

Workshop tips

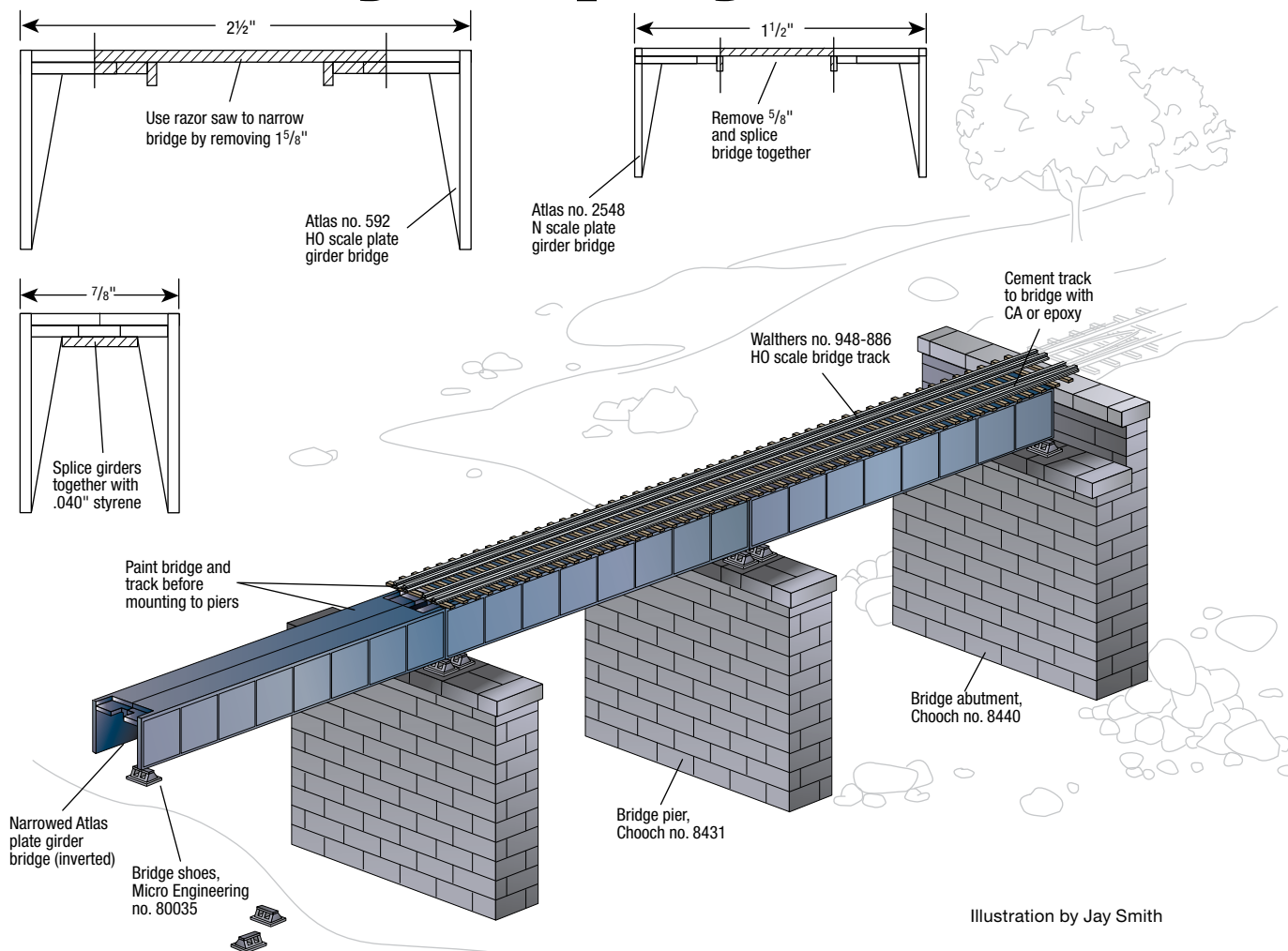
Illustrated layout projects



- Build simple deck plate girder bridges
- Create a bigger scene with mirrors
- Plus 4 projects to help you add animation to your layout

Illustrated layout projects

Tip 1



Easy bridges

Welcome to Illustrated layout projects. This is a collection of fun modeling projects that ran in the pages of *Model Railroader* magazine several years ago. Each offers useful tips and techniques that can be applied to most any layout.

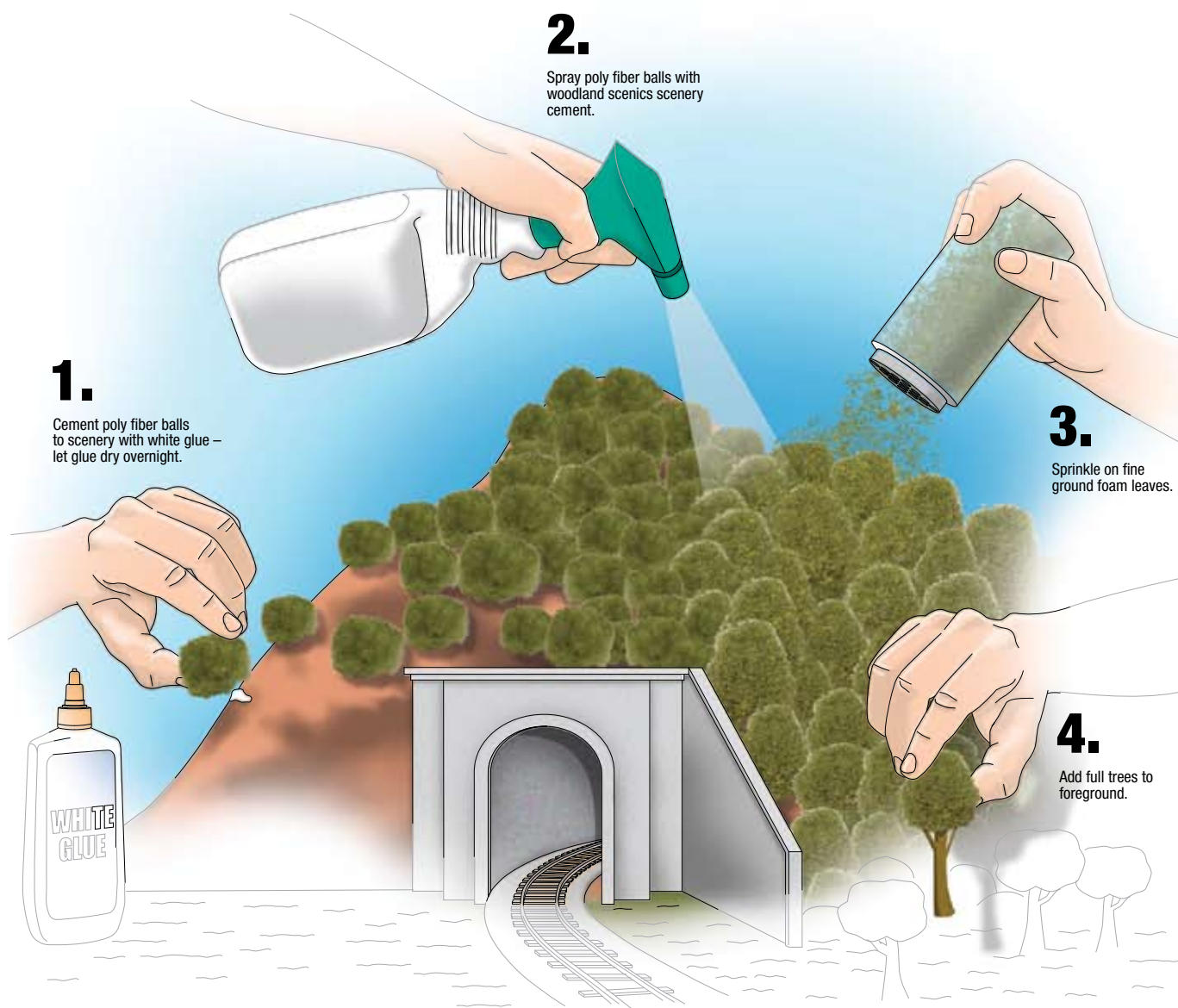
Nice kits for deck plate girder bridges are available from several manufacturers, including Micro Engineering, but a few years ago I saw Lou Sassi use a simple technique to build this type of bridge from ready-made Atlas through girder bridges. I've since used Lou's trick on several layouts and have

been pleased with the results. The Atlas bridges are available in N and HO scales, and feature good girder, plate, and rivet detail on their outer faces. If you're modeling in HO, you can use either size bridge, though the HO bridge is much too big for use in N. I made the HO bridge shown in the illustration using a string of N scale bridges supported by intermediate piers. You can use Atlas HO bridges for spanning longer gaps.

Both size bridges need to be narrowed to look correct. For our example, the N scale bridge has a $\frac{5}{8}$ " section removed from the mid-

dle. (If you're using HO bridges, remove $1\frac{5}{8}$ ".) You can make these modifications using a razor saw to cut away the unwanted section. Then, splice the girders back together with a .040" styrene strip, cemented underneath the bridge.

Once the bridge is fitted to its piers (don't forget bridge shoes), simply cement your favorite brand of bridge track over the top (if you're working in N scale, you can use Micro Engineering item no. 11112), paint and weather the track and girders, and install the bridge on your layout. — *David Popp, managing editor*



Quick background trees

Illustration by Theo Cobb

Most model railroads need a large number of trees, but the trees don't all need to be detailed models. Former MR staff member Jim Kelly used this simple technique to make treetops to cover the hills of our Turtle Creek Central project layout.

Start with some Woodland Scenics no. 178 green poly fiber, roll it

into tree-sized balls, and cement the balls to the layout with white glue. Once the glue dries, spray the balls with Woodland Scenics scenery cement, and then sprinkle fine green ground foam (leaves) over the treetops. You can add highlights by dusting a lighter shade of green foam on top of the first layer.

Finally, blend the background treetops into your foreground scenery by adding a few complete trees (trunk and branches) in front of the poly fiber balls. To the casual viewer, those few foreground trees will lead them to believe that your entire forest is made up of individual trees. – D.P.

Simple rotating signs

One American icon of the mid-20th century is the rotating service station sign. In marketing, anything that catches the consumer's eye has potential to sell a product, and moving signs were good at it – especially when the gimmick was new. Growing up in the '60s and '70s, I remember seeing a number of rotating gas station signs around town, including Clark, Standard Oil, and my uncle's Union 76 station.

Bill Day of Potomac Falls, Va., sent us this idea for making your own rotating service station sign. The key component for this project is a low-rpm display motor. (We've shown a Hanksraft 1-rpm switch motor here). The shaft for the sign is made from two pieces of brass. A length of brass tubing serves as the mast, and a piece of rod with a diameter small enough to fit inside the mast drives the sign. The sign can be any material including sheet brass or styrene.

The motor is mounted under the layout. To connect the motor shaft to the drive rod, Bill used a small piece of vinyl tubing that fit snugly over both the rod and shaft, though you could use a brass sleeve with set screws instead. Almost any 12-volt power supply will work for the motor, but if you want to be able to adjust the speed, you could use an inexpensive power pack.

Don't have a gas station on your layout? Rotating signs are also used by restaurants, car dealers, and many other businesses. – *D.P.*

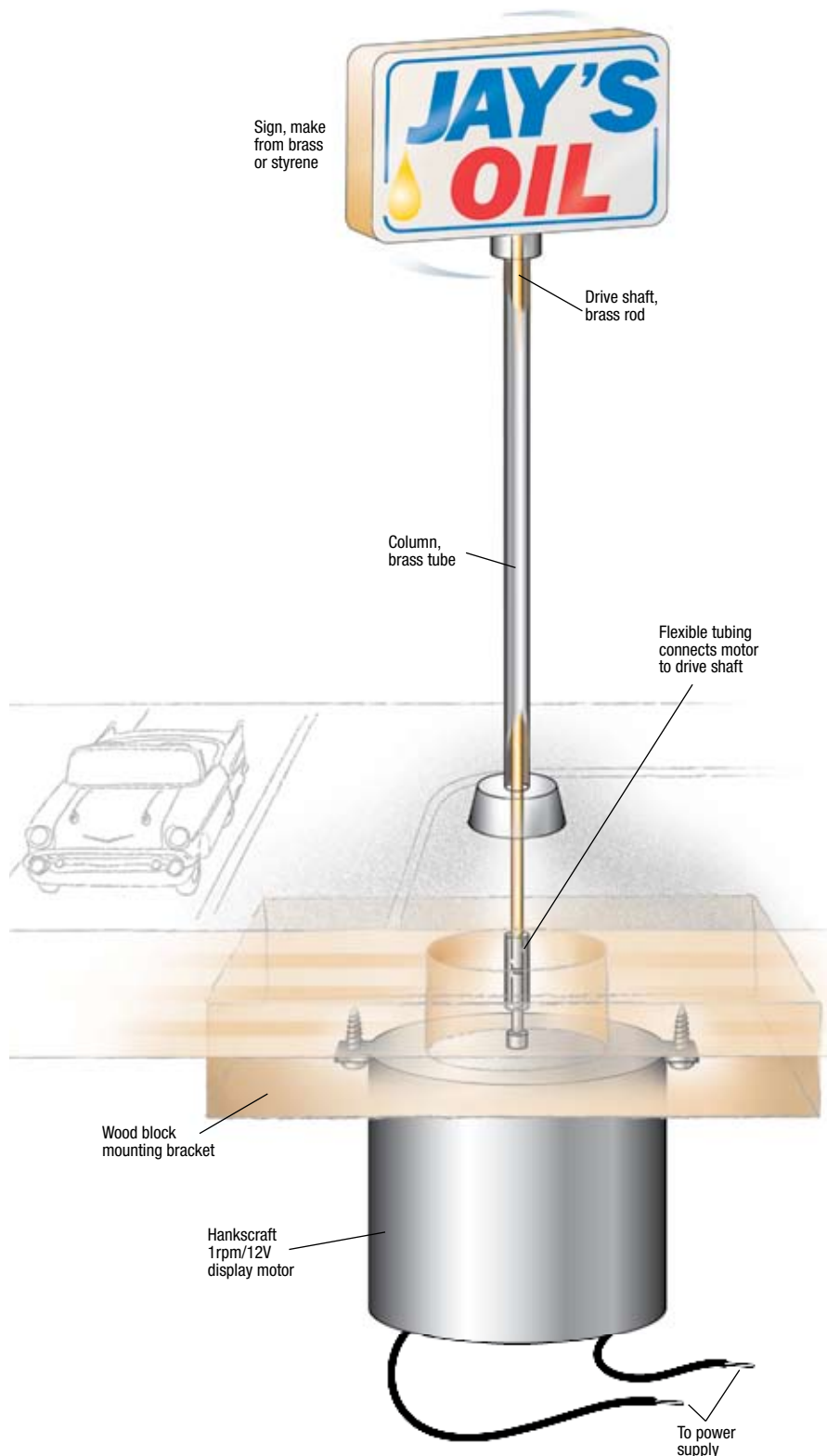


Illustration by Jay Smith

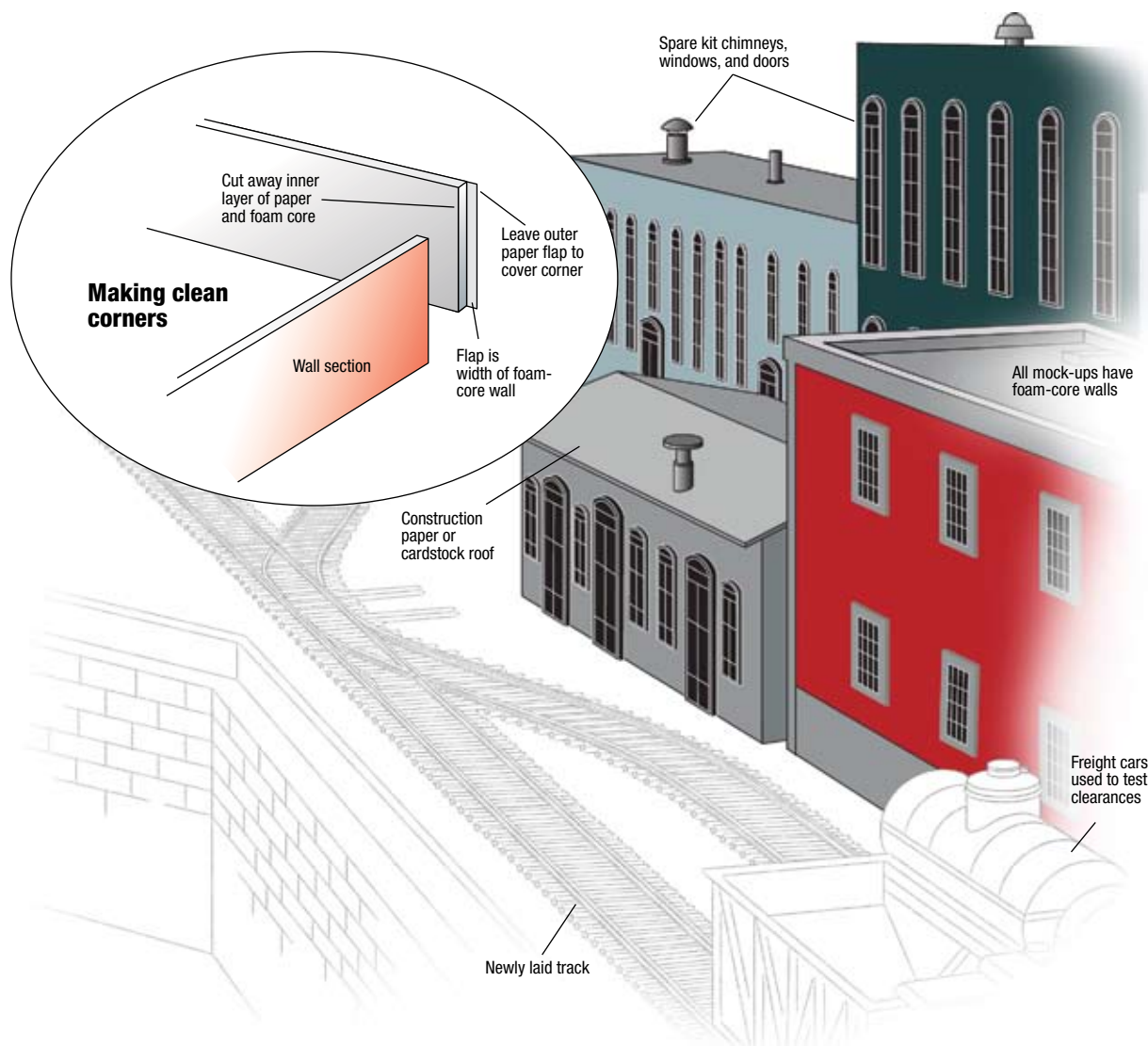


Illustration by Jay Smith

Quick mock-up structures

What do you do once you've laid your track but want to know if the plan will work with the structures you would like to install? William DeBuvitz, of Mendham, N.J., sent us a technique he used to make mock-up structures while planning an industrial district on his layout.

William made his mock-ups from foam core illustration board. He purchased the material from his local office supply store, choos-

ing colors that would look good as structure walls. After cutting the wall sections from the foam core, William assembled the pieces with white glue. He was able to make good-looking corners on his buildings with the layering technique shown above.

Once the walls were in place, William made roofs for his buildings with construction paper. To make his buildings look more real-

istic, he used windows, doors, and chimneys from his scrap box. He attached these items to his mock-up structures with Ambroid cement.

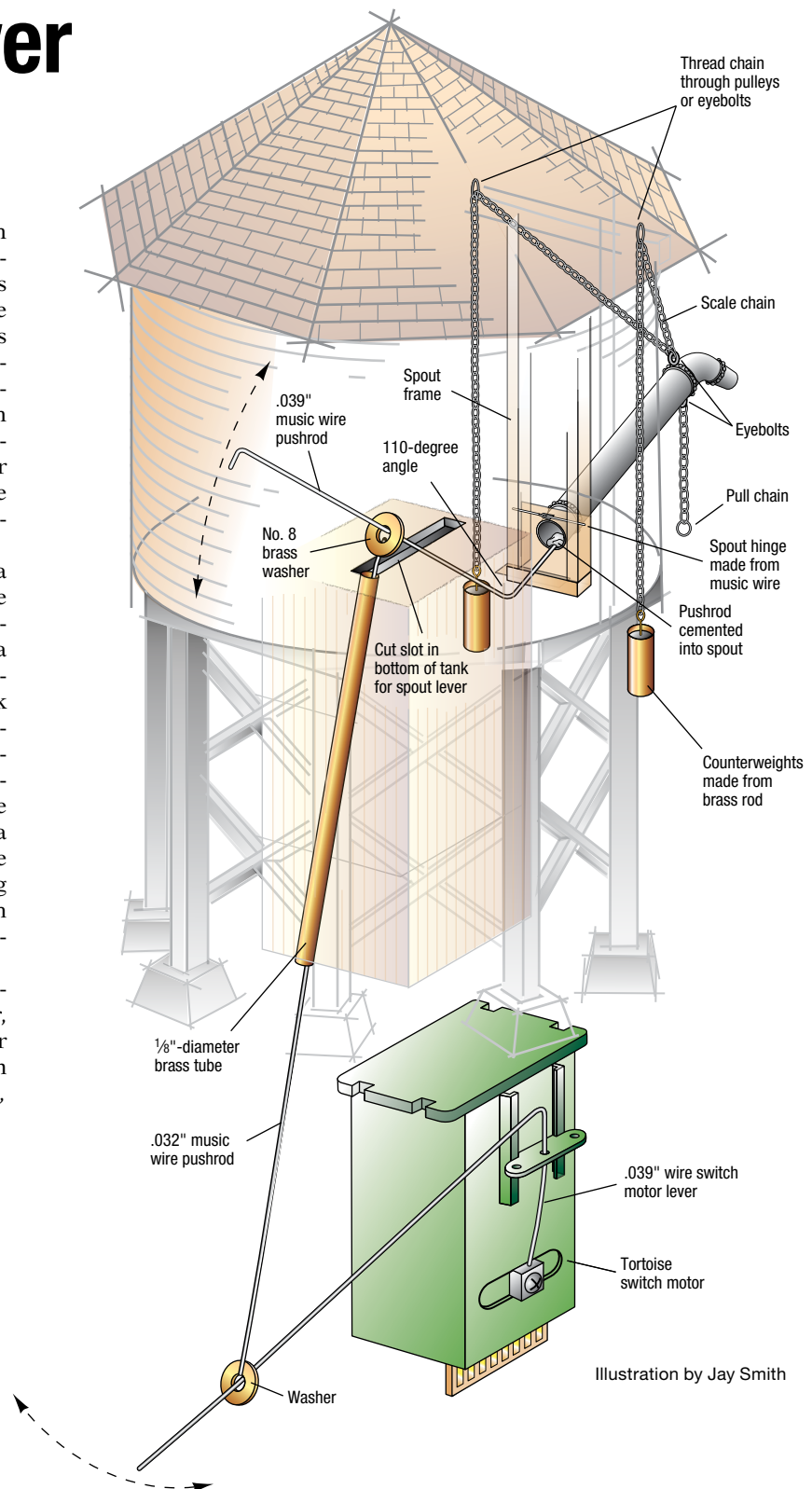
When the mock-ups were complete (about two days' worth of work for the entire scene), he placed the foam core structures on his layout and ran trains on the industrial district until he was satisfied his ideas would work. He then built the actual models. — D.P.

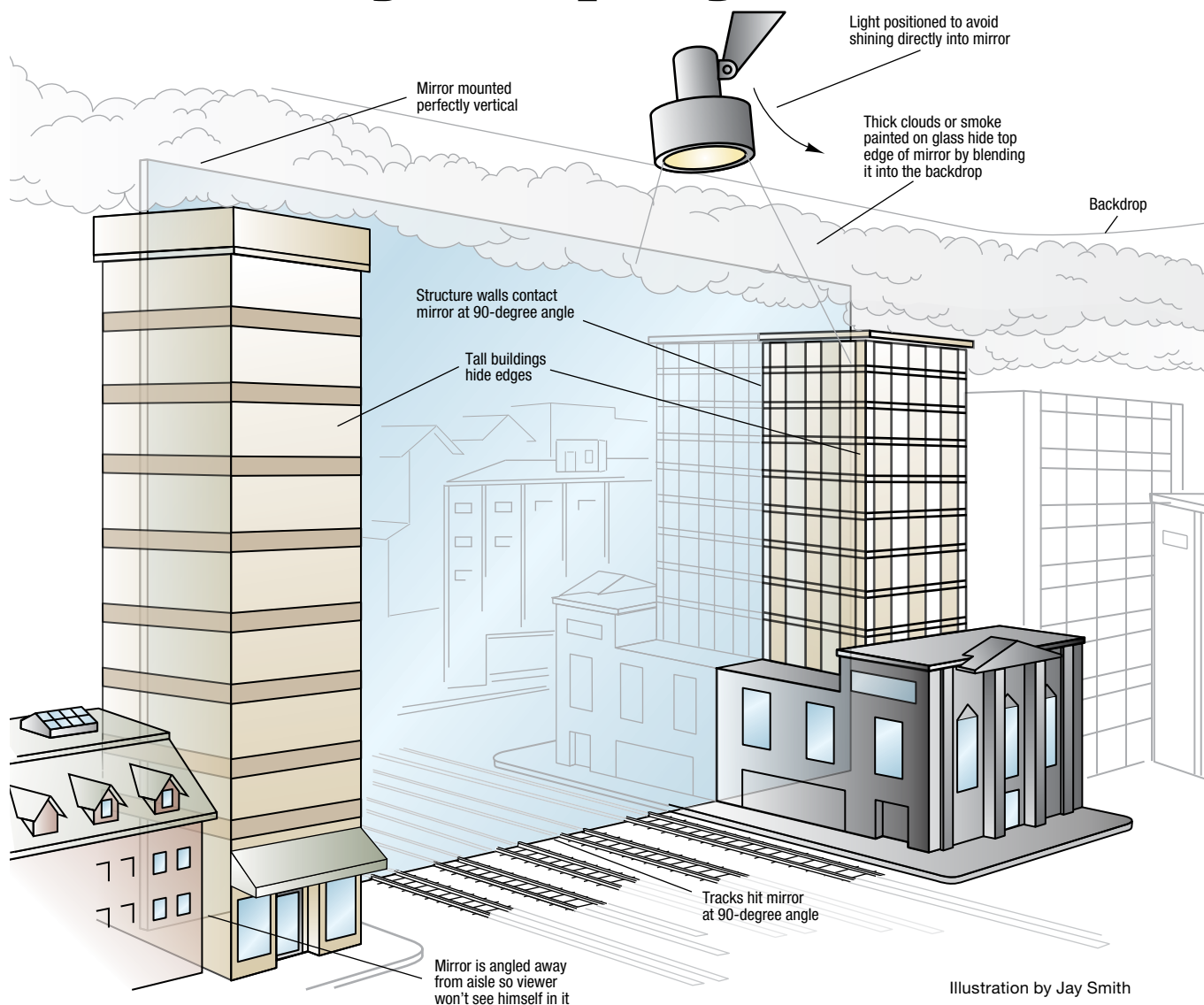
Water tower animation

One entertaining feature you can easily add to your layout is a moving spout for a water tower. This project works best if you add the animated spout to the structure as you build it, though it's not impossible to install on a previously assembled tower as long as you can remove the roof. I made mine using Campbell's no. 356 wood water tower kit, but you could also use the Atlas plastic kit no. 703 or Walther's no. 2813 built-up tower.

As shown in the illustration, a Tortoise switch motor provides the motion. The simple mechanism requires fitting the tower with a movable spout and counterweights, and adapting the tank and frost box for a .032" steel music wire pushrod. Wire the Tortoise according to the manufacturer's directions, and mount the control switch on the layout fascia near the tower. You could enhance the operation even more by adding a water tank sound module from Miller Models (P.O. Box 84, Middletown, MD 21769-0084).

The next time one of your locomotives needs to take on water, your crew can spot the tender under the tower and flip the switch to lower the spout. — *Bill Day, Potomac Falls, Va.*





Mirror, mirror on the layout

Mirrors are a clever way to make a model railroad look bigger than it really is. Years ago, model-railroad pioneer John Allen wrote a fairly extensive article (published posthumously in the December 1981 *Model Railroader*) about ways to use mirrors effectively on most layouts. His own HO scale Gorre & Daphetid RR featured more than 30 mirrors, demonstrating an amazing array of interesting scene-expanding techniques.

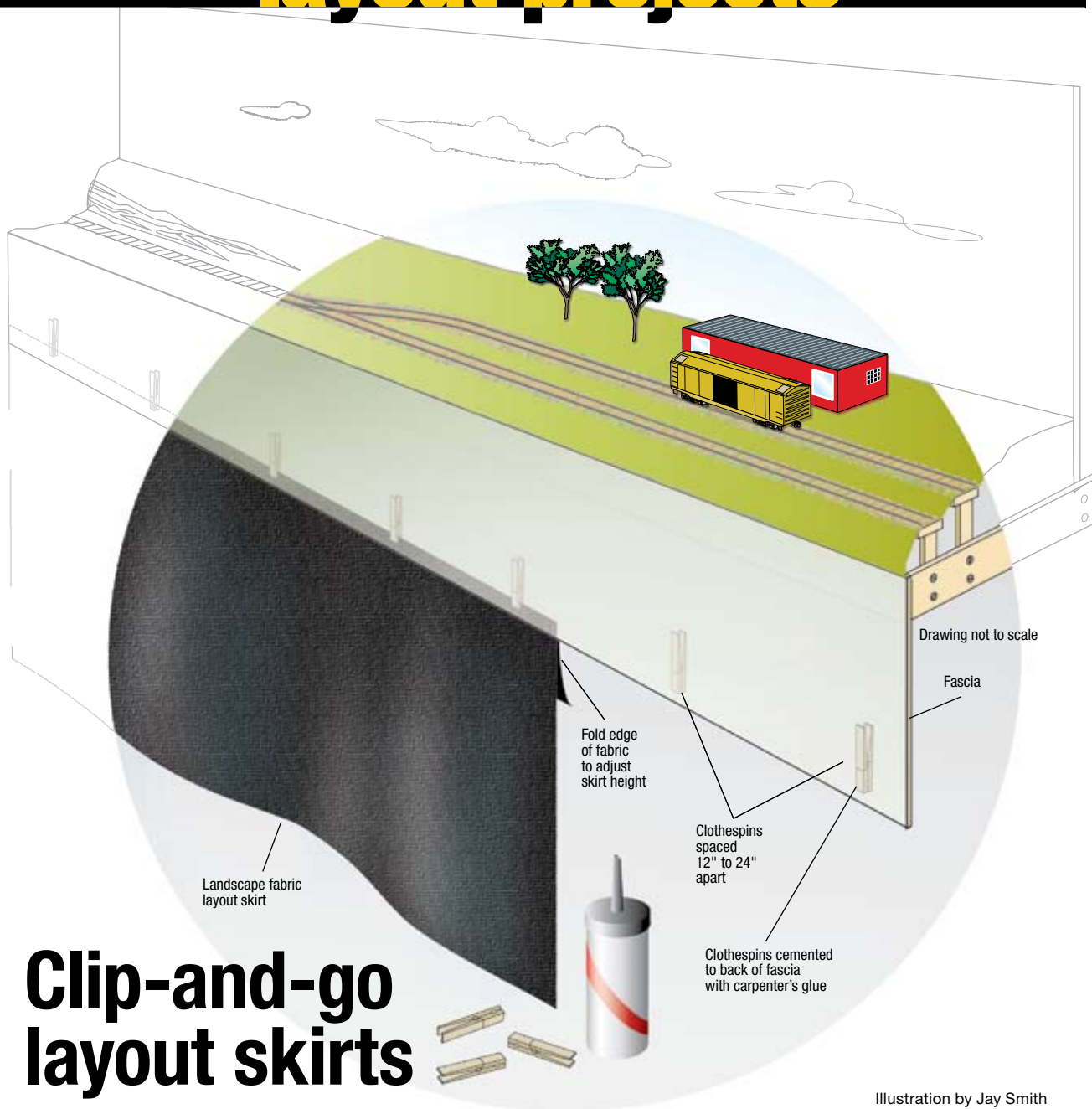
Adding one or more mirrors to your layout isn't all that hard to do, especially if you follow John's three basic mirror rules.

Placement. Mirrors need to be positioned so that only a layout's scenery is reflected, not the room or the viewer. Also, to work correctly the mirror must be perfectly vertical.

Angles. Since a mirror reflects everything at the same angle, the ground, surrounding scenery, and

structure walls generally look best when meeting the mirror at 90-degree angles. This is particularly important for track and roads so their reflection won't look kinked.

Lighting. Layout lighting should be placed so that it doesn't shine directly into the mirror. If it does, it will reveal surface dirt on the glass. This means the mirror will need to be cleaned frequently, which can be difficult in remote locations. — D.P.



Clip-and-go layout skirts

Illustration by Jay Smith

After you've finished the scenery, backdrops, and fascia for your layout, you may next want to consider how the underside looks. Most model railroads share real-estate with valuable storage space. Adding a skirt will hide those stacks of boxes, furniture, and assorted odds and ends that tend to accumulate beneath a layout.

Here's an inexpensive layout-skirt suggestion from David Zuhn

of St. Paul, Minn. As shown in the illustration, David cemented wood clothespins to the backside of his layout's fascia at 1- to 2-foot intervals, using carpenter's wood glue. He used clamps to hold the clothespins in place until the adhesive dried; then he clipped the skirt to the layout.

For the skirt itself, David used non-perforated black landscaping fabric from his local hardware

store. This durable material has a nice, dull black appearance and comes in several different widths. To adjust the height of the skirt, he simply folded the top edge of the landscape fabric to fit the layout.

David reports that he completed the 120 feet of skirting needed for his layout in two evenings, and the materials for the project cost a grand total of \$21. This is definitely an economical solution. – D.P.

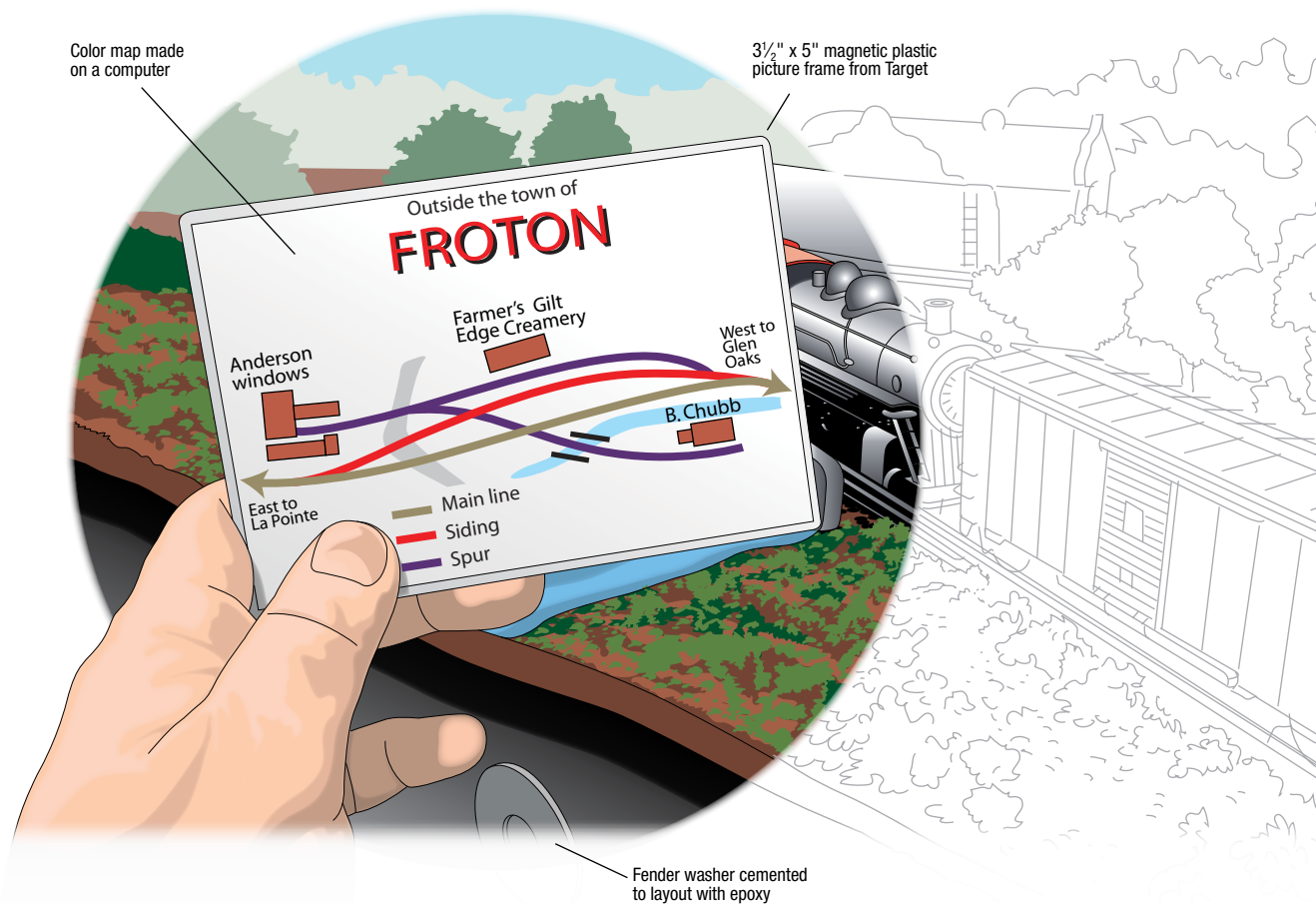


Illustration by Theo Cobb

Magnetic, movable maps

When preparing a model railroad for operation, it's a good idea to provide a map for each town on your layout. This way people unfamiliar with your track plan can easily find key industries and other track-side features such as interchanges or sidings while switching cars.

Town maps are easy to make. I use the drawing tools in Microsoft Word to make mine. (If you save them on a disk, you can take them to a copy center and have them printed in color.) I purchased simple plastic picture frames from an office supply store in the neighbor-

hood and tacked the framed maps to my layout.

Gerry Leone of Excelsior, Minn., has added a useful twist to the town-map concept. Fascia boards on model railroads tend to be down around a typical operator's waistline, making it difficult for some to read information printed on the fascia without stooping. To solve this problem Gerry has made his plastic map frames removable, so his operating crews can move the maps to eye level, making them easier to read. Gerry uses borderless, magnet-backed plastic picture

frames (available at Target) to hold his maps. To anchor the frames to the layout, he installs a large steel fender washer in front of each town, using epoxy to cement it to the hardboard fascia. When the epoxy sets up, Gerry inserts his computer-generated map into the frame and clips the assembly to the layout.

Now his operators can remove the maps and comfortably refer to them while switching. When finished, the maps quickly snap back in place for use by the next crew that comes to town. — D.P.

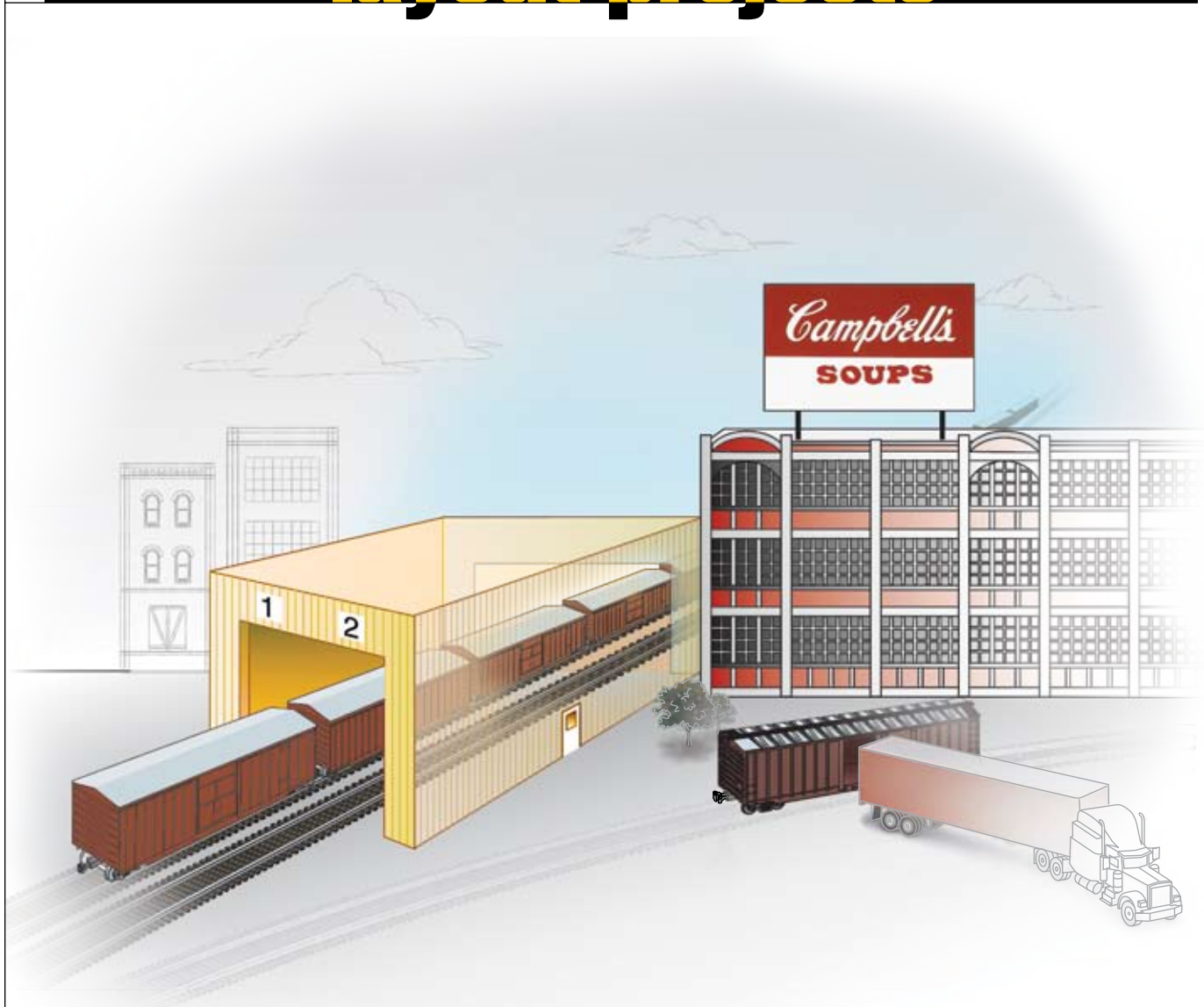


Illustration by Jay Smith

More business than meets the eye

Creating enough industrial traffic to move during an operating session is an important aspect of layout planning. Here's a trick I used on my HO scale Ohio Southern to turn a shallow-relief structure into a major railroad customer with most of the cars out of sight.

This trick involves running a pair of stub tracks through the backdrop. Each track extends a

little more than eight car lengths behind the backdrop, with the opening concealed by a warehouse structure with an angled rear wall. The warehouse appears to be a modern addition that angles behind the main four-story plant.

A few signs, cut from can labels, add the corporate identity to the "warehouse." I also numbered each track to provide greater real-

ism as the crews switch warehouse tracks 1 or 2.

The result is that a local crew has a lot more work to do as they switch the warehouse. On any given day, this may involve swapping up to 16 empties for a similar number of loads that need to be forwarded to various destinations after the local returns to the yard.

— Jim Hediger, senior editor

Illustrated layout projects Tip 10

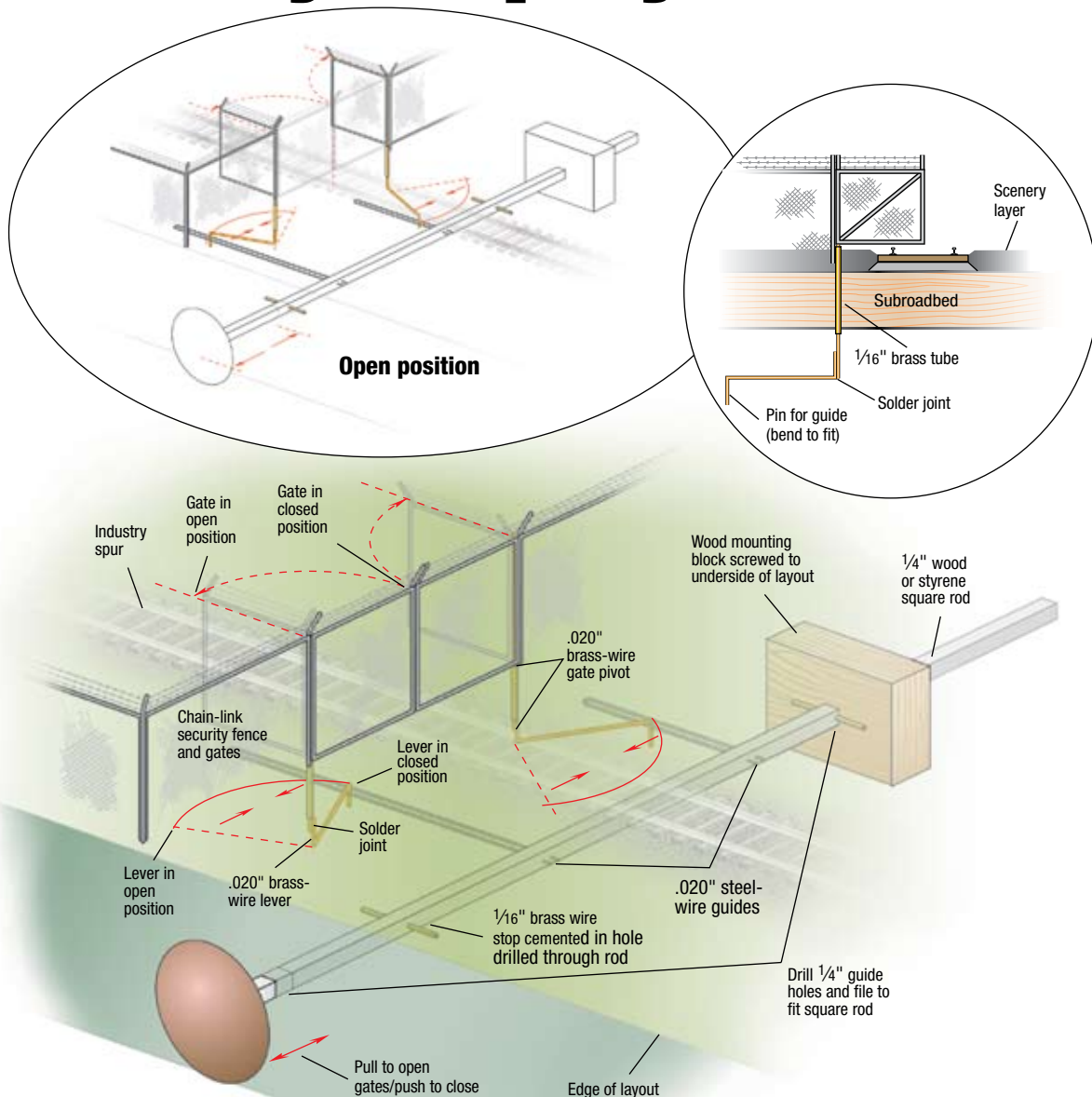


Illustration by Jay Smith

Operating gates for industrial spurs

Industries served by railroads are often not in the best parts of town. To protect valuable commodities, many companies install fences around their property and include gates at key entry points.

While a number of manufacturers, including Wm. K. Walthers,

BLMA, and Scale Scenics, make good examples of chain link security fences with static gates, Wolfgang Dudler of Iserlohn, Germany, took the idea a step further. Using a simple square pushrod to move a set of actuating levers, Wolfgang devised the method shown above

to operate a set of security gates. When someone needs to set out a car at the plant, he opens the gates by pulling the knob on the fascia. When the switching work is complete, he closes the gates and secure the factory by pushing the knob back to its starting position. — D.P.

Illustrated layout projects **Tip 11**

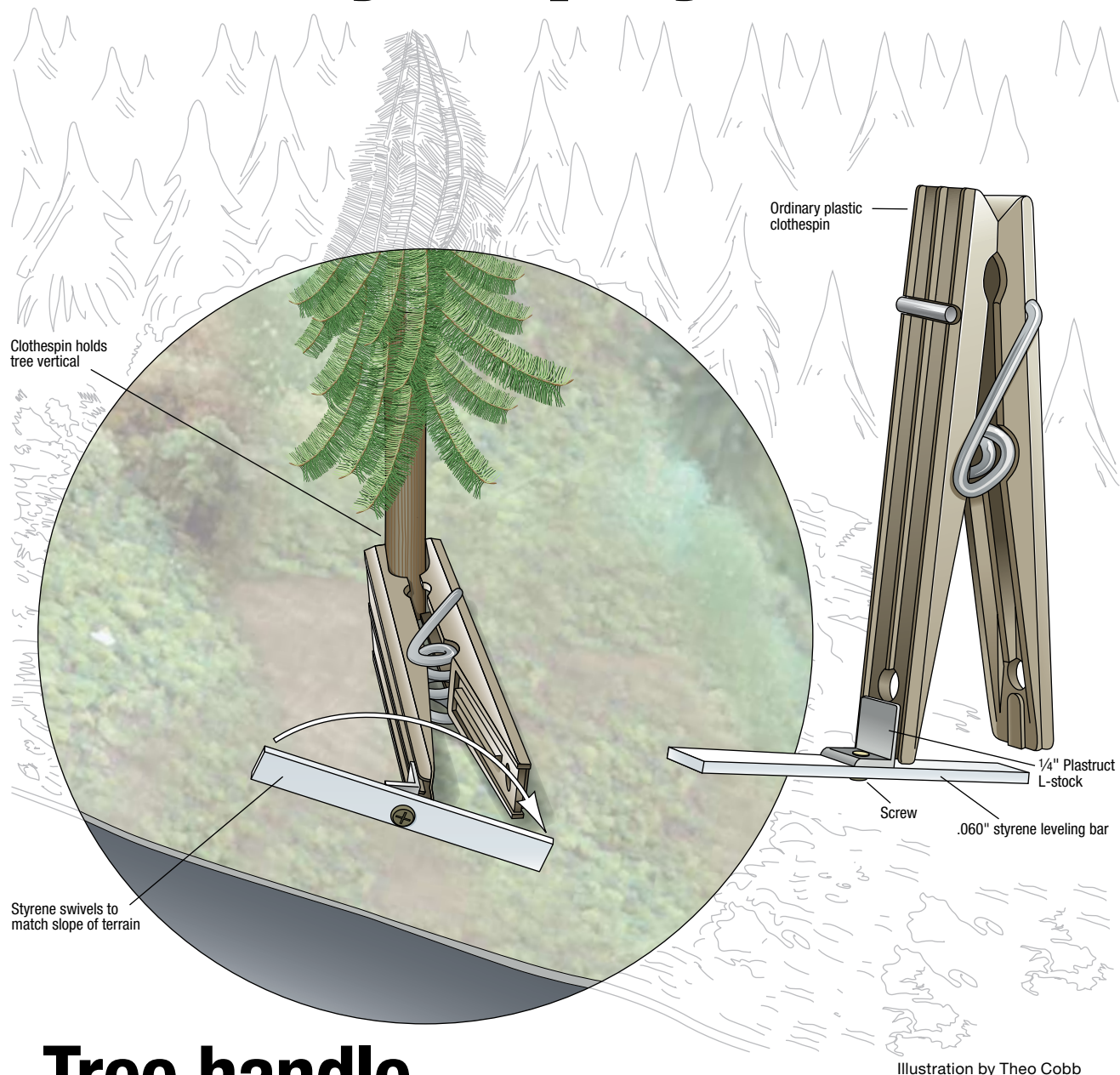


Illustration by Theo Cobb

Tree handle

Installing trees on hardshell scenery can be tricky, especially when gluing them in place. The thin plaster scenery shell doesn't provide much grip to hold a tree's mounting pin; more often than not, while you wait for the glue to dry, the tree will shift. The result is a forest full of crooked trees.

Model Railroader readers Gerry Leone and Chuck Diljak sent in

this idea for making simple but effective tree clamps to hold the trunk upright while the glue dries. The key to the clamp's success is the adjustable leveling bar made from .060" sheet styrene. It allows the clamp to be used on inclines and other uneven layout surfaces.

Gerry and Chuck cemented a piece of 1/4" Plastruct angle to one leg of a plastic clothespin, as shown

in the illustration. Then they drilled holes into the open side of the angle and in the middle of the styrene leveling bar and inserted a small self-tapping screw. The idea is to tighten the screw enough to hold the clothespin in place but not so tight that you can't adjust the leveling bar. Gerry and Chuck report that their clamps take about two minutes each to build. — D.P.

Illustrated layout projects

Tip 12

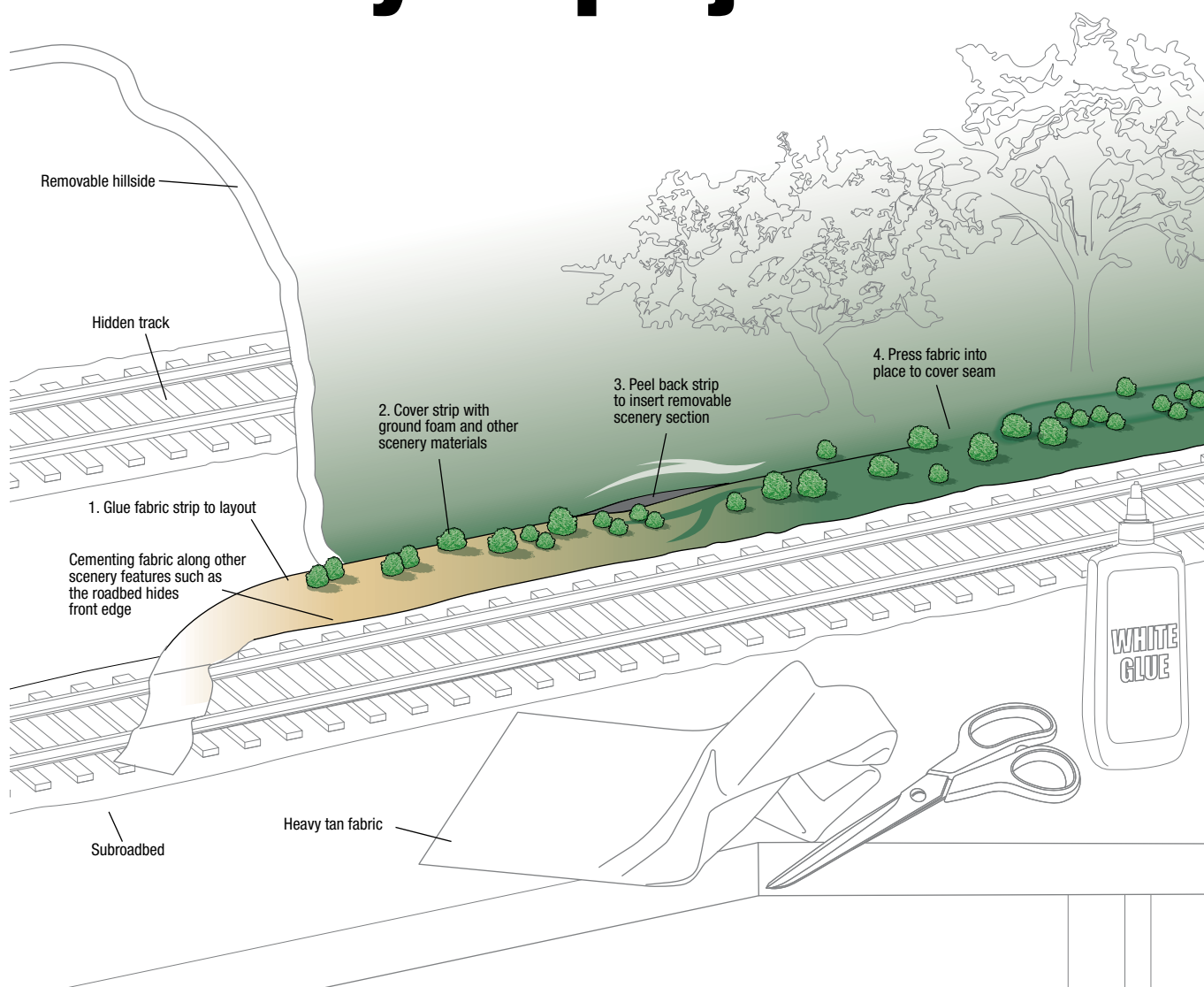


Illustration by Theo Cobb

Seamless removable scenery

Sometimes a model railroad needs removable scenery pieces so you can reach hidden tracks or get to locations deep in a scene. Hiding the seams for these removable pieces can be difficult; however, when Juan Pena, of Miami Shores, Fla., built a removable hillside to hide the track running to his lower staging loop, he came up with an interesting solution to the seam dilemma.

Juan started by building a removable hillside from screen wire

and covered it with several layers of plaster cloth. Once the hill was complete, as shown in the illustration, his next step was to cut a strip of heavy tan fabric and glue it to the edge of the scenery along the edge of the foreground track's roadbed. He cut the strip of fabric wide enough to overlap the joint where the hillside connects to the remainder of the layout.

After the fabric was in place and the glue had dried, Juan covered it with the same ground foam

and dirt he used on the rest of the hill. He cemented these materials to the fabric with a 50/50 mixture of white glue and water. Once the white glue has dried, the fabric remains flexible, making it easy to peel it back to tuck the removable hill into place and then lay it down to cover the seam.

Juan used a similar method to hide the seam where the hill and the backdrop meet. This time he cemented the cloth strip to the back of the removable hill. — D.P.

Illustrated layout projects ^{Tip} 13

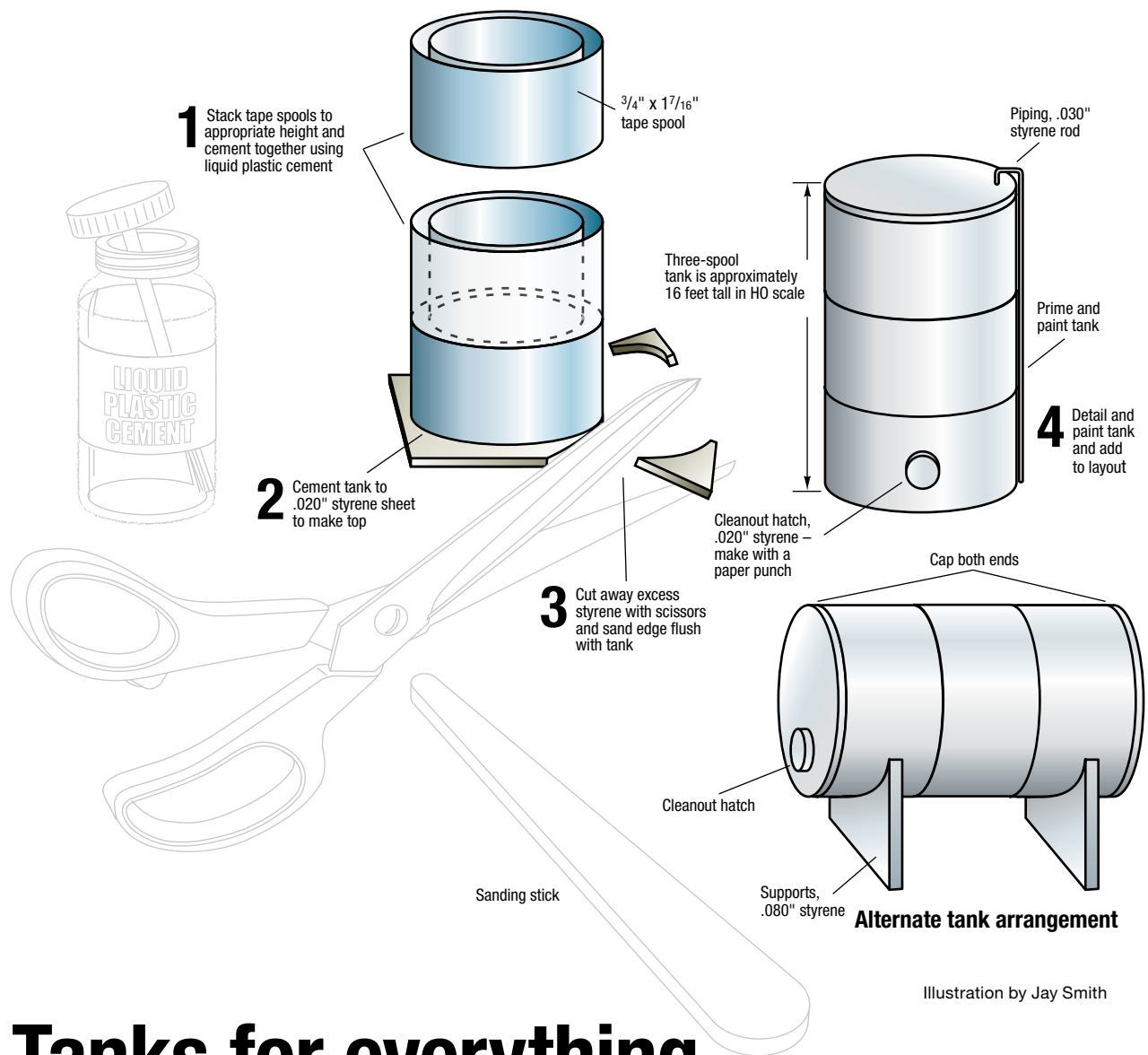


Illustration by Jay Smith

Tanks for everything

Storage tanks are a common sight around railroads and the industries they serve. The tanks themselves come in all shapes and sizes and are often painted white, black, or silver. Most model industries can benefit from the addition of one or more storage tanks, and they make a great heavy-industry detail. As a bonus, storage tanks also give you an extra place to spot tank cars.

Though there are a number of plastic and cast-resin storage tank models available, I learned a neat

and easy way to make model tanks from a friend of mine, the late John Proebsting. As shown in the illustration, John would take several empty plastic tape spools (like the kind used in office tape dispensers), stack them to a suitable height, and cement them together using liquid plastic cement.

Next, John would cement the top of the tank to a square of .020" sheet styrene and then use a pair of scissors to trim the overhanging material. He'd then sand the sty-

rene top until it was flush with the sides of the tank. Once the spool tanks are painted, the seams look like welded plates. You can add simple cleanout hatches by cutting circles of .020" styrene sheet with a paper punch.

Though you may not use enough clear plastic tape in a year to make a lot of tanks, try asking friends to save tape spools for you. My wife used to work in an office building and was able to quickly collect a bunch of spools for me. – D.P.

Illustrated layout projects **Tip 14**

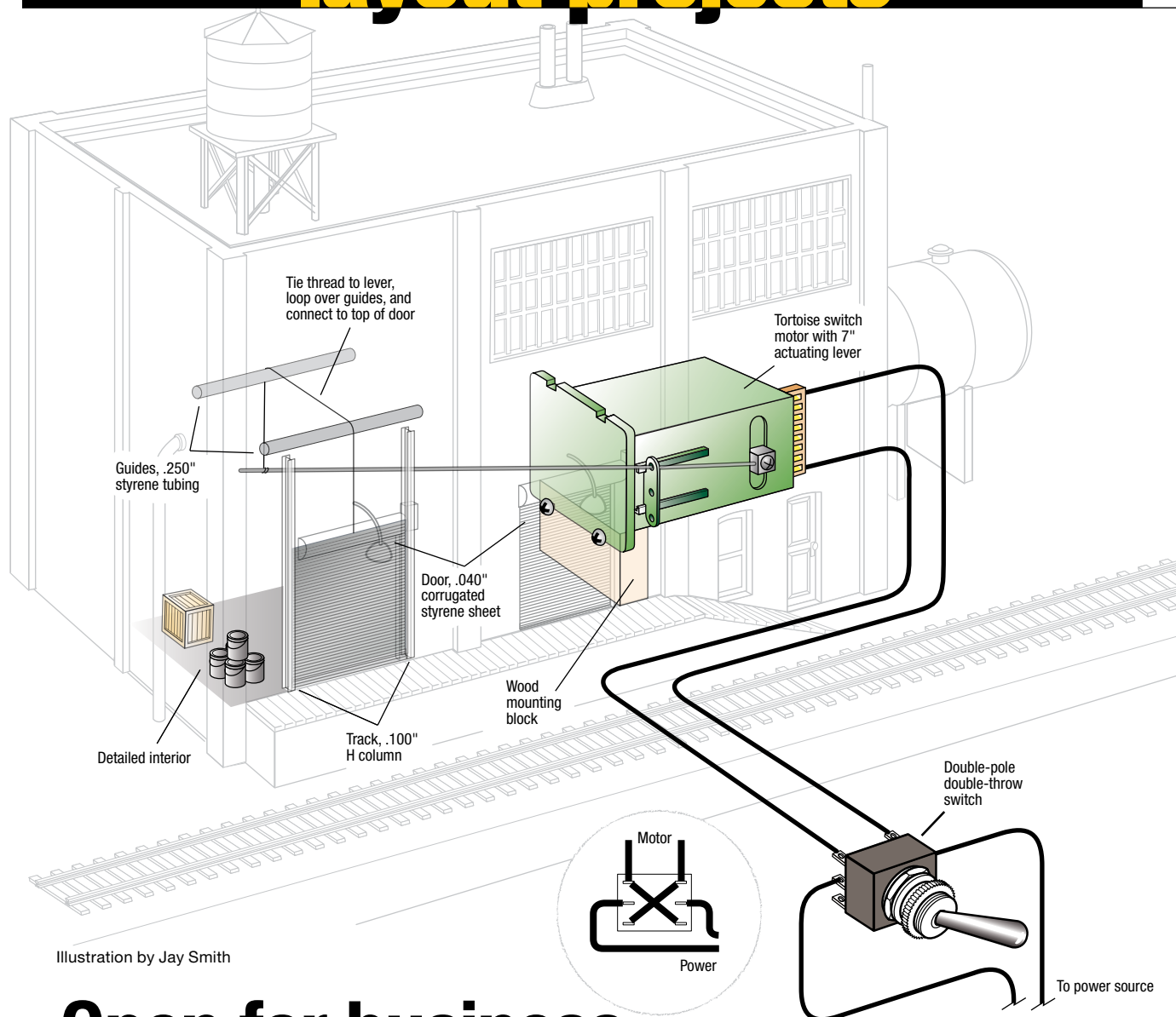


Illustration by Jay Smith

Open for business

Simulating even simple industrial actions on a model railroad can add a lot of detail to operation. As an example, Bill Day, of Potomac Falls, Va., has added operating doors to the warehouses on his HO scale layout. When a train crew drops off a boxcar at a warehouse, they flip a switch mounted to the fascia to open the warehouse door. As long as the door is open, it indicates that the car is in the process of either being loaded or unloaded. When it's time for the car to be

picked up and sent on its way, Bill closes the corresponding door.

The operating roll-up doors on Bill's layout start as a piece of .040" corrugated styrene. After cutting the styrene a little bigger than the doorway opening in the building, Bill mounts the door in tracks made from .100" styrene H columns. He cements the tracks to the back of the wall on either side of the open doorway and then checks the door's fit to make sure it will operate freely.

Bill automates the door with a Circuitron Tortoise slow-motion switch motor, installed as shown in the illustration. To support the door's actuating thread, Bill cements two lengths of .250" styrene tubing inside the building above the doorway. He then guides the thread from the door, over the tubing, and attaches it to a 7" actuating lever on the switch motor.

Bill wires the Tortoise according to the directions that come with the switch motor. — D.P.