



The yard house is the first landmark passed by 408 as it enters OJ Yard with a southbound freight. Within minutes, the train will be broken down and the cars assigned to blocks depending on their destinations. The author

discusses in this article how he employs principles used by prototype railroads on his own layout to make car handling in yards a more efficient operation.

## GO WITH THE (TRAFFIC) FLOW

Look to the prototype for help in efficiently designing and operating yards on your own layout. The author shows us how we can save space with smaller yards while also making operating sessions smooth-running and more fun.

### PART III/Yard operations

**T**he scene: A dimly lit clubroom crammed wall-to-wall with a gargantuan model railroad layout and two dozen excited modelers; it is an operating session of the Skookumchuck Society of Model Railroad Trainmen. The yardmaster is busily engaged in putting new shipment bills into car cards while the yard engine scurries track-to-track assembling a train—one car from track 3, three cars from track 5, etc. After a great burst of activity (and about 100 engine moves) the train is ready to

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**PHOTOGRAPHY BY THE AUTHOR**

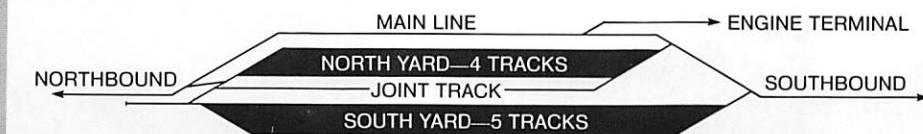
leave the club's mega-tracked yard. As the session proceeds, every train that arrives sits on its arrival track with the yard engine digging out cars as they are needed. The modelers enjoy themselves thoroughly, but all lament the fact there was inadequate yard space—what they really needed was a 65-track yard that would support the layout properly.

The club is made up of skilled crafts-

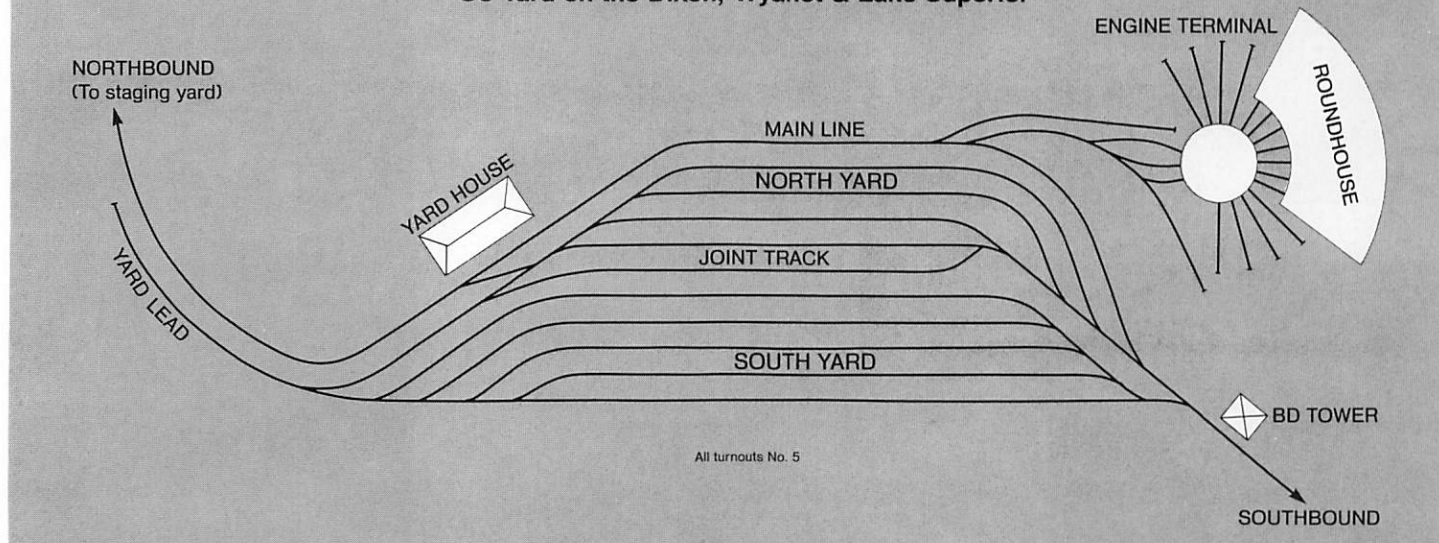
men and modelers who have designed the layout based on the best *model railroad* press. They claim they're interested in prototypical operation but, as is typical, none of the club members works for a prototype railroad. Thus, they don't realize that if designed and *operated* properly (the way the prototype would do it), a 12-track yard would more than support the operations of the club's layout.

No prototype builds a train by digging cars out of various tracks. Trains

### Schematic of OJ Yard



### OJ Yard on the Dixon, Wyanet & Lake Superior



are worked as they arrive (or when the yard can get to them) and the cars are sent (kicked) into tracks that are blocked for a common destination. The point is to handle a car as little as possible and to work the yard with as few yard engines as possible. Yard operations are expensive!

One of the hardest things to do in model railroading is to think in terms of building trains for both the session in progress and for "tomorrow," even if "tomorrow" (the next operating session) is not for months. Yet, this continuity of operation is one of the keys to creating a *railroad model*, not just a model train layout.

### Defining and Designing Yards

**YARD:** A system of tracks, other than main tracks and sidings, used for making up trains.

For a working yard, this is the only part of the Book of Rules (every major prototype railroad follows a published Book of Rules; you can easily obtain one of these for a small cost at most railroad flea markets or swap shows) definition that applies. With the restricted space we usually have to work with, we cannot afford to use a yard for storage or use any more space than necessary for the yard. The yard should be an ever-shifting kaleidoscope of trains being built and torn down.

The key to designing and using a yard is setting up your operation for

both the session in progress and the next session. Working the yard for both today's trains and tomorrow's trains, and understanding the concept of a "for now" track (a convenient empty track into which cars are shoved temporarily until they can be dealt with later) can enable a fairly small yard to service a large layout efficiently. This will also involve abandoning the *model* railroading concept of assembling trains by digging cars out of various tracks. By implementing these changes, operations will go more smoothly and the yard can become fun for the yardmaster running it.

One more item from the Book of Rules is important. Within yard limits, yard locomotives need to clear the main line only for the time of first-class trains (usually passenger trains). All other trains must be prepared to stop for a train or engine occupying the main track. This rule allows you to *prototypically* use the main line for engine movements between trains in the yard and the engine terminal, or even to use a mainline track temporarily for switching. This eliminates the need for the "engine running track" found in so many yard plans—using that track as another yard track is far more productive. If you consider how few trains actually use the main line around a yard, you can see that this track is usually available for yard operations.

To examine prototypical yard operations in action on a layout, we will again use my Dixon, Wyanet & Lake

Superior as an example. At OJ Yard (see the maps of the Wyanet in the previous issue of PM to see how OJ Yard fits into the scheme of things), the northbound loading is classified into three blocks: Dubuques, Peorias and Evansvilles. The Dubuque and Evansville loading is on the head end of a northbound train to be set out in River Yard at Orient Junction for the lines to Dubuque and Evansville (actually everything goes into the staging yard below OJ Yard). The southbound loading at OJ Yard has six blocks:

1. Through cars
2. Mine empties
3. Clinton loading
4. Short
5. Wyanet and Kings cars
6. Ebner loading

With these blocks in mind, let's consider what our yard needs. It should have two tracks for the north loading. (One for Peorias and one for Dubuques and Evansvilles mixed. Send these cars out "dogs breakfast" style—mixed up—and let the River Yard work them.) The south loading needs six tracks, and let's add two arrival tracks. The total is a ten-track yard which can handle ten inbound and ten outbound trains in a 24-hour session. This also includes light engine movements, engines working the coal chute and the sand house, etc. On the average, over 400 cars are moved through the yard in a session.

In practice, OJ Yard is comprised of a



An overall view of OJ Yard on DW&LS. Southbound trains enter the yard by the yard house in the background at left. The southbound main passes BD

tower and leaves the yard in the foreground of the photo. At right is the OJ Yard engine terminal.



Locomotive 720 is on the main with a southbound freight on its way out of OJ Yard. In the background you can see the coal bunker and sanding tower at the engine terminal where 720 was serviced before being sent out to work this job.

four-track "north yard," a five-track "south yard" and a "joint track." The latter is a long track that can be used as a part of either the north or the south yard, but is usually employed as the sixth southbound loading track. Connecting this track at both ends in the same yard (as in a typical yard ladder) would drastically shorten it and eliminate much of its usefulness.

Trains are able to enter and exit the north yard from both ends without interrupting a switcher on the yard lead. The yard engine has but to reach through the crossover to work the north yard. In the south yard, the yard switcher must work from the north end and, as southbound trains are made up, power can be moved in without disrupting the yard engine's work.

By having Orient Junction located north of OJ Yard, the staging yard is able to represent Peoria, Dubuque and Evansville destinations and still have but one track entering the yard. Since the real purpose of a staging yard is simply to feed the modeled portion of the layout, a single main track between OJ and the staging yard is sufficient.

### Working OJ Yard

Let's look at some typical operations at OJ Yard. Starting at 12:01 a.m.,

# Handling southbound traffic at OJ Yard

## Southbound arrivals from Orient Junction (staging yard)

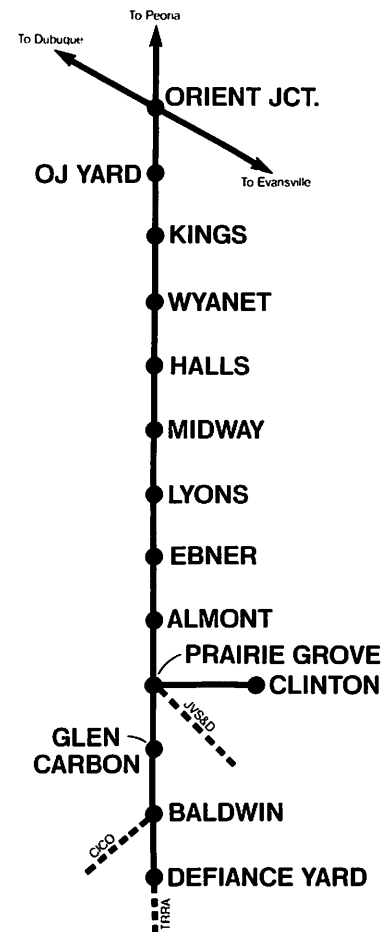
Train	Time
375	12:01 a.m.
377	4:01 a.m.
Extra south	
371	10:01 a.m.
373	4:01 p.m.

## Lineup of southbound loading at OJ Yard

Blocks	Notes
Through cars	Cars bound for Defiance Yard
Mine empties	Lined up on one track and used as fill
Clinton loading	Lined up on one track with cars blocked for Clinton Terminal Ry.
Short	Cars bound for Halls, Midway and Lyons
Wyanet and Kings cars	Blocked for head end of No. 375
Ebner loading	Cars bound for Ebner, Almont, Prairie Grove, JVS&D, Glen Carbon and Baldwin

## OJ Yard southbound departures

Train	List Time	Loading
375	2:01 a.m.	Through, Wyanet and Kings cars, mine empties
381	9:01 a.m.	Short
377	2:01 p.m.	Through cars
371	8:01 p.m.	Clinton
373	10:01 p.m.	Ebner, filled with mine empties



No. 375 enters OJ Yard from the staging yard; the cars are left on an available arrival track in the north yard and the road power goes to the engine terminal. The switcher works the train by taking off any OJ cars and adding any Defiance loading on hand. The train will be filled out with Wyanet and Kings cars and with whatever tonnage of mine empties can be accommodated. The Wyanet and Kings loading, as well as the mine empties, would have been blocked in the south yard. When 375's fresh power comes out of the engine terminal for its 2:01 a.m. call, a double move from the south yard to the north yard will be required to get the two sections of the train together.

In the meantime, the switcher has been working the OJ cars pulled off 375's inbound train: Clinton cars go to the Clinton block, the Ebner loading goes to the Ebner block, etc. All the shorts for the local freight (No. 381) get set into a "for now" track. This process continues with a southbound Extra (or a second 375) which arrives between 2 and 2:30 a.m. with mine empties and dead freight in tow, and

with No. 377, which is due in at 4:01 a.m. or thereafter.

As the trains arrive, the switcher continues to break them down and move the cars to their proper blocks. After 377's train has been switched, the yard engine reaches into the "for now" track and starts to line up the train for No. 381—its 9:01 a.m. call is rapidly approaching. After No. 381 has left town, the switcher continues to work incoming trains, as normal, with all shorts going into the "for now" track for tomorrow's No. 381. The same applies to all other loading; as the train carrying that block leaves town, the building of tomorrow's train starts.

No track in the yard is an "assigned" track; the switcher starts a block on the most convenient available track. Thus, the point is not to develop yard plans with carved-in-stone labels like "Jonesdale track" or "for now track." Instead, label the tracks 1 through 10 and let the switcher on your working layout use the tracks as necessary to handle the traffic.

Number 373 is called at 10:01 p.m.

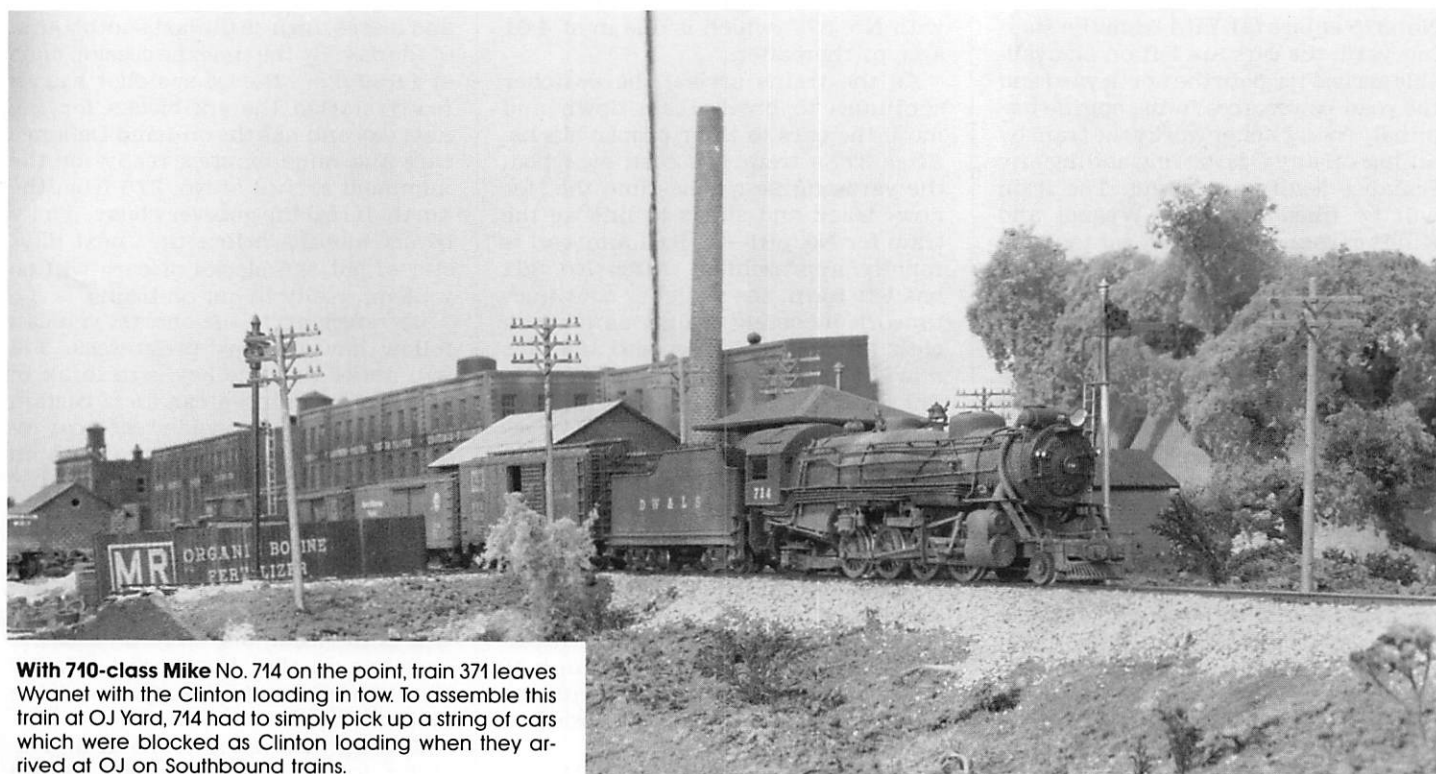
and leaves town as the last southbound of the day. By the time the session ends at 11:59 p.m., the OJ switcher has already started the six blocks for the next day and has the on-hand Defiance cars and mine empties ready for the imminent arrival of No. 375 from the north. If real life gets very busy, it may be six months before the "next day" starts, but the blocks of cars will be waiting, ready to put on trains.

By referring to the charts, you can follow how the day progresses. You will notice that the key is to think in terms of blocking a car for a certain train, and not to consider each car individually. For example, a car is an EBNER, not a load for the Prairie Grove team; a car is a SHORT, not an empty for Hayes Industries in Wyanet, and so on. This puts the cars onto the proper track and requires handling them only once. The only exception to this is the local, but all of its cars are together on the "for now" track; all that is needed is to line up the cars in station order.

Putting these simple, efficient principles to work on your own layout



**On the turntable** at the OJ Yard roundhouse: 408 is on his way out to work another southbound job out of OJ after time in the shops for servicing.



**With 710-class Mike No. 714 on the point**, train 371 leaves Wyandot with the Clinton loading in tow. To assemble this train at OJ Yard, 714 had to simply pick up a string of cars which were blocked as Clinton loading when they arrived at OJ on Southbound trains.



**Extra 700 North** enters OJ Yard as 714 waits with an Almont turn which handles empty mine cars at the hopper yard at Almont. The cars on 700's train will be blocked on one of two tracks: one track for Evansville- and Dubuque-bound cars and one track for Peoria loadings.

should not be a difficult task. Consider how your loading can be handled in blocks and you'll see that yard operations can be greatly simplified and more enjoyable. You might even discover that you can redesign your 50-track yard and make some space for that structure you scratchbuilt and couldn't find room for since you didn't want to sacrifice operating realism. Fortunately, this is one circumstance where looking to the prototype can

provide you with the simpler solution.

Thanks for sticking with me through the whole series. I hope you can put some of these ideas in action on your own layout. If you have any questions or if you would like to have us address some other topic on prototypical operation, let us know! We will do our best to deal with your queries using future articles or through our monthly Company Mail column.

## Call Sheets

On my previous layout I used employee timetables and job assignment sheets for operation. A job assignment would have an operator working a set series of trains, i.e., Nos. 370, 23, 374, 25, 377. I suppose this would have been fine if every train had run right on time, but what happens if 370 was still in the middle of its run when No. 23, a passenger run, was due out? Its assigned crew was still on 370; a new crew would have to be called. Each change in list time and job assignments would end up involving new paperwork which, in the case of employee timetables, could take quite a bit of time to make up.

One thing became clear: Only operating sessions can expose weaknesses in schedules and reveal the necessary changes. When I built the new Wyanet, I wanted to have something that would cover all the bases and would be easy to use and modify. The dispatcher needed to know, at a glance, what a train's loading and priority was. The caller needed a quick way to keep track of his crews and what trains needed to be called. I also needed a cheap and dirty employee timetable that gave the list times (theoretical departure times) that would also be easy to change.

What evolved out of these needs was the "call sheet" shown here. In practice it has been interesting to compare the theory of the call sheet with the actual results of a session recorded on the dispatcher's sheet. After a few sessions (sometimes only one) the needed changes are quite obvious. By using the call sheet, the schedule changes involve using some typewriter correction fluid and inserting new times; or, for major overhauls, making up a new call sheet, which takes about 15 minutes. It is also proving to be a handy way to work out schedule changes for the proposed new south end of the Wyanet and for the Farmington District (a branch on the new south end). This call sheet held up for more than one year's operation, and I was about to work up a full employee timetable with special instructions until the planning for the new south end put that project on hold.

The call sheet shows the time, train numbers and loading of the various jobs on the Alton District. In operating sessions the dispatcher and caller both use the call sheet, but most crew members never need to see it as each crew has a work message for their train.

The call sheet, above all, is a product of my preference to build cars, structure, scenery, etc. rather than waste my time on paperwork. Real life provides us with more than enough of this unwanted commodity!

TRAIN	LIST	AT	LOADING	CREW
373	(1201A)	ON LINE	EBNER	RINEHART
376	(1201A)	ON LINE	EBNER	SCHNEPF
370	1201A	DY	THRU PERISHIBLE MOOSE	DANZ
C.I.C <sup>o</sup>	1231A	KY	CLEANER COAL	SCHRAMM
375	201A	OJ	THRU WYA & KINGS	FISSELL
JVS & D	401A	PRAIRIE GROVE	TO EBNER	GULBRANDSEN
22	531A	DY	PASSENGER	SCHAFFER
21	631A	OJ	PASSENGER	WILLETT