosswalk provides passenger access down to the terminal platform and tracks

CENTRAL CITY
This 64-square-foot area stands 8 inches above track height. Top off the platform with hardboard or sheet styrene material you've painted gray to represent concrete walkways and asphalt streets

Uptown features modern, high-rise buildings that reach 2 feet above the track level

Raised platform crafted from dimensional lumber (frame) and hardboard material (walls). Add hinges to the wall panels for easy access to trains beneath the city

Photo by K. Johnson

MIDSIZE TRACK PLAN

A BUSY HARBOR ADDS ACTION TO THIS 8 X 16-FOOT TRACK PLAN

Waterfront Terminal Railroad

by E. A. Engebretson and Kent Johnson • illustration by Kellie Jaeger

Tugboats, lighthouses, gantry cranes, lift bridges, and warehouses are all structures you'd expect to find along a waterfront. These items and more dockside details are readily available as toy train accessories and call for a layout to showcase them in operation.

Model railroader Iain Rice had this type of industrial port action in mind when he designed his HO scale Chesapeake Harbor Belt track plan. It was first published in the 2002 issue of *Model Railroad Planning*, a special magazine created by the staff of *Model Railroader* magazine. Although Iain's original was a small, 4 x 8-foot scheme, we've redrawn it here as an O gauge track plan and at twice that size. Even at twice the size, the layout is still quite accessible and prime for waterfront operation.

Sizing up the plan

Measuring 8 x 16 feet, this plan is somewhere between being a small bedroom-sized scheme and a large basement pike. Rather than getting lost somewhere in the middle, this plan offers some of the best attributes of both small and large layouts.

Like many smaller layouts, this plan is designed as a water-level route. No grade means you can easily build a flat tabletop platform using sheets of plywood for a base. The plan's dimensions also make it easy to lay down sheets of acrylic (Plexiglas) that can be used to create the waterway that takes up the center third of the layout. Layer on a few sheets of lightweight insulating foam board to raise the land above the water, and you've got the terrain required to start laying the track.

The numerous switches make the Atlas O track seem just as intricate as anything you'd find on a large layout, but don't be fooled. The plan isn't much more than a simple oval with a harbor running right through the middle. Although the scheme is simple, you'll still find an engine-servicing area, a yard, numerous industry leads, and plenty of dockside tracks used to bring freight right to the water's edge. Make no mistake, there's more to operating

LIONEL ACCESSORIES

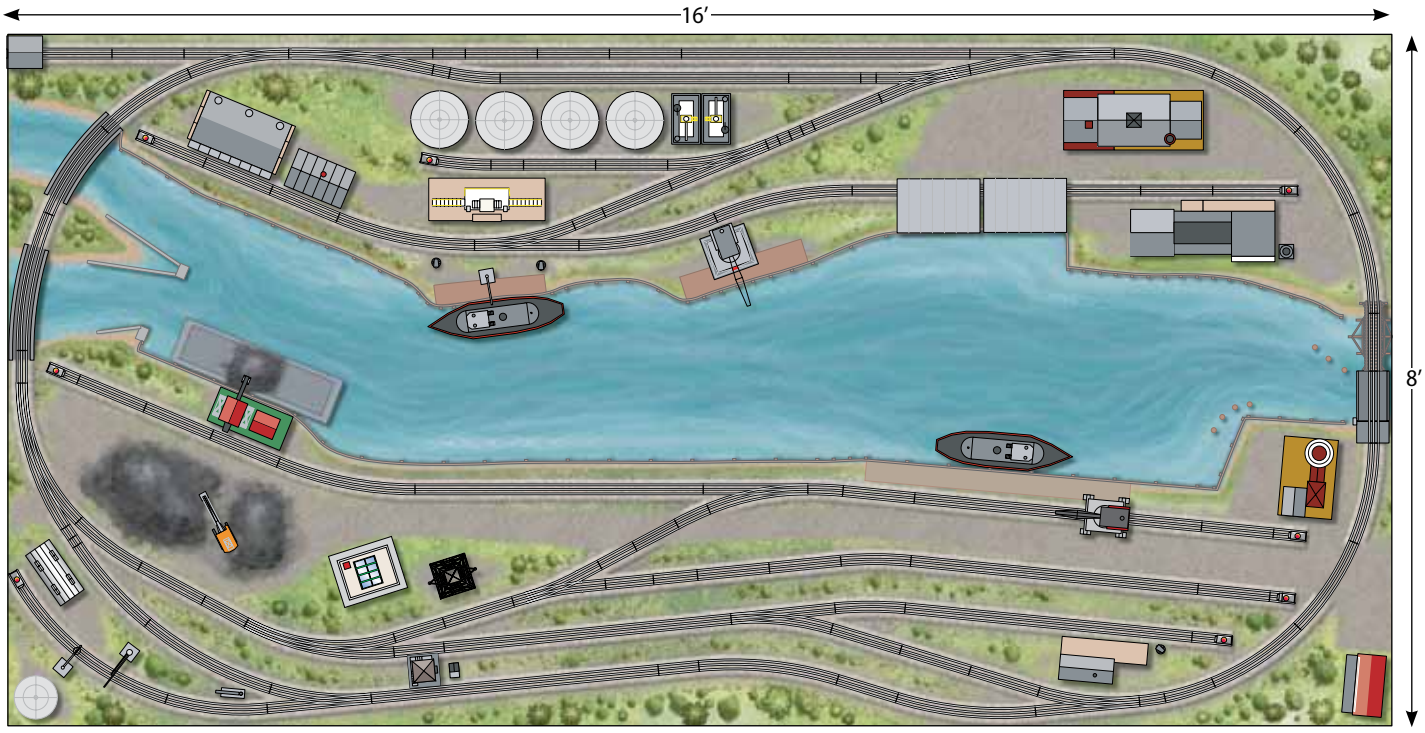
Number/Product

182 magnet crane
12733 watchman's shanty
12773 freight platform
12884 truck loading dock (2)
12901 steam shovel
12927 yard light (3)
12953 tall Linex oil tank
12954 wide Linex oil tank (4)
14142 industrial smokestack
14143 industrial tank (2)
14173 drawbridge
22902 Quonset hut
22933 section gang house
24110 PRR tugboat (2)
24114 AMC/ARC gantry crane
24119 lighthouse
34162 speeder shed
49807 no. 752 Seaboard coaler

MTH ACCESSORIES

Number/Product

10-1080 no. 436 powerhouse
30-1056 hi-tension tower
30-9084 brewery
30-9098 warehouse
30-9110 operating transfer dock
30-9117 storage tank station
30-11007 water column
30-11037 fuel column (2)
30-11040 sanding tower
30-90002 telephone shanty
30-90038 Capt. Jack's Seafood



this layout than continually running trains in a circle.

Action on the waterfront

The action begins as you prepare the Waterfront Terminal Railroad (WTRR) locomotives for a day of light switching. Tight clearances and weight restrictions along the docks keep the railroad from operating power any larger than an Atlas O SW8; K-Line Plymouth switcher; Lionel, MTH, or K-Line Alco S-2; Williams 44-tonner; or even an MTH 0-4-0 Docksider, if you prefer steam power.

Once your locomotive is ready to roll, your orders direct you to the industries on the north shore. Take a quick count of the loaded cars you'll need to deliver as you roll past the small yard on the way to the lighthouse and drawbridge. Once you're on the other side of the harbor, it's time to start pulling grain hoppers from the brewery, tank cars from the fuel storage depot, and boxcars from the warehouses along the waterfront.

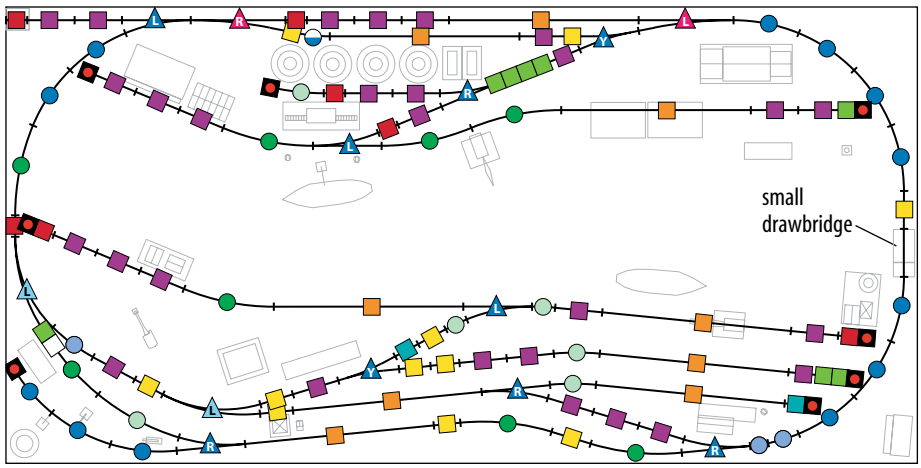
This type of switching isn't quick work, but you still need to keep up the pace to finish before another train or tugboat arrives with more loads in tow. Once you've collected the empty rolling stock, you'll need to hustle them back over the bridge and into the south shore yard.

A little yard work

Upon returning to the yard, you notice that those loaded cars you counted earlier seem to have multiplied. Before you can drop off any of the cars in your train, you'll need to thin out the congestion. Move your train into the siding, uncouple the locomotive, and then get busy.

Gondolas filled with scrap metal and flatcars loaded with heavy machinery or crates need to be positioned under the gantry crane used to load outbound ships and barges.

While you're working along the pier, you can help shove a string of coal hoppers under the coal loader. Finally, you can return to working your own train. When your work is done, leave the locomotive idling near the yard office. Call it a morning's work on the WTRR and head for Capt. Jack's Seafood shack. CTT



Atlas O track components

Quantity	Description/Number
9	40-inch straight (No. 6058)
28	10-inch straight (No. 6050)
2	5.5-inch straight (No. 6053)
7	4.5-inch straight (No. 6051)
8	1.75-inch straight (No. 6052)
1	1.25-inch straight (No. 6015)
11	custom-cut straight
8	snap-on bumper (No. 6040)
8	0-99 22.5-degree curve (No. 6014)
12	0-72 22.5-degree curve (No. 6062)
1	0-72 11.25-degree curve (No. 6063)
3	0-72 custom-cut curve
6	0-99 custom-cut curve
3	0-72 left-hand switch (No. 6072)
4	0-72 right-hand switch (No. 6073)
2	0-72 'Y' switch (No. 6074)
2	0-72/0-54 left-hand switch (No. 6077)
1	no. 5 left-hand switch (No. 6024)
1	no. 5 right-hand switch (No. 6025)

Running & switching on a FasTrack loop

THIS 12 X 16-FOOT O GAUGE DESIGN FEATURES CONTINUOUS OPERATION AND A FAMOUS SWITCHING SCHEME

by Kent Johnson • illustration by Kellie Jaeger and Ron Kempke

A basic loop of track is a simple pleasure that nearly every toy train operator can appreciate. Sometimes it's the simplest things that bring the greatest enjoyment. But when that loop expands to include a switching scheme of legendary status, you've got the makings of a layout that elevates toy train operation from simple to the sensational. That's precisely what CTT contributor Ron Kempke accomplished when he adapted his 12 x 16-foot O gauge plan for continuous operation to include a historic switching layout.

At first glance, Ron's track plan may appear to be little more than a basic, single-level oval design that's folded at the center. This folded, dog-bone-shaped scheme helps maintain a compact footprint that should fit within the walls of a large bonus room or basement recreation room. Considering that Lionel FasTrack no. 12056 O-60 curve sections set the minimum standard on this plan, you wouldn't expect to find much space left for anything else, right? Wrong!

In a seemingly impossible transition from simple to sensational, this plan includes no less than a reversing loop, a lengthy passing siding, two industrial spurs, a four-track yard, and a locomotive-servicing area with an Atlas O no. 6910 turntable and three-stall roundhouse. All of this is topped off by an O gauge rendering of John Allen's famous "Timesaver" switching puzzle.

A three-rail Timesaver

John Allen was an inventive model railroader who pioneered numerous techniques and practices still used today in model railroading. In the November 1972 issue of *Model Railroader* magazine, he introduced a small, simple track plan intended to turn railroad switching into a game.

As John Allen wrote, "The object of the game is to make the required switching move in the least amount of time." Though he gave the plan its "Timesaver" moniker, that name is quite a misnomer. It can become quite time consuming, mentally engaging, and strangely relaxing to work through the Timesaver switching puzzle.

If the Timesaver section of the layout isn't enough to keep you engaged, this plan also includes a small yard with four tracks used to sort cars without fouling the operations on the main line. In fact, whether you're working the yard, the industrial spurs, or the Timesaver section, your switcher doesn't ever need to venture across the main line – even when moving to and from the locomotive-servicing terminal.

Full-service terminal

Though it's hard to imagine there's room for structures as large as an Atlas O 6910 operating turntable or 6904 roundhouse sections, the plan includes both of these. Since this plan is specifically designed for Lionel FasTrack components, you'll need to use no. 12040 transition pieces and Atlas O no. 6095 transition pins to connect track to the turntable. Also consider installing insulating track pins to create electrically isolated storage tracks for your prized motive power.

An operating Lionel water tower or coaling tower could provide additional intrigue when placed adjacent to the other terminal structures encircled by a ring of O-72 curved track. If you do include more operating accessories, be sure to leave room for an access road that begins at the Lionel no. 12062 grade crossing with gates and flashers.

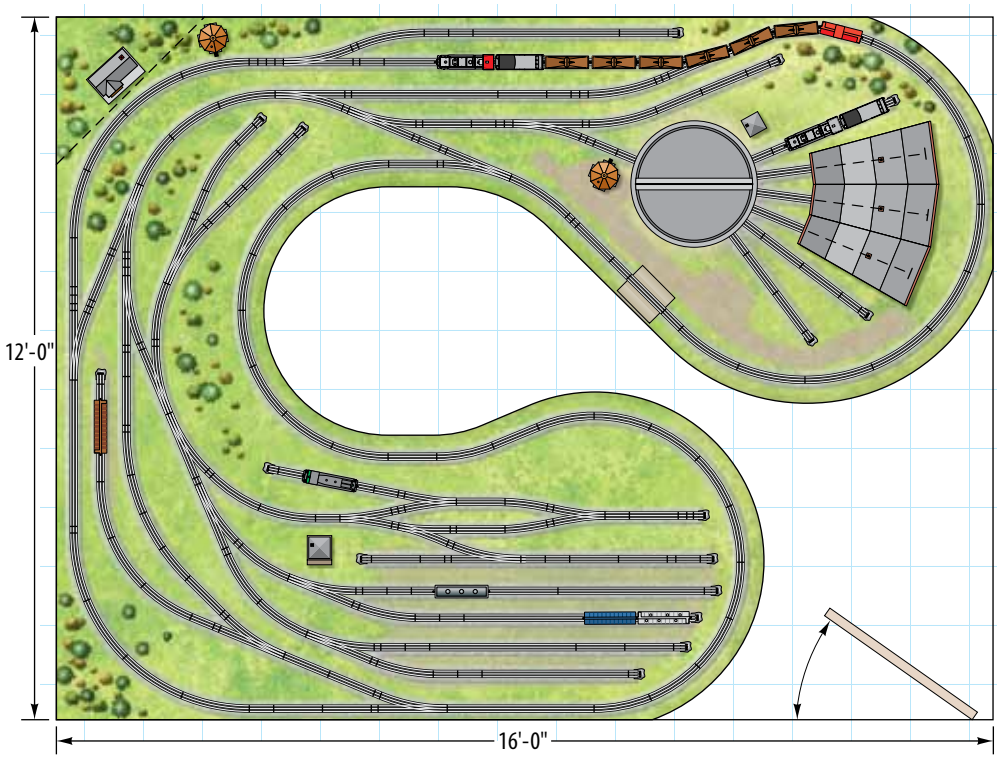
Working the railroad

Fitting all of these features into the 12 x 16-foot confines requires a few small concessions. The ideal location for running the layout is from a control panel at the center of the layout. Perhaps even three control panels – one for the main line, another for the terminal, and the third for the Timesaver/yard area – will be best, but access to this point is rather constricted.

The area just inside the room is a good secondary operating location, but you'll still want to create a pop-up access area at the center of the layout to reach any derailments. More likely, you'll just want a place where you can immerse yourself in all the Timesaver switching or the smooth-sailing action over the continuous mainline loop. CTT

LIONEL FASTRACK COMPONENTS

Quantity	Description Number
9	1 3/8-inch straight (12073)
42	1 3/8-inch straight without roadbed (12074)
16	1.75-inch straight (12026)
2	4.5-inch straight (12025)
19	5-inch straight (12024)
39	10-inch straight (12014)
10	30-inch straight (12042)
33	0-60 curve, 22.5-degree (12056)
22	0-72 curve, 22.5-degree (12041)
8	0-84 curve, 11.25-degree (12061)
4	0-72 wye track switch (12047)
9	0-72 left-hand track switch (12048)
9	0-72 right-hand track switch (12049)
14	5-inch uncoupler (12020)
2	5-inch isolated block (12029)
4	5-inch transition (12040)
1	grade crossing with gates and flasher (12036)
16	bumper (12059)

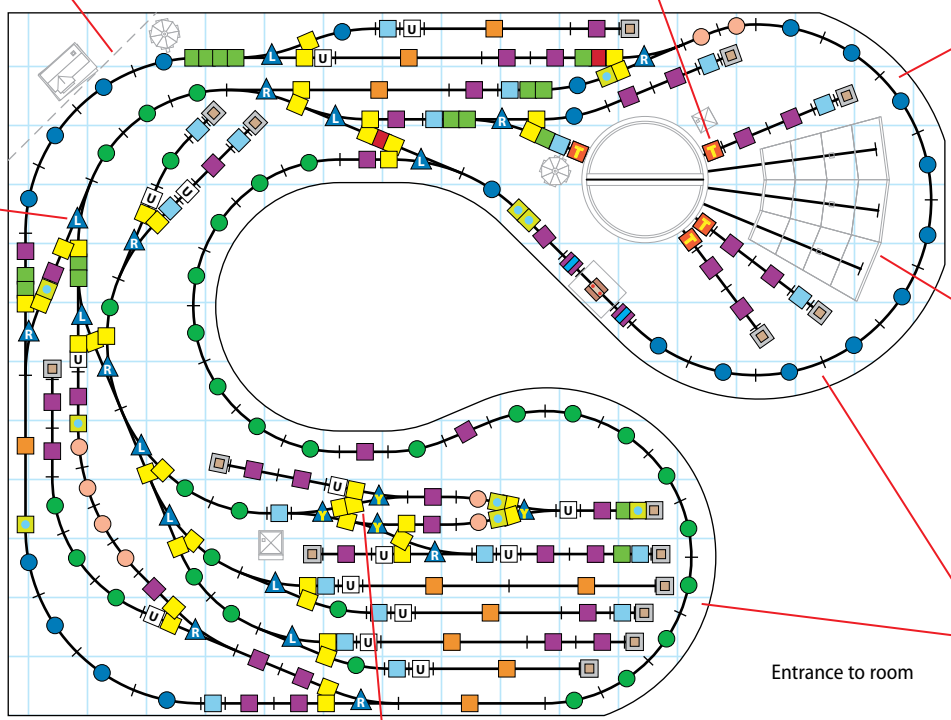


Pop-up hatches or lift-out sections in the corners provide easy access to tracks at the rear of layout

Atlas O no. 6910 turntable requires Lionel no. 12040 transition track and Atlas O no. 6095 track pins to align with Lionel FasTrack sections

Track is on the same level across the layout. However, you can create a grade along this curve. Adding a hill with a cut or a mountain with a tunnel will help disguise this end of the continuous loop

All switches are O-72 for smooth operation. Each switch is supplied with two Lionel 1⅜-inch straights with a partial roadbed section



A full-featured locomotive-servicing terminal, complete with an Atlas O turntable and three roundhouse sections, is easily accommodated inside the broad bend of O-72 curves

Entrance to room

Separate control panels for the yard, main line, and engine terminal could fit at the center of the layout. However, restricted access into this area makes placement along the perimeter more desirable

INFORMATION STATION

John Allen's famous "Timesaver" switching scheme is cleverly integrated here. To purchase information on the John Allen's HO scale Timesaver layout, go to Kalmbachstore.com, click on "Digital Downloads," click on "Model Railroading," click "Articles," then "Track Plans."

THIS DISPLAY-STYLE 12 X 16-FOOT O GAUGE PLAN FEATURES MULTIPLE OPERATING TRAINS AND ACCESSORIES

MIDSIZE TRACK PLAN

A big and busy retro railroad

by Anthony Dilapi and Kent Johnson • illustration by Kellie Jaeger

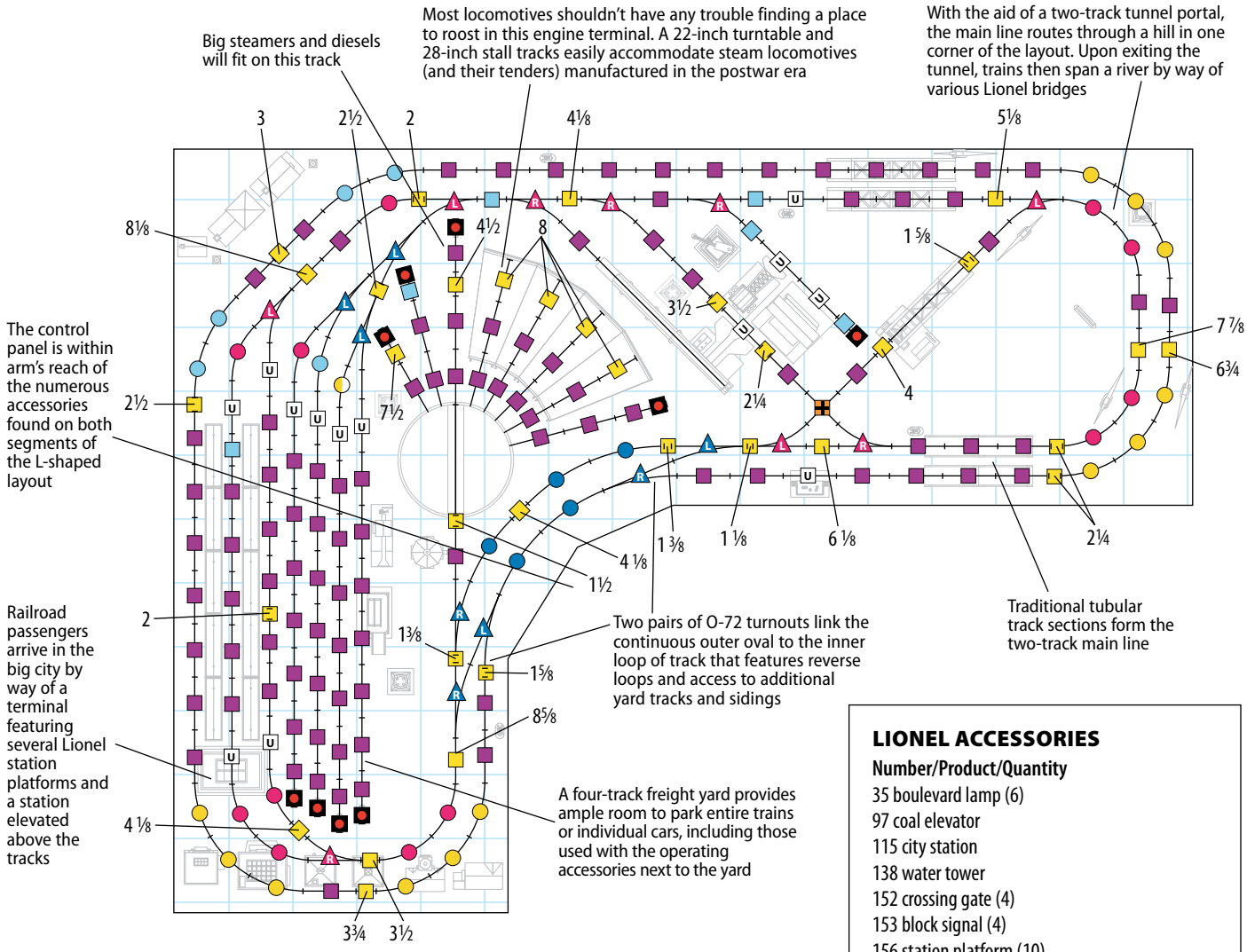
Along with the positive comments about our Retro Railroad, the 4 x 8-foot O gauge track plan featured in the September 2009 issue of *Classic Toy Trains*, we heard from readers wanting a similar display-style theme on a larger layout. We were listening.

Based on your feedback, I began to search for schemes that might satisfy a resounding desire to see multiple trains running continuously on a layout loaded with postwar-era operating accessories. As luck would have it, my first glance through an assortment of CTT's Toy Train Track Plan submissions revealed an ideal plan developed by CTT contributor Anthony Dilapi. The display-style theme of this track plan is immediately evident, but I'll let Anthony describe some features he added to make this an O gauge layout that delivers action-packed operation in a traditional setting.

An operator's layout

This rec-room scheme promises something of interest for just about every fan of the display-style layouts that Lionel designed and constructed to promote its classic O gauge trains and accessories throughout the postwar era.

The L-shaped layout has a double-track main line featuring traditional tubular track sections and two pairs of O-72 track switches that connect the two loops. While the outer oval (assembled from O-42, O-54, and O-72 curves) is intended for continuous operation, the inner oval (assembled from O-31 and O-72 curves) has two reverse loops that form a figure-eight pattern.



LIONEL SECTIONAL TRACK COMPONENTS

Quantity	Description/Number
6	5.5-inch straight
103	10-inch straight
33	custom-cut straight
12	O-31 curve
12	O-42 curve
1	O-42 custom-cut curve
5	O-54 curve
5	O-72 curve
4	O-31 modern left-hand turnout (no. 022LH)
5	O-31 modern right-hand turnout (no. 022RH)
5	O-72 left-hand turnout (no. 5165)
3	O-72 right-hand turnout (no. 5166)
13	uncoupling track (UCS)
1	90-degree crossing (no. 020)
9	bumper (no. 260)

LIONEL ACCESSORIES

Number/Product/Quantity

35 boulevard lamp (6)
97 coal elevator
115 city station
138 water tower
152 crossing gate (4)
153 block signal (4)
156 station platform (10)
164 log loader
182 magnet crane
310 billboard set
313 bascule bridge
314 plate girder bridge (4)
316 trestle bridge (2)
352 icing station
395 floodlight tower (3)
397 diesel-type coal loader
456 coal ramp
494 rotary beacon
3462P milk car platform
3656 operating stockyard
ZW 275-watt transformer (2)

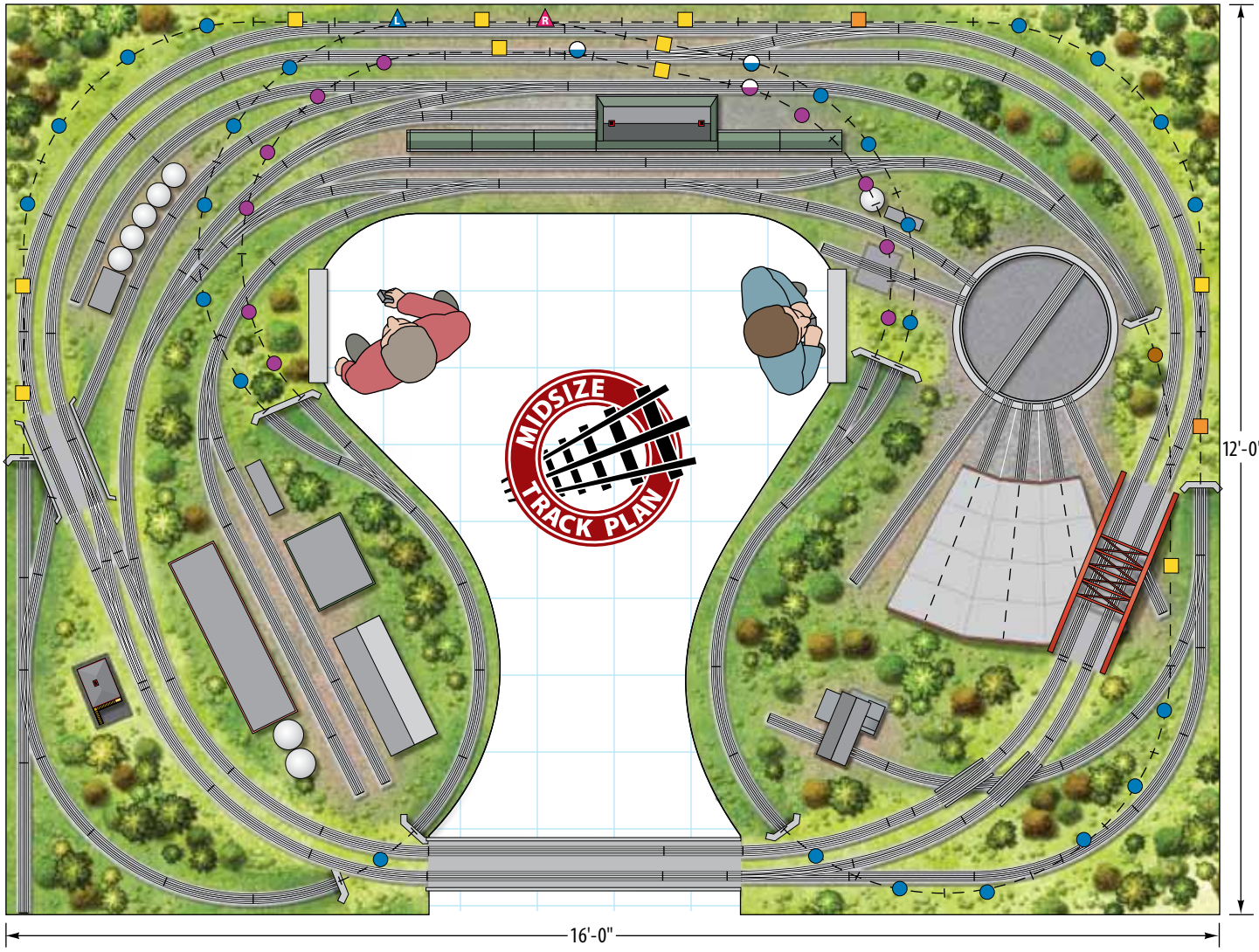
Along this serpentine route, I've included two sidings used to host vintage Lionel operating accessories, including a no. 97 coal elevator and a no. 456 coal ramp. In addition to the accessories found along the inner loop, you'll note a no. 313 bascule bridge, plus smaller freight-transferring accessories in the four-track freight yard.

Adjacent to the freight yard, an engine terminal features a 22-inch-diameter turntable with eight spurs radiating from the lead track at 15-degree intervals. The plan calls for a four-stall roundhouse with 28-inch-long tracks. At this length, the stall tracks and turntable can accommodate any steam locomotive and tender combination produced in the postwar era

Passenger trains also have a place to park in a corner of the layout where I've included a terminal. Several Lionel no. 156 platforms and a no. 115 station service three through tracks. These structures occupy a raised area that represents a city, which also includes an illuminated boulevard and several Plasticville buildings, featuring a no. 1607 fire station, a no. 1614 police station, a no. 1801 bank, a no. 1902 hospital, and a no. 1904 cathedral.

Pictures printed in Lionel's *Model Builder* magazine influenced the design of this city scene and the overall scenery for this layout. In fact, the inside back cover of the December 1940 issue shows a passenger terminal with an elevated Lionel 115 station with tracks running below it – very much like the city scene I included on this plan.

Finally, I centered the control panel along the front edge of the layout. Here, operators will enjoy the best view of the scenes, as well as the easy reach to many of the operating accessories on this thrilling display-style layout! GTT



The O gauge Erie & Lackawanna RR

MODEL TWO GREAT RAILROADS ON ONE 12 X 16-FOOT HI-RAIL LAYOUT

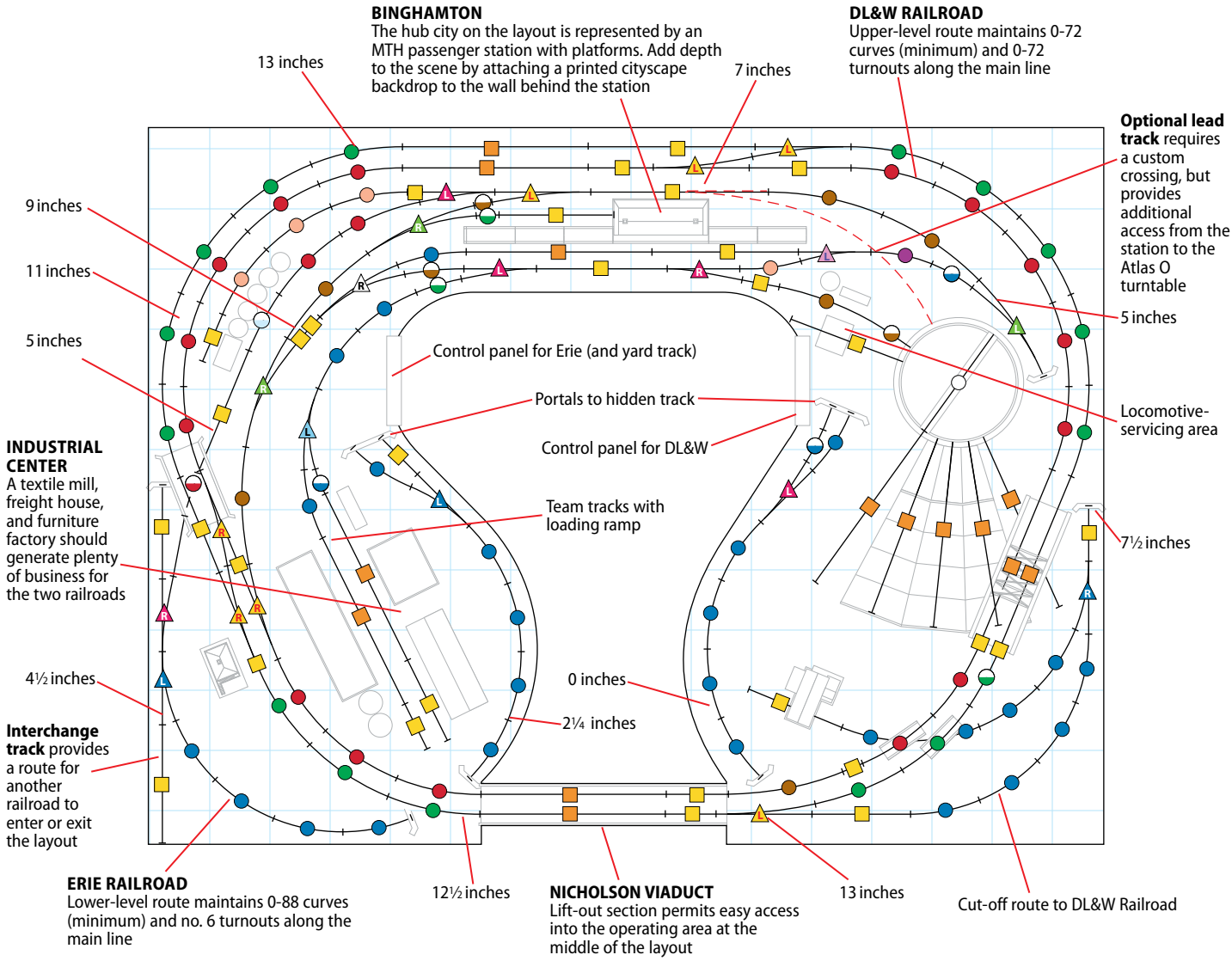
by Kean Burenga • illustration by Kellie Jaeger

We've seen a quantum leap in the realism of O gauge trains in the past decade, and the dynamics of the mass-market mean that scale-proportioned locomotives and cars have become fairly affordable. But if you want to run the big iron, you need a layout that can match your machines – scale-sized steam and diesel locomotives look and work best on broad curves and gradual turnouts.

I designed the Erie & Lackawanna RR to accommodate today's trains. Representing the rival (but soon-to-be merged) lines of the Erie RR and the Delaware, Lackawanna & Western RR, my plan is intended for the modeler who is ready to make the transition from toy trains to hi-rail.

My track plan uses a broad range of switch and track components from Ross Custom Switches and GarGraves flexible track. The lower-level Erie part of the layout features O-72 curves and turnouts, and the upper-level main line of the DL&W has even grander O-88 and O-96 curves and no. 6 turnouts.

Prior to the 1960 merger, the Erie and the DL&W operated competing lines between New York City and Buffalo while serving many communities between. One such industrial and manufacturing hub, Binghamton, N.Y., is the centerpiece of my model railroad. I was careful to include the connecting



tracks, a yard, and a passenger station – all the things you would expect to find in an important railroad center.

While the simple loops of the upper-level DL&W and the dogbone of the lower-level Erie offer continuous running for three or more trains, there are plenty of operational challenges to keep you busy on this layout. The loops on the Erie level connect in hidden staging tracks below Binghamton, representing points east and west, and permit trains to be turned for operation in either direction. Routing Erie traffic behind the station at Binghamton clears the front tracks for switching activity. The modest locomotive-servicing facility lends itself to power changes on through trains.

In a merged scenario, the line can also be operated as a busy single-track railroad, with trains making nearly four trips around the space from hidden staging tracks and through Binghamton and several junctions before returning. There are enough sidings to keep the dispatcher busy planning meets between road trains, while the local freight works at lineside industries.

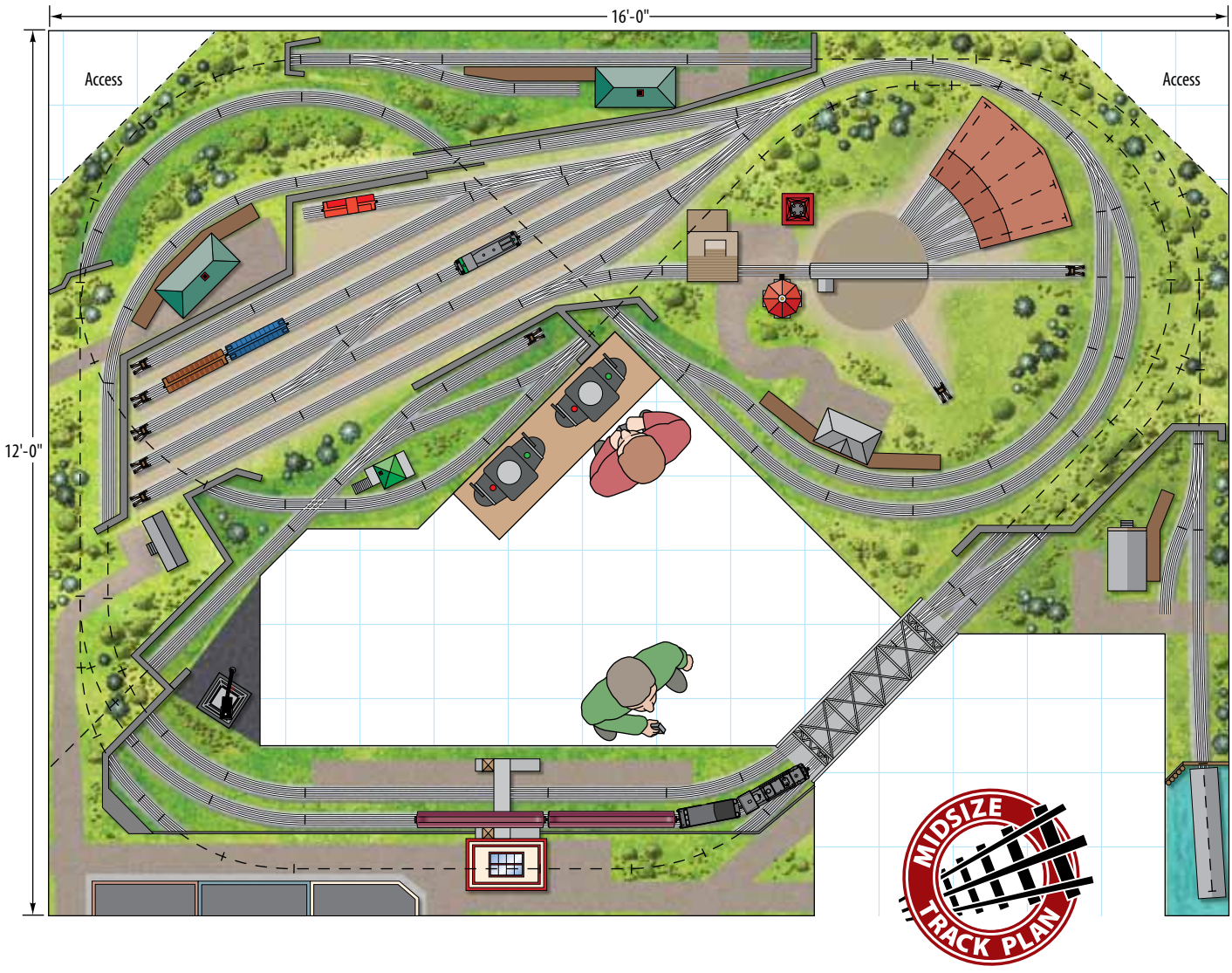
Scenic elements of the layout include the Lackawanna's impressive double-track Nicholson Viaduct as an entry to the layout's operating area. Backdrops capture the flavor of the Pocono Mountains and the urban landscape of the city of Binghamton.

I think you'll agree that, pre- or post-merger, the O gauge Erie & Lackawanna RR offers plenty of operating and visual opportunities for enjoying the new age of scale-sized toy trains. CTT

TRACK COMPONENTS

Quantity	Description/Number
16	37-inch straight (GarGraves 101)
41	custom-cut straight
50	0-64 custom-cut curve (Ross 064)
5	0-64 curve (Ross 064)
11	0-72 curve (Ross 072)
1	0-72 custom-cut curve (Ross 072)
4	0-80 curve (Ross 080)
17	0-88 curve (Ross 088)
1	0-88 custom-cut curve (Ross 088)
15	0-96 curve (Ross 096)
7	0-120 curve (Ross120)
3	0-120 custom-cut curve (Ross120)
1	0-128 custom-cut curve (Ross 128)

Quantity	Description/Number
1	24-inch turntable (Atlas O 6910)
3	0-72/0-54 left curved turnout (Ross 161)
4	0-72 left-hand turnout (Ross 126)
1	0-72 right-hand turnout (Ross 125)
3	no. 4 left-hand turnout (Ross 201)
1	no. 5 right-hand turnout (Ross 100)
1	no. 5 left-hand turnout (Ross 101)
3	no. 6 right-hand curved turnout (Ross 230)
3	no. 6 right-hand turnout (Ross 210)
4	no. 6 left-hand turnout (Ross 211)
4	no. 8 right-hand curved turnout (Ross 240)
1	no. 8 left-hand curved turnout (Ross 241)



The O gauge Anonymous & Northern RR

THIS 12 X 16-FOOT LAYOUT STRIKES A BALANCE BETWEEN OPERATION AND SCENIC FEATURES

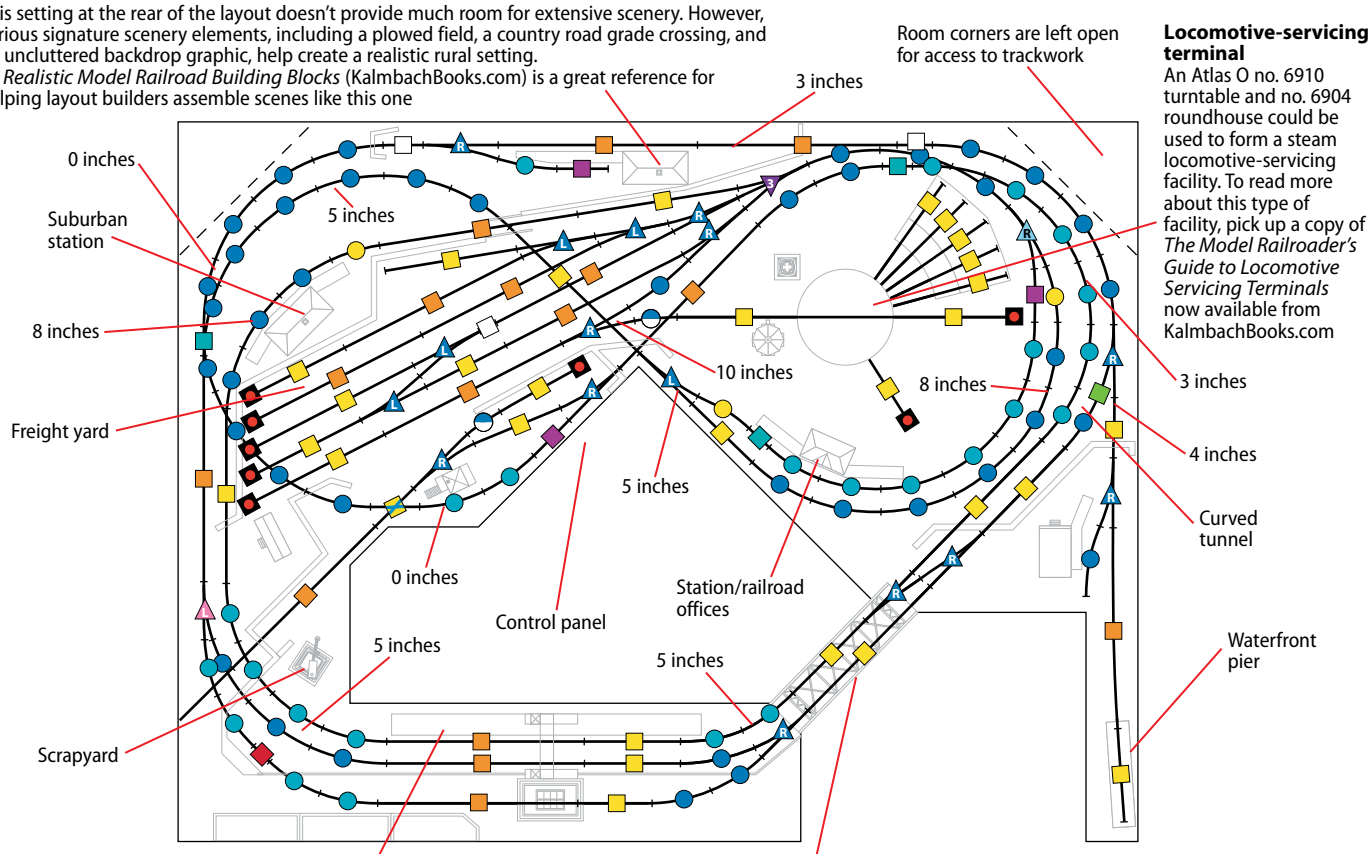
by David Deinard • illustration by David Deinard and Kellie Jaeger

The Anonymous & Northern RR layout plan features an around-the-wall design that maximizes the total distance a train can travel. While this O gauge scheme provides plenty of room for trackwork and several access points, there's enough room left to create exciting panoramas and engaging layout scenes.

Upon entering this 12 x 16-foot space, visitors step into a galley area that was created by clipping one corner of the around-the-wall design. From this vantage point viewers can take in the entire layout, including the vivid backdrop graphics that frame the railroad. The layout is designed to stand 40 inches above floor level, with the highest track elevation at the yard and the city set at 50 inches. At this height, moving from the visitors' galley to the control panel area is an easy duck under the two-track bridge.

Small-town station
This setting at the rear of the layout doesn't provide much room for extensive scenery. However, various signature scenery elements, including a plowed field, a country road grade crossing, and an uncluttered backdrop graphic, help create a realistic rural setting.

Realistic Model Railroad Building Blocks (KalmbachBooks.com) is a great reference for helping layout builders assemble scenes like this one



Locomotive-servicing terminal
An Atlas O no. 6910 turntable and no. 6904 roundhouse could be used to form a steam locomotive-servicing facility. To read more about this type of facility, pick up a copy of *The Model Railroader's Guide to Locomotive Servicing Terminals* now available from KalmbachBooks.com

Main passenger station
The terminal structure is above the tracks at street level. Stairs lead to the platforms at track level. The city is thriving with commerce represented by three-dimensional structures and building flats

The Atlas O no. 6921 double-track truss bridge spans the entry to the control panel area. For details on building a removable bridge for this location, see Peter Riddle's feature, "Build lift-out sections" in the December 2006 issue of CTT

A trip around the A&N RR

The best way to describe the operational and scenic features of the A&N is to take an imaginary ride over its rails. Let's board a passenger train waiting at the main station.

Departing the station, we pass over an Atlas O double-track truss bridge spanning a giant canyon, negotiate a crossover at medium speed, and pop into a curving tunnel. Just before the portal cuts off our view, we see a long branch that leads to a freight house and spur, crosses a road, and extends on to a waterfront pier and car float.

We exit the tunnel, cross a dirt road, and pull into the station in a small town. This is where the double-track ends, but you'll still find a team-track siding adjacent to the rural depot.

"All aboard!" We're underway again, entering another tunnel. Emerging into the light, we cross an interchange track of another railroad and note that the crossing is guarded by a two-story signal tower.

We don't have long to wonder at the sights before plunging into yet another tunnel. Upon exiting this tunnel, we find ourselves back on a double-track main line and slowing down to cross the truss bridge.

After a station stop, we leave in the opposite direction of our original departure. Our train rolls past an operating magnetic crane at work in a scrapyard, ducks under a city street viaduct, and slows to stop at a suburban station.

A quick pause, and we continue upgrade and across a girder bridge over a lower-level track. The train takes a looping curve around the railroad's division point steam locomotive facilities only to halt at another small station. Several passengers detrain, and a few new ones join us before we start up and pass by the freight yards.

Traveling through a curving cut, we enjoy some rugged scenery before entering a short tunnel and ending our journey at the same city where we boarded the train. Stepping onto the platform, we reflect on our exhilarating journey around the layout.

A builder of the A&N RR may wish to have a second name for the city to complete the illusion of a point-to-point run over a railroad ripe with options for operation and scenery. CTT

ATLAS O SECTIONAL TRACK COMPONENTS

Quantity	Description/Number
16	40-inch straight (6058)
29	custom-cut straight (6058)
3	10-inch straight (6050)
2	custom-cut straight (6050)
3	5.5-inch straight (6053)
1	4.5-inch straight (6051)
1	1.75-inch straight (6052)
41	O-72 curve (6062)
2	custom-cut curve (6062)
2	O-72 half-curve (6063)
25	O-63 curve (6064)
5	O-72 left-hand turnout (6072)
11	O-72 right-hand turnout (6073)
1	O-36 left-hand turnout (6075)
1	O-72/O-54 curved turnout (6078)
1	45-degree crossing (6081)
8	Track bumpers (6040)

ROSS CUSTOM SWITCHES COMPONENTS

Quantity	Description/Number
1	No. 4 three-way turnout (204)

MIDSIZE TRACK PLAN

A plan for the "classic operator"

THIS 12 X 16-FOOT LAYOUT COMBINES REALISTIC OPERATION WITH A TIMELESS APPEARANCE

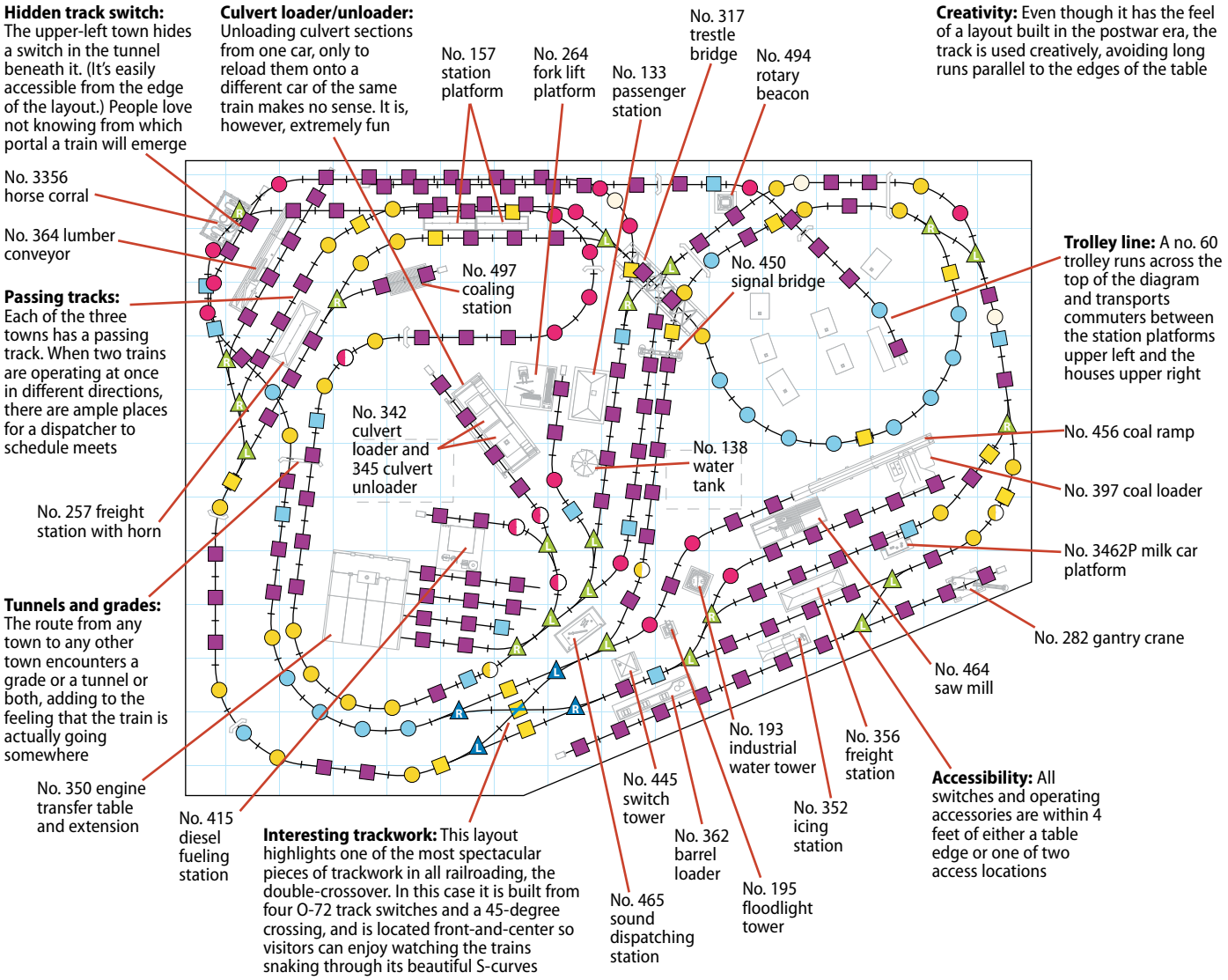
by John Rusterholz • illustration by Kellie Jaeger

Realistic operation and classic appearance were the two goals I had in mind when I sat down to design this 12 x 16-foot O gauge layout.

My "Classic Operator" plan will easily keep two, three, or four people busy doing jobs that simulate those of a real railroad. Rather than going in circles, trains move purposefully between towns and industries. But I also wanted to capture the fun of postwar trains. Nearly everything on this layout could have come from the 1957 Lionel catalog, including virtually all the accessories available that year.

Running the "Classic Operator"

For normal single-direction operation, the single-crossover at the upper right is not used, so that the train on the outer track continues on the outer track, and the train on the inner track continues on the inner track. Similarly, the hidden switch at the upper left of



the plan needs to remain in the curved position, so that the northern-most track inside that tunnel is not used.

The double-crossover at the lower left reconfigures the main line. With the switches set for the straight direction, the main line is a single multiple-folded loop that travels to all three towns.

When set to the curved position, the main line becomes two loops. One loop serves the town at the upper left; the other two towns are served by the lower loop. Since the two loops intersect at the double-crossover, engineers need to stay alert to prevent collisions. That's why I located a Lionel no. 445 operating switch tower by the crossover – extra vigilance never hurts!

A single use of either of the two reverse paths will result in a train reversing direction. When the main line is operated as a single loop, these reverse paths are available to all trains.

When the main line is treated as two separate loops, the use of the hidden track to reverse is available to only the train on the lower loop. The use of the single-crossover to reverse also allows a train to move to the other of the two smaller loops.

That sounds like a lot to keep track of, and it is. But it also opens the way to running several trains and never falling into a repeating pattern.

If you build the plan with Lionel switches, you may encounter one or two places where the switch machines will not fit on either side of the track. It's relatively easy to mount the machines under the table.

Once you have the "Classic Operator" up and running, be sure to invite the gang over for some railroad fun. This O gauge layout can easily keep several people busy for an entire evening of enjoyable train operation. CTT

LIONEL SECTIONAL TRACK COMPONENTS

Quantity	Description/Number
132	straight
13	half-straight
14	custom-cut straight
18	0-31 curve
4	0-31 half curve
25	0-42 curve
3	0-42 half curve (cut)
3	0-42 quarter curve (cut)
16	0-54 curve
12	0-22 left-hand switch
9	0-22 right-hand switch
2	0-72 left-hand switch
2	0-72 right-hand switch
1	45-degree crossing

BONUS TRACK PLAN

Plan a point-to-point layout

THIS L-SHAPED PLAN IS DESIGNED FOR SWITCHING ACTION ALONG THE WALLS

story and photos by John Penca • illustration by Kellie Jaeger and Kent Johnson

The venerable 4 x 8-foot continuous loop layout always has, and always will, set the standard for toy train layouts. Even when there's room to expand a small layout into something larger, it's likely that the scheme will still include a provision for trains to run in an uninterrupted circular pattern.

Unfortunately, many would-be layout builders can attest to plenty of instances when there just isn't enough space to accommodate even a single loop of track. But before you decide that there's no way to deal with the lack of space, you'll want to consider this plan, featuring two ways *across* a room, rather than circling around the center of it.

I knew it was time to break from traditional toy train schemes when I found that most of my toy train collection wouldn't fit on a 4 x 8-foot layout. That's when I started planning a narrow, shelf-style O gauge layout to make the most of unused space along two walls in my basement.

My point-to-point plan may not include a loop, but the rails will buzz with trains routing to and from the freight yards on opposite ends of the layout.

Linear logic

While the practice of running trains from one point to another isn't common among toy train operators, that's how I've spent many of my days working as a conductor for real freight railroads. For me, it was only natural to create a linear plan that I could easily assemble atop several 2 x 4-foot tables built 54 inches high and positioned against painted block walls.

My choice of track for this plan is Atlas O. For the sake of reliable operation within yard limits, all the curves and track switches are O-54 or greater. Because the narrow width keeps track within arm's length, the switches can be equipped with economical, manual switch throws.

Operating action

The action on this layout comes by way of switching operations. A typical operating session might begin with outbound cars placed, or "spotted," on outbound tracks 1 and 2 at Marsey Yard. Conversely, tracks 3 and 4 hold inbound cars that are ready to be placed. Once the outbound tracks are filled with six or seven cars each, you can attach a locomotive and travel across the railroad to track 1 in the Ohio Street yard.

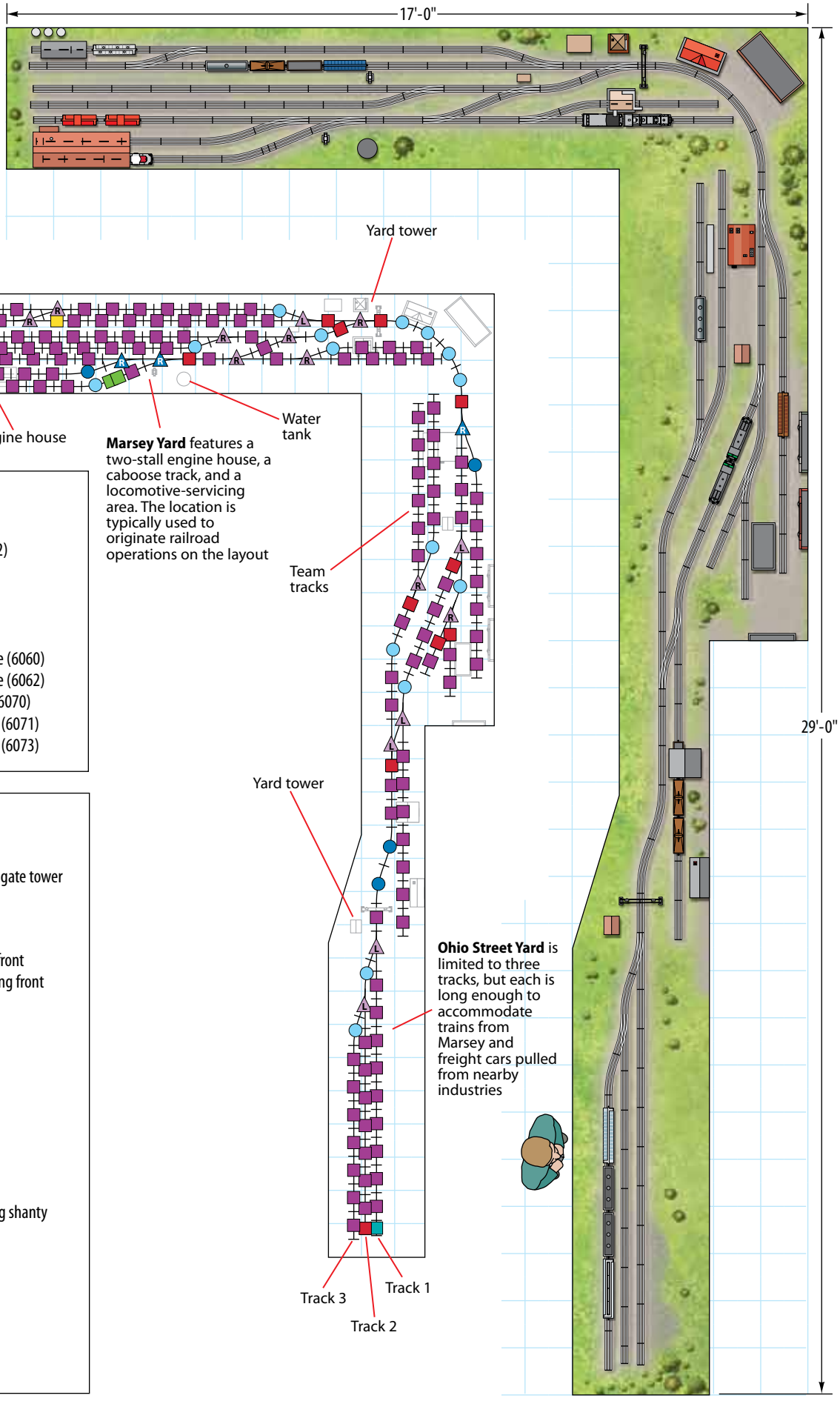
Next, a light (without cars) engine moves from the Marsey engine terminal to the Ohio Street yard and returns with inbound cars from track 2 or 3. This train arrives at Marsey on track 1, which is now clear of cars.

In another light engine move to the Ohio Street yard, the locomotive couples, or "ties," to the inbound train on track 1 and places, or "sets," the cars over to track 2 or 3, whichever is clear. After completing this work, the locomotive returns light to Marsey, but picks up or moves cars at lineside industries along the way.

As on the real railroads, multiple locomotives can be used to remove or sort cars from an inbound train. Finally, after pulling and placing cars from tracks 3 and 4, the action starts again.

With the aid of a command-control system and motive power appropriately equipped for slow-speed operation, an operator or two can spend hours shoving freight cars to and from various industries and the two yards. Chances are, they'll be too busy to notice the absence of a continuous loop! CTT

◀ **Author John Penca used his experience as a professional railroader to create a track plan designed to keep trains moving between two different freight yards.**



Marsey Yard features a two-stall engine house, a caboose track, and a locomotive-servicing area. The location is typically used to originate railroad operations on the layout

Ohio Street Yard is limited to three tracks, but each is long enough to accommodate trains from Marsey and freight cars pulled from nearby industries

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
3	1.75-inch straight (6052)
13	4.5-inch straight (6051)
3	5.5-inch straight (6053)
126	10-inch straight (6050)
1	custom-cut straight
15	0-54 curve, 22.5-degree (6060)
4	0-72 curve, 22.5-degree (6062)
6	0-54 left-hand switch (6070)
9	0-54 right-hand switch (6071)
3	0-72 right-hand switch (6073)

SUGGESTED ACCESSORIES

Atlas O
6903 trackside shanty and elevated gate tower
2009001 Trainman engine house

Elfin Models
EM-014 Dugan's Cafeteria building front
TS-007 Precision Machine Co. building front

Lionel
12927 no. 65 yard lights

MTH
30-11030 Pennsy signal bridge
30-11039 floodlight tower
30-90188 granary

Plasticville by Bachmann
45977 loading platform and crossing shanty
45979 coal tower

Wm. K. Walthers
933-2707 Golden Valley depot

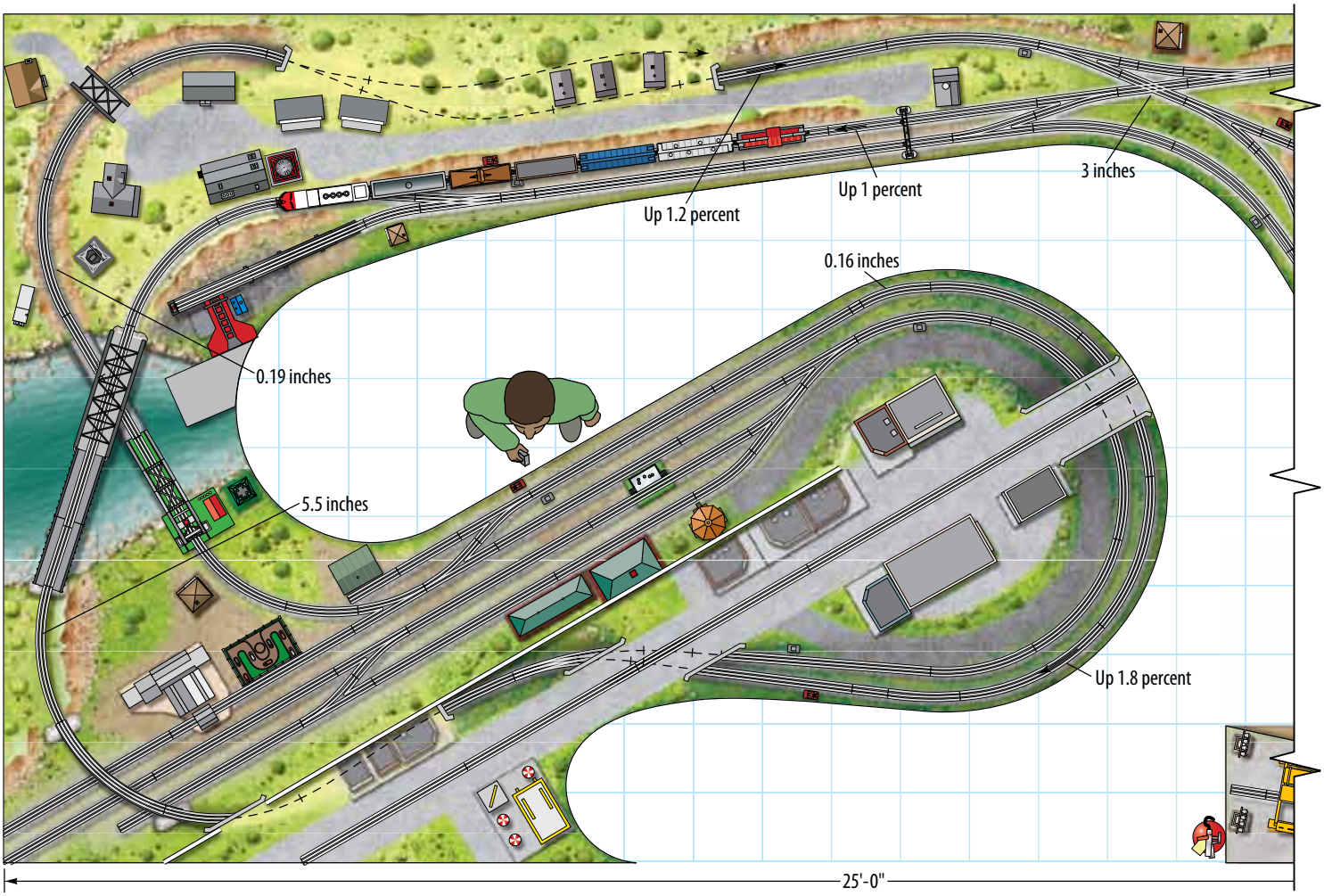
Weaver Models
G1955A 50,000-gallon water tank

12 x 25 rec-room

BUILT ON 35 YEARS OF EXPERIENCE

by Kent Johnson • illustration by Kellie Jaeger

BONUS TRACK PLAN



railroad

There's some truth to the claim that a layout can never truly be finished. However, a day may eventually come when you grow tired of working on your railroad. For my father, that day came shortly after the "Great Trolley Fire" [see CTT's October 2005 "Editor's Desk"] called attention to the hazardous shortcomings of his large, nearly 35-year-old layout.

Within a few months of the incident, my father decided to dismantle his old layout and rebuild a new and improved one. To get things started, I offered to design a new O gauge scheme to fit his 12½ x 25-foot rec-room space. But first, I wanted my dad to consider how we could make the new layout as lasting and enjoyable as the previous one.

Best laid plans

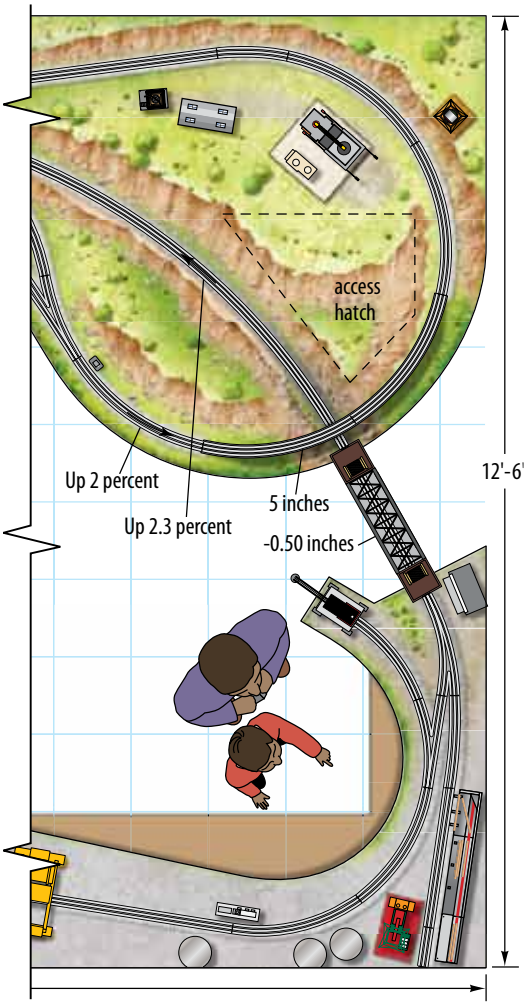
Initially, I encouraged my father to explore the design concepts that help make layouts fun to operate and exciting to watch. Aided by the Toy Train Track Plan featured in the May 2006 issue of *Classic Toy Trains*, he quickly embraced key concepts, such as accessibility and space utilization.

Next, I asked my dad to inventory his collection of trains and accessories as he moved them into temporary storage. This hands-on assessment helped him account for items that he'd forgotten and promptly update his insurance records [see CTT's January 2004 "Toy train insurance"]. With each item he removed from the layout, my father gained a better sense of which trains he preferred to operate.

Lastly, I asked my father to take into account all the design concepts, operating features, and trains in his collection, and then generate a prioritized list of the things he liked most about his old layout. With this list to guide me, I then started to draw a plan.

Right on track

What began as a shaky pencil sketch I drafted onboard an Amtrak train ultimately resulted in the 12½ x 25-foot track plan presented here. Using my



SUGGESTED ACCESSORIES

ATLAS O

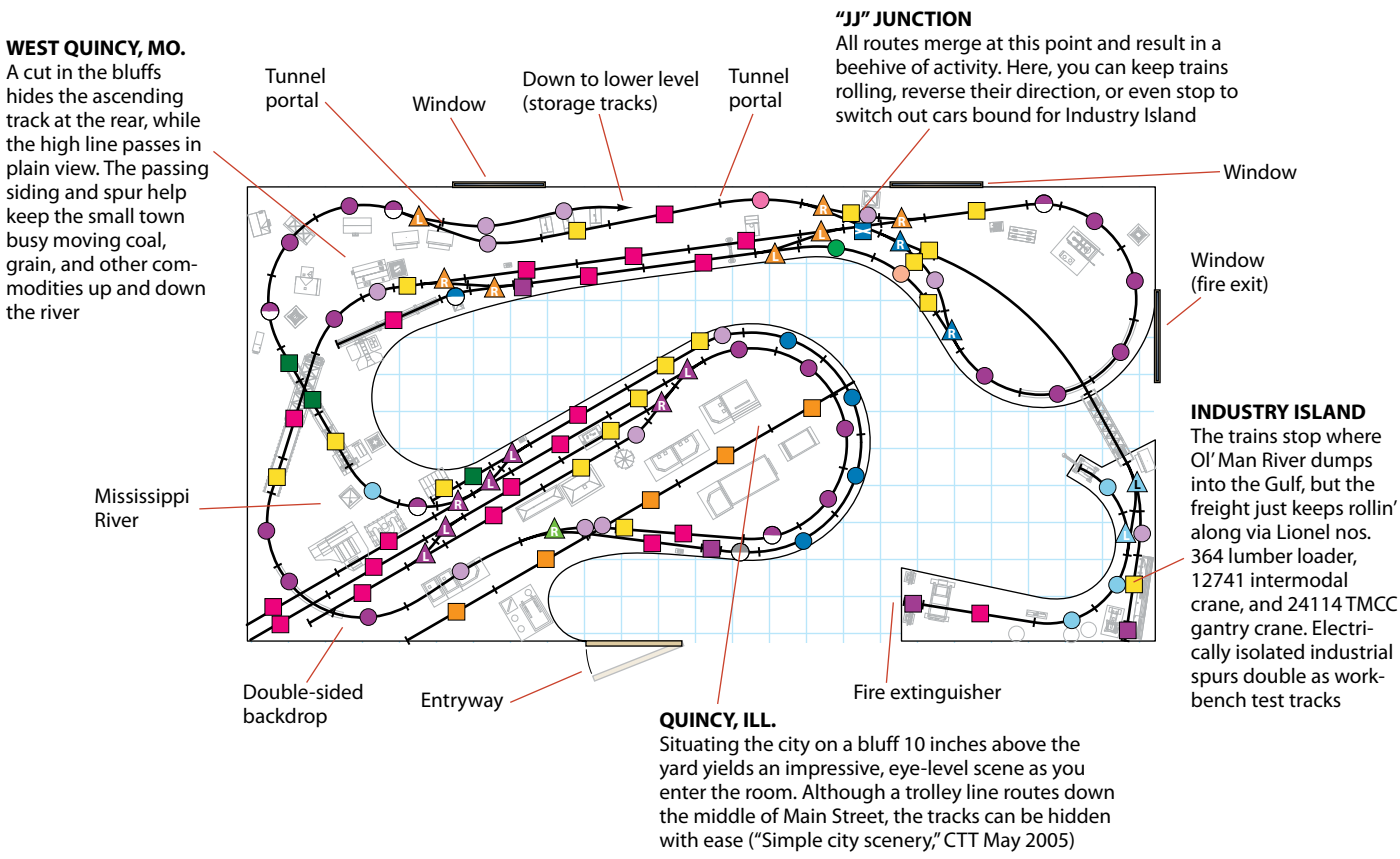
Number/Product
6923 deck girder bridge

LIONEL

Number/Product
132 passenger station
138 water tower
175 rocket launcher
195 floodlight tower (2)
356 operating freight station
364 lumber loader
395 floodlight tower
397 coal loader
450 signal bridge
494 rotary beacon
3356 horse car platform
3462 milk car platform
12726 grain elevator
12730 girder bridge (2)
12733 watchman's shanty
12741 UP intermodal crane
12749 rotary radar antenna
12768 burning switch tower
12772 extension truss bridge
12773 freight platform
12889 motorized windmill
12912 pumping station
12917 operating switch tower
12948 operating bascule bridge
14167 no. 213 lift bridge
22902 Quonset hut
22933 section gang shed
22934 cantilever signal
22945 block target signal (4)
24114 TMCC gantry crane

MTH

Number/Product
30-9012 corner drug store
30-9017 corner bank
30-9023 row house (3)
30-9029 no. 193 water tower
30-9034 McDonald's restaurant
30-9082 hotel
30-9088 vegetable stand
30-9093 fireworks stand
30-9096 CJ's Textile factory
30-9139 burning house
30-11009 cantilever signal bridge
30-11024 3-over-3 block signal (2)
30-11026 telltale (6)
30-11037 fuel column
30-11038 dwarf signal (5)
30-90005 mobile home
30-90019 Lombardi's Pizza
30-90022 Jenny Lee Bakery
30-90036 assembly hall
30-90038 seafood stand
30-90046 grainery
30-90061 coffee shop
30-90080 pool hall
30-90092 bicycle shop
30-90121 pet store



GARGRAVES TRACK COMPONENTS

Quantity	Description
2	6.2-inch straight
3	12.4-inch straight
20	37.25-inch straight
17	custom-cut straight
11	custom-cut curve
4	0-54 curve
15	0-63 curve
5	0-63 custom-cut curve
4	0-72 curve
1	0-72 custom-cut curve
1	0-80 curve
1	0-96 curve
1	0-128 custom-cut curve
1	0-138 curve

ROSS CUSTOM SWITCHES TRACK COMPONENTS

Quantity	Description
1	0-54 left-hand turnout
2	0-64 right-hand turnout
5	0-64 left-hand turnout
2	0-72 right-hand turnout
1	0-72/0-54 curved right-hand turnout
3	11-degree left-hand turnout
4	11-degree right-hand turnout
1	no. 8 curved right-hand turnout
1	30-degree crossing

LIONEL O GAUGE TUBULAR TRACK COMPONENT

Quantity	Description
5	0-27 long straight

father's focused set of notes, I could easily identify what things meant the most to him and what things could be compromised when necessary.

My dad really liked having long yard tracks to store several cars or entire trains, so that's where the new plan began. Although the riverfront yard has only three tracks, it features numerous accessories and locations for trains to work without disrupting the main line.

Coming out of the yard, the main line, made using GarGraves sectional track, immediately curves and climbs an easy 1.8 percent grade, loops back over the yard tracks, and crosses an impressive array of bridges. The Mississippi River town of Quincy, Ill., my father's hometown, once had a riverfront yard and river crossing, so I loosely fashioned the scheme to include some similarities.

Since Quincy was also a terminal for the Chicago, Burlington & Quincy RR, it didn't surprise me that the trains my dad ran most often were decorated for the "Q" or its descendents (Burlington Northern and BNSF). Other railroads, such as the Illinois Central and the Santa Fe, also appeared on his previous layout, so I included lower-level storage tracks he could use to introduce additional trains.

When traveling along the main line, trains reach a junction that's formed by a 30-degree crossing and several different track switches from Ross Custom Switches. Just beyond the crossing, the main line circles back onto itself to keep trains operating continuously.

Although the scheme is essentially a large oval, it's still possible to run trains from one point to another. Specifically, a Lionel no. 14167 operating lift bridge helps connect an island of industry to all other points on the railroad.

As the name implies, the island is isolated in the corner of the room, atop a workbench. This makes an ideal location to repair trains and operate accessories. If nothing else, my dad insisted that I include a place where his grandchildren could easily (and endlessly) play with their favorite trains and operating accessories. CTT

INDEX OF TRACK PLANS (by size)

INDEX OF TRACK PLANS (by track brand)

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