

# Getting Started in Model Railroad Freight Operations

By Pete Mulvany



*"Back up 5 to a joint, 56". Don Locke is the engineer on today's GHR train 44, the Marlow Mule. All photos by the author unless otherwise noted.*

I didn't get into the operations part of this great hobby for many years, but once I tried it, I was hooked. Maybe you could enjoy it too!

At first, I was wary of serious layout operations I read about or watched online. It seemed complex and jargon-heavy. So I tried to first understand what operating a model railroad could be in a simple form.

For me, operating a model railroad layout is about adding another layer of realism by creating plausible reasons (probably railroad revenue and profit) for running freight trains on my layout. Rather than just railfanning from layout track side, I wanted to be in the middle of the action with a sense of purpose.

Deciding to operate a model train layout can also involve learning more about how real trains function, as well as learning how to simulate that in miniature. Another feature of modelling operations is that it introduces industrial switching. This is the topic we'll look at first as it can require the least amount of space and equipment to model.

Switching model railroad customers on our layouts has hidden benefits for operators:

- Planning and executing realistic and efficient switching moves that replicate the real thing keeps the brain working!
- Operating a model railroad can be a great social activity as well. A two-person crew can usually operate one train in the same space one person could. So now you have the opportunity for some interaction with like minded friends in a role-playing and simulation game scenario.

- And if you haven't started building your layout yet, maybe thinking more about operations will help with how you design your new layout.

But let's keep it really simple to start with. The good news is that if you have an oval of track or a simple shelf layout with a main line and a spur (see Figure 1), a locomotive, plus one or two freight cars and a caboose (if applicable), you can operate your layout like a real railroad runs.

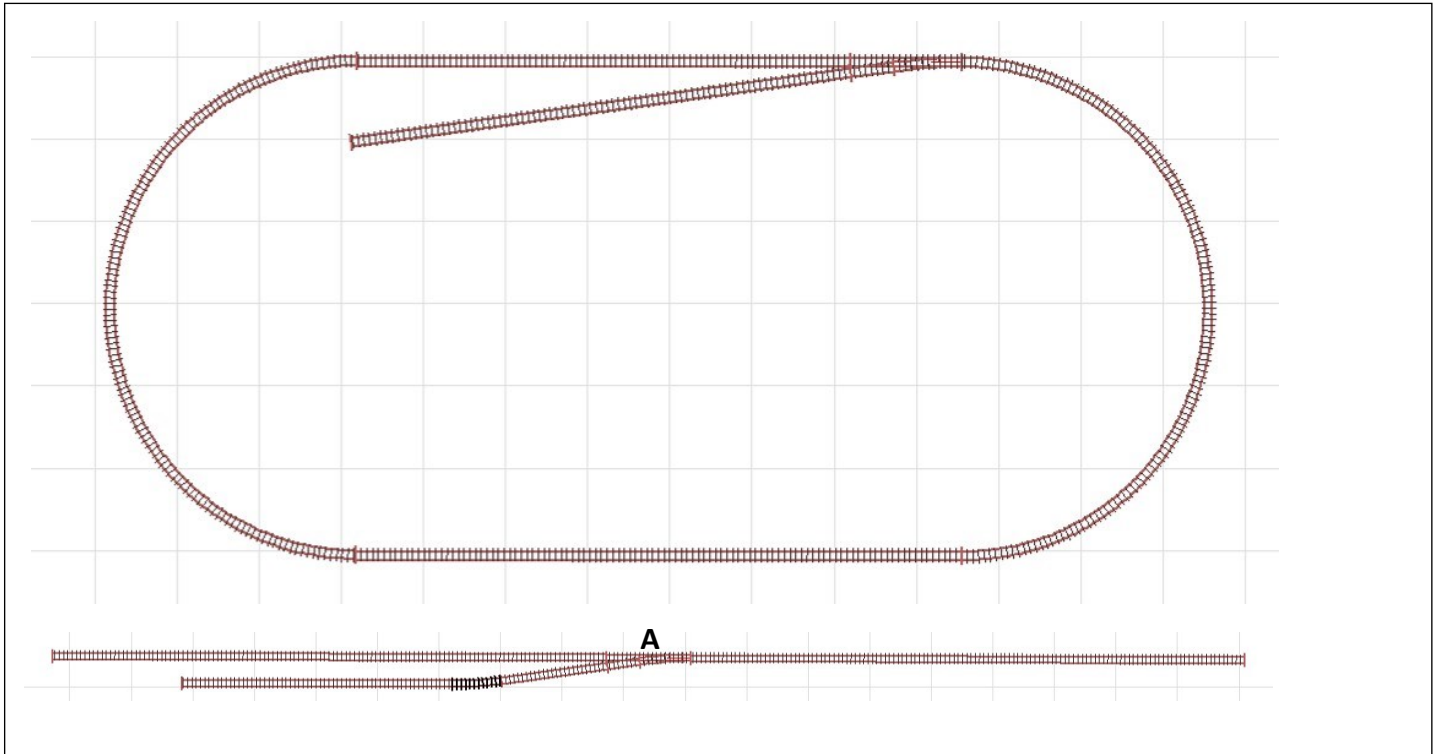


Figure 1. Here are two possible simple layouts that could be used for industrial switching. The top diagram is an oval main line track with a single spur. At the bottom is a straight track, which could be a mainline with a spur (siding). Or, it could be a branch line up to the turnout at A, with two spurs.

If your layout is depicting a real scene you can use the actual industries there of course. If you model a freelance railroad, you can make up some plausible business customers. You can then decide what products they need to receive or ship by rail, and what types of freight cars would be used.

If you model a prototype, your planning will benefit from researching the railway(s) that serve your communities and the businesses along the track. But you don't need to do that to get started, you can just make it up for now, like I did!

So why does a freight train run? Supply and demand. Emp-ties and loads. Timing. Profit. Well, maybe not so much profit in the picture to the right. But who says you can't run a train with just one car? Short lines often do.

To help you get started, we'll walk through the very first steps with some simple examples. Then I'll use my O scale modern era freelanced short line – the Galt & Hespeler Railway (GHR) – as an example. The basic concepts apply to every era although the methods may vary. Note that I'm still modelling mostly plywood season but this just goes to show



A shortline delivery of a single tank car. Graydon Johnston photo. Reprinted with permission of the photographer.

you can start operations as soon as you have the track laid. Indeed, operating your layout early on can lead to adjustments in the track plan to improve realism.

Let's say ACME Widgets (see Figure 2), located trackside somewhere on your layout (a Post-it note marking the location will do to start with) needs to ship widgets by rail. The widgets are shipped to ACME's national distributor Lottza-Thingz. Lottza's warehouse is located somewhere else on your layout.

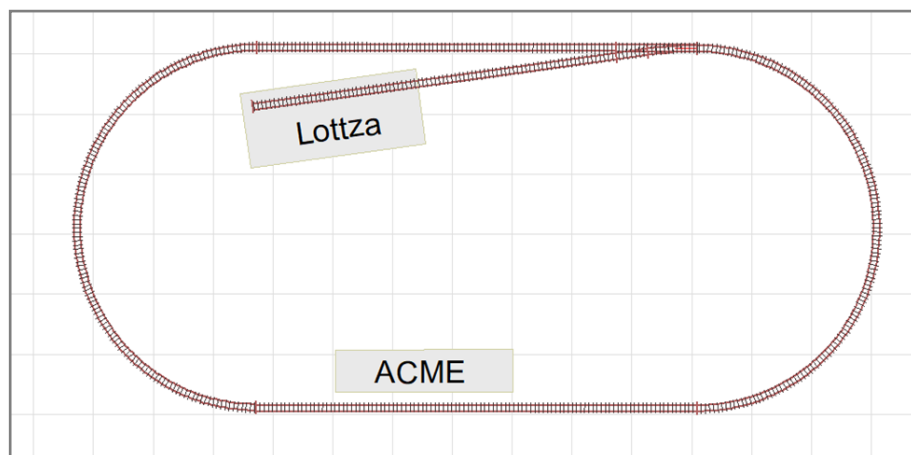


Figure 2.

So ACME needs empty boxcars sent to their loading dock, and Lottza needs boxcar loads of widgets delivered to their warehouse track. That's why the freight train needs to run.

Your train needs to deliver empty boxcars to ACME when ACME requests them. Once loaded by ACME, it needs to collect them and deliver them to Lottza. Then, once unloaded, the empty cars at Lottza need to get collected and returned to ACME. That's freight operations in a very simple form.

You can layer as much detail onto this basic industrial switching concept as you want in the quest for realism and fun. Here are a few considerations that could add depth and detail to your operations:

- How many cars can ACME load per day/operating session?
  - ⇒ If more empties are sent to ACME than it can load or fit in its spur, maybe you need a storage track where cars can be placed (off-spot) until a spot at the ACME dock is open. This can create another switching move or two moves per session.
- What if ACME ships several products that need different car types that load from different doors?
  - ⇒ This might create the need for freight cars to be designated by what commodities they can carry.
  - ⇒ As well the doors (spots) at ACME will need to be numbered.
- Maybe ACME needs to receive some products by rail as well as ship.
  - ⇒ If you have room you can add spots or another spur for ACME also to receive products.
  - ⇒ Maybe this product takes longer to unload, or is only ordered once every few days.
- What if ACME ships more in one day than Lottza can receive?
  - ⇒ Maybe you'll then need car storage space at Lottza.

These ideas can create some more variety in switching moves while still maintaining some sense of realism.

Here's an example of combining these ideas which can make one or two spurs and the main line into a switching job that's a bit different each session. It also takes a bit of strategic thinking to get all the work done in the most efficient and realistic way. I'll use part of my industrial switching layout, the GHR.

Magna Automotive is a customer served by the GHR. It has two spurs. Magna spur #1 has five car spots: Shipping doors 1, 2, 3 and 4 plus a spot for unloading plastic pellets. The four doors all ship auto parts in High-cube



box cars (see Figure 3). But each door ships a different type of auto part and some parts require cars with different internal fixtures. As well, door 3 sometimes takes 2 days to load a car and door 2 doesn't need one every day.

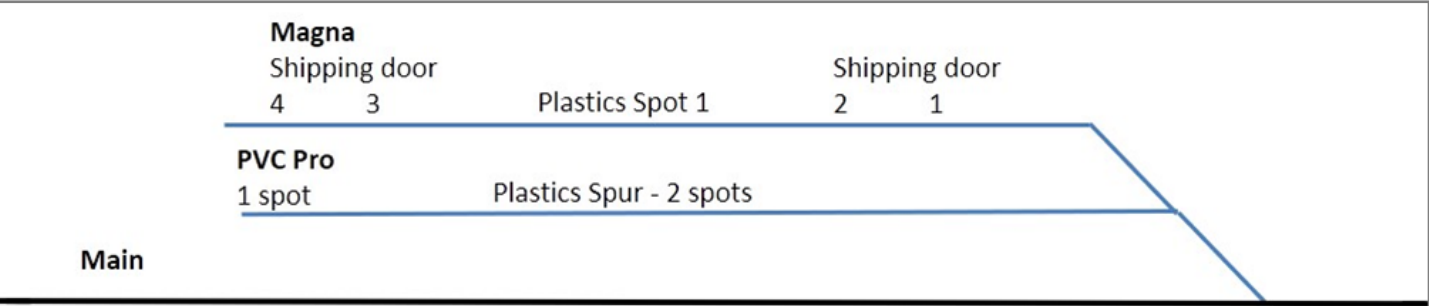


Figure 3. Here's what Magna looks like on the GHR's track schematic that crews refer to.

The GHR train that switches Magna arrives on the Main track with several cars that will replace those already in position (on spot) at Magna that are ready to be pulled.

Before the switching work begins, the conductor will need to plan out the most efficient way to pull all the cars that are ready and spot all the in-bound cars where the correct spot is open. As well, any cars that weren't ready to leave will need to be re-spotted. In addition, any in-bound cars where the correct spot isn't open yet will need to be set out in a permitted storage area (off-spot).



This is the Magna auto parts industry served by the GHR.

Of course, this fictitious switching job feels like it's trying to fit 10lbs of operations into a 5lb bag. But I hope it's not too far from reality. It can create up to an hour of switching fun for a one or two-person crew when operating at scale speeds and taking into account all the activities and communications that would need to occur in the real world.

That's my idea of fun anyway. I hope that operating your layout like a real one could become fun for you too!

**Building on the Foundation**

What if ACME isn't on your layout but is in another region served by different trains or railroads?

You can handle off-layout customers via an Interchange. An Interchange is usually a track that connects to two railway lines that are adjacent. Each railroad can set out or lift cars destined for customers served by the other. In this case, you could designate a spur or just one end of your Main track to be an Interchange. Here another train (maybe imaginary) from the connecting railroad would set out a cut of cars from ACME destined for Lottza.

The local switching job (you) would then need to lift the cars from the Interchange and spot them at Lottza in the correct spots. You'll need to pull the ready-to-go cars from Lottza and set them out on the Interchange. There may be some extra wrinkles here as well. You might need to sort the inbound cars into the right order for the spots on the Lottza spur. And you may have instructions to block the outbound cars in a certain order on the Interchange track. Of

course, you might have the odd car to re-spot as well if it wasn't ready to go.

How could you document the switching operations so the crew (even if it's just you to start with) knows what to do? To start with you could just write a list by hand showing which cars are to be pulled from where and spotted where, or replaced until ready. [*In the Fall 2020 Inspirations we will have an article to introduce readers to the basics of an operational card forwarding system.*— Editor] You could use each car's reporting marks, where it is at the start, and where

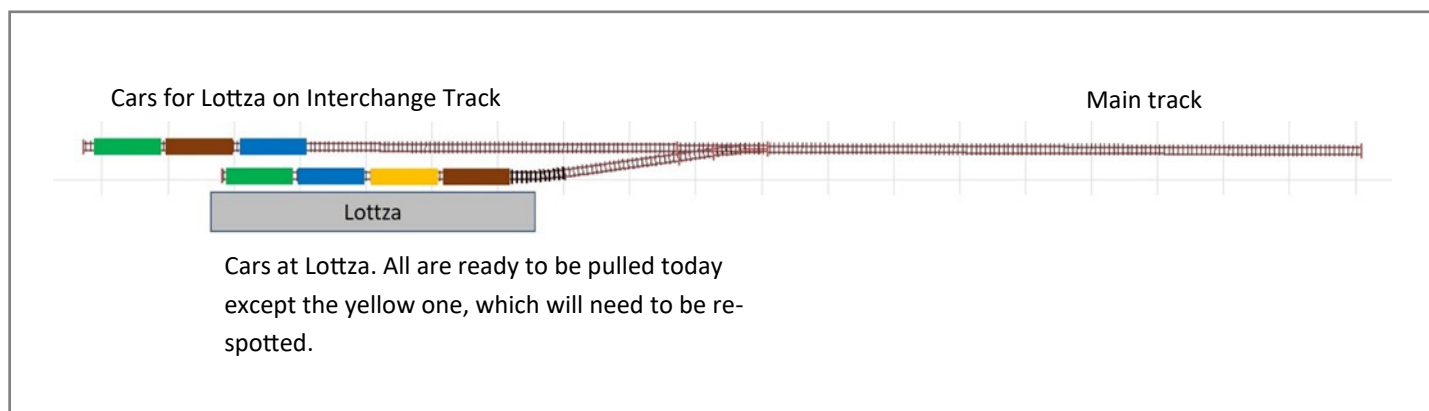


Figure 4. A typical switching assignment.

it needs to be at the end of the session. This could be the start of a switch list or car-cards type of system that you could either base on what the real railroads do in your era, or on one of the proven railroad modellers' systems available.

Operations can also create opportunities for you to replicate the roles and responsibilities as well as communication methods used by the real crews in the era you're modelling. Here are some ways you could go about learning what could be included in your operating sessions:

- ◆ Research your era for guidance on methods, radio language, hand signals, horn blasts, etc.
- ◆ Railfan switching jobs with a scanner if you're modelling the modern era.
- ◆ Conduct online research and maybe join online groups relevant to your era.
- ◆ Ask around at your local clubs. You might be surprised to find a few current or retired railroaders who are also in the hobby.

Here are more layers of detail you might want to consider as you gradually develop your framework for operating your layout like a real revenue-generating railroad:

- What basic rules are needed to make the operations safe on your railroad?
- Who's in the train crew and how should they work together?
- What activities does a train conductor/brakeman need to carry out, and how much of that do you want to model?
  - ◇ Managing paperwork
  - ◇ Communicating with the engineer
  - ◇ Communicating with the dispatcher
  - ◇ Communicating with customers
  - ◇ Unlocking switches to throw, re-line and lock them
  - ◇ Removing and replacing de-rails
  - ◇ Opening and closing gates
- Expand the products carried and car types needed/used.

- ◇ You could create a list of products your industries ship and receive.
  - ◇ Designate an Association of American Railroads (AAR) car type for each of your cars (e.g. XM—general service box car with side or side and end doors) and which products are to be carried in each car type.
- Add a variety of shippers and receivers.
  - Add more products and car types.
  - Create interchange with “the rest of the world” via staging.
  - Decide how to manage running more than one train over your track.

### Learn More: Information Sources

John Armstrong's *The Railroad – What it is and what it does*

<https://www.amazon.com/Railroad-What-Does/dp/0911382046>

Lance Mindheim

<https://lancemindheim.com/book-store/>

Mike Confalone

<https://www.youtube.com/watch?v=mcBvKcwy4HI>

Tim Garland

<https://www.youtube.com/watch?v=ldgnFG0yM-4>

Jack Hill

<http://oscalewcor.blogspot.com/>

Watch five recorded switching sessions on the GHR at:

<https://www.youtube.com/watch?v=mGPOX8plc5Y&list=PLAAExDlbQlcGrpWGXAKZmSQ1c-zvvdOnz&index=6&t=0s>



“Ahead 10 cars, 8212” John Wagner is engineer on the Brock St Yard job.