

Build a better layout





10 tips to make a better layout

Good advice for all toy-train layouts

by John Grams | photos by William Zuback

A DECADE AGO, Dick Christianson, the founding editor of CLASSIC TOY TRAINS, and I began work on what became the O gauge Lionel Lines/Santa Fe layout. With help from CTT staff members, who dutifully ventured to Dick's suburban basement every Tuesday night, we spent countless hours planning, thinking, changing our minds, and making false starts before finishing the layout.

Many of you saw photos of the layout in the November 2002 issue of CTT. Some of you even saw it in person during the 2002 Lionel Operating Train Society convention and the 2004 Lionel Collectors Club of America convention, both of which were held in Milwaukee.

Looking back, were all of those countless hours spent planning, thinking, changing our minds, and making false starts simply time wasted? Not at all, because we ended up with a better toy train layout than if we had rushed through the process.

We learned a lot, and along the way we wrote down this list of 10 tips to improve a toy train layout, followed by 6 mistakes we made, so you won't make them, too.

1 Follow a logical sequence

Begin by asking yourself lots and lots of questions and doing plenty of soul-searching. Plan to do everything in an orderly, logical sequence and in manageable steps.

For example, if you want to paint walls, install carpeting, or put in overhead lighting or a drop ceiling, do it before you start building benchwork. Leave room around your furnace, water

heater, sump pump, and the like. Such things will need to be serviced or replaced some day.

The effects of planning – good or bad – will show up at almost every level in the layout construction process. I honestly can't emphasize enough that early decisions will determine the end result. So make your decisions good ones by taking your time and thinking everything through.

1. The O gauge Lionel Lines/Santa Fe layout took 10 years to complete and reflects knowledge gained by the guys who built it. They share some of their acquired wisdom here, starting with the primary point that you need to plan everything in a logical, orderly manner before beginning construction.

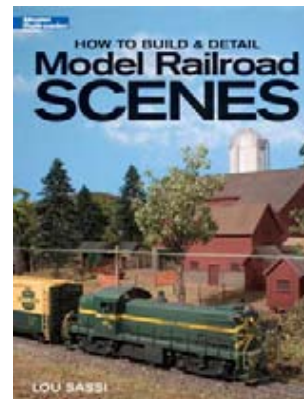
2 Learn from scale model railroaders

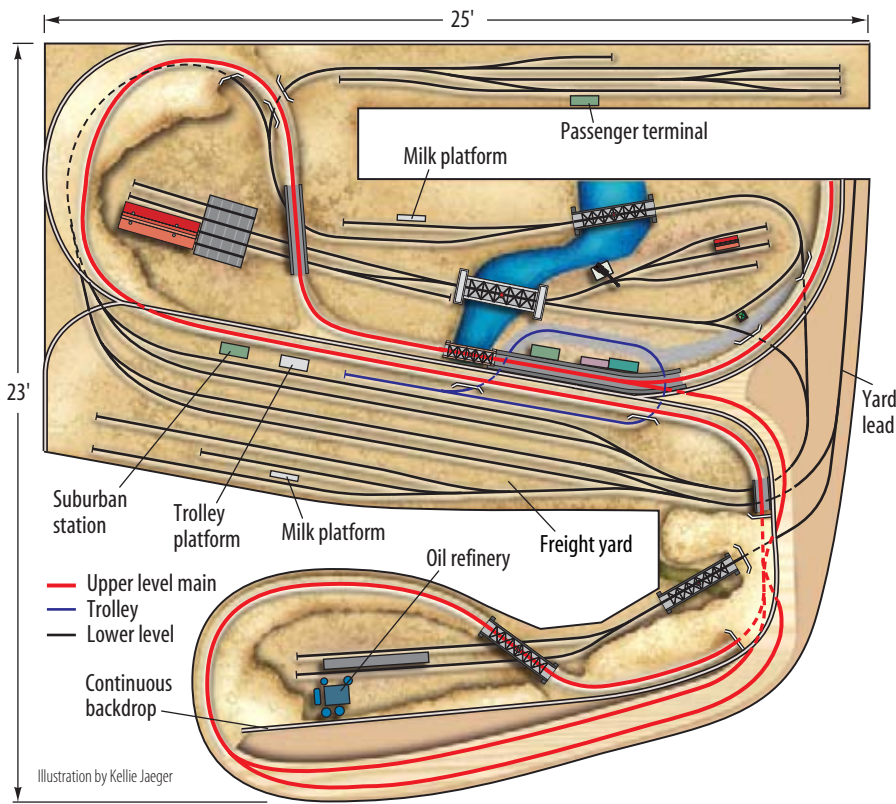
Read everything you can find on the subject of model railroading in all of its many facets. Look for ideas you can incorporate into your very own dream scheme, particularly in the hundreds of books and thousands of articles that have been published on layout planning and building.

Don't be afraid to cross over the tracks and investigate what's happening in the HO or N scale model railroad community. Visit clubs and attend conventions and shows. Most scale modelers started with toy trains, and many of them have ideas born of long experience that you can adapt.

3 Design a good track plan

Although the best-laid track plans may still sometimes turn into bad layouts, bad track plans can never result in good ones.





3. This track plan reflects a great deal of planning. However, some areas of the layout are beyond arm's reach.

Make sure every switch, uncoupling track, and operating accessory that requires an insulated track section is carefully located ahead of time on your layout drawing. You'll be living with the final results for a long time.

Try to keep all trackage within easy reach, without having to climb up on the benchwork. Use pop-up access hatches so you don't have to climb on your layout to reach something.

4 Consider realistic operation

Even if you're satisfied with watching trains run in circles or get your kicks by putting your chin on the benchwork and closing one eye as the train grazes your nose, the day will come when these

4. This scene shows the advantages of incorporating realistic operation. In this case, a passenger terminal operation offers local commuter service.



basic gratifications will become boring and you'll yearn for more.

Stations, yards, sidings, crossovers, switchbacks, and industrial spurs provide for realistic operation. Include some of these features in your plan, even if you don't use them very much at first. They provide the potential for a new dimension of fun down the road.

5 Build stable benchwork

A number of benchwork techniques can be used successfully – tabletop, cookie-cutter, L-girder, and shelf – as can combinations of them.

Don't be intimidated by this part of the project. You don't have to be a skilled carpenter, because benchwork doesn't have to be fancy. You can cover your handiwork with a skirt or even buy ready-made benchwork that goes together with nuts, bolts, and washers.

5. L-girder benchwork is surprisingly versatile, strong, economical, and easy to build. Note the 1-to-1 scale track templates on the floor.



Build it sturdy, stable, and level. How you accomplish this is your business.

6 Use care when laying track

Spend a disproportionate amount of time laying track. There are no universal rules about how and where to lay your track. Still, using a metal straightedge is helpful in laying long runs of straight sections. Curves should be as smooth as you can make them.



6. Adding additional ties and ballast to O gauge tubular track sections makes them look more realistic.

Check and test everything – switches, uncoupling tracks, even track sections – before you install them. You don't need unpleasant surprises turning up later.

7 Use adequate transformers

There are advantages and disadvantages to using conventional or command control. Decide what you want to do first, especially if you favor MTH's Digital Control System, since, depending on the size and scope of your layout, it can require a different approach to wiring.

The key thing is to have plenty of reserve power available – a multiplicity of transformers. Never tax any single power source to its capacity.

7. Bigger is generally better when it comes to selecting wire for your layout. Be sure to color-code and document everything.

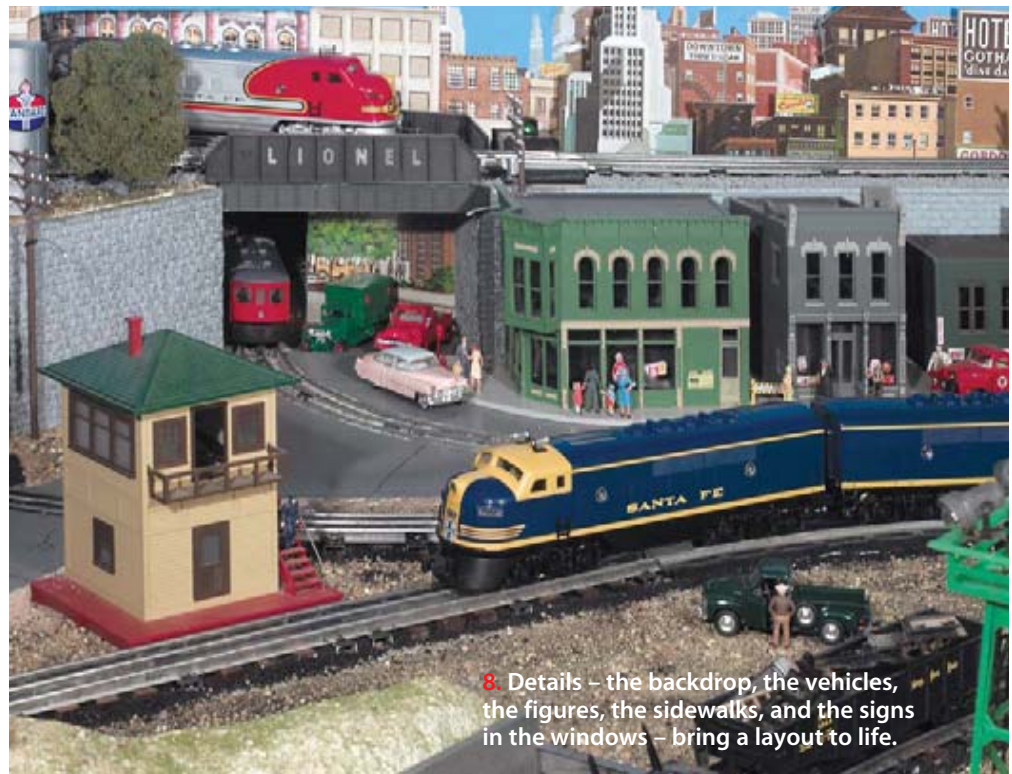


As far as wiring is concerned, bigger is better – use heavy gauge all around. Color-code everything, and don't lose the sheet that tells which color you used for which application! Finally, you can't have too many track feeders.

8 Match rolling stock

The kind of layout you build and the period you model will determine the rolling stock you use. Match rolling stock to the type of railroad activity you enjoy and be selective. You don't need to have one of everything that was ever made (unless you want to).

Lionel and other manufacturers have made O gauge rolling stock in a variety of sizes, from accurate scale O all the way down to cars that are close to S scale. If you don't mix them (at least in the same train), your railroad will have a more convincing appearance. Follow the Rule of Noah: "Each to its own kind." (You can ignore the "two by two" part.)



8 Details – the backdrop, the vehicles, the figures, the sidewalks, and the signs in the windows – bring a layout to life.

Six deadly sins

A few things not to imitate on your layout

1. EXCEEDING OUR REACH

In the original plan, no track was to be more than 3 feet from the edge of the benchwork. When we converted the plan into three-dimensional reality, some of those distances got stretched a bit. Then we began extending the benchwork outward and adding tracks.

Big mistake! Crawling around like a toddler on the surface of a layout doesn't get easier with time.

Keep track within reach of the edge of the benchwork, or put in pop-up hatches for access. Someday you'll be 10 years older, and your backbone will be older, too.

2. LOSING THE WIRING KEY

While I was under the benchwork, stringing many colored wires to all points, Dick was recording the information in a notebook. We slavishly followed that routine to ensure that all wires were color-coded.

Two years later, neither of us can remember where we put the blasted notebook.

3. FAILING TO TEST

Dick and I tested all the old equipment before we installed it on the layout because, well, it was old. Too bad we didn't apply that lesson to all the new stuff.

One of the new heavy-duty toggle switches wouldn't shut off, even though it clicked to the "off" position. Of course, we took it right from the blister pack and soldered it into the circuit. Later, we had to unsolder a bunch of wires to replace it. So test everything!

4. CREATING INACCESSIBILITY

Despite our careful planning, a 4-foot section of lower-level mainline track is enclosed by the benchwork, scenery, a staircase, and a concrete-block wall. This section runs behind the backdrop and emerges through a

tunnel portal near the locomotive-servicing yard, making it totally inaccessible from any direction.

So far, only one mishap. The brakeman on the Lionel no. 3424 Wabash car ignored the telltales and, after nearly 50 years of service, snapped off at the ankles. His lifeless body was found inside the tunnel.

After that, we positioned an Artista nun at the top of the tunnel portal. She offers a silent prayer to ward off the entities from the Axis of Evil every time a locomotive enters the dark portal. Hence, the name, "Hail Mary! Tunnel."

5. EMBEDDING SWITCH MACHINES

All our switch machines currently work and can be accessed for service if they should ever fail. All except one! This upper-division switch in the track that runs close to the Masonite backdrop had to be inserted into a hole in the backdrop because there was no other space for it.

This section of backdrop runs down the spine of the layout. We installed another backdrop sheet behind the first to face the other side of the layout, and the switch machine got swallowed up between the two. Like the track in the "Hail Mary! Tunnel," there's no way to get at the machine without tearing up the scenery.

6. CHANGING THE ORIGINAL PLAN

The legend of Magic Mountain was contrived after the fact – a case of what Shakespeare called "fortuitous circumstance" (Elizabethan for "dumb luck"), rather than planning.

Originally, a backdrop was going to separate the upper-division tracks to disguise the return trip after the sweeping S-curve around the oil facility. Then Dick wanted to put two non-derailing switches back to back between the legs of the division so a train could reverse its direction.

However, accomplishing this feat meant that we had to cut a large, rectangular hole in the Masonite "sky." After trying to disguise that hole, we decided to build a mountain over the whole mess. Dick bought two more tunnel portals, and Magic Mountain soon arose from the primordial soup (actually, 5 gallons of Hydrocal solution).

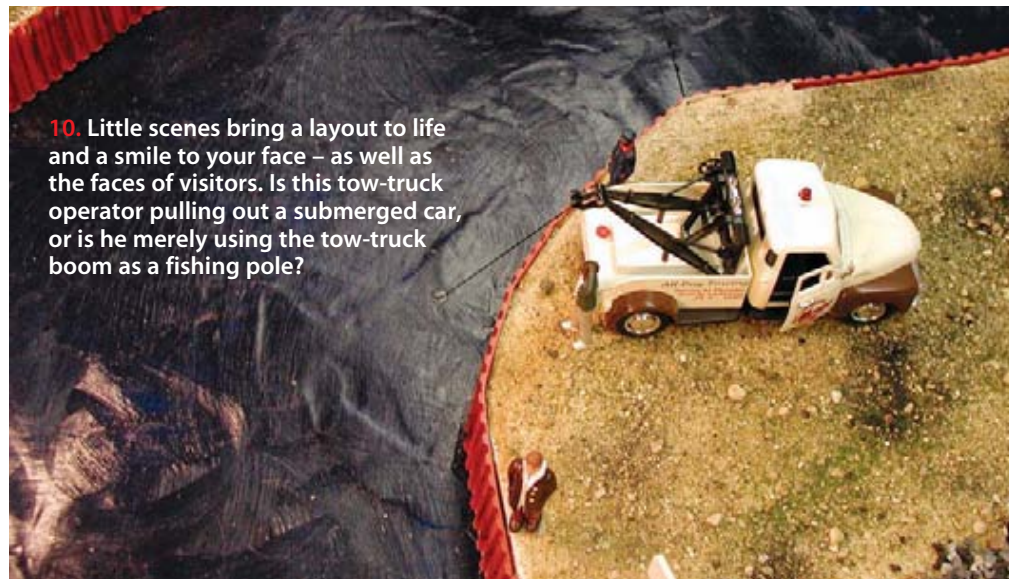
9 Maintain your trains

We've heard the adage that "the squeaking axle gets the grease." All the same, it's best not to wait that long. Set up a schedule for regular preventive maintenance for all of your locomotives and rolling stock.

Start with your freight and passenger cars. Older models, especially those from the postwar era, need to have their wheels lubricated on a regular basis. Newer cars equipped with needle-bearing axles don't need much, if any, oiling.

Locomotives should be kept lubricated at all times. This is a simple task; keep a record of when you added oil. Engines need more-intensive levels of service occasionally.

Finally, don't overlook your operating accessories. The motor and moving parts in freight loaders and other trackside pieces need attention if you want them to perform reliably. However, they don't need service as often as the rolling stock on your layout does.



10. Little scenes bring a layout to life and a smile to your face – as well as the faces of visitors. Is this tow-truck operator pulling out a submerged car, or is he merely using the tow-truck boom as a fishing pole?

10 Add life to scenes

The tale is in the details. Figures, vehicles, and trackside props bring a layout to life. They can be moved about from time to time for emphasis.

Slice-of-life tableaux set up in nooks, crannies, and empty spaces add drama

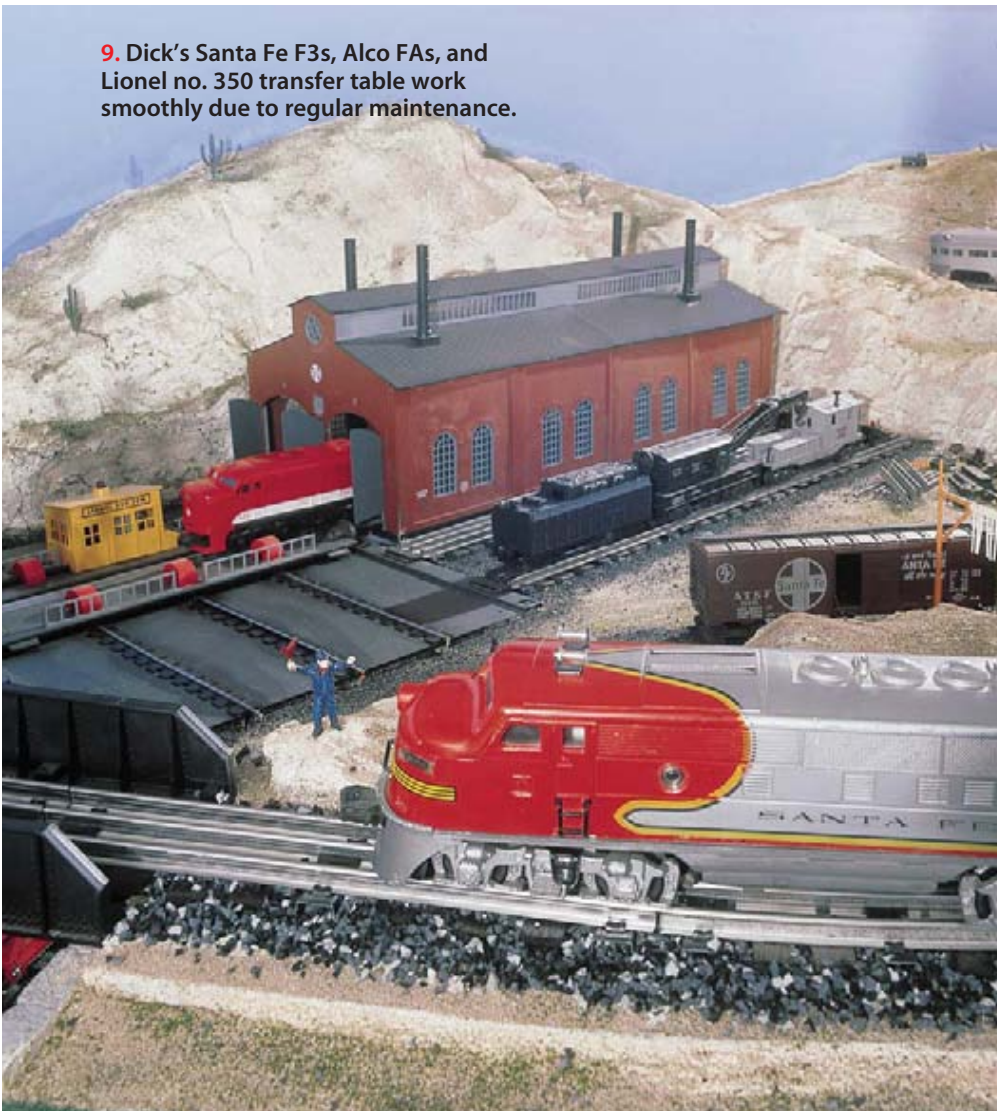
and humor. Don't neglect adding signs explaining the activity. Visitors love this.

Slippery Sid, the lawyer who specializes in whiplash cases, has his office where the trolley hits the bumper and changes direction. The exposed ends of the oil pipeline don't match up. And over at Lake Dry Socket people swim and fish, although there's no water in it.

On the river, you'll see a water skier being pulled by a rowboat being chased by a shark, a guy fishing for big ones with a tow truck, and a partially submerged caboose with the brakeman sitting on the roof.

Let your imagination run wild. Model railroading is supposed to be fun, and it's up to you to have it. **CTT**

9. Dick's Santa Fe F3s, Alco FAs, and Lionel no. 350 transfer table work smoothly due to regular maintenance.



If you found this information helpful, you may want to get a copy of John and Dick's new book, *Build a Better Toy Train Layout* (no. 10-8803, priced at \$18.95). You can find it at hobby shops or order it from Kalmbach Publishing Co. at 800-533-6644 or online at kalmbach.com.

