

THE *Beer Line*



1. Milwaukee Road's Beer Line is the theme for *Model Railroader's* 75th anniversary project layout. Here we see a Fairbanks-Morse H-10-44 switcher leading a string of boxcars past Schlitz on the HO scale layout.

Build the Beer Line

PART ONE

Track plan, layout configurations, and benchwork for our new HO scale project layout

By Cody Grivno • Photos by the author, Jim Forbes, and Bill Zuback



When searching for a locale for our 75th anniversary project layout, we turned to our old neighborhood in downtown Milwaukee, Wis. The “Brew City” not only has a strong connection with model railroading (Kalmbach Publishing Co., Wm. K. Walthers Inc., and the National Model Railroad Association), it has a rich railroad history as well. The Milwaukee Electric Ry. & Light Co., Chicago & North Western, and Milwaukee Road were all here. Though all of these railroads featured interesting operations, it was a Milwaukee Road indus-

trial branch that proved the best fit for our 4 x 12-foot HO scale layout. Welcome to the Beer Line, circa 1947.

One layout, many looks

The Beer Line was in a gritty, industrial part of Milwaukee. In the 1940s, when coal was used prominently by industries (and to heat houses), everything had a sooty appearance. Overgrown weeds and assorted junk could be found in empty lots.

Though we’ve built several project layouts over the years, this one is special for several reasons. First, it fea-

tures an innovative design. Managing editor David Popp designed the layout in four sections that can be rearranged into different shapes, as explained on page 48.

Second, it’s one of the most detailed model railroads we’ve built in a long

► Build the Beer Line series

Coming next month: Roadbed, track, wiring, and Bachmann Dynamis Digital Command Control.

Milwaukee Road Beer Line

HO scale (1:87.1)
Layout size: 4 x 12 feet

Scale of plan: 3/4" = 1'-0", 12" grid
Numbered arrows indicate photo locations

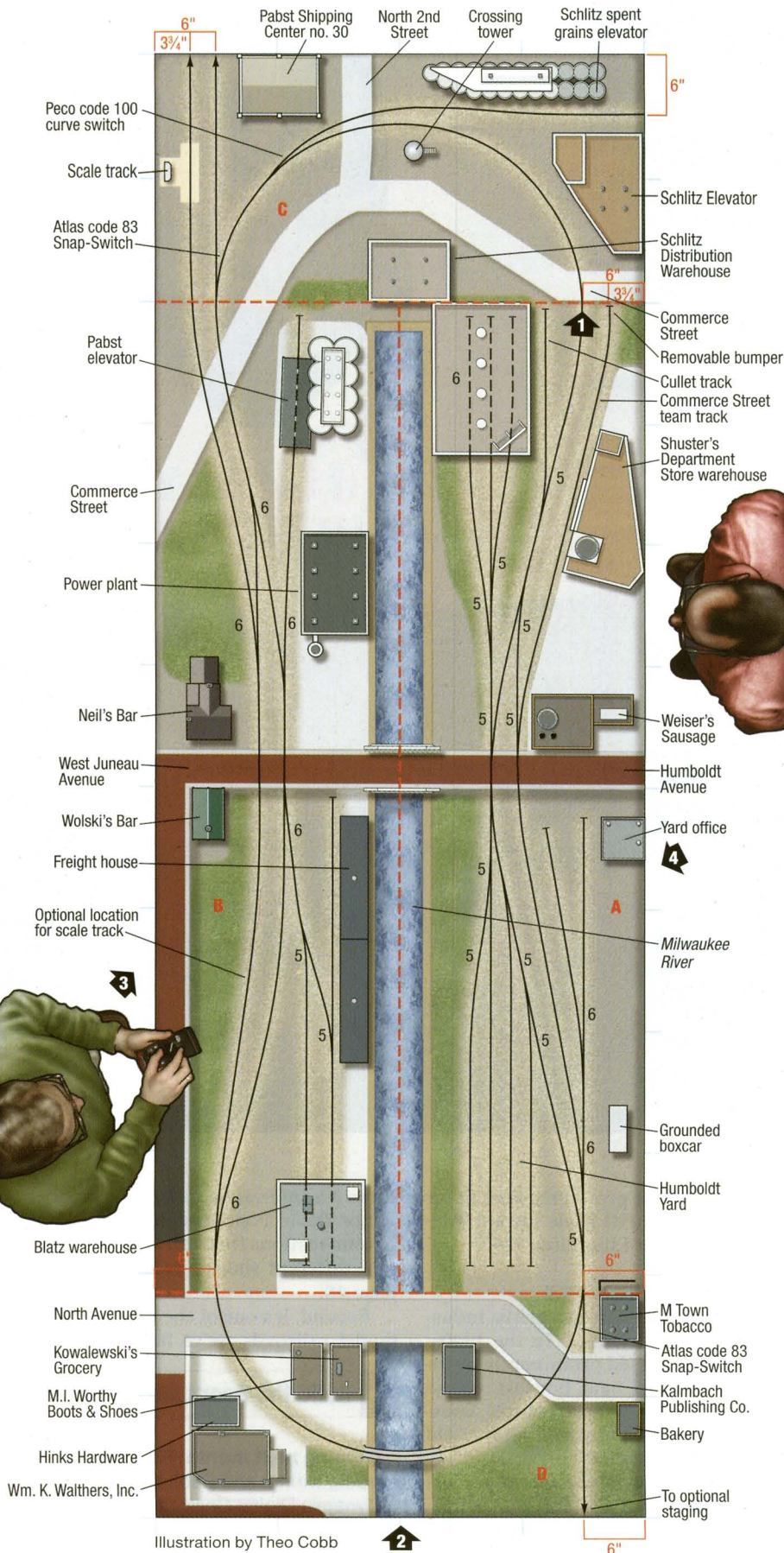


Illustration by Theo Cobb

The layout at a glance

Name: Milwaukee Road's Beer Line
Scale: HO (1:87.1)
Size: 4 x 12 feet
Prototype: Milwaukee Road's Chestnut Street Line
Locale: Milwaukee, Wis.
Era: 1947
Style: sectional
Mainline run: 24 feet
Minimum radius: 18"
Minimum turnout: no. 4
Maximum grade: none
Benchwork: sectional tables
Height: 44"
Roadbed: cork
Track: Atlas code 83 flextrack and Peco American-prototype turnouts
Scenery: extruded-foam insulation board and Sculptamold
Control: Bachmann Dynamics Digital Command Control (DCC)

time. Several of the structures were kitbashed or scratchbuilt to match prototypes. Though some selective compression was necessary, especially with the brewery buildings, we were still able to capture the look of the Beer Line.

We used some modeler's license, too. For example, the first Kalmbach Publishing Co. office was actually located on 84th Street in West Allis, a Milwaukee suburb. The Wm. K. Walthers building, which we'll see in part four of this series, was on Water Street in Milwaukee. The power plant and Milwaukee Road freight house, which were next to each other in reality, are on opposite sides of the street here.

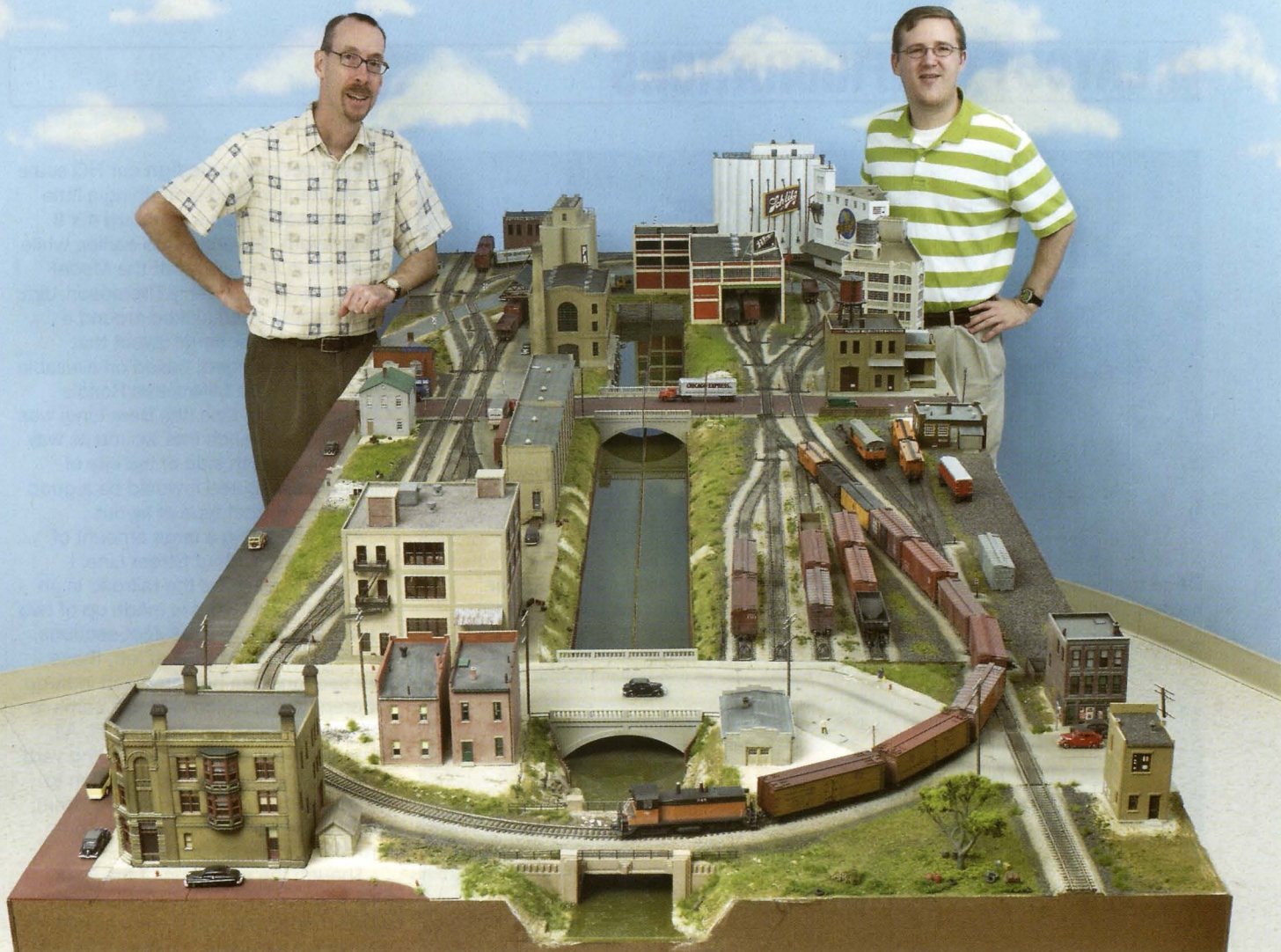
A completed layout (finally!)

As Neil Besouloff noted in his editorial in the June 2008 issue of *Model Railroader*, it took us a bit longer than the two weeks we'd first planned to finish the Beer Line. As you can see, the layout is now finished (finally!)

Over the next five months, we'll show you how we built the Milwaukee Road Beer Line. Even if you don't build the layout like we did, many of the techniques we'll show you can easily be adapted for use on your own model railroad. So follow along as we show you how to build the Beer Line from the benchwork up. **MR**

More on our Web site

This month David Popp will show you how to connect the four sections of the Beer Line. To watch the video, visit www.ModelRailroader.com.



2. Managing editor David Popp (left) and associate editor Cody Grivno stand next to the Milwaukee Road Beer Line in its oval configuration. The layout can also be arranged in F and J shapes, as explained on the next page.



3. A Fairbanks-Morse switcher and ribbed-side boxcars help establish the Milwaukee Road prototype.



4. The Walther H-10-44 model is a perfect fit for our Beer Line layout. The engine is switching cars at Humboldt Yard.

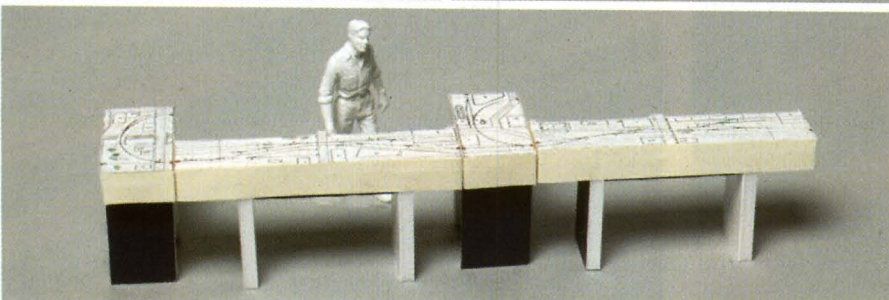
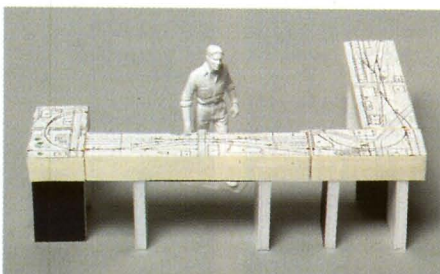
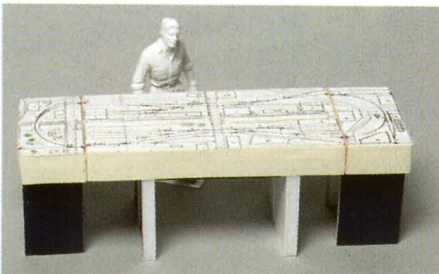
LAYOUT CONFIGURATIONS



Once the benchwork sections were completed, senior editor Jim Hediger helped David test them in each of the configurations. Here is the J setup.



For those that have a long wall to work with, the layout can also be set up in its F configuration. All setups can have an optional staging yard added at this end.



As part of his test of the design concept, David made this scale 3D paper model. All three possible configurations (oval, J, and F) are shown here.

When I set out to design our HO scale Beer Line, I wanted something a little more versatile than a standard 4 x 8 table layout. Several years earlier, while standing in the hallway at the *Model Railroader* offices, Terry Thompson, Jim Hediger, and I had kicked around a concept for a sectional layout that could be rearranged, based on available space. Since the Milwaukee Road's Chestnut Street Line (the Beer Line) was essentially a branch that wound its way through the north side of the city of Milwaukee, I figured it would be a good candidate for that type of layout.

After collecting a large amount of data on the Chestnut Street Line, I essentially designed the railroad in an afternoon. The layout is made up of two 2 x 4-foot and two 2 x 8-foot sections. As shown in the photos at left, those four sections can be combined in three different ways, which we have come to call oval, J, and F configurations. All three can have an optional staging yard added to represent the connection to the rest of the Milwaukee Road system. Explanation of the benchwork's construction begins on page 50.

Though the entire run of the Beer Line would make an excellent large urban model railroad, there was just no way to fit everything I wanted into our project layout's various footprints. As such, I concentrated my efforts on the southern end of the branch, which included very "railroad" spots, such as Humboldt Yard, the Schuster Department Store warehouse, the Pabst Elevator, and the famous Schlitz Brewery complex. Because the Schlitz plant was the subject of many railroad photographers (see the Wallace Abby shot at right for an example), I made it the focal point of the layout.

Much of the Chestnut Street Line followed the west bank of the Milwaukee River. As such, the river was also an important part of the design. When set up in its oval configuration, as shown in the track plan on page 46, the river runs through the center of the layout. However, both sides of the river are still the west bank – the river and railroad simply wraps around itself. In the J and F configurations the river is split in half, offering a more realistic presentation.

While the layout runs well in any of its configurations, I prefer the J the most. After making up a train in Humboldt Yard, it's great fun to wind your way through the streets of Milwaukee and switch the industries. – David Popp



The Schlitz Brewery complex was a landmark on the Beer Line. Fairbanks-Morse switchers, such as the one shown here weighing cars in the Commerce Street Yard, were typical power for the branch. Wallace W. Abbey photo

The Milwaukee Road had dozens of branch lines throughout its system, but one of the busiest and best-known was the Chestnut Street Line north of downtown in the railroad's namesake city. "Wait a minute," you might be asking. "I thought this was about the Beer Line?" Don't worry, it is. To the railroad, the branch was known as the Chestnut Street Line. However, it was better known as the Beer Line, and for good reason.

Three of the nation's biggest breweries were on or near the Milwaukee Road's six-mile branch. The Joseph Schlitz Brewing Co., at one time the world's largest brewer, was the biggest industry on the Beer Line. Pabst Brewing Co. (its elevator is partially visible at right) and Blatz were also Milwaukee Road customers.

There was more to the Beer Line than just brew, though. Other rail-served industries included American

Motors Corp. (body plant and warehouse), Kraft Foods and Nabisco (warehouses), and assorted foundries, oil suppliers, lumber yards, and box companies.

The decline of the brewing industry and the Milwaukee Road during the 1980s was a one-two punch that marked the beginning of the end for the Beer Line. Approximately half of the Beer Line was torn up; the Schlitz buildings shown in the photo above were razed in 1986.

Regional carrier Wisconsin & Southern began operating the remnants of the Beer Line in 1992, and purchased it in 1999. Following the abandonment of 2.4 miles of track in late 2007, all that remains of the line is a stub for two customers near WSOR's North Milwaukee Yard.

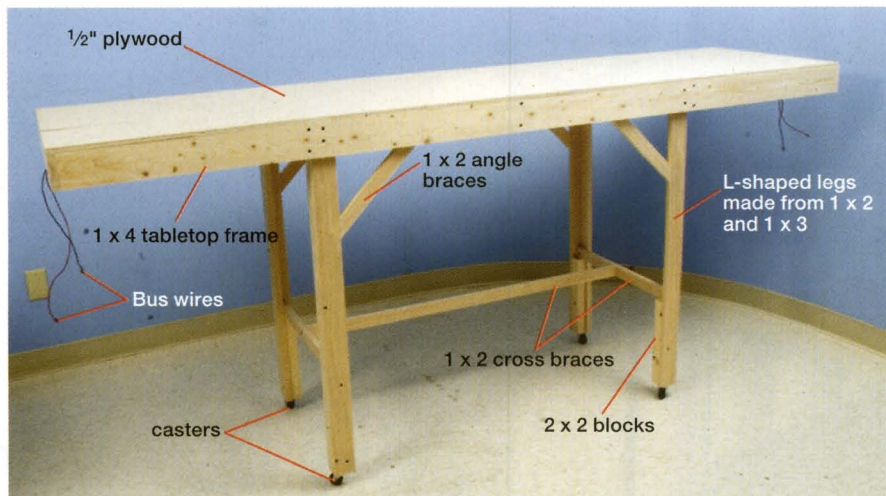
The Beer Line is one of 12 railroads featured in *Classic Railroads You Can Model* (Kalmbach Publishing Co.,

2002). The section on the Beer Line includes two track plans and a chart with the types of cars used by breweries from the pre-prohibition era through the 1970s. To order this book, contact Kalmbach Publishing Co.'s Customer Sales & Service department toll free at 1-800-533-6644 or via e-mail at customerservice@kalmbach.com.

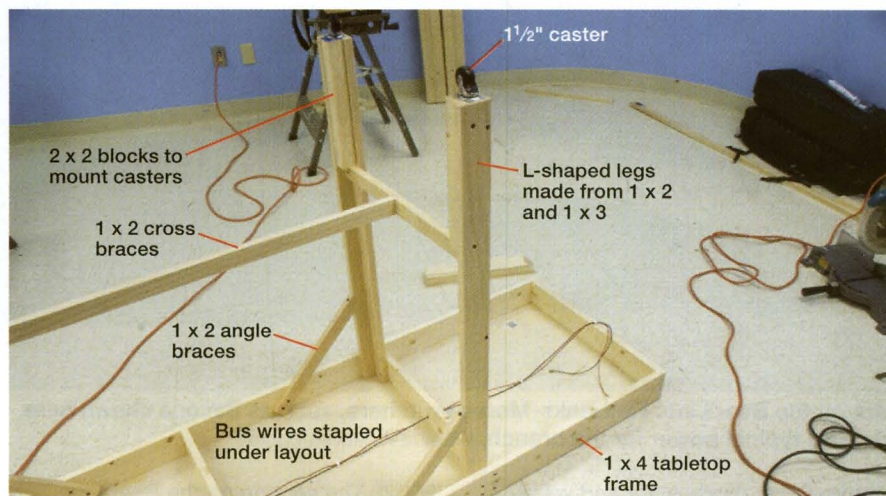
For even more information on the branch line that made Milwaukee famous, read *The Milwaukee Road's Beer Line* by Art Harnack (The Milwaukee Road Historical Association, 2003). This 40-page book contains historical information, maps, and dozens of color and black-and-white photos. The publication is a must-have if you plan on modeling the Beer Line. We consulted it frequently.

The Milwaukee Road's Beer Line can be purchased online at The Milwaukee Road Historical Association's Web site, www.mrha.com. — C.G.

BENCHWORK



This is one of the two 2 x 8 foot sections of the Beer Line. Each section is supported by its own set of legs and has casters to make moving it around the shop easy. The 2 x 4 foot sections were made the same way.



This view shows most of the benchwork construction, including the table frame, legs, and bracing. All joints are fastened with glue and screws.



David first built all the tabletops and legs in assembly line fashion. He and Neil Besougloff then quickly assembled the four sections.

The benchwork for the Beer Line is made of four independent 2-foot-wide tables. Each is mounted on its own set of legs and has 1 1/2" casters, making it easy to move around the workshop. As shown on the track plan on page 46, the layout is made from two 2 x 8 foot tables and two 2 x 4 foot tables. The sections use 3/8" dowel pins to align the tables, and the entire layout, in any of its three configurations, is held together by clamps.

The table frames and legs for the layout are constructed from dimensional lumber. All joints are glued and fastened with 1/4" drywall screws. Assembly is simple, involving basic carpentry techniques, and yields a very stable layout surface.

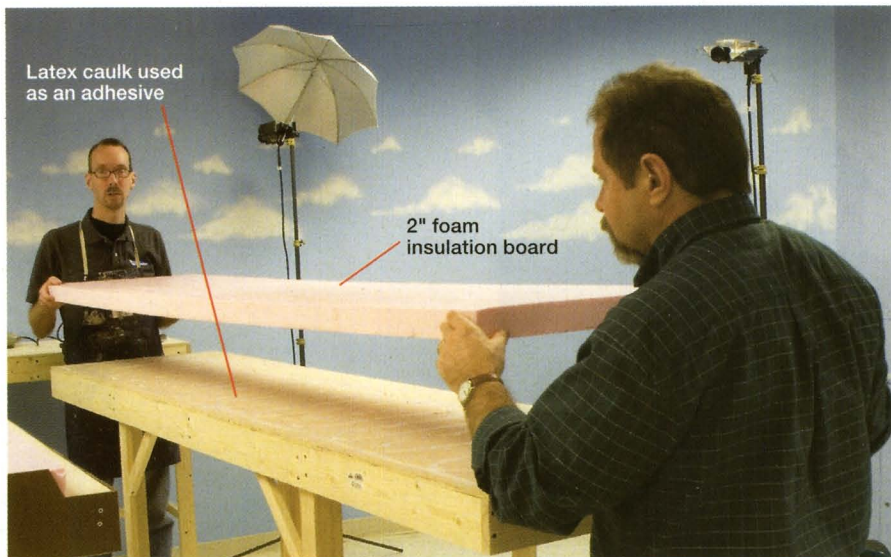
The minimum hand tools you'll need for the project include a hammer, square, tape measure, caulk gun, and a pencil. For power tools, you'll need a drill (with screwdriver attachment and basic drill bits), and one or more saws. I used a chop saw, circular saw, and a reciprocating jigsaw, but you could do the entire project with just the jigsaw if you're careful.

When choosing lumber for layout benchwork, take your time and be picky. It's worth the effort. Lumber that is warped or cupped (or both) will never get better. More than most other project layouts we've built, this layout required a high level of precision to fit together properly, and we needed good-quality lumber to make it work. Neil and I spent more than an hour in the lumber aisle at The Home Depot when we bought the lumber for the project, and we double checked all the boards we'd selected, just to be sure they were straight.

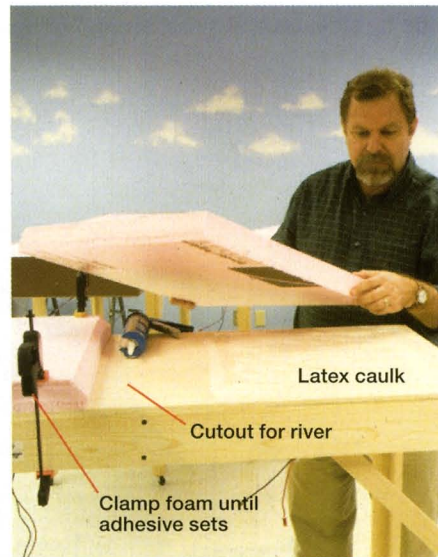
Frames and legs. The table frames are made from 1 x 4 pine, with cross braces set on 24" centers. I covered the frames with 1/2" plywood, fastening it with yellow carpenter's glue and 1" ringed paneling nails. (The rings keep the nails from slipping out over time.)

The legs are standard L-shapes, made from a 1 x 2 glued on edge to a 1 x 3 and held in place with three 1 5/8" drywall screws. The base of each leg has a 12" block of 2 x 2 glued inside the L. Ordinarily I'd mount adjustable feet in the end of the block so I could level the layout. This time, however, I mounted 1 1/2" casters to the bottom of the legs instead. (Next time I'd use a larger caster, as the 1 1/2" wheels don't roll well on uneven surfaces.)

BENCHWORK (CONT'D)



Once the tabletops were built, David and Neil surfaced them with 2" foam insulation board, cemented to the top with latex caulk used as an adhesive. To save time, they cut out the river sections before gluing the foam in place.



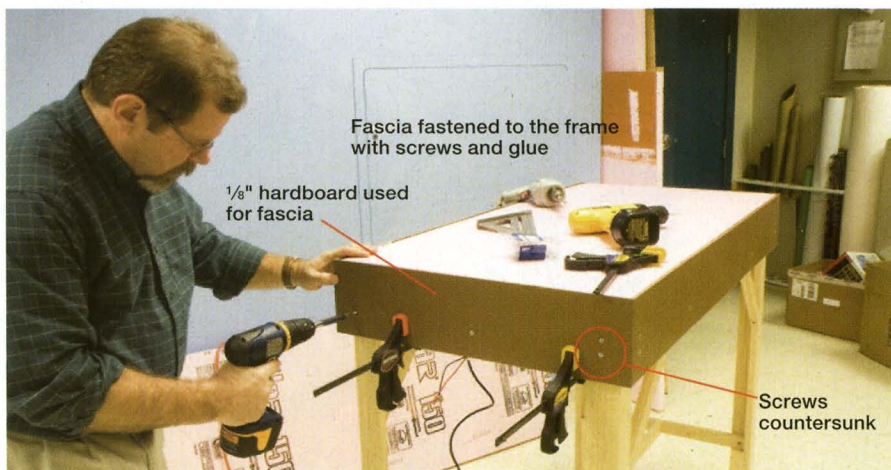
After the foam sections were glued to the tabletop, Neil used clamps to hold them firm until the adhesive set.

Once the tabletops and legs were built, Neil and I assembled the sections. We glued and screwed all joints, this time using 1 $\frac{1}{4}$ " drywall screws, so the tips wouldn't poke through the back of the wood.

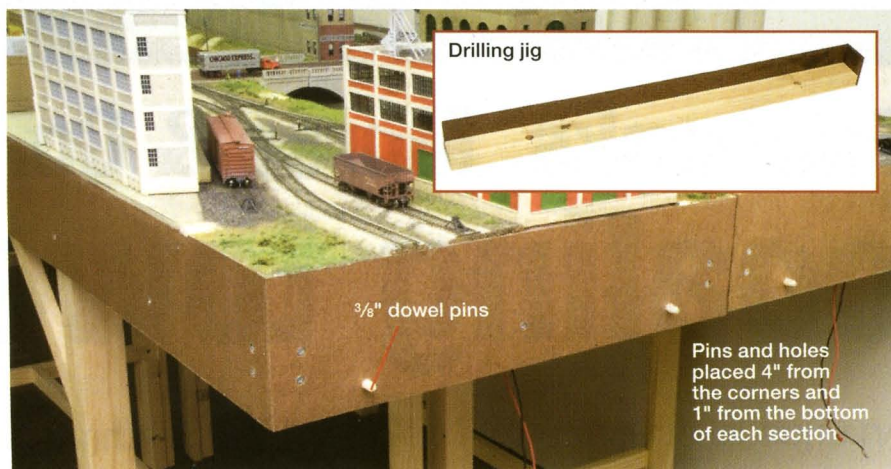
Foam and fascia. The next step in the benchwork process was to add the foam layer that would form the scenery base for the layout. We used 2" foam insulation board, cementing it to the layout with ordinary latex caulk. To keep the foam secured until the caulk set, Neil and I clamped it in place for 12 hours. Since we were going to have to cut out the river from the foam sooner or later, I opted for sooner, making the cuts before cementing the foam to the layout.

After the foam was in place, we applied a $\frac{1}{8}$ " tempered hardboard fascia to the sections on all sides. The finished layout can be assembled in three different ways, so some sides of the sections are not always hidden. Therefore, we surrounded all sides with fascia. To ensure that the sections would fit together properly, the fascia needed to be flush, so we countersunk all the $\frac{3}{4}$ " screws we used to mount it.

The last step on the benchwork project was to install the alignment pegs. As shown in the bottom right photo, they are made from $\frac{3}{8}$ " dowel pins and mounted at uniform positions so that any layout section could plug into any other (though only the tracks on the main loop will line up). – D.P.



After the foam was in place, Neil and David added fascia panels made from $\frac{1}{8}$ " tempered hardboard. The fascia is attached to the frame with glue and screws.



David used $\frac{3}{8}$ " dowel pins as guides for connecting the sections. The pin locations are standardized so any section can connect to any other.