Ballasting made easy

Model railroading is fun, right? Well, most of the time it is, but there are some aspects of this hobby that make us shudder. And judging by the questions we receive, one thing many of us don’t enjoy is ballasting. However, adding ballast (the rocks between the ties and along the edge of the roadbed) isn’t that difficult, and it goes a long way toward making our layouts more realistic.

On model railroads ballast is purely cosmetic, but on real railroads it serves several important purposes. First, ballast holds the track in place and keeps the ties and rails from shifting. Second, it helps drain water away from the track. Third, ballast evenly distributes the weight of the rails and equipment to the subgrade. Finally, it keeps the track level and in alignment.

The type of material used for ballast varies between railroads. However, in its book *A Practical Guide to Railway Engineering*, the American Railway Engineering & Maintenance of Way Association has a list of recommended ballast: “granite trap rock, hard limestone, open hearth and blast furnace slags, other limestones, prepared gravels, chat, volcanic ash, pit-run gravel, and coarse sand (as a last resort).”

Fortunately, we don’t have to go to a quarry to get our ballast. Instead, we can go to our local hobby shop and pick up a bag from Arizona Rock & Mineral, Noch, Woodland Scenics, Hunter Scenery Co., and Busch, among other firms. For this article, I used Highball Products HO scale Genuine Limestone Ballast, which we’ve used on the MR&T main line since 1989.

Though ballasting requires some patience, it’s a task worth learning. You may even find that ballasting is fun after all. MR

I ballasted a stretch of main line between Big Bend and Mukwonago, starting with the area between the rails. I like to ballast this part of the track first because I can cover a lot of ground in a short amount of time.

First, I poured about 1½ ounces of ballast into a 3-ounce drinking cup. I then bent the lip of the cup so it formed a spout, making it easier to pour the ballast between the rails. I used a ½”-wide paintbrush to spread the ballast, working the brush back and forth until the ballast was off the tops of the ties.

On prototype railroads, particularly high-speed main lines, keeping ballast off the ties is important because the suction created by passing trains can cause the ballast to fly around, potentially damaging equipment or knocking air hoses loose. Ballast regulators and compactors are used by railroad maintenance crews to keep the rocks groomed.
Once the ballast was evenly distributed, I sprayed it with a 50:50 mixture of water and 70 percent isopropyl alcohol until it was completely saturated. Wetting the ballast helped the Woodland Scenics Scenic Cement wick between the granules. If not properly wetted, the Scenic Cement won’t saturate all of the ballast. Though the top layer will dry hard, the granules underneath will be loose, and the ballast will get sucked into the vacuum the first time you clean your track (don’t ask how I know this!).

With the ballast still wet, I used a pipette to apply the Scenic Cement. I worked slowly during this step so I wouldn’t wash the ballast out from between the ties. My goal was to apply enough cement so I could see it between the granules. I let the glue dry for 24 hours. Then I used a toothbrush to remove stray ballast stuck to the tops of the ties and web of the rail.

Ballasting shoulders was a task I used to dread because the granules would wash away when I applied the Scenic Cement. However, I learned a neat trick used by veteran modelers that makes ballasting shoulders a breeze and results in clean, even edges.

First, I poured some white glue into a mixing dish and diluted it 15 percent with water. Then, with another 1/2"-wide paintbrush (not the same one I used to spread ballast), I applied the glue along the shoulder, making sure I had an even edge along the base of the roadbed.

Next, I lightly sprinkled ballast into the wet glue. This dusting of ballast gave the shoulders some tooth and prevented the second layer of granules from washing away. I let the glue dry for about 12 hours, and then I used a wet-or-dry vacuum to suck up the loose granules. Using a spoon or small cup to distribute the ballast works best during this step. Remember, a second layer of ballast will be applied, so the base coat can be applied lightly.
Scenery Step by Step

Step 3  Painting and weathering

No matter how careful I am, there are usually a few spots where the roadbed shows through the ballast, especially on the shoulders. Fortunately, I discovered that Polly Scale CSX Tan is a perfect match for our limestone ballast, so I used an airbrush to touch up the light spots. I thinned the paint 30 percent with 70-percent isopropyl alcohol.

After airbrushing the ballast, I weathered it with Polly Scale paints mixed 1 part paint to 9 parts 70-percent isopropyl alcohol. First, I used an airbrush to spray Grimy Black between the rails to simulate the oil and grease that drips off freight cars and locomotives. Then I lightly sprayed the areas outside the rails with Earth. I also used the color to spray a faint transition line between the ballast and the ground foam, helping to tie all of the scenery together.

With that, another section of the MR&T has been ballasted. But with a 200-foot main line and several industrial sidings, there's still a long way to go. However, using these simple techniques, ballasting the rest of the layout won't take much time at all.