



RAILROAD REPORT

Dennis Andreas



Integrating Power Making the layout work

Although it was declared complete—railroad layouts are never really completed—for this month we will go back to the N-Scale build. I realized that providing power, switching and lighting were covered as individual topics during the evaluation and demonstration of those products, but what was not covered was how all the different products were integrated into the layout. For some modelers this is elementary, but for others electrical connections and wires are an abyss they wish to avoid. However as a store owner, you are the people they will ask for help. As brick and mortar stores, not only do we sell products but we also offer customer service and when asked, advice.

To start we prepared a mounting board and gathered all of the components that were needed. For digital control a Bachmann E-Z Command control center was chosen. With the E-Z Command it is possible to program up to nine locomotives to run simultaneously and be able to control the individual locomotive's features. As great as digital control is, not everything used on the layout is digital, so for analog control and accessory power a Model Rectifier

Corporation Throttle Pack 9950 was selected. All of the rails used on the layout are Bachmann E-Z Track, including the turnouts (switches) and to keep things simple, the Bachmann switch direction controls were utilized. For our Just-Plug equipped accessories Woodland's Just-Plug Light Hub and Control Switch was used also.

The trick, and what scares a lot of customers, new railroaders and old-timers alike, is making everything work together, but with a little thought and planning it really isn't that difficult. Where most people make a mistake is to look at the entire layout as a single job and they quickly become overwhelmed. Wiring a layout is a bunch of individual jobs that when completed one at a time these little jobs are generally pretty easy to do.

The first thing needed is central power. The Bachmann E-Z Command and Woodland's Just-Plug systems each use dedicated wall transformers and the MRC Throttle Pack has its own wall plug. Not only does it look sloppy, but it's dangerous to have a bunch of power supplies tangled up on the floor getting kicked around and tripped over. The best thing a mod-



Since the majority of the layout is designed around digital control, selected for use was the Bachmann E-Z Command control center. This little marvel of engineering can control up to nine individual locomotive along with each locomotive's features all at the same time.



Every manufacturer has gone to great lengths to simplify putting its products into service and Woodland's Just Plug controls all of the layout's lighting to include the different structures and street lights.

eler can do is to purchase an outlet strip at the local home supply store and mount it to the side of the layout. This not only looks neat and orderly, but it will centralize all of the power supplies. Another advantage is if something goes wrong, the outlet's on/off switch can be thrown and power to the entire layout is immediately shut down—a major safety factor.

It doesn't matter if the layout is compact, or extends for an entire room, but it always seems that the length of wire from the turnouts, accessories and rail power is never long enough. Pre-manufactured extensions are available from a multitude of suppliers, but extending the length of leads is one of the first things a railroader should learn. All it takes is to have loads of the right gauges of wire, heat shrink tubing and a soldering iron. I suppose a person could use crimp connectors or strategically placed screw terminals to lengthen leads and avoid soldering altogether, but soldering is a skill all modelers should learn. The thing to remember is however it is done, neatness is of paramount importance.

Layouts can be as simple as a single loop of track, or more complex with multiple loops. In the past days of analog, multiple loops were the standard so that a number of trains could be run at the same time. This required multiple controllers, one for each loop of rails. When modelers attempted to run two trains on the same loop they encountered the problem that no two locomotives will run at the exact same speed and one of the trains would eventually catch up to the other, resulting in a collision, so this was not usually done.

Today's standard is digital control. It goes by a few different names depending on the manufacture, but each system complies with NMRA (National Model Railroad Association) standards and they all work pretty much the same. Digital is without a doubt the way to go as it has the ability to control all of the rails from one source and it can also individually control each locomotive. The only limitations are the capacity of the control system itself.



Although digital is the primary control of the layout, there is still a lot of analog used, and to power the outer loop of rails along with the analog accessories, the MRC Throttle Pack 9950 with its simple to incorporate track and accessory power output terminals was selected.



To activate the Bachmann E-Z turnouts the company's switch direction controls were selected. These can be stacked together to work in unison and are very easy to put into service.

In all reality many train enthusiasts own both analog and digital engines. Manufacturers recognize this and many have designed their controllers to operate both analog and digital modes. This helps with the locomotives, but it's still necessary to get power to the rails.

To alleviate the issue of analog and digital locomotives many modelers will incorporate an analog loop and a series of digital loops into a layout. This is exactly what was done with the N-Scale build. The outer loop of rails is designed with analog in mind and it is powered by the MRC Throttle Pack. All of the inside rails are powered with digital control in mind and use the Bachmann E-Z Command system. However a three-way toggle switch was added so that digital control can be steered to the outer loop of rails when desired. Showing a customer how this is done could be the ah-ha moment for some people and he will quickly learn how to apply the power switching toggle to other applications. I realize it's true that the same thing can be accomplished by moving wires, but this is time consuming. It always results in a messy tangle of wires and eventually a costly mistake is usually made.

Woodland provides fairly long wires for their Just-Plug structures so we are able to connect them directly without the need for extensions. As mentioned in opening a Just-Plug Power Switch is connected to a Just-Plug Hub. With this system all of the lights are controlled via the one hub and one switch. Also as mentioned, to control the turnouts the Bachmann switch controls are used. These are pretty neat devices as they can be stacked end to end to provide power to each turnout, making the connections much neater. It is worth mentioning though that the Bachmann turnouts do require 12 volts of power to activate them.

With everything connected it is time to apply 120 volt wall power to the system. Provided the builder did his homework no smoke was emitted out of any of the components and the house lights are still on [He's not talking about the layout's house lights either-Ed]. The only "extra" skill needed for the entire setup was learning how to solder. And even if the customer isn't inclined, the chances are that some-

one in your shop has this ability. Soldering a few connections for customers is a great way to add value to your shop, it keeps people coming back and it tosses a few extra dollars in the petty cash box.

Hopefully some light was shed on the final connections needed to integrate the different manufacturers' many great products that were

used in building the layout. All of the manufacturers have gone to great lengths to make the process easier. As an example Bachmann has named many of its components E-Z and Woodland uses Just-Plug to describe lighting its many structures, but some folks will always need a little help. That's where we as dealers come into play. Sometimes we complain, but there is always a great deal of satisfaction in helping our customers learn something new. **HM**