

INDUSTRIAL RR A PLACE TO START

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OK, let's have a show of hands: If you had \$1500 hot ready cash in your pocket right now, which would you rather have? A room full of wood working tools such as a table saw, chop saw, sabre saw, electric drill, couple of portable drills, large inventory of hand tools such as files, hack saw, C clamps, furniture clamps, OR a superbly detailed brand new brass locomotive? Hmmmmm. All right, all in favor of the tools say 'aye'. All in favor of the loco say 'heck yes'.

I thought so, me too.

(Yes I know there are guys out there who are in this hobby because they do love tools, and have enviable collections, and the skill to use them; and that is cool, I greatly admire them. However, to me, they are a means to a much greater end).

Fact is, many of us have one goal; a single focus: Run two rail, O Scale trains. That's it! But first of all, you pretty much have to have a basement. Right, you can work around this, but basements are cool! Second, you need wood and lots of it. You are going to have to put those trains on something and it's not the floor or the kitchen counter. To make things worse, it has to be sturdy. Braces, cross braces, etc. In short, the B word: Benches. This concept truly expands the hobby of model railroading. Before you turn a single wheel, you need a T square. You have to be able to cut a 45 degree angle. That old skill saw you bought for working on the deck... forget it. Very hard to make a straight cut, even harder to cut vertical angles, and after a while their jagged appearance will bother you. What I am trying to say is: before you enjoy your chosen hobby of model railroading, you have to somehow enjoy the hobby of carpentry. And once that is overcome, how's about the hobby of electrical wiring? Not 12 volt but 110! (But that's another story).

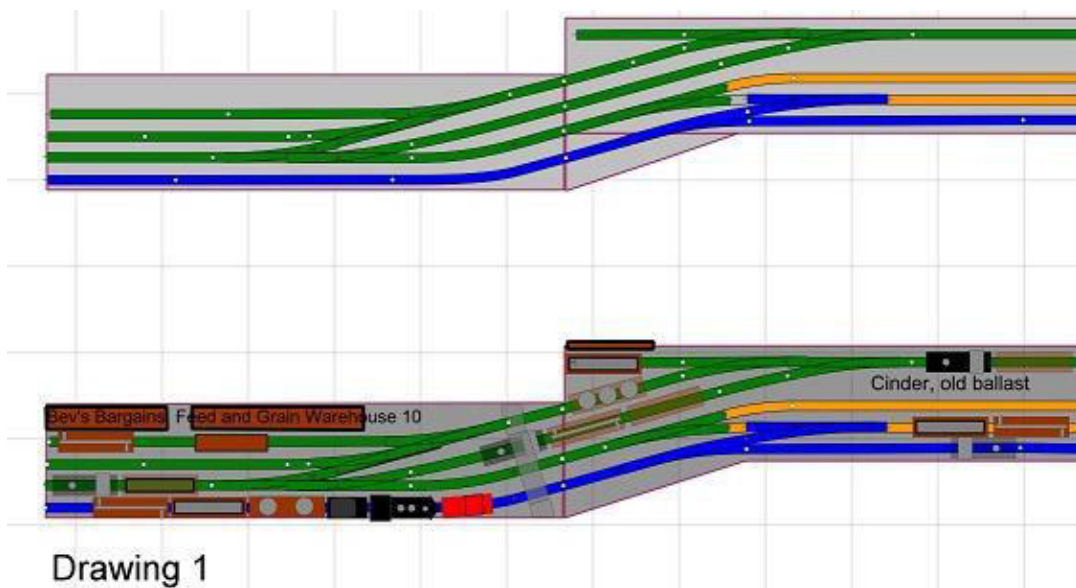
If you read the title to this article you already know where I am going. I plan to make an argument for a layout that is 12' long, 2' wide AND breaks into two pieces. A 2' x 6' module will fit in even the smaller SUV's (Crossovers, Humvees, Rickshaws, etc.). There are a lot of great ideas for where we are going with all this, but the big reason, (let me emphasize this) the BIG reason is **you can get up and running quickly**. You can shuttle cars back and forth. You can appreciate the movement of that RY 70 Tonner, the Sunset GE 44 Tonner and an Atlas SW series. These guys can be found on eBay regularly. (There were two SW8/9's at the Indianapolis show in September both well under \$350.) I think you will thoroughly enjoy dialing down that controller and gently coupling up to a highly detailed tank car, reversing operations and heading out of the siding; back to the outbound track. If the track is dirty and the loco hesitates, or the couplers don't mesh the way you think they should... bang, out comes the track cleaner or off to the work bench (otherwise known as RIP). You know what is happening? You are enjoying being a model railroader. You are not overwhelmed with a track plan that reaches 35' into the corner of your basement, nor are you forever looking at scenery that, in your heart you fear will never get built. I have always suspected that sort of thing gets discouraging and you kinda have to develop some tunnel vision to not see the things that bug you. And, you don't have to walk a hundred miles just to see what went wrong and then walk back while you are figuring out what tool you need. This is a must for the larger layouts. Please don't get me wrong, the bigger really is 'the better', but if you think in terms of 'bang for the buck' or the fun/work ratio, there is a heck of an argument to be made for something, smaller, portable, lighter, and expandable. For many of us it's called "Do-Able".

Get your feet wet with DC and DCC, build or install 7, 8, or 9 turnouts. Wire in the necessary feeds for each block, but then gang wire them together so you can get going. At first we are only using one loco so the whole layout can be hot. Now, turn on that controller and watch your beautifully detailed engine go 6" and stop dead. (Imagine our hero just staring at the engine thinking "What the heck?") Those weeks and months of dreams and planning and actual hard work crushed in the face of reality. Ask any model railroader. Now what? Eventually you will develop a check list for these situations, its only right you should run into this straight out of the box. OK, out with the ohmmeter. (Ohmmeter? I need an ohmmeter for a small model RR? Yep. You're not playin' with kids here you know.) Turns out a nearby rail joiner is not conducting between rails. We've got voltage on the controller side, but not the engine side. Remember those model rail articles that said have a direct physical wire connection to all sections of track? Do not rely on rail joiners? They weren't kidding. So you fix your joiner problem and off you go. With a smaller railroad, each obstacle becomes bearable whereas a larger one can seem overwhelming. Remember, model railroading builds character.

3 Phases of Development

Let's take a look at a plan or two (or three) and see what would be considered essential, and what you can goof around with. This plan contains three drawings representing the three phases of development. **Phase**

1 is the 12' x 2'. In **phase 2**, we expand on the original to add a little space for parking and lengthen our runaround. Finally in **phase 3**, we put the Industrial RR into a larger layout for running through trains and interchanging with a main yard cleverly titled Mainside.



The first drawing (**Drawing 1**) shows two parts: Both are the initial 12' plan. The upper displays the basic track plan.

The lower is the same thing only with suggestions where the cars, engines, warehouses, crossings, etc. might go. (Interesting note: Top photo is the module that displayed at the March Meet 2015 in Chicago – as is! No fluff. Did not get a lot of attention, but the few that did look at it, took a long time. Kids LOVED it.)

- In phase 1, the layout really only supports one loco. I have drawn in two to make the point that as a whole, the railroad cannot handle more than a single loco and one car. This will change in phases 2 and 3. You will see rolling stock that appears grayed out, it's to show where a scale loco and/or 40' car can fit.
- The real limit to train length is not the run around tracks, but the tail tracks. (Upper right and lower left). * Here's a very important point: Given our limitations, such as 12' total length, #5 turnout angle (11.31 degrees), and just plain ole' clearance so we don't damage the super detail or crush a union member, our owner/operator is only going to move one car at a time. In other words, we can make one lead longer by shortening the run around, but that's it.

Phase 1. Operation of the 12' version.

There are few strict operating rules in a district such as this. Actual operation is up to the crew and of course their prime motivation is to get the job done and get home. But as you look through the plan, you can see often times that's not so easy. But before we get into the ins and outs of the daily routine, there are some things a new person really needs to know.

The colors of the track on the plan are an attempt to help a new engineer think in terms where the operation takes place, where processing so-to-speak happens and how we get cars to and from the district. **The blue rails at the bottom connect the district with the outside world.** West is left and East is right. Couple of names for this kind of track: From the adjacent yard it is an extension of the thoroughfare track. Because it handles both local freight and passenger traffic, it is in fact a secondary main – top speed, 30 mph. Keep in mind we are only describing what would happen in the initial instance of this plan so if you are itching to put a small 10 wheeler, Atlantic or GP and some coaches here, they might be in the way until we get going on our expansion plans. In phase 1 the blue tracks can be used as if they were part of the inbound/outbound and switching. *BUT, in phase 3, they will change over to a main line as we expand our in and out capability.* **The gold tracks on the right are inbound and outbound.** Which one is which is up to the crew and it can change daily or even more often than that. There are a number of ways the inbound drop off can take place. First of all, notice in this version the blue crossover on the right has to handle all the exchange. **The green tracks are the industrial area itself.** The yard job can simply leave the cars on the main. (Yet another note: Industrial switching almost always takes place at night. This is not hard and fast, but certainly is a tradition established over the years. Of course blocking grade crossings is a problem to be avoided, but the nightly routine is for the benefit of the rail customers. Most industries want the car they loaded on Wednesday to be gone and replaced with an empty by start of business Thursday, and vice versa.)

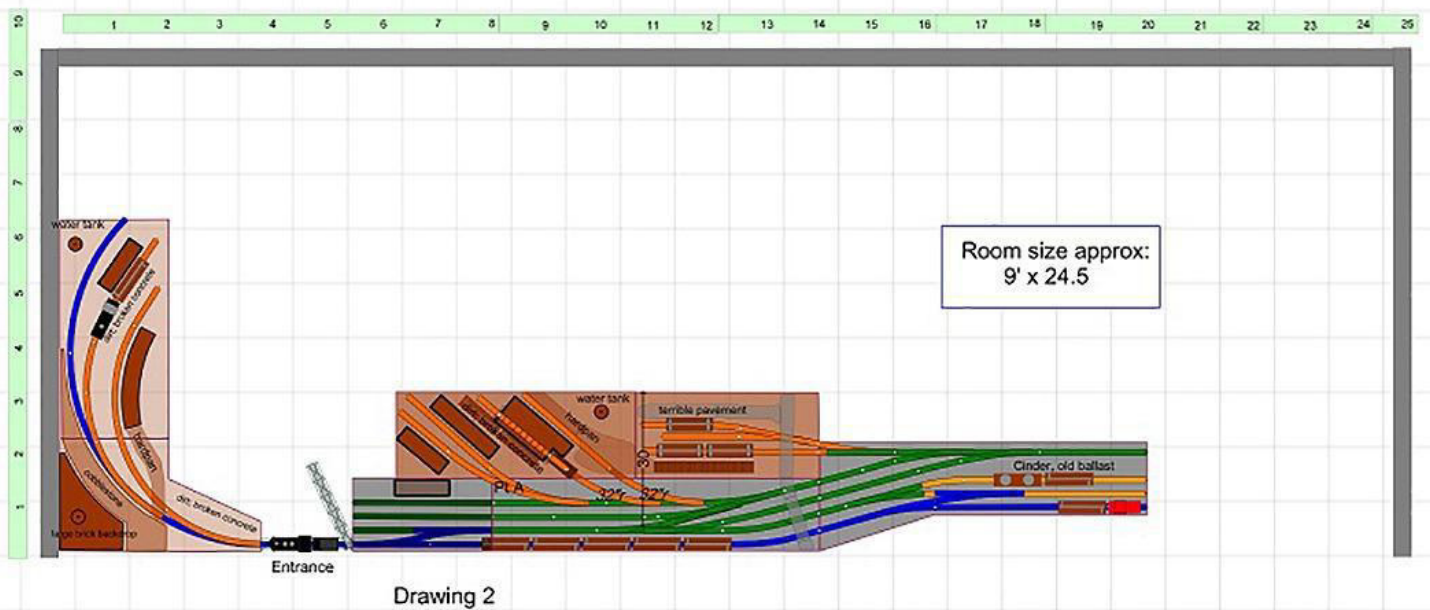
One cool thing you can do with industrial operation is leave a car sitting on a switch. If you are part of a club operating session, uh... don't do that! But here it's just fine. There is only room for two 40'ers on that lower gold. Some of the key trackage, like the runaround, can handle two cars plus an engine, but the idea is to force the operator to think in terms of one car at a time, for now. Ugly as it may sound, there is a limit to how much I can cram into 12'. There is 2' of straight track at each end meaning ALL crossover movement is within 8' of itself in the middle of the layout. In one of the photos, you will see a suggestion that takes advantage of this fact. **Sitting down.** (See end of article.) With four tracks, that's a lot of shuttling in a small space.

As you may have noticed, not a lot of industries here in phase 1. "Well, you're the one that wanted 2 rail O scale in a small space! Right?" Ahem! "Yes, OK, yes!" Fact is, I love the track and the rolling stock so much I can be happy imagining the buildings, at least for now. At this point we have three places to spot cars for customers. It's up to the owner/operator/conductor/clever guy/schemer, to figure out how to get cars from that inbound track, to a customer siding, then back to the outbound track. You know that can't be done without the runaround track clear. Take note of the middle track on the left. Its only purpose is to temporarily store car(s) while switching is going on. On the runaround, I have an engine and two cars shaded out. Again, they are there only to point out relative sizes and proximity.

OK, let's go: Our engine and crew are sitting on the lead track; upper right. The most immediate goal is to get the loaded box car sitting in front of Bev's Bargains onto the outbound track and replace it with a like, empty box car parked (trapped) by the gondola on the inbound track. There are a number of different ways to accomplish this; of course an experienced crew will know the most efficient. If you just built this and are getting to know your own creation, you won't. Frankly, there are so many possible variations a simple layout like this could keep you interested for years to come. One thing we know for sure is, that boxcar sitting at **Feed and Grain** has to go. It's easy to just move her over one track and that's that. "But what if it's in use? What if Feed and Grain is loading or unloading?" That's another reason so much of this inner city switching is done at night! So, we now have a clear path to our destination, but what about picking up that replacement? The gon is in the way.

Without making another move, here's what we know: since we began this whole thing knowing there was space available on the outbound track (if there wasn't, we'd already be in expansion mode, just like the real railroad), we can use that space for temporary parking. So we put the gon on the outbound track. Easy. Now go get our replacement. We will park him on the south runaround and go get the car sitting at Bev's. Now we put this guy on that 'middle' track and finally go get our replacement. A runaround movement allows us to place it in front of Bev's. Good. We head back to the middle track and get *both* cars. Since the Feed and Grain's car is furthest west, simply back up, clear the siding, then pull forward and drop off. Once again, a simple runaround puts us in position to drop the outbound Bev's car on the outbound track, but that doggone gon is in the way again! Not really. We just pull forward, couple him up, drag backward then put him right back on the inbound track, uncouple and place our car on the outbound track and away we go.

A word about uncoupling: I don't use uncoupling ramps. They have always struck me as something you put in place after you have enough experience to know precisely where to put them. I can't help it, but I always want to get up and running quickly. I am right handed, so I use an upside down MRC Control Master throttle in my right hand (this way I can operate the dial speed controller and the direction control with my



thumb, AND the cord is headed down instead of up) and a pocket screwdriver in my left for uncoupling. For me, the screwdriver represents manual uncoupling whereas the ramps represent automatic uncoupling which in this case is positively, absolutely unrealistic. Besides, it's kind of fun!

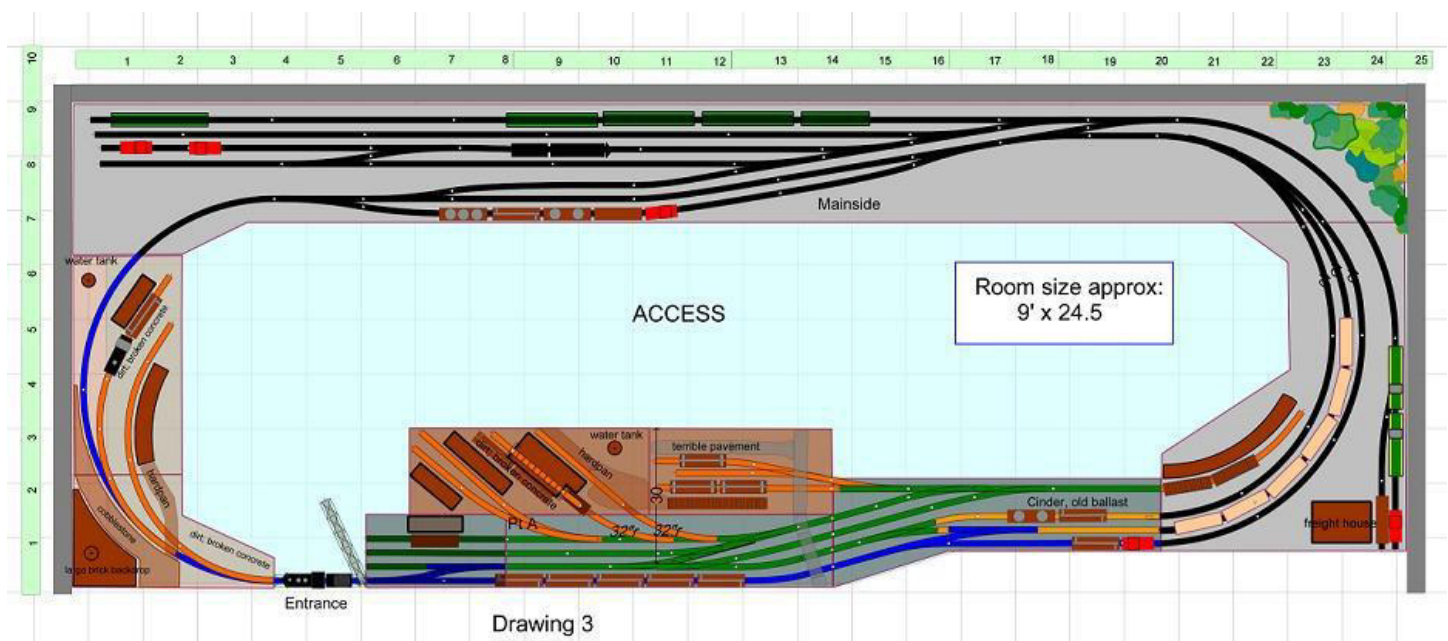
Phase 2

Regarding expansion, here is how it might be done: One of the main motivations for this plan was portability. However, as we expand, it gets a little less easy to pick up and go, but it's still moveable in the case of an emergency. Since the existing modules are no larger than 6' and we want to keep construction simple, we'll hold the new additions to 6' in length or less. By the time we are done, there will be seven modules. Seven seem like a lot to you? Yes, to me too. But, please stick around for the rest of the show because there are some good arguments for this type of approach.

- First of all, the bigger this critter gets, the more it is like a home layout BUT, **it can still be moved.** Modular railroads do tend to get beat up going to shows and after a while, folks tire of the efforts, especially after hearing someone walk by and say "Oh, I've seen that before". (Sigh).

- It can be moved by one person! Hopefully in a future article, we can show you how to build these components using 1 x 4 frames, 2" foam and 1/4" plywood. Quiet, sturdy and mobile.
- The owner/operator can stop anytime he likes, never getting overwhelmed.
- If your first reaction to seven modules is: “why not just build the thing in one unit all at once, I’m not taking it anywhere”. Answer: Yeah, why not? We’re having fun here. Whatever floats your boat.
- If you establish a standard to live by for all modules, you should not have trouble mating them together.

Before we go too far, there is a comparison I want to make. The difference between an industrial district and a yard. Simply put, it’s this: a yard takes more space. In phase 3, you can determine the size of each one under the other. The industrial has operating capacity right off the bat. The yard won’t be functional until more railroad is added. Perhaps a way to think of this is the industrial district provides traffic to and from the yard. Many of the requests I get for small track plans are for “yards”. When reality sets in, those #7’s, 8’s and even 6’s are a significant undertaking. But don’t despair! We have a plan coming (phase 3) that shows both. You can have a lot of fun making up a train in the yard exclusively for a ‘transfer’ to the inbound track at the district, and back again.



Phase 2: Operation in the first expanded version. We have added five more modules which are the ‘industrial’ area itself. Some tricky track, but mostly just sidings and spurs and reasons for them to be there. In three locations, existing tangent track has to be removed and replaced with tightly curved turnouts typical of these sorts of locations. We have added a second crossover from the so-called main to the west switch lead. The bridge itself is hinged on the east end and supported in such a fashion as to maintain a tight 90 degree angle with the bench work beneath it. The structures that were a part of phase 1 simply relocate to new locations in phase 2 as new structures are built.

Phase 3: This is where the layout comes full circle. (Oh my goodness, I couldn’t resist).

Now those **blue tracks** that were sorta this and sorta that take on the duties of a secondary main line. From here on out cars cannot be left on this track. The curved yard tracks connecting Mainside to the industrial area handle about 12 cars from the fouling point to the outer edge of the original module while leaving the main clear.

Phase 3 is called staging by some, storage by others, etc. For me, it's just a plywood platform with cork road bed and balsa under the turnouts. I might put a water plug in somewhere, or a structure of some kind. It's for shuffling cars and having fun. You may find tools lying about as I experiment with different things. (Heavens above). The only fuss budget constraints are, I insert ties between the lengths of flex and other flex or turnouts. Maybe paint the roadbed and rails, but keep it consistent.

While we are describing the operations of this 12' version, we will also cover a concept not heavily recognized in 2 rail O scale: **2 rail O scale is just made for small switching, but hardly ever used as such. I mean just MADE for it.** The size and the heft of two rail is really cool to watch as a switcher pushes a cut of freight cars through a series of turnouts while the operator sits right up close on a stool. I'm sorry, other scales just don't do it for me. There is nothing realistic about a wheel hitting a frog and going 'tick'. O scale makes a clunk, a bit more like the real thing, which is what got us here in the first place. There, I said it!

Physical operational notes: So where do we operate from? Are we going to back an engine to a car then move around the entire 12' to couple it up (in case it doesn't)? As drawn, this plan has two basic operating aisles. First, the 12' version calls for the operator on the main line side of things. As benches and track expand, and as we add a main terminal for transferring to and from, inside the circle makes more sense and causes a lot less travel for the switchman. So as we add modules, we have to keep in mind a maximum reach. From the side along the warehouses, we have a worse case 30" from backside to center of points; not bad.



Phase 1 of the Industrial RR is actually under construction. Here are a few raw pics of where it is today. (Image 1 and 2) Of course it would be better to show a perfect, completed rendition, but deadlines are deadlines and so are interruptions.

The pair of curved turnouts in phase 3 exist and are pictured on the next few pages (Image 3 and 4). If there is enough interest, it would be fun to explain the basics.

Here is why I have spent so much time on phase 1 of this project. I'm not a kid any more. Being able to build, not only a turnout from the bench but an entire section of railroad is wonderfully comfortable. Now let's take that idea one more step: operate the layout from that chair. Notice the bench work

itself really is a bench – or a table. If the modeler wants to move to phases 2 and 3, he can build simple legs and girders as appears in the rear behind the lamp and lift the railroad up. The fact that all turnouts are within 8' of each other allows nice pleasant operation from that office chair.... Just a thought!