

## How To

### Removable Backdrop Panels for Your Model Railroad

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When you install scenery on a model railroad, you see the layout come alive. I like doing scenery and find it relaxing and fun. One aspect we often consider but wonder how to do it – installing a backdrop. Backdrops for a model railroad are vertical panels along the back of a layout. They are usually painted sky blue. You may add painted details such as buildings or vegetation or use photo cutouts glued to the panels for details. But first, you need to figure out how to fasten the backdrop panels to the back of the layout.

My N scale layout is a series of 6 to 8 foot modules (2 feet wide) that run along the walls of my layout room. The edge of the layout benchwork stands out from the wall by about 3 inches. There are backdrop panels along the rear painted sky blue. I will be adding more detail later, but for now, blue works fine. Each panel is 6 to 8 feet long and 2 feet high. Panels are either 3/16" Masonite (straight sections) or 1/8" Masonite (curved sections or cove corners). Brackets along the back of the layout hold the panels. **Figure 1** looks down along one section of the layout. Vertical 1 x 2's along the back are part of the



Figure 1

brackets that hold the backdrop panels. Installing or removing a panel is easy. The backdrop panels are made to slide in and out of the brackets (**Figure 2**). There is no glue or fasteners. Depending where you are on the layout, about 4 to 6 inches of the panel sits below the layout resting in the bracket. The tops of all panels are level with each other. Wide panels result in higher backdrops, narrow panels gives you less backdrop. I am still not sure what the final backdrop height will be so I purposely cut these wider than what I will want. Currently, with 2-foot panels, there is about 18" of backdrop sticking up depending on where you are on the layout. When I decide the final height, I will slide out the panels, trim to size and slide the panels back into the brackets.

Let's look at how this works. **Figure 3** is a view of a benchwork section under construction. I use L-girder benchwork so there are joists sticking out the back along the wall. I fasten the brackets to the joists. If you do not have any joists out the back (like open-grid benchwork), you could still fasten a 6-inch vertical piece of 2 x 2 to the back of your benchwork. Now you have a place to hang a bracket. Just be sure the layout is 3 to 4 inches out from any wall so you have room for the brackets.

**Figure 4** is a bracket. It consists of three pieces:

- 6-inch long 1 x 4
- 5-inch long 1 x 2 (one corner beveled)
- 18-inch long 1 x 2

Here is the bracket build-out process:

- Cut wood to size and sand all edges.
- Clamp the 18-inch 1 x 2 to the edge of the 1 x 4. Try to keep the edges of the two pieces of wood parallel as best you can.
- Clamp the 5-inch 1 x 2 to the 1 x 4. To maintain proper spacing between the 1 x 2 pieces, place a small piece of 3/16" Masonite between the 1 x 2 pieces.
- Clamp it all together, drill pilot holes, screw it all together.
- If you turn the 1 x 4 to vertical, you can build a "skinny bracket" that you might use on open-grid benchwork.



Figure 2

Build as many brackets as you need. It goes quickly if you pre-cut the wood and then assemble all of the brackets at once.

Important point: if you look at the bracket in **Figure 4**, you will notice that it is what I call a right-hand bracket. As you face the layout, this bracket is designed to fasten to the right side of a joist. If you need to fasten a bracket to the left side of a joist, you would build the mirror image with the 1 x 2 pieces on the other side of the 1 x 4 piece – a left-hand bracket. I found I needed both, depending on roadbed riser and wiring locations. Consider this point before you build too many “wrong-hand” brackets. Been there, done that. The good news is that the same wood pieces are used for either left or right-hand brackets.

Installing the brackets is easy, although access from the back of the layout from underneath may require some planning on your part. Sorry, but you cannot do this out in the garage while building the benchwork. There is no way to level things out until you are in the layout room.

Clamp your first bracket to a joist. Take your time and get the height correct. This is your zero elevation. All other brackets will be leveled against this standard. Clamp the bracket to the joist. Lay a level along the long 1 x 2 to be sure it is vertical. If it is vertical, you know the bracket is level with the layout. Check spacing between layout edge and the 1 x 2 sticking up. There should be a gap of  $\frac{1}{4}$  inch between the long 1 x 2 and the layout edge. This is enough room to slide the panels in and out easily. Clamp everything again, drill pilot holes and screw the bracket in place.

Now we go to the second bracket. Clamp this second bracket to the next joist and level it out by eye. Drop in a piece of Masonite that spans the gap between the first bracket and this second bracket. Lay a level along the lower edge of the Masonite between the two brackets while you are under the layout. Raise or lower your new bracket to get this edge of the Masonite level. Check the new bracket as you move it to ensure the long 1 x 2 is vertical and has a  $\frac{1}{4}$ -inch gap to the edge of the layout. If it all looks good, screw the bracket into the joist. Now clamp on your next bracket. Slide your piece of Masonite over to this new bracket and repeat the process. Take your time. Check and then check again to ensure



Figure 3

everything is level or vertical. Things can shift around as you work. Do one bracket at a time to be sure you are level. Then install the next bracket. **Figure 5** shows an installed bracket. The gap between the edge of layout and the vertical 1 x 2 is about ¼” – just big enough to slide in a 3/16” piece of Masonite.

So what can go wrong? Brackets may not end up level with each other. How do you measure this? Place a long piece of Masonite into the brackets. With a level, check the top edge. Is it level? If not, this means your brackets are not level with each other. They will not be off by much, but a couple of them may be off your baseline. Crawl under the layout to detect which one is too low or too high. Check them all. One high bracket makes the rest look too low.

How to fix the problem:

- If a bracket is too high, then you must unscrew, lower the bracket, then screw it in again. Use the same installation process as above. Drill new pilot holes for the screws away from the old holes.
- If a bracket is too low, you can insert a small piece of Masonite as a shim in the bracket to support the lower edge of the Masonite. Cut the piece to the proper thickness. If the bracket is very low (more than about 3/8”), unscrew the bracket, move and reinstall it.

Fix a high bracket and check again. Shim the low ones and check again. Remember to check for the proper gap between layout edge and the long 1 x 2 on the bracket as you go along (about ¼ inch is good). Slide your piece of Masonite backdrop around checking all of the brackets in different parts of the layout. Don't try to fix more than one bracket at a time. You may introduce another mistake unwittingly.

If you build and install these brackets, get the right tools. Use a good electric drill and counter-sinking bit for pilot holes for the screws (I use Phillips head countersunk 1¼-inch #6). Use a good electric screwdriver to screw everything together. A chop saw with stand helps with lumber cutting. Attempting this project without power tools will cause great consternation. There are six screws per bracket and I made 38 brackets. Please use safety equipment such as eye & hearing protection and gloves when working with power tools. The



Figure 4

tools and materials you need to build these brackets:

- 1 x 2 and 1 x 4 lumber
- Tape measure
- Saw
- Sandpaper to sand all of the wood (splinters hurt)
- Multiple clamps to hold wood together while installing screws
- Handheld drill
- Countersinking bit for the screws
- Plenty of screws
- Electric screwdriver or screwdriver bit for the drill

Use the longest pieces of Masonite possible for the backdrop panels. This results in fewer seams. If you have curved sections or cove corners in the backdrop, use one long piece of 1/8" Masonite around the whole section or corner. Seams will not work in a curve or a corner. To help hide the seams, be sure to paint the edges of the Masonite sky blue and clamp the two panels together, top and bottom, after installation. These edges will be less obvious. Use a primer on the Masonite before you paint it. Masonite acts like a sponge with paint.

Final installation could be a piece of wood behind panel seams, glued to both panels. Then, spackle the seams and paint them sky blue. However, once you do this, removing a panel just became much more difficult. Let me know how this works for you.

Happy modeling!

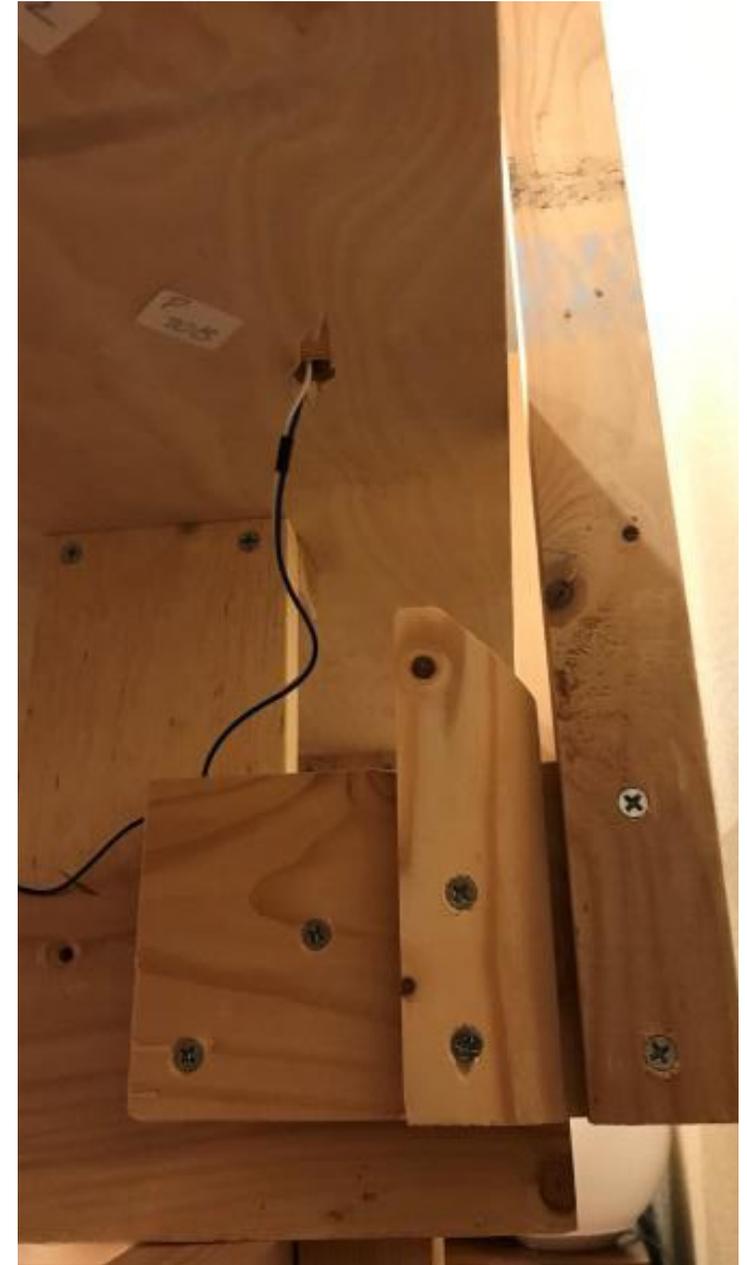


Figure 5