

An aerial photograph of a large industrial yard, likely a rail yard or manufacturing facility. The image shows numerous tracks, buildings, and various pieces of equipment. The text is overlaid on the image.

Yard Operations and Design

“Yard operations for boomer operators and design for the owners who host them”

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Yard Design and Operation

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Agenda

- What is a yard?
- What kinds of yards are there?
- Why are yards located where they are?
- What tasks are performed in yards?
- What yard jobs do we model?
- Preparing to operate the yard
- Strategies for visiting operators
- Suggestions for the owner/builder

What's a yard?

“A system of tracks within defined limits provided for the making up of trains, storing of cars and other purposes over which movements not authorized by timetable, or by train order, may be made, subject to prescribed signals and rules, or special instructions.”

WP Operating Rules 1972

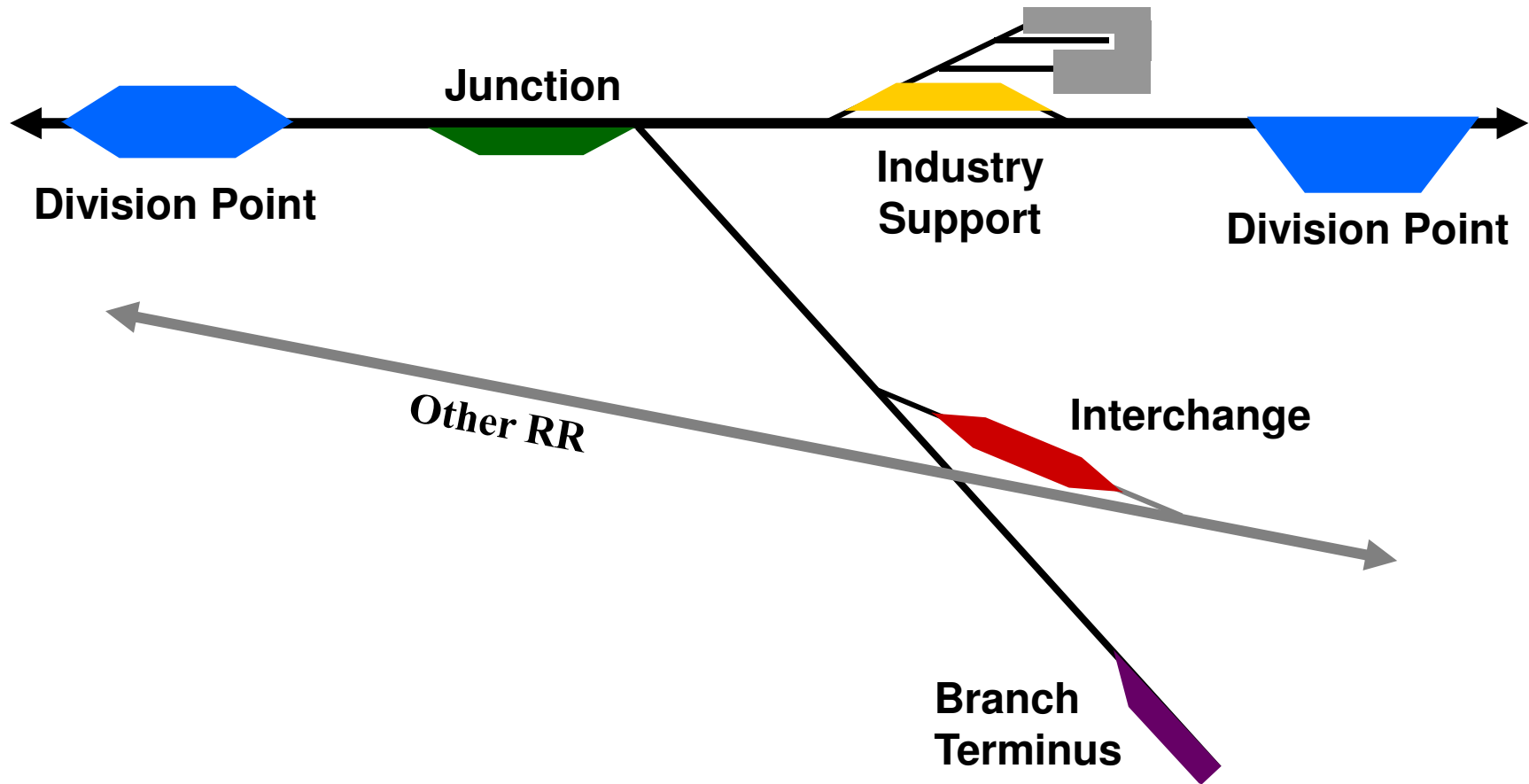
“Within defined limits”

- Yard Limits
 - All movements at restricted speed: prepared stop within half the visual distance to any obstruction...
 - Marked with “Y” sign
 - May extend beyond the end of the yard: for example WP San Jose Yard limits extended from the North end of Milpitas to the South end of the branch
 - Generally under control of a Yardmaster
 - You may not leave Yard Limits (even for a quick runaround) without the permission of the Dispatcher
 - Yard Limit rules apply to the main track only

“Making Up Of Trains, Storing Of Cars”

- Classification (including Hump)
- Making and breaking trains
- Block Swapping
- Industry support (example: marshalling yards)
- Storage
- Staging (Model Railroad Thought)

What kinds of yards are there?



Why are yards located where they are?

Classification Yards

- At division points
- At other points where major branches diverge
- At ends of helper grades

Industry yards

- Near the supported industry (for example: Milpitas, CA)

Storage

- At an inexpensive location (or any unused branch)

What Yard Jobs Do We Model?

- Yardmaster
- Trimmer(s)
- Tower man/Herder
- Hostler
- In-yard industry switcher
- Operator/agent
- Some of these may be done by a passing road switcher, this is fairly common in the West

These are often combined on model railroads but may be subject to “labor agreements”

Helpful Items for the Host

- Clear, consistent signage
- Label everything:
 - Turnout controls
 - Magnets
 - Track diagrams
- Fast Clock should be visible in Yard
- Post order of trains arriving in yard and what work is to be done
- Smooth running trim locomotives (back-EMF if DCC)
- White boards to track allocation of tracks (if dynamic)
- Adequate, well marked car card pockets or clear switch lists (with switch lists, consider the impact of late trains)
- Work space for sorting cards, marking switch lists – little tracks from TAP plastics
- Documentation: job briefs, schedules, rules
- Briefings and debriefings

Caveat on Prototype

The next few slides apply more to freelanced or “interpretive” railroads, if your prototype did it a certain way, try to follow the prototype to the point where it is diminishing the enjoyment of operations. At that point consider modifications: model railroading is supposed to be fun!

Design Suggestions - 1

- Turnout controls – need to be clear
 - Manually push points (can't throw under moving train)
 - Ground throws
 - Remote switches or panels – label clearly
- Cabs and throttles
 - Walk around: lots of jacks
 - Best yet, wireless – no cords to tangle, especially if road crews pass through yard aisle
 - Hooks or velcro for cabs, clip boards
 - Hostler workspace to dispatch power
- Aisle space
 - 30" back to wall
 - 48" if back to other operators
 - Yard aisle occupancy on "need to be there" basis

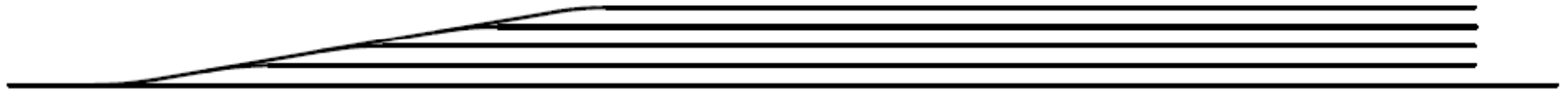
Design Suggestions - 2

- Leads
 - a long straight lead is best, but better to fold around an inside curve than an outside curve – too many people standing at the end of the blob
 - Best to have a direct connection to the main within Yard Limits
- Ladders
 - Simple, straight ladders easiest but space may dictate other arrangements
 - Keep within 24” of aisle for manual uncoupling: Magnets are evil!
- Body tracks
 - More is better
 - Most non-hump yards do not have separate A/D and classification tracks – try to pool the double ended tracks
 - stub ended tracks for classification save space but are not common on the prototype
 - If you have a long but narrow yard, consider some crossovers, effectively makes more tracks
 - Label tracks clearly (little decals on track ends). I spend a lot of time counting tracks

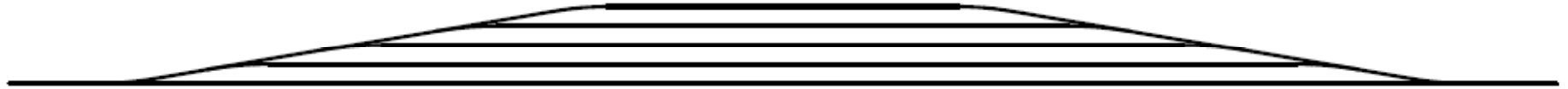
Yard Design Options

- Single-ended, double-ended, mix
- Yard shape
- Ladder type
- Yard lead?
- Dedicated Arrival/Departure tracks?
- Driven by *purpose* and *location* of yard
- Space is always the trade-off

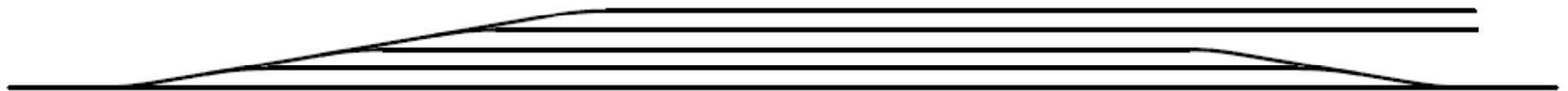
Yard Arrangements



Single-ended

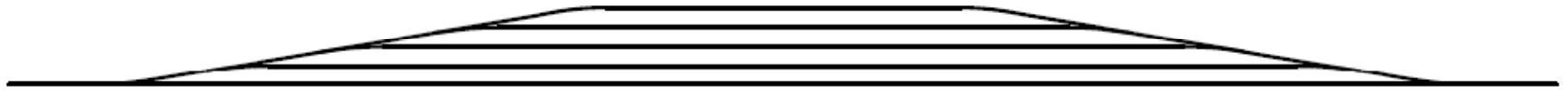


Double-ended

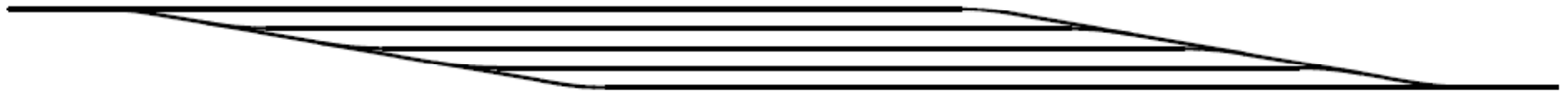


Mix

Yard Shapes



Pyramid



Diamond

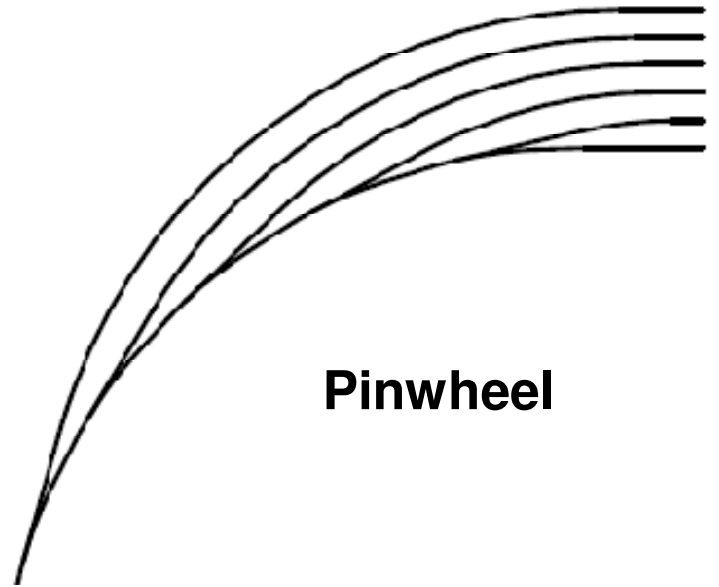
Ladder Types



Simple



Compound



Pinwheel

Yard Lead

Lead extends to allow classification
without fouling main line



Needed more on model than prototype

- Train operating densities
- Short mainlines
- Switching is relatively time-consuming

Good Example:

West end of Orchard Yard on Rick Fortin's 4th District, Valley Division

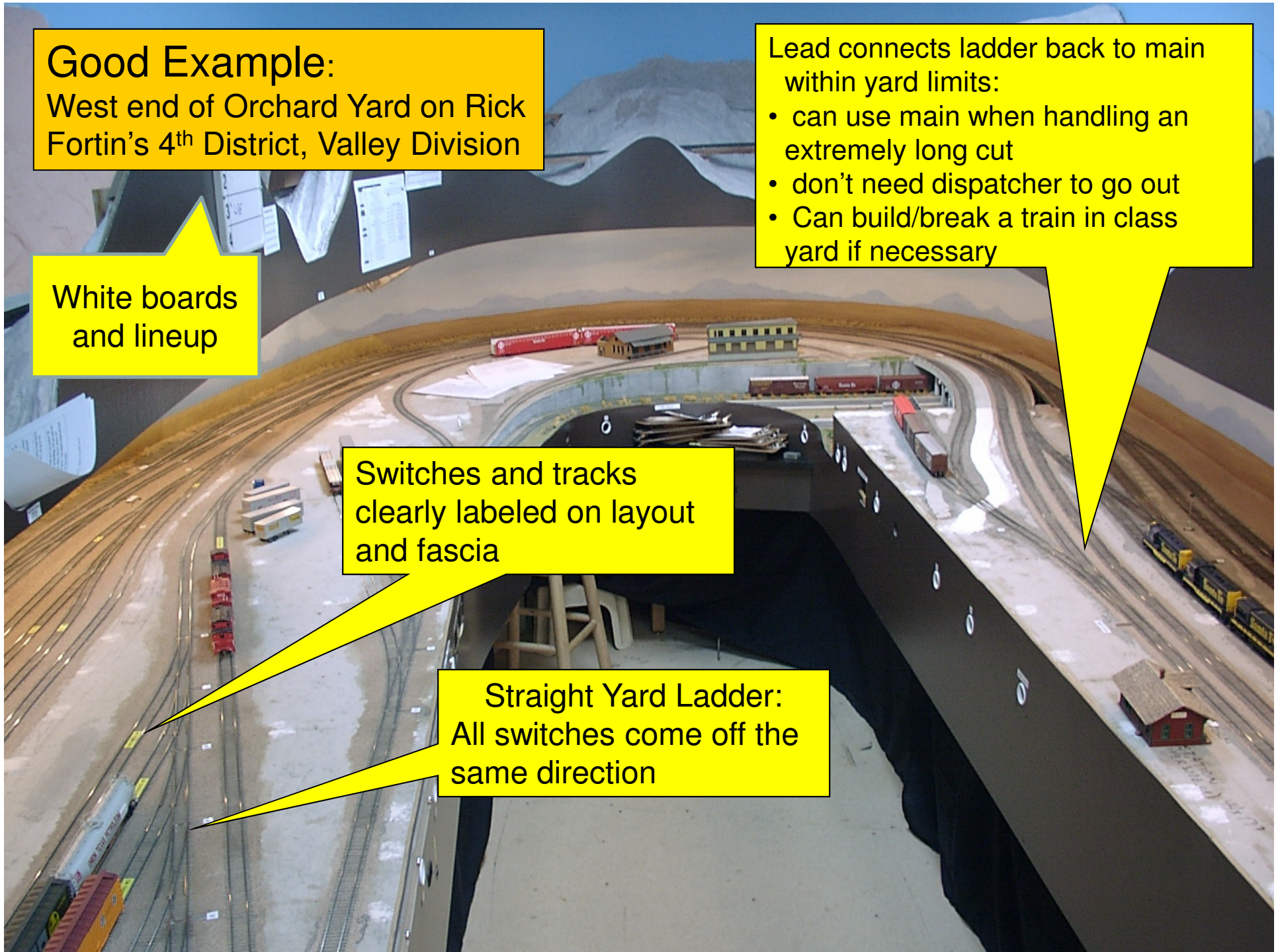
White boards
and lineup

Switches and tracks
clearly labeled on layout
and fascia

Straight Yard Ladder:
All switches come off the
same direction

Lead connects ladder back to main
within yard limits:

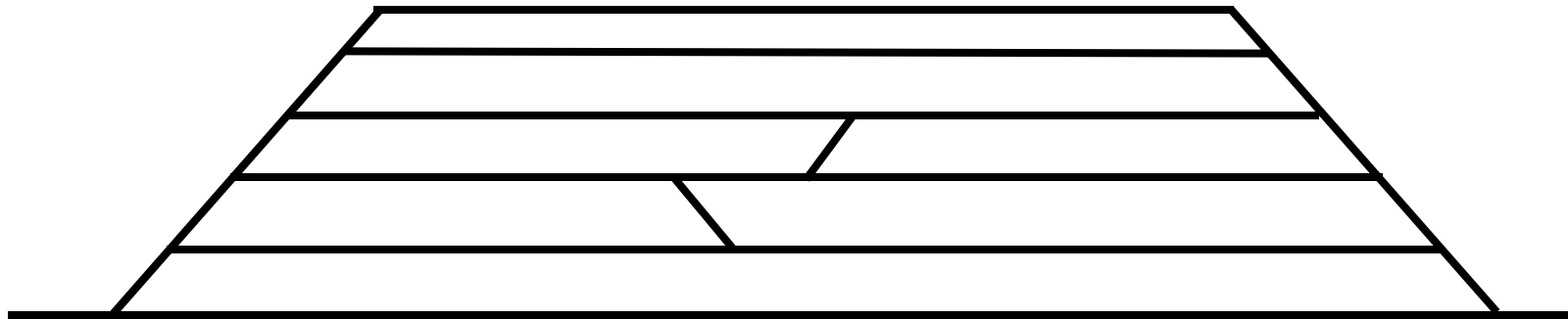
- can use main when handling an extremely long cut
- don't need dispatcher to go out
- Can build/break a train in class yard if necessary

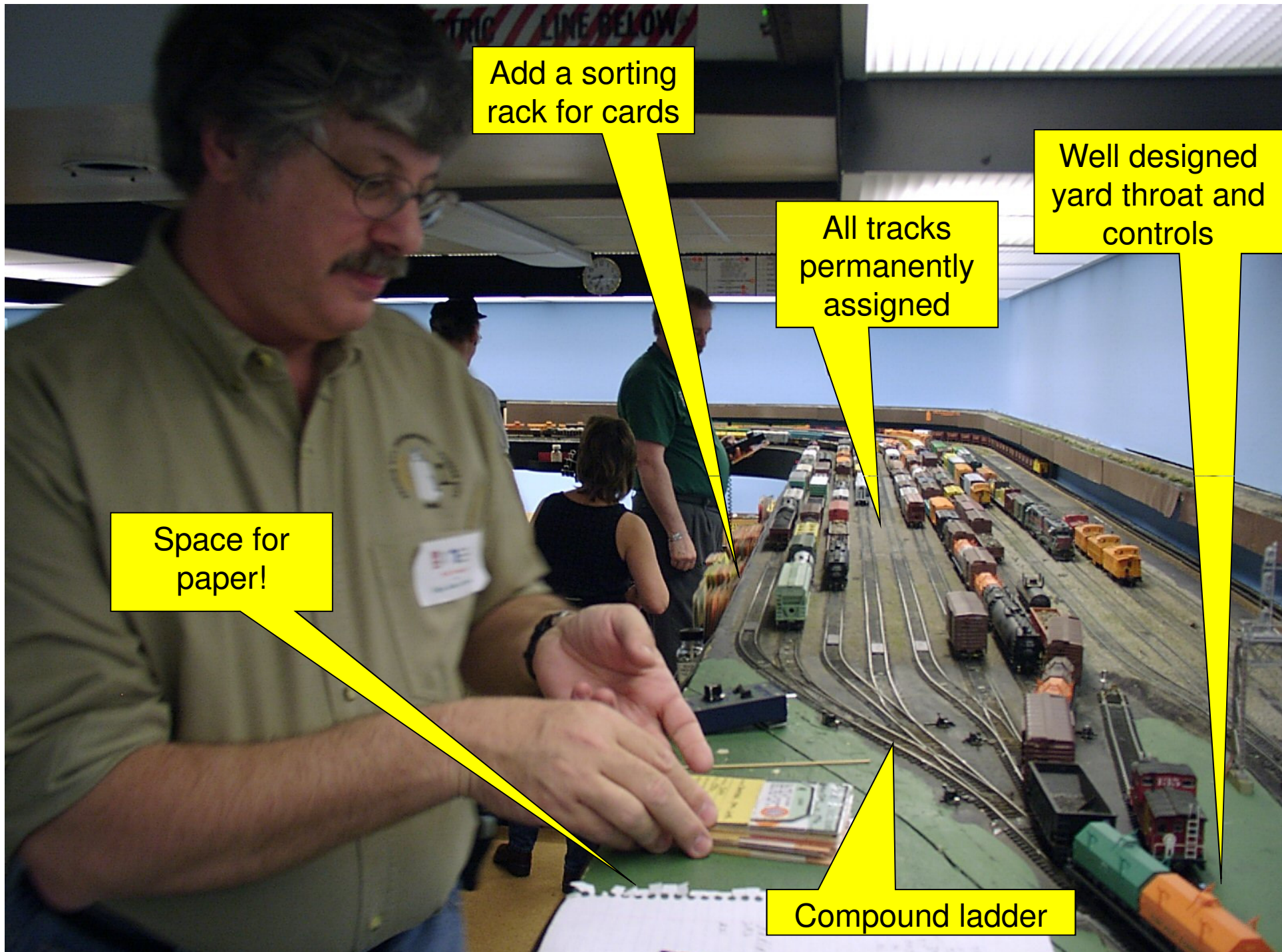


Long Yard

Crossovers in a long, narrow yard :

- provide convenient run-arounds
- Effectively create more tracks to store sorted cuts in





Add a sorting rack for cards

Well designed yard throat and controls

All tracks permanently assigned

Space for paper!

Compound ladder

- Most of yard beyond reach
- Must couple of curved track
- Magnets

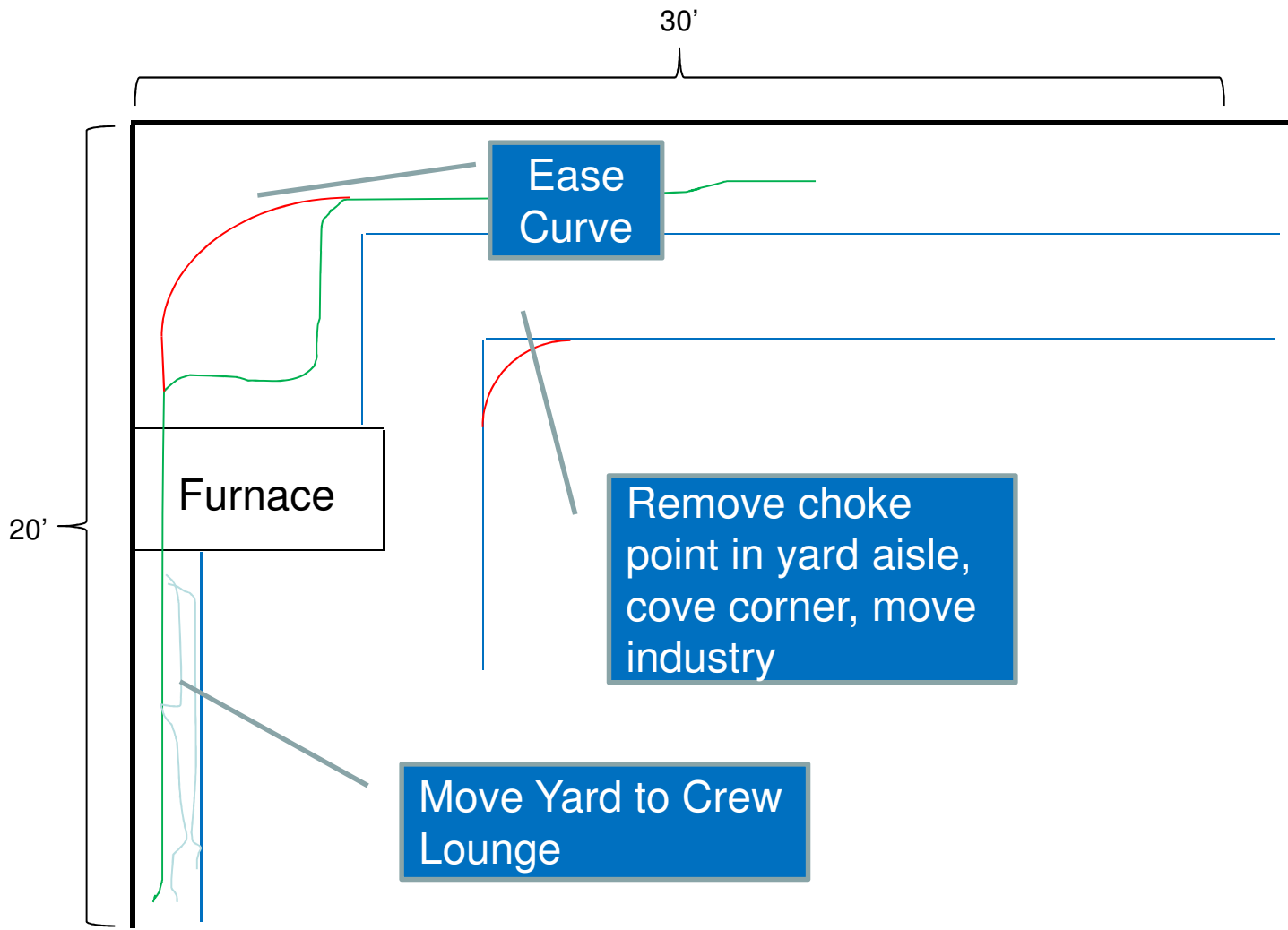
30'

20'

Furnace

Industry against aisle

What's wrong with this picture?



Questions to ask before designing a new yard

- Match the yard to your operational scheme:
 - (at least in the West) non-hump yards do not usually have Arrival/Departure tracks – are you modeling Roseville?
 - Can your yard justify a Yardmaster and permanent switcher? (many yards have a clerk and the locals work their own trains)
 - What roles do you want to model?
 - Can you trade yard work for more road crew work?

Resources - Print

- ***Track Planning for Realistic Operation*** John Armstrong (Kalmbach) – the bible!
- ***LDJ Freight Yard Issue, June 1992*** – Commentary on the bible
- ***Freight Terminals & Trains***, John Droege reprinted by the NMRA 1998, great source material
- My article on visiting yardmaster: *Dispatcher's Office* Volume 8 #4 Jan 02 – the genesis of this clinic
- ***Freight Yards***, Andy Sperandio, Kalmbach, shows plans and explains features. Good tutorial.
- ***North American Railyards*** – Rhodes, covers major North American classification yards

Resources - Internet

- LD-Sig Primer:
<http://www.ldsig.org>
- Op-Sig Primer:
<http://www.opsig.org/primer/yards.shtml>
- Byron Henderson's Web site
<http://www.layoutvision.com>
- Craig Bisgeier's Web Site
<http://www.housatonicrr.com/>