NTRAK Modular Railroading Society, Inc.

N-Scale Modular Railroading

Tips N Techniques

NTRAK Joiner Track Tips

June 1, 2020

NTRAK modules are normally connected together using “joiner tracks”, defined in the NTRAK Standards and Recommended Practices as an Atlas Code 80 5” track section. There are many methods of mating joiner tracks to the modules, and several types of joiner tracks. This TipsNTechniques describes one method.

Tip #1 — Ballasted Joiner Tracks

One of the early selling points of NTRAK was that unrelated, uncoordinated modules could be assembled into a layout that looked good. The theory was that the eye plays tricks with the mind and, even though the modules are totally different and unrelated, the overall effect was good. Over the more than 40 years since NTRAK was developed, this theory has been proven correct. But we have discovered that modules with some sort of continuity offer a more harmonious and professional look to a layout. So, other than using a continuous bolt of skirting, how do you assemble unique modules built by different individuals into a layout and provide continuity?

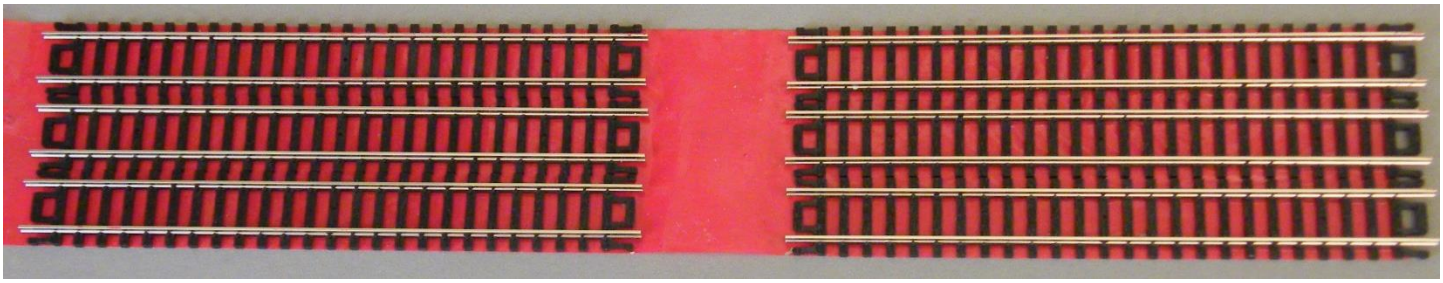
There are three primary visual stimuli that provide the look of harmony and continuity, and all of them relate to the modules’ tracks. The first, and most obvious stimulus, is the three-track format running from module to module that is at the heart of NTRAK. The second and subtler visual stimulus is to have a consistent color of ballast on corresponding tracks of all modules. This trick helps the eye follow the flow from module to module. The third technique is to expand the consistent ballast premise by ballasting the joiner tracks between modules, further fooling the eye by making it seem like all the modules are one continuous layout, as shown below.

Unballasted Joiner Tracks

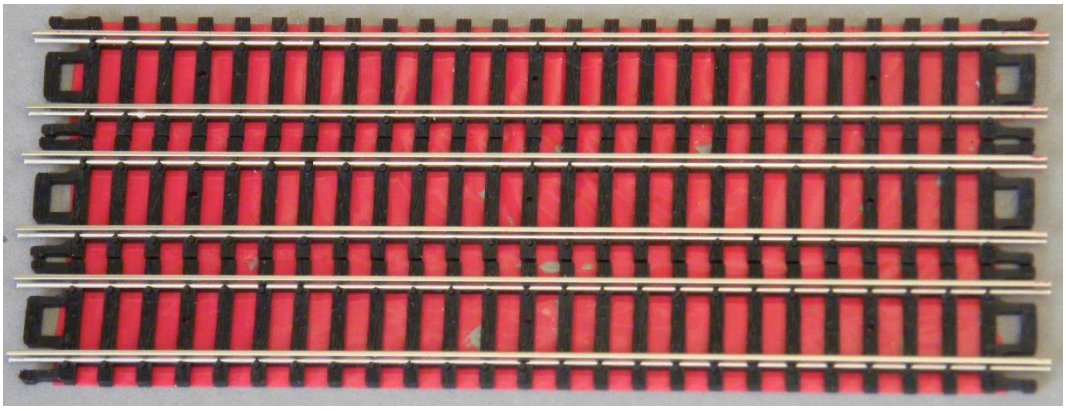
Ballasted Joiner Track

Regular unballasted joiner track on Red, ballasted joiner tracks on Blue and Yellow

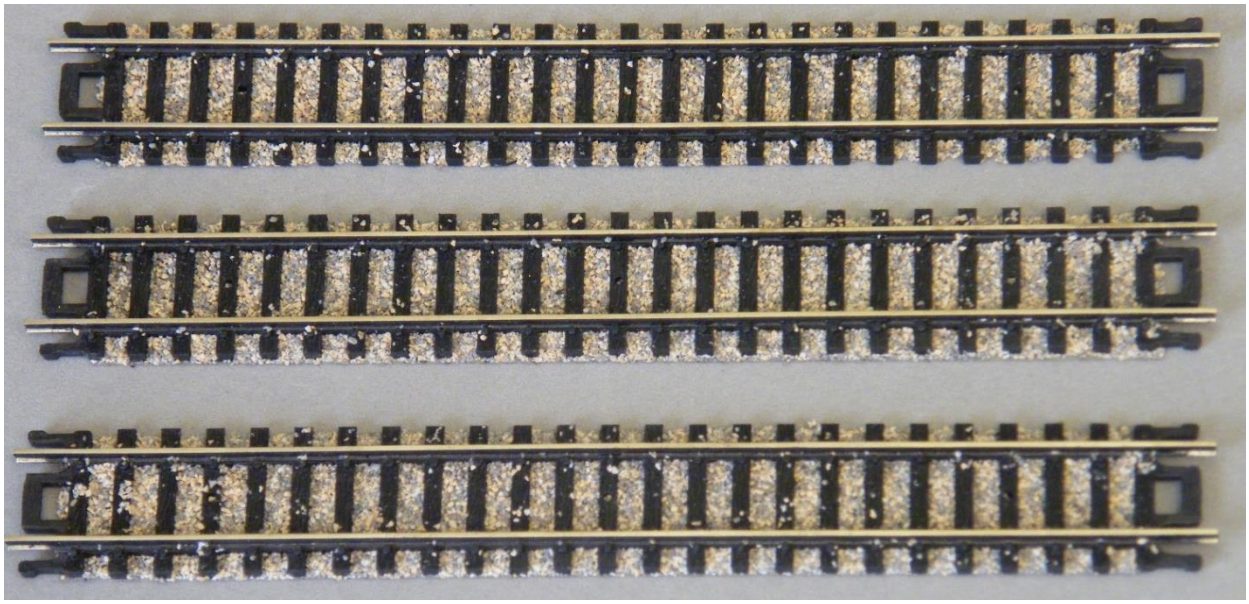
Ballasting joiner tracks is a very simple project. First, paint the rails of the joiner tracks. (Be sure to scrape the paint off the rail tips so the rail joiners will make good electrical contact.). Then take a strip of clear box tape and place rows of three joiner tracks on it, as shown (tape painted red for camera).



Trim the tape flush with the ties on both sides and trim the tape on the ends back to the last regular tie so the ends of the rails where the rail joiners go are not taped as shown.



Place the joiner tracks on a sheet of cardboard and ballast them as you would regular track, using the same color ballast as you selected earlier. Note: the red color in figures 4 and 5 is red paint on the back of the clear box tape. It is there so the tape can be seen in the picture. It will normally be transparent.



Tip #2 — Insulated Joiners

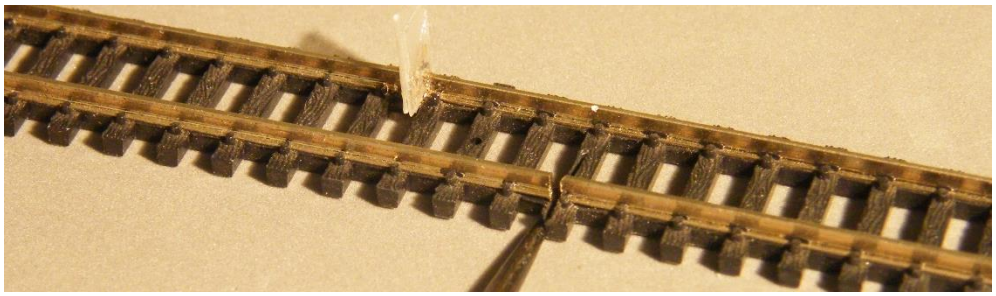
Larger N-Trak layouts are often broken into several electrical districts (blocks) which require electrical isolation between those blocks. Historically, block breaks have been accomplished by using plastic insulated rail joiners

on one side of a joiner track. The problem with this method is that plastic insulated rail joiners have a thick bottom which is hard to insert under the module track ends, and they have a stub that takes up space between the rail joiner and the module track, making for a tight fit, or sometimes an impossibly tight fit. On top of that, many of these plastic rail joiners are yellow, white or some other color that sticks out like a sore thumb, as shown below.

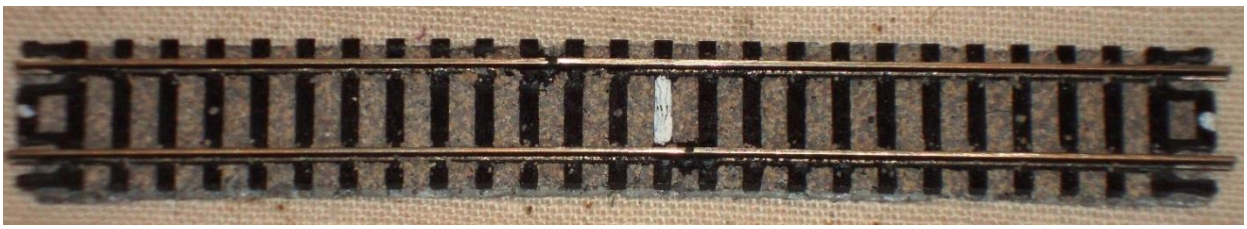
Regular Joiner Track with Insulated Joiner on bottom and middle tracks, and regular joiner on top track

Unballasted regular Joiner Track w/insulated joiner on bottom track, insulated joiner on middle track, regula joiner on top track

This problem can be easily solved by modifying some of the rail joiner tracks. Take a Dremel tool and cut both rails of the joiner track, staggering the cuts of the two rails about one inch. Be sure to cut through only the rails. Do not cut through the plastic base. Insert clear styrene in the cuts and glue in place with AC, as shown.



The styrene should be the same thickness as the Dremel cutting disc. After the glue has dried, cut and file the styrene to the rail profile.



Turn the joiner track over and mark the bottom to identify that it is “INSULATED”. Our club also paints one tie near the center of the insulated joiner track white, making it clearly noticed that it is not a regular joiner track.

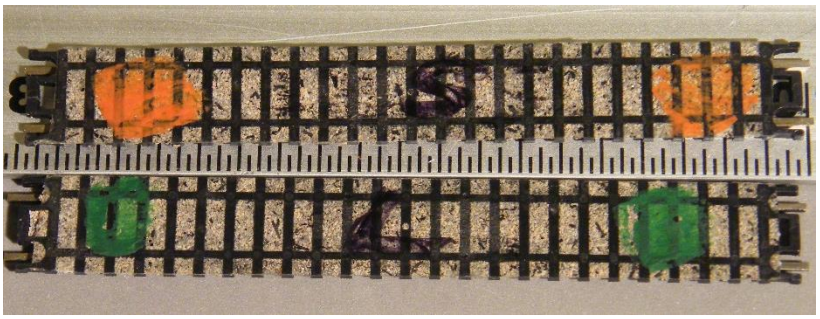
These insulated joiner tracks can be dropped in wherever there is a block break. They will fit perfectly, and it will be almost impossible to notice any difference between them and a regular joiner track, as shown.

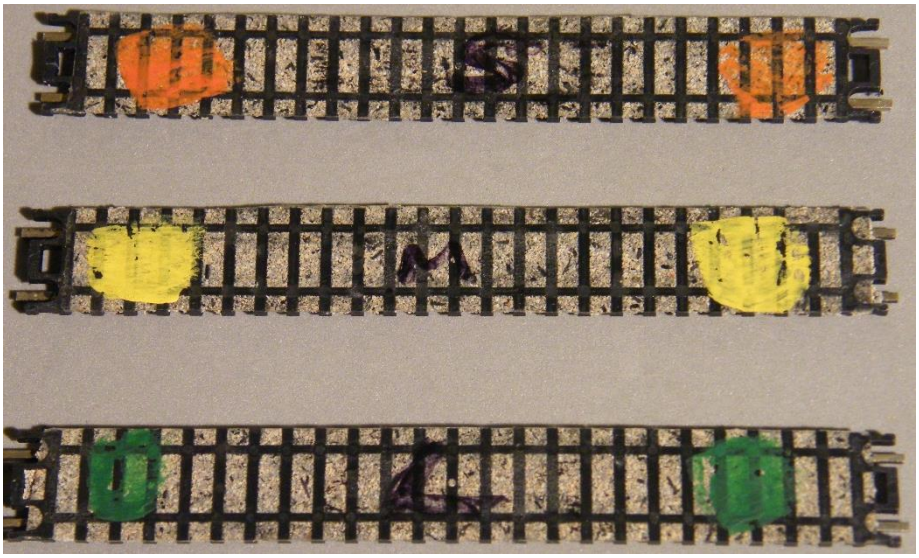
Tip #3 — Color Coded Joiners

Anyone who has installed joiner tracks on a layout at a show knows it can be frustrating. Since not all modules are trimmed perfectly and not all joiner tracks are the same length, it's a trial-and-error effort to find a joiner track that fits correctly. When I was at the N-Scale Enthusiast convention in San Diego a few years ago, I ran across a club that had the clever idea of color coding each joiner track based on its length. The 5" Atlas track sections officially recommended by NTRAK are theoretically 4.91" long. My NTRAK club measured all of our joiner tracks and found that there is some variance. Plus, we've artificially made some shorter by nipping them back to fit and have had to make some that are extra-long to fit large gaps.

If you have ballasted all your joiner tracks and have the box tape on the back of them, it's easy to measure all of them and paint a circle on the back with a color code that identifies their length as follows, per the table and as shown below:

	Minimum Length	Maximum Length	Color Code	Percentage of Total
X-Short	4.75	4.8125"	Red	5
Short	4.8125"	4.875"	Orange	12
Medium	4.875"	4.9375"	Yellow	64
Long	4.9375"	5.000"	Green	14
X-Long	5.000"		Blue	5





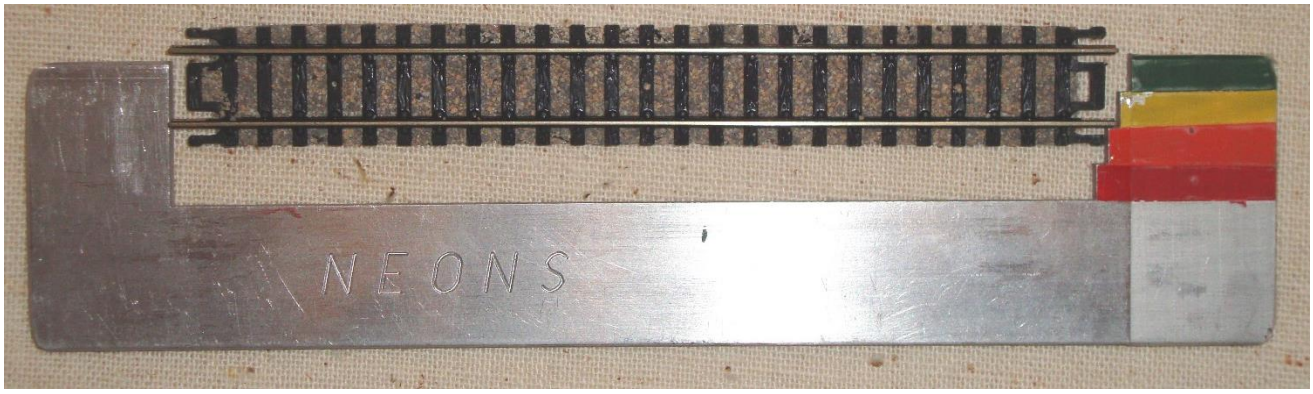
We sort ours by color after each show and keep them in a storage box

My experience shows that the distribution of different lengths should approximate the percentages in the right-hand column, and you should have about 10% excess. This may be an indication that my club members don't do a very good job of accurately trimming the track ends on our modules, or it may be due to the modules' age and the differing coefficients of expansion between track and wood. The distribution of different sizes of joiner tracks will probably be unique to your club's modules. One warning — even though the rails on joiner tracks are supposed to be fixed, they sometimes do slide. Be sure the rails are squared up before measuring. If you can't find enough Longs and X-Longs, do not make them out of flex track unless you glue the sliding rail down firmly against the ties with AC.

The club at the San Diego show had manufactured a tool that was about 5" long with a series of 1/16" notches on one end that made measuring the gaps easy.

They slide the tool in the gap between the modules until it won't go, then read the color. Before we made a tool, my club always started with a medium and, if it didn't fit, we grabbed a longer or shorter one as needed. This system has significantly reduced the time required to install joiner tracks and, as a side benefit, it has made the task easier for novice members to handle.

When we made our gap measuring tools (we made 3 of them) we also made a joiner track measuring tool so we could accurately measure and color code all our joiner tracks.



Tip #4 — Rail Joiners

Rail joiners are often hard to install. NEONS has found that undercutting the rails where the joiner tracks attach and leaving the rail joiners on the modules both simplifies and speeds up setup. You can't insert a joiner track with rail joiners attached to each end since the rail joiners will not slide completely onto the joiner track. However, with under-cut rails, rail joiners can slide completely onto the module rails so that when the joiner track is inserted, they can easily be slid into place. This means that when tearing down, the rail joiners should remain on the modules.

While this practice saves time, it comes with a warning. Over time, rail joiners loosen and may no longer fit snuggly. If that happens, the electrical connection across the joiner track may be compromised. Rail joiners should be checked occasionally to confirm that they are making good electrical contact.

Author

Steve Gillett of the Northeast Oklahoma N Scale (NEONS) club is the author of this TiipsNTechniques.