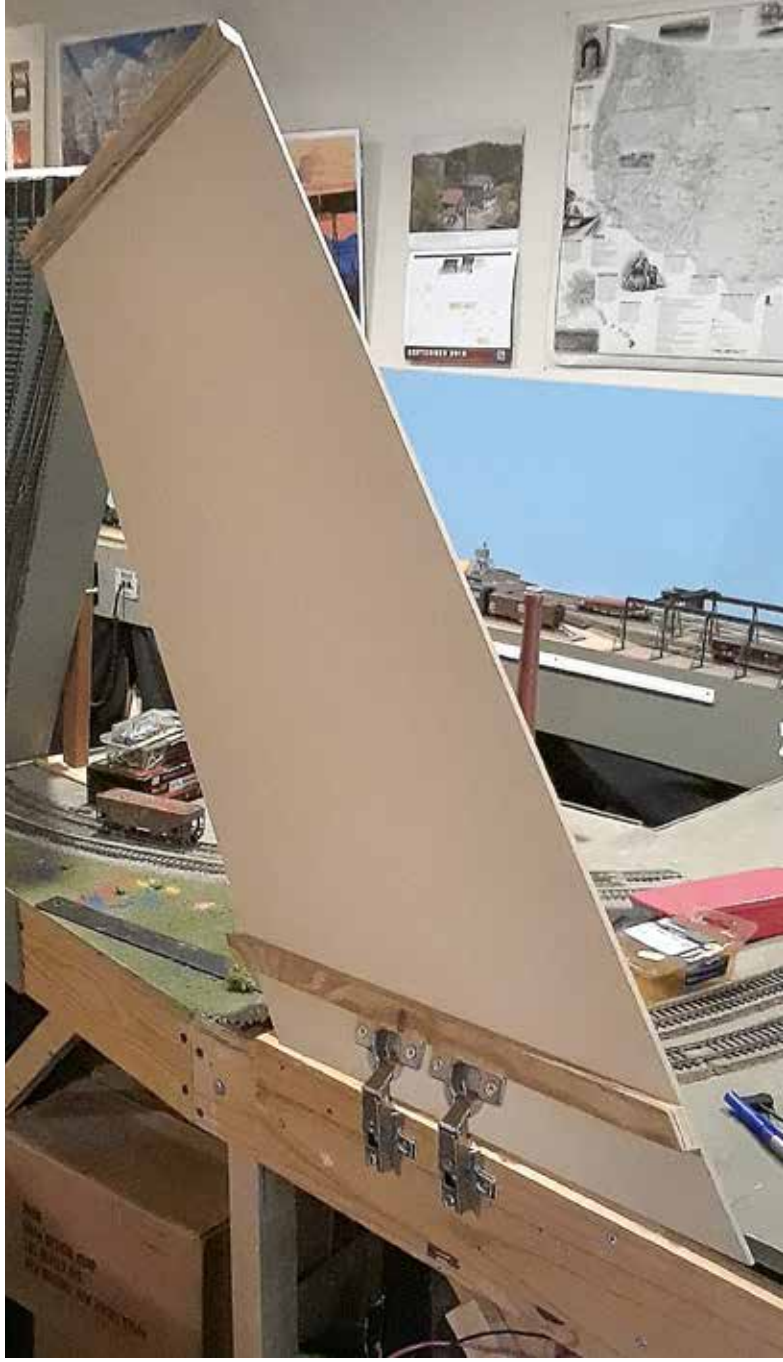
A fresh approach to lift-up sections

Euro-style cabinet hinges provide bind-free operation and can be hidden under the layout

By Don Winn • Photos by Gary Phelps



Many lift-up sections have hinges on top of the layout, detracting from the model railroad's realism. Looking for a better solution, Don Winn used Euro-style hinges, which can be installed below the layout.

Most modelers aim to design a walk-in layout to avoid duck-unders, liftouts, swing gates, and other pieces of benchwork that impede travel. But the needs of visitors and operators are often prioritized below that of the trains. We're willing to make compromises in our quest for an optimal track plan.

The track plan for my new model railroad includes a section where the mainline crosses an aisle used by three operators who are working on branch lines. I ruled out a fixed duck-under. Some operators and visitors lack the flexibility to comfortably bend down to clear a duckunder. Further, I wanted to keep the space open when working on the railroad between operating sessions. Not using a fixed duckunder also makes it easier to move items in and out of storage below the layout.

A simple liftout was also ruled out. A liftout needs to be set down somewhere, which is too often on the layout where it may damage scenery, structures, or rolling stock.

With those two options off the table, I narrowed my list of options down to a swing gate, a hinged drop leaf, or a hinged lift-up section. I selected the last one.

Hinged lift-up sections provide a hard stop for trains in one direction. In addition, they offer an extra bit of protection for scenery and structures when operators and visitors pass through the opening.

Learning as you go

When I visit layouts during open houses and operating sessions, I'm on the lookout for how other modelers have addressed construction challenges. Many lift-up sections have hinges on top of the benchwork, which detracts from the realism of the scene (see 1 on the next page).

The mechanics of a standard hinge require the pin to be above the rail height, or else the rails on the lift-up section would crush against the track on the layout. I did some head scratching and wondered if there was a better way to raise and lower the lift-up section.

Around this time, I moved into a new house. To save money, I installed the cabinet and drawer pulls in the kitchen and bathrooms myself. Spending all of that time around cabinet hardware (time I could have spent building my layout), I noticed a new style of hinge.

Old-style cabinet hinges, like those shown in 1, are visible from the outside and use a simple hinge. Euro-style hinges, found on most new cabinets, are hidden and feature a double-hinge design (see 2 on the next page). The double hinge allows the cabinet door to fully overlap the opening, but open in a way that keeps it from binding.

1 The old way. While attending operating sessions and open houses, Don noticed many lift-up sections used standard hinges. Because of their design, the hinges have to be mounted on top of the layout.

2 A better solution. Don found Everbilt 35mm 110-degree full-overlay cabinet hinges worked the best for lift-up sections. Though there are other Euro-style hinges on the market, not all of them are alike.

3 Concealing the hinges. Don used 5mm lauan plywood for roadbed where the lift-up section meets the layout. Don concealed the cup section of the Euro-style hinges in the plywood roadbed.

Four keys to lift-up sections

- Recess the hinges so they're flush with the bottom of the ties (HO scale and smaller).
- Install two or more hinges to eliminate wobbling when the lift-up section is raised.
- Use Everbilt 35mm 110-degree full-overlay frameless hinges or equivalent. There are a lot of hinges out there that look the same but vary in how they articulate.
- Avoid any grade changes at the ends of the lift-up section. – *Don Winn*

Testing hinges

Curious, I picked up some Euro-style cabinet hinges at my local home improvement store and constructed prototype lift-up sections.

As I researched hinged lift-up sections on the internet, I discovered posts by other modelers who had tried using cabinet hinges. Many reported their lift-up sections would bind. This led most to abandon the concept and try other solutions.

After building a number of prototypes, I discovered through trial and error what had stalled out the attempts I had read about on the internet. The binding was caused by the combined thickness of the roadbed and benchwork.

I found that the Euro-style hinges will work only if they're placed on the same plane as the ties (in HO and smaller scales; larger scales may need the hinge at the bottom of the rails). If the hinges are placed any lower than that, greater gaps must be cut between the layout and lift-up section to prevent the rails from binding.

I also learned that not all cabinet hinges are alike and that most of them will not work. In my research I discovered that Everbilt 35mm 110-degree full-overlay frameless hinges provide the articulation needed to keep the rails from binding 2. The hinges are available at The Home Depot and are relatively inexpensive, priced at around $6 a pair. The hinges are available in soft-close and self-close versions. The latter works better for model railroad applications.

Building lift-up sections

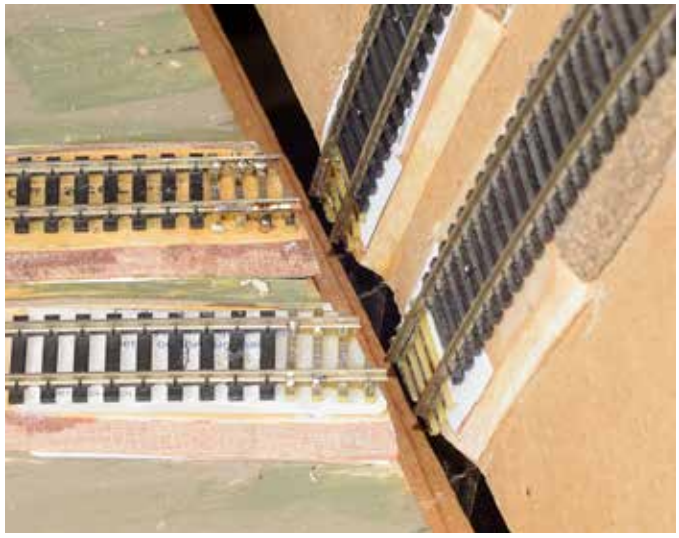
The hinges need to be installed in material at least .45" thick. This provides sufficient room to recess the cup portion of the hinge. On a model railroad, that works out to a ¼" base with 5 mm roadbed. Here's the method I used to construction lift-up sections.

First, I cut a piece of ¼" medium-density fiberboard (MDF) for the lift-up section. Though heavier, I prefer MDF over plywood as it's stronger and more consistent. Then I marked the centerlines of the track.

Next, I cut 3" pieces of 5mm lauan plywood and attached them with wood glue. The lauan acts as roadbed at the edges of the layout and lift-up section. Conveniently, the lauan matched the cork roadbed in height. It also provided a more stable platform for attaching track.

I then marked the location for the center of the hole for the hinge. Alternatively, I could have used the paper template included with the hinges. Then I drilled 35mm (1⅜") holes through the lauan and MDF. Drill carefully through the lauan to avoid splitting the material 3.

4 Final installation. This under-the-layout view shows how the hinges are attached to the lift-up section (top) and layout. Don drilled pilot holes for all of the screws before attaching the hinges to the plywood and Homasote.



5 Printed-circuit board ties. To help keep the rails aligned between the layout and lift-up section, Don attached the rails to Gaugemaster ties. The printed-circuit board ties are produced by American Tie & Timber Co.

6 A versatile solution. The tracks can be curved or straight relative to the joint on the lift-up section. Two Euro-style hinges were used on this lift-up section. The cup section of the hinges is visible at left.

Next, I installed the hinges in the lift-up section. I drilled pilot holes for the screws before installing them. I glued bracing to the bottom of the lift-up section to give it extra rigidity.

Then I lined the lift-up section flush with the mating section of layout. I marked the location for the mounting screws, drilled pilot holes, and fastened the hinges 4.

Before installing the track, I soldered Gapmaster ties from American Tie & Timber Co. (americantieandtimber.com) at the edges of the layout and lift-up section 5. Attaching the rail to the Gapmaster ties, which are then glued to the lauan roadbed, helps hold the track in gauge.

I aligned the track with Ribbonrail gauges and fastened it with white glue. An alternative method would be to lay down a full section of track across the joint and cut the track after the glue had dried. As the lift-up section is raised, the rail sections pull away from each other without making contact.

Practical application

My friend George Zapalac offered to try a hinged lift-up section on his HO scale layout. Note that the track can be angled or curved relative to the lift-up joint 6.

The hinges were easy to conceal on George's layout because the line is double-tracked. In a single-track setting, you could hide only one hinge under the rail. I'd recommend adding another hinge or two for stability. The other hinges would create a bump of only 5mm, which could be covered with scenery.

Euro-style cabinet hinges are a great solution for lift-up sections. They're readily available, economical, and let you keep the mounting hardware off the layout surface. MR

Don Winn lives in San Antonio, Texas. This is his first byline in Model Railroader *magazine.*