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# Ten tips for freight yard design and operation

1. Cars don't belong in freight yards. Cars can't be loaded or unloaded in a yard (intermodal yards being the main exceptions), and cars standing in a yard aren't generating transportation. The purpose of a freight yard is to organize cars into trains, interchange transfers, or switch cuts so they can be taken somewhere else for loading or unloading.

2. When space is tight, use something other than a straight ladder. Compound ladders, pinwheel ladders, and ladders on the angle of the next smaller frog will allow longer body tracks in a given length.

3. Include a drill track as long as the longest body track. Allowing a switcher to drag out an entire track for sorting generally expedites classification switching.

4. Allow trains to arrive and depart without interfering with yard switchers. More can be accomplished when switch engines don't have to stop work

to let road trains in or out. Also, operators won't have their plans interrupted.

5. Use staging tracks to provide off-layout destinations for trains and cars. Let staging be the "somewhere else" where cars in a yard are supposed to go, over and above the industries on your layout. Staging can represent any place not displayed on your layout: a distant terminal, a connection with another railroad, or an industrial district (or large industry) just out of sight.

6. Operate with paperwork that deals with cars in the order they stand on the track. Whether you choose hand-written switch lists, car cards with waybills, or computer-generated lists, you'll save time and confusion if you can handle cars in sequence as they come in trains, blocks, and switching cuts.

7. Sort arriving cars by where they go next. Cars classified as they arrive into outbound

blocks and trains require less handling in the yard between arrival and departure.

8. Model a yard located at or near a junction. Consolidating traffic from and separating traffic for different lines adds interest to the switching, even if most trains just pass through the yard. And the junction can be merely "notional" or "conceptual," off the modeled layout in staging.

9. Assign multiple operators to help the yard keep up. A common complaint is that trains cross our too-short main lines so quickly that the yard inevitably falls behind. But does it make sense to expect one yardmaster to keep ahead of six or eight road engineers? Additional yard operators can run a second yard engine, hostile engines at the roundhouse, switch local industries and interchanges, or any combination of these tasks.

10. Double-endedness is a good thing. The more through tracks a yard has, the more flexible it will be for handling trains in both directions. And since the real railroads overwhelmingly prefer through yards, a double-ended model yard will look more realistic.

# BASIC YARD FUNCTIONS



We're going to look at freight yards as sorting centers: facilities with the main function of grouping individual cars into blocks or trains going to the same destination and dispatching them as trains, transfer runs to connecting railroads, or switching jobs serving local industries. Our basic assumption is that most cars in a yard at any time are supposed to be somewhere else. They're just passing through, and the work of the yard is to move them along to wherever it is that they're really going. We don't want to think of yards as places to store cars, except for certain special cases I'll explain later in the book.

Let's take a closer look at yard functions and their model railroading potential.

Woodsriver Yard on Paul Dolkos's HO scale Boston & Maine layout is a sorting center that builds both originating trains and blocks of cars for pickup by through trains. *Paul J. Dolkos*



# The ideal model railroad yard

Here's an example of an "ideal" yard you can use as-is on your own model railroad. You can adapt it from the track plan or follow its schematic to fit a yard into a different shaped space.

It includes double-ended arrival/departure tracks so trains can come and go from either direction. This is a good idea even if the yard will be at the end of the line on your layout.

Remember, a yard isn't a destination. If your road ends here it needs connections to other systems, or to industrial complexes represented by staging.

The classification tracks are single-ended

to save space. A second ladder at the far end of the yard will add that much more length, although if you have the space for it it's a great investment in flexibility. More tracks for sorting and short-term storage would also be welcome.

The switching lead or drill track allows the yard engine to keep working while other traffic, such as passenger trains that won't enter the freight yard, passes by on the main line. The drill track has to be on the ladder end of any single-ended tracks.

Extending the drill track through the backdrop in this case lets it

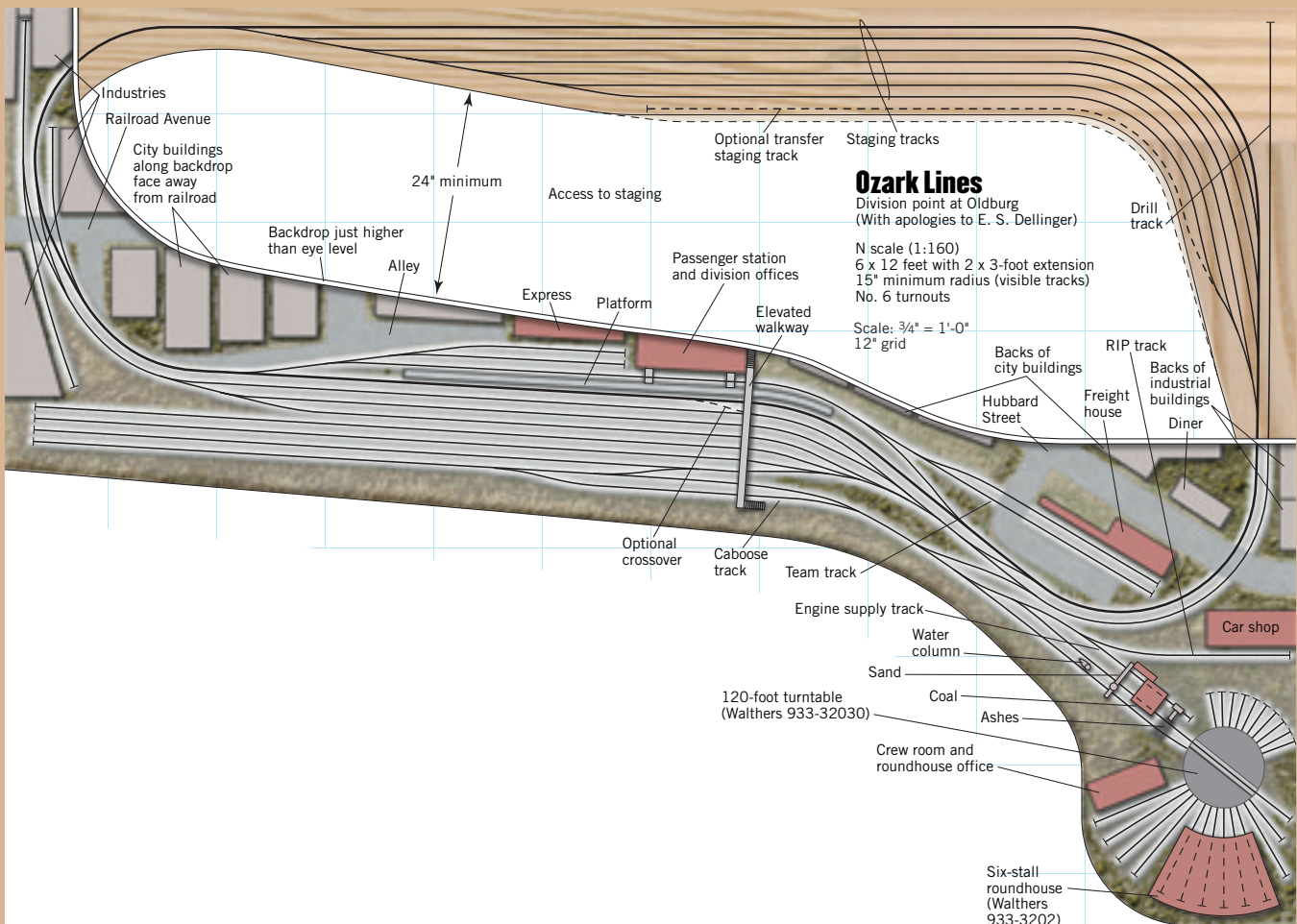
be as long as the longest yard track. That lets the switcher clear any track in one move, then sort those cars into any other tracks in the yard.

Crossovers allow trains to come and go from the arrival/departure tracks also without interrupting switching on the lead and ladder. The optional crossover would let the switcher on the lead work a through train stopped on the main line.

There's a roundhouse, a caboose track, a RIP track, a freight house, and a few small industries. There's even a passenger station so this doesn't have to be a freight-only railroad.

Interchange at this yard would be represented with transfer runs to and from a stub-ended staging track.

This yard is shown as a complete layout in itself, with staging tracks behind the backdrop to provide trains for the yard to work. That's not a bad concept for a compact but action-packed layout, but either or both ends of this yard could be connected to the main line of a larger layout. Since it can perform all the basic yard functions, it could function just as well as part of a more complete system.





Right: Track scales allow railroads to charge for shipments by weight, and can be used for a wide variety of commodities and car types. Balance-beam scales typically could not handle the weight of locomotives, so gantlet tracks were used to allow engines to bypass the scale's live rails. As shown here at the Milwaukee Road's Chestnut Street Yard in Milwaukee, the scale's live rails are usually offset toward the scale house.

*Gordon Odegard*

Below: The RIP (repair-in-place) track is on the left in this view down the ladder at the Chicago & North Western yard in Boone, Iowa. *Henry J. McCord*



• **Adjacent industries and interchanges:** Whether yards are in urban or rural areas, they're often adjacent to industrial property that attracts businesses needing rail access. These may be served by a yard switcher during breaks in classification, or if there is sufficient work an industrial switching job may be established. The yard switcher would classify cars for the industry switcher to deliver, but as a yard job the industry crew might help in assembling its own cars. Always keep in mind the railroad itself when you're looking for industries

around a yard. The engine terminal will need deliveries of fuel (coal, fuel oil, or diesel fuel) and sand, and ash from coal burners has to be hauled away. Shops and storehouses will receive shipments of materials, and items like wheelsets and traction motors may be shipped to another shop for heavy work. If another railroad crosses or passes adjacent to your yard, there can be an interchange track right at that spot. Interchanges are rightly called "universal industries" for a layout because any kind of car might move through such a connection.

• **Car repair and cleaning:**

Almost any yard will have a simple repair-in-place (RIP) track, and at larger yards there may be more extensive car shops. Since any actual repairs will be done on our workbenches this may not seem much of an operational opportunity, but we can use card decks or some other random selection to simulate the need to repair cars arriving in our yard or found defective in a terminal air test (see Chapter 6.) That can make for interesting if unexpected switching to get bad-order cars to the RIP track, and later to pull them out and reclassify them. Empty cars may need to be cleaned or otherwise prepared for loading, and a clean-out track can add another switching spot to maneuver cars to and from.

• **Weighing cars:** Most real yards include a track scale for weighing cars, as this is often the basis for billing shippers. Almost any kind of car can be weighed if necessary, but yards that handle a lot of bulk traffic, like coal, grain, minerals, or cement, will need to weigh many cars. Even with dummy track scales, this can be an extra switching move that can add interest to the process of getting cars on their way. Older scales required each car to be