A Quick & Easy Start for Operations

A Clinic for Beginners

Operations: Meaning and Myths

"Operation" includes:

- Purposeful movement of rail cars and trains

- Simulation of some aspects of real railroading

- Fun and (a selectable degree of) challenge

Operations: Meaning and Myths

"Operation" is <u>not</u> :

- Joyless and stressful
- A chance to make fun of the newbie
- Only for elitists
- Defined by anyone's standards but your own
- Dictated by a single set of universal rules, requirements, and regimens
   - e.g., Fast Clock, TT&TO, etc., etc.

Today's Topics

- Distribution, Transportation, Control

- Examples from different layouts

- Prep the layout: simple supplies & tools

- Ideas for the first session

- Questions

- Adding complexity over time: suggestions for more fun and challenge

Distribution (and Collection)

- Moving cars to- and from specific industries and spots

    Major cost factor on the prototype

    Major fun factor on the model

- Purposeful movement is more than "pick up two, set out two"

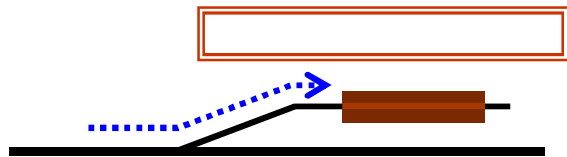- Systems and tools generate this movement

Classification

- Takes place between distribution and transportation

- Organizes cars for efficient delivery or handling over-the-road

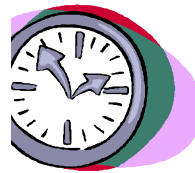- Often in yards, occasionally elsewhere
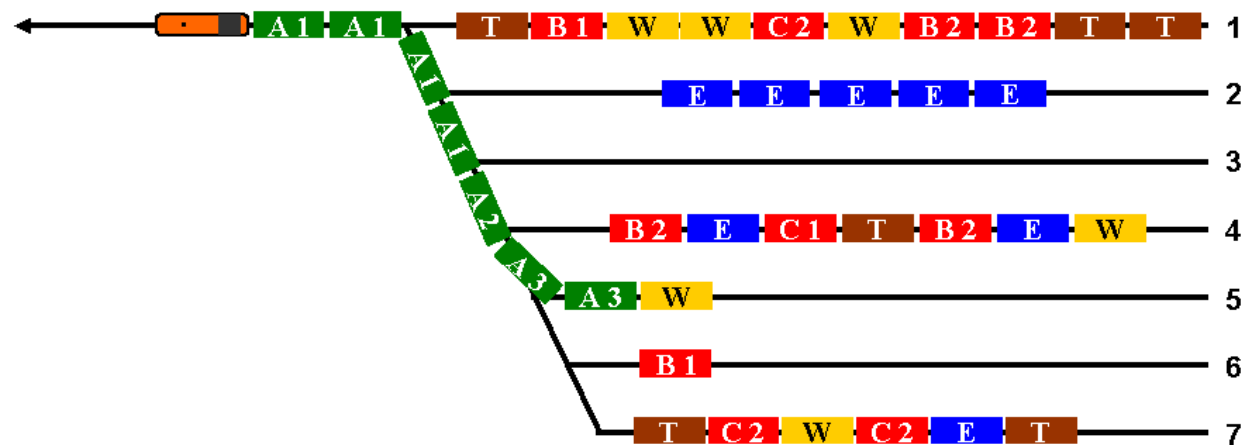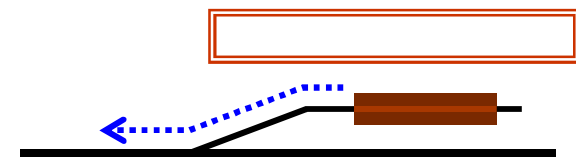
Distribution -- Moving Cars

- Simulates flow of loads and empties
- Typical flow

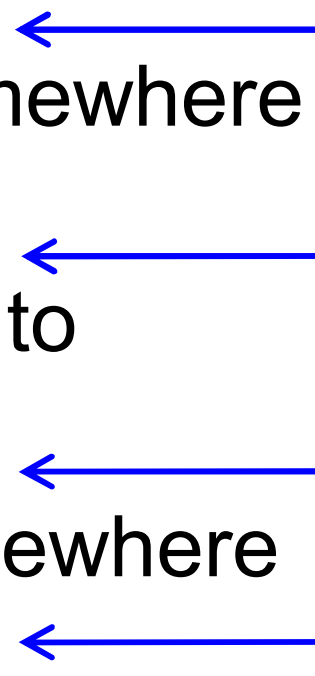Empty car to on-layout Industry

("loaded" between sessions)

Loaded car to "somewhere else"
Staging or another industry

- And vice-versa, with loads being delivered and empties taken away

Sample Pattern for a Car

1. Load from "somewhere else" to on-layout Industry "A"

2. Empty from Industry "A" to somewhere else

3. Empty from "somewhere else" to Industry B

4. Load from Industry "B" to "somewhere else"

Imagine loaded or unloaded between "sessions"

"Somewhere else" may be Staging

Industry "B"

West Staging
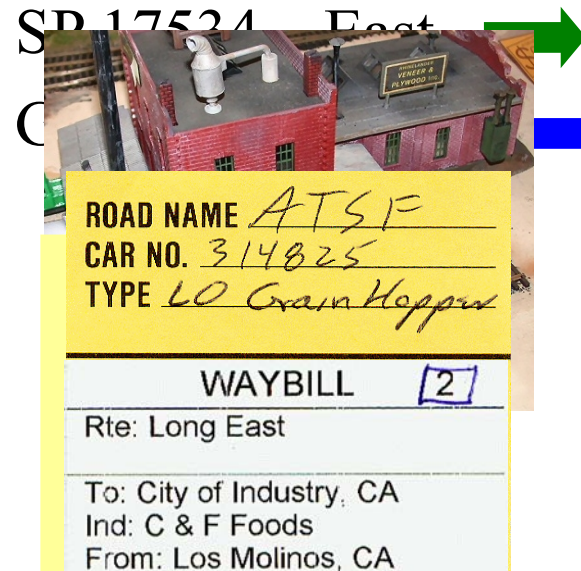
Industry "A"

East Staging

Visible layout
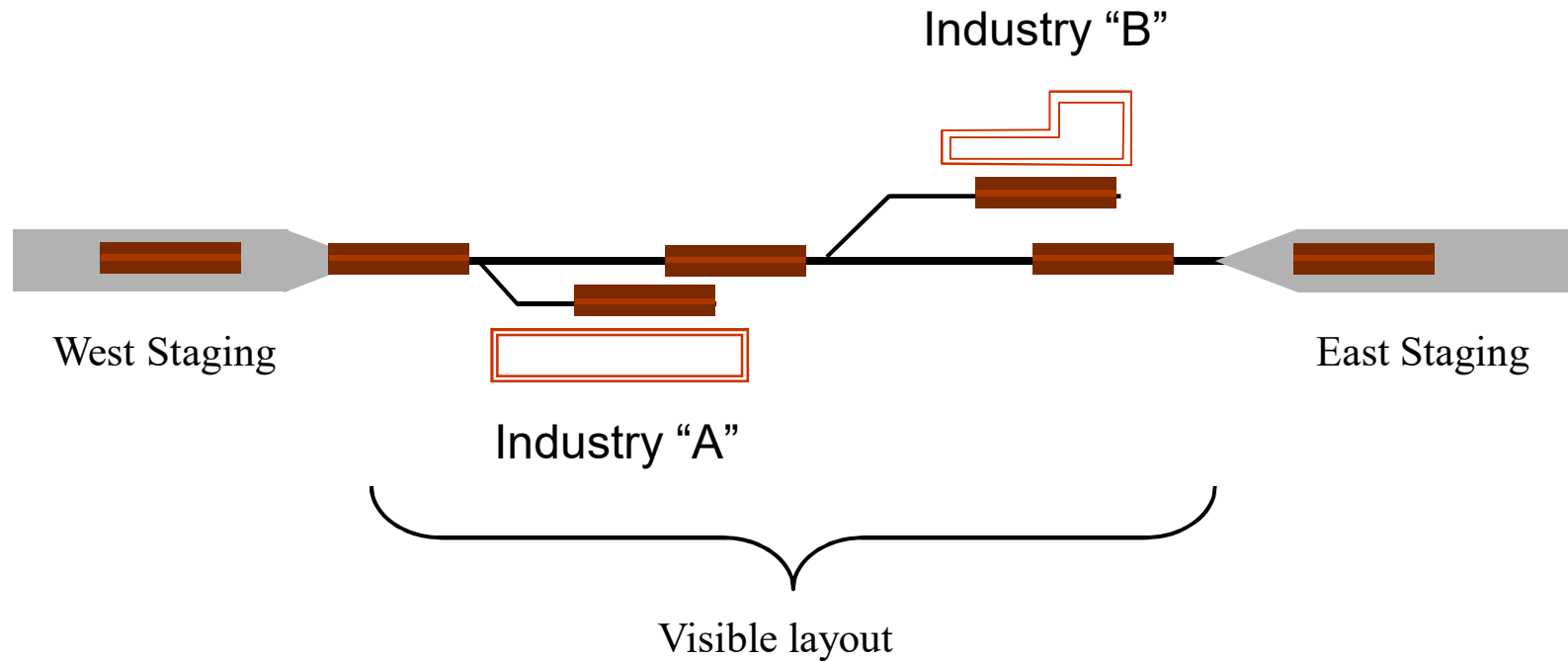
Staging: Function, not a Place

- Dedicated yards (hidden or visible)

- Interchange tracks

- Tracks within visible yard

- Moveable sections (cassettes, et al)

- Many track segments possiblities
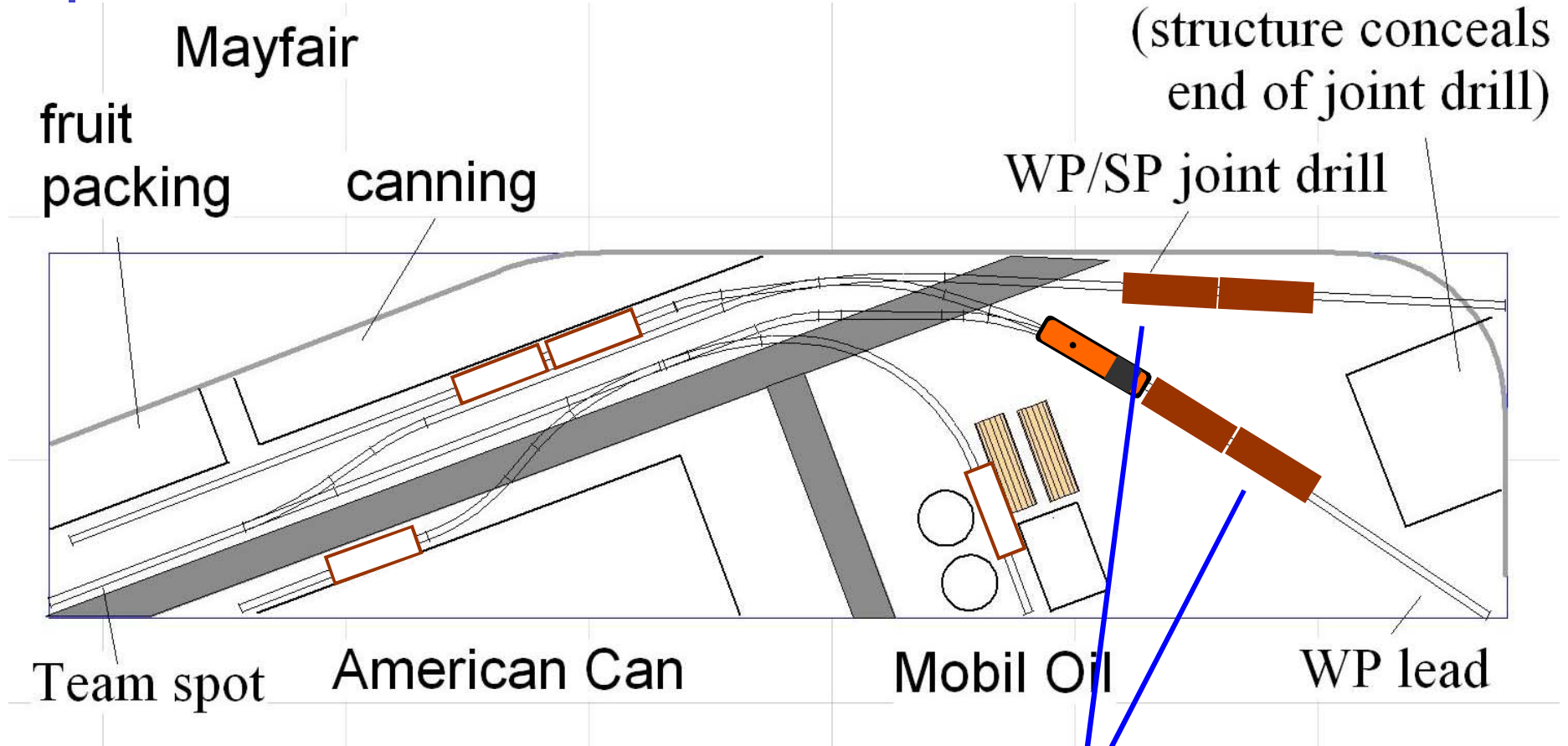
Staging is in how you use it

Systems and Tools

- ## Simple rules
  - e.g., "Evens and Odds"
- ## On-car indicators
  - Tabs or tacks
- ## Sequence systems
  - Car card with check-off list
  - Car cards and waybills
- ## Switchlists
  - Manual
  - Automated
- ## Self-correcting?

SP 17524 — East

ROAD NAME *ATSF*
CAR NO. *314825*
TYPE *LO Grain Hopper*

WAYBILL [2]

Rte: Long East

To: City of Industry, CA
Ind: C & F Foods
From: Los Molinos, CA

Western Pacific RR
SWITCH LIST

		Car				
6th St Job	Initials	ID	Type	From	To	Track
Date: Sep. 3, 1955						
1	SFRD	346	RS		Mayfair Fruit	Spot 32
2	DRGW	224	XM		Mayfair Whse	Spot 1
3	SN	625	XM		Mayfair Whse	Spot 3
4	ART	Yellow	RS	Mayfair	SP	
5	FGEX	Yellow	RS	Mayfair	SP	
6	UP	Brown	XM	Mayfair	SP	
7	SP&S	Brown	XM	Mayfair	William St	
8	GN	Red	XM	Canco	William St	

Movement on a Switching Layout

Mayfair

fruit packing

canning

(structure conceals end of joint drill)

WP/SP joint drill

Team spot

American Can

Mobil Oil

WP lead

"Somewhere else"

Transportation

- Moving trains of railcars over-the-road from place to place

- Types of trains (many variations)

  Locals -- deliver to-and-from industries

  Through trains -- move between locations with fewer or no stops en route

  Passenger trains --moving people with few or many stops en route

- Systems and tools to create and control train movement

Transportation -- Adding Trains

- Locals to deliver and collect cars
 - May be point-to-point or "turns"
  - On a small layout, these may be the only trains
- Through trains swap "blocks" of cars
  - Moving cars "somewhere else"
  - May swap in yard or along the line
- To begin, add a small number of each
- Add passengers trains for atmosphere, interaction

Ops on a ~~4X8~~ 5X9 or so
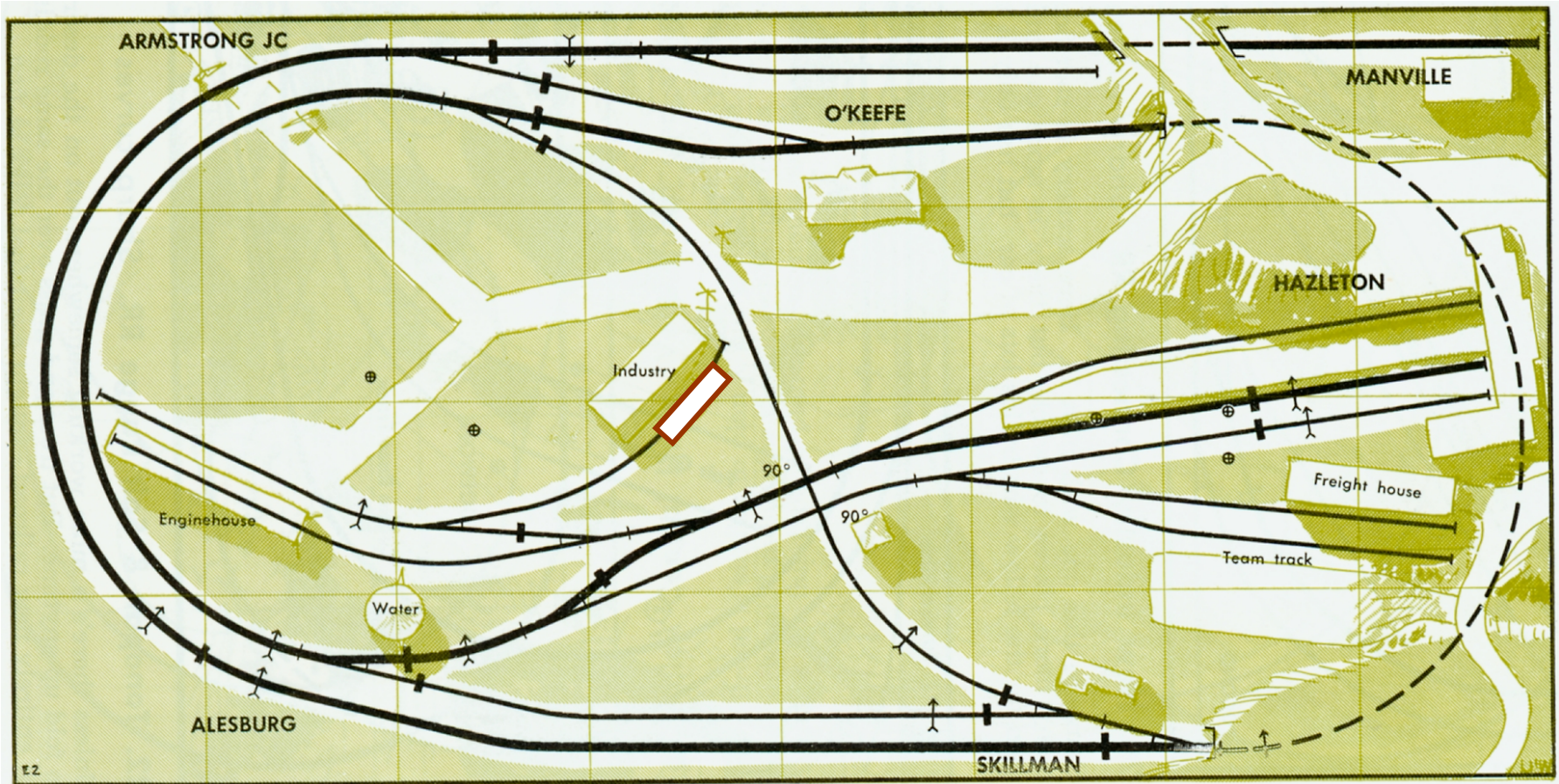
John Armstrong's Pennsylvania and Potomac; #26 from *101 Track Plans*

At Start

RDC (passenger)

Local or Yard Crew
working industries

East Block
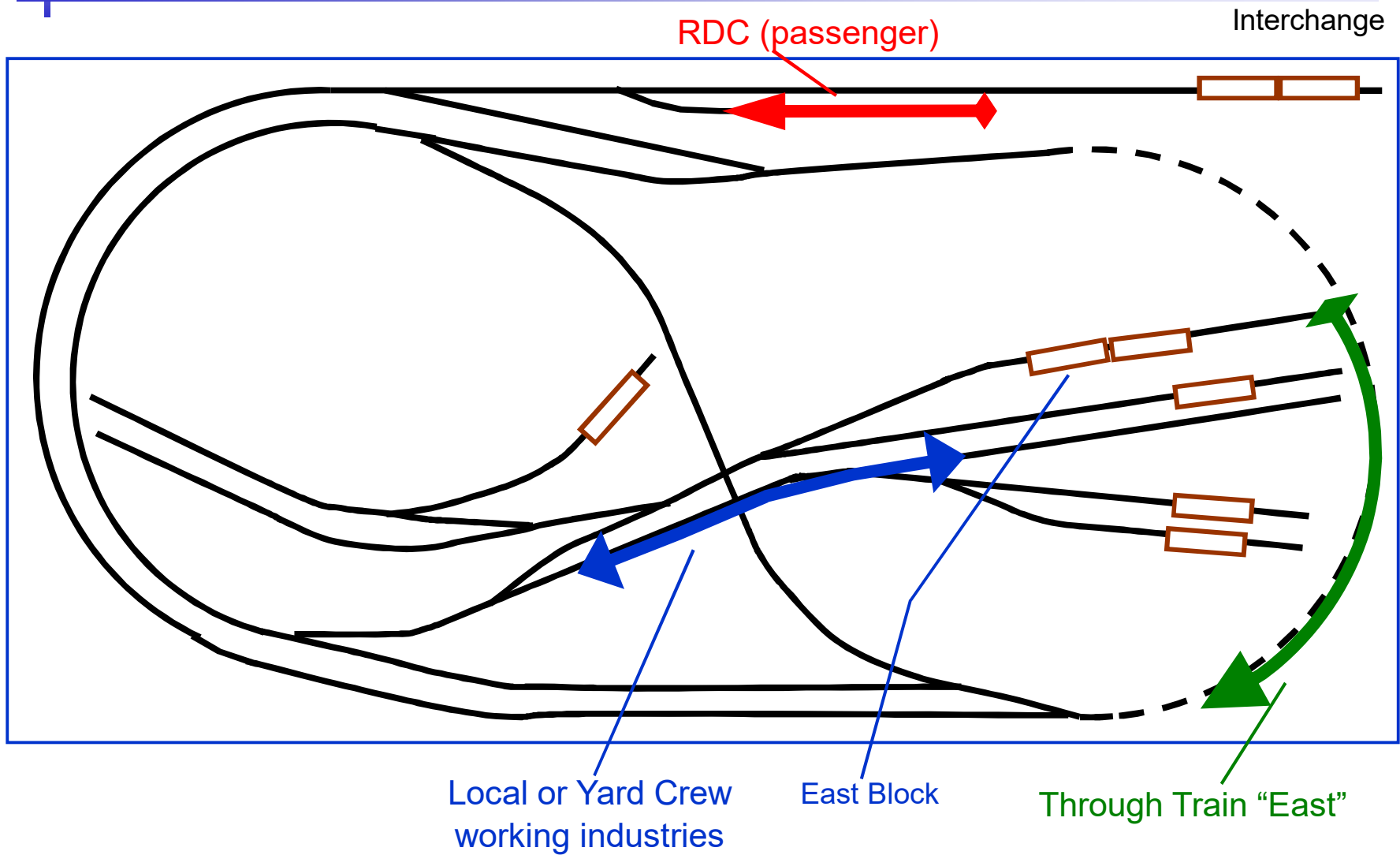
Through Train "East"

Through Train Arrives

RDC (passenger)
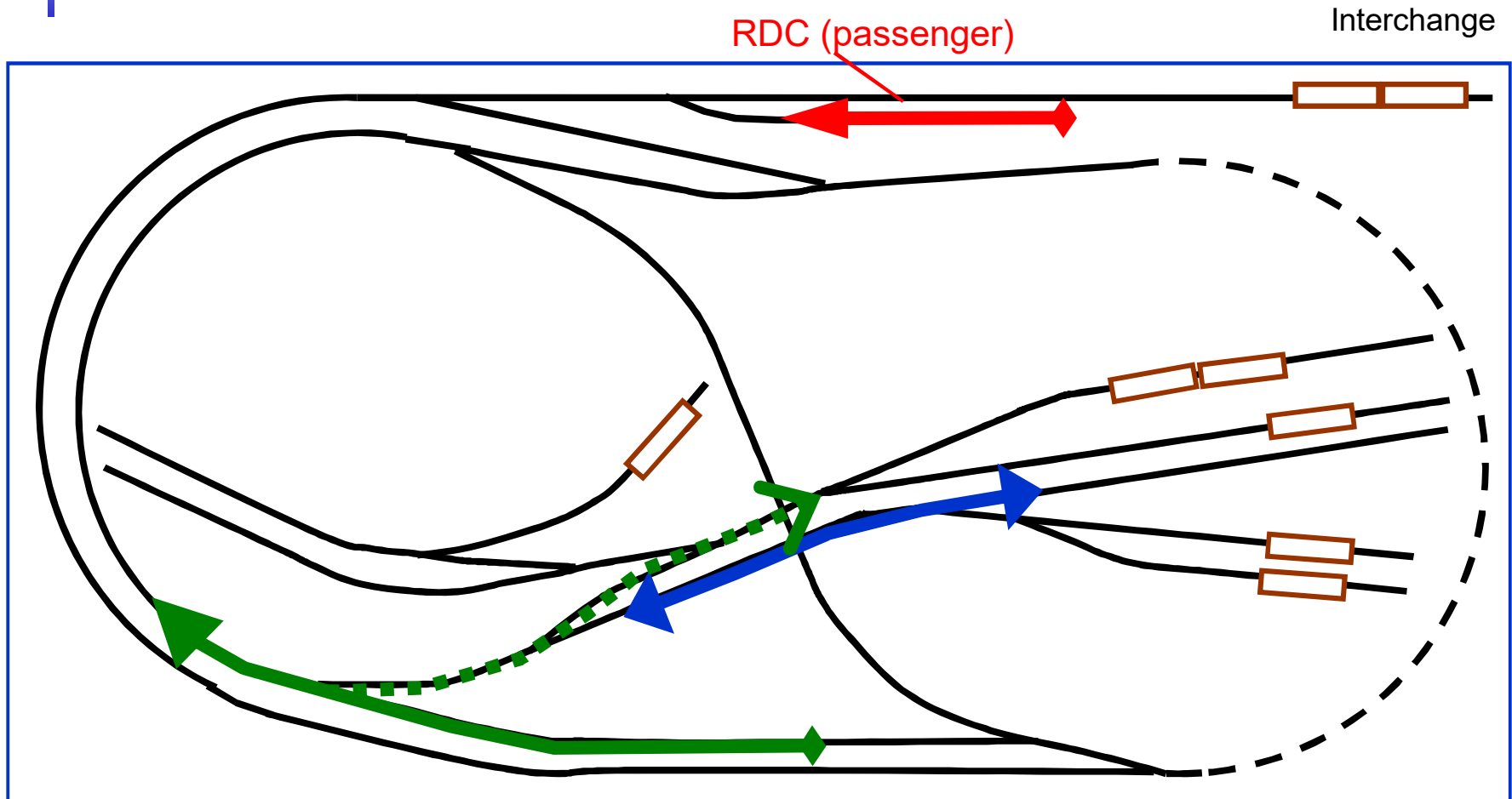
Interchange

Through train picks-up and
sets-out cars for local

Passenger Meets Freight

Interchange
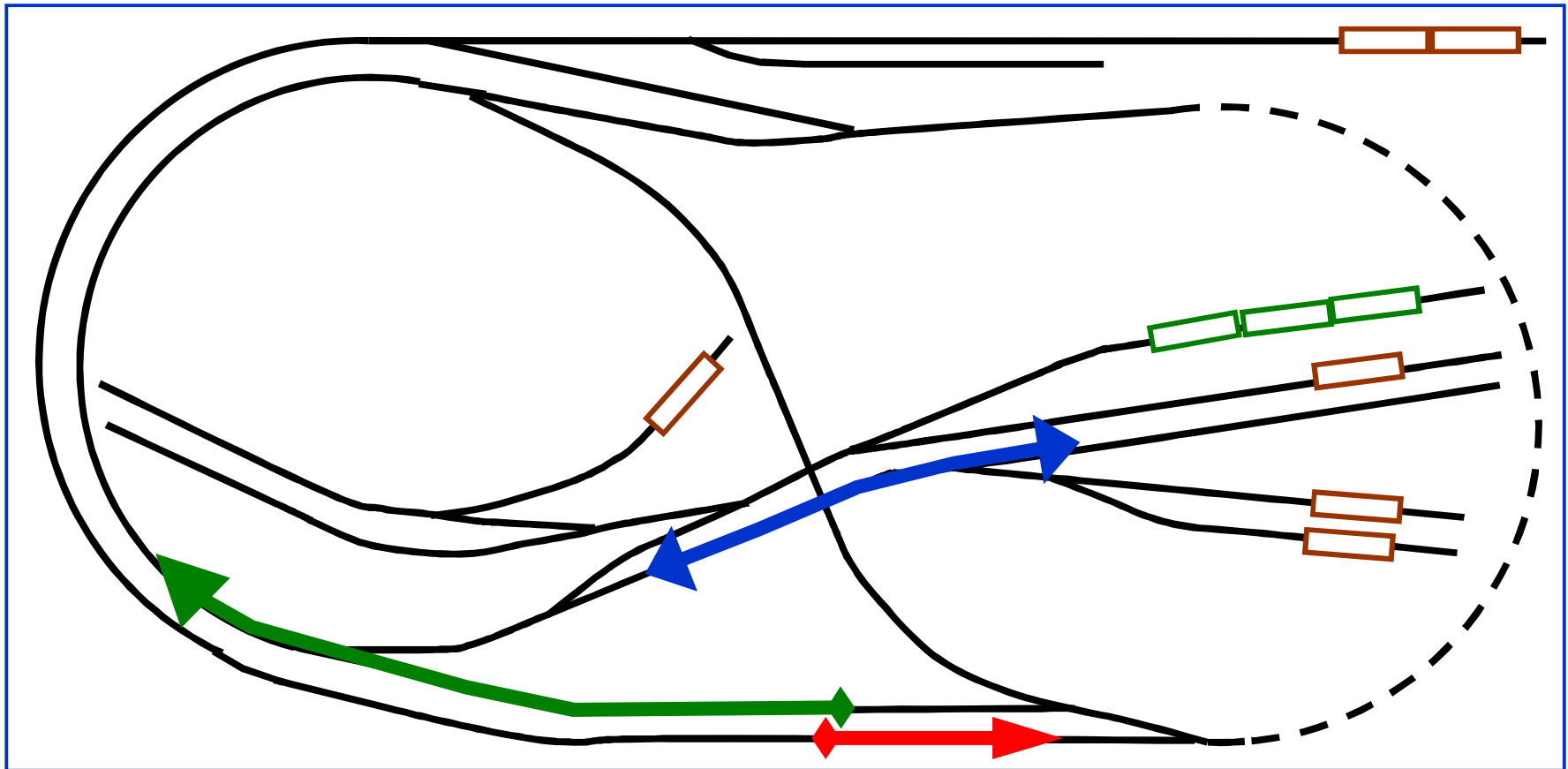
Passenger takes a lap or two,
making station stops, ending
at Skillman

Through Freight Reverses, Becomes "Westbound"

Interchange
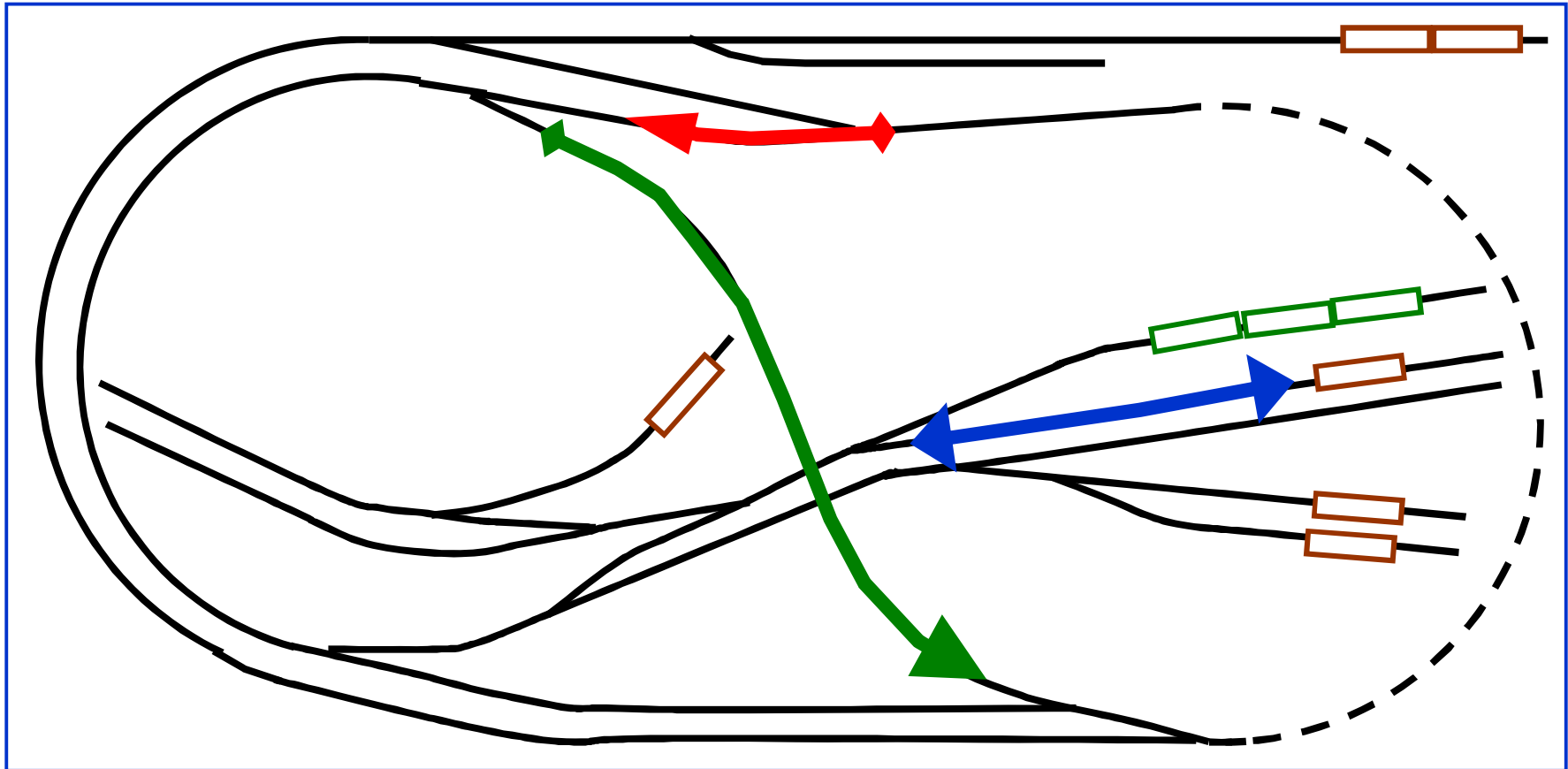
Reversing freight holds at Skillman for another meet with Passenger

Passenger makes another lap in opposite direction (optional)

Local in clear for meets

Meets Done, Local's Back to Work

Interchange
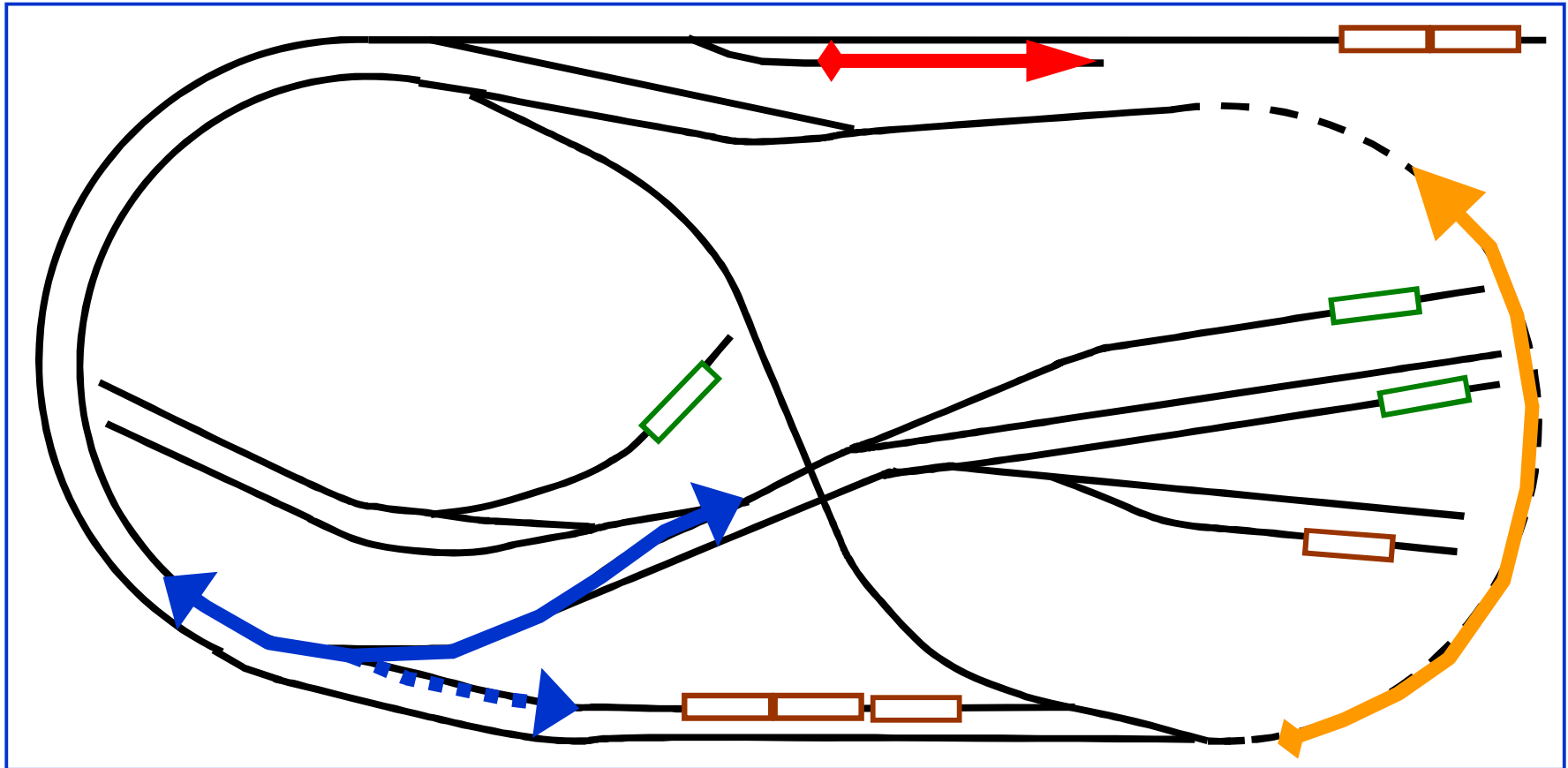
Local sets up
"Wests" in siding

Eastbound has
become Westbound

"Westbound" Works Interchange
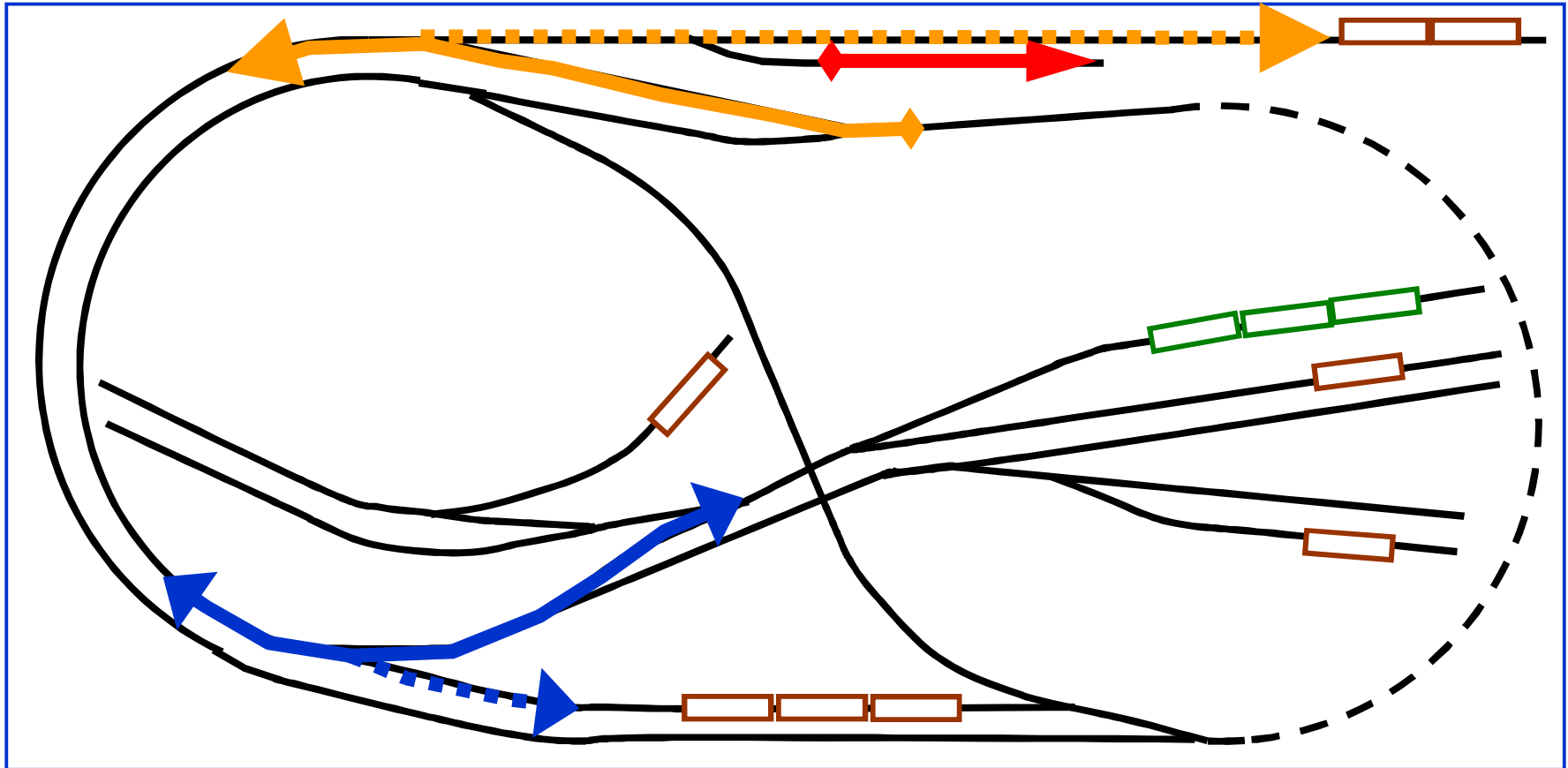
Local sets up
"Wests" in siding

"Westbound" Works w/ Local

Interchange
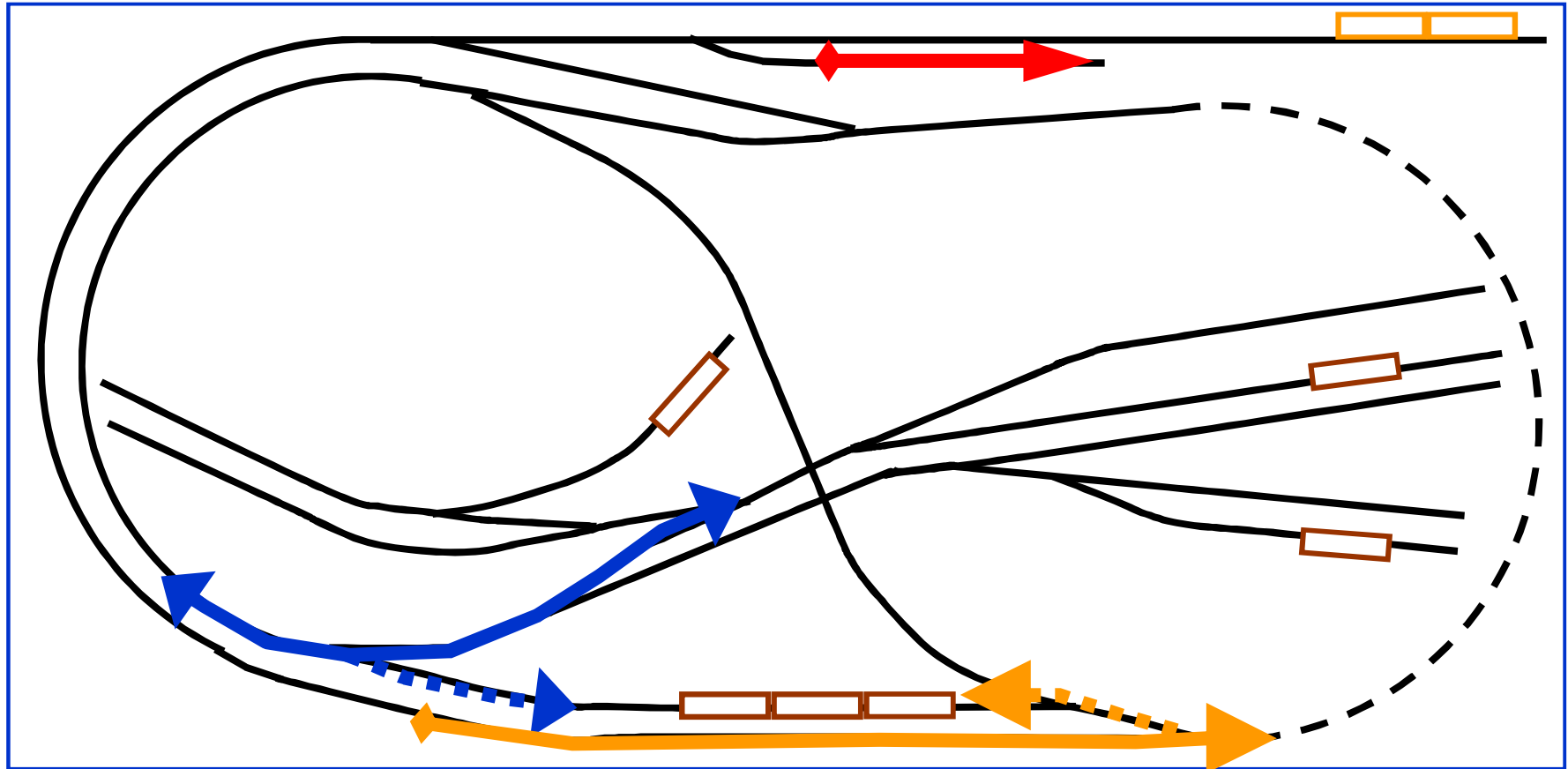
Local ready to
grab inbound
cars

Through Freight sets-out
interchange and other "local"
cars, picks up "Wests"

Both Trains Clear for Meet

Interchange
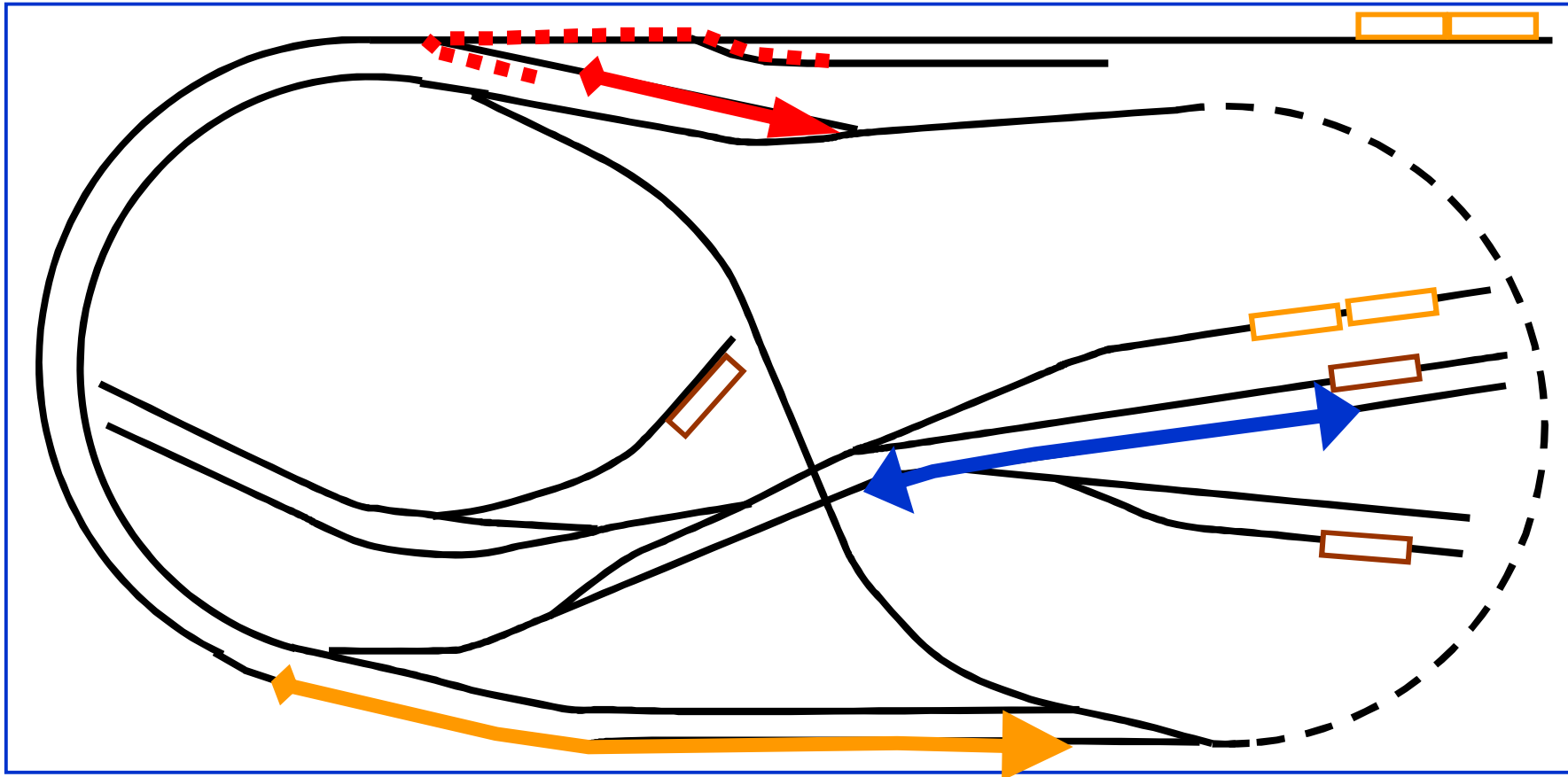
Passenger makes a lap or two
with station stops, reverse
loop move

Westbound Departs

Interchange
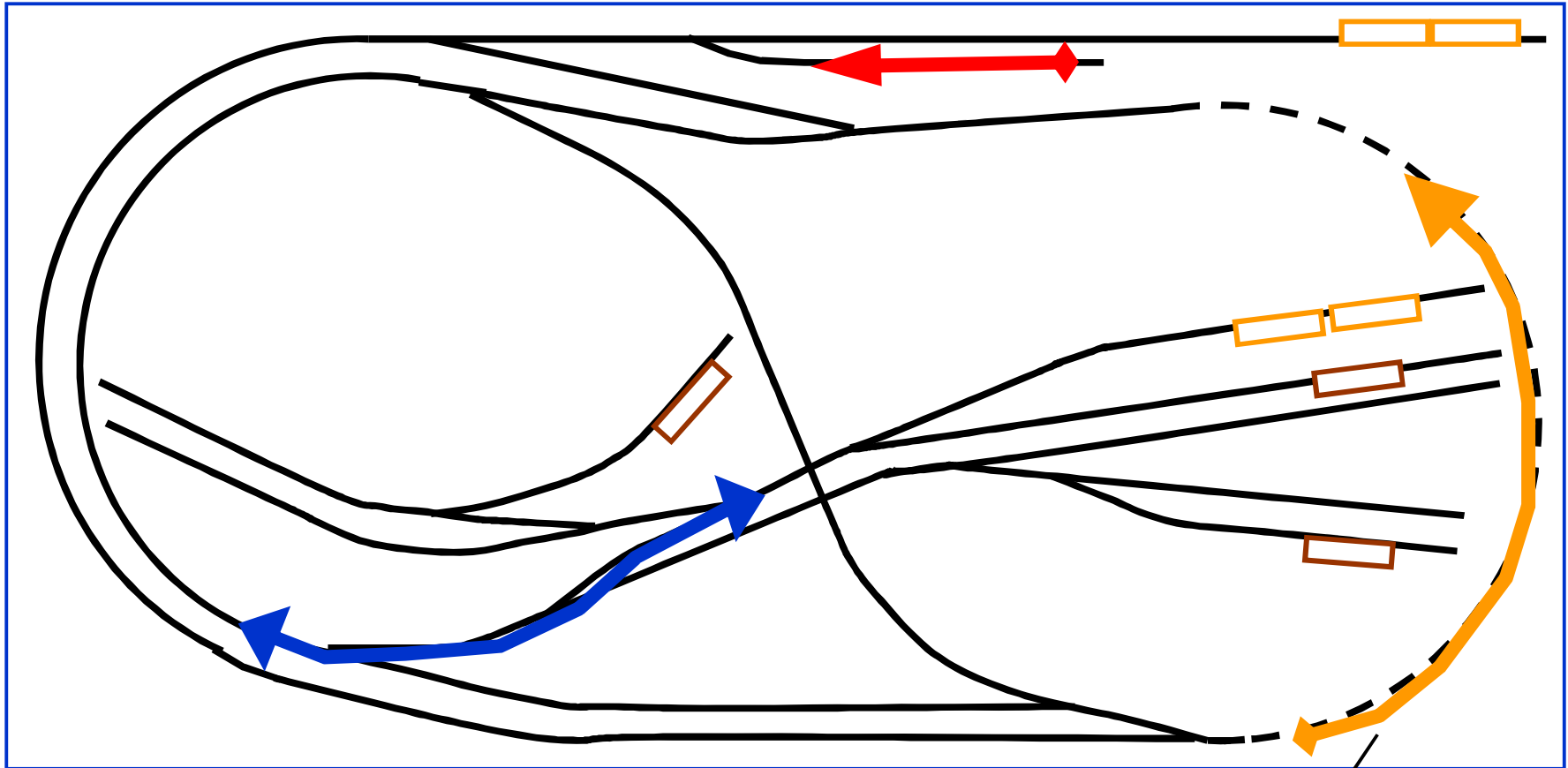
Local may keep working

Note: A quick back-up reversing move or end-for-end swap "between sessions" resets for next time!

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Control and Communications

- Define in what order trains move
- Manage interaction (meets, passes, etc.)
- Prioritize traffic
- Means for crews and leader to communicate
- Crew instructions
- Orientation guides on and around layout
- Wide variety of systems and tools

Control and Communications

- *Not* a status symbol
- Start with something simple!
    - "Holler and hope" / "Mother, may I?"
    - Sequence Timetable (like 4X8 example)
    - Yard Limits everywhere
    - Later, if *you* want …
    - ★Track Warrant / Direct Traffic Control (DTC)
        - Timetable and Train Order
        - Centralized Traffic Control (CTC)

Start simply and quickly, add complexity

Track Warrant – Proto Inspired

4th District Track Warrant

No: _____7_____ _____March 15_____ ; 19 __73__

To: __Eastbound Pick-up_____ At: __Los Molinos_____

Mark "X" in box for each item instructed

1. X Track warrant No. ___6_____ is void

2. X Proceed from __Los Molinos__ to __Orchard Yd Limits__ on __S Main__ Track

3. ☐ Proceed from _____ to _____ on _____ Track

4. ☐ Work between _____ and _____ on _____Track

5. ☐ Work between _____ and _____ on _____Track

6. ☐ Hold _____ Main track at _____

7. ☐ Take siding at _____

8. ☐ Not in effect until after arrival of _____ at _____

9. ☐ This authority expires at _____ M

10. X Other instructions ___Contact Chico Tower on yard channel at Orchard Yard Limits_____

OK _____ 8:32 A M Dispatcher __BBH_____

Reported clear at _____ M by _____ Form TW310771

Track Warrant – "Verbose"

Track Warrant OCC&N

No: _____   _____ ; 19 _____

To: _____ At: _____

Mark "X" in box for each item instructed

1. ☐ Track warrant No. _____ is void
2. ☐ Proceed from _____ to _____ on _____ track
3. ☐ Proceed from _____ to _____ on _____ track
4. ☐ Work between _____ and _____ on _____ track
5. ☐ Work between _____ and _____ on _____ track
6. ☐ Hold _____ Main track at _____
7. ☐ Take siding at _____
8. ☐ Box(es) _____ not in effect until after arrival of _____
     at _____
9. ☐ Movements in box(es) _____ to be made at restricted speed and
     stop short of men and machines on track
10. ☐ Box(es) _____ joint with _____
11. ☐ This authority expires at _____
12. ☐ Contact _____ when _____
13. ☐ Contact _____ when _____
14. ☐ Other instructions _____

     _____

OK _____M Dispatcher _____
Reported clear at _____M by _____

Preparing the Layout

- Access and reach
    Uncoupling, mishaps

- Reliability (**#1**)
    "if they don't run, it's no fun"

- Orientation on the layout
    Names, maps, signs
    Crew instructions, blocking charts, etc.

- Places for paper and space to work

The Operator's Questions

- Who am I?

- Where am I?

- What am I supposed to do?

- Where do I go next?

- Which way is East?

Answer these -- only where and when <u>needed</u>

Orientation and Controls

Maps and Guides

West to Leaf

Main and Siding

Dorris

East to Klamath Falls

Log Track

East Spur (Team)

Mill #1

Mill #2

Industry Track

Associated Lumber & Box

Lead

Maps and Guides

← **East**
Old Chico

Sambone

West →
Los Molinos

Del Norte
Canning

S.E. Rykoff   SLC Graphics

McCluskey Mfg

Rykoff

Del Norte 2
Del Norte 1

to yard ←   Mack Track

South Main →

North Main →

Sheetrock   Biscontini

Gypsum Drywall   SN   Biscontini Dist

< Aisle >

Maps and Guides

Portola

West
to Blairsden

East

to Staging

No. 3

Main

No. 2

No. 1

Portola Bypass
Switch

West Passing

Bypass
to Merlin

Station

Ice House

to Delleker

Spotting Guide

Spots at Simpson Paper

Door #s

5	6	7	8

Track 1   14   15

Track 2
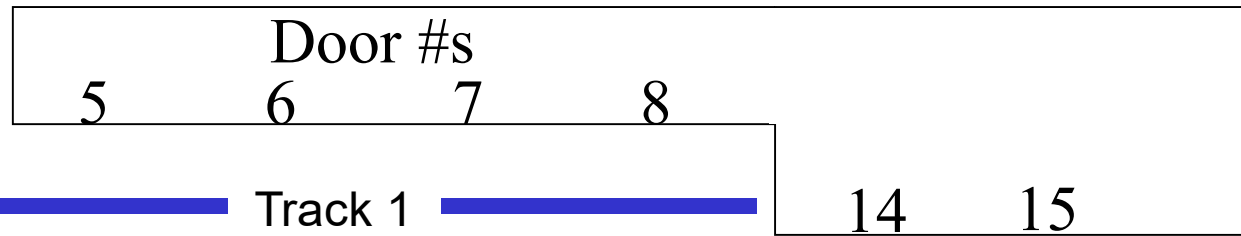
Tank & Cvd Hopper   Box   Chip Hopper

As Needed, Where Needed

VSC – Valley "*Super C*"
Train originates in Stockton/Valley staging

The Valley Super C represents an extension of the ATSF's famous "Super C" expedited freight service. Hot freight from Midwest and Southern California markets is combined in Barstow for a fast run through Tehachapi, up the Central Valley, and across the visible portion of our layout, with destinations in the Pacific Northwest. Loads are exclusively trailer-on-flat-car.

A few hot cars bound for local (on-layout) destinations will be set out in Orchard yard and a few "hot" cars added. The VSC makes no other stops on the visible layout, terminating in McCloud staging.

Like the original Chicago-LA Super C, the VSC is the hottest train on the railroad and the Dispatcher will treat it accordingly.

Procedures
- Run west to Orchard Yard
- Local block ("no symbol" waybills) at the rear end of the train pulled by switcher
- "Hot block" added by yard job to rear of train

To maintain horsepower/tonnage rating, no more than twelve 90-foot cars permitted in consist departing Orchard Yard. Leave any additional cars for later westbounds.
- Run west to McCloud and tie up [All trains bound for McCloud must double-check length in Raymond, leave excess cars on Raymond industry lead]
- Go off duty—crew change

KGT – Kingsley Turn

Train originates in Orchard Yard, Chico

The Kingsley Turn works its namesake town, the "cement" side of the large Cal Port Plant, and the town of Red Bluff on main. The KGT is blocked so that it is easiest to work the California Portland Cement (Cal Port) plant west of Kingsley, then Kingsley itself, and finally Red Bluff, before returning to Orchard yard.

Procedures
- Check consist
- Obtain clearance (access to branch is from North Main in Los Molinos)
- Run west to Kingsley
- Pull outbound cars based on waybills
  (pick up *only* covered hoppers or boxcars from Cal Port [track 3], not open coal hoppers)
- Spot inbound cars based on waybills
- Make up train of all outbound traffic
- Back caboose-first to Los Molinos, obtain clearance for entering main and for run to Red Bluff
- Run WB to Red Bluff, work industry spur from siding, spotting inbounds and pulling outbounds
- Run around and reassemble train headed East
- Run engine-first EB to Orchard Yard, Chico
- Tie up train on A/D track as directed
- Go off duty

Revised 1/16/08

"Yard" -- a Four-Letter Word?

- Yard productivity will often determine op session flow

- For early sessions, <u>don't overload yard</u>

- Chose car-routing method with yard in mind

    Manual or automated switchlists sometimes a challenge

- Stage when you can, yard if you must

Reset Realities

- Must be considered in designing session

- More personality and interaction usually means more reset work

- Issues

  Staging configuration (space vs. flexibility)

  Active (mole) vs. passive

  Car-routing method

  What about mistakes?

First Session Ideas

- Start with a few trains and an uncrowded layout (i.e., fewer than max # of cars)

- It won't be perfect the first time

- Bring in a group -- preferably with some experience

  Orientation before

  De-brief after (this info is gold)

- Make some decisions beforehand

  Rerailing equipment, notes for bad orders, etc.

More First Session Ideas

- Keep it light and fun
- Have a helper to "run interference"
    - Taking notes
    - Solving non-train problems (where's the coffee?)
    - Fixing some basic electrical / equipment issues
- *Stop* the first session early, if it makes sense
    - When you have enough data
    - If everyone looks a little pooped (or you are!)
- Add new trains, jobs, procedures over time
- Try not to forget -- the journey *is* the reward

Questions

When You are Ready to Add ...

… more fun and challenge

- Personality

- Interaction

- Balance

- Sharpening Theme and Concept

- "Fine Scale" operations

Personality

- Trains

   Consist and activity

- Signature industries / scenes

- Town character

- Unique operator roles

- Layout theme / concept

   e.g., Class 1 vs. terminal vs. shortline

Interaction

- Between trains

    e.g., local with through trains

- Beyond the layout

    Interchange and competition

- Interplay of job roles

Balance

- Traffic with staging capacity
- Through vs. local
- Yard vs. road
- Mix of towns, trains, job roles
- Fun *and* challenge

Theme and Concept

- What story are you telling?

- How will the crew experience it?

  Formality, sense of purpose, intensity

- Where is the focus?

  e.g., over the road, terminal, locals?

Though it is tempting, you can't have everything

Fine-Scale Ops Examples

- Based on prototype practices & situations
- Timing and sequence of moves
  - Shifts and access to private tracks
  - Perishables / icing
  - Intra-plant moves
  - Repair-in-place (RIP)
  - Weighing cars
  - Cleaning cars & testing ladings
- Seasonal and time-of-day variations

Fine-Scale Ops Examples

- "Sure spots"
    - Positioning cars to doors, spouts, dumps
    - Re-spots, off-spots
- Simulating crew roles
    - Positions on the ground
    - Uncoupling, throwing switches
- Cutting train for grade crossings
- Less time-focused

Same Building Blocks

- Theme and concept
- Trains
- Schedule
- Job roles & crew size
- Car routing
- Traffic control / communication
- Reset realities

None of these are permanent -- start, try, refine