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Laying track

CHAPTER 4

Now that you've designed your railway and built the roadbed, it's time to lay some track. When track is properly laid, it will give you many years of reliable service outdoors. This chapter will show you the basics of this important task.

Broad, sweeping curves, like those seen here on Betty and Jud Swedberg's railroad in Northern California, are easily attainable using the methods described in this chapter. *Photo by Marc Horovitz*

Trackwork

A wide variety of track is available today, and which type is best for you depends on your circumstances. Basically, there are four choices of rail material: brass, nickel silver, aluminum, and stainless steel.

Brass costs less than nickel silver but more than aluminum. It is not the best material, but it is, in my opinion, a reasonable choice. It is easy to work with and solders well. It does, though, require frequent cleaning if your trains are track powered.

Nickel silver is harder to work with. It is tougher than brass and more difficult to solder. It requires less frequent cleaning than brass but still requires occasional cleaning.

Aluminum is the least expensive material. It is also the softest of the four metals and can't be soldered. A sound mechanical/electrical connection is required for electric operation, which can be troublesome with aluminum rail. My advice is to avoid aluminum track.

Stainless steel is the most expensive of the rail materials. It is very hard, difficult to cut, and nearly impossible to solder. Some claim that no cleaning is required, but most track still needs an occasional cleaning to remove sediment. If stainless-steel flextrack is used, it is mandatory that a rail bender be used and that the rails be bent to the exact curvature. Clamp-on rail joiners should be used to secure the track since it can't be soldered. If you can overcome these difficulties, stainless steel is a good choice for track-powered railroads.

Selecting your track

The next thing to know about rail is its "code," which refers to the height of the rail. Code is nothing more than the height of the rail, measured in thousandths of an inch. Rail on LGB track is code 332, or .332" high (the standard for most manufacturers of large-scale equipment). Also available are smaller rails in codes 250 and 215.

Why code 250 or 215? If scale is important to you, and you look at code 332 track from a low angle or scale eye level, you will see that the rail is very tall—much taller than true scale. When codes 250 or 215 are viewed from the same angle, they appear more correctly



Code 332 rail is much taller than scale, and the bolts and brackets are European. However, this track is very robust and will take a lot of abuse. On the author's line, 90 percent of the track is code 332 and 10 percent is code 250.



These are the basic tools for trackwork. 1. 175-watt soldering iron. 2. Allen wrenches with screwdriver handle and T-handle. 3. Air ratchet. 4. Atlas Super Saw. 5. Rail bender. 6. Allen wrench set. 7. Resistance soldering unit. 8. Pliers. 9. Stainless-steel wire brush. 10. Die grinder with extra cutting wheel. 11. Micro torch. 12. Butane gas.

proportioned. Personally, I like a scale look whenever possible.

The rails on LGB track are supported by plastic ties that are replicas of European sleepers (ties). In Europe, clamps and bolts are used to hold the rail in place. American rails are held down by smaller spike heads. This presents a problem in some garden railroads, especially those with limited or difficult access. Sometimes it's necessary to step on the track. Scale track does not handle foot traffic well. Due to the scale-size spike heads (represented by fragile plastic nubs), ties are easily stripped away from the rail when stepped on, creating serious maintenance problems.

LGB track is more robust and forgiving when abused. I personally recommend LGB flextrack for general-purpose garden-railroad use. It is the easiest to work with, is strong, and has proven reliable.

If you prefer a more scale appearance, code 250 rail could be used in areas that are not subject to abuse. The two different rail sizes can be joined together. Another trick with code 332 rail is to build the ballast up a little higher, over the tops of the ties, to make the rail look lower and to hide the European-style clamps and bolts.

In this chapter, I will be discussing the use of LGB flextrack. I recommend it because it allows you to form your

SECTION 1: Landscaping with model structures

The placement of structures on your railroad should be done with the same thought and care that you invested in the rest of your railroad. It makes no sense to spend hours building and detailing model structures, then place them haphazardly on the ground. I attended a garden-railroad event some time ago. On the cover of the program was a photo of a beautiful building with surrounding details. Needless to say, I put that railroad on my “must see” list. After arriving, to my disappointment, I saw what did not show up in the picture. Structures were not level and were displayed in unnatural settings, almost like they were just set out on the ground. The buildings themselves were nicely done. If the builder had spent just a little more time in the placement of them, the total effect would have been stunning.

A garden railroad doesn't have to have structures in it, and I have seen some very nice lines that had just a few buildings. I happen to enjoy building structures, so I don't subscribe to the this practice.

Like plants, structures can be used as landscaping. There are many ways to use buildings to create special effects. Structures can lend scale to your work and can accent certain features. For example, a small Japanese maple by itself can get lost in a larger garden setting. But if you place a miniature building next to it, the maple is now accented. Structures can also add color to the garden, just as flowers do in full-size gardens.

Structures can add depth to your garden; they can lead the eye into the scene you are creating. In this chapter, rather than discussing the construction of structures, the emphasis will be on using them as part of your landscape and creating a vignette or a town.

Town planning

In designing your railroad, consider leaving open spaces to create the



Helping root-bound plants

When you buy a plant, you'll sometimes find that it's been in the pot for a while (**photo A**). If the roots are tightly packed and growing in circles (known as “root-bound”), you'll need to comb the roots out to allow them to spread evenly. The tool shown in the bottom of **photo B** has a small hook that is used to gently break up the root ball and separate the tangled roots. If this is not done, the roots will continue to grow in circles. If the root ball is not too tightly packed, it only may be necessary to shake it a little to get the roots to spread out. Combing the roots (**photo C**) makes it much easier to plant in tight areas, such as between rocks.



illusion of distance between towns. It is tempting to fill every space with a structure. You will be more satisfied if you place your buildings in groups or settlements, leaving open space in between. The illusion created is that of time and distance to be traveled by the train. I have done this on my railroad by designating certain areas as “no-build” zones.

The purpose of this chapter is to direct your thinking, rather than to give you a set of rules. If you are depicting a modern-era railroad, all you have to do is look around to see how structures are laid out. For earlier times, look at old photos. While studying old pictures, I

found it interesting to see the many ways towns were laid out. Buildings were sometimes built in a straight row. They often ran alongside the railroad. In early days, most towns sprang up along the tracks. In some cases, like in gold-rush-era Skagway, Alaska, or modern-day Oakland, California, the tracks ran right down the middle of the street.

Sometimes towns were built along a river or a stream bank. Sometimes they were built next to an industry; in the case of a company town, everything was next to or near the factory. Some small towns were built around a town square or a central park. In some cases, towns

or homes had to be built on hillsides. As you can see, there are many ways to lay out a town.

Planting structures

Here are a few guidelines I follow in setting model structures into my railroad.

- Don't overwhelm the space.

Almost anything can be reproduced in scale except space. With few exceptions, we are all working with limited spaces. I have found that when a structure goes into a given space, it will often dominate the area. For example, I have a pond that looks like a mountain lake, appearing large in photos where there are no scale references. I decided to add a small dock and a boathouse. As soon as I set them in place, the lake seemed to shrink. The boathouse gave scale to the scene and revealed that the pond was really not very big.

Two ways to deal with this phenomenon are to model small structures or work in a slightly smaller scale than the trains. I model all my structures in 1:24 scale, even though the trains are 1:20.3 scale. If I modeled structures in 1:20.3, I would not have room for them in my railroad (or I would have far fewer structures). As long as undersize structures are not displayed too close to the trains, they will work.

It is important not to mix scales in close proximity to each other. If I have a 1:24 structure, I would not display 1:20.3 scale (on the larger side) or 1:32 scale (on the smaller side) details next to it. This would draw attention to the difference. If you have virtually unlimited space, it is always better to build your structures in the same scale as the trains. Since I don't, I have forgiven myself for the different scales. I just try to keep everything in correct proportion to each other.

Be careful not to mix scale figures. Placing a 1:20.3 person next to a 1:24 door really draws attention to the difference. One cure for this is to make your doors 1:20.3 scale even though the rest of the building is 1:24. In studying old photos, I noticed that some doors were very tall, so a large door may not be out of character.

• Always level your structures to the ground. There is nothing more annoy-

Scale reference



Without scale reference, this lake could be any size. Once you add a boathouse, dock, or railroad tracks, you introduce a scale reference. The mind will view the scene based on these reference points. In most cases, the natural landscape will look smaller with structures in place.

ing to me than seeing structures that are all askew. Even in a real-life ghost town, a structure that is leaning over and ready to collapse is usually level at the base. To keep structures level, I like to install a base or foundation.

• Use low-growing ground covers around structures. Irish and Scotch moss, creeping mint, and green carpet are good choices. Always select plants with

small leaves for use around structures. Most plants have leaves that are much larger than true scale, so be selective about what you use. Avoid flowing ground covers around structures.

• Miniature trees and shrubs will make the scene come to life. Make sure you plant trees far enough away from buildings so that when they grow, they do not become a problem. Some