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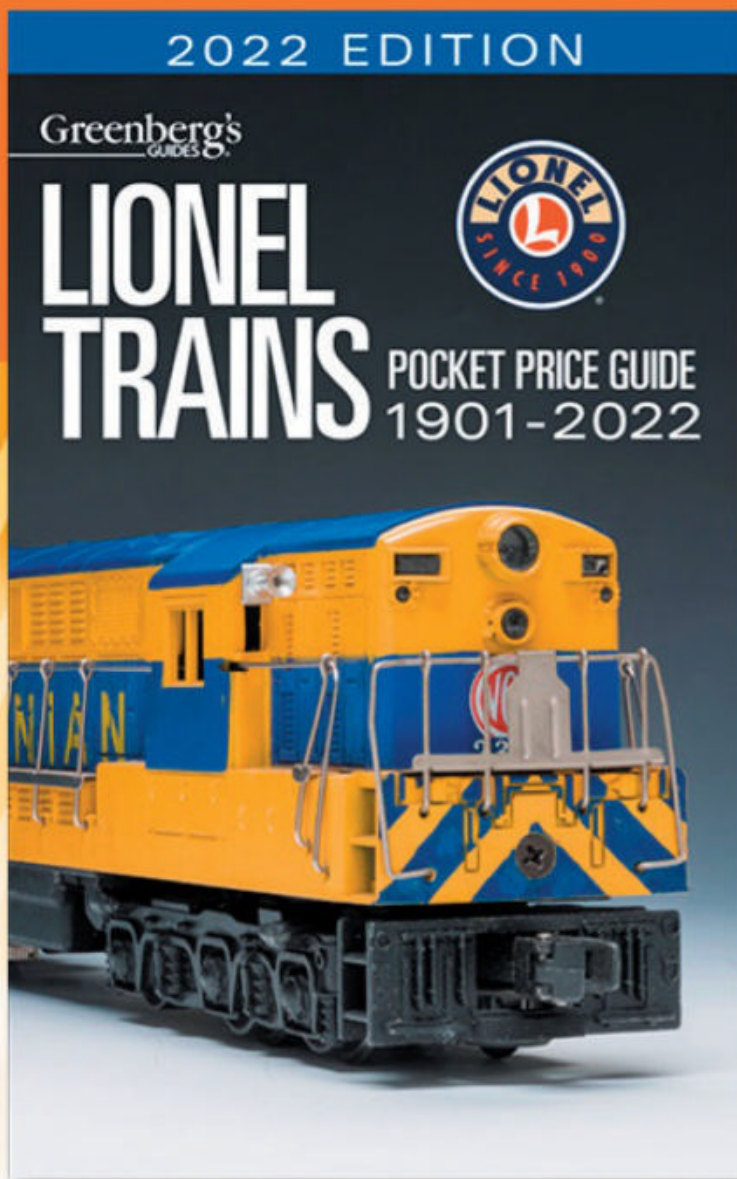
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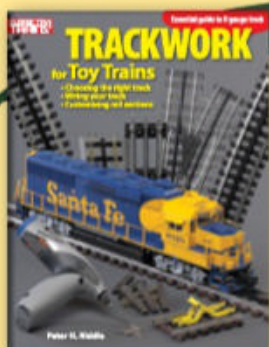
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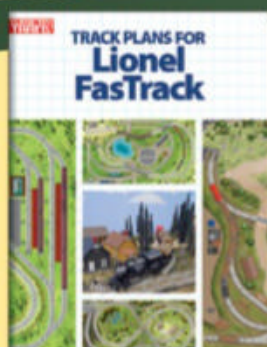


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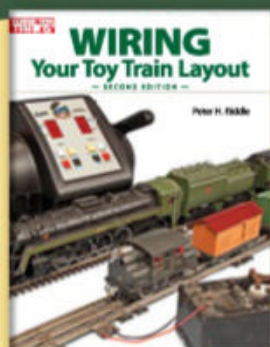
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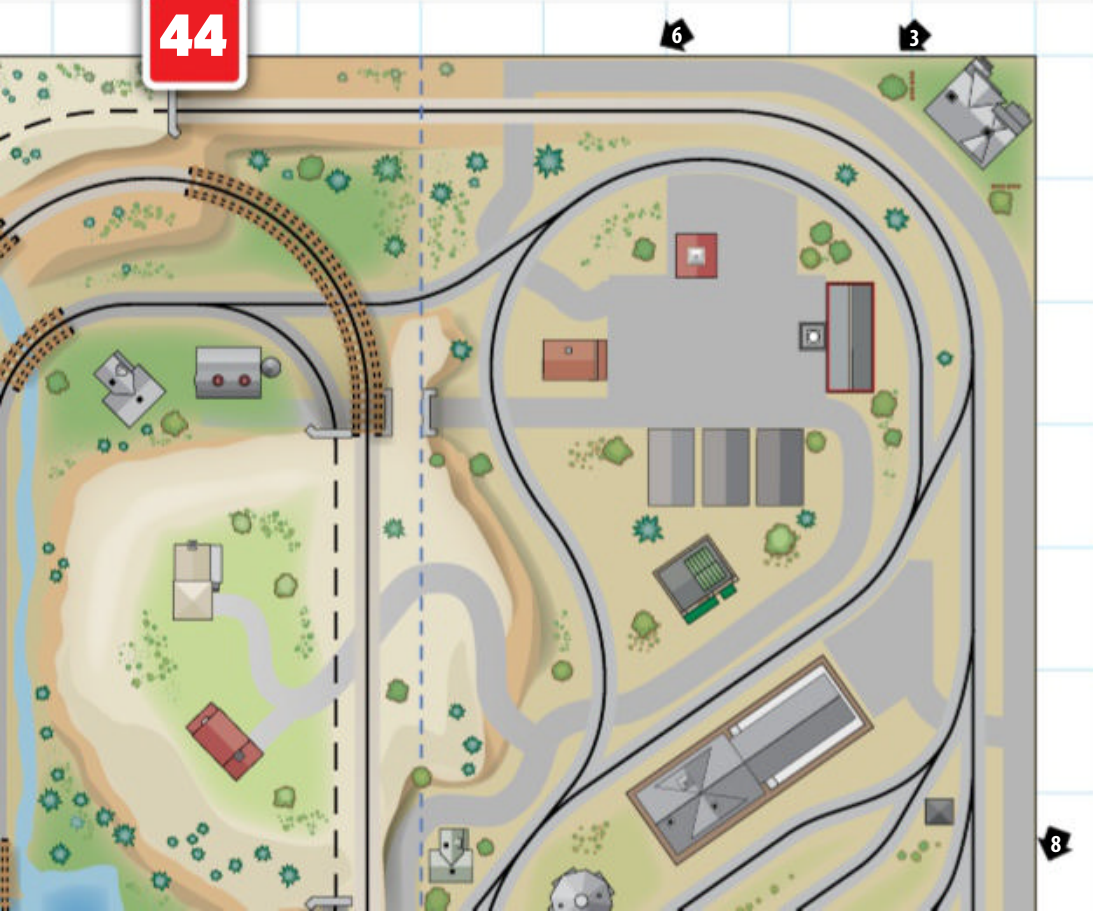
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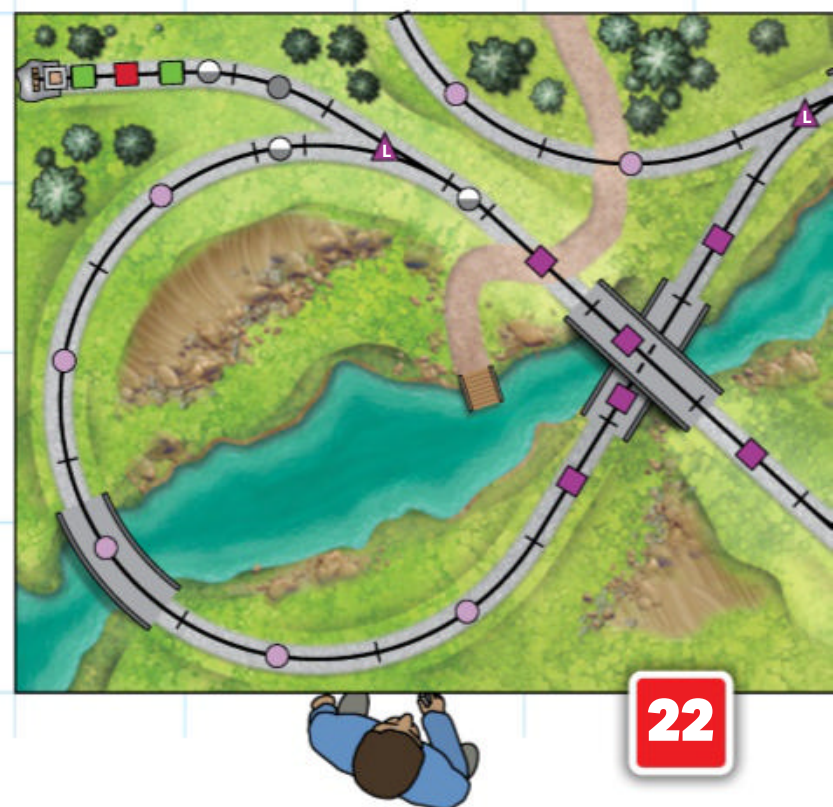
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TOY TRAIN LAYOUTS FOR SMALL SPACES

Everything you need for
a great compact layout

Welcome to the latest special-interest publication from *Classic Toy Trains*. Our editorial and art teams present *Toy Train Layouts for Small Spaces*, which, in 100 pages, offers the information and inspiration that O and S gauge modelers need for their next – or their first – layout.

You may remember our previous special-interest publication, *Families and Electric Trains*. That topic seems at first glance quite a departure from this one. *Families and Electric Trains* provided a somewhat nostalgic overview of how Lionel and American Flyer products united families in the post-war and modern eras.

Truth be told, though, families and individuals almost always started out with S or O gauge trains by building compact layouts.

In the postwar decades, kids joined their dad or mom in the basement or attic laying down a loop of track on a sheet of plywood covered with green sawdust grass mat. Then they might have added a few structures and maybe some trees. The project strengthened the bonds between generations having great fun at home.

We at CTT believe firmly that constructing a layout, especially a small one, still guarantees pleasure for parents or grandparents and youngsters of all ages. It brings them together while teaching basic carpentry and electrical skills and enhancing trust and cooperation. No

wonder we call model railroading the world's greatest hobby.

Need proof? Check out what the Esposito clan has done with their post-war trains on p. 74, or how much enjoyment the Kisver family (p. 64) and Steve Albee and his sister have had when designing a layout (p. 28). Not sure where to begin? Some veteran O gaugers, including Kent Johnson, Peter Riddle, Terry Thompson, and Mike Tylick share entertaining track plans for layouts intended to fit in a spare room.



ROGER CARP, editor

The purpose of this publication is to show anyone who is reluctant about taking the first step or worried about the time and resources necessary that a meaningful and entertaining layout can occupy less than 100 square feet – frequently a lot less.

Our goals are for these articles and plans to show readers how easy it can be to build a terrific layout – and motivate them to take the plunge. Toy train manufacturers once expressed these powerful ideas with plans and words of encouragement in their catalogs and promotional literature. We hope to carry on this tradition in *Toy Train Layouts for Small Spaces* and guide a new generation in understanding the pleasures and challenges involved when completing a layout.

Roger Carp

Roger Carp, Editor

CLASSIC TOY
TRAINS

SPECIAL ISSUE

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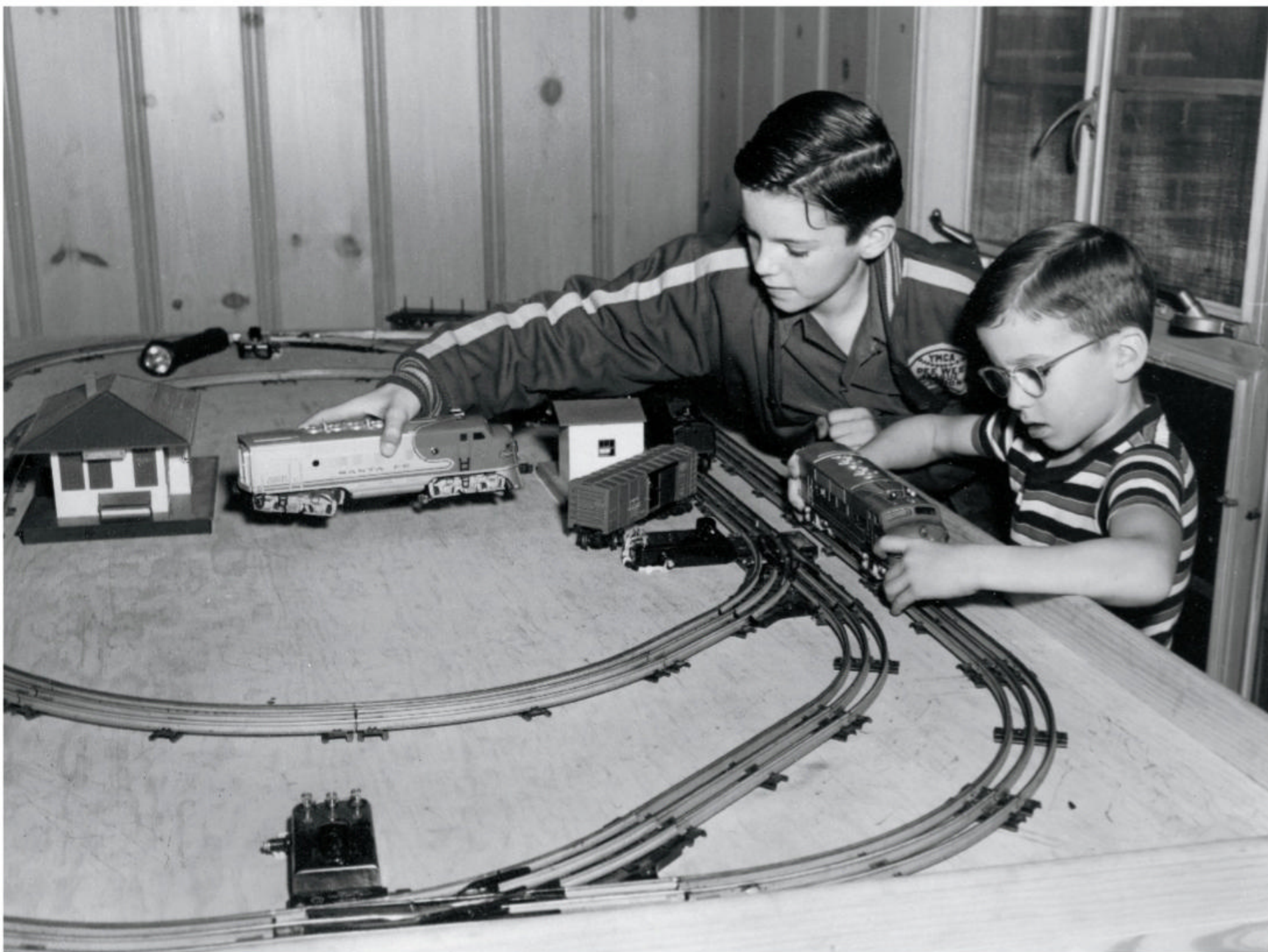
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MODEST BEGINNINGS

Where so many of us started with our toy trains

STORY BY ROGER CARP

Toy Train Layouts for Small Spaces, as you're all about to discover, offers wonderful looks at several outstanding and creative compact O and S gauge model railroads. Terrific photographs and descriptions of layouts plus the many excellent track plans drawn by our illustrators show how much action, enjoyment, and animation can be packed into less than 100 square feet.

Small two- and three-rail model railroads were how millions of toy train enthusiasts entered the hobby. Like the two youngsters captured in this evocative black-and-white from around 1950, they started with a loop or two of track, an engine, a few freight cars, and a transformer. Then, often working alongside a parent or grandparent or maybe a sibling or neighborhood friend, they developed a miniature rail empire.

Modest beginnings were the rule, and no one complained

about having only a sheet of plywood or a ping-pong table on which to start. Why? Because youngsters brought with them vivid imaginations, so they could pretend their small layout was bigger and more elaborate than their eyes told them. They gained inspiration to stay with their trains, adding track and switches as well as another locomotive and more freight and passenger cars.

This picture and the unidentified boys in it epitomize the value and beauty of compact layouts. Great fun can be had when starting small. Desires to learn more and dreams of model railroads larger and more detailed are nurtured. No matter how long you've been in the hobby, the projects and plans highlighted in this special-interest publication will help your imagination soar. Time to take the plunge and make your own small beginning. **CTT**

SMALL WORKHORSE CTT'S CITY TRANSFER & TERMINAL

This multi-role 5 x 9 layout truly earns its keep

STORY BY CTT STAFF

Parked in a hallway at Kalmbach Media is one of the hardest-working layouts in O gauge railroading. Given its humble accommodations, you'd never know it's one of the stars of *Classic Toy Trains* and *Trains.com*. But when it's asked to perform, it does so without fail. It looks good doing it, too.

The City Transfer & Terminal was built as a project layout in 2017 and appeared in the magazine the following year. The four installments detailed its construction by members of the CTT and Model Railroader Video Plus staff.

Like almost all the layouts built at Kalmbach Media, it was designed with space and portability in mind. It doesn't spend its entire life in the hallway; it has work to do! Its size and the inclusion of wheels on the benchwork allow it to roll through the doorways of our workshop or photo and video studios.

On any given day, the CT&T might serve as a test track for a locomotive or rolling stock review, the background for a photo shoot, or as the source of a project for video on *Trains.com*. Its wiring makes it easy to run trains and accessories using a variety of control systems, from a massive Lionel ZW transformer to an app-equipped smartphone.

Thanks to its forward-looking design and robust construction, the CT&T is likely to give quite a few more years of service. That's a pretty good life for a compact layout!



The 5 x 9 City Transfer & Terminal punches above its weight. It gets plenty of use for photos, video, and just general train running.

Bob Keller and video producer Ben Lake make an episode of Bob's Train Box for Trains.com, co-starring the CTT!



TRACK PLAN

For most hobbyists, the first step in developing a track plan is to compile and assess your layout design preferences. Legendary layout designer John Armstrong coined the phrase “Givens and Druthers” when referencing these key factors in helping determine if you’ll end up with a layout you’ll actually enjoy!

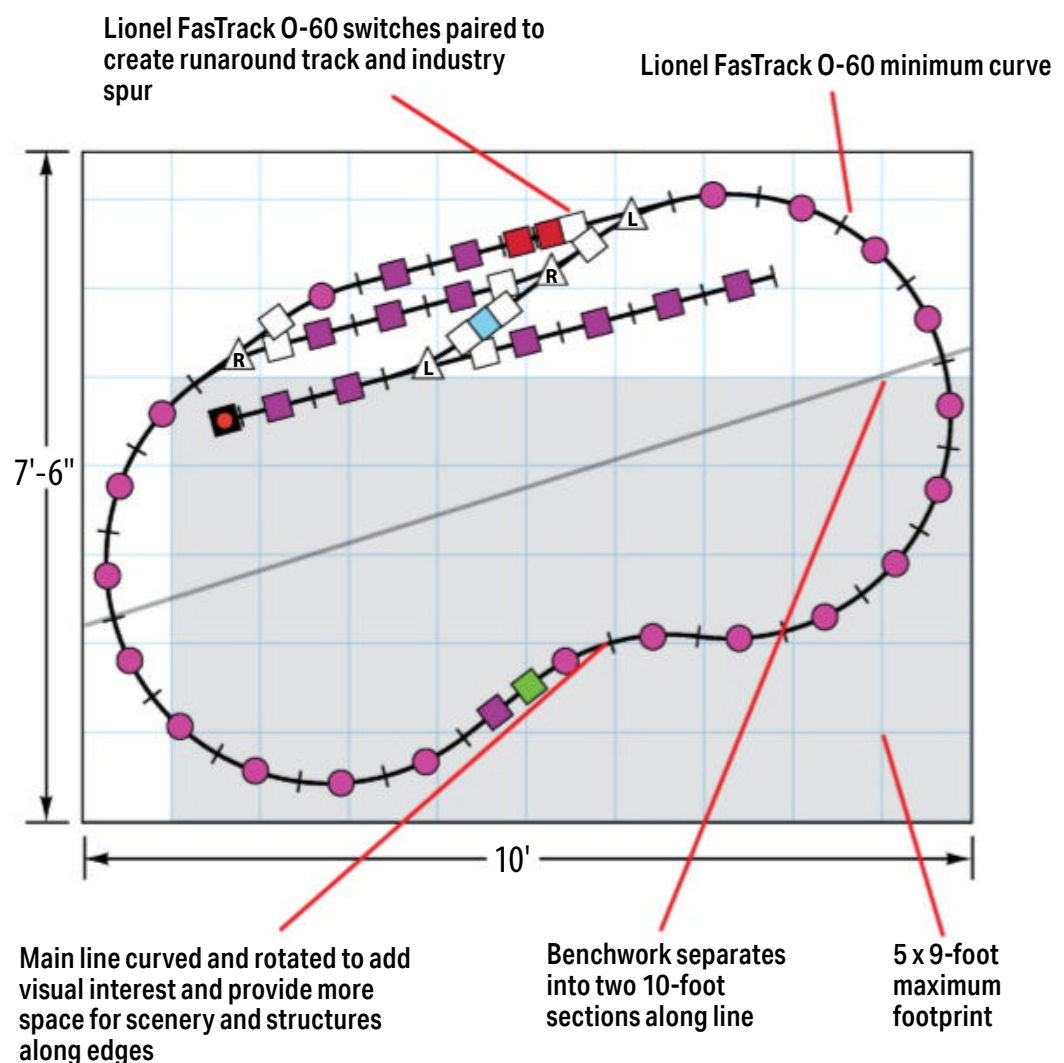
But for our next foray into O gauge layout construction, David and I defined just one criteria that had to be met. Without question, this layout had to move easily in and out the double doors of our frequently utilized workshop space.

So, after establishing our 5 x 9-foot canvas, I then queried CTT’s Bob Keller and Carl Swanson for their layout preferences. As expected of CTT’s product review specialist, Bob yearned for wide sweeping curves to host some of the largest locomotives currently manufactured. Similarly, Carl had a keen interest in seeing how we could incorporate some of the massive industrial structures now arriving on the O gauge market.

And then there was that little voice in my head constantly suggesting any industry on the layout would need to be served by rail. Meaning of course, additional sidings and spurs would be required to keep the main line free and clear.

Having just a few toy train track plans under my belt, I knew the impossible task that lay ahead. But why keep that to myself? I decided it might just be helpful to illustrate what 50 pounds of stuff looks like when forced into a five-pound bag. While this original plan was never a real consideration, it clearly demonstrates the importance of shaking out your criteria prior to buying even a single section of our preferred Lionel FasTrack.

With a nip here and a tuck there, all very manageable when using R&S Enterprises’ RR-Track for Windows (rrtrack.com), I was well on my way to shaping a midsize layout that maintained characteristics of something much larger. Indeed, comprises and complication factor into all phases of construction. All but the next one, that is – the construction of our 5 x 9-foot benchwork! – *Kent Johnson*



LIONEL O GAUGE TRACK COMPONENTS

Quantity	Description/Number
8	1.38-inch straight (12073)
1	1.75-inch straight (12026)
2	4.5-inch straight (12025)
1	5-inch straight (12024)
12	10-inch straight (12014)
20	O-60 curve, 22.5-degree (12056)
2	O-60 right-hand track switch (12058)
2	O-60 left-hand track switch (12057)
1	bumper (12059)

SUGGESTED MODERN-ERA ACCESSORIES

LIONEL

- 1 short extension bridge (62716)

MENARDS

- 1 hobby shop building (2792677)
- 1 Morton Salt factory (2793847)
- 1 Pepsi bottling plant (2793860)
- 1 York Hotel Royale (2793973)

MTH

- 1 passenger station (30-9014)
- 1 townhouse (30-9080)
- 1 Katz's Deli (30-90020)
- 1 coffee shop, opposite corner (30-90061)

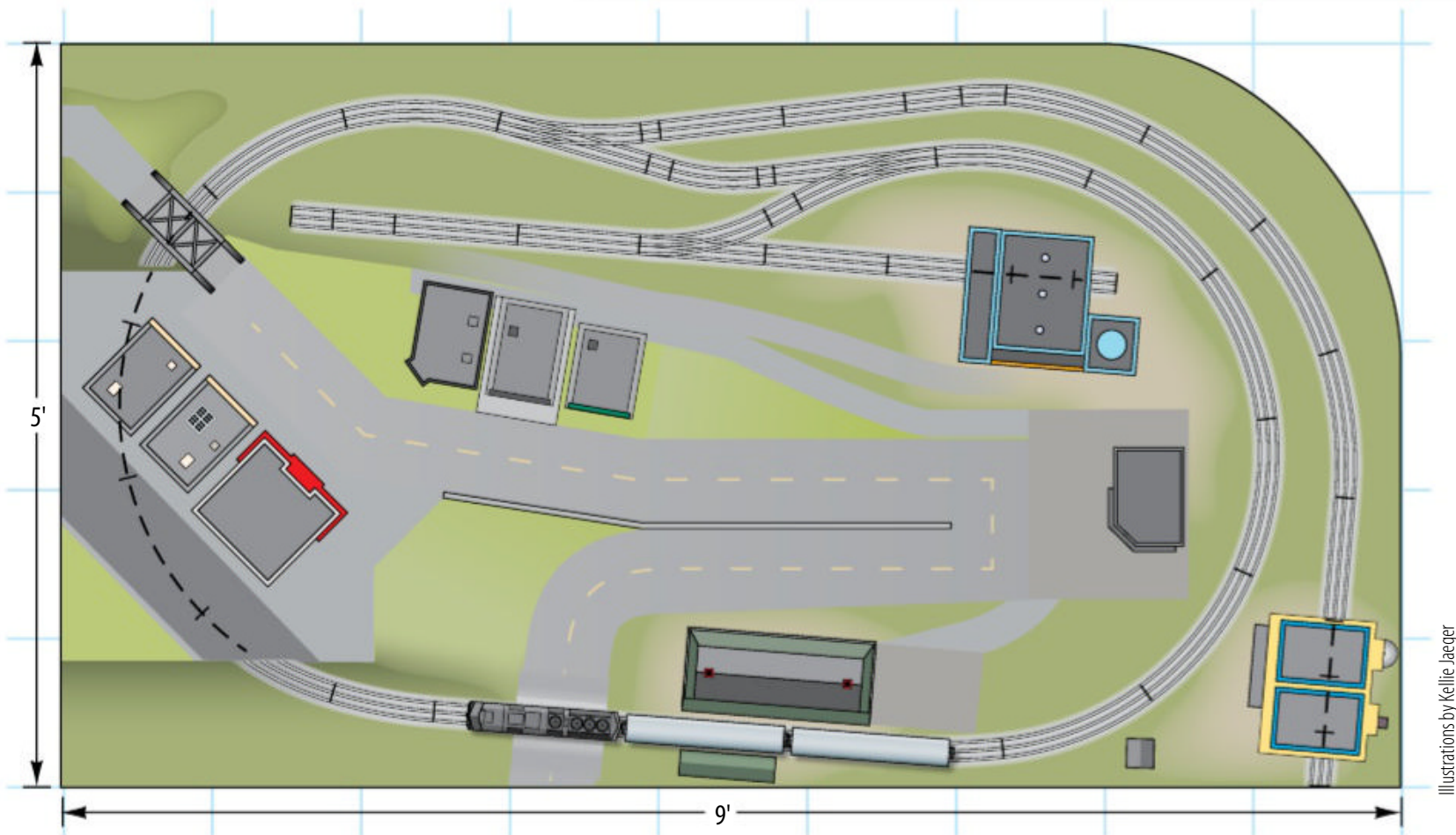
WOODLAND SCENICS

- 1 J.W. Shoe Cobbler (5843)
- 1 Emilio's Italian restaurant (5855)
- 1 work shed (5857)

This track plan, along with most others published in CTT or the CTT Track Plan Database on [Trains.com/ctt](https://www.Trains.com/ctt), features 1-foot grid lines that make it easy to transfer the plan from paper to plywood or pink foam insulation board. You'll see how helpful this step becomes when you watch the track assembly process in the instructional videos on [Trains.com](https://www.Trains.com).

LIONEL O GAUGE TRACK COMPONENTS

Quantity	Description/Number	
4	1.38-inch straight (12073)	1 0-36 curve, 11.25-degree (12023)
2	1.75-inch straight (12026)	1 0-36 curve, 22.5-degree (12022)
5	4.5-inch straight (12025)	12 0-48 curve, 30-degree (12043)
2	5-inch straight (12024)	4 0-60 curve, 22.5-degree (12056)
2	5-inch insulated straight (12029)	2 0-84 curve, 11.25-degree (12061)
6	10-inch straight (12014)	1 0-36 left-hand track switch (12045)
1	10-inch terminal straight (12016)	2 0-60 left-hand track switch (12057)
1	10-inch activator straight (12027)	1 grade crossing (12036)
		2 bumper (12059)



This leg of the spur can be electrically isolated to function as a locomotive storage track

Lionel FasTrack O-36 switch can easily accommodate small switcher used by industries

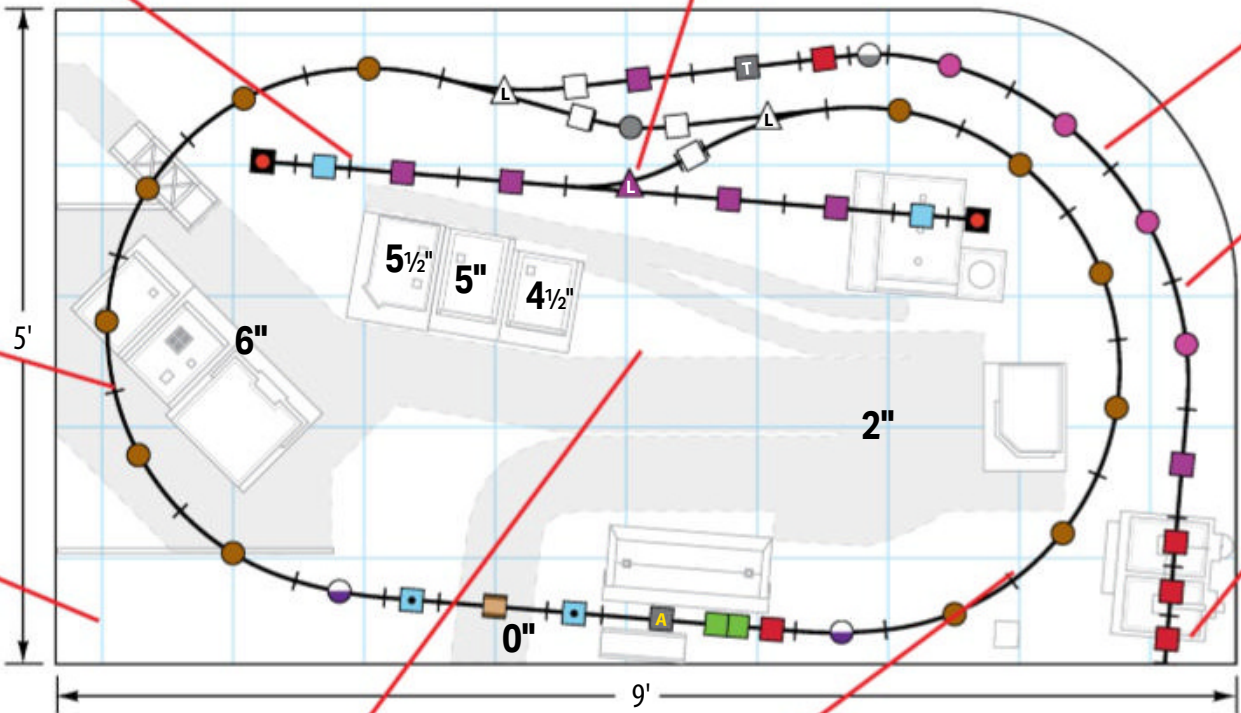
Lionel O-60 switches and curves along spur still provide a location to test locomotives requiring wide curves to operate

Long industrial spur can hold as many as 8 freight cars

Track spurs that extend to the edge to provide an easy location for layout expansion

6-inch separation between subroadbed and underside of elevated section

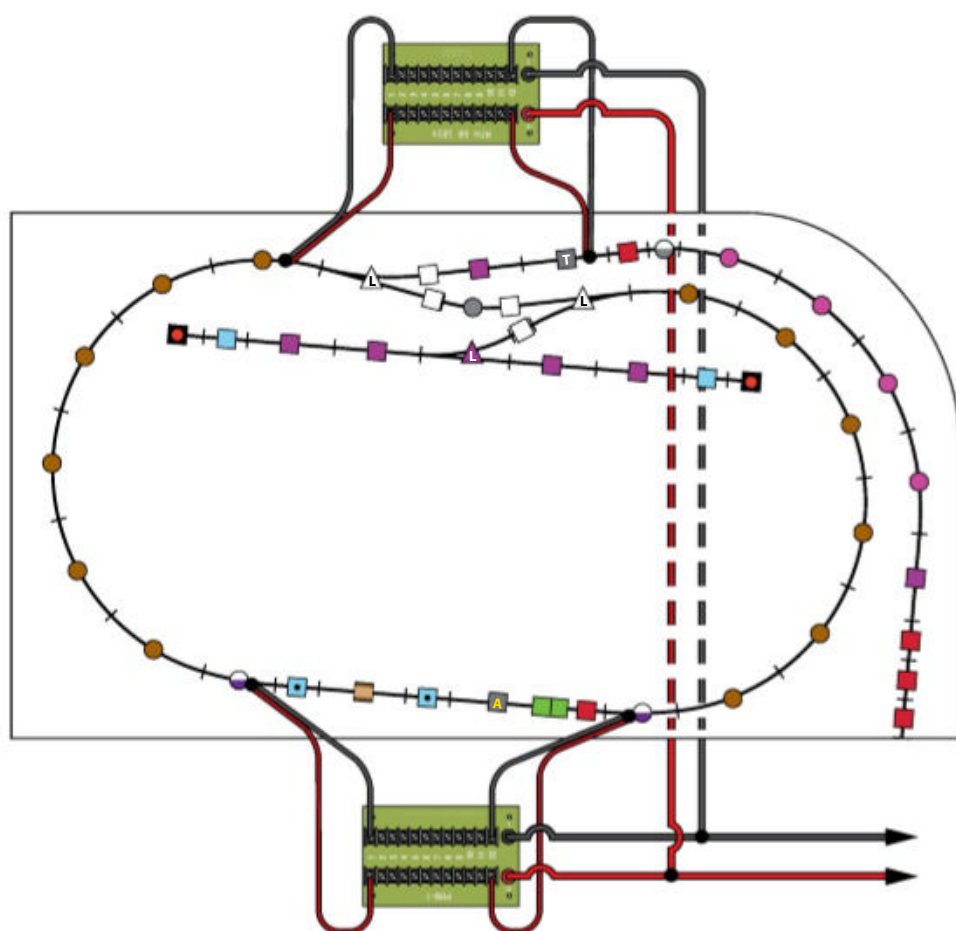
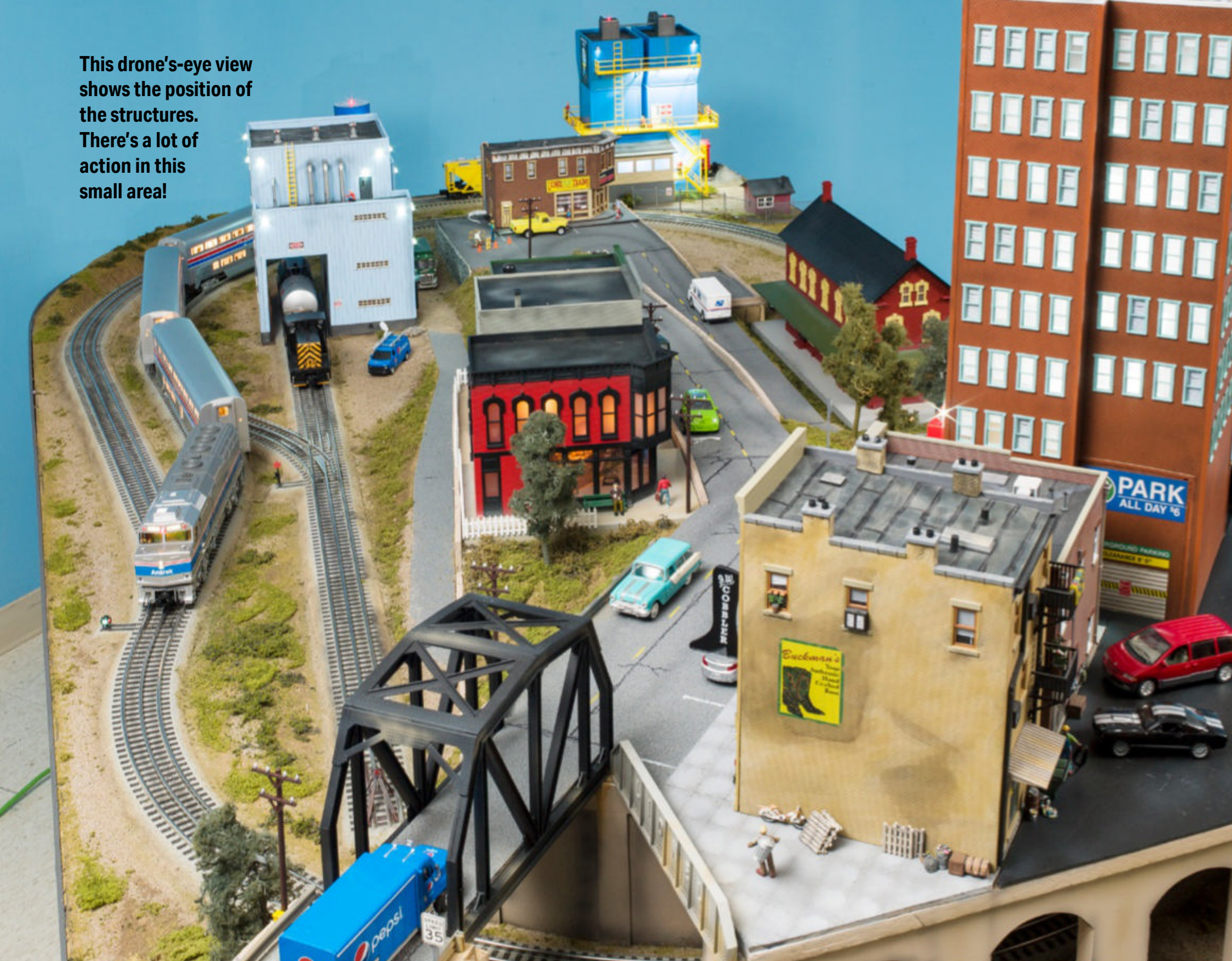
Space left vacant for control panel or power pack



Elevated city center and road form a realistic view block

Lionel FasTrack O-48 minimum curve

This drone's-eye view shows the position of the structures. There's a lot of action in this small area!



TRACK WIRING

The tight-locking, metal-to-metal pins used on Lionel FasTrack provide a sound physical link to adjacent sections, plus a solid electrical bridge, too. In fact, electrical continuity is so good, I initially looked to power the track using only the two wires routing from the Lionel FasTrack no. 12016 terminal section. I eventually yielded to conventional layout wiring practices and used Lionel no. 12053 Power Wire to add a few track “feeders” (short lengths of wire extending from the center rail and an outside rail), all connected to an MTH no. 50-1014 12-port terminal block.

The adjacent wiring schematic shows all of these connections, along with the second terminal block I included to easily attach an AC-powered track transformer along either side of the layout. **CTT**

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BUILDING THE BENCHWORK FOR A 4 x 8 LAYOUT

A great layout starts
with a solid base

BY KENT JOHNSON ● Photos by Jim Forbes, Kent Johnson, and William Zuback

Whether you're building a basement-sized empire or a basic layout, the first step is always the same: Erect a framework to raise the track off the floor.

This is classic benchwork made from good ol' lumber and plywood not unlike a Lionel or American Flyer display layout from the 1950s. However, by using the correct fasteners, framing, and bracing,

you can construct sturdy benchwork out of some substantially lighter construction materials than they did in days past.

Even if you don't have much experience in carpentry, it's not difficult to build quality benchwork. All the materials can be found at any home-improvement center.

You don't need a workshop filled with power tools, either. A variable-speed drill and a circular or a miter saw can handle

nearly every construction task.

In the photographs and illustrations that follow, you'll see the techniques we used to build the foundation for a modern iteration of Lionel's no. D-146 display layout. That said, the resulting basic benchwork can be used for other 4 x 8-foot plans in any scale. With some planning, the benchwork design could even be modified to accommodate multiple scales.

CTT staffers (from left) Carl Swanson, Roger Carp, Kent Johnson, and Bob Keller show off a great 4 x 8 layout built on solid benchwork.



BUILD A CLASSIC LIONEL DISPLAY

1 Benchwork

Our benchwork for the D-146 4 x 8-foot layout uses standard dimensional lumber (1 x 2s, 1 x 3s, and 1 x 4s) for the legs and frame and ½"-thick plywood for the tabletop. The illustration below shows the important dimensions for building the frame and legs as well as how to assemble the fold-down control panel.

Making tight joints is a key part to building sturdy benchwork. You can accomplish this using carpenter's wood glue and 2" nails or screws for all the connecting points on the frame. If you use screws, you can avoid splitting the wood by drilling pilot holes first. In addition, as you build the framework, be sure to check your assembly periodically with a carpenter's square. It's far easier to make adjustments before the glue has set.

MATERIALS LIST

TABLE FRAME

1 x 2 (1)
1 x 3 (2)
1 x 4 (5)
½" plywood, 4 x 8 foot sheet (1)

LEGS

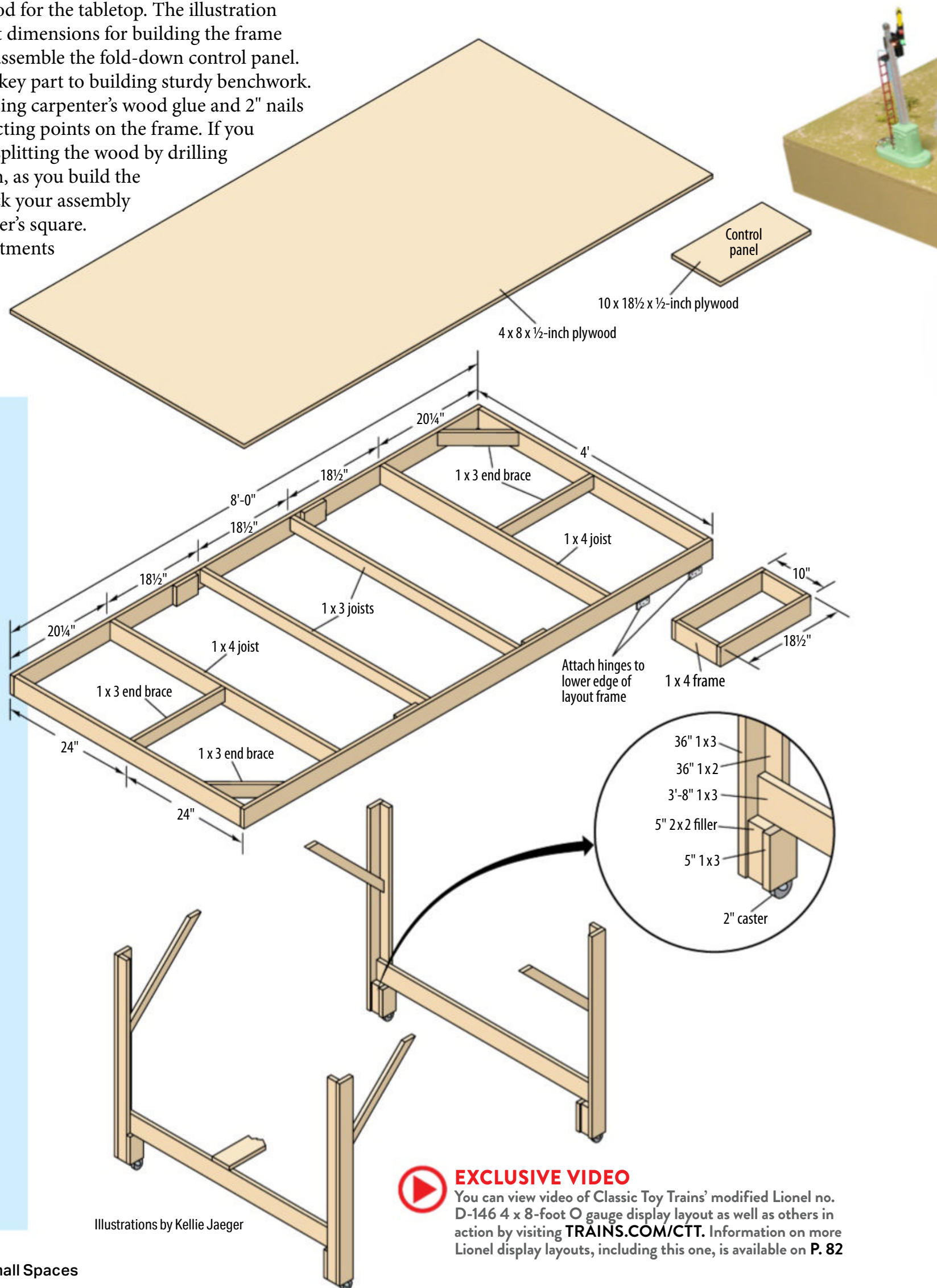
1 x 2 (3)
1 x 3 (4)
2 x 2 (1)
2" swivel casters (4)
No. 10 x 2" screws (16)

CONTROL PANEL

1 x 4 (1)
½" plywood, 2 x 4-foot handy panel (1)
2" piano hinge (2)

MISCELLANEOUS

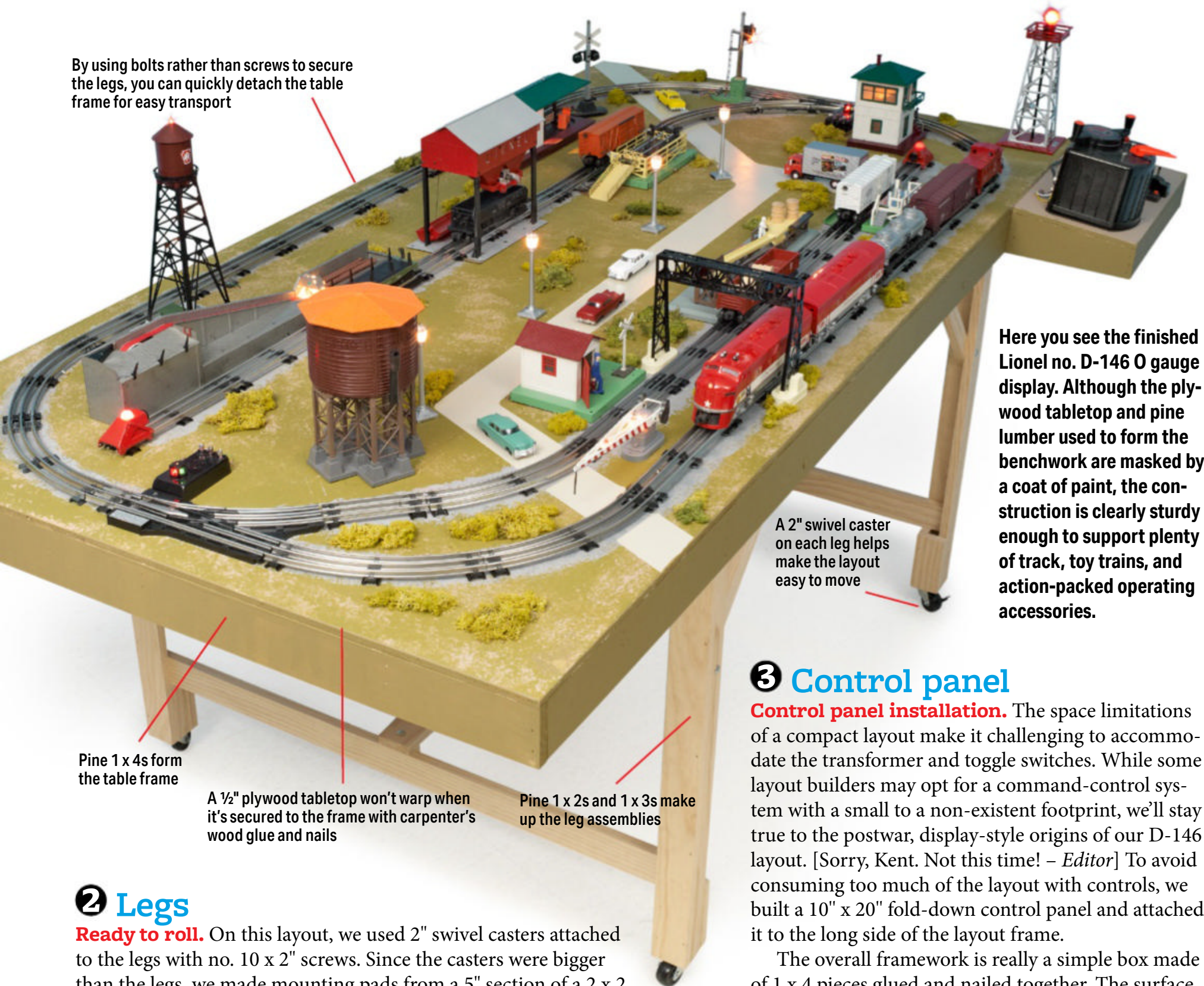
Carpenter's square
Carpenter's wood glue
2" finishing nails
¼" x 2½" carriage bolts (14)
¼" x 3" carriage bolts (6)
¼" washers (20)
¼" wing nuts (20)



EXCLUSIVE VIDEO

You can view video of Classic Toy Trains' modified Lionel no. D-146 4 x 8-foot O gauge display layout as well as others in action by visiting TRAINS.COM/CTT. Information on more Lionel display layouts, including this one, is available on P. 82

By using bolts rather than screws to secure the legs, you can quickly detach the table frame for easy transport



Pine 1 x 4s form the table frame

A 1/2" plywood tabletop won't warp when it's secured to the frame with carpenter's wood glue and nails

Pine 1 x 2s and 1 x 3s make up the leg assemblies

A 2" swivel caster on each leg helps make the layout easy to move

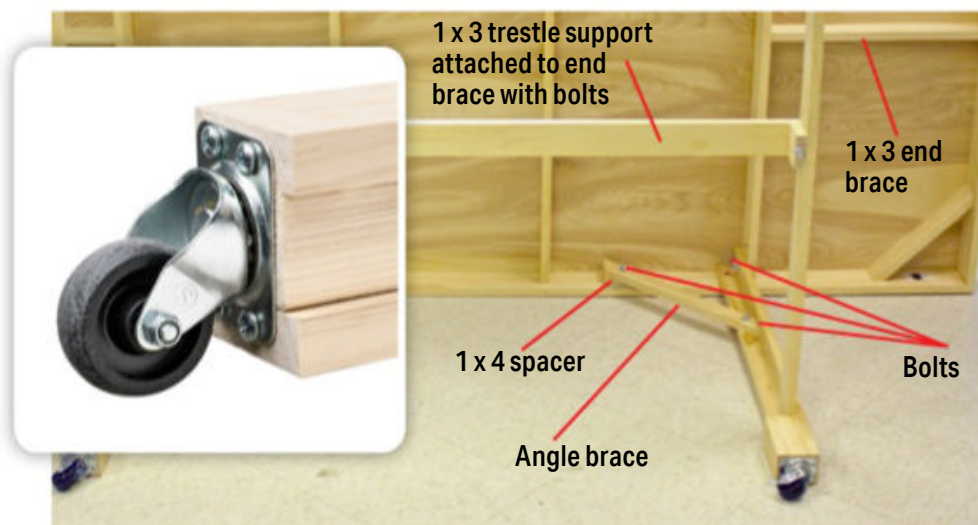
Here you see the finished Lionel no. D-146 O gauge display. Although the plywood tabletop and pine lumber used to form the benchwork are masked by a coat of paint, the construction is clearly sturdy enough to support plenty of track, toy trains, and action-packed operating accessories.

2 Legs

Ready to roll. On this layout, we used 2" swivel casters attached to the legs with no. 10 x 2" screws. Since the casters were bigger than the legs, we made mounting pads from a 5" section of a 2 x 2 and a scrap piece of 1 x 3.

Attaching the legs. For easy transport, we built the layout so the tabletop separates from the leg assemblies. As shown in the photo, each leg is held to the benchwork with 1/4" x 2" carriage bolts with wing nuts and washers. Each leg also has its own 1 x 2 angled brace. For the brace to properly align, we installed 1 x 4 spacer blocks inside the table frame with a bolt.

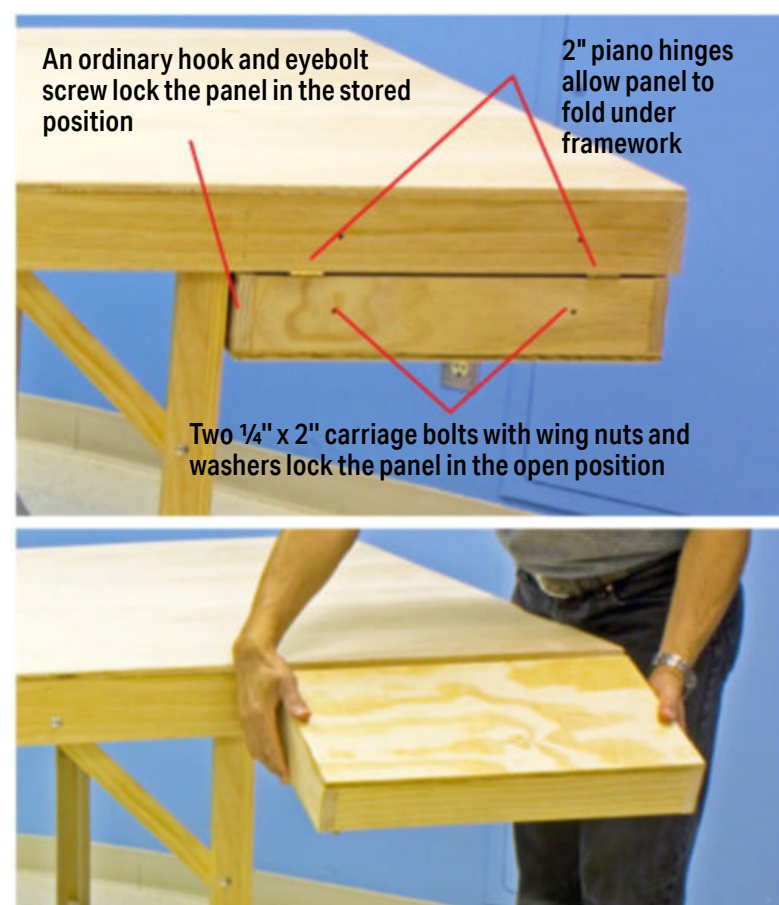
As shown in the center illustration, the legs are paired with some 1 x 3 end braces. We used an additional 1 x 3, much like a trestle table support, to lock the legs together.



3 Control panel

Control panel installation. The space limitations of a compact layout make it challenging to accommodate the transformer and toggle switches. While some layout builders may opt for a command-control system with a small to a non-existent footprint, we'll stay true to the postwar, display-style origins of our D-146 layout. [Sorry, Kent. Not this time! – Editor] To avoid consuming too much of the layout with controls, we built a 10" x 20" fold-down control panel and attached it to the long side of the layout frame.

The overall framework is really a simple box made of 1 x 4 pieces glued and nailed together. The surface of the panel received a 1/2" plywood top, which we also glued and nailed in place. **CTT**



MEET THE CHAIRMAN OF THE BOARD

Amazing O gauge layout in 4 x 8 feet

STORY BY ROGER CARP
Photos by John Cunius

1 Is there an O gauger who does not have a soft spot in his or her heart for Lionel's no. 2245 *Texas Special* F3 A-B combination from 1954-55? John Cunius caught the magnificent diesels as they rounded a bend on his layout by parked construction vehicles.



John, to his great credit, has devoted his years in the toy train hobby to exploring the endless possibilities available on a sheet of plywood to a creative modeler.



Without any further ado, the moment has finally arrived for us to proudly introduce John Cunius, the O gauge modeler capable of building an empire on plywood. You read correctly, a mighty three-rail system in his family home encompassing a mere 32 square feet. No wonder he's known just about everywhere as the "chairman of the board."

Let's be clear about John. He isn't the presiding officer of a corporate board of directors. And he doesn't fancy himself as another impersonator of show business' "chairman of the board," Frank Sinatra. The board in question is the sheet of plywood measuring 4 x 8 feet you can purchase at any local lumberyard.

John has chosen to use that common piece of wood as the medium on which he has created a stunning work of art. And the 4 x 8 has been his preferred platform virtually his entire life as a model rail-roader, a span of about 40 years at this point. So when John insists a great-looking and enjoyable O gauge layout need occupy just a board, you quickly discover he knows what he's talking about.

Lessons from Dad

Now a humble John will hasten to deflect credit from what some modelers might declare a brilliant breakthrough in an age when folks believe more always is better.



2 Can you imagine a more inviting corner than this one, at least to anyone who's a fan of vintage or contemporary O gauge trains? John has designed a 4 x 8-foot layout with two levels of activity. He has plenty of steam and diesel locomotives to run on them.

3 John is quick to prove to skeptics that he can operate some really big locomotives on his 4 x 8 empire. Check out the massive Lionel no. 11909 Norfolk & Western 4-8-4 steam engine drifting past a Lionel no. 464 operating lumber mill from postwar days.

He certainly didn't invent the 4 x 8! But what he learned working on an assortment of sheets of plywood alongside his father has informed every compact layout he has designed, constructed, wired, and landscaped since his childhood.

John's schoolroom when it came to model railroading actually was the spacious home in which he grew up. His dad, a Lionel enthusiast, filled available cabinets and shelves with cataloged outfits, locomotives, cars, and accessories. The elder Cunius collected postwar trains not

merely to admire them on display but also to use them for the impressive temporary layouts built every Christmas.

Those holiday operating displays were, according to John, "huge!" They tended to be so enormous that father and son needed to take them apart before removing them from the attic and reassembling them in the family's living room.

From Thanksgiving through the middle of December, John kept himself busy arranging the Plasticville structures, checking on all the accessories, moving around miniature vehicles, adding trees and shrubs, and painting more and more plastic figures.

If you hadn't guessed by now, John will be the first to tell you that he loved every minute of every step involved in developing the Christmas railroads. The only way things got better was the cold morning in 1982 when the 8-year-old received his first Lionel train from Santa Claus: a no. 8762 Great Northern EP-5.

That handsome electric-profile locomotive inspired John to commence building his own layouts. By the time he had graduated from high school, he had constructed a host of model railroads in scales as small as N and as large as O. True, they

The task of designing a compelling and very entertaining O gauge railroad on a mere sheet of plywood demands creativity and discipline. John has those traits, as his 4 x 8 layout proves. The numbered arrows correspond to the numbers in each of his captioned photographs.



4 The Lionel no. 18104 Great Northern F3 easily takes your breath away with its stately beauty. Still, we recommend you glance down to admire John's superb trackwork.

differed in the type of trains operated and the degree of scenery, but every one of them shared an important characteristic: John always used a 4 x 8 as the base.

Comfortable sheets

There was something very comfortable and familiar with a 4 x 8 sheet of plywood that brought John back to that kind of modeling when he decided to launch work on the detailed O gauge railroad being showcased here. He understood what completing it would demand of his

resources and free time, and therefore felt confident he would be able to get from start to finish fairly quickly.

Mental images of what the layout should look like were translated into sketches and plans in no time at all. John wanted a layout with an elevated area as well as the main level on the surface of the 4 x 8 made out of ½"-thick plywood. The best height struck him as 39" off the floor, with the second level 8" higher.

In the past, John had relied on tubular track, and he was very tempted to follow

that route again. But curiosity about the FasTrack system developed by Lionel pushed him to use it. The realistic look of the FasTrack straights, curves, and switches pleased him, even if in retrospect he found them to cost more than he liked. Diameters ranged from 31" to 36".

Experience as an HO and N scale modeler motivated John to enhance the appearance of his track with ballast from Woodland Scenics. Once he had secured it in place and tested the remote-controlled turnouts, he was ready to move ahead.

AT A GLANCE

Name: John Cunius' O gauge layout

Dimensions: 4 x 8 feet

Track and switches: Lionel FasTrack (diameters range from 31 to 36 inches)

Motive power: K-Line, Lionel (post-war, modern), MTH, Williams

Rolling stock: K-Line, Lionel (post-war, modern), MTH, Williams

Controls: Lionel types KW, ZW transformers with TrainMaster Command Control

Accessories: Lionel, MTH

Structures: Plasticville

Vehicles: Hot Wheels, Matchbox

Figures: Woodland Scenics

Simple electronics

When it comes to the electronics on this compact layout, John summarizes his thoughts in a pithy three-word explanation: “I’m old school.” Anyone who looks puzzled will immediately get the picture straight when he continues by describing himself as “a simple guy” whose preferences tend to be for postwar engines and transformers with maybe a few items from the 1970s (“the MPC era”) thrown in.

John boils it down to the feeling he has that the extravagant sounds and lighting effects on contemporary locomotives are just that – extravagant features he hardly needs to enjoy running trains. Postwar items from Lionel as well as reproductions from Williams more than satisfy John. What he calls “the bells and whistles” on current-production items mean little. He does own some recent motive power, but could do just fine without any of them.

Consequently, John prefers to operate his trains via conventional control. No surprise he lets two of Lionel’s toughest transformers from its golden age in the

1950s – types KW and ZW transformers – take care of everything. The only reason he occasionally switches over to Train-Master Command Control is because he has locomotives with special features that can be activated with it.

Other than the rudimentary control panel and the Lionel nos. 153 block signal and 450 signal bridge put into action, the electronics seldom come to mind. As for wiring, John mentions soldering 18-gauge feeders every 4 feet to the main lines and sidings. Thinner 20-gauge solid-core wire takes care of other functions, specifically the assortment of K-Line and Lionel operating accessories installed.

Scenery goes fast

No matter how elaborate the landscapes planned for a layout filling one board, there’s little chance they will require months of labor. Of course, when you’ve built many layouts over a lifetime as John has, everything is destined to move along faster and faster while being easier and easier. Scenery was a ball.

For the landforms that John created, he started with 1-inch-thick pieces of foam-board he layered and then carved with an array of hand tools, ranging from knives to rasps. He later colored the exterior with latex house paints and different hobby colors. He airbrushed them on with care and patience. A solid foundation was prepared for the landscaping.

John turned next to the lengthy lists of scenery materials marketed by Woodland Scenics. He spoke with satisfaction about the dirt, grass, and turf available in different colors, textures, and weights from that respected company.

Woodland Scenics was, in addition, the business from which John ordered commercial bushes and shrubs to arrange. Certain spots on the layout benefited from the tall grass he made using an upside-

5 On a Saturday morning, just about an hour before the Frosty Bar opens, only one cook is behind the counter to appreciate the Lionel no. 38365 Santa Fe “black bonnet” F3 diesels leading a passing freight.





down paint brush neatly highlighted with a green felt-tip pen. Elsewhere, he glued down shades of moss and lichen.

The shallow bodies of water didn't pose much of a challenge either for John. He added a couple of coats of Mod Podge Gloss, an all-in-one decoupage glue, sealer, and finish purchased at a crafts store. That

material dried in a jiffy, thereby giving him plenty of time to sand it smooth to obtain a shiny finish.

Details in and around the banks John created with kitty litter and latex paint. He worked at a steady pace with patience to get the look he thought best.

Every inch used

Final touches on the slick little layout, including the backdrop with sky and clouds that John painted by hand, really enhanced the two-level display. Then he could have fun running two trains at once, along with a motorized unit on the upper line with a bumper at each end.

Enjoyment meant more than operating cool trains headed by eye-catching diesel and steam engines. The town composed of Plasticville U.S.A. structures proved entertaining to visitors of all ages, provided they had a sense of nostalgia. John was gratified

6 Even in the tiniest area, John packs in plenty of action. Besides the train roaring by on the main line, the switch tower is on fire and the boxcar can't stop rolling!

the various kits carried so many of them back to postwar days.

Most of all, however, our host was happy with his latest O gauge display because many aspects served as a tribute to his father. "I learned from the best," John said, referring to his father and the range of mechanical skills he shared.

"Dad typically helped with everything on our Christmas layouts when I was growing up," John recalled, "and I've aimed to follow in his footsteps in all the model railroads I have built since then." Hearing that, it might be best to refer to John as the second-generation chairman of the board and then envision his teen-age son, Preston, as preparing to take the tradition into the future. **CTT**



7 John's big roster of F3 diesels compensates for the compact size of his layout. Among his favorite cab units from Lionel is this striking model handsomely attired in the Atlantic Coast Line's unforgettable purple-and-silver paint scheme.

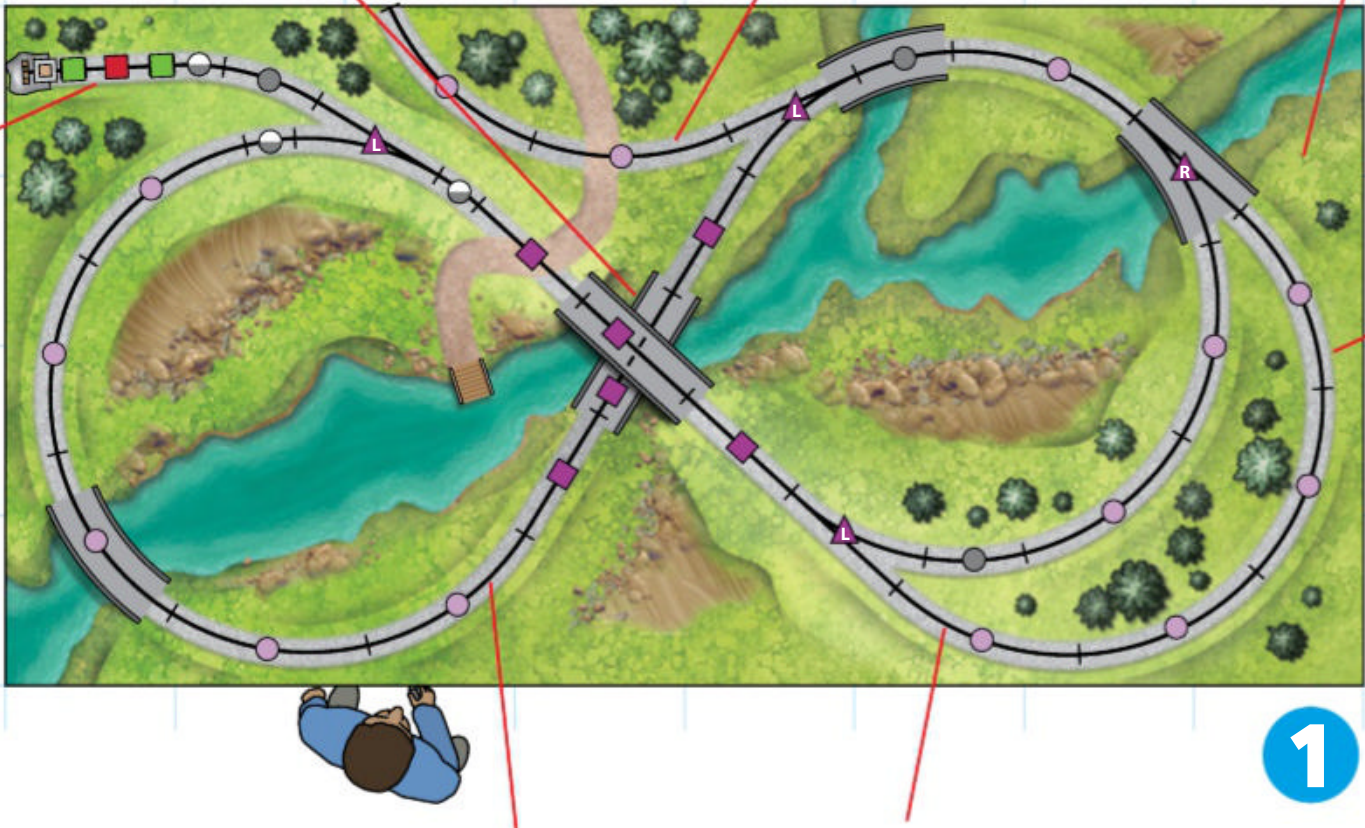
4 x 8 - 5 x 9 LAYOUT

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.

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 or a busy mine operation are two fitting choices.

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 need not be on the straight and narrow. Here, the solution was placing 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 that 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 5 x 9 feet

BY KENT JOHNSON AND DAVID BARAN

Nearly every toy train hobbyist dreams of building a large layout. The reality is that most folks 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 this special-interest publication saluting small layouts, we're presenting a smorgasbord of compact O gauge track plans

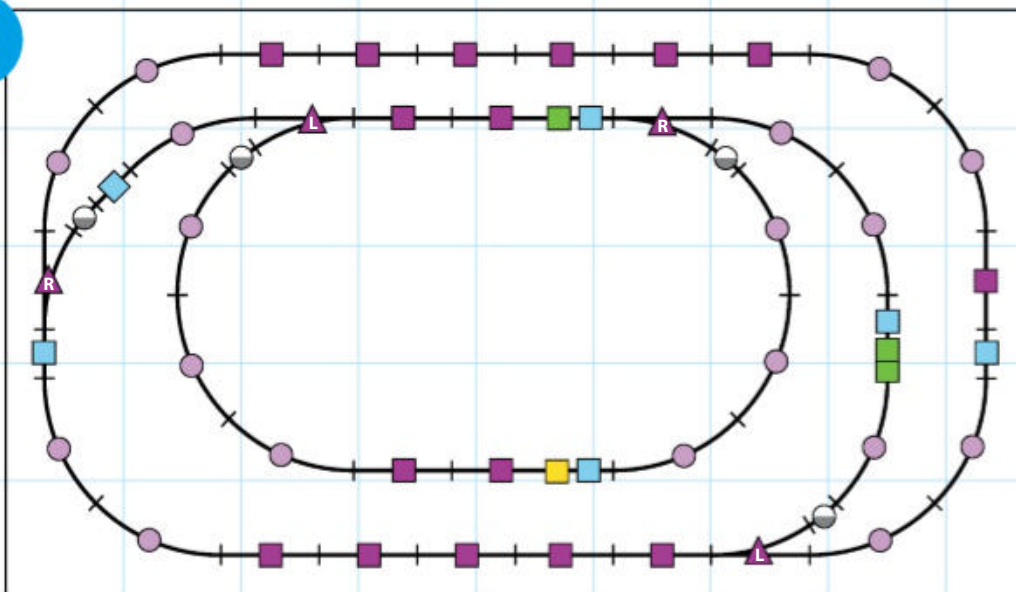
using Lionel FasTrack. For starters, we composed a 4 x 8-foot plan that has the initial appearance of a simple figure-eight scheme. But be sure to look closer. You'll see the Blue Creek Ry. features an overpass rather than a typical 90-degree crossing section limiting the length of your trains.

In addition to this simple scheme, we created a total of six other plans that are deceptively basic yet offer operational challenges. Make sure you read the annotations, because 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)

2

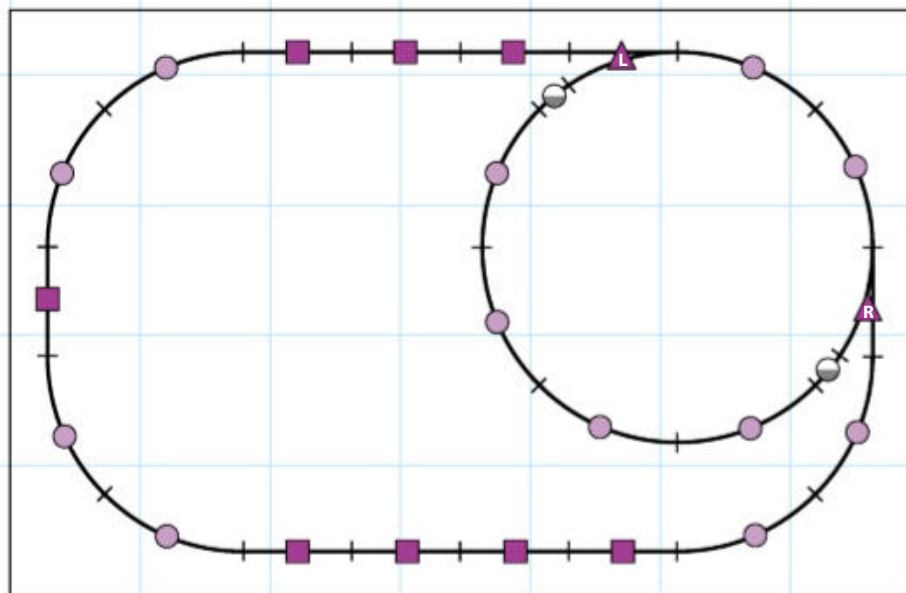


A pair of loops make up this 5 x 9-foot layout that can easily run two trains at once. With connecting track switches, trains can move between the loops for plenty of action. There's even room to include a few great postwar or modern operating accessories.

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)

3

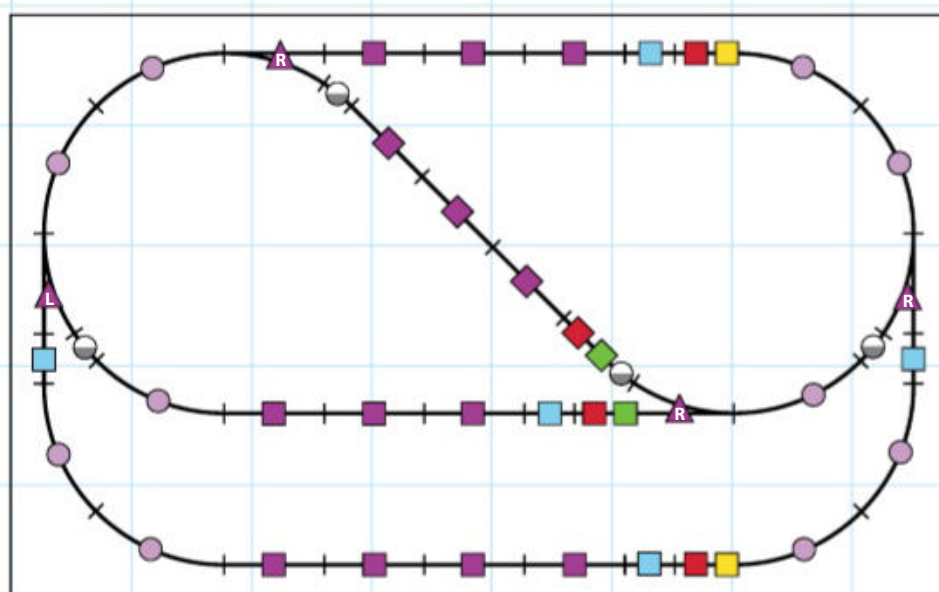


This simple oval with a secondary loop is perfect for construction under a Christmas tree. Place the tree stand inside the small circle of track and add a Christmas village using old or new structures and details. Santa will never want to leave your house!

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)

4

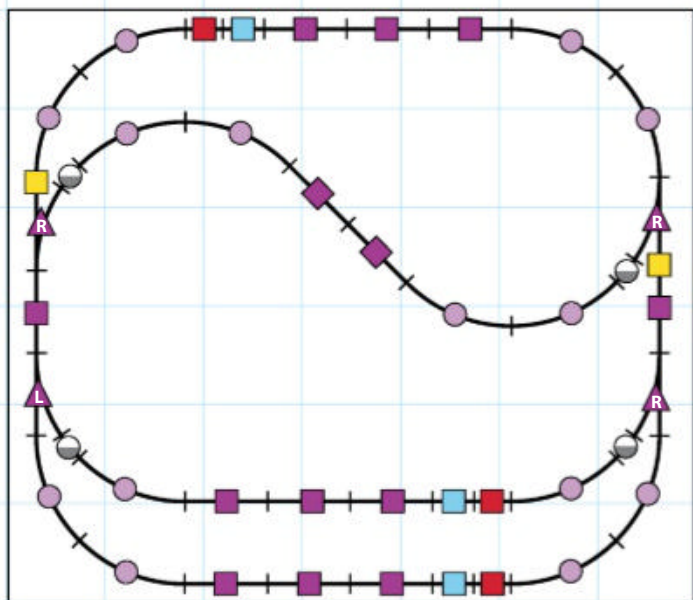


A large oval with an inner siding and reversing loop will provide plenty of action on this 5 x 8-foot layout. By installing a few track switches along the reversing loop's cut-off, you can add a small yard on the inner loop for more enjoyment.

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)

5

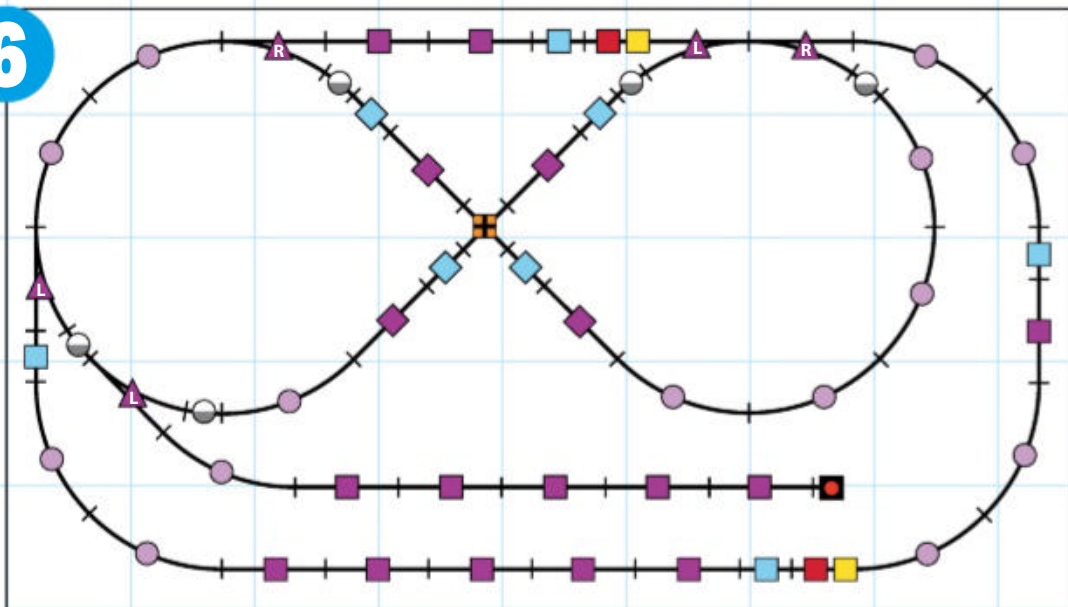


This larger oval is a great starting point. It provides lots of open space at the center of the layout, so you can consider adding yard tracks or building a town or an industry. Just by including a reversing loop and a passing siding, nothing gets shortchanged here!

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)

6

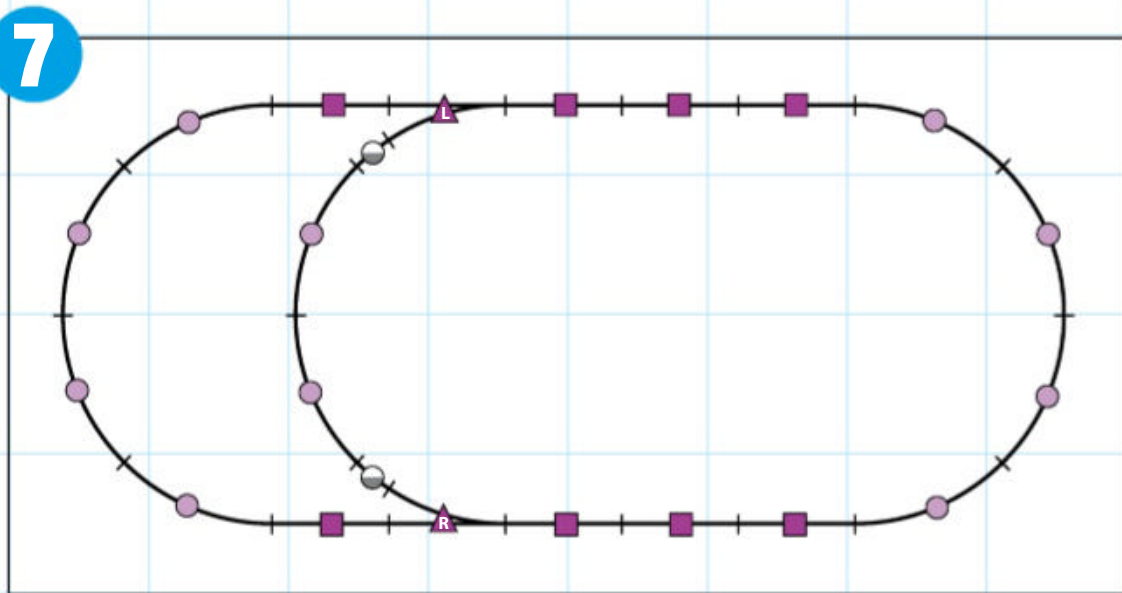


What started as a Lionel no. 12030 figure-eight add-on pack has expanded to include a large siding and loop. A long straight section plus extra switches offer reversing options and multiple routes for your trains to travel. Add a few accessories for still more fun.

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)

7



This layout, which will fit on a single sheet of plywood or foam insulation board, promises a wide variety of options for future expansion. To begin, you can add another sheet of plywood to form an L-shaped railroad that fits nicely into a corner.

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)

Illustrations by Kellie Jaeger

A RETRO-STYLE O GAUGE TRACK PLAN

Go back in time on this 4 x 8-foot layout

BY TERRY THOMPSON

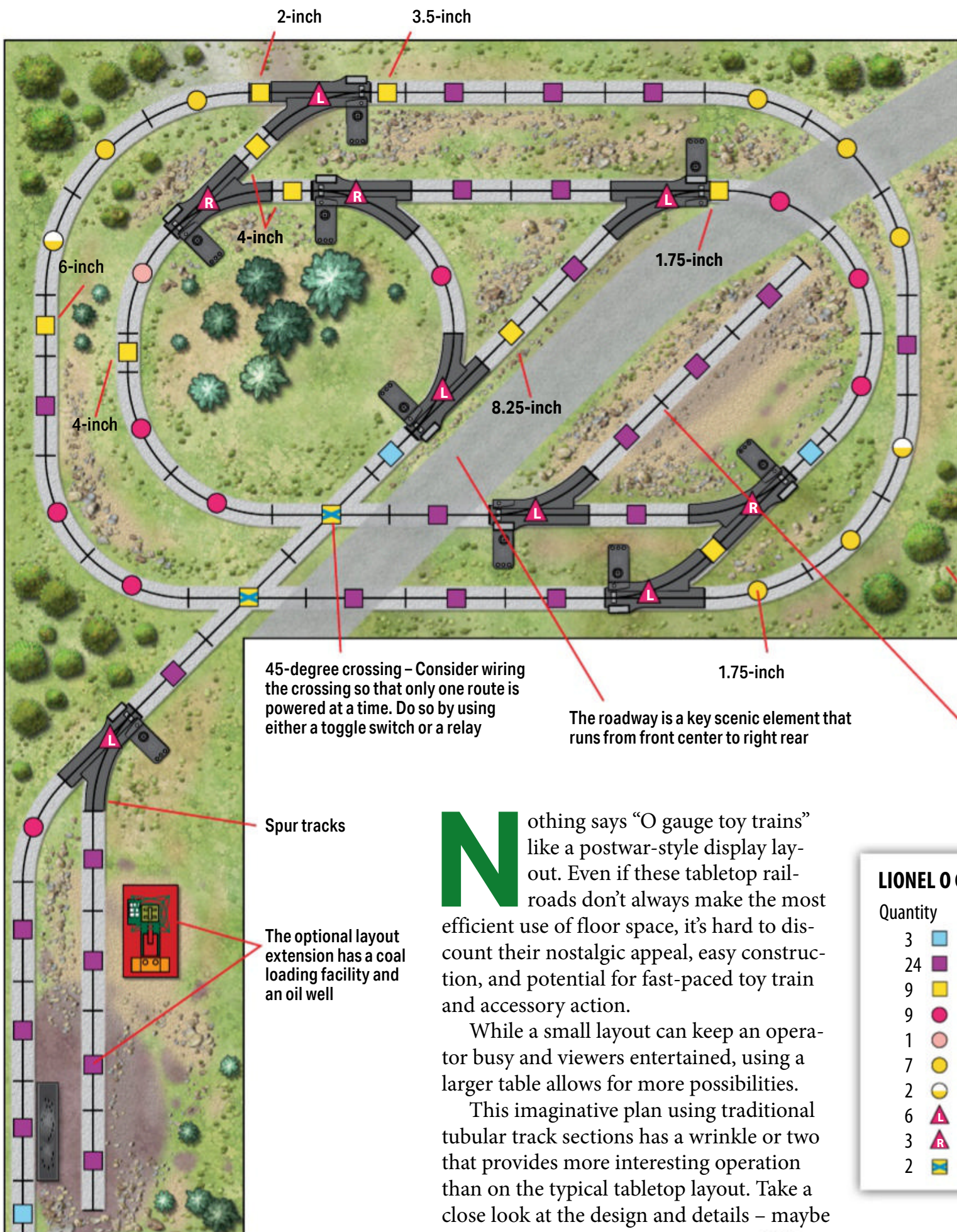


Illustration by Kellie Jaeger

TRACK-PACKED TABLETOP

Want a layout with more track than scenery? How about this 5 x 8-foot plan with a 2 x 5-foot extension! Rather than having the branch originate on the outer loop, it starts at the back, cuts across the middle, and crosses the main at a 45-degree angle on its way to a town. You'll need to cut several sections of track, but you'll get intriguing operation plus a crossing at the front of the layout.

Lengthening the layout by 2 to 4 feet would allow for more spur tracks and accessories

A lone siding on the main table hosts a coal and oil dealer

45-degree crossing – Consider wiring the crossing so that only one route is powered at a time. Do so by using either a toggle switch or a relay

The roadway is a key scenic element that runs from front center to right rear

Spur tracks

The optional layout extension has a coal loading facility and an oil well

Nothing says “O gauge toy trains” like a postwar-style display layout. Even if these tabletop railroads don’t always make the most efficient use of floor space, it’s hard to discount their nostalgic appeal, easy construction, and potential for fast-paced toy train and accessory action.

While a small layout can keep an operator busy and viewers entertained, using a larger table allows for more possibilities.

This imaginative plan using traditional tubular track sections has a wrinkle or two that provides more interesting operation than on the typical tabletop layout. Take a close look at the design and details – maybe this is the plan for your next layout! **CTI**

LIONEL O GAUGE TRACK COMPONENTS

Quantity	Description/Number
3	5.5-inch half straight
24	10-inch straight
9	custom-cut straight
9	0-31 curve
1	0-31 custom-cut curve
7	0-42 curve
2	0-42 custom-cut curve
6	0-31 left-hand track switch
3	0-31 right-hand track switch
2	45-degree crossing

GRADES ON YOUR RAILROAD

Grades add operating and visual interest to O and S gauge layouts

STORY AND PHOTOS BY JOHN RUSTERHOLZ



Almost every O or S gauge layout featured in *Classic Toy Trains* has track on more than one level. This multiplies the opportunities for interesting scenery and makes possible the operation of more trains. Some layouts simply stack independent loops of track to allow multiple trains to run with minimal attention, but more often builders connect the different levels so trains can move from one to another. For that they must have grades.

Historically, real railroads spent a large proportion of their engineering budgets planning the best routes through rugged terrain to minimize grades. By contrast, model railroaders look at vertical changes not as problems to be minimized, but as opportunities. Breath-taking mountains, valleys, rocky cliffs, and dramatic bridges all seem much more natural when the trains are also climbing and descending.

The ability to pull toy trains up and down grades took a giant leap forward when Lionel introduced Magne-Traction

in 1950. An article in the September 2010 issue of CTT (“Add elevation to a flat layout”) highlighted a number of great ways to make use of the third dimension to add to the appeal of a layout.

Here are some useful ideas on how to plan grades for your O or S gauge railroad.

Steepness

The standard method to measure the steepness of an incline is to divide the rise over the run. For example, a grade that rises $\frac{1}{2}$ inch for each 10 inches of length is a 5 percent grade because $\frac{1}{2}$ inch is 5 percent of 10 inches.

For a full-size freight-hauling railroad, a 5 percent grade would be prohibitively steep. Fortunately for modelers, 5 percent is the grade found midway up the popular Lionel no. 110 trestle set from postwar days, and O gauge engines have been negotiating it successfully for decades.

Length

Other considerations affect both the prototype and the model. One is the length of

Just a few simple calculations will make it easy and safe to take your trains to new heights on an O or S gauge model railroad.

the train: The weight of the railcars on the grade creates the downward pull. Thus, a standard prototype technique to get a long train up a steep grade is to break it into sections and haul one section up at a time. Another method is to add a helper locomotive that joins the train for the uphill trip and returns to the bottom of the hill to wait for the next train.

If you want to run trains up and down your grades without resorting to these time-intensive techniques, then you may have to experiment to find how long of a train is realistic and confine your longest trains to the level portion of the layout.

Curves

Another factor affecting the climbing ability of a train is the straightness of the track. Most of today’s toy train cars have needle bearings that provide little rolling friction, but that isn’t true of models from

the postwar and prewar eras. Even on a level track, if the last car or cars of a train provide too much drag, the cars in the middle of the train tend to be pulled from the track when the train goes around a sharp corner. If the train is also climbing a grade, this tendency is magnified.

There are two ways to deal with this problem. The first is to put the cars that exhibit the most drag at the front of the train and the more free-rolling cars toward the back. The second technique is to minimize the sharpness of any curves that occur on grades.

Vertical easements

While we are familiar with sectional track in which a particular piece is either a curve or a straight, a more realistic design employs a transition so a straight track enters a wide-radius curve that gradually becomes sharper. This is called an “easement,” and railroads have mathematical formulas for calculating them. The use of an easement makes any curve less abrupt.

There is a similar situation in the vertical dimension, but it is more of an issue on a model railroad than the prototype. If you’re working with sectional track and have one section on the level and want the next to climb a 5 percent grade, you’ll experience a couple of problems.

First, the track doesn’t want to bend that sharply. Even if you can force it to bend that much, it’s better not to.

Second and more important, if you try to run many steam locomotives up to the base of such a grade, the pilot will reach the inclined track first and plow straight ahead, shorting out against the inclined center rail. In some cases it may climb all right but have problem coming down.

Another problem occurs at the top of a grade. If the elevated track is level and comes to a sudden 5 percent downgrade, many locomotives with long wheelbases will appear to be jumping off a cliff. In fact, if the first section of the grade is a curve, there’s a good chance the locomotive will miss the track and derail with potentially disastrous consequences.

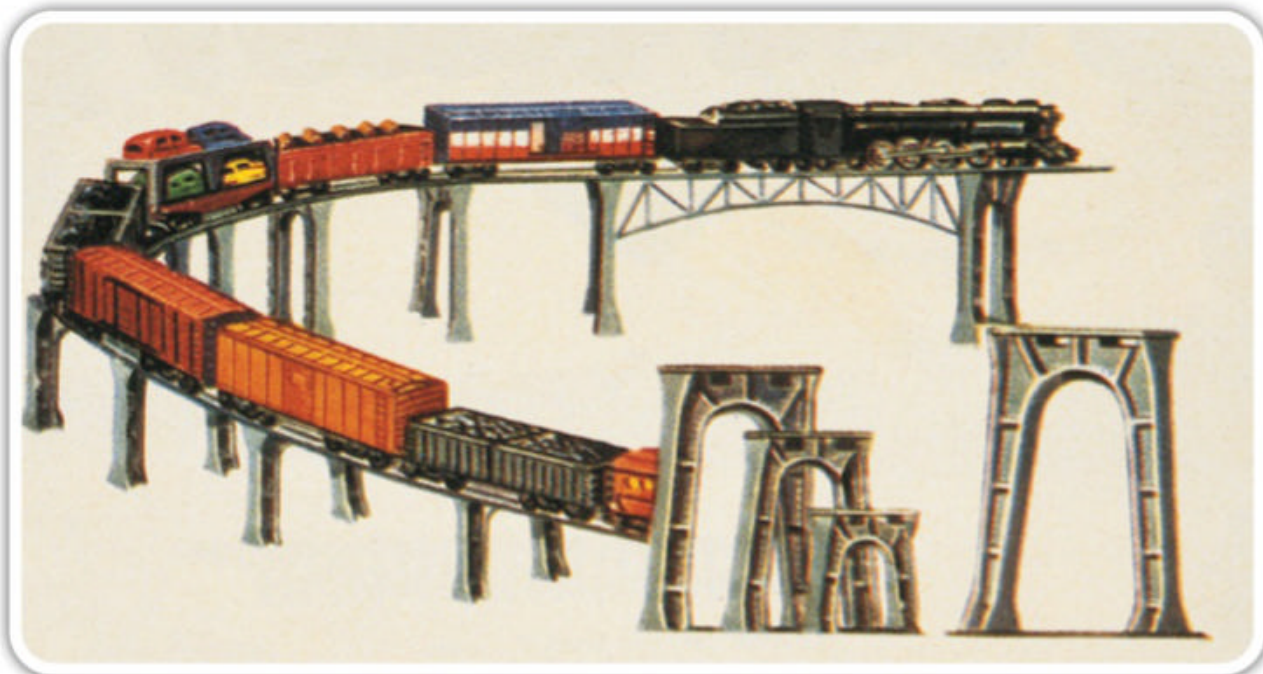
A vertical easement can solve both problems. The amount of change to the gradient at any point is limited.

If we trace the tops of consecutive trestles on the 110 set, we find they form an S-curve. There’s a vertical easement at the bottom and at the top. Even though the grade at the middle is 5 percent, the grade of the lowest section (assuming

10-inch track sections) is 1.7 percent. The grade of the next section is 3.4 percent. Not until we get to the third section does the grade become the full 5 percent.

At the upper end the easement is even more pronounced. Assuming the train is coming to a downgrade along a series of A trestles (the tallest size), the grade down to the B trestle is only 1.2 percent. The grade from B to C is 2.4 percent, and from C to D it’s 3.7 percent. Not until we get past D is the grade the full 5 percent.

In other words, between each pair of consecutive 10-inch sections the gradient changes by no more than 1.7 percent where the track is concave and no more than 1.3 percent where the track is convex. Although these dimensions are somewhat approximate, this is a good rule for calculating vertical easements.



The Lionel no. 110 trestle set from the postwar era brings additional operating enjoyment to any O gauge layout. Original and reproductions are easily found on the current market.

Practical applications

If any of these calculations strike you as overly complex, there’s no reason to fret or abandon hope of building anything other than a tabletop layout. Many modelers have successfully built grades for years without doing any math. Instead, the rule of thumb old-timers taught was, “If the track doesn’t conform to what you want, don’t force it.”

Using O gauge tubular track in good condition, the most vertical deviation it allows between sections is less than 2 percent, so people just fudged the supports until everything seemed happy. The results were always good, although it seemed that various grades required more length than was expected. Now we know why.

If you’re using GarGraves or another brand of flexible track, it’s easy to create a

smooth bend or curve in the vertical dimension just as with the horizontal dimension (with the usual precautions about avoiding kinks).

But with sectional track, particularly track with built-in roadbed, the changes in grade must occur at the section junctions. To maintain necessary reliable electrical and mechanical connections, the vertical easements are essential.

Height

The 110 trestle set elevates the upper track by 4¾ inches. That’s the bare minimum and assumes there is nothing more than a thin sheet-metal bridge deck between the elevated track and a train passing underneath. It also assumes you’re attaching the lower track directly to the lower tabletop. If you want the upper level to be scenicked

with structures and other trackage, or if you’re using a built-up roadbed, you’ll need more separation.

When designing a layout, try to separate multiple levels by at least 6 inches. That allows for a sturdy ½-inch plywood floor for each level and room to reach inside any tunnel entrances in case of emergencies. Depending on the type of roadbed used, you may want to set up a trial with your tallest locomotives and rolling stock to make certain they will fit.

Summary

Grades are a wonderful idea for any O or S gauge layout, enhancing the visual appeal and operating interest. As long as you observe the guidelines presented here, you should be able to enjoy them in a trouble-free manner on your own layout. **CTT**

8x11 LAYOUT

TAKE THE 'A' TRAIN

'A' as in Albee's O gauge layout

STORY BY ROGER CARP ● Photos by Steve Albee



1 Two heads are always better than one, which is one big reason Steve Albee appreciates the ideas and assistance provided by his sister, Rochelle Mevorah. Steve has given his 8 x 11-foot two-level O gauge display an identity all its own by concentrating on the subways and elevated trains familiar to everyone who lives in or visits New York City and surrounding areas. He has a ball running the various subway sets developed by MTH, including this one local graffiti artists have so colorfully tagged.



Every jazz lover knows the Duke Ellington tune, “Take the A Train.” Written by composer Billy Strayhorn in 1939, it celebrates the recently opened A subway service, which traversed New York City by running from Brooklyn to Harlem and northern Manhattan. “Take the A Train” blends the liveliness of swing with the sophistication audiences associated with Ellington and his orchestra.

In O gauge circles, particularly if you’re with members of the Train Masters of Babylon Model Train Club on Long Island, taking the A train has an added meaning. It brings to mind the first initial of the last name of one of their own, Steve Albee, and the 8 x 11-foot two-level display he has built to run the MTH subway sets he likes.

Chevelle and back

For as long as Steve remembers, O gauge modeling has been a key part of his life. Younger than many of his peers in the hobby, he nonetheless can recall receiving some of the best locomotives in the Lionel catalog while growing up in the 1960s. Highlights included the nos. 736 2-8-4 Berkshire steam engine and tender and

2360 GG1 electric. Providing the juice to keep them running over Super O track when Steve was growing up was none other than a type-ZW transformer.

If Steve is asked why he doesn’t run those iconic pieces on his current layout, he gets a bit defensive because he has to confess they’re missing in action. He hasn’t seen hide nor hair of those childhood favorites for at least 40 years – not since about the time he was finishing high school.

“I sold all my trains to help pay for my first car,” Steve admits. Fortunately, he had superb taste. He had his eye on a 1972 Chevelle S/S. That beauty proved to be the first of several outstanding automobiles he owned and that formed the basis of a collection he treasured for many years.

Sad to say, everything was destroyed when Hurricane Sandy roared off the Atlantic Ocean to inundate New York City and surrounding areas in 2012. Decades spent hunting for the finest cars and babying them in every way came to a sudden and tragic end.

Devastated by what he had lost, Steve hesitated before committing resources and energy into rebuilding his collection. Maybe the time had come when he ought

2 Can we possibly be any higher in the New York sky than the Goodyear blimp that floats over the far end of Steve’s three-rail display? Wherever we are, the view is fantastic and offers terrific views of the rail lines and the suburban village that he fashioned out of MTH accessories plus structures from Menards and Woodland Scenics.

AT A GLANCE

Name: Steve Albee’s 8 x 11-foot O gauge layout

Track: Atlas O 21st Century (diameters range from 36 to 72 inches)

Motive power: MTH

Rolling stock: Lionel, Menards, MTH

Controls: MTH no. Z-4000 transformer

Accessories: MTH

Structures: Menards, MTH, Woodland Scenics

Vehicles: CVS, Menards

Figures: MTH, Woodland Scenics



The 8 x 11-foot layout Steve has designed and constructed boasts lots of activity, yet to his credit there are no areas that feel crowded or poorly planned. We can all learn a few tricks from this talented modeler and the compact O gauge display he built in a spare bedroom.



3 The sun is setting on a typical Thursday in September, but the youngsters playing on the swings and other equipment keep pleading with their parents to let them stay for another few minutes. Maybe a treat from the ice-cream truck on the left will be enough to coax the boys and girls to head home.

sights he had observed locally during his years growing up. That meant, above all, making excellent use of the different sets of subway trains being offered by MTH Electric Trains.

A number of those special trains ended up on shelves protected by glass in Steve's train room. Some replicated the earliest subways – heavyweight cars used during the pre-World War II era, when riders might have been humming “Take the A Train.” Others captured the look of trains Steve himself rode as a youngster.

Perhaps Steve's favorites were the MTA cars partially covered in graffiti. Their bright colors and bold graphics caused them to stand out no matter where they appeared. Another set popular with him featured light blue bodies with white bands running through the windows in the middle of each side. “That was the IRT R36 train put into service for the World's Fair held in New York when I was a kid back in 1964,” he told us.

Simple design

Aware that the amount of open space he had to work with was quite limited, Steve envisioned a layout with two levels of action, one right above the other. The main level, which stood 43 inches off the floor and consisted of sheets of ½"-thick sanded plywood, had a loop of Atlas O 21st Century track right along the exterior perimeter. No switches and nothing too fancy, although Steve laid it on top of ¼"-thick cork roadbed.

The upper line, held up by a series of braces and girders Steve had purchased, rose 51" off the floor. He decided there would be two concentric loops there, each for a different subway train. Diameters of the realistic three-rail track ranged from 36" to 72". The solid-rail sections looked great to him.

Thinking about the interior of the main area, Steve shared ideas with his sister, Rochelle. They weighed possible locations for structures from Menards, MTH, and Woodland Scenics. Steve also intended to make a few items from scratch, and his efforts improved several of the key areas.



4 Subways on the upper level of Steve's home layout carry commuting workers, students, and shoppers in and out of New York City. The main level generally hosts only freight trains, such as this one decked out in the blue and orange associated with the Long Island RR. Steve has a passion for late-model automobiles, so he made sure to keep the streets busy.

to try a different hobby. Maybe the time had come when he ought to return to O gauge modeling. It had, after all, brought him pleasure during his youth and teens.

Any doubts Steve might have had about going back to Lionel trains and questions about the best way to reenter the field were erased when he learned about the Train Masters of Babylon. Club members were incredibly welcoming. They invited Steve to assist with their O gauge layout and encouraged him to operate trains on it regularly. [The club and its layout will be profiled in a future issue of *Classic Toy Trains*. – Editor]

Give it a try

Wisely, various officers and members of the Train Masters of Babylon gently pressed Steve to take his interest to a higher level. Besides inviting him to join in with an array of club activities and open houses, they suggested he design and build an O gauge layout in his home. Doing so would refine his skills at laying track, developing meaningful scenes, and handling different electrical tasks. It would also boost his enthusiasm.

Steve took the advice and started contemplating what he would prefer to show on a home layout. He wanted to focus on



5 Besides a superb assortment of subway trains, Steve's compact layout features vehicles traveling over the EZ Streets system marketed by Williams by Bachmann. Other animation in the local community includes moving trucks and figures on the MTH accessories and an operating streetlight to keep all the traffic from colliding.

Without question, the most important decision Steve made regarding the surface of the platform involved adding EZ Streets from Williams by Bachmann. The straight and curved pieces went into position in an easy and straightforward manner. Steve, being a dyed-in-the-wool car guy, appreciated the variety of vehicles he could acquire to run over the EZ Streets through the suburban community he formed.

Local sights

Once Steve and Rochelle were firm about the lower and elevated rail lines as well as the EZ Streets, the real discussions commenced. He had in mind for the middle of the display a village similar to those on Long Island where he and many other members of the Train Masters of Babylon resided and worked. Nothing very large, yet bustling in its own unique way, with an older downtown district bordered by modern facilities and ample parking lots.

Here is where Steve and every other O gauge modeler is extremely fortunate. The wide variety of replicas of contemporary commercial and industrial facilities hitting the market these days is unprecedented. Never before have layout builders enjoyed having so many cool buildings to consider, in particular, the realistic, detailed, and imaginative items introduced regularly by Menards and Woodland Scenics.

A quick glance at Steve's layout reveals a number of noteworthy

additions, in particular, a handful of fast food restaurants, a big power and light plant, a soft drink manufacturer, and tall parking garages. Some operating accessories developed by MTH, such as its fire house and service station, bolster their visual appeal with animation. Visitors applaud all the effects.

For the outskirts of town, Steve truly allowed his imagination and sense of creativity to go wild. In addition to a trailer park loaded with figures and details, there is a playground where children play on a slide and climb on the monkey bars. Not too far from the fenced-in site, folks are grilling hamburgers and watching trains go traveling by.



6 The humidity on this July night is unrelenting. Folks at the trailer park find a little relief by sitting outdoors, waiting for a breeze, and watching freight trains fly past.

Never finished

The first thing Steve says about his layout when quizzed about its status is, "It's done!" The next thing he tells you is, "No it isn't!" Don't worry about his mental state: Steve knows what he's talking about.

Right now, Steve and Rochelle are very proud of everything they have accomplished. The trains run like clockwork, as do the vehicles on the EZ Streets. The scenery is wonderful, especially the trees and grassy fields adjacent to the main line on the principal level. And he took care of all the wiring like a professional.

Even so, Steve can't help but look at the display and have ideas come to mind about possible improvements. With great structures continuing to flood the market, he's almost certain to buy some to substitute for what he has already placed in the town.

To be honest, Steve Albee reminds us of the subways he emphasizes on his layout. Like the trains emblematic of New York ("the city that never sleeps") he keeps going strong day and night and never stops mulling over how he can revise his railroad. What he's accomplished satisfies him, yet it also leaves him eager to do more. As Steve might put it, "The A train is always on time and catching the next one promises more excitement." **CTT**

6 x 10 LAYOUT

FLYER EXPANDS IN A TWO-CAR GARAGE



S gauge trains replace full-size autos

STORY BY ROGER CARP ● Photos by David Baule



Dave and his wife, Barbara, regularly escape the frightfully cold winters hitting the Midwest for warmer climes. He's recently built an S gauge layout there just for fun.



In January, when temperatures along the East Coast and the Midwest dip below freezing, toy train enthusiasts living farther west breathe sighs of relief as they cruise around golf courses and swim laps in their pools.

They don't have to shovel snow or worry about icy roads. S gauge modeler David Baule knows the feeling, because he and his wife, Barbara, have escaped from frigid Wisconsin winters.

But there is one major disadvantage to residing in the Southwest or Deep South, at least if you want to build a compact layout. Houses and condos in these regions seldom feature basements or attics, which are the most convenient and logical places for a large and comfortable train room. Modelers find themselves hoping there's an empty bedroom or begging for a corner of the living room.

Dave knows the situation only too well. At home along the Great Lakes, he can claim a sizable lair for his collection of postwar and contemporary S gauge models. He's constructed terrific layouts there, including a new one soon to be showcased in *Classic Toy Trains*. At the smaller residence Dave and Barb share during the winter, he must be more creative. A two-car garage has proved to be ideal for a compact railroad boasting more postwar S gauge trains as well as a number of cool Plasticville U.S.A. structures.

1 An American Flyer no. 21920 Missouri Pacific Alco PA unit slows down so it doesn't disturb swimmers in the Plasticville pool on Dave Baule's 6 x 10-foot S gauge railroad.



By installing commercial casters on the wooden legs supporting the two-level S gauge layout, Dave made sure he would be able to move it around the two-car garage at his winter residence.



2 A Northern Pacific Alco PA roars past Plasticville models on the 54-inch-high upper level. Postwar American Flyer trains always look great with these vintage structure kits.

Christmas and Flyer

While some owners of large model railroads might gripe about having to downsize because they moved, Dave hardly complained when he realized his plans for another immense S gauge layout weren't about to come true. He realized the American Flyer displays that had mesmerized him during his youth in the 1950s had been small. No point in fighting it now.

To be honest, what Dave remembered about his boyhood trains was how rare the opportunities to play with them were. Starting with the Hafner windup he

received for Christmas of 1948 and then continuing with the Marx electric steam set and American Flyer circus train that came his way the next few years, time to enjoy toy trains proved incredibly elusive. They came out for the holidays only.

Consequently, Dave felt extremely fortunate just to have as many different models as he did and to be allowed by his parents and grandparents to dream of getting more. Over the following years, a few more Flyer models and accessories arrived. Dave put them to good use on floor layouts surrounded by furniture.

Back to model trains

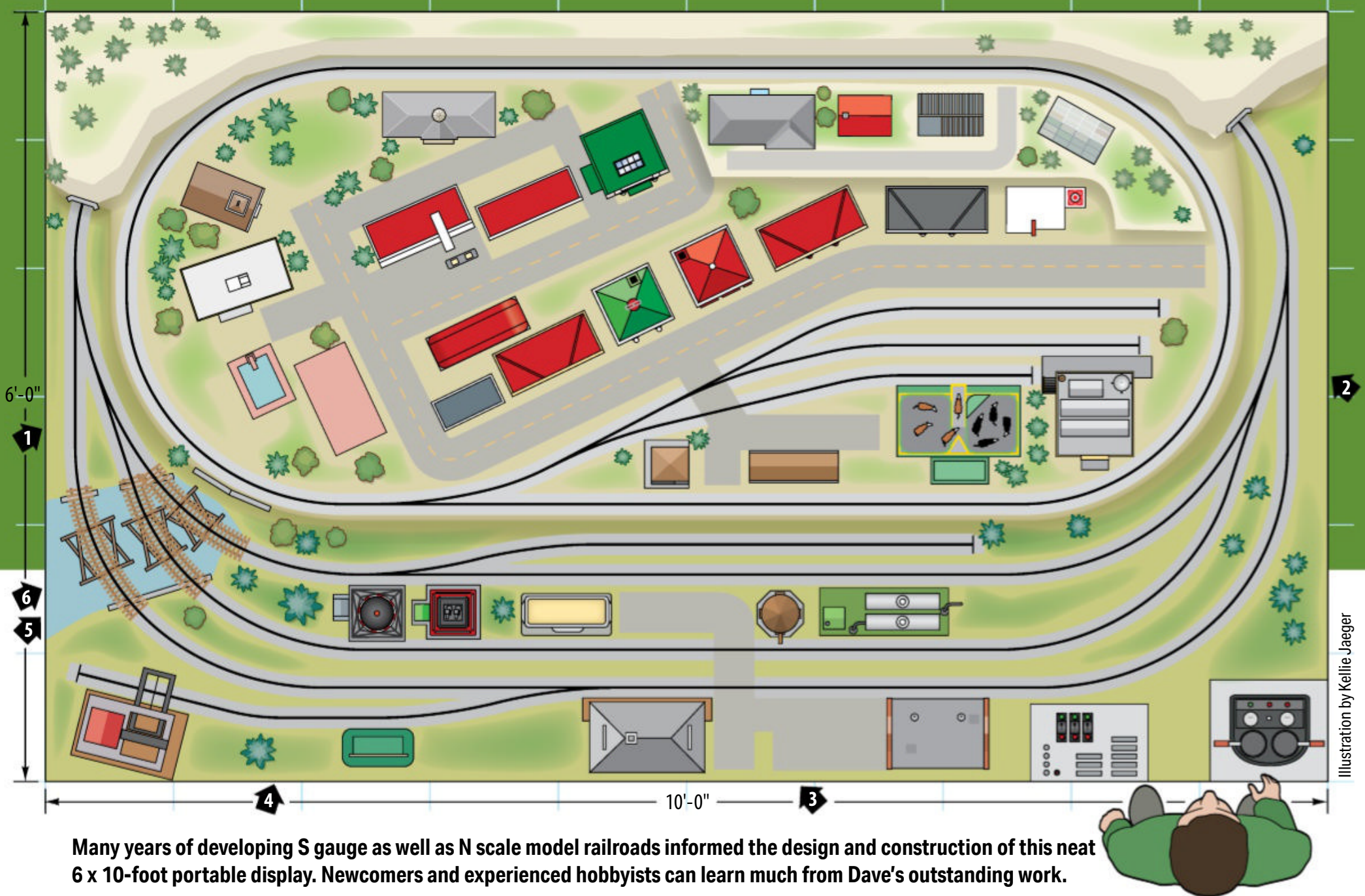
Folks may assume that someone whose connection with toy trains had been limited to a month or so each year during childhood will never return to the hobby. But Dave can surprise you. Once his career and family life permitted him to indulge, he dashed back to the hobby – only he opted for N scale!

When the dimensions and operation left Dave frustrated, he put N scale to bed and shifted back to S gauge. Assembling a collection of the finest engines, freight and passenger cars, and accessories from Gilbert's postwar line occupied him from the 1980s well into the next decade.

Only after acquiring much of what he had wished for as a boy did Dave start the layout CTT was proud to shine a light on in the May 2009 issue. Itchy to refine his skills while remaining busy during the winter, Dave built this 6 x 10-foot traditional-looking layout in the garage of the home where Barbara and he live each year.

Benchwork and track

It doesn't require much time or effort to become proficient at constructing solid and sturdy benchwork. Dave can attest that methods and materials used for this layout reflect what he has learned from previous S gauge and N scale ones.



Many years of developing S gauge as well as N scale model railroads informed the design and construction of this neat 6 x 10-foot portable display. Newcomers and experienced hobbyists can learn much from Dave's outstanding work.



3 A Milwaukee Road Doodlebug motorized railcar sits patiently at the Plasticville station while a handful of commuters board. Dave really likes the striking model.

"Reading *Model Railroader* magazine plus books put out by Kalmbach Publishing Co.," Dave says, "helped me learn the techniques and advantages of L-girder benchwork." He's used it for years, including for this compact layout.

Pieces of 1 x 2 and 1 x 3 lumber served as the grid. Bracing was made of 1 x 2 and 1 x 4 wood. For the legs, Dave used 2 x 4s.

On top he laid sheets of $\frac{3}{4}$ -inch-thick clear plywood from a local lumberyard.

Dave prefers that the platform stand at 48 inches high. The elevated section evident in the photos is another 6 inches higher. When checking out the framework, please pay attention to the legs: Dave put casters on them so he can easily roll the layout in and out of the garage.

AT A GLANCE

Name: Dave Baule's S gauge layout

Dimensions: 6 x 10 feet

Track and switches: American Models (diameters range from 38 to 76 inches)

Motive power: American Models, Gilbert American Flyer

Rolling stock: American Models, American S Gauge, Gilbert American Flyer, Lionel, S-Helper Service

Controls: Gilbert American Flyer no. 30B transformer with Lionel Legacy command control

Accessories: Gilbert American Flyer, Lionel

Structures: Plasticville U.S.A.

Vehicles: Road Champs, Winross

Figures: Artista, Gilbert American Flyer, Preiser



4 On a summer day, a no. 21085 Milwaukee Road 4-6-2 Pacific steam engine and tender lead a string of refrigerator cars on their journey east on the primary level.



5 We can title this photo, "Honoring the Pacifics." While a postwar Union Pacific Alco PA reigns on the upper level, a modern Texas & Pacific GP7 runs by below.

Roadbed is an essential element for a satisfying layout, Dave asserts. He selected shaped RV insulation material. "It's a dense foam," he explains, "which is why I find it provides good sound insulation when running old Flyer engines."

Instead of nailing down vintage track from Gilbert, Dave turned to the new solid brass type marketed by American Models. It was realistic and came in sections as well as flextrack, which offered more ground coverage with fewer joints. The rail profile was lower than original Flyer track. The diameters ranged from 38 to 76 inches.

Remote-controlled turnouts from the same firm worked well. The upper level was hard to reach, so Dave used remote units wired to S-Helper controllers. He used manual turnouts on the lower platform because of their simple design.

Dave said his only difficulty with using American Models track related to connecting the curves. "I could never get turnout leads or curve leads correct," he admitted. "So I decided to use preformed curve sections to start my arcs. Once the preformed section was soldered to the flextrack, the resulting curve was perfect."

Modifying traditions

Dave's attitude when designing and constructing what might be described as his "vacation layout" was to keep things simple and enjoyable. That approach often dictated that he show his trust in the construction methods and materials he was most familiar with. Tradition guided yet never restrained him.

Where did Dave's preference for what he knew best and longest start? Probably with his motive power and rolling stock. For this layout, a stable of steam and diesel engines dating from postwar days ("the knuckle coupler era of American Flyer production," Dave said) proved powerful and very reliable.

Appreciation for what the A.C. Gilbert Co. cataloged more than 60 years ago has never meant ignoring more recent releases on the S gauge market. Dave speaks highly of the newer units developed by American Models. "They're durable and highly dependable," he adds, "so I can use them day after day. Also, my grandson loves to blow their whistles!"

The phrase "modifying traditions" captures in a nutshell Dave's philosophy about controlling this little empire on casters.



6 Which train deserves to hit the main line first? The fellow at the switch tower had better decide fast. We vote for the Flyer no. 356 Silver Bullet duo on the right.

The tradition aspect calls for letting a vintage American Flyer no. 30B transformer handle the main lines and accessories. The modifying part inspired him to advance beyond exclusively relying on a conventional mode by experimenting with Lionel's improved and respected Legacy system of command control.

"Look," Dave explained, "I don't want to alter any of my original American Flyer locomotives. But Legacy command control gives me the option of sitting back and controlling a train from any point in the garage." Complexity translates into freedom and fun.

Simple scenery

Years of landscaping layouts with diverse dimensions, not to mention the dozens of model railroads in every scale and gauge Dave has visited, have taught him virtually everything about making mountains, waterways, and forests. He's too modest to admit it, but he could author a primer on making model scenery.

For this layout, Dave chose to fashion various landforms using strips of commercially made plaster-impregnated cloth draped over a cardboard lattice strengthened with newspaper. Once the shell had hardened, he removed the paper.

Next, Dave detailed the exterior with

outcroppings. They ranged from rock faces formed of Hydrocal to rock sheets made of resin. Tinted Sculptamold filled in gaps and concealed seams and areas where separations were obvious.

Once satisfied with their appearance, Dave painted the landforms with gesso from a crafts store. He followed with different acrylics from a hardware retailer to get the earth tones he desired as well as the highlights and contrasts.

From there, Dave coasted home with some popular modeling items. Woodland Scenics provided colors, textures, and densities of ground foam. Wm. K. Walthers stocked Busch and Heki brands of miniature trees, often priced at a discount. It didn't take an enormous assortment of vegetation to complete the dry and sparse scenes envisioned.

Ready for fun

Barbara may be the one with a big smile on her face, but Dave never fails to make fun paramount in his life, especially with his favorite hobby. How does he define "fun" when it comes to toy trains? "Designing and building layouts" is his succinct and immediate answer. Running trains is a close second, particularly when

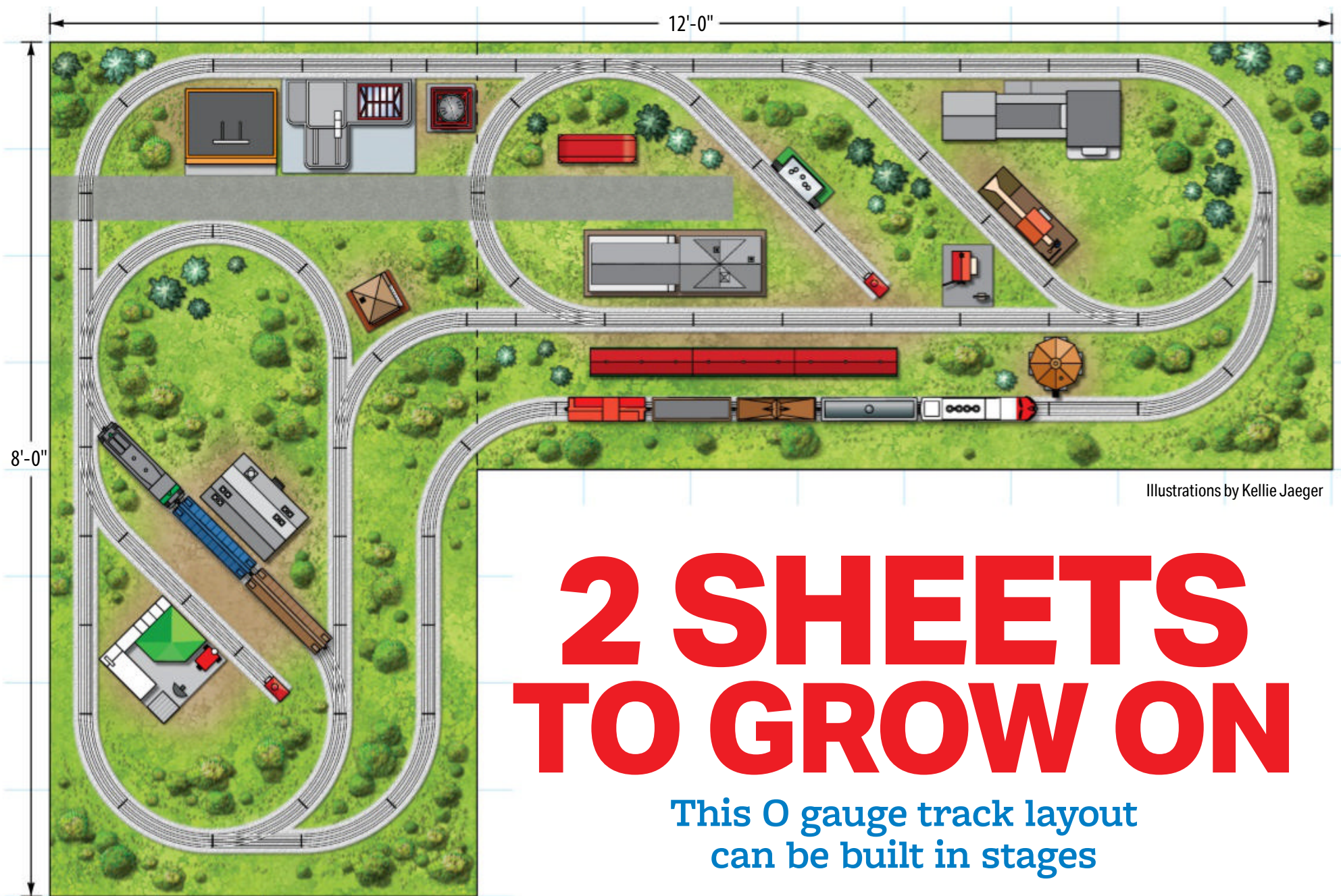


Dave's parents seldom broke their rule about the Flyer trains being run solely during the holiday season. They kindly relented when he came down with the chicken pox while attending elementary school in the mid-1950s.

his grandson is visiting, but nothing really beats trackwork and scenery.

Knowing how much Dave likes planning a layout, building benchwork, and all the other stages of work, leaves us thinking he'll soon be upgrading his vacation railroad or even starting a new one. He advises anyone weighing the benefits of constructing a display to quit contemplating and just get moving!

"There is so much to enjoy about translating your mental images into something real," Dave states. "Basic tools and materials, a desire to learn and listen to other modelers, and a willingness to make mistakes are all anyone needs. Before long, you're in the home stretch and preparing to run your trains." **CTT**



Illustrations by Kellie Jaeger

2 SHEETS TO GROW ON

This O gauge track layout
can be built in stages

BY NEIL BESOUGLOFF

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 commercial plywood. Even better, it also can be in operation as you build.

The inspiration for this L-shaped track plan comes from the 68-page booklet *How to Operate Lionel Trains and Accessories*, published by the Lionel Corp. back 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 of the layout).

The complete plan offers three distinct routes for operating trains.

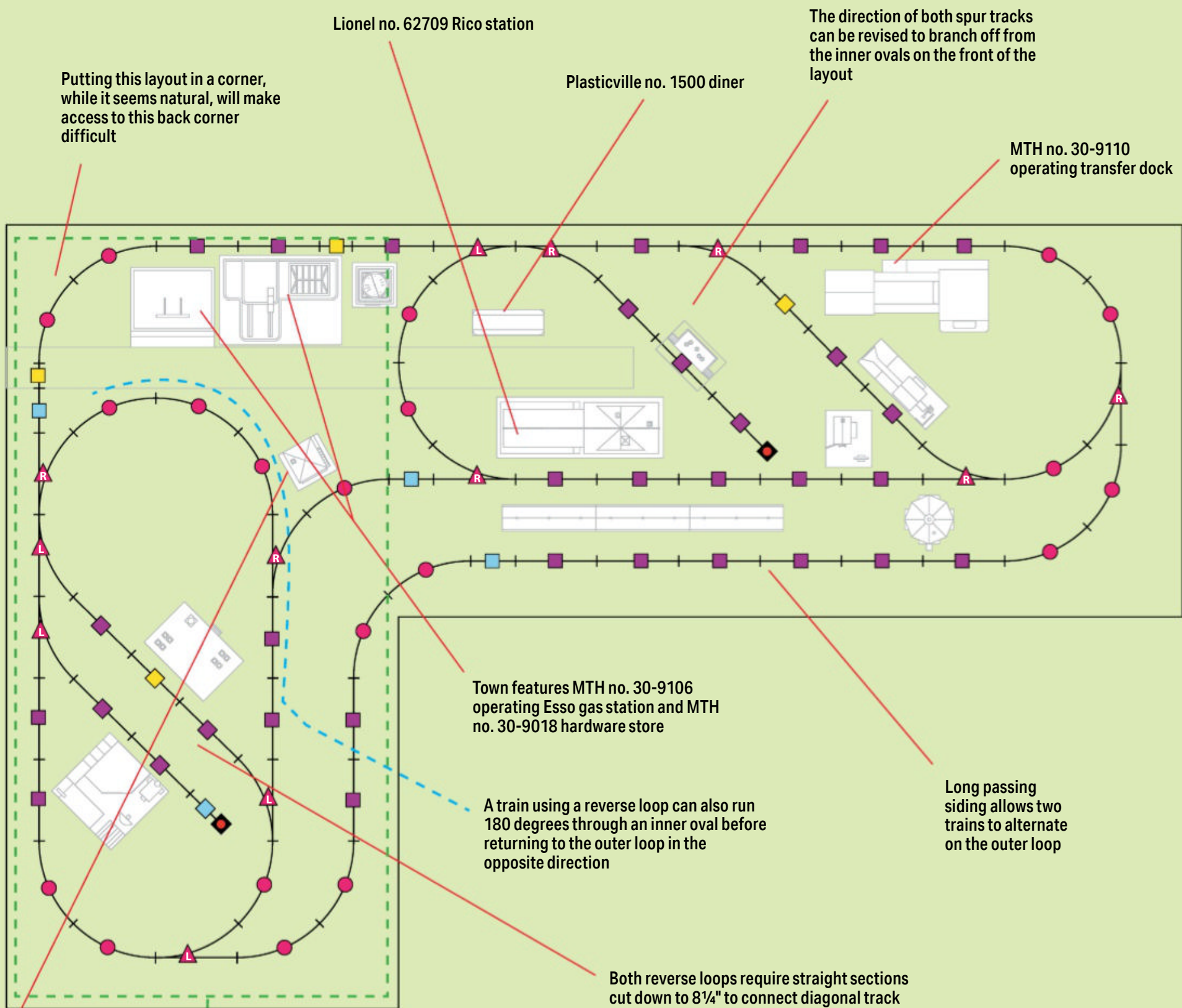
First, two trains can run at the same time on the inner ovals, both of which have short spur tracks for accessories. You'll need to separate these ovals electrically from other parts of the layout using two transformers and plastic pins in the center rails.

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 would make it possible for a train to 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.

As time and resources allow, add the second inner oval, the passing siding, the two reverse loops, and the two spur tracks for accessories. The fun never ends! **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, use a second sheet of plywood for the outer loop. Then save up for additional O-31 track switches to build a second inner oval and finally the passing siding and reverse loops.

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	granary

PLASTICVILLE

Number	Product
1500	diner

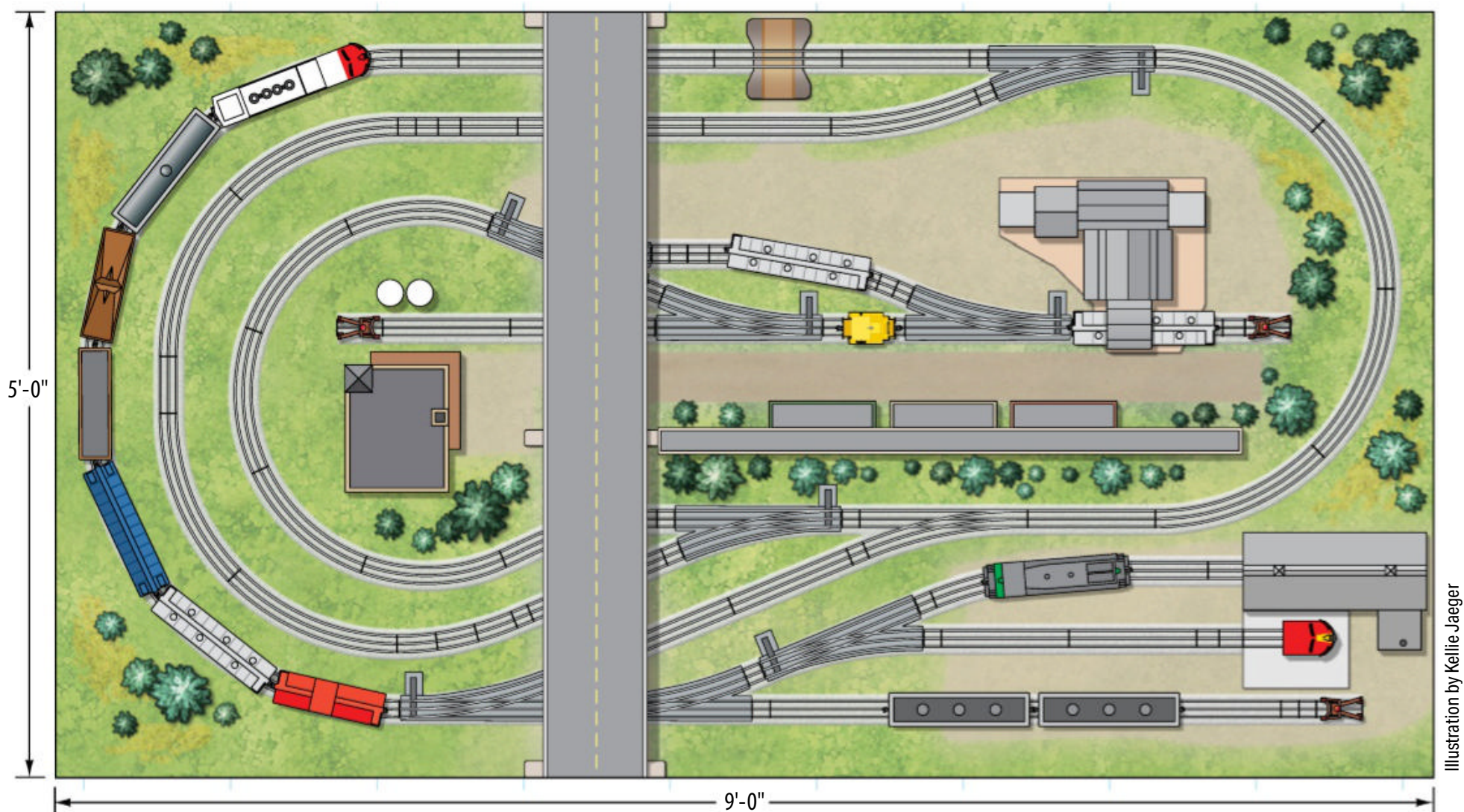


Illustration by Kellie Jaeger

A FASTRACK 5 x 9 MADE TO HANDLE THE CURVES ... AND MORE!

Here's a compact O gauge track plan that boasts design features more often found on large layouts

BY KENT JOHNSON

As will quickly be evident from studying this ingenious 5 x 9-foot O gauge scheme, the Lionel FasTrack no. 37103 O-31 curved section gives small layout builders reason for celebration. Why? Because it's now practical to include multiple loops of track in a compact area.

Truth be told, notable physical attributes of FasTrack (the width of the molded-plastic roadbed) prevent builders from forming truly concentric curves using O-31 and standard O-36 curves.

However, adding just a single straight fitter section at the top of the wider O-36 curve makes it practical to include two or even three nested loops of track. Time to capitalize on this point and create a compact three-rail layout with some great features.

A plan filled with features

At one end of this track plan, you'll see adjacent O-31, O-36, and O-48 FasTrack curves. Moving from the inner to outer tracks, this arrangement represents curved routes along an industrial branch line, a passing

An Atlas O no. 6907 lumber company or Walthers no. 933-3305 dairy can be used to represent a small, rail-served industry

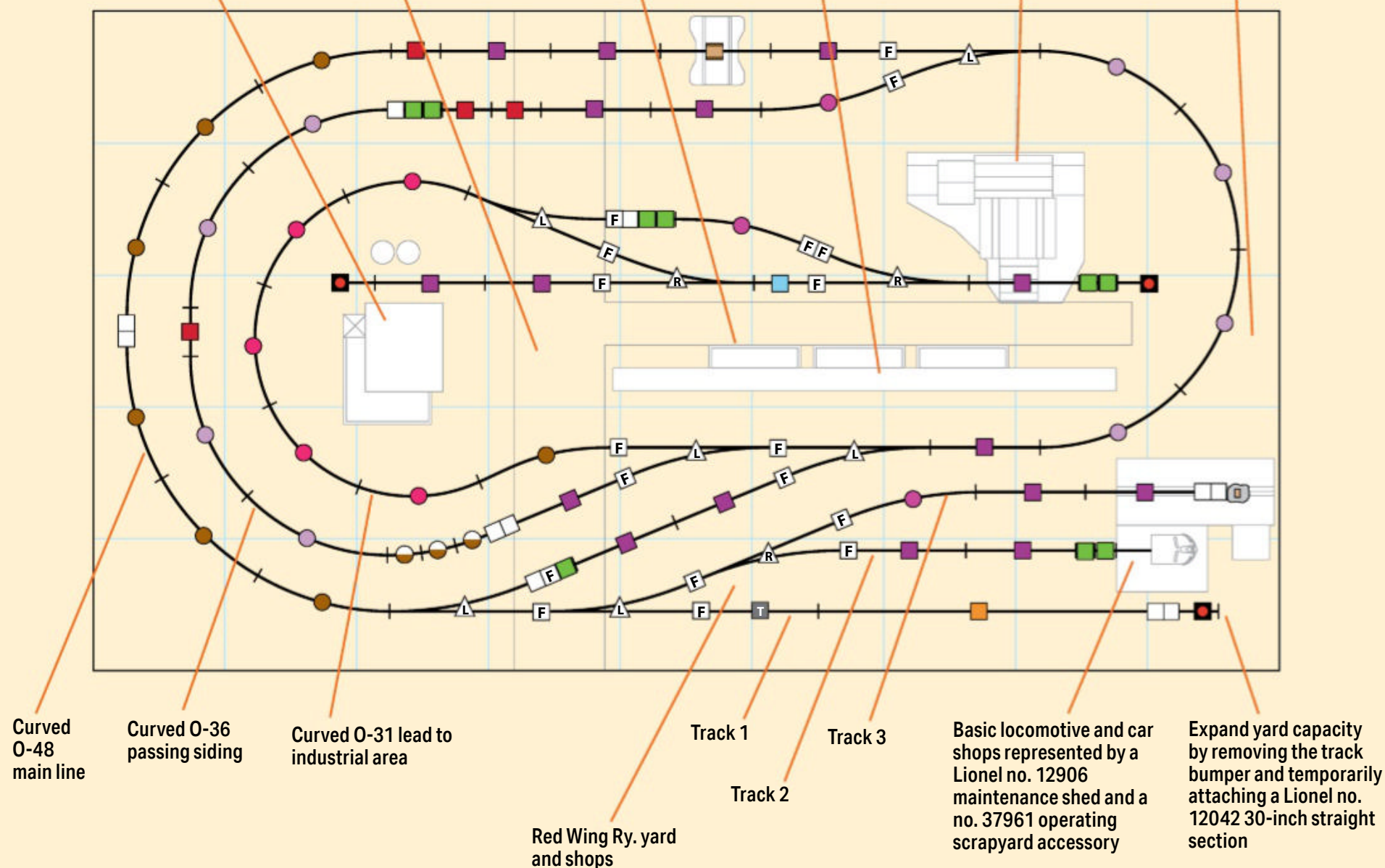
Build a highway overpass used to route traffic up and over the railway action around the town of Red Wing

Partial buildings or structure fronts can be used to represent the backside of structures along Main Street in Red Wing

Install a double-sided, view-blocking backdrop to help visually separate Red Wing from the yard

The Lionel no. 12726 grain elevator is a key industry at the heart of the Red Wing community

Position trees to hide track routing behind backdrop



siding, and a wide-sweeping main line. On a layout with limited space, you're lucky to have one, let alone all three, of these neat design features. That's the benefit of starting with a tight yet serviceable O-31 curved section.

Other "big layout" features fit to this limited space include FasTrack O-60 remote-controlled switches. At nearly half the curvature of an O-36 switch, these broad switches keep scale-proportion locomotives and rolling stock from navigating neck-breaking moves through the freight yard and industrial area.

You read that previous sentence correctly! This 5 x 9-foot layout also features a three-track yard with locomotive-maintenance facilities. You don't need a lot of space to store a few freight cars destined for the industrial branch, but you can easily increase the capacity by adding sections at the end of Yard Track no. 1.

At the center of the industrial switching area I've included a runaround track. This short yet essential arrangement permits a small switcher or an even smaller Lionel Trackmobile motorized unit to pull or push cars into place at the two industries. Even with just two industries, the work of positioning cars before, during, and after loading and unloading will be enough to keep one layout operator busy while another operator keeps a train continuously rolling along the main line.

And when it comes to running trains on this 5 x 9 plan, a command-control system seems in order to handle the three possible operating positions. You'll want one remote to run and route the mainline train, while another operator or two handles duties in the industrial area and yard. As you can see, there's plenty to do on this small railroad – the layout can certainly handle all the curves, but how about *you*? **CTT**

LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
18	1.375-inch straight fitter (12000X)
11	1.375-inch straight (12073)
9	1.75-inch straight (12026)
4	4.5-inch straight (12025)
1	5-inch straight (12024)
16	10-inch straight (12014)
1	10-inch terminal straight (12016)
1	30-inch straight (12042)
5	O-31 curve, 45-degree (37103)
8	O-36 curve, 45-degree (12015)
3	O-48 curve, 7.5-degree (16835)
7	O-48 curve, 30-degree (12043)
3	O-60 curve, 22.5-degree (12056)
6	O-60 left-hand remote switch (12057)
3	O-60 right-hand remote switch (12058)
1	grade crossing (12036)
3	lighted bumper (12035)
1	earthen bumper (12059)

AN O GAUGE LAYOUT NAMED ELTRINGHAM STATION

Paying tribute to a good friend with a unique layout

STORY AND PHOTOS BY JOHN AND DONNA KAEHMS

This is the story of an O gauge railroad we named Eltringham Station. The story explains how and why we built this 10 x 10-foot compact layout. It tells as well about the connections we made and the memories that were created.

We built Eltringham Station as a tribute to Norman P. “Skip” Eltringham. He was born in New England and served 35 years in the U.S. Navy aboard submarines and surface vessels. Skip retired from the Navy as a lieutenant commander and went on to become the senior captain of Franklin Roosevelt’s presidential yacht, the U.S.S. *Potomac*, currently berthed in Oakland, Calif.



As important, the story of how we designed and constructed Eltringham Station offers our many fellow O gauge enthusiasts some useful methods for saving space with a layout. Our railroad, which we had to build in a garage,





1 A Virginia & Truckee 4-4-0 Columbia steam engine and tender cruise around the 10 x 10-foot O gauge layout built by John and Donna Kaehms. The 19th-century locomotive is at the head of an excursion train being greeted by a solitary hiker at a miner's cabin on this sunny afternoon.



can be folded to become what the two of us jokingly describe as “a giant briefcase” (actually a 5 x 10-foot table for work in the garage). The layout has been built into the table, while the mountains and other scenic effects can be removed for storage in drawers and cubbyholes under the table. There was nothing complicated about the design, and we had it finished in a year.

Returning to the hobby

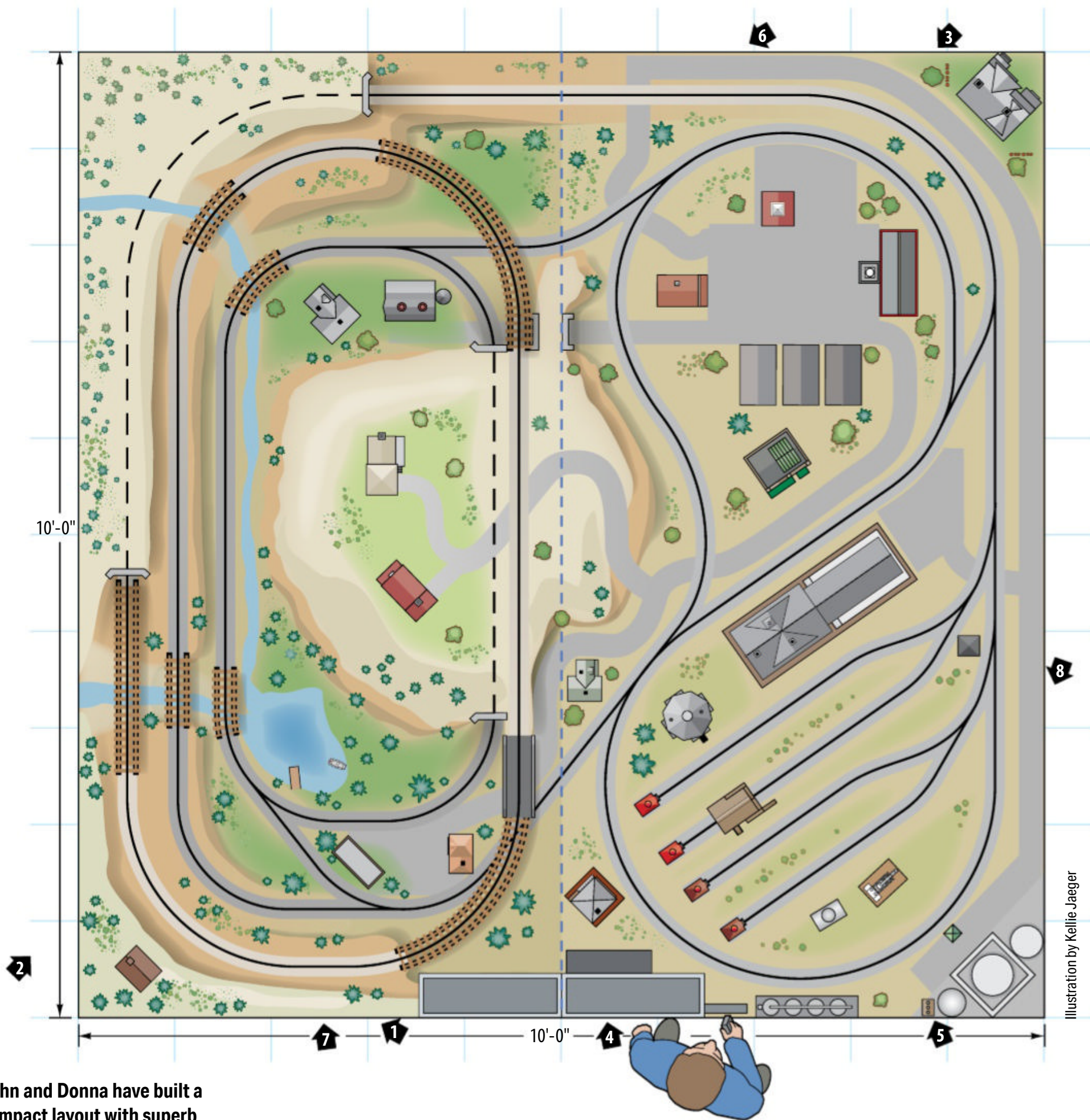
I met Skip on a *Potomac* cruise following my retirement from the Port of Oakland in 2004. The *Potomac* and I have a history going back to 1981, when I was employed as construction and maintenance supervisor for the port. That year, the Port of Oakland had acquired the *Potomac* and assigned me the job of supervising some of its initial restoration.

Following my retirement, I felt drawn to the yacht that 60 years earlier had hosted President Franklin Roosevelt. I began to volunteer on the *Potomac* as part of the crew. Skip and I became close friends through conversations about the



2 What really sets the Eltringham Station apart is that the 10 x 10-foot O gauge railroad can be folded over to save space inside the garage at the Kaehms' home. John's ingenuity has much to offer other builders, especially those wishing to construct a compact layout.





John and Donna have built a compact layout with superb scenery and landforms easily removed whenever they want to fold up the table display. The numbered arrows correspond to the numbers in each of the captioned photos he took.

AT A GLANCE

Name: John and Donna Kaehms' O gauge layout

Dimensions: 10 x 10 feet

Track and switches: Lionel (27- to 54-inch diameters)

Motive power: Lionel (postwar, modern), MTH, 3rd Rail, Williams

Rolling stock: K-Line, Lionel (postwar, modern), MTH

Controls: MRC "Dual-Power" transformer with MTH Digital Command System

Accessories: Lionel, MTH

Structures: Atlas O, Lionel, MTH, Plasticville, scratchbuilt

Vehicles: Diecast Direct, Hot Wheels

Figures: Plasticville, Woodland Scenics



3 This Southern Pacific *Daylight* passenger train, a gift from Skip, reignited John's passion for O gauge modeling. The absolutely stunning set of locomotives sparked his desire to return to the hobby by starting work on a realistic-looking and smooth-operating layout.

ship. I eventually served as his first mate. I learned he was an HO scale modeler.

Our mutual interest in trains strengthened our bonds of friendship. Skip had collected HO and other models for years, with his favorite railroad being the Boston & Maine, which he had watched while growing up. Mine was the Southern Pacific, where my father had worked for 40 years as an electronics engineer in charge of the detector car program. He developed and patented several electrical instruments used by railroads, including the first "hot box" detector and ultrasonic rail testing equipment.

I played with Lionel trains throughout my childhood. I received my first outfit at the age of four for Christmas of 1952. The no. 1485WS O-27 stream freight set used a no. 2025 engine and tender to pull a gondola, a tank car, and a caboose. In time, my roster grew to include Santa Fe F3s and passenger cars, a diesel switcher, box-cars, and operating items. Dad took old

sheets of plywood to build layouts for my trains and Plasticville kits.

My trains got put in storage as I grew older, but I never lost interest in them and recalled how much a part of my Christmases they had been. I made sure my sons, Kevin and Chris, had opportunities to play with them after they were born. Later, my boyhood model trains went back into storage.

That was where they were when I met Skip. Our conversations reignited the interest I had in model trains from years before. Once you own model trains, they will always be a part of your life.

Wonderful gift

Conversations with Skip about model trains led to our meeting for lunch and visiting a train or hobby shop every month. He usually bought several HO

Boston & Maine freight cars; I was content to admire the Lionel trains on display. Our routine lasted for years until 2013, when Skip was diagnosed with liver cancer.

Just before Christmas, Skip presented me with a set of beautiful O scale Southern Pacific *Daylight* diesel locomotives he had been given. The units, he explained, had never fit in with his HO models; besides, the gift would honor my father and his long and distinguished career with the Southern Pacific.

Skip's gesture touched me deeply. In fact, it motivated me to pull out my old boxes of Lionel trains and set them up on a table in my garage for Christmas.

At that point, Donna and I had been married for 17 years, yet she had never seen my trains. She loved them! They brought back memories of playing with

MY TRAINS GOT PUT IN STORAGE AS I GREW OLDER, BUT I NEVER LOST INTEREST IN THEM AND RECALLED HOW MUCH A PART OF MY CHRISTMASES THEY HAD BEEN.



4 Donna is quick to push her husband to bring out the Lionel no. 2025 steam engine and tender he received at age 4 on Christmas of 1952. Then the vintage combination can once again lead a string of postwar freight cars while puffing smoke and blowing the whistle.

toy trains with her brother had when she was a girl. When Skip died in January of 2014, Donna and I concluded we could best honor his memory by building a real model train layout.

Problem solved

Like all model railroaders, Donna and I had to face the issue of available space for a layout. Rather than building a layout around the walls of the family room or living room, we decided to house it in the garage. My garage table would have to serve a dual purpose. Consequently, we scrapped the old table and designed a new table with the layout built into it.

The new table in my garage functions as a giant “briefcase.” It has a 4 x 8-foot base on heavy casters so it can be rolled around with ease. There are several drawers and “cubbyholes” for storage of rolling stock. One drawer at the end of the table houses the transformer and command-control components.

On top of the 30-inch-high base is the “briefcase.” The top is 5 x 10 feet when closed as a table and 10 x 10 feet when opened as a train layout. Both the top and the bottom of the briefcase are constructed from ½-inch-thick plywood, with 1 x 6 spine boards for the perimeter.

The hinge side of the layout is reinforced with 2 x 6 lumber at the hinge points, along with gussets at each hinge. The hinge structures are built into the layout scenery and are disguised as tunnels or bridge abutments.

To open the top, I use a small electric winch mounted in the overhead garage rafters. The top of the layout then rests on two specially constructed “sawhorses” that were built to hold the tabletop at exactly 30 inches to match the base.

Track plan

A track plan was developed to provide the greatest number of train routes to follow. Several trains can be operated at one time.

In addition, reversing loops were carefully incorporated into the design so the trains would change direction and enhance the visual presentation.

Sidings were built to store rolling stock not being used. Some track sections are built so they can be operated on either the “A” or the “B” circuit of the transformer. Or they can be switched off completely for train storage like a siding.

Electric power from the transformer is provided to the track by wiring that follows the perimeter of the layout. Two hinges act as conductors to transfer the power from the base to the top.

Track is traditional tubular three-rail. Curves are mostly O-42 with some O-54 and O-27 pieces thrown in. Track is mounted to ¼-inch plywood cut and formed to exactly match the rail layout. The plywood is glued to the base and provides additional reinforcing to the layout structure and simulates railroad ballast once it was covered with ballast material.



5 The yard near the village of Eltringham Station serves as a wonderful home for several Southern Pacific engines. John considers the SP his favorite prototype railroad for the reason that his father worked there for 40 years as an electronics engineer.

To improve the look of all the tubular sections, Donna and I added hundreds of wood ties. We cut Popsicle sticks using a homemade panel saw jig. These wood ties are the same length as the sheet-metal ones on my vintage tubular track. Then we dumped the sticks in a large plastic jar filled with dark walnut stain.

Later, we removed the Popsicle stick ties and left them to dry on a sheet of door screen in a frame. After they had dried, we glued them beneath the rails of the track. Once the ties were in place, we covered the track with gray railroad ballast from Woodland Scenics (removing any excess with an artist's brush). We covered the rails with thin strips of masking tape before spraying the ballast with diluted white glue.

Off to the mountains

Most of the scenery is modular and

removable. There are eight mountain modules on the base side of the layout. Seven sections are removed to close up the layout. One section remains to support the top when closed.

Mountains and most other types of landscape were fashioned out of high-density flotation foam (in our case, what are known around marinas as "float biscuits"). Donna and I cut and carved them to shape with a handsaw, a sheet-rock rasp, and a single-blade hacksaw. Next, the two of us covered the foam with plaster-infused cloth and a layer of diluted plaster. Where we thought it was needed, we applied Sculptamold before painting the shell with latex colors from at a home-improvement center.

Some plaster rocks were cast in rubber

molds and then glued in place before final carving. We also added real rocks of various sizes, along with trees, branches, and twigs. Some of those scenery items are real and were collected on walks; others were commercial materials intended for modelers.

The mountains have two long tunnels, seven scratchbuilt trestles and bridges, two waterfalls, a river and lake, a quarry and mine, a farm and hobo camp, a motel, and houses. Livestock graze in the pastures. Wild animals roam the forests.

Hundreds of short and tall trees fill the layout. Bottle-brush pines, along with the more elaborate Woodland Scenics products, dot the landscape. Donna made many trees out of oak twigs covered with ground foam. Fallen and dead trees add realism to the forests.

THE KEY TO OUR CONSTRUCTING AND COMPLETING THE LAYOUT IN A YEAR WAS THAT DONNA AND I VIEWED IT AS A GENUINELY COLLABORATIVE EFFORT.



6 A handsome Baltimore & Ohio train heavyweight passenger rounds a bend on the elevated section of the layout. Donna's artistry is evident everywhere, notably with the trees, mountains, and painted backdrops.

Clear acrylic resin from Tap Plastics worked well for the two waterfalls, the river, and the lake. We dyed the resin light blue before pouring it over painted waterways. By the lake, swimmers are urged to enter the water with caution, as rumors have persisted for years that the Loch Ness Monster dwells on the bottom.

Heading into town

The top half of the layout is the town of Eltringham Station. It includes industrial buildings, shops, a town square, a church, a cemetery known as Boot Hill, and a town hall. Trains can stop at the station for passengers, proceed to the yard to take on coal or water, or pick up oil at the refinery.

The reversing loops expand the operating options. A train can follow the upper outer perimeter loop through the mountains over the trestles and back to town. Or it can take the lower perimeter loop

through the mountains, pass the farm, and head to town. Or it can make a reversal and run through the switching yard, drive past the Mayor's House, and go to the refinery and tank farm.

We give visitors a list of scenic items to find when they come to see the layout. Can you spot the dog stealing a hotdog off the barbecue at the mayor's residence or the Loch Ness Monster in the lake?

Final detailing

Trestles and bridges, as I knew from years spent as a supervisor for the Port of Oakland, are important elements of any kind of roadbed. The two bridges on the layout are commercial products from Lionel detailed with wood ties.

The five trestles were scratchbuilt, using Alder hardwood dyed with the dark walnut stain and cut with a table saw into strips thin enough to be bent in a jig to

form long stringers. I glued the strips together in a jig and mounted them on cap timbers attached to underlying piles (dowels) secured to a base plate screwed into the table. Ascending and descending grades, along with some compound curves, created a serious challenge.

Each of the trestles, while sturdy, can be removed from the layout once the track has been taken up. Just one more way of creating a versatile model display.

Team effort

The key to our constructing and completing the layout in a year was that Donna and I viewed it as a genuinely collaborative effort. She brought so many artistic skills to the project. Her talents and creativity made everything happen.

Donna's eye for detail, honed during a career as a dental hygienist and enhanced by experience in floral design at a local



7 Any swimmer who is nonchalantly admiring the Northern Pacific 4-6-4 Hudson from Williams (product no. 40106) shown barreling past the lake on this summer day had better wake up. The Loch Ness Monster has risen from the depths!



8 An antique steamer was assigned to deliver the Southern Pacific single-dome tank car to the refinery. It's really fortune for the owners of the petroleum facility that the locomotive engineer is familiar with all the latest rules and safety regulations.

crafts store, proved invaluable when we planned scenes. Landscape colors, textures, trees and shrubs, rockwork, modeling construction, and the detail all reflect her tremendous artistic talents.

Lucky for us, the business where Donna was employed served as a great source for landscaping materials. We recommend modelers explore the terrific range of items at crafts stores and hobby shops and then support those businesses.

Family fun

Eltringham Station has done more than honor Skip and strengthen the ties between us. The layout serves as a great attraction for our friends and a blended family that includes our four children, their spouses, and six grandchildren.

The track plan lets as many as four trains run at one time. Most of them use Lion Chief remote control, so adults and kids can have their own controller.

When several trains are operating

simultaneously, they must run in the same direction. That way, the only thing anyone needs to worry about is running into the rear of the train ahead or being run into by the train rushing up behind.

The trains running all at once in an enclosed garage create a lot of smoke. We must be careful not to set off the smoke detectors. "Noise pollution" can be a problem, too, since our kids and grandchildren enjoy blowing whistles on their locomotives while cars equipped with sound systems clang around the track. Add in realistic chugging of the steamers, and the noise can be heard throughout the house.

Yet neither of us would trade all the smoke, noise, and clamor for anything in the world! The sights, sounds, and smells of the trains are what create family memories. They take me back to 1952, when I got my first Lionel train. I feel as though Skip is watching over us with a big smile. Thanks for your service, Skip, and thanks for the SP *Daylight* diesels! **CTT**



NORMAN P. ELTRINGHAM, who was known to friends as "Skip," was more than just someone John spent time with on the restored U.S.S. *Potomac*. The retired naval officer motivated him to return to O gauge modeling and did much to inspire the design and construction of the 10 x 10-foot layout being saluted.

SALUTING A FEW GREAT COMPACT LAYOUTS

Story by Roger Carp

■ **FROM THE EARLIEST ISSUES OF *CLASSIC TOY TRAINS*** and especially over the past 15 years, smartly designed and beautifully landscaped compact O and S gauge railroads have been regularly showcased. The proliferation of digital cameras and smartphones has invited readers to provide great photos of their work, and we've been happy to share their outstanding and inspiring modeling. Here are eight of the finest compact layouts presented, each of which has something to offer anyone thinking about building a display, regardless of hobby experience or age.

Robert Fisch's 8½ x 11-foot O gauge layout

In less than 100 square feet, modeler Robert Fisch brought back memories of Lionel trains and accessories from the years right before World War II curtailed toy production. He wired some of the best operating accessories available in 1940 by combining plastic structures and details from the modern era to create an exciting and colorful display in which to operate original and reissued Lionel streamlined outfits.





Scott Smith's 9 x 9-foot O gauge layout

Challenged to find space at home for an O gauge layout, Scott Smith chose to modify his office to accommodate a spiraling display. Then he made certain not to overlook any of the detailing, so every scene contained visual elements guaranteed to grab the attention of viewers and inject more entertainment into his railroad. An impressive structure, trees with fruit, and a grazing rabbit enhance this area.



Mario DiFede's 5 x 9-foot O gauge layout

Some of the most pleasing compact layouts to look at and then operate are those developed with more than a single level of activity. O gauge enthusiast Mario DiFede wisely added an elevated line to his home railroad so his roster of newly built steam engines could punch their way to the top after navigating along the primary level. He made great use of Lionel's FasTrack sections with their plastic roadbed. Of course, what else make Mario's little world come alive are the many neat details, notably the human figures, he thoughtfully arranged.



John Grams and Terry Thompson's 4 x 8-foot O gauge layout

Two of the stalwarts of Milwaukee's O gauge community wonderfully combined ideas and talents in 2009 to develop a compact layout with roots in the postwar era. What John Grams and his friend Terry Thompson nicknamed the Retro Railroad definitely hearkened back to the action-packed operating displays Lionel once built for retail accounts. Their model railroad featured several classic accessories and vintage sets.



Classic Toy Trains' 4 x 8-foot O gauge layout

A notable tradition at *Classic Toy Trains* has been the construction and operation by members of the editorial staff of a compact layout for the education of the magazine's many readers. Every step of work is carefully outlined in consecutive issues, as was done with the Cascade & Timber Trail project railroad in 2008 and 2009. Leading work on that great-looking and smooth-running display was superb O gauge modeler Kent Johnson.

Bruce Pfeifer's 7 x 9-foot O gauge layout

One of the many tricks that builders of compact model railroads in any scale typically rely on to make them look larger is to surround at least one side with a backdrop. While some people opt for photo murals, others prefer to emulate Bruce Pfeifer and paint their own. The snow-covered mountains and evergreen trees greatly reinforce the impression that his O gauge trains are running fast during the coldest days of winter.



Skip Natoli's 5 x 9-foot O gauge model railroad

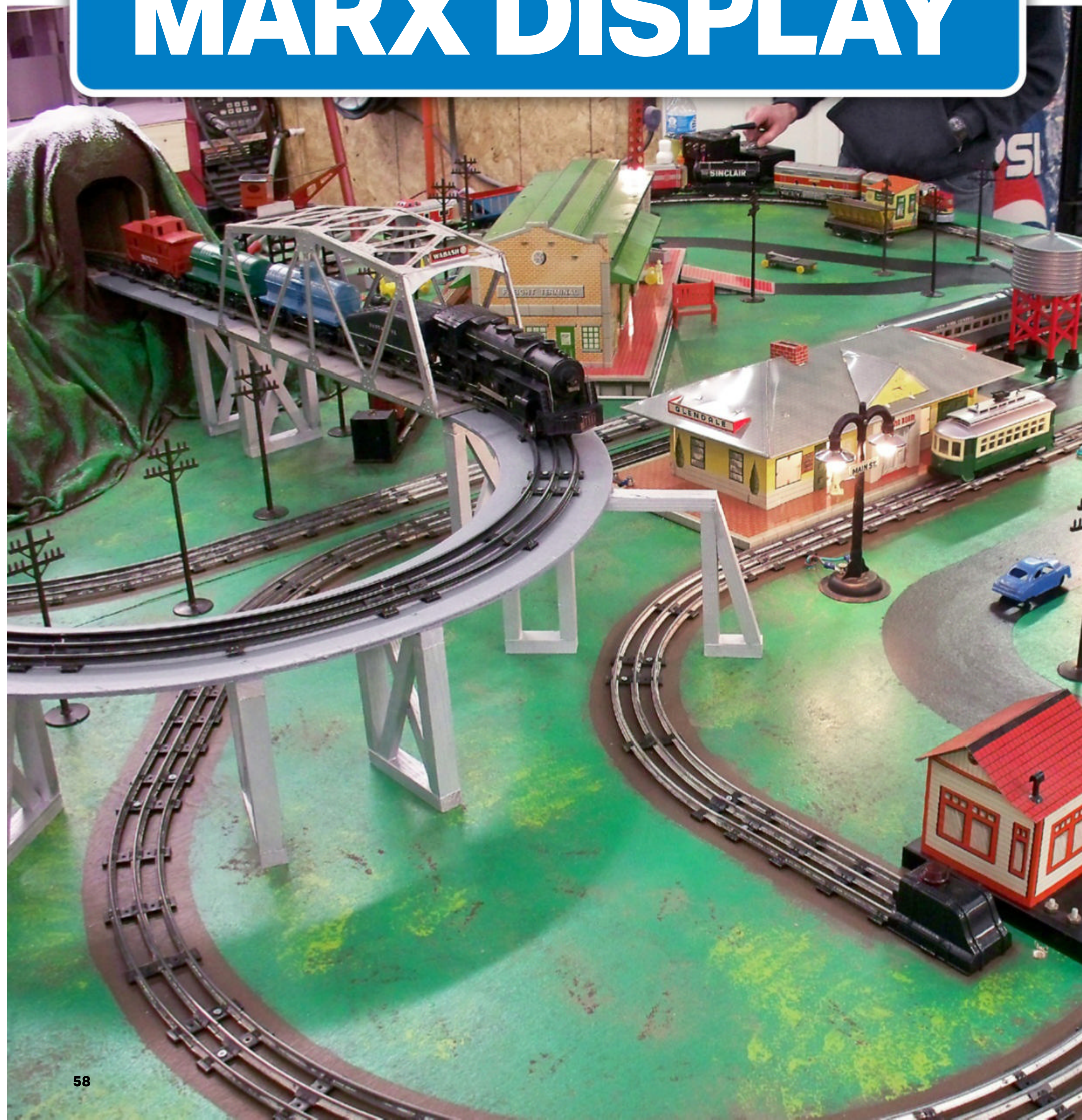
Christmas has long offered toy train enthusiasts the perfect opportunity to create a compact layout, either under their decorated tree or on a table or cabinet nearby. For Skip Natoli and his family, the holidays have been synonymous with Lionel railroading since he was growing up in the 1950s and '60s. He uses Department 56 structures and vintage Super O track to build scenes reminiscent of postwar New York City.

John Mansueto's 9 x 11-foot S gauge layout

Blessed with an abundance of American Flyer trains and accessories from the postwar era, John Mansueto felt driven to develop an S gauge layout with several independent loops of track on both the main level and an elevated section above it. He figured out how his trains might traverse fairly lengthy runs without causing his railroad to feel cramped. Figures and vehicles add interest to his scenes.



BUILDING A POSTWAR-STYLE MARX DISPLAY



Showing off vintage tinplate trains on an 8 x 8-foot layout

STORY AND PHOTOS BY DON AND LORI RICHARDSON



I've been collecting Marx toy trains for the past 20 years, starting with the purchase of a no. 597 O gauge Commodore Vanderbilt steam locomotive and tender, along with five freight cars and a caboose as a decoration for my son's room. From that first locomotive and train, my collection has grown over the years. I now have more than 200 Marx trains and a considerable number of accessories.

In 2013, I changed careers to open an auto body shop, Pike Collision in Petersburg, Ind. For Christmas that year, my wife, Lori, and I wanted to do something for the community both to promote our business and to share our love of toy trains. We decided to host a train show.

I had a small HO scale layout; my wife was working on an N scale layout; and our son had a Lego train and layout.

All that was missing, we decided, was an O gauge layout to showcase our Marx trains. So we built an 8 x 8-foot layout just for the show. Follow along and learn how we built a portable display in two weeks at a cost of about \$200 in materials.

A table for trains

We've always been impressed with Lionel's factory-built displays, so Lori and I chose to mimic that style of postwar pike without copying any particular plan. From the start we wanted our layout to have a toy-like appearance, which is how we imagine Louis Marx & Co. would have built it.

My wife and I started by assembling a pair of 4 x 8-foot tables we had designed to be easily connected and separated for storage between train shows. Each table has a box frame of 1 x 4 pine lumber with



A Marx streamliner roars past a no. 5424 freight station. Both are examples of the vividly colorful products made possible by lithographing tinplated sheet metal.

After deciding to host a Christmas train show for members of their community, Don and Lori Richardson put together an 8 x 8-foot postwar-style display to showcase some of their favorite items from the extensive collection of Marx O gauge trains and accessories they own.



The Richardsons constructed their display layout using Marx O-27 and O-34 tubular track. The model railroad is built on a pair of 4 x 8-foot tables, each with a single loop of track and one siding. The table closer to the camera also features an independent trolley track. The O-27 oval of track at the upper left will eventually be elevated.



Totally tinplate! Generously proportioned and distinguished by the many intricately printed lithographed details, the classic Marx no. 5424 freight station is the perfect complement for the string of vintage O gauge freight cars from America's greatest toy manufacturer.

a top made out of ¼"-thick Luan floor sheathing. We then connected the tables with ⅜" x 2½" bolts and nuts. To save on weight and materials, we didn't build legs to support the tables. Instead, we decided to rest them on sawhorses.

Next, Lori and I connected Marx O-34 gauge tubular track in two ovals, installed

one siding and a bump-and-go trolley track for an MTH motorized unit, and added an elevated oval of O-27 track.

The upper level covers both tables. Lori and I made its trusses out of ⅜" and ¾" pine board that we glued and nailed together and then painted silver. We next screwed the upper-level track to a Luan

MARX ACCESSORIES ON THE LAYOUT

- No. 61** telephone pole set
- No. 65** water tower with spout
- No. 68** high tension power poles
- No. 225** billboard
- No. 409** crossing blinker
- No. 412** derrick
- No. 413A** switchman tower
- No. 416** searchlight tower, twin lights
- No. 418** crossing signal with bell
- No. 423** twin light crossing flasher
- No. 429** street lamp
- No. 438** automatic crossing gate
- No. 446** revolving beacon tower
- No. 505** non-illuminated bumper
- No. 605** illuminated bumper
- No. 1305** plate girder bridge
- No. 1320** through truss bridge
- No. 1420** automatic crossing shanty
- No. 1614** automatic dump unit
- No. 4412** Glendale station
- No. 5424** freight station

base that we carefully screwed to the trusses. A pair of bridges spans the seam between the two tables.

Mountain scenery

Lori and I talked in detail about just how we wanted to arrange the scenic features. We concluded that a corner seemed best



The roads have been masked with tape and are awaiting a coat of flat black paint to represent pavement. The elevated loop, which rests on homemade wood trestles painted silver, passes through a mountain made from stapled fabric covered with fiberglass resin.

for a mountain. I made that landform from cardboard and stapled it to the table, making sure my longest and tallest cars cleared the walls and ceilings. Next, I made tunnel portals from $\frac{3}{4}$ " plywood, doing the same check for clearance.

Next, I patiently filled out the shape of the mountain using spray insulating foam and wadded paper. Thanks to Lori, I made sure to create a platform near the summit for a Marx no. 446 revolving beacon tower.

My wife and I followed by covering the mountain with brown fleece before stapling the landform to the table. I then coated the fleece with fiberglass resin.

After the resin had hardened, Lori and I painted the layout using household latex paints. We started with dark brown and followed with light, medium, and dark shades of green. To give the paint some texture, we used sponges and wadded paper towels to apply the colors. Final touches included painting the inside of the tunnels black and coloring the rock outcroppings on the outside of the portals.

Lori and I knew we wanted some roadways on the display. We delineated all the edges of the streets with masking tape. Then we used a roller to apply flat black paint simulating the pavement.



After the train show, Don and Lori put their Marx layout in storage. They promise it will play a return engagement soon, with plans to add a layout for windup trains!

For ease of storage and transportation, none of the buildings and accessories were attached permanently. We wired each table independently for the same reasons. Power is supplied by postwar Marx transformers: two no. 1669 100-watt models, one no. 1409 75-watt, and one no. 1549 50-watt.

A simple layout, a huge hit

The train show took place on December 21, 2013, and the Marx layout was a huge hit with everyone. Even though I didn't

have time to finish wiring all the crossing signals, it still looked great!

We handed out wood train whistles to all the children attending the show, and many kids followed the trains around the layout while tooting their whistles. A year later, Lori and I built a second Marx layout; it featured the firm's windup trains.

Who would have thought the purchase of one little red engine to decorate a child's bedroom would lead to such a wonderful and engaging hobby we still love! **CTT**

FUNDAMENTALS OF WIRING YOUR COMPACT LAYOUT

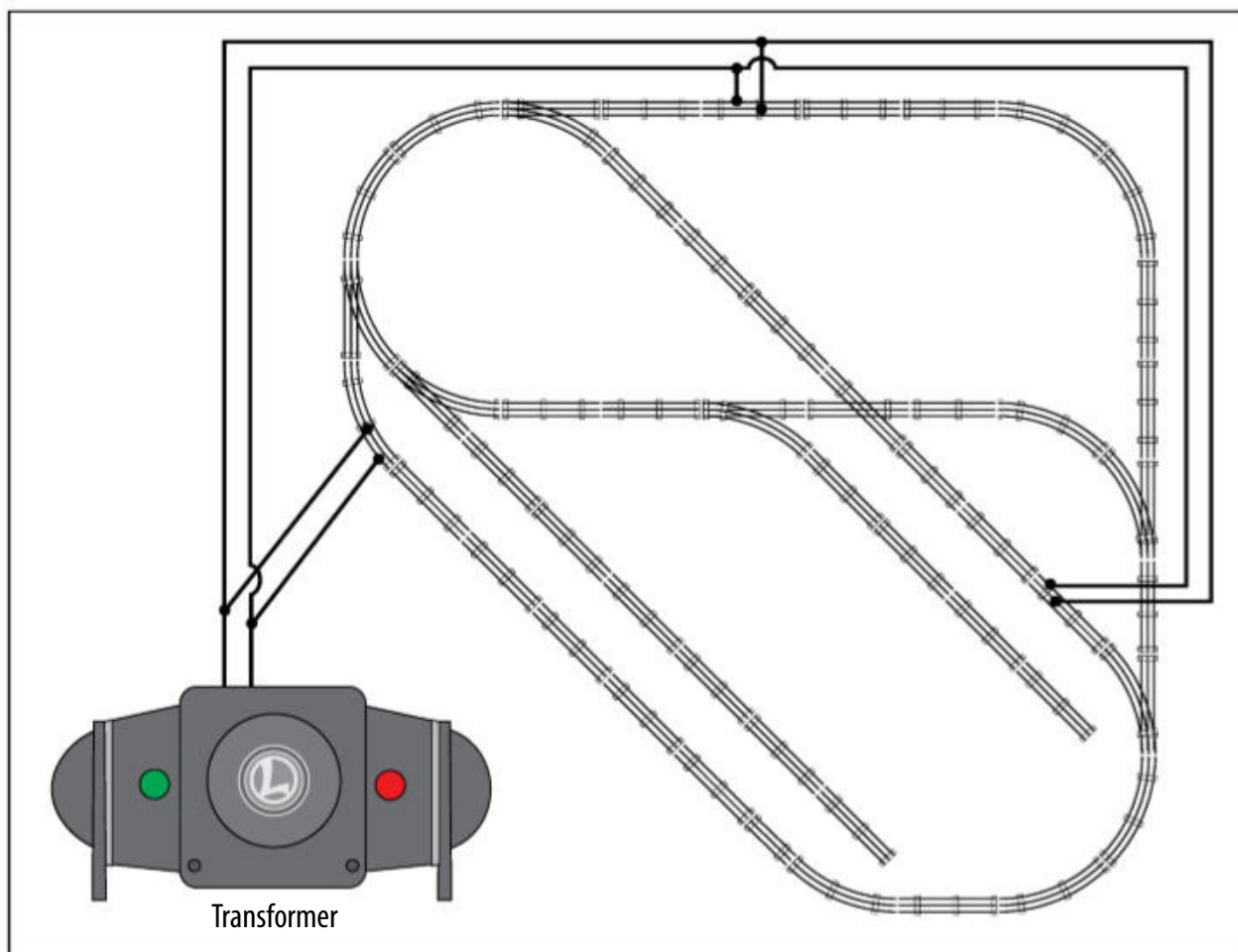
Know these track power basics

STORY BY BOB KELLER

■ It isn't an exaggeration to observe that the *Classic Toy Trains* staff is frequently asked basic questions, such as: "How do I connect my power and lockon to the track?" However, we get even more questions related to adding operational capability beyond running one train in a circle – taking a step beyond the starter outfit.

Aside from the layout-unique questions that simply can't be answered over the telephone, most of the queries we receive about wiring a layout revolve around the pattern of wiring to connect the whole shebang.

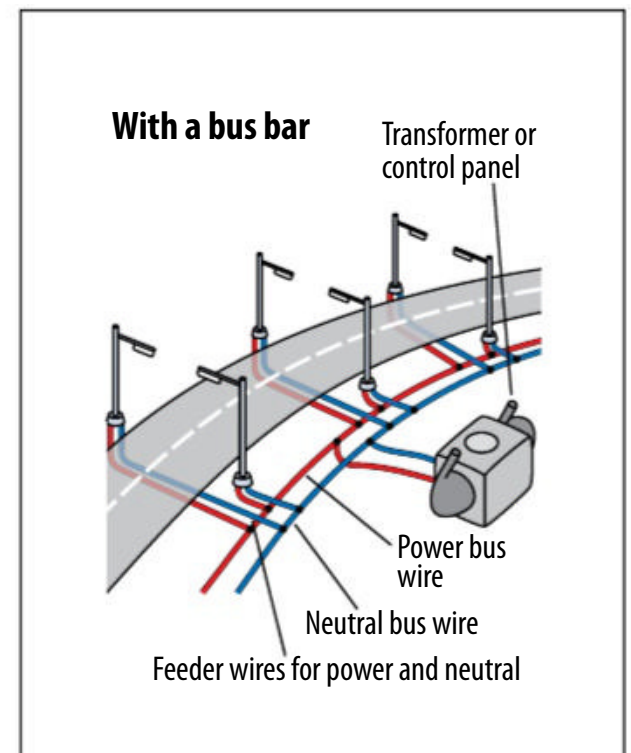
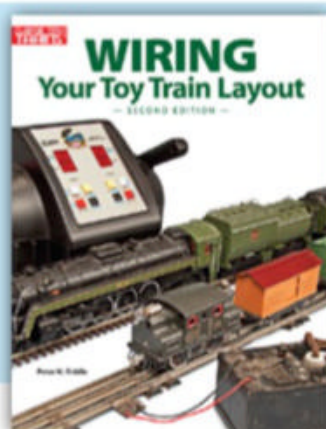
These are bus wiring (not so much a way to operate a layout as much as it is a means to effectively power it), block wiring (breaking a layout into multiple electrical blocks – or zones – controlled with a single transformer), cab wiring (similar to block wiring, except each zone is controlled by an independent "cab" or transformer), and "star" wiring (unique to users of the Digital Command System from MTH Electric Trains).



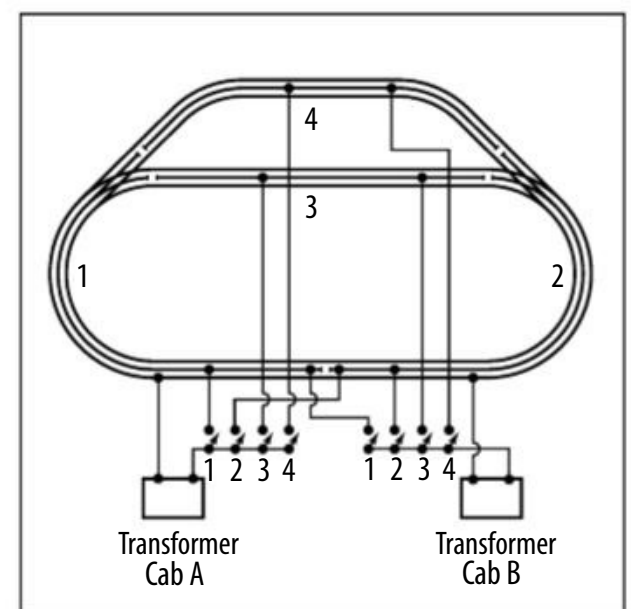
If you connect your power supply to your O gauge layout with a single lockon, the power will fade farther from the initial connection point. A bus distributes power more evenly throughout a layout. In its simplest form, it is easy to install – all you need are wire and some lockons!

FOR MORE INFORMATION

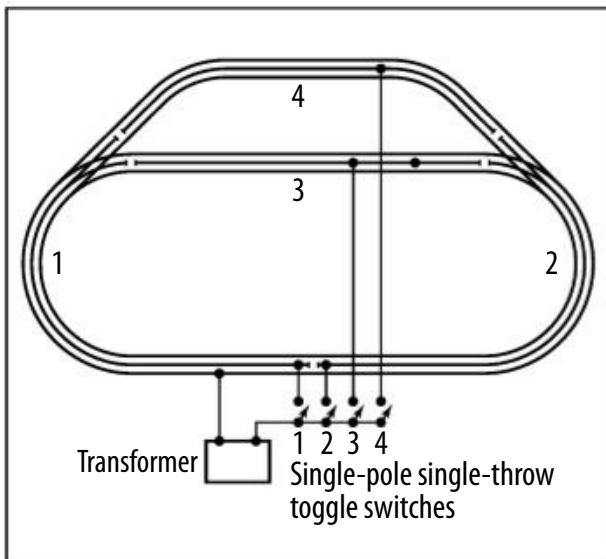
Kalmbach Media offers a variety of books and digital downloads on the subject of wiring for toy trains. See *Wiring Your Toy Train Layout* by Peter Riddle (item no. 10-8405) or *Wiring and Electrical Tips* (CTTPDF083). Both can be ordered by visiting KalmbachHobbyStore.com



Another handy aspect of running a bus system is that you can power trackside accessories, such as streetlights, by feeding them power from the bus.



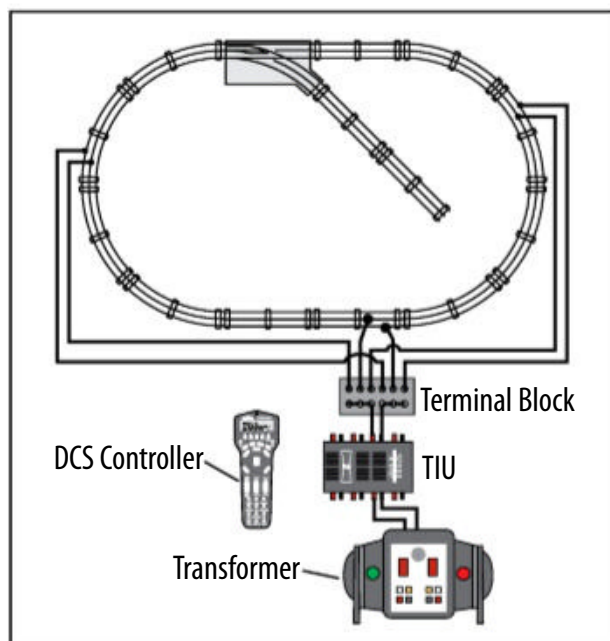
The cab control system is a more flexible version of the basic block system. The advantage of this is that you can use the two control sides of a Lionel type-ZW or MTH no. Z-4000 transformer, or multiple single transformers, for independent control and operation of each electrically isolated block. As with basic block control, this scheme is for conventional operation. Locomotives equipped with command-control components can go anywhere on a layout when they're used in conjunction with command-control equipment.



A block system is a basic method of running two or more sections of the same layout with a single power supply – and using insulated sections to isolate the track and single-pole single-throw switches to manage power flow.

Why would you want to do this? Let's say you wanted to run a switcher on the short siding without having to remove a locomotive from the larger loop. Then you would merely have to turn power off the main line and flick the switches to power the siding.

This scheme is for conventional control of locomotives, since both Lionel's TrainMaster and Legacy systems of command control as well as MTH's Digital Command System permit independent operation of command-equipped locomotives anywhere on a layout.



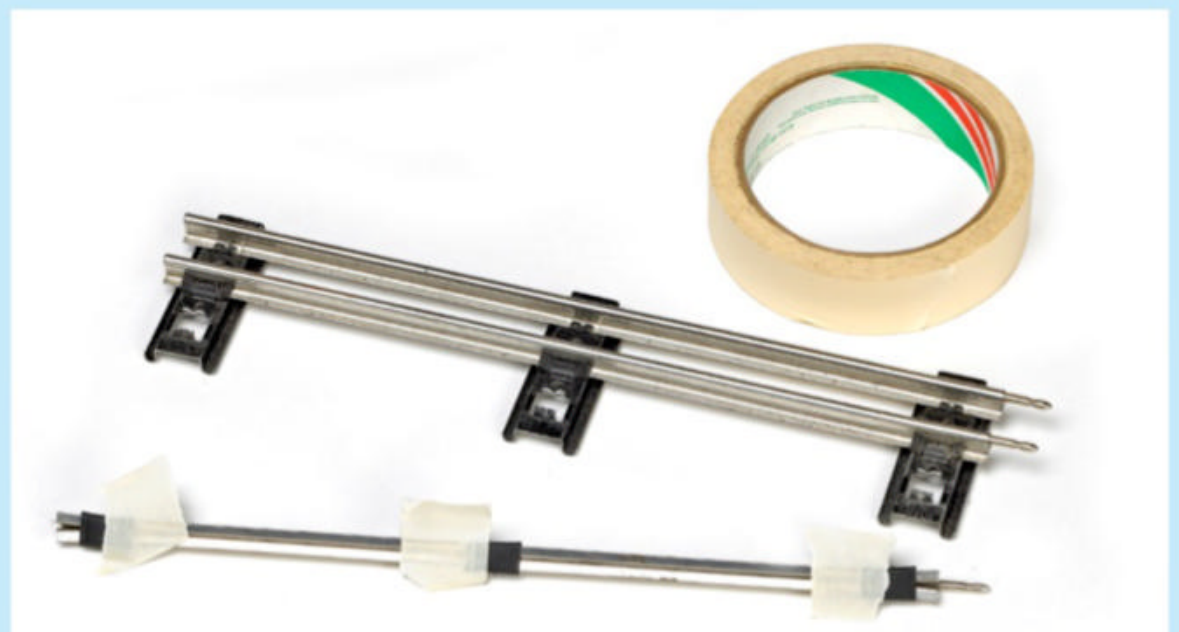
The Digital Command System will transmit signals through the track system, unlike Lionel's TrainMaster and Legacy systems, which transmit through the air. Depending on the size and complexity of the layout, switches and track-powered accessories may reduce or distort the signal strength. MTH recommends the "star" system, which uses a direct pair of power and common lines to connect to the layout. The concept is similar to that of bus wiring, except there are no secondary feeds from the line to weaken the signal. The moniker "star" comes from the image of power radiating from a central source. **CTD**

SIMPLE AND IT WORKS

Make an insulated track section

In the less technologically complex post-World War II era, the two most popular ways to activate trackside devices from Lionel, such as grade-crossing lights and block signals, were the nos. 145C, 153C, and 1045C contactors (devices that used the weight of a train passing over the contactor to power a circuit) and the insulated track section.

Over time, the 153C could become a bit unreliable. But the insulated track section virtually never failed. And since the gizmo was basically a modification of something you already owned (a piece of track), it saved a few pennies because you didn't need to buy anything else. This technique will work with any brand of standard, postwar-style tubular track. And the great news is, that even in these heady 21st-century times, the insulated track section still works!



These are all the common materials you'll need to make an insulated track section: A screwdriver, a pair of pliers, three small sections of cardboard for insulation, tape to secure the cardboard in place, and an insulating track pin.



Gently pry up the metal lip on the metal tie that holds the rail in place and remove the rail. Take bits of thin cardboard that are sized to match the width of the tie. If you have an old section of tubular track, re-purpose the three cardboard sections beneath the center rail. Use a spot of tape to hold the sections in place while you're working on the rail. Remove the track pin.



Place the rail back on the ties, and then carefully and gently bend the lips back over to hold the rail in place. Make certain the metal of the rail doesn't contact the tie. Next, insert a plastic insulating pin where the metal pin had been. There you have it – an insulated track section that works as well in 2021 as it did in 1941!



8 x 12 LAYOUT

MAGICAL TOUR ON AN 8x12 LAYOUT

Trains
really
travel on
**Steve
Kisver's**
railroad

STORY BY ROGER CARP ● Photos by Rachel Kisver



1 Scenes on Steve Kisver's neat 8 x 12-foot O gauge layout convey viewers from the 19th century, when old-time trains like this one dominated life on the railroad, to the 20th century, when New Yorkers depended on subways. Yes, Steve also runs MTH models of those urban trains.



2 The spirited combination of porcelain structures capped with patches of snow, animated amusement park rides, and postwar accessories is pure toy train magic. Steve wanted to showcase these buildings and animated models on his O gauge railroad.

The O gauge railroad modeler Steve Kisver has been building and operating for several years resembles so many others that readers of *Classic Toy Trains* have enjoyed. It measures 8 x 12 feet. That is enough real estate to accommodate some detailed scenes and plenty of track on two levels for his freight and passenger trains to run on.

But what truly distinguishes Steve's home model railroad from run-of-the-mill O and S gauge displays is the aura of wonder and pleasure people feel every time they enter his train room and watch the trains start their journeys. They look and look until the inevitable happens: Family members and friends nicely yet firmly ask Steve if he'll let them have a minute or two at the controls.

Of course, Steve kindly agrees to their request. Maybe he even offers a few pointers about how to use all the powerful transformers to avoid any high-speed derailments or collisions. Then the next

inevitable happens: Nobody wants to surrender their time playing engineer. "That's the magic of toy trains," Steve says with a big smile.

Magic is key

Our host really nailed what sets the toy train niche apart from others in the hobby of model railroading. If Steve hadn't put it so well, someone else I recently had been talking with, an acquaintance with no experience in the hobby, definitely did.

A conversation about my career at CTT led to a discussion of the relative merits of scale models versus toy trains. The woman with whom I was conversing admitted to being unfamiliar with the hobby, and so I tried to summarize the major differences between folks who opt for the temporal and geographical authenticity of HO and N scale modeling and



Steve Kisver has been an O gauge enthusiast since the day in 1954 when his Uncle Lou presented him and his brother with a used Lionel freight outfit.

those who prefer the whimsy and liberty of O and S gauge.

As the two of us talked further, I went out of my way to emphasize how enthusiasts in both fields could create highly realistic scenes with landscapes and vignettes deep in detail and believability. All the same, I concluded, individuals in the scale camp protest when seeing three-rail track and oversized couplers. And those in the toy area hardly rebel against running models of locomotives from the 1990s side by side with steam engines. Nor do they mind

when Southern Pacific passenger trains race streamliners decorated for the New York Central.

After listening for a while and posing a few more questions for me to answer, the woman said, "Now I think I get what

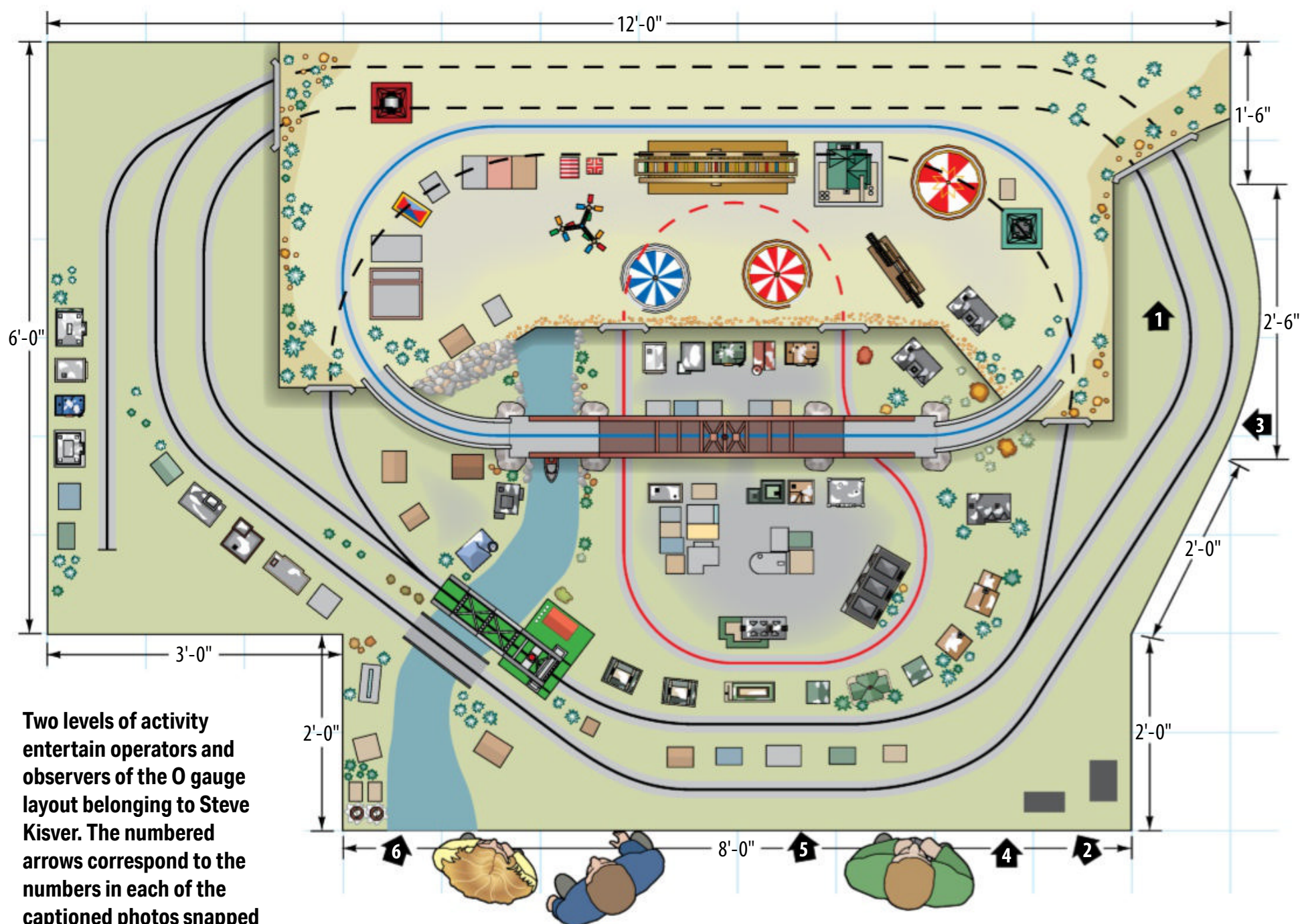


Illustration by Kellie Jaeger

Two levels of activity entertain operators and observers of the O gauge layout belonging to Steve Kisver. The numbered arrows correspond to the numbers in each of the captioned photos snapped for this exclusive article.

AT A GLANCE

Name: Steve Kisver's O gauge layout

Dimensions: 8' x 12'

Track: Atlas O, Lionel (diameters range from 27" to 72")

Switches: Atlas O

Motive power: Lionel, MTH

Rolling stock: K-Line, Lionel, MTH, Williams

Controls: Lionel type-ZW, Model Rectifier Corp. no. AH-601 Pure Power Dual transformers

Accessories: American Flyer, Lionel, Mr. Christmas

Structures: Department 56, K-Line, Lemax, Mr. Christmas

Vehicles: Matchbox, Rio

Figures: Lionel, Woodland Scenics

you're telling me. Scale modelers and toy train hobbyists find tremendous pleasure in the hobby, but in different ways. Both niches can aim for realism. But if you want magic in your trains and the freedom to do pretty much anything you want, toys are what to do."

Steve gets it

If the same woman I had engaged in this hobby discussion had met Steve at a social or professional gathering and asked the same questions, it's safe to say he would express similar opinions. And he might agree about the magic in what he and so many thousands of other O and S gauge builders achieve.

"I've watched my trains cast the same kind of spell over visitors to our home endless times during the years my layout has been up and running," states Steve. "The size, the sounds, the smoke, and the animation – they're all magical."

For Steve, toy trains have been repeating their magic and wonder ever since he and his brother, Irv, were growing up in

Brooklyn after World War II. Right around the time Steve was born in the late 1940s, their parents brought home the first electric train in the family, an American Flyer S gauge set. It was, sad to say, a source of frustration, with derailments being a common occurrence.

Luckily for the Kisver brothers, their Uncle Lou came to the rescue in 1954. He gave them a hand-me-down Lionel freight outfit headed by a no. 681 Pennsylvania RR 6-8-6 Turbine steam engine and tender. The steady and stable operation of the locomotive, not to mention the smoke pellets and blasting whistle, worked miracles. So also did the operating milk car that came with the 681. The boys were hooked.

Steve and Irv stayed excited for the next few years. They constructed a 4 x 10' layout with an "over-and-under" figure-8 track plan. The fun never ended until other interests and activities made electric trains feel like kid stuff. Then the Flyer and Lionel engines and rolling stock were packed away, although no one ever suggested getting rid of them.

Steve's return

The magic of the boyhood trains never vanished from Steve's mind, even if he showed little interest in the trains for more than a decade. Then, after marrying Sherry and welcoming their son, Gregory, into the world, the time seemed ideal for reuniting with his trains.

Pleased to discover how smoothly the Turbine still pulled the postwar freight cars, Steve promptly assembled a 5' x 10' display for his young son to enjoy alongside him. What a delight it was to gaze

upon a child discovering the magic of Lionel, just as his brother and he had done almost 30 years earlier. No chance Steve was giving up on trains now.

And he never has done so. Even when Gregory invariably moved on to other pastimes, Steve felt the vintage Lionel trains retaining their grip on his imagination. A spare bedroom in the Kisver home promised to be a terrific environment for a new railroad made up of three 4' x 8' sheets of plywood. They served as the foundation of the 8' x 12' layout featured here.

Construction proceeded at a steady pace for Steve. The 1"-thick tabletop stood 30" off the floor and was supported by 2 x 3 pieces of lumber. Cork roadbed went over the surface before Steve laid down the Atlas O track and switches.

Conventional control seemed the one and only choice for Steve. "It's part of my childhood memories of playing with our trains," he explained. "Besides, friends and relatives, not to mention their children, find using my vintage Lionel ZW easy."

Old-time Christmas

Now free to let his imagination roam and his sense of nostalgia reign, Steve decided on a unique setting for his home display. Remember, he says with a hint of warning in his voice, "this is a toy train layout. What I'm doing is far from reality!"

First came the trains, a fanciful combination reflecting two of Steve's passions. He admits to liking the so-called old-time trains Lionel has cataloged regularly since introducing the famous General old-time steamer and its freight and passenger cars in 1959. There have been a number of updated reissues over the years, and Steve really delights in operating them.

Okay, Steve, so you planned on building an O gauge layout with an Old West theme. It will likely feature a miniature version of Dodge City, with cowboys roping horses and driving cattle to the local yard for shipment east in stockcars pulled by a wood-burning locomotive.

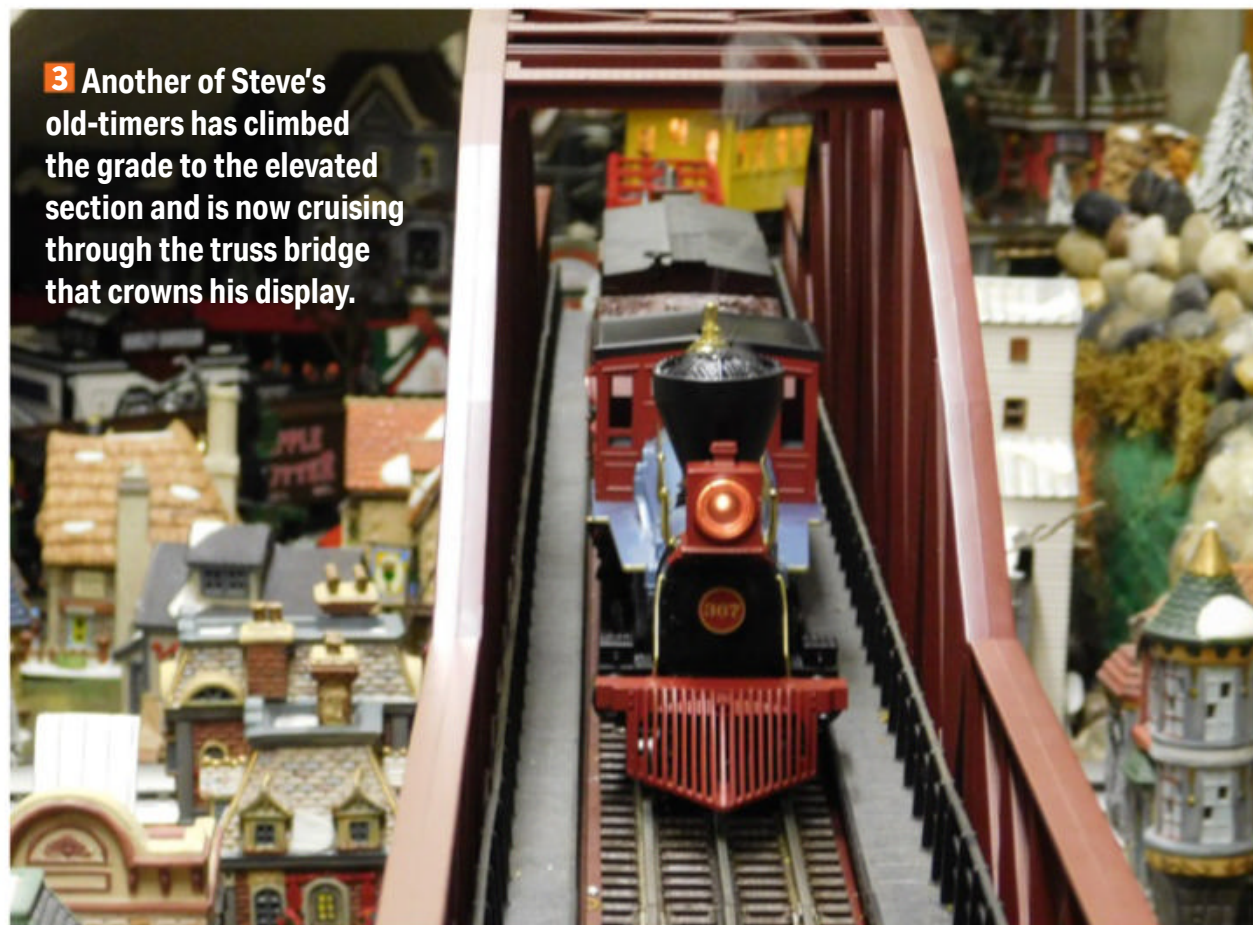
"Not exactly," our host hastily said with a touch of trepidation. "There's much more to my layout."

That was the moment when Steve reminded us about growing up in Brooklyn during the post-World War II years. Subways and elevated trains were daily sights during his boyhood, which was the reason he insisted that an MTH subway set be prominent.

Old-time trains and 20th-century subways – only on a toy train layout could you find such a combination and not bat an eyelash when seeing the models interact.

"There was something else I wanted to add to the layout," Steve quickly asserted. "I love Christmas and wanted my railroad to feature winter scenes with the holidays."

The best way to reinforce the impression the railroad is set in December was with some of the evocative porcelain structures on the market that were decorated for Christmas and created with patches of snow on their roofs. Lemax,



3 Another of Steve's old-timers has climbed the grade to the elevated section and is now cruising through the truss bridge that crowns his display.



4 The freight train dipping into a short tunnel has exited the main line mere seconds before a passenger train headed by a steam engine from the 19th century barrels across the turnout. One look reveals the old-time locomotive can smoke with the best of them!



5 Commuters rush out of the cold into the open doors of the subway cars on a morning in December. They're planning to do some Christmas shopping later today.

Department 56, and Mr. Christmas were ample sources. Steve and Sherry couldn't believe how many buildings there were.

Final touches

Christmas on the prairies of old Brooklyn – a rather facetious title for what Steve developed – has come together superbly. Sherry and Gregory agree the head of the family has accomplished everything he intended. They also give a thumbs up to the scenery.

Again, what Steve has done for landscaping may not pass muster among the most fastidious of scale modelers, but who cares? He has depended on traditional methods to finish appealing and believable areas for his trains to pass through and his buildings to inhabit.

We're referring to Steve using pieces of scrap wood and chunks of Styrofoam for the foundation of his hills and elevated sites, all of which he's covered with different landscaping materials marketed by Woodland Scenics. Commercial paints sold by Krylon and Rust-Oleum have worked well for coloring the hardshell with earth tones and greenery.

Last to go over the various surfaces are gravel, ground foam, and lichen from Woodland Scenics. The trees Steve arranged are commercial items he bought at hobby shops and at train shows.

What else should viewers note? Steve directs attention to the roads ("I relied on cloth printed to look like stone") and the river ("It's a layer of Styrofoam I spray-painted to get a more realistic look with holes and dents before adding water effects from Woodland Scenics").

Pride in the magic

The dreams that Steve nurtured during his childhood about owning a larger and more spectacular O gauge railroad now have come true. Thanks to his vivid imagination and diverse modeling talents, he owns a three-rail display unique in its identity, wondrous in its appearance, and magical in its operation.

"Best of all," Steve states, "anyone can do something just like this. All you need is imagination, a love of toy trains, and some free time. You don't need a lot of room; all I had was a spare bedroom. But if you're willing to try, you can construct a layout



6 The river Steve fashioned and painted with care is home to a tugboat about to pass under the Lionel no. 313 operating bascule bridge. Children line the waterway to wave to the crew on a beautiful spring day.

you're really proud of and your family and friends can enjoy as well."

The pride and pleasure Steve and others just like him take in what they build, usually while surpassing what they ever thought was possible, captures the magic of toy trains. This may be the most meaningful and fulfilling aspect of our hobby – just ask Steve. **CTT**

TRANSFORMERS & TRACK for your COMPACT LAYOUT



Lionel's type-KW 190-watt transformer is as capable today as it was in the 1950s of powering a couple of trains and some accessories on a layout of moderate size. There are lots of other options for train control today, too.

Choose traditional or high-tech, or a mix

STORY BY HAL MILLER

When you design a compact layout, two of the first things to decide on are what kind of track you want your O or S gauge trains to run on and how to power them. You have a variety of choices.

Transformers have come a long way over the decades. They're still a popular way to run trains. In more recent times, however, command control has evolved to allow hobbyists to remotely change models' speed and sound and to activate lighting, smoke, and other effects. You can even run consists from a smartphone, digital tablet, or handheld remote.

"Traditional" alternating-current (AC) transformers are technically interchangeable. With the right track connections and the correct power requirement for your toy trains, you can run 3-rail Lionel, Marx, or even MTH trains with a vintage American Flyer transformer, or 2-rail Flyer trains with a postwar Lionel transformer.

Track, too, has gotten better. The tubular version that was a hit in the early days of toy trains is still popular with many hobbyists, and new and used sections are plentiful. Also popular in both gauges is track with integral roadbed, which snaps together easily, looks great, and eliminates

ballasting. There are also "scale"-like track components available in O and S gauges.

How do you decide what to use? It makes sense to ask some questions first. The things you should think about from the onset are:

What's your available space? This will determine your maximum curve diameter. When designing a plan, don't fudge it and think you can bend things here or there to fit it all in. Various track-planning templates are available should you wish to use a pencil and paper. If you like to design on a computer, something like RR-Track software may fit the bill (rrtrack.com).

How many trains do you plan to run at once? You may be able to fit multiple loops of track into your space and be able to run two or possibly three at once. Or maybe one is the maximum. This will dictate the amount of power your trains will require. Transformers are rated in watts; shoot for a transformer that can deliver about 80 watts per train you want to run.

Do you plan to run postwar or modern models? Both have their own charms, and many people like to mix rolling stock. Postwar locomotives have durable though heavier and less efficient motors. The axles on the rolling stock were machined to

rougher tolerances than those made in more recently. The bottom line is the older the equipment, the more power it draws.

Am you going to power operating accessories with your transformer? This is important for two reasons. First, when choosing a transformer, you should make sure it has taps for accessory use as well as for trains. Second, accessories, including track switches and lights, put additional loads on the transformer, so if you have many of them, go bigger on the power.

Am you going to run passenger trains? Freight? A mix? Here's why it matters: In addition to the current drawn by the locomotives on a passenger train, the cars are frequently equipped with interior lights that add to the electrical load. If older, they're probably equipped with incandescent bulbs, which draw more current than the light-emitting diodes (LEDs) found in modern passenger equipment. It's not a consideration with freight trains.

Do you have grades on the layout? Any uphill climbs will tax the motive power and cause it to draw more current. These spots on the railroad are usually where peak power requirements occur.

Here are some transformer options



Lionel 1033

Lionel's no. 1033 Multicontrol Transformer was included with many of its O-27 outfits in the postwar era, and it is a workhorse! This 90-watt unit can control a train, blow the whistle or horn, change the direction of a locomotive, and power a number of accessories. They're usually plentiful at swap meets and on online auction sites. As with any vintage electrical item, make sure the wiring is in good condition.



Modern conventional control Lionel CW-80

Lionel's CW-80 has been included with a number of its more recent train sets and is also available for separate sale. This reliable power source comes equipped with wiring taps for train and accessory power. In addition, it features buttons for whistle/horn control, bell, and direction.

MTH Z-1000

MTH Electric Trains' no. Z-1000 has a power output of 100 watts, a 14-volt accessory port, and whistle/horn/bell, and direction controls. It will control one train.



Command control: Lionel LionChief

If you have any LionChief-equipped engines, you can run your trains with a LionChief app equipped smartphone or tablet or with a universal remote (pictured). You must also have a power supply for the trains, such as a CW-80 or its more powerful sibling, the GW-180. You can run several LC-equipped trains with this system. There is also a FlyerChief system for equipped S gauge locomotives.



MTH DCS Explorer

MTH's DCS Explorer can control as many as three locomotives. It has been part of select sets and is available for individual sale. It employs an app available for Apple or Android operating systems and can be operated from a phone or tablet via Wi-Fi. It does not require a network and can act as its own hotspot. It works with Protosound 2.0 and 3.0 locomotives.

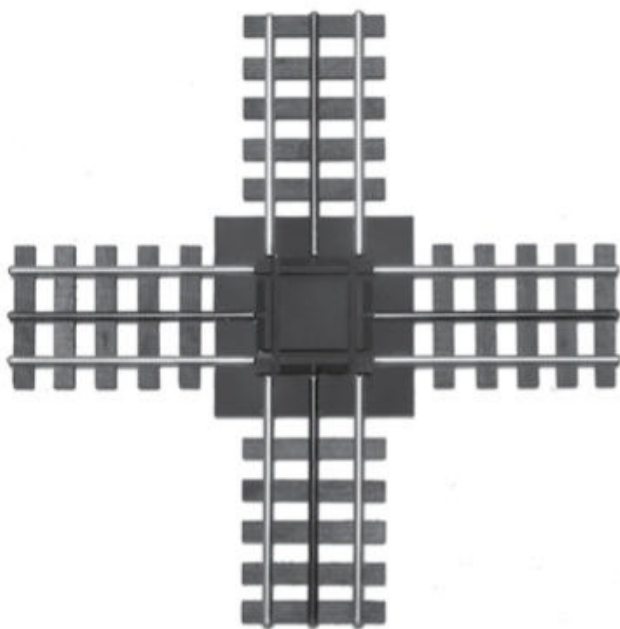


Here are some track options



Traditional: Menards tubular track

Even though Lionel stopped manufacturing tubular track in 2015, there's still a lot out there new in O-27 and O gauge. Home-improvement chain Menards still produces the track with O-31 curves, but it doesn't make switches or crossings.



Scale-like track: GarGraves Trackage Corp.

Reminiscent of Lionel's postwar Super O, GarGraves makes a line of scale-appearing track. The line includes O gauge flextrack, straights, curves, and a variety of accessories. Its Phantom track makes the center rail darker to blend in with the ties. GarGraves also offers S gauge straights and flextrack.

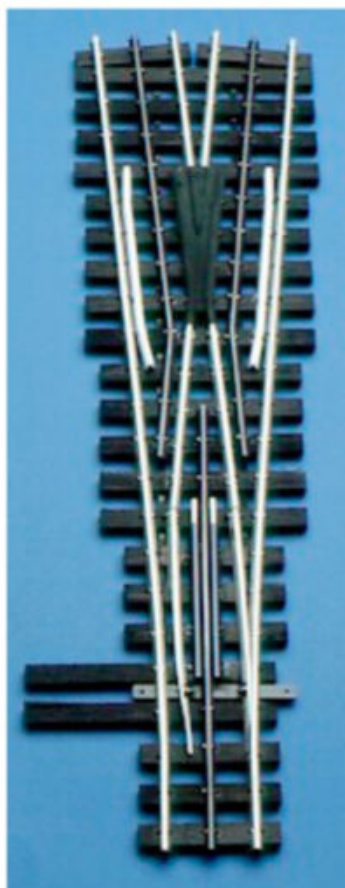


Track with integral road-bed: Lionel American Flyer S FasTrack and Lionel O FasTrack

Lionel makes FasTrack in S and O gauges. American Flyer S gauge curves are available in R20 and R27; the line includes switches, crossings, and other track components, along with adapter sections to mate with the traditional Flyer track components. The company's O gauge line includes similar components and curves from O-31 to O-96. It's not compatible with MTH RealTrax.

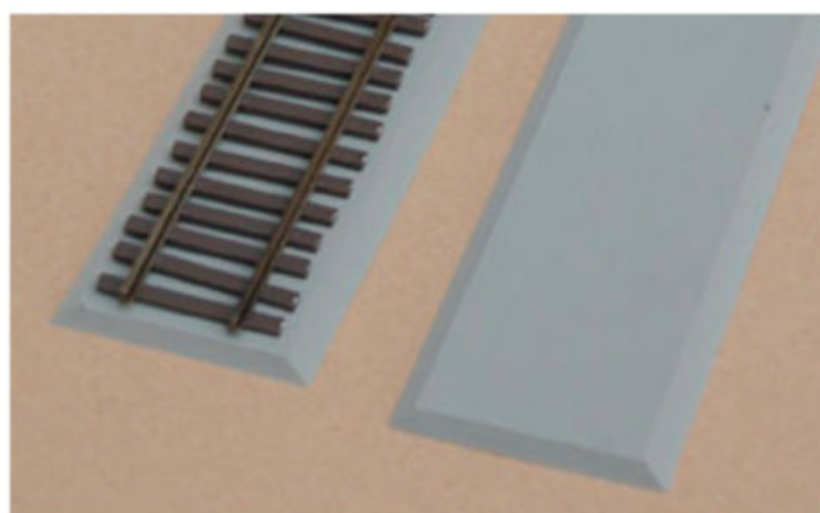
MTH RealTrax

RealTrax is a full-line component system that includes curves ranging from O-31 to O-82. Switch machines may be swapped to either side for space purposes, and power can be connected to lighted lockons. There are also adapter sections available. It's not compatible with Lionel FasTrack.



Ross Custom Switches

In a similar vein, RCS takes the realism up a notch or two from traditional track. Its stock-in-trade is O gauge switches, which it builds in many different configurations as well as in multiples.



American Models

In addition to selling its own line of locomotives and rolling stock, American Models manufactures S gauge track components. The system is Code 148 and is of scale design, including flex, straights, crossings, switches, and roadbed.



Atlas O

Atlas O has its 21st Century Track System, a line of nickel-silver, solid-rail products including straights, curves, switches, and crossings. A starter set is available. Curve diameters start at O-27 and then go from O-54 to O-108.

RESOURCES

American Models: americanmodels.com

Atlas O: atlasrr.com

GarGraves Trackage Corp.: gargraves.com

Lionel Trains: lionel.com

Menards: menards.com

MTH Electric Trains: mthtrains.com

Ross Custom Switches: rossswitches.com

THE ESPOSITO FAMILY'S NEWEST ADDITION

1 Striking Lionel no 2023 Union Pacific Alco FA diesels from 1950 pull a string of Sunoco double-dome tank cars past the farm on the compact layout recently completed by Christopher Esposito with help from his four children. He recommends getting youngsters involved with model trains.

Time to build a new layout for this growing family

STORY BY ROGER CARP ● Photos by Christopher Esposito





Even though the dimensions of the O gauge layouts Christopher has designed as an adult have varied, the depth of realistic detail and emphasis on using Lionel trains from the postwar and modern eras of production has stayed constant. His brand-new layout measures 4 x 8 feet with a 3 x 4-foot extension.

The Esposito household – parents Christopher and Amy plus their four children – may be one of the few places where the clamor made by operating postwar trains barely disturbs the sounds of day-to-day life. With four delightful and playful kids under the age of 11, Chris and Amy know the noise and ruckus they can raise will routinely drown out whatever roar the vintage small Hudsons and turbines create.

These two caring and patient young parents wouldn't have it any other way. They cherish moments with Lucia and Lorenzo, Giovanna and Santino, especially when everyone is standing in protected areas to watch full-size trains on vacations or crowded into the room at home where Christopher has his latest display.

Already in *Classic Toy Trains*, we've showcased two of this talented modeler's layouts. When news hit that Christopher had torn down the 6 x 13-foot railroad featured in the November 2017 issue and was starting on a postwar-style layout with less than 50 square feet, we jumped at the opportunity to present it. What continues to add interest to every new effort is how much Christopher encourages his sons and daughters to assist him. He wants the hobby to be welcoming and fun for them.

Just how to proceed

Among Christopher's many attributes as a modeler and photographer are those associated with being a loving and terrific dad.

The laidback approach he has adopted to his favorite hobby and motivating his kids to share it reflects the way his father got him into O gauge railroading in the 1980s. "My love affair with Lionel started when I was a toddler," he reflects. "Dad let me play with his postwar trains on the small layout he was building for them. Pretty soon, I wanted to get more involved."

The first Lionel set Christopher could claim as belonging to him and not his father came from the legendary store in New York: Madison Hardware Co. Even at an early age, he felt proud to own a new set, and it soon joined various postwar engines and cars on a 4 x 8-foot Super O layout father and son built at the home of Christopher's paternal grandmother. Later came a basement-size layout with a three-track main line in their family home.

They seem ready

All the lessons Christopher learned would serve him well after Amy and he had married. The hours of pleasure he recalled inspired him to return to the hobby about 15 years ago. There seemed to be no reason not to fire up the Lionel trains that had belonged to his late father and carry on a tradition of three-rail modeling.

Naturally, a 4 x 8-foot display struck Christopher as the perfect way to start. In time, he broadened his visions and launched work on a 12 x 20-foot O gauge layout. The challenges of developing realistic scenes satisfied him and left him mulling over the possibility of moving toward bigger and more complex layouts.



Christopher and Amy Esposito have their hands full raising two sons and two daughters, but a key to their success is making sure the children gain valuable lessons in cooperation and sharing as they build and operate layouts. Chris' father introduced him to the hobby in the same manner.

However, the arrival of Lucia changed Christopher's thinking. In place of hours spent working independently on a sophisticated model railroad, he wanted to create something smaller and more appropriate for a child. He wished to include his wife and daughter in what he was building.

The desire to make his hobby a family activity grew stronger after the birth of a son three years later. Lorenzo took to the trains right away, as did their second

daughter, Giovanna. They handled minor tasks with minimal supervision from Dad.

There was virtually no doubt Santino was going to be another Lionel fan from the get-go. Once the baby had passed his first birthday, Christopher knew he was ready to lend a hand. He marshalled the troops and started on the new layout.

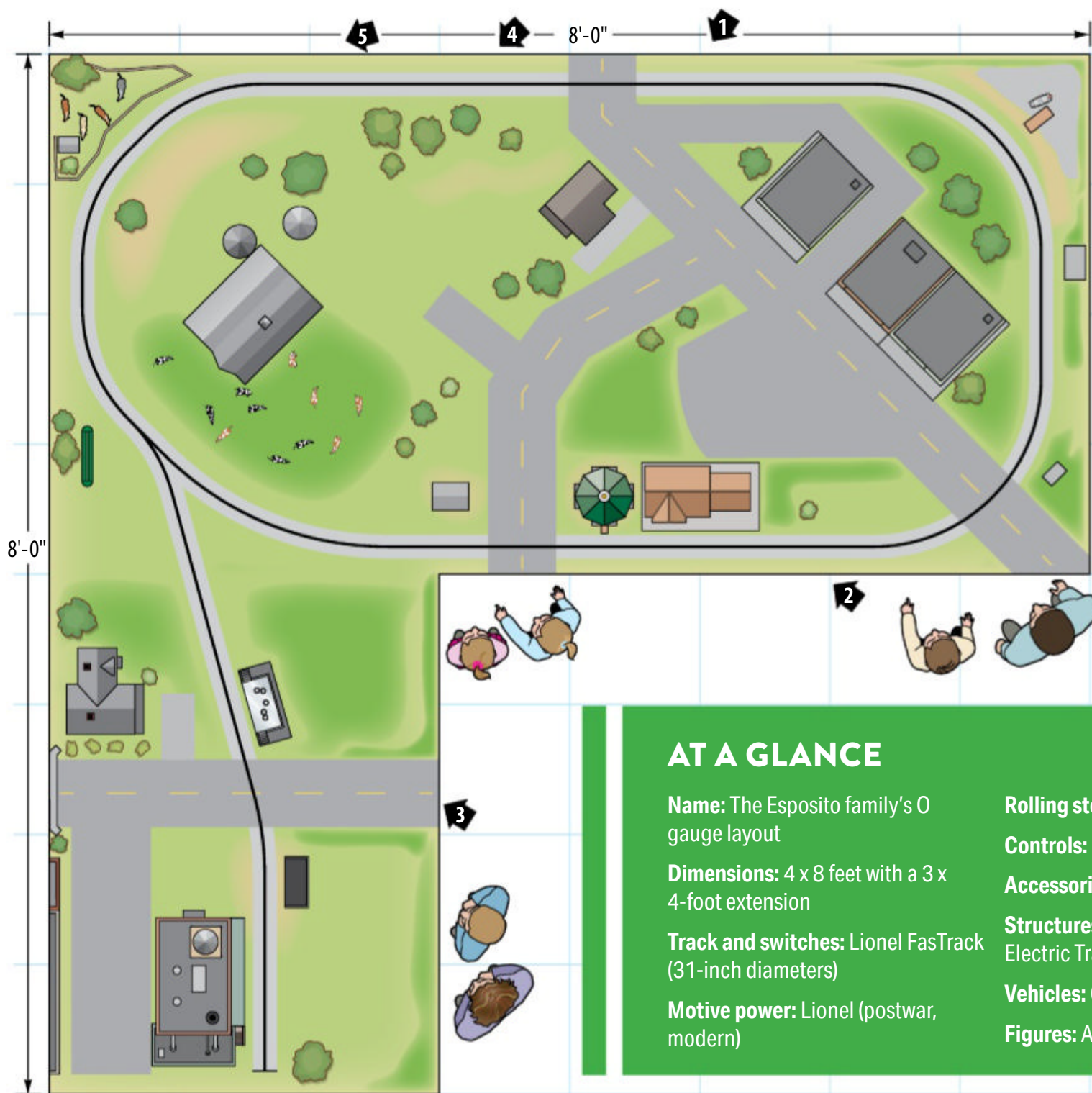
Easy and familiar

To every mom, dad, or grandparent contemplating whether to include a child in planning and building a layout, Christopher offers a resounding reply: "Go for it!" As to the best way to proceed, he answers with the philosophy he has figured out one or two kids ago: "Make everything easy and fun. And the best assurance you can have for achieving that goal is to choose methods that are familiar."

Simple benchwork for this 4 x 8-foot layout with a 3 x 4-foot extension came together quickly, even with little fingers



1 A no. 2338 Milwaukee Road GP7 road diesel leads several colorful freight cars from the 1950s through a grade crossing on the Esposito family's model railroad. Photo backdrops make the compact three-rail layout seem larger and more realistic than it actually is.



Realistic landscaping and just a handful of structures helped Christopher and his kids create an exciting layout. Work done by Diorama Studios 70 years earlier has influenced the look of his different projects. The numbered arrows correspond to the numbers in each of the captioned photos taken by Chris.

AT A GLANCE

Name: The Esposito family's O gauge layout

Dimensions: 4 x 8 feet with a 3 x 4-foot extension

Track and switches: Lionel FasTrack (31-inch diameters)

Motive power: Lionel (postwar, modern)

Rolling stock: Lionel (postwar, modern)

Controls: Lionel type-ZW transformer

Accessories: Lionel (postwar, modern)

Structures: Bachmann, Lionel, MTH Electric Trains

Vehicles: Corgi, Ertl, Road Champs

Figures: Artista, Ertl

Illustration by Kellie Jaeger



2 Not a cloud in the sky on this April day when a freight train led by one of Lionel's small Hudsons chugs past the Woodland Scenics passenger station. Christopher named the village Hillside in recognition of the town in northern New Jersey where Lionel's factory was once located.



3 A tramp pauses by the main line to watch a slow-moving steam engine and tender pass. He's willing to jump into any boxcar with an open door.

and short attention spans to deal with. The family made a tabletop using 2 x 4s for the legs and 1 x 4s for the supports. On top the kids helped Dad add a sheet of plywood.

Tubular O gauge track once was ideal for a beginner layout. These days, parents and children swear by Lionel FasTrack. It's plentiful, versatile, and affordable.

Developing a compact for kids led Christopher to install manual switches

instead of remote-control ones and to put his trust in conventional control. Not that he hasn't introduced the older children to Lionel's command system. But for this kid-friendly display, he concluded a postwar type-ZW transformer was best.

Big surprise

Asked about scenery, Christopher talked about the photos published in the 1990s

showing the realistic settings created long before he was born by Diorama Studios. Craftsmen there had built detailed dioramas for Lionel to use when photographing trains for catalogs and promotional items. They also had designed and constructed a 16 x 32-foot O gauge layout for Lionel's corporate showroom in 1949.

Photos of work done by Diorama Studios influenced what Christopher was planning for his latest layout. He studied them to see how he and his children might add similar sights to their small railroad.

However, Christopher realized quite soon, there was no purpose in using exclusively the materials and techniques the men at Diorama Studios had relied on. Doing so would severely limit what he and his offspring might accomplish. Besides, Christopher had lots of experience constructing his own displays. He decided they would be better off taking what he had learned and combining that knowledge with the visions of the past.

With patience, Christopher helped his children use two common landscaping materials to form neat scenes. “We took chunks of Styrofoam,” he explained, “and after getting them in the shapes necessary covered everything with Plaster Cloth from Woodland Scenics.”

The kids loved the process and with great seriousness colored the shell with brown or dark green latex paint. They next added ground foam and lichen.

For a pond, Christopher supervised the “excavation” of the foam on top. Once the area had been carved out, the kids colored the exposed plywood with a mix of black, blue, and green paints. Dad put a sheet of clear plastic over the sunken terrain to simulate water. They finished the scene with assorted details. Really a highlight!

Memories galore

Christopher and Amy love packing up the minivan and traveling with their sons and daughters to attractions, parks, and recreational areas along the East Coast. Photos taken on recent “adventures” nurtured wonderful memories that in turn shaped different scenes on the layout. For example, Christopher used a scaled-down picture he had taken of the sign for the Family Cow Farm, a sight the family had visited in Pennsylvania, to serve as the entrance to the farm on the layout.

If a vote were taken among the four children, they probably would select the farm as their favorite spot. Not only did they help model it based on what they remembered having seen on actual farms, but in addition Lucia has a real love for horses and Giovanna thinks cows are the coolest and most beautiful creatures. As for Lorenzo and Santino, they almost certainly defer to their sisters on this topic.

Good sharing

One of the most important lessons Amy and Christopher strive to instill in their daughters and sons is the importance of sharing. To demonstrate what he has in mind, Christopher goes the extra mile to make the vintage and current trains accessible to his kids, regardless of their age.

Sharing the pleasures of this hobby with youngsters is a recommendation Christopher hopes others will take to heart. Another tip from this master modeler boils down to the need for everyone to get started. “You should begin your layout, even if it’s smaller than the gigantic displays you’ve always dreamed of owning.”



4 No matter what the day, visitors are likely to find a postwar locomotive hard at work on the Esposito family’s new layout. Moving a boxcar to its next destination is a no. 1615 0-4-0 steam switcher. The structures on the farm come from MTH Electric Trains.



5 Horses and cows delight all four Esposito youngsters, so the layout had to feature plastic replicas grazing inside a fenced-in area. Now the animals won’t be tempted to stray and possibly block the freight train rushing to get less-fortunate livestock to market.

Christopher is correct. There can be thrills and fun on a compact display. And you can develop scenes that boast realism and depth. The crew at Diorama Studios proved the truth of that assertion long ago.

Fortunately for us, the Esposito family will keep on showing what can be achieved in relatively small areas in the

next few years. More layouts await, for the simple reason that, as Christopher recently announced, they’ve pulled up stakes once again. A new home means the talented and enthusiastic group will be building new and better layouts. We look forward to presenting their work and seeing their love of the hobby grow. **CTT**

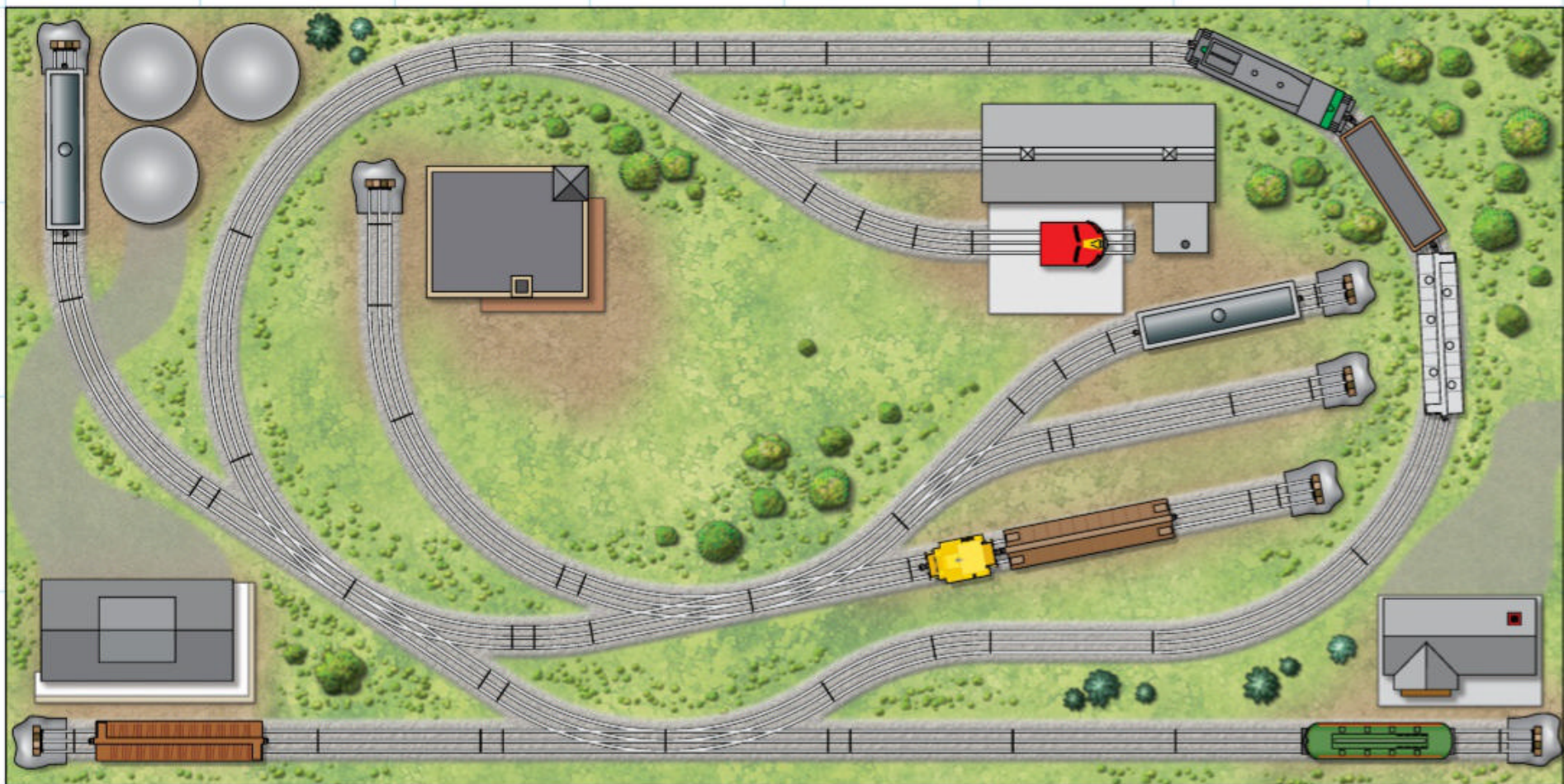


Illustration by Kellie Jaeger

INDUSTRIAL MITE

STORY BY KENT JOHNSON

Small motive power has plenty of room to roam on this 4 x 8-foot O gauge track plan



An Allegheny, a Big Boy, a Centipede, and a DD40X. They make up just a sampling of the gargantuan O gauge locomotive offerings that have inspired toy train operators to plan and sometimes build layouts of equally epic proportions. But how many of us are motivated to “think small” when we’re enamored of a diminutive diesel or slight steam engine?

Although I initially had doubts about this approach, the process of building the Readers’ Choice Railroad (see February through September 2011 issues of *Classic Toy Trains*) helped convince me otherwise. After operating Ready Made Trains by Aristo-Craft (RMT) “Beep” locomotives on the 4 x 8-foot O gauge project railroad,

I began to see how a compact layout might complement a tiny train.

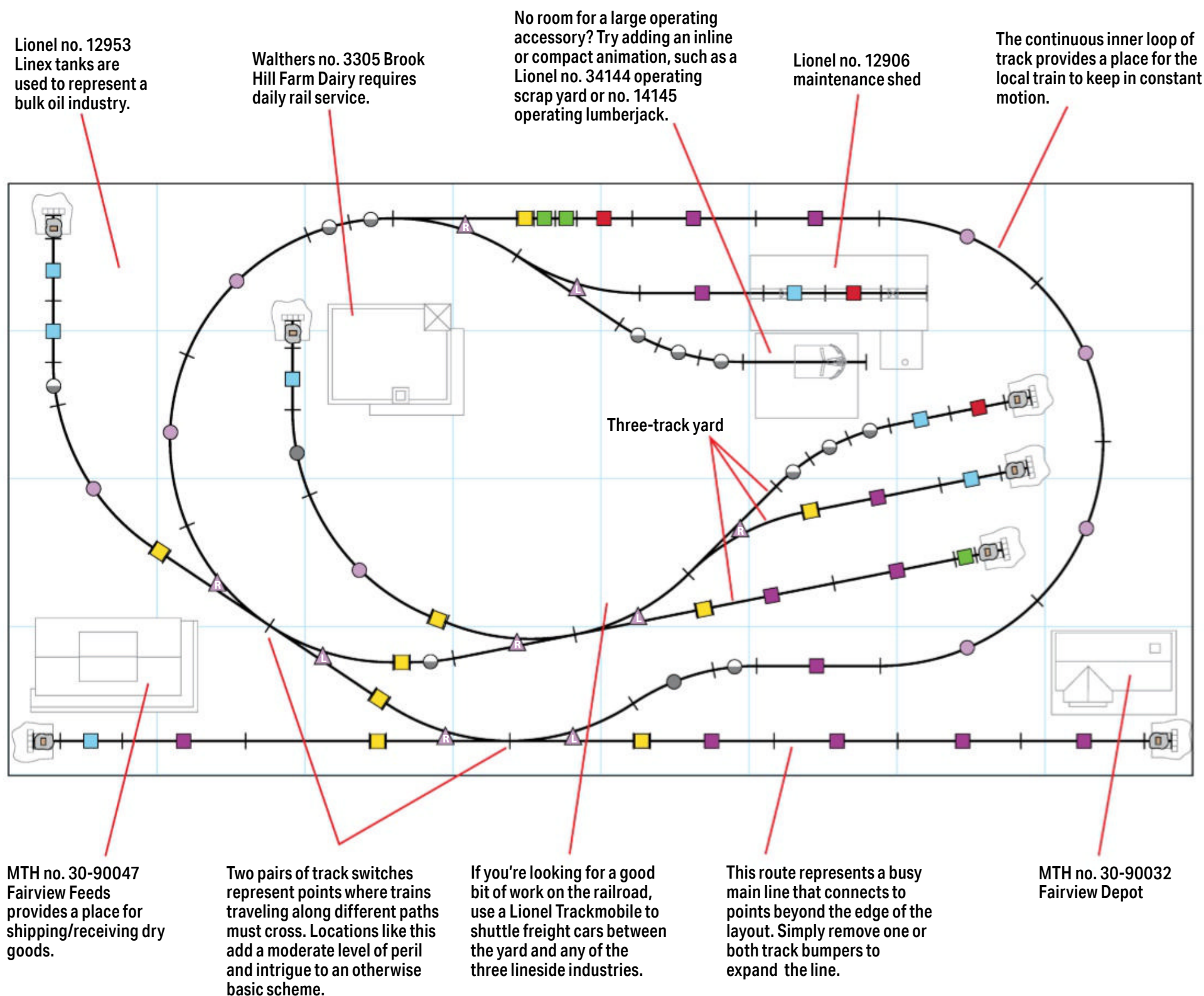
Then, with the arrival of a new kind of motorized unit from Lionel known as the Trackmobile, I was ready and rarin’ to plan a small, yet fully functional, O gauge layout specifically intended for this novel “Industrial Mite!”

Down to size

I started sketching this track plan with the thought that a basic point-to-point scheme might be the most appropriate environment for my new favorite motorized unit. But even though I enjoyed operating the Trackmobile along the K-Line SuperStreets on our Readers’ Choice layout extension (see the September 2011 issue),

I wondered if most operators would soon long for a continuous route. That’s when I challenged myself to design a small layout featuring both types of operation.

Working within the borders of a single 4 x 8-foot sheet of plywood, I included several rail-served industries, a locomotive/car maintenance facility, a yard, and a loop of track that permits unimpeded operation. Though it would have been easy to employ tight-radius O-27 track and switches, I instead chose to work with our readers’ favorite Lionel FasTrack system. A loop of broader O-36 curves and track switches will extend to the outer edges of the tabletop, but the ability to run more standard-sized trains made the decision easier to endure.



'Round & 'round or to & fro

The no. 28450 Trackmobile is best suited for shunting one or two cars from the compact, three-track yard to any of the three distinct industries. By design, it can access two of the three industrial sidings without traversing the mainline loop. An operator can make a job out of swapping empty cars with loaded ones and then return the unit to the maintenance facility at the end of the day.

Next, it's time for the local, perhaps led by a small diesel locomotive, to drop off and pick up cars from the yard. That's where the continuous operation over the loop of track comes into play. Of course, the ultimate challenge is to perform both jobs at the same time, which is possible if

you've wired the layout for control using two separate electrical blocks and a transformer with twin throttles, or you've installed a command control system.

Despite the industrial slant to this compact O gauge layout, there's still plenty of opportunity to incorporate passenger service. Perhaps the simplest option is to add a trolley equipped with a bumper reverse mechanism. Set it on the main line at the front edge of the layout, and you've effectively added a third train to the action!

If you prefer a more versatile mainline people mover, try a Budd Rail Diesel Car from Lionel, MTH, or RMT. It will be ideal for transporting laborers to the industries along this not-so-big yet truly bustling three-rail layout. **CTT**

LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
9	1.375-inch fitter (12000X)
3	1.75-inch straight (12026)
3	4.5-inch straight (12025)
7	5-inch straight (12024)
12	10-inch straight (12014)
8	0-36 curve, 45-degree (12015)
2	0-36 curve, 22.5-degree (12022)
11	0-36 curve, 11.25-degree (12023)
4	0-36 left-hand manual switch (12017)
5	0-36 right-hand manual switch (12018)
8	bumper (12059)

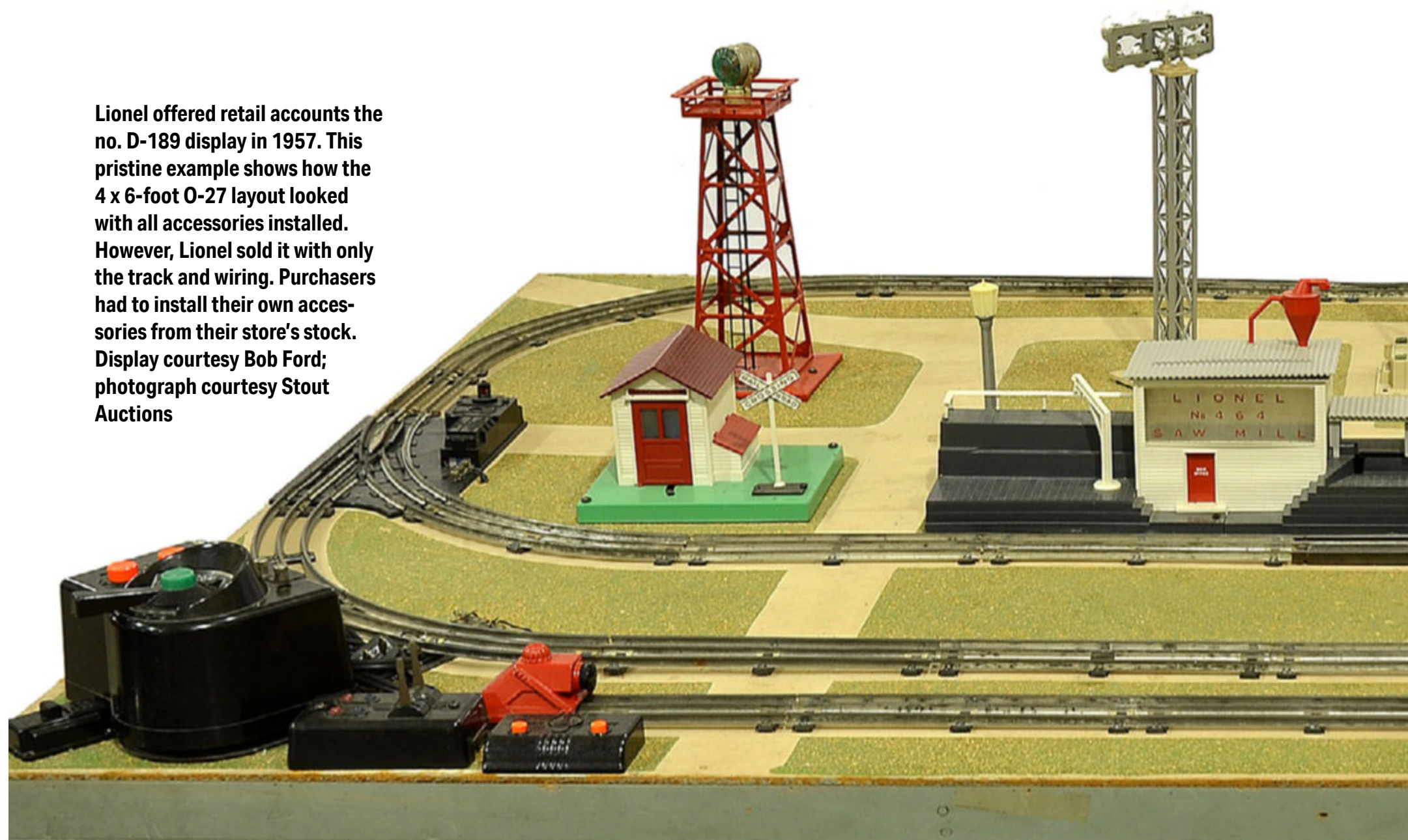
3 LIONEL DISPLAYS THAT MAKE TERRIFIC COMPACT LAYOUTS

**Reviving what
postwar designers
built for retailers**

STORY BY ROGER CARP

Readers of *Classic Toy Trains* eager to design and then construct compact layouts of their own have a vast selection of sources of inspiration and information. For many builders, the best place for fantastic plans is a book or magazine shining light on the display layouts built by crews at the Lionel Corp. and the A.C. Gilbert Co. for store owners in postwar days.

Lionel offered retail accounts the no. D-189 display in 1957. This pristine example shows how the 4 x 6-foot O-27 layout looked with all accessories installed. However, Lionel sold it with only the track and wiring. Purchasers had to install their own accessories from their store's stock. Display courtesy Bob Ford; photograph courtesy Stout Auctions





D-189 DISPLAY 4'x6'

A fine landscaped display which satisfactorily shows a train set and number of accessories in operation in a limited space.

ATTRACTIVE AND SALES PRODUCING! Sell this display for more than your cost at the end of the Season! **NET COST 39.95**

The following merchandise is included and mounted on display:

- 1 No. 6619 Remote Control Track Set
- 1 pr. No. 1122 "027" Electric Switches
- 20 No. 1018 "027" Straight Track
- 10 No. 1013 "027" Curved Track
- 2 No. 1/2 1018 1/2 Sec. Straight Track
- 1 No. 364C Controller

Display is wired for the following accessories which are to be taken from your stock:

- 1 No. 464 Operating Log Mill
- 1 No. 342 Operating Culvert Loader
- 1 No. 494 Rotating Beacon
- 1 No. 445 Operating Switch Tower
- 1 No. 252 Operating Crossing Gate
- 1 No. 145 Oper. Gateman
- 2 No. 71 Lamp Post
- 1 No. LW 125 Watts 115 Volts
- 1 No. 195 8-Bulb Floodlight Tower
- 1 No. 410 Billboard Bliker

TRAIN SET, TRANSFORMER AND OPERATING ACCESSORIES NOT INCLUDED.

In *Lionel Trains: Best Layouts & Store Displays*, a special-interest publication put out by the editors of *Classic Toy Trains* in 2015, I shared just about everything I'd learned over the previous 25 years about the operating layouts Lionel offered dealers between the 1910s and '60s. Included were track plans and wiring diagrams for several displays ranging in size from 4 x 6 feet to 8 x 8 feet, any of which would make a terrific project.

Information about additional display layouts as well as photographs of some

surviving ones continue to surface. Let's look at three of Lionel's best compact railroads developed for authorized service stations and retail accounts.

Background on displays

The history of displays used as marketing devices for Lionel appeared in the November 2012 issue of CTT. In that issue of the magazine, I described how the company used operating railroads to demonstrate to potential customers how its new trains and accessories functioned. The hope was

The Lionel advance catalog issued for 1957 described the D-189 display and listed the track sections secured to it, plus the accessories and transformer recommended.

that seeing Lionel's models in action would make people want to buy them.

The process accelerated in the 1950s under Joseph Donato Jr. and William Bonanno, who supervised the Display Department. They designed new items each year, including operating model railroads. Without causing the layouts to seem crowded, they had to arrange loops



Merchandise included with this display is as follows:

1 No. 494 Rotating Beacon	1 No. 155 Operating Ringing Hwy Signal
1 No. 464 Operating Log Mill	2 No. 71 Lamp Post
1 No. 342 Operating Culvert Loader	1 No. 110 Graduated Trestle Set
1 No. 352 Operating Ice Depot	3 No. "A" Large Trestle Piers
1 No. 257 Station w/Horn	1 No. UCS Remote Control Track Set
1 No. 3356 Operating Horse Car	29 No. OS "0" Straight Track
4 No. 260 Ill. Bumper ("0"—"027")	16 No. OC "0" Curved Track
1 No. 410-w/310-3 Blinker w/Billboard Complete	8 No. 1/2 OS 1/2 Section "0" Track (Straight)
1 No. 362 Operating Barrel Loader	1 No. OSS Special "0" Straight Track
1 No. 145 Operating Gateman	1 pr. No. O22 Pair RC Switches
1 No. 445 Operating Switch Tower	1 No. O22LH Left Hand RC Switch
1 No. 3424-100 Brakeman Warning Poles for 3494	2 No. OCS Special "0" Curved Track
1 No. 140 Operating Banjo Signal	2 No. 1/2 OC 1/2 Sec. "0" Curved Track
1 No. 252 Operating Crossing Gate	1 No. 364C Controller
	1 No. ZW 275 Watts 115 Volts

Exciting display packed with lots of action! Operates one train set and many accessories. Completely wired. Transformer and other necessary controls mounted on panel as illustrated.

Sell this display for more than your cost at the end of the Season!

NET COST \$229.95

D-190 DISPLAY 4'x8'



TRAIN SETS AND CARS ILLUSTRATED ARE NOT INCLUDED. THESE ARE TAKEN FROM YOUR STOCK.

of track, sidings for animated rolling stock and accessories, independent lines for motorized units, and signals and gates.

On the larger display layouts, Bonanno, Donato, and their assistants depended on elevated sections to provide additional space to demonstrate the excitement of the new trains. Trestle sets worked well for that aim, as did painted landforms. Either way, the track might duck in and out of a big mountain through a tunnel or two.

The guiding lights of the Display Department worked under severe time constraints because orders for layouts and stationary displays had to be placed early in the production year to be ready to ship by the holiday season. As a result, layouts announced for the current year seldom had the accessories being introduced. Instead, the latest pieces typically came from the previous year.

Fortunately, because the shop owners and managers ordering displays had to pay separately for trains, they were able to feature brand-new outfits. Or they could elect to reuse an older set or two, perhaps inventory left over from the past.

Little but loud

Perhaps the most ambitious years for the Display Department were 1956 and '57, when it introduced four completely new layouts for retail accounts to choose from. The dimensions rose from a 4 x 6-foot railroad to an 8 x 8-foot one. Prices rose from \$36.50 for the D-162 in 1956 to \$345 for the D-192 a year later.

Documentation for the displays Lionel promoted for those noteworthy postwar years, good as it was back when CTT finished *Lionel Trains: Best Layouts & Store*

Displays, still failed to cover all of them. Particularly unfortunate was a lack of photos of surviving examples of all the layouts associated with 1956 and '57.

We are very pleased, therefore, to provide this picture of an intact example of a no. D-189, which is the 4 x 6-foot operating layout announced for 1957. Nothing about the history of this O-27 display can be determined, so we can't tell you the department store or appliance shop that first put it out for customers to admire. We are just happy to be able to present the picture provided by Stout Auctions.

Using relevant information provided by Lionel to retail outlets, we know the D-189 was a flat three-rail display that, according to the firm, "satisfactorily shows a train set and number of accessories in operation in a limited space." It was priced at \$39.95.

Everything extra

Why was the cost of a D-189 layout so low? Because, as the listing in the annual display catalog reminded potential purchasers, none of the accessories pictured came with it. Rather, the landscaped board came with only a loop of tubular track, a pair of no. 1102 switches and the line connecting them, and the separate line of track equipped with bumpers.

Any dealer buying a D-189 would discover that the Display Department had wired it for the accessories shown, "which are to be taken from your stock." And that almost certainly was what the owner of this surviving example had done.

Highlighting the accessories for a D-189 were nos. 342 operating culvert loader and 464 operating lumber mill, both top-of-the-line pieces introduced in

With the purchase of a D-190 for \$229.95, a dealer received information on how to assemble and maintain that display layout, as well as a wiring diagram for troubleshooting.

1956. Also from the previous year were the small and so less conspicuous nos. 89 flag-pole and 410 billboard blinker.

Joining all of them were older and less-expensive trackside items, such as nos. 145 operating gateman, 252 operating crossing gate, 445 animated switch tower, and 494 rotating beacon. There were as well on the layout two no. 71 lamp posts.

The final item specified deserves attention because it entered the cataloged roster in 1957. The no. 195 floodlight tower stands out in the middle of the layout.

By the way, if you look closely at the wiring diagram prepared by Lionel, you'll notice the product number for that light tower was 198. Since the artwork had a date of 4-57, it seems plain that Lionel intended to market the new floodlight tower with eight bulbs, even though plant supervisors at the company eventually modified its number.

Back to the D-146

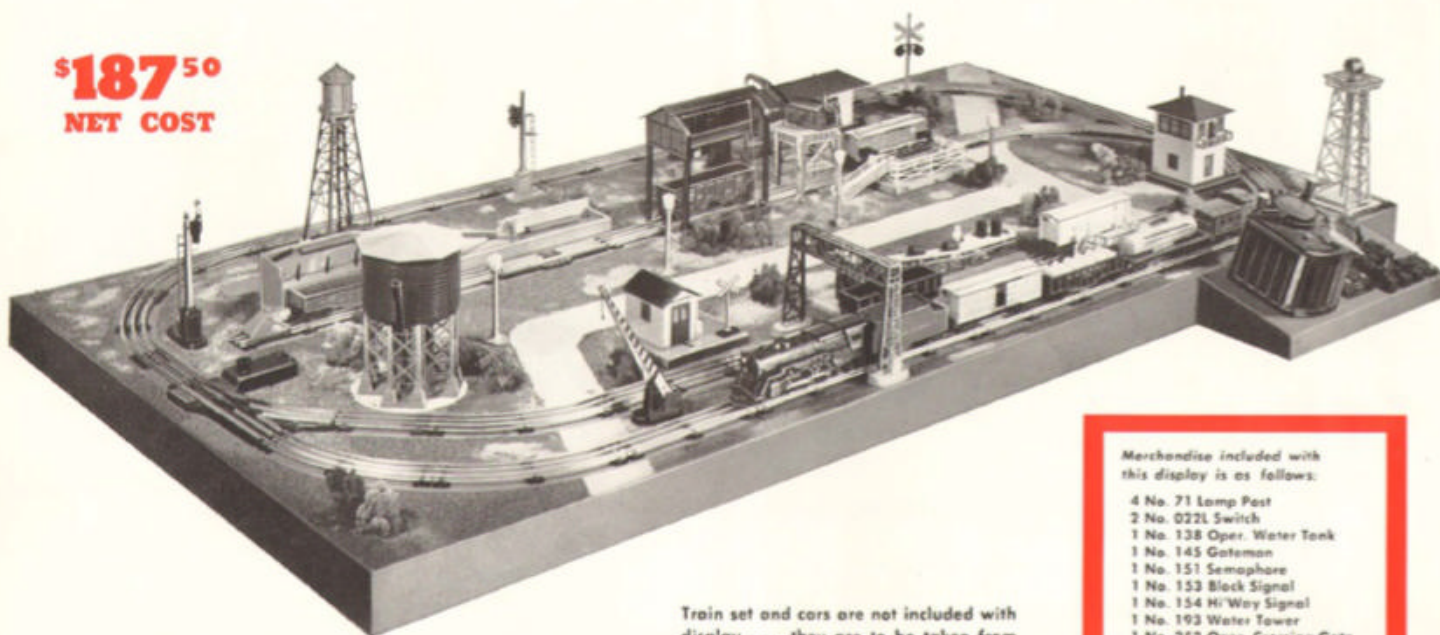
Lionel did provide all the accessories intended for its larger displays. No wonder that the next layout available for 1957, the no. D-190 (a 4 x 8-foot item), sold for \$229.95. It even came with the type-ZW transformer needed to run it.

Two years earlier, Lionel had advertised a simpler 4 x 8-foot layout. All the activity on the no. D-146 had taken place on the flat surface sprinkled with artificial grass, as opposed to the D-190, which featured a winding, elevated line.

As an aside, back in 2012-13, members

LIONEL TRAIN DISPLAY D-146

\$187⁵⁰
NET COST



Train set and cars are not included with display . . . they are to be taken from dealer stock for demonstration purposes.

**AN EXCITING DISPLAY – SURE TO
DRAW INTEREST DAY AFTER DAY**

ACTION PACKED ISLAND-TYPE DISPLAY SHOWS OPERATION OF TRAIN AND A NUMBER OF ACCESSORIES – FASCINATING 4 x 8 FOOT LANDSCAPED PLATFORM – COMPLETELY WIRED FOR OPERATION – CONTROL PANEL WITH TRANSFORMER OPERATES TRAIN, SWITCHES AND REMOTE CONTROL ACCESSORIES. ALL CONTROLS ON OPERATING PANEL ALSO INCLUDED.

Merchandise included with this display is as follows:

- 4 No. 71 Lamp Post
- 2 No. 022L Switch
- 1 No. 138 Oper. Water Tank
- 1 No. 145 Gateman
- 1 No. 151 Semaphore
- 1 No. 153 Block Signal
- 1 No. 154 Hi-Way Signal
- 1 No. 193 Water Tower
- 1 No. 252 Oper. Crossing Gate
- 2 No. 260 Ill. Bumper
- 1 No. 282 Op. Crane
- 1 No. 356 Op. Frit. Station
- 1 No. 362 Op. Barrel Loader
- 1 No. 364 Log Conveyor
- 1 No. 494 Rotating Beacon
- 1 No. 445 Op. Switch Tower
- 1 No. 450 Over. Sig. Bridge
- 1 No. 497 Cooling Station
- 1 No. 3462P Platform Milk
- 1 No. 3656-150 Carrol Platform
- 1 No. KW 190 Watts Transformer
- 9 No. OC Curved Track
- 21 No. OS Straight Track
- 2 No. OS5 Ins. Straight Track
- 2 No. UCS R. C. Track Set
- 1 No. OCS Ins. Curved Track
- 2 No. 1/2 OS 1/2 Sec. Straight Track

The no. D-146, a classic 4 x 8-foot layout, was among the most popular displays made available by Lionel for 1955. It featured a number of operating items from the golden years of the postwar era.

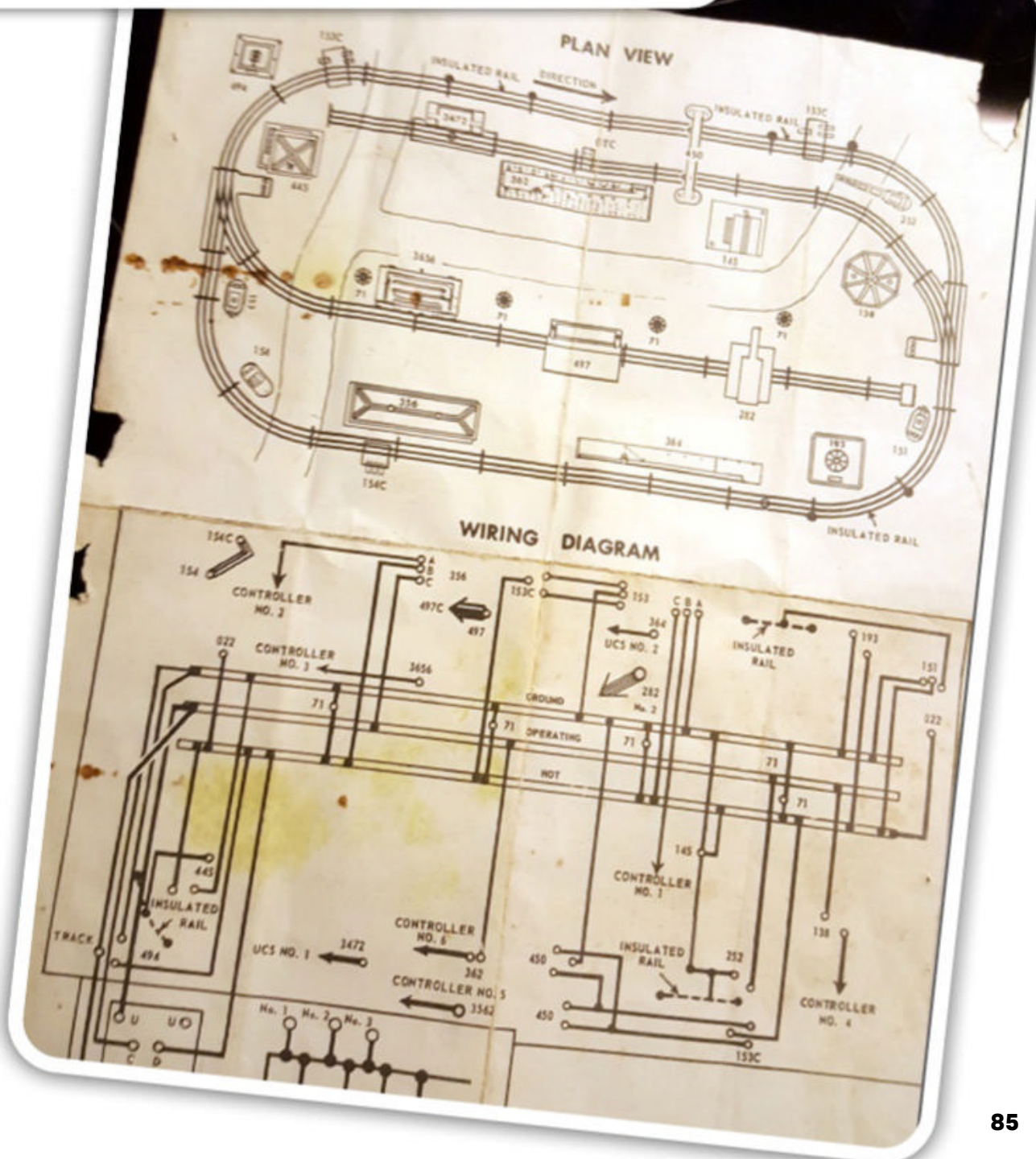
Not until recently were an original track plan and wiring diagram available for the D-146. The documents shared by Robert Osterhoff should make it possible for more hobbyists to build their own versions of that action-packed compact layout.

of the editorial staff at CTT built a modern reproduction of the D-146 as a project layout for readers. How they did so was outlined in great detail and supplemented by many photographs in four consecutive issues of the magazine (December 2012 through March 2013).

Unfortunately for the editors, not to mention thousands of readers intent on constructing their own versions of the D-146 display, we didn't have access to an original track plan or a wiring diagram. Now, thanks to Lionel expert and author Robert Osterhoff, we can share those key documents with you here. They may encourage more people to try building their own compact operating layout.

Keep learning

The displays Lionel and its chief rivals, American Flyer and Marx, made to increase sales continue to interest and influence toy train hobbyists. They help us better appreciate how American toy train manufacturers aimed to popularize their products and inspire generations of children. Using these displays to guide our progress can help us build better compact O and S gauge layouts at home. We hope many of you will give it a shot. **CTT**



TRAVEL IN AN O GAUGE TIME MACHINE TO 1932 & 1963

Kevin Coyle's twin layouts remind us of two interesting years for Lionel

STORY BY BY ROGER CARP ● Photos by Kevin Coyle



1 Kevin Coyle has finished two compact model railroads in his home. This 8 x 9-foot three-rail layout suggests he has ridden a time machine all the way back to 1932. Feel free to check out the sheet-metal tunnel and houses from Lionel, plus the antique vehicles and figures. That's a Lionel no. 248 electric-profile locomotive leading two coaches in the foreground.

"There is nothing new under the sun." These memorable words from the Book of Ecclesiastes have stirred endless debates about the meaning of life since ancient times. However, as O gauge enthusiast Kevin Coyle shows, they also have relevance for understanding the construction of contemporary toy train layouts.

On the one hand, model railroaders have been making good use of what amounts to the same techniques and materials for planning, building, and making scenery for their layouts since the hobby originated a century ago. And, frankly, the two compact O gauge displays in Kevin's home prove this point.

On the other hand, as his layouts also demonstrate, occasionally someone manages to adopt an approach unlike any other. A modeler can, as Kevin has done, unveil miniature railroads we at *Classic Toy Trains* compliment as new.

Youthful preference for HO

Understanding what Kevin has achieved requires seeing how he differs from many toy train hobbyists. Nostalgia – the wish to return to an earlier phase of life recalled with warmth – scarcely motivates him.

1963



2 Freight trains featuring items cataloged by Lionel during the early 1960s race around the two levels that Kevin has erected on the compact 8 x 11-foot O gauge layout he has developed to showcase his assortment of postwar models. For this neat model railroad he has relied exclusively on techniques, materials, and products a youngster would have used to build a miniature railroad more than half a century ago.

Kevin did play with miniature trains when he was growing toward the tail end of the postwar era. Those models did not show up in the consumer catalogs Lionel or American Flyer released at that time.

Instead, Kevin started off with a couple of inexpensive HO scale sets from Tyco. Those small trains entertained him, and he felt an affinity for HO that returned years later. Kevin also had time to become acquainted with Lionel trains. His father owned a prewar passenger train set, led by a no. 262 steam engine and tender. Whenever the youngster wanted, he was free to run those antiques and their three cars.

Plans go awry

Decades passed until Kevin, now an adult, thought about model railroading again. He got down to work on a 4 x 8-foot HO layout. And it was a blast! The railroad featured structures Kevin enjoyed weathering as well as scenes he gave a host of details.

Everything in Kevin's hobby world was proceeding as planned. The next, logical step, he believed, was enlarging his layout. But even the best-laid plans can go awry! What threw a monkey wrench into Kevin's expectations turned out to be something harmless: remembering his father's prewar Lionel train set stored in the attic.

"How about if I get the old train and see if it will still run?" Kevin asked himself. Sounds simple, right? Well, Kevin's rehabilitation of his dad's little set ignited a passion in him. Thoughts of expanding his HO scale empire went out the window. In their place came a daring new scheme: Could Kevin take an antique plaything from the early 1930s and create a layout for it using nothing but the materials and techniques a boy then would have used?

Yes, modelers continue to hearken back to key moments in the history of Lionel. But the number building a layout with bygone tools and materials is tiny.

Two interesting years

Kevin chose to limit himself to what could have been done in 1932. No modern track or electronics and no contemporary scenery methods. It was as though he was boarding a time machine and setting the dials for 80 years in the past.

Hearing about the restrictions Kevin imposed on himself, you can't help but be impressed. Then you learn he wasn't content with just a prewar display. He deepened his O gauge commitment by constructing a postwar layout. Identical premise, only for this one Kevin focused on Lionel trains from 1963.

Ironically, neither 1932 nor 1963 was a high point in the history of the world's greatest toy train maker. Lionel cataloged fine outfits and offered several superb locomotives and accessories in those two years, but both 1932 and 1963 saw the fortunes of the Lionel Corp. declining in some worrisome ways.



3 Model railroader Kevin Coyle pauses to survey the wide array of Plasticville U.S.A. structures and Lionel accessories and billboards filling the 5 x 11-foot three-rail layout he just finished. He built this layout to suggest what a youngster might have done in 1963.

The results of Kevin's handiwork are a pair of cool layouts. The prewar display measures 4 x 9 feet with a 4 x 5-foot extension; the postwar one is 5 x 11 feet with a 3 x 4-foot extension.

Just as you'd expect

Having made up his mind about what he wanted to do on the two layouts, Kevin moved ahead briskly. Decisions about the benchwork, track and switches, and modes of control ended up being simple, due to the fact that model railroaders had far fewer choices about materials in the early 1930s and the middle 1960s.

First, Kevin built solid and sturdy yet fairly rudimentary tables for both of the projects. No reason to believe modelers in 1932 or 1963 would have lacked any of the woodworking skills and carpentry tools he deemed necessary for putting together rather elementary types of benchwork.

Confident he had the experience and level of skill called for, Kevin laid out his hammer, handsaw, level, yardstick, and nails. At a lumberyard he purchased 1 x 3 wood for the framework and 1 x 4 boards for the fascia along its exterior.

The track and switches Kevin screwed in place came straight from the Lionel catalog. Prewar sections weren't difficult to

obtain, and postwar straights and curves proved to be even easier. Manual turnouts seemed most appropriate for the prewar layout, while remote-controlled ones went on the postwar display.

Fudging a bit with electronics

To this point, Kevin had remained true to his goals. Turning to the electronics, he considered the wiring and modes of control. He wanted to stay consistent with his plan to rely on what modelers had in 1932 and 1963, but refused to overlook safety issues or minimize convenience.

Conventional control would have been the only alternative 60 and 90 years ago. Kevin didn't object to adopting that traditional method, having only a passing interest in the exceptional systems of command control with handheld devices now available to O gauge enthusiasts.

Yet Kevin reluctantly fudged a bit. He went with Lionel transformers from post-World War II catalogs for both displays. Two no. 1033s handled the prewar trains, and a type-RW took care of the accessories. The postwar layout depends on a type-ZW to provide juice for the trains and a type-LW for the accessories.

Kevin bought new 14-gauge wire, running lines from the transformers to the

track as the feeders. A couple of power connections going to the different main lines proved to be what he needed.

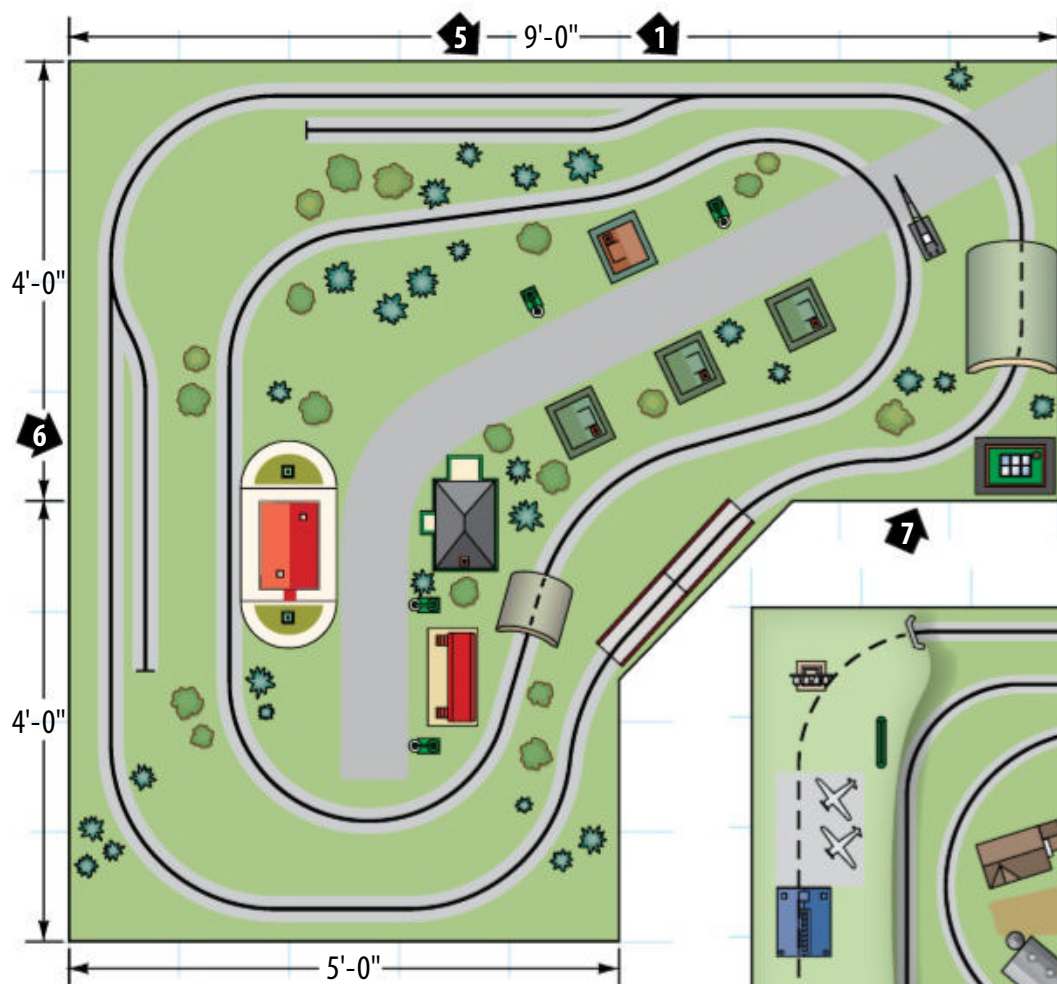
Neither layout has electrical blocks. In the future, though, Kevin will modify his postwar railroad by isolating the interior loops until he is able to simultaneously run a pair of trains through the switches.

Fun with prewar scenery

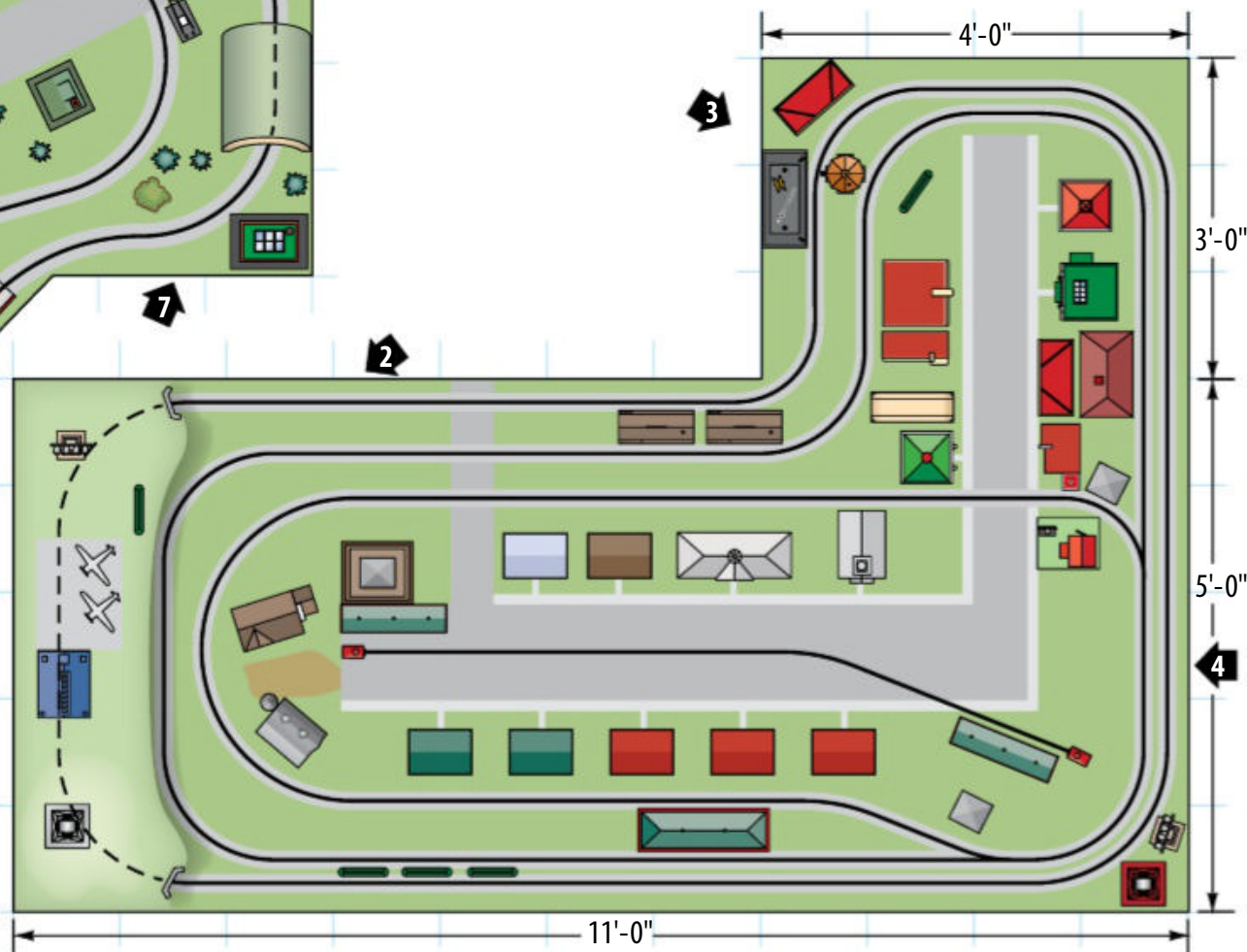
Kevin, possibly chastened by how he had departed from creating a prewar layout that was entirely prewar, steered himself back to the straight and narrow path when he contemplated scenery and structures for it. He first did some research about what had been done to landscape layouts 90 years earlier. Articles in the March 1997 and September 1999 issues of CTT served as starting points. Especially helpful was Joe Lissi's how-to essay about making replicas of the scenic plots Lionel had produced during the prewar era.

What Kevin learned helped him use household and artist's paints, thick pieces of rope and sponge, and mounds of sawdust to develop scenes reminiscent of prewar displays. Knowledgeable observers insist his layout has the right look.

And the process couldn't have been easier or more fun. Kevin brushed on a



Nothing too fancy about the plans of Kevin's tributes to prewar and postwar O gauge trains. Yet there's enough going on to make operation fun for him and his visitors. He relied on vintage track for the main lines and sidings on both displays.



coat of tan or beige to suggest earth, light gray to indicate a street, and dark gray for roadbed beneath his three-rail track. Light tones of blue worked for water.

Sawdust dyed green went over the wet paint in areas where Kevin wanted viewers to imagine grass or shrubs. He mixed in sand and finely sifted gravel to heighten the visual interest of the fields and parks.

Bunching together pieces of sisal rope and then tying them to form trunks for trees imitated what laborers at the Lionel factory had done in the 1920s and '30s. Hunks cut from loofa sponges went on next for the trees, after which Kevin daubed on forest green paint. Hedges required more of the sponges and bits of lichen; flowering bushes needed red, yellow, or white paint to suggest blooms.

Mountains change

Rather than fashion rolling hills for the prewar display using strips of cloth and papier-mâché plus the flammable adhesives Lionel had once used, Kevin opted for something simpler yet equally as evocative. He searched for decent examples of the painted sheet-metal tunnels Lionel sold during the prewar era. Those accessories provided the right touches for a 1930s-era model railroad.



4 Kevin's cool interpretation of postwar paradise includes this O gauge approximation of what suburbia looked like. Comfortable homes with manicured front lawns, scrubbed streets, and plenty of railroad tracks filled his imagination as he worked. Other parts of his postwar collection appear on the shelves directly behind the massive mountain he built for this layout.



5 A Lionel no. 253 electric pulls a short freight train along the main line of Kevin's prewar display. He handmade the trees to resemble landscaped items from Lionel.



6 A no. 262 steamer brakes as it arrives at a no. 127 station. A passenger waits to board the train, having just eaten lunch at the no. 442 diner on the street beyond.



7 A colorful freight train wiggles across Kevin's compact prewar model railroad. Among the Lionel highlights in this corner are nos. 060 telegraph posts, 77 crossing gate, 83 traffic and crossing signal, 120 tunnel, 185 bungalows, and 435 power station.

Making scenery had become easier by the 1960s. Kevin knew how to use wadded newspaper as the foundation, with cardboard strips completing the contours. Plaster of paris completed the hard shell, which he painted brown and green.

Dyed sawdust, which had done the trick for the prewar layout, did just as well for grassy expanses and hillsides on the postwar display. Kevin randomly arranged tufts of lichen and commercial trees, as postwar kids would have done.

Getting the proper structures

The buildings Kevin put on the layouts followed what he learned from old hobby publications. Stories and ads informed him Lionel had cataloged houses and little depots for O gauge model railroaders throughout the prewar era. Used examples of those items, along with the line poles and lamps it marketed, turned up at shows Kevin attended. He bought a slew of them.

Three decades later, lithographed structures made of tinplated sheet steel had all but vanished from toy stores and hobby shops. In their place were boxes of inexpensive structure kits, primarily from the Plasticville U.S.A. line developed by Bachmann Bros. Accuracy demanded that Kevin use those items on his postwar display, plus plastic trees, poles, and details.

Fortunately, Bachmann had broadened its catalog in the 1950s and '60s to include vehicles and figures; Kevin got those items to fill the roads and sidewalks of his postwar project. Its prewar counterpart called for more ingenuity, and he responded by finding die-cast metal and rubber cars and trucks. The human and animal figures had formerly been parts of the lines promoted by Barclay, Lincoln Logs, and Lionel.

Don't you love it?

Kevin has reached the point where the two layouts are essentially finished. He may modify the wiring on the postwar display and wants to add more details to its prewar companion, including old houses.

Kevin encourages others to follow in his footsteps. Think of the fun to be had by someone trying to build a layout similar to what might have been done in 1924 or 1939 or 1957 or, well, you pick the date.

"I learned a lot," Kevin says, "and now appreciate where our hobby has come from." Developing your own O or S gauge time machine can give new life to your toy trains. It's also a good way to prove there can be something new under the sun! **CTD**



FOUR FUN-FILLED 4x8 TRACK PLANS

These small O gauge plans offer intriguing themes for popular Atlas, Lionel, and MTH track systems

BY MIKE TYLICK

The typical 4 x 8-foot toy and model train layout is every bit as popular today as it was throughout the postwar era. People often find it preferable to work on a small and manageable project than a much larger one that can easily become overwhelming or even frustrating. Layouts that are smaller than a Ping-Pong or pool table can become an interesting centerpiece in a basement rec room, where game tables are left to collect dust between parties.

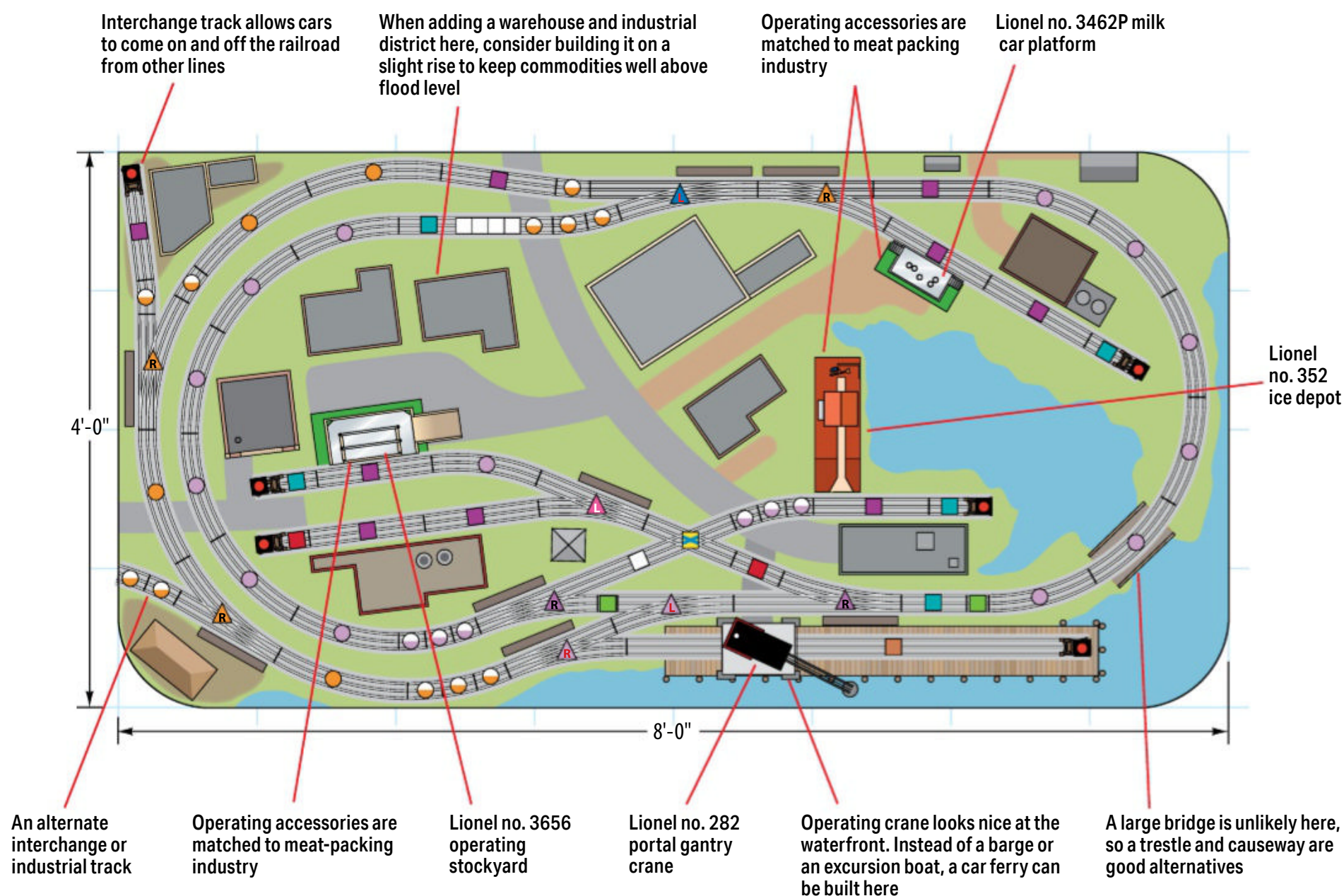
An operating layout with an interesting theme is a wonderful conversation starter for parties without embroiling a few participants in a lengthy contest. By leaving space to walk around all four sides, you give visitors a great many different views and locations to enjoy the action.

While a 4 x 8-foot layout matches the size of a standard sheet of plywood, you can also consider building one atop other similarly sized construction materials, including 2-inch-thick foam insulation board or medium-density fiberboard (MDF). Even if you're more interested in collecting, a small railroad offers a place to display and occasionally run your models and accessories.

Many of us are approaching (or are already in) retirement and so find ourselves downsizing larger homes and moving to smaller quarters. Even if we have space for a vast toy train empire, it's far less taxing to attempt a project you think can be completed and enjoyed. A small railroad allows the time to lavish attention on making everything work right and include details and beautiful scenery. Additionally, the smaller equipment necessary for tight curves is more reminiscent of the electric toy trains that inspired many of us in our youth.

A small railroad will never offer the operating possibilities of a large one, but each of the following plans makes it possible to occupy several operators with a taste of switching. Interest in a small railroad will last much longer if we take a cue from scale modelers and spend time switching cars between industries. This is more in keeping with full-size railroads and justifies using a nice range of operating accessories. With the use of automated train-control circuitry, you can alternately run two unattended trains on any of these layouts. But sometimes, of course, it's fun simply to sit back and watch the trains run!

PLAN NO.1 – THE OMAHA ROAD



The heartland cities located along the Missouri River were once thriving commercial shipping ports. Although the paddle wheelers and barges that once filled that waterway are long gone, recreational boating is quite popular. And while cattle drives no longer come up from Texas and western Nebraska, the city of Omaha is still a center of the meat-packing industry. I've tried to include some of this flavor in the main features I selected for this three-rail layout.

An urban seaport isn't a common toy train theme. That's unfortunate because the results can be stunning. In this plan, the lake provides a logical source of ice for the Lionel no. 352 ice depot accessory from the postwar period.

The complex track arrangements near the riverfront are reminiscent of city harbor trackage. (The track arrangement

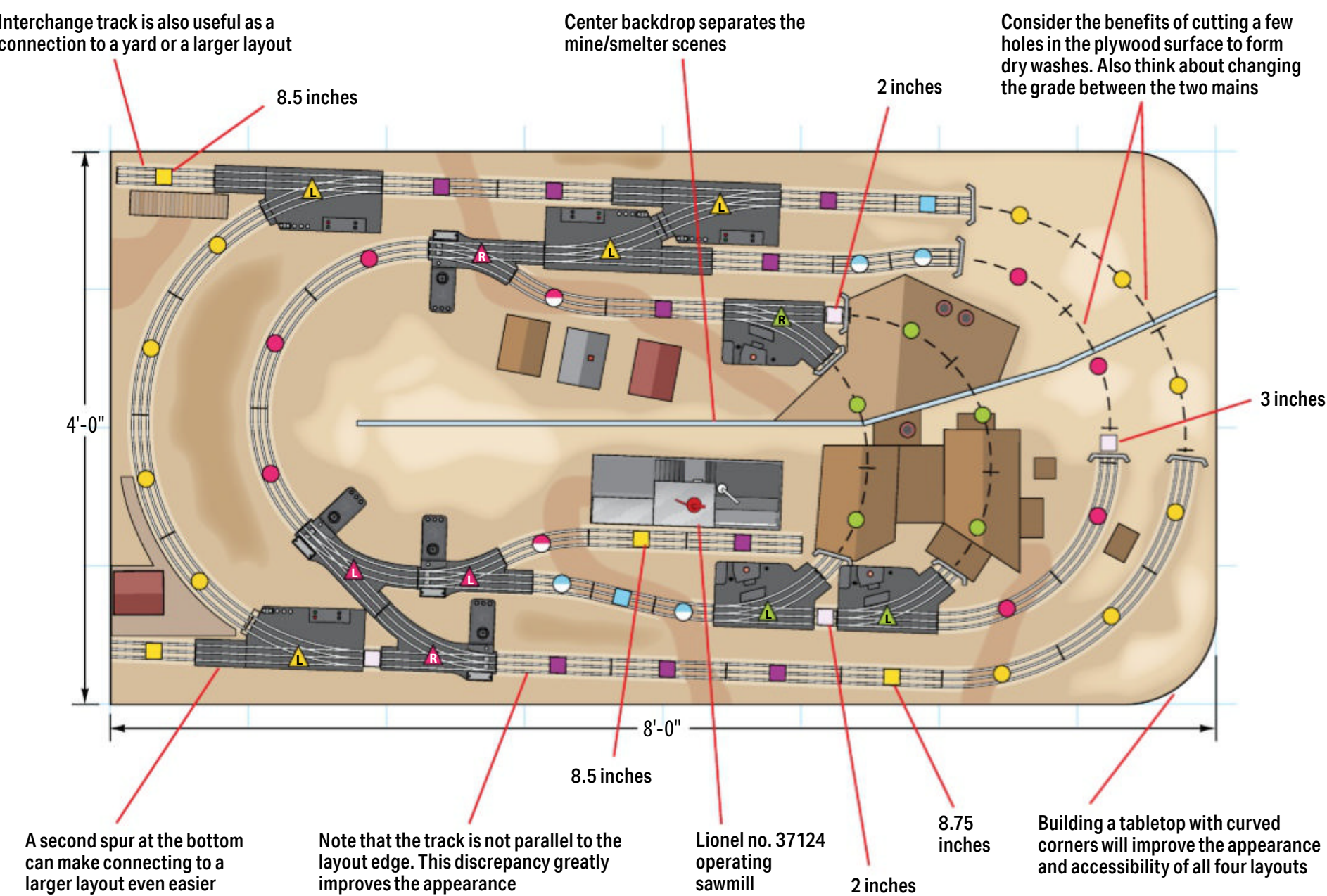
here is actually a reconfigured variation of the classic Timesaver switching puzzle devised by legendary HO scale modeler John Allen more than 60 years ago.) Two trains can alternate using the passing siding, but it may be a better and more challenging idea to use the passing siding for storage and as a run-around track. A Union Pacific switcher would look great working this area.

Applying a cityscape backdrop on a rear wall is the best option, as there isn't sufficient room for a three-dimensional downtown. The complex trackage helps suggest a heavily industrialized waterfront. A few small warehouses and industrial structures establish the overall theme. This is a flat railroad, so the waterfront should be lowered a few inches by modifying the frame used to support the plywood tabletop.

ATLAS O TRACK COMPONENTS

Quantity	Description/Number
5	1.25-inch straight (6015)
2	1.75-inch straight (6052)
2	4.5-inch straight (6051)
5	5.5-inch straight (6053)
9	10-inch straight (6050)
1	40-inch straight (6058)
13	0-36 curve, 30-degree (6066)
6	0-36 curve, 7.5-degree (6068)
4	0-45 curve, 30-degree (6045)
11	0-45 curve, 7.5-degree (6046)
1	0-36 left-hand switch (6075)
3	0-45 right-hand switch (6086)
2	0-54 right-hand switch (6071)
1	0-54 left-hand switch, short (6070Z)
1	0-54 right-hand switch, short (6071Z)
1	0-72 left-hand switch, cut 19.5-degrees (6072Z)
6	snap-on bumper (6040)
1	45-degree crossing (6082)

PLAN NO. 2 – SEDONA & BRYCE CANYON RR



The theme for this railroad is based on the Sedona Red Rock area in northern Arizona. No railroads ever ran through this stunning natural locale, but the scenery there is spectacular and I wanted to try fitting it into a 4 x 8 footprint. Skillful use of perspective will help to replicate the vast spaces of the southwestern U.S. A center view-block contributes to the illusion of distance and separates the two scenes. Also note that carving unique desert rock formations from foam insulation board isn't as tedious or expensive as making or buying trees!

The O-27 tubular track curves are tight, but they won't be a problem for small engines and freight cars. The tight curves help establish two independent loops for continuous running and make it possible to accommodate a loads-in/empties-out arrangement. If you want to stick with

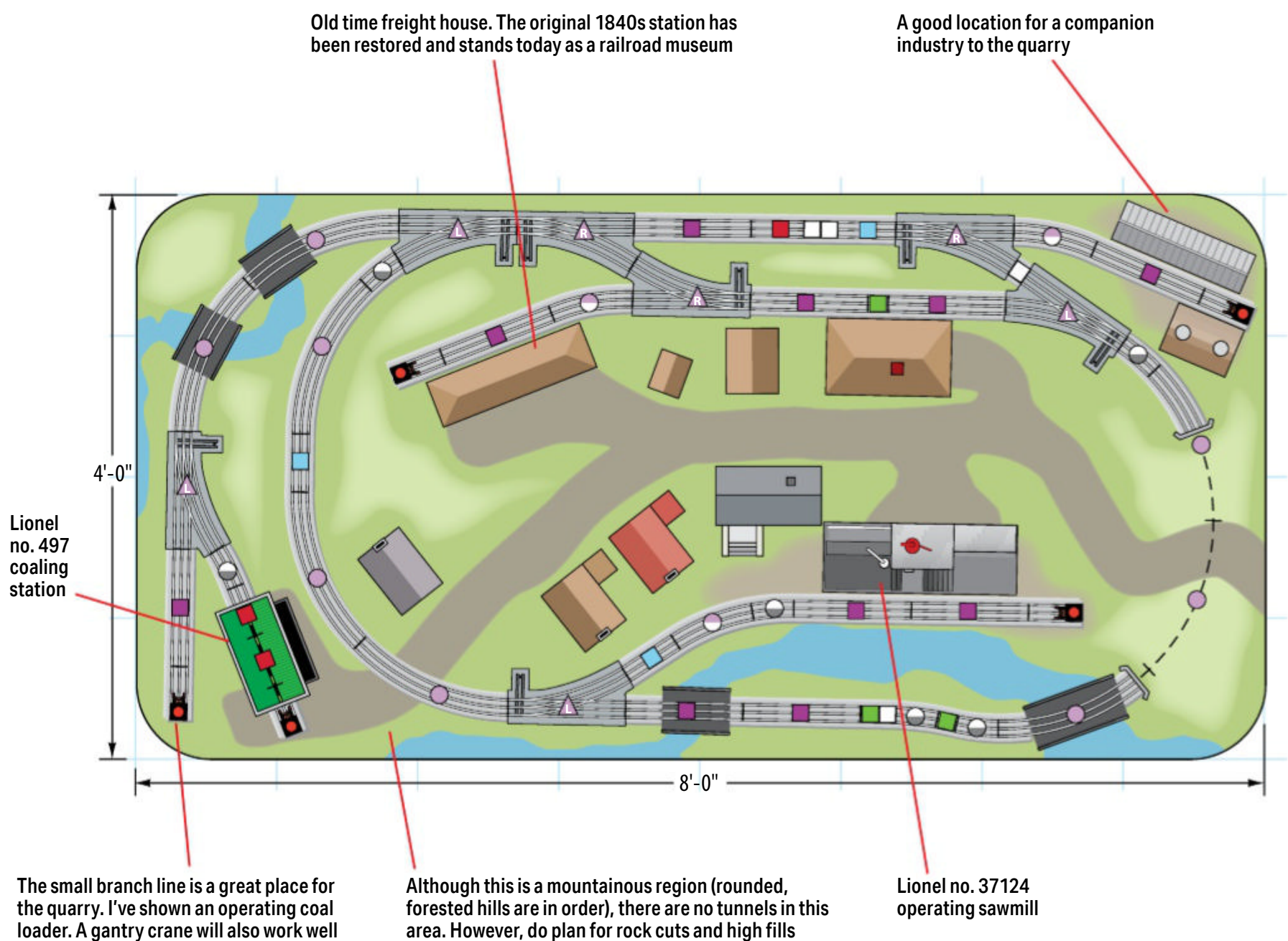
the premise the model railroad is based in Arizona, possible loads/empties pairs include copper mine/smelter, logging camp/sawmill, and even stockyard/packing plant.

The station at the upper left of the plan boasts an interchange track, which is important for bringing rolling stock to and from the rest of the world. The interchange can also serve as a path to expand the layout in the future. My choices for equipment would include a dusty mine train to operate on the tighter inner loop and a shiny Grand Canyon tourist train for the larger outer loop. But don't limit yourself to these notions. Instead, use your imagination to come up with different geographic locations and economic reasons that will make this plan come alive and give your trains justification for their existence.

LIONEL O GAUGE TRACK COMPONENTS

Quantity	Description/Number
2	5.5-inch half-straight
9	10-inch straight
4	0-27 custom-cut straight
4	custom-cut straight
5	0-27 curve, 45-degree
7	0-31 curve, 45-degree
2	0-31 custom-cut curve
10	0-42 curve, 30-degree
4	0-54 half-curve
2	0-27 left-hand switch
1	0-27 right-hand switch
2	0-31 modern left-hand switch (14062)
2	0-31 modern right-hand switch (14063)
4	0-42 left-hand switch (12081)

PLAN NO. 3 – BOSTON & ALBANY RR



Chester, Mass., was once one of the larger towns in the Berkshire Hill country. In the more distant past, the Chester & Becket RR connected a busy stone quarry to the main line. Large mica and corundum deposits existed there, and the hills were extensively mined through the end of World War II. Some logging continues to this day.

This layout is geared for showcasing popular logging and lumber-cutting accessories. They add enjoyment and operating challenges to any railroad.

Chester was also the home of a busy diesel locomotive terminal that serviced the helper engines used to assist west-bound freight trains climb over Washington Hill. Although the Boston & Albany and the Berkshire Hills can be interesting

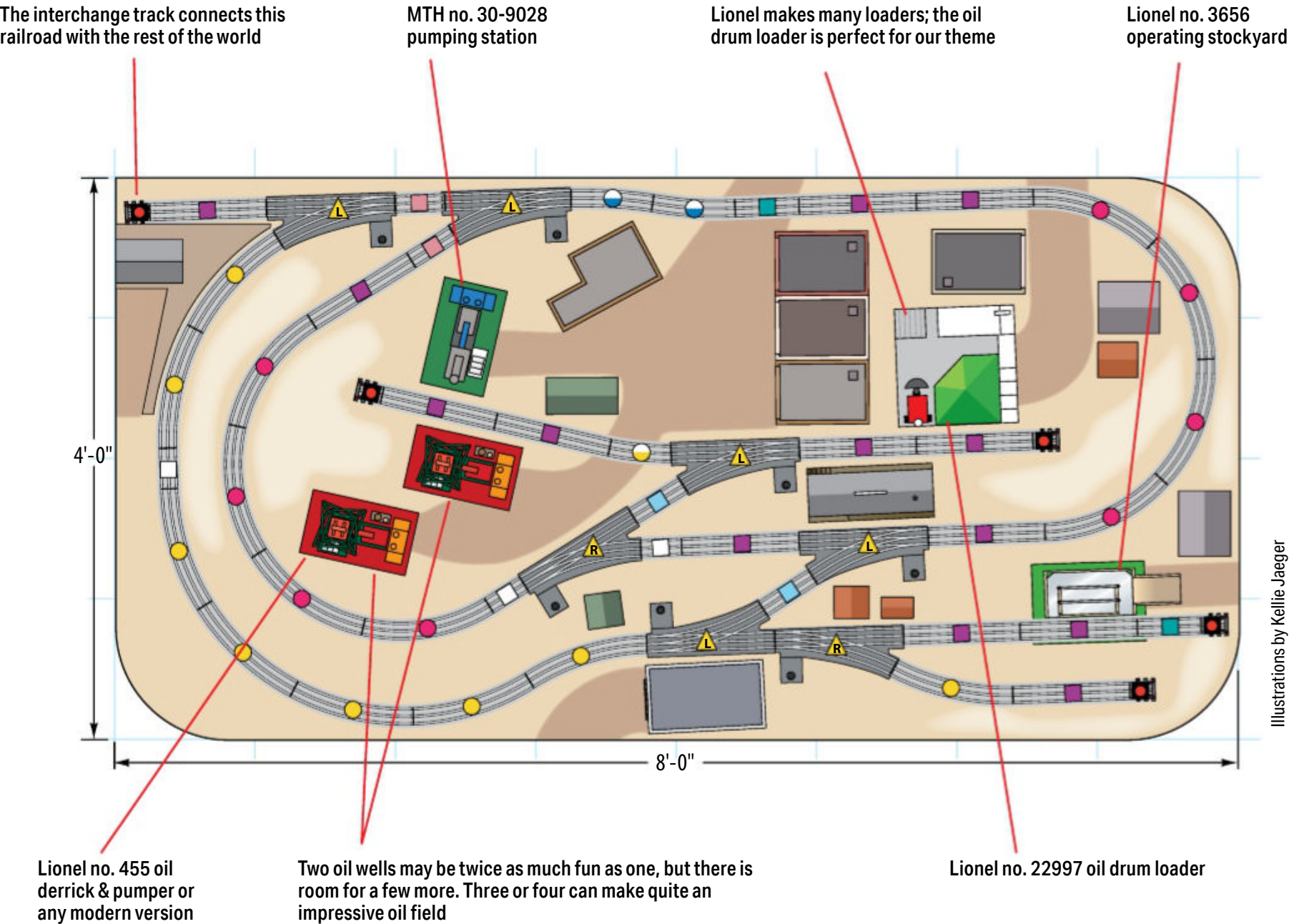
themes for a large model railroad, I'll be using them for this simple scheme – a single loop with a passing track. Only one train can operate on the layout, but there are several opportunities for switching. There isn't much track, so the railroad can be up and running quickly.

The open space leaves plenty of room for interesting scenery and structures. Scenery should include mountains with lots of trees, perhaps sporting brilliant New England fall foliage. The real Boston & Albany RR was completed in the 1840s to connect Boston to the Erie Canal, so old stone arch bridges and structures would fit right in. Prototype railroads from the 1840s through the present included the Western RR, Boston & Albany, New York Central, Conrail, and now CSX.

LIONEL FASTRACK COMPONENTS

Quantity	Description/Number
4	1.375-inch straight (12073)
3	1.75-inch straight (12026)
3	4.5-in straight (12025)
3	5-inch straight (12024)
10	10-inch straight (12014)
8	0-36 curve, 45-degree curve (12015)
3	0-36 curve, 22.5-degree (12022)
6	0-36 curve, 11.25-degree (12023)
4	0-36 manual left-hand switch (12017)
3	0-36 manual right-hand switch (12018)
5	lighted bumper (12035)

PLAN NO. 4 – FRISCO RAILROAD



This track plan is very similar to the Omaha scheme shown earlier, but I wanted to show that almost any track plan can be adapted to nearly any of the current track systems.

In place of a Midwestern theme, I've located this scheme in the Southwest, where crude oil reigns. Oil may be found throughout the U.S, but I think of Texas and Oklahoma when I see oil wells. Two or three Lionel operating oil derricks will help establish this setting. Toss in an oil pump, a drum loader, and a cattle pen, and you'll have an unmistakable theme.

The sparse arid scenery is ideal for a flat sheet of plywood. There's no press-

ing need to elevate track or create water-courses. Even better, you can save your money for cars and locomotives rather than purchasing a forest full of trees! False-front western towns may be a cliché, but they help establish the setting and give viewers lots to look at.

Texas was once the home of cattle drives to the railheads of Kansas and Nebraska. Later, railroads like the Frisco (formally known as the St. Louis-San Francisco Ry.) came to the cattle. Although livestock now moves almost completely by truck, the association with railroad cattle pens and horse ranches is almost a Texas stereotype. **CTI**

MTH REALTRAX COMPONENTS

Quantity	Description/Number
3	3.5-inch straight (40-1018)
2	4.25-inch straight (40-1017)
2	5-inch straight (40-1016)
2	5.5-inch straight (40-1012)
13	10-inch straight (40-1001)
8	0-31 curve (40-1002)
8	0-42 curve (40-1042)
1	0-42 half curve (40-1045)
2	0-72 half curve (40-1049)
5	0-42 left-hand switch (40-1043)
2	0-42 right-hand switch (40-1044)
5	track bumper (40-1024)

THREE O GAUGE PLANS FOR A NOT-SO-BIG BEDROOM

These wall-hugging track plans leave room to live

STORY BY PETER H. RIDDLE

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 occupied.

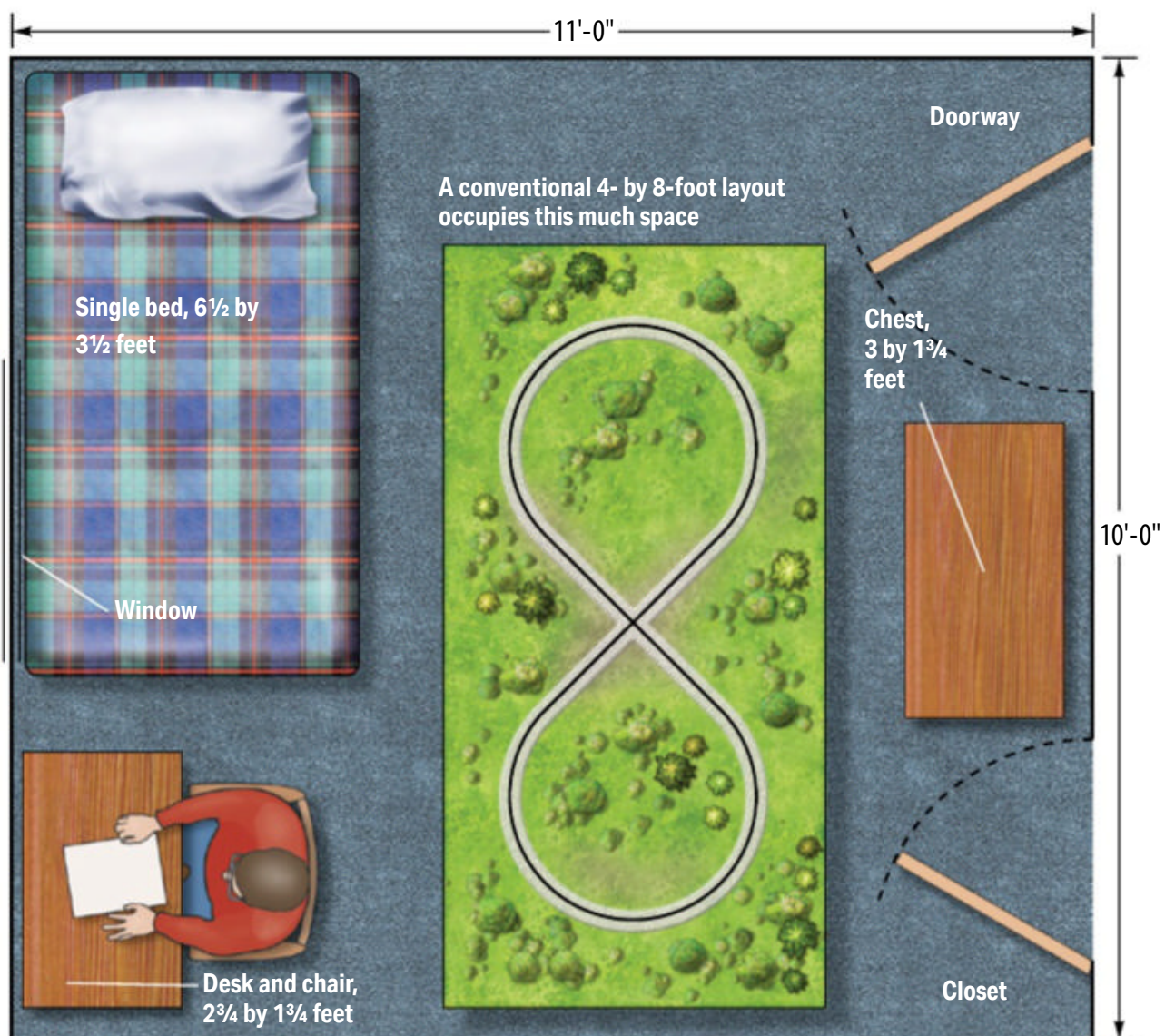
When space is at a premium, toy train layouts often take the form of a temporary display. But with a little imagination you can enjoy a permanent layout all year round. A modest layout can fit into a small guest room without entirely compromising the use of the space.

In a bedroom about 10' by 11', the furniture can be arranged as shown in the room diagram. The simplest way to build a small layout will be on a 4' x 8' sheet of plywood, but no matter how you shift the furniture, it makes the room crowded. In addition, developing an interesting track plan is tricky because the trains can do little more than run around an oval.

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

A point-to-point with potential

I designed the O gauge layout to fit around the perimeter of the room and sit high 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. Younger ones can stand on a stool to operate the layout. Make sure you 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 rather narrow, 31"-diameter curves and

When space for a toy train layout is at a premium, it can be quite challenging to incorporate a conventional 4' x 8' 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 sheet of plywood.

the integrated roadbed. You can substitute other manufacturers' products as well.

If you use Lionel O-27 track, your curves will be about 27" in diameter. If you use Lionel FasTrack, however, the smallest curves you can make are 36" in diameter. Ross or GarGraves track will occupy the same amount of room as MTH RealTrax. Finally, 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 that is suspended from the wall by 90-degree angle brackets screwed through the wallboard into the studs. I advise placing an additional leg under each of the two wider tables where the passing sidings are.

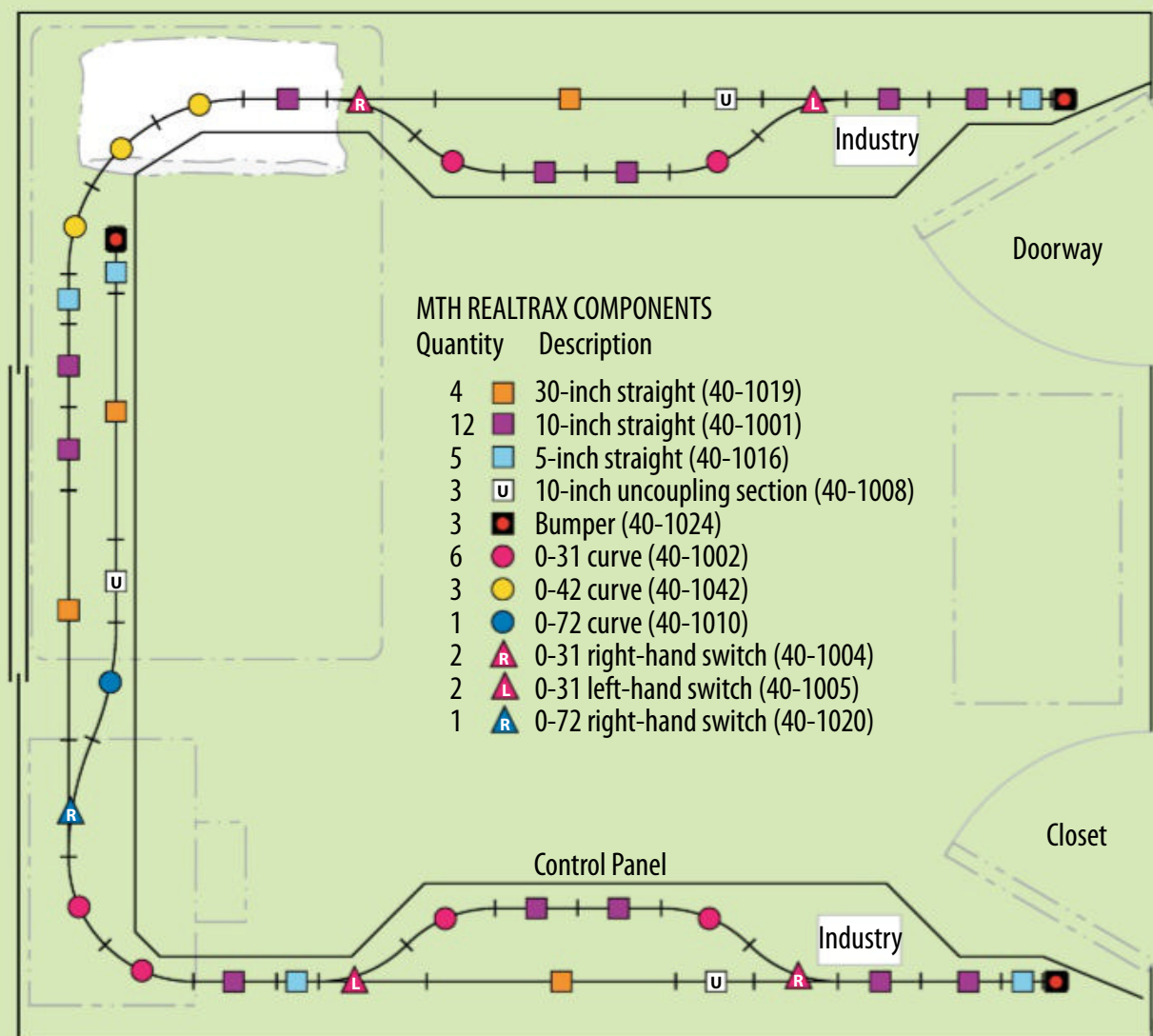
Operation favors short trains and double-ended locomotives or switchers that can be run in either direction, since there's no provision for turning a locomotive around. At either end of the layout, a locomotive can uncouple from its cars on the operating track section, proceed through the turnout to 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 accessory at each end to give the trains a purpose. A small mountain with a tunnel would fit in either of the two corners that flank the window.

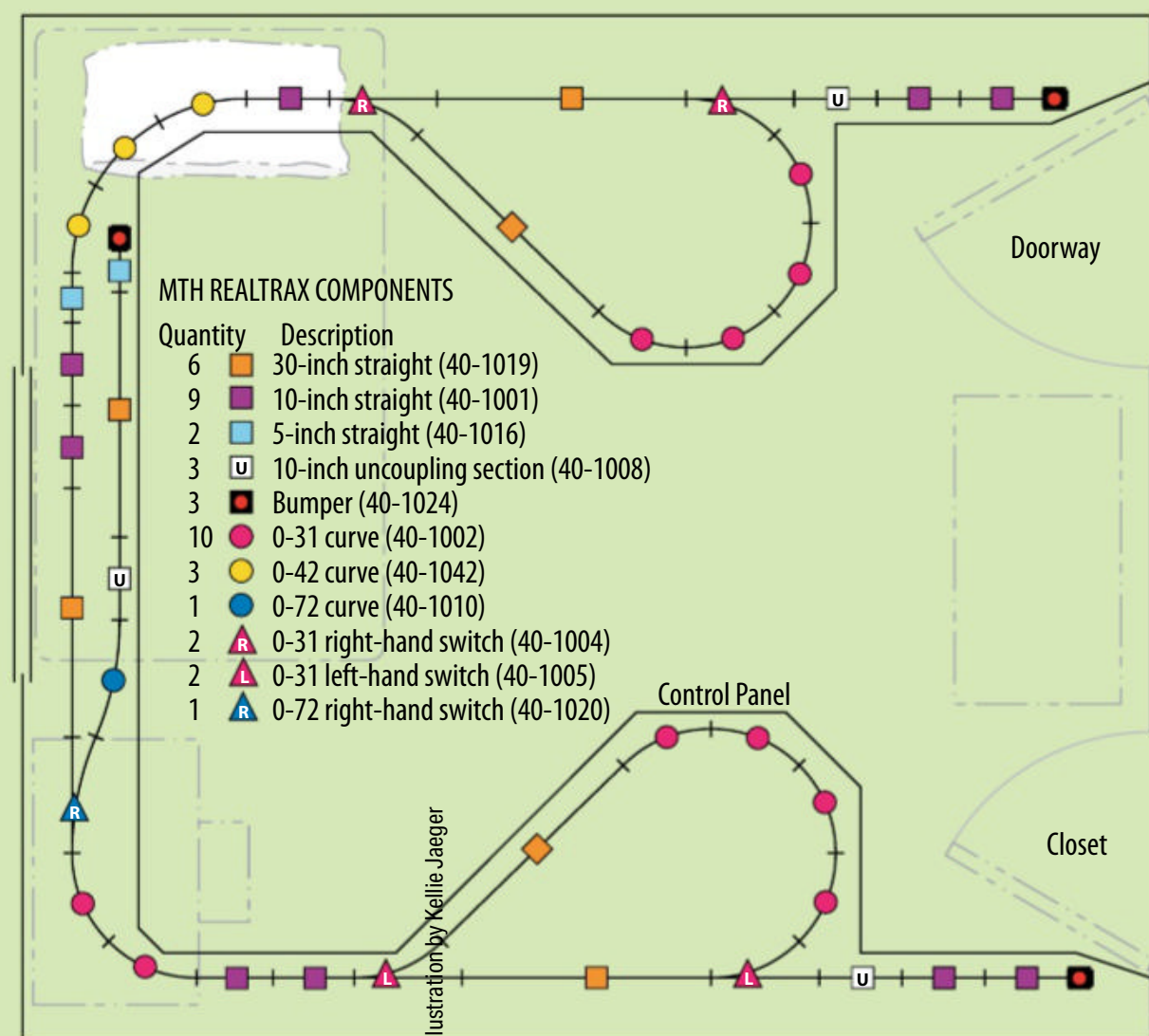
Ongoing developments

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 30" wide. Even though the new loops eliminate two sidings, the plan still retains three sidings.

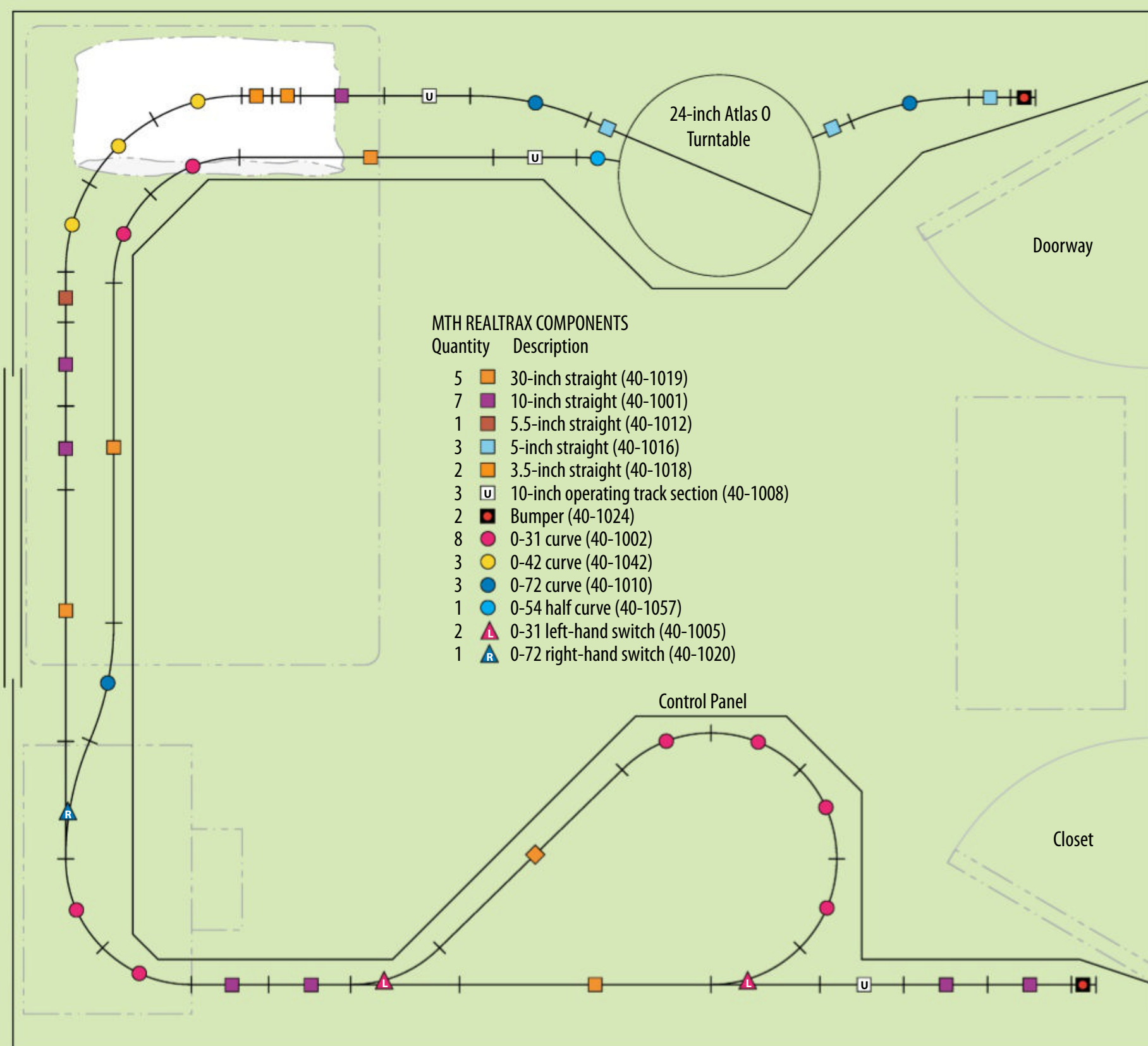
There is extra room for scenery in this plan, and it can be as simple or as complex as your imagination dictates. The reverse loops are large enough to contain a few houses or accessories, such as a coal or log



A basic point-to-point scheme lets you 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 type of layout, trains run from one point to another, similar to real railroad operation.



This loop-to-loop scheme allows you to continuously run a train over the entire O gauge railroad 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.



What's known as a "point-to-loop" scheme is a combination of continuous-run and point-to-point designs. In this design, you'll use a turntable to swap the locomotive from one end of the train to the other.

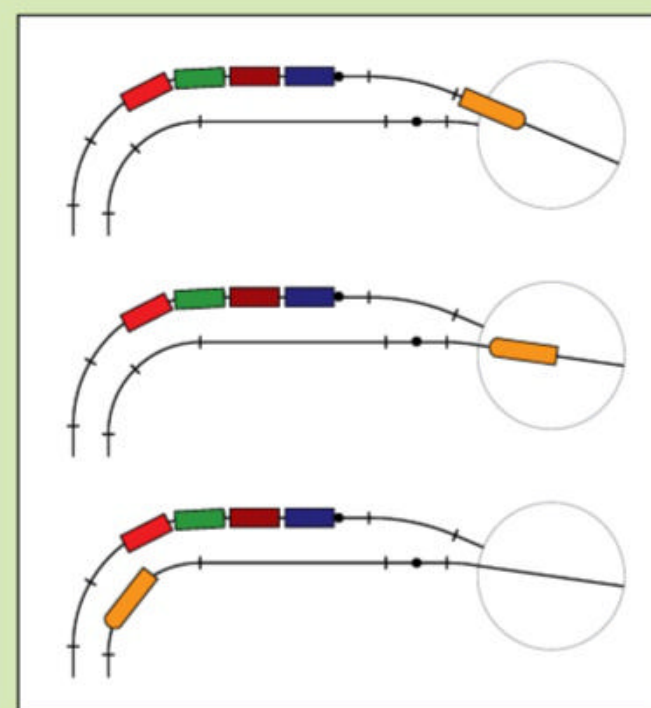
loader. You'll want to provide a station or industry at each reverse loop to give the trains logical destinations. Consider building a mountain with a tunnel over each of the curves on either side of the window.

360-degree turnaround

A variation of the track plan, one that provides more interesting operation, substitutes an Atlas O no. 6910 24" self-indexing turntable for one of the reverse loops. 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, sanding facility, or diesel fuel station.

Don't let a small house or apartment keep you from enjoying the many 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 always be available whenever you want to run them, and they make a wonderful conversation piece whenever guests visit. **CTI**



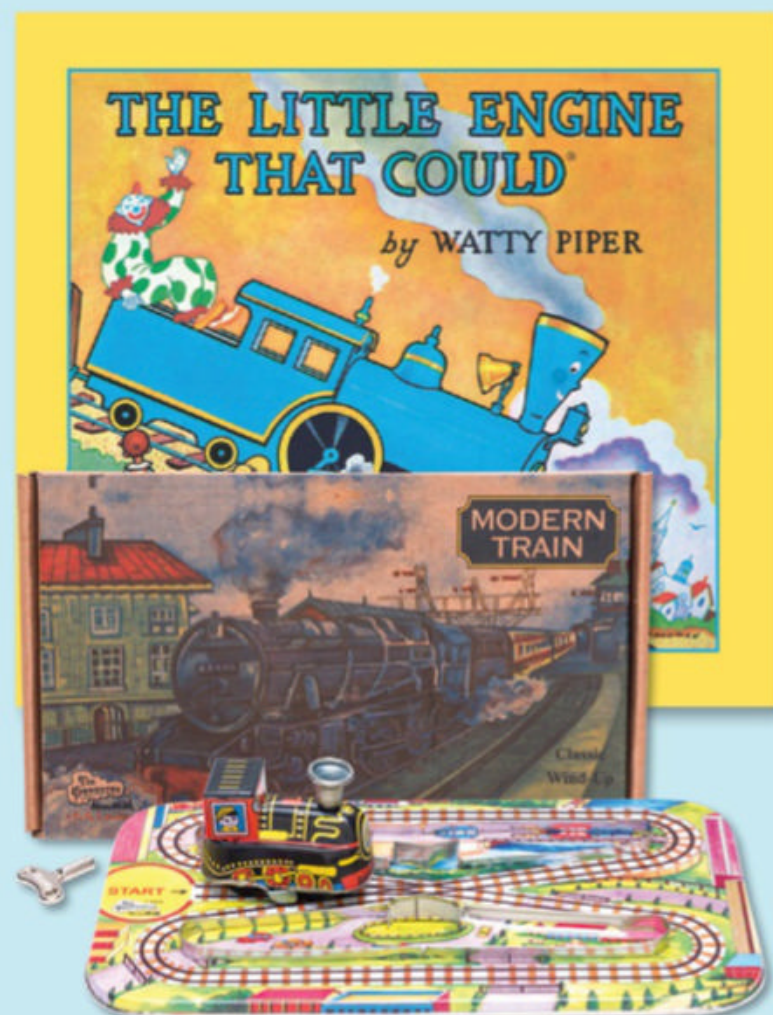
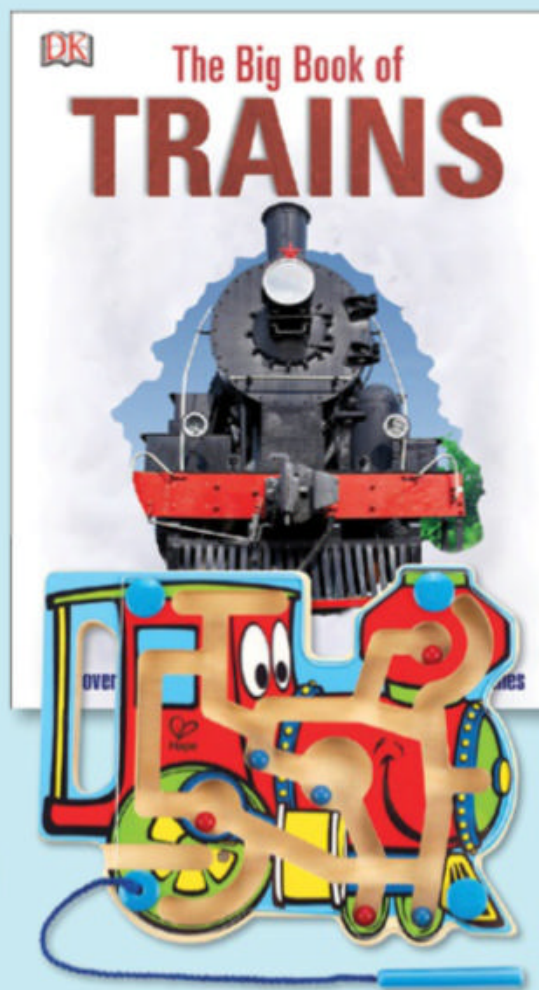
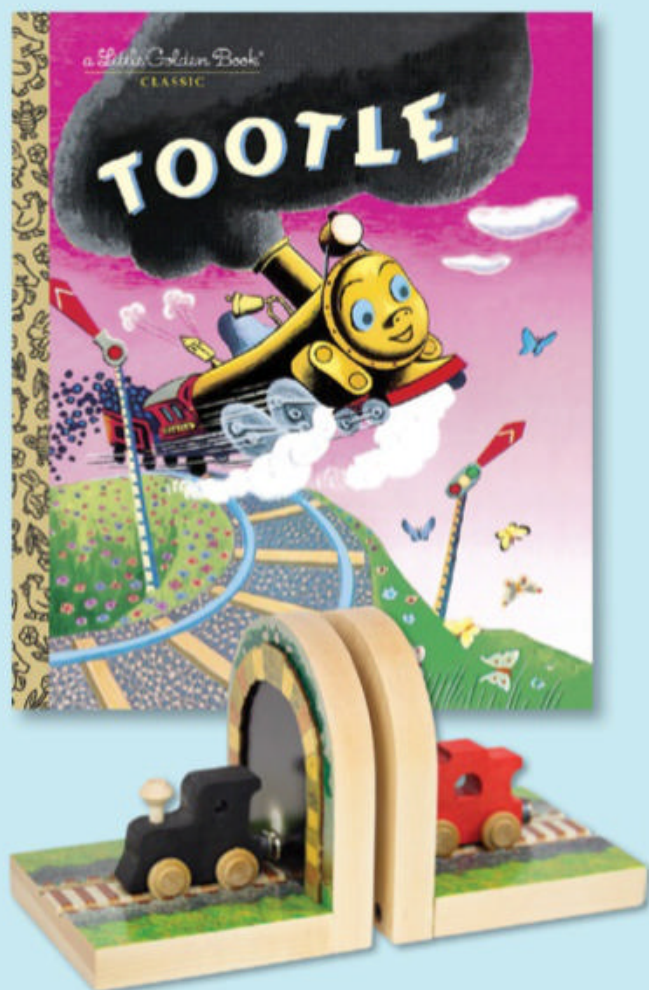
A turntable allows two-way operation. The locomotive enters the turntable, rotates to face in the opposite direction, and then exits via the parallel track.



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