

Op Session Design

Freelance and Prototype

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Today's clinic

- Keys to engaging ops
- Building blocks
- Designing a session -- examples
- Building from an easy start
- Theory and practice
- Your comments and questions

Op session keys

Personality
Interaction
Balance

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

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

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

Trains

- Usually a mix

Locals/turns; pick-up / sweeper;
expedited; drag freights; passenger;
etc.

- Each can be distinct

From other types and within type

- Major factor in personality

Car routing

- Decide based on *your* needs
- Impact on flow, workload, reset
 - Informal
 - Tab/sticker on car
 - Car cards and waybills
 - Switchlists (hand-written or computer)
- My opinion: yard needs should usually take precedence

Traffic control / communication

- Not a status symbol
- Choose based on ops and layout realities, prototype, era

“Holler and hope” / “Mother, may I?”

Sequence Timetable

Yard Limits everywhere

Track Warrant / DTC

Timetable and Train Order

CTC

Start simply and quickly, add complexity

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?

Prototype example

Jim Dias' beautiful 1930s WP

- Circumstances

 - Nearly finished layout

 - Garage-sized space

 - Not designed for ops -- staging, et al

- Desires

 - Story: recreate WP trains of era

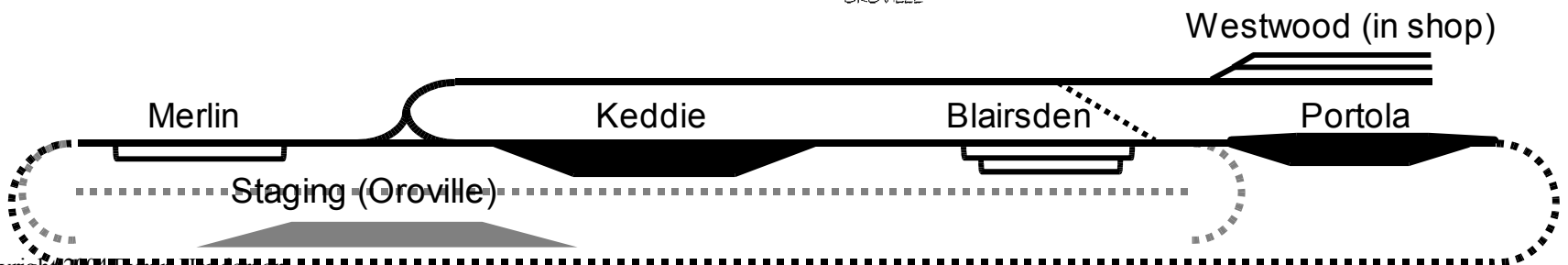
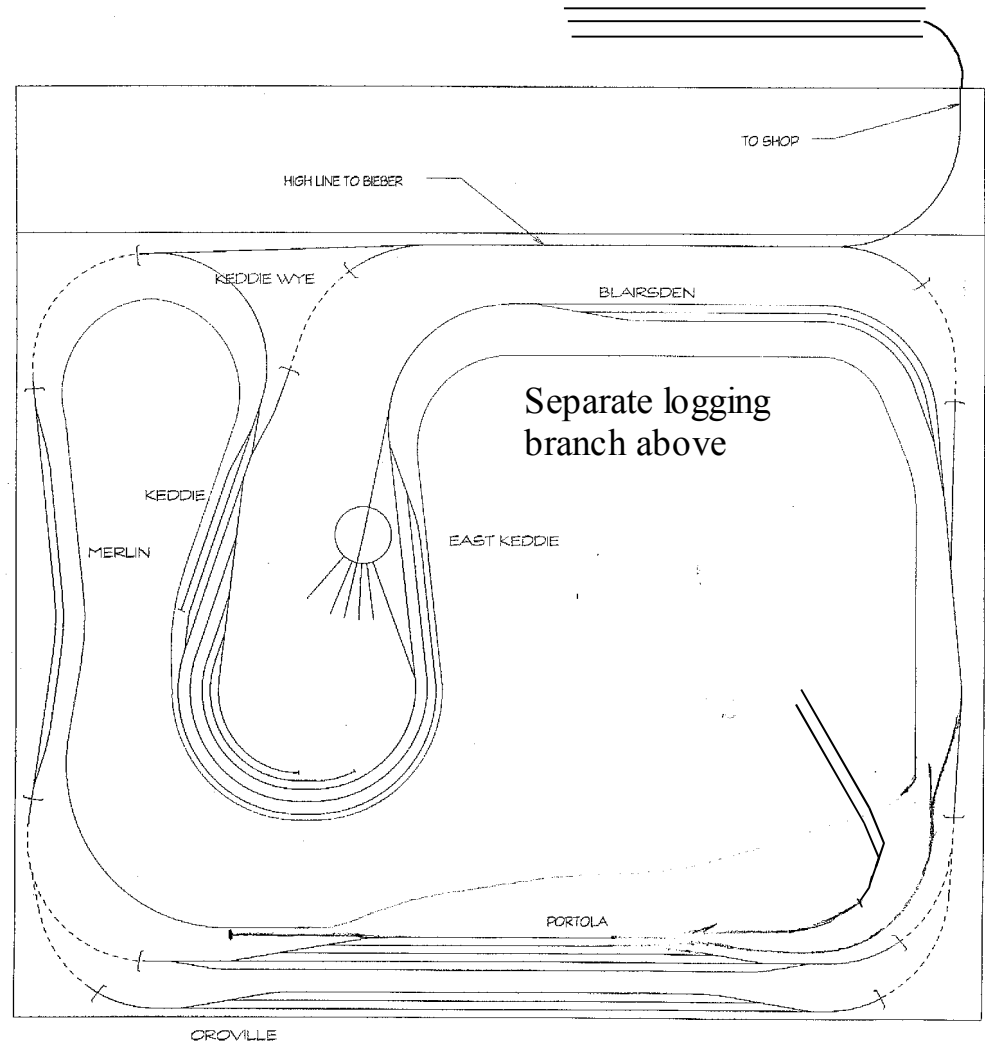
 - Switchlists

 - TT&TO

 - 3-5 operators, 2-3 hour session

WP layout

- Runs great!
- Passive staging only -- 3 tracks
- Portola isolated from staging
- Yard is few tracks but long



Mechanics -- prototype

- Draw layout schematic
- Review prototype timetable
- Pick key trains for personality and interaction
- Choose car-routing and traffic control
- Signs, labels, ops aids
- Call the round-robin and let's try 'er out!

Prototype timetable

- 2 passengers daily
- 5 scheduled “Fast Freights” daily
- 2 freights daily on High Line
- 4 Locals:
 - Three days per week: Portola - Keddie;
Keddie-Portola
 - Three days per week: Oroville - Keddie;
Keddie-Oroville

Ten pounds of sugar and a five-pound bag ...

Challenges

- Staging capacity and connection is limiting
- No segment of the actual WP timetable “lines up”
- Mainline too short and too visible for TT&TO
- Keddie can't build all the trains we need (and wouldn't have)

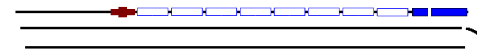
Decisions

- Prioritize key trains for personality
 - 1 Mainline local - Portola to Keddie
 - 1 passenger
 - 1 long Fast Freight
 - 1 Highline train

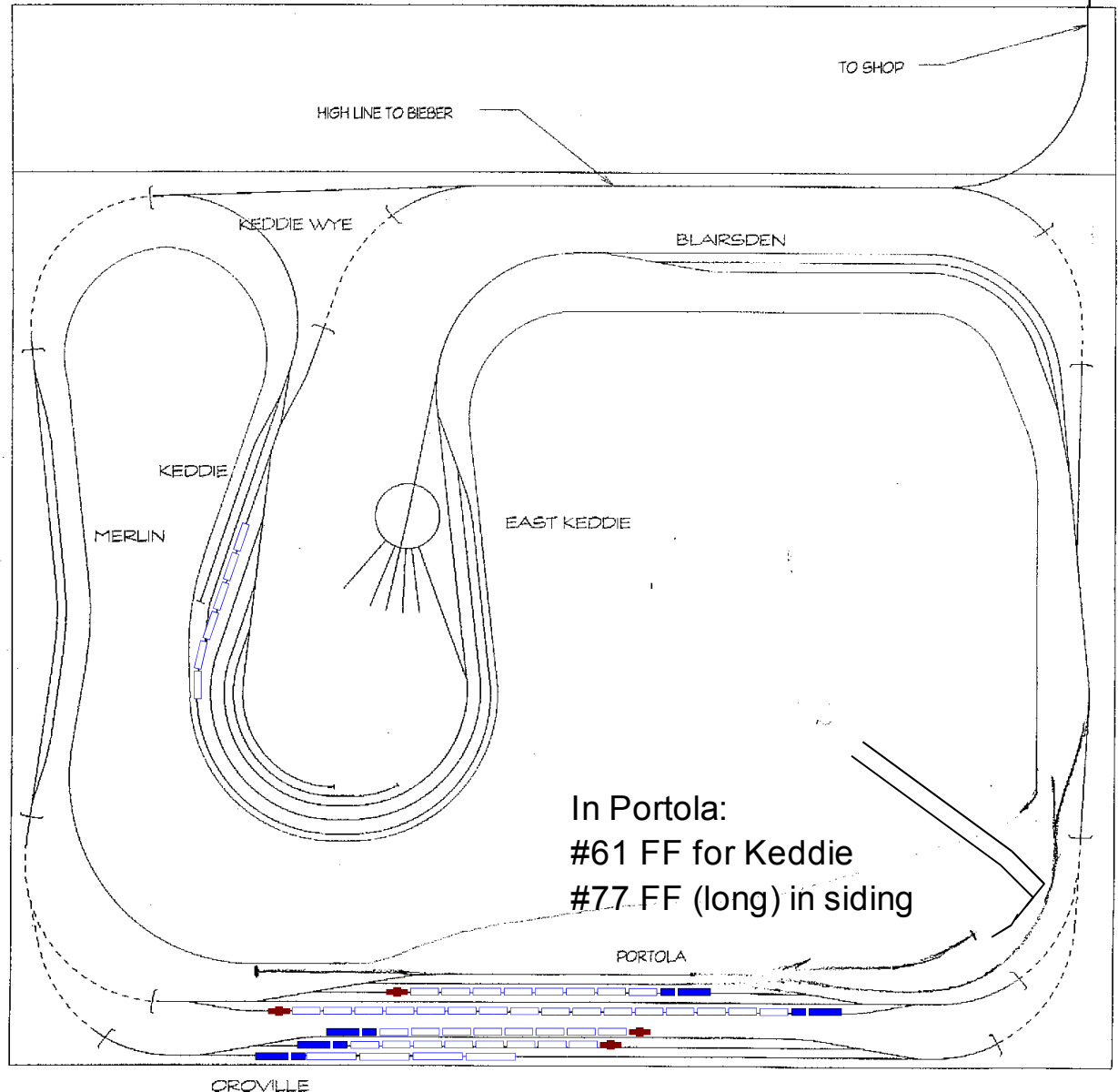
Balance of schedule -- move cars as needed, interaction, atmosphere
- Stage on visible layout
- Sequence timetable
- Manual switchlists

At start

#182 LF to work Westwood



Cars for #61 in Keddie



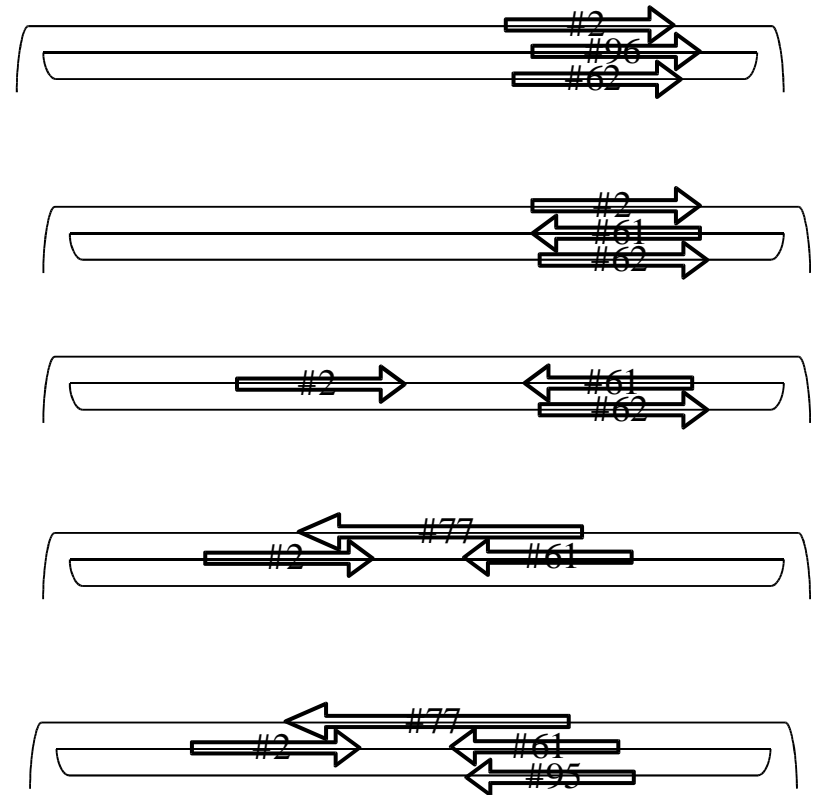
In Portola:
#61 FF for Keddie
#77 FF (long) in siding

In staging:
#62 FF for Keddie
#96 LF for Keddie
#2 "Scenic Limited" East

Getting the most from staging

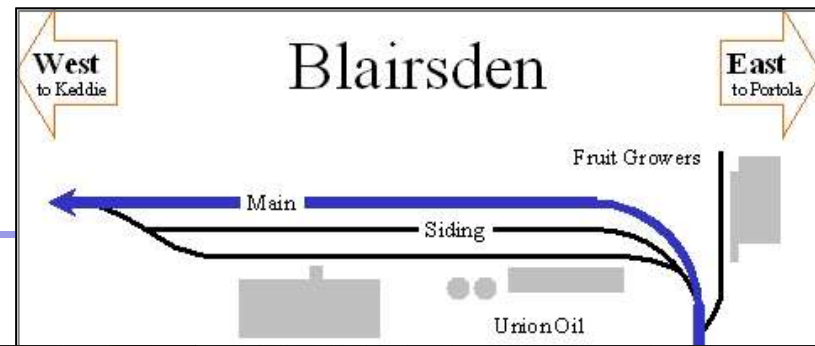
- Tracks are long, so most trains can be doubled up
- Specific order needed
- Works best with sequence timetable

Staging Sequence



Ops aids

- Town maps indicate “virutal” industries
- Manual switchlists include instructions
- Yard lists track cars three ways
- Sequence timetable



Sequence Timetable		Operator				Notes
Train	Starting Location	A	B	C	D	
Yard Job	Keddie					Start Yard Job 5-10 Minutes ahead of the rest of the crew
#96 East	Oroville	96				Start at same time as # 61
#61 West	Portola		61			Start at same time as # 96
#97 West	Portola			97		Start #97 West Local as soon as #61 leaves Portola
#182 East	Westwood	182				Start #182 when the first op finishes # 96
FRLC	Upper Deck					

Western Pacific Railroad Company						
Switch List						
No. 97 West		At Portola		date: June 6 1938		
	Car		From	To	Track	
	Initial	No	Type			
1	PFE	36171	FS	Portola	Portola	Ice House
2	MSCX	2023	SM	"	Blairsdien	Stock Pen
3	COSX	237	TA	"	"	Union Oil
4	OSKX	458	TA	"	"	Union Oil
5	AT&SF	117940	XM	"	Delleker	Mould #1
6	PFE	50468	FS	"	Portola	Ice House
7	UP	184055	XM	"	Delleker	Box #5

Train No. 97 west Second Class Crew goes on duty in Portola Yard

This local freight originates and works the industry in Portola. Departing westbound, No. 97 then works industries in Blairsdien before terminating in Keddie.

Board assigned power in Portola, work all local in and yard tracks as indicated by switchlist. This includes two Delleker spurs. Note that there are specific notes for the Delleker set-outs.

All westbound trains are required to turn up retain pick-up cars. 15 seconds per car.

Western Pacific Railroad Company						
Car List						
Keddie Yard Job		At Keddie		date: June 6 1938		
	Car		To	Track or Notes		From
	Initial	No	Type			
	ATSF	122635	XM	62 E		No. 182 E.
	ATSF	124874	XM	Keddie	Back Trk	No. 96 E.
	ATSF	128741	XM	98 E		KD Bck Trk
	ATSF	235478	XM	95 W		No. 96 E.
	B&O	110017	SM	Keddie	Back Trk	No. 96 E.
	CB&Q	26323	XM	95 W		Keddie #3
	CB&Q	42293	XM	98 E		No. 62 E
	CN	141337	GB	95 W		No. 61 W
	CP	236378	XM	Keddie	Back Trk	No. 61 W
	GN	50762	XM	181 W		KD Bck Trk
	GN	55171	SM	95 W		No. 182 E.
	IC	341970	XM	61 W	KD Trk 3	No. 62 E
	MP	89014	XM	61 W		Keddie #3

Building blocks -- WP

Theme and concept	WP Third Sub, 1938
Trains	9 out of 11 (!), including key locals
Schedule	Sequence Timetable (doesn't match prototype)
Job roles & crew size	4 crew: 1 yard, 1 local, 2 mix of local and through
Car routing	Manual switchlists
Traffic control / communication	Informal verbal dispatching by owner
Reset realities	Wait 'till you hear!

Three keys -- WP

- Personality

 - Mix of trains suggests prototype

 - Stops for water, retainers, etc. reinforce era

 - Unique jobs (Highline, Keddie yard, #97)

- Interaction

 - Primarily in yard, although meets and passes on the road

- Balance

 - Yard workload manageable through paperwork and flow

 - All four operators active most of session

Proto-freelance example

Rick Fortin's fabulous early-70s ATSF

- Circumstances

Under construction multi-deck

Large space, 20-year plan

Intended for ops from outset -- start early

- Desires

Story: Mainline mountain railroading with plausible alternate history

Involved op sessions (18-20 ops, 5 hours)

Major emphasis on personality

Challenges

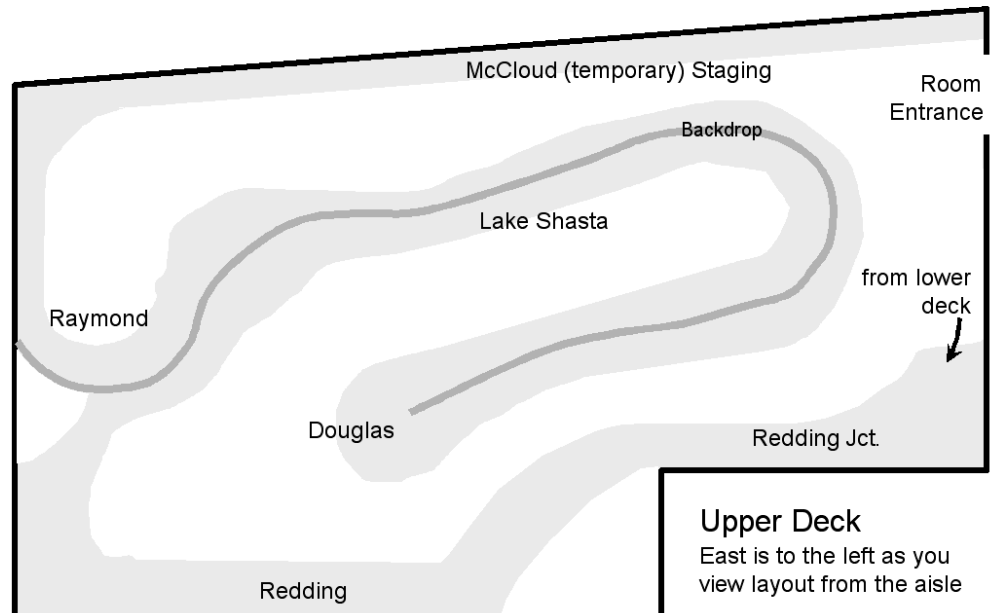
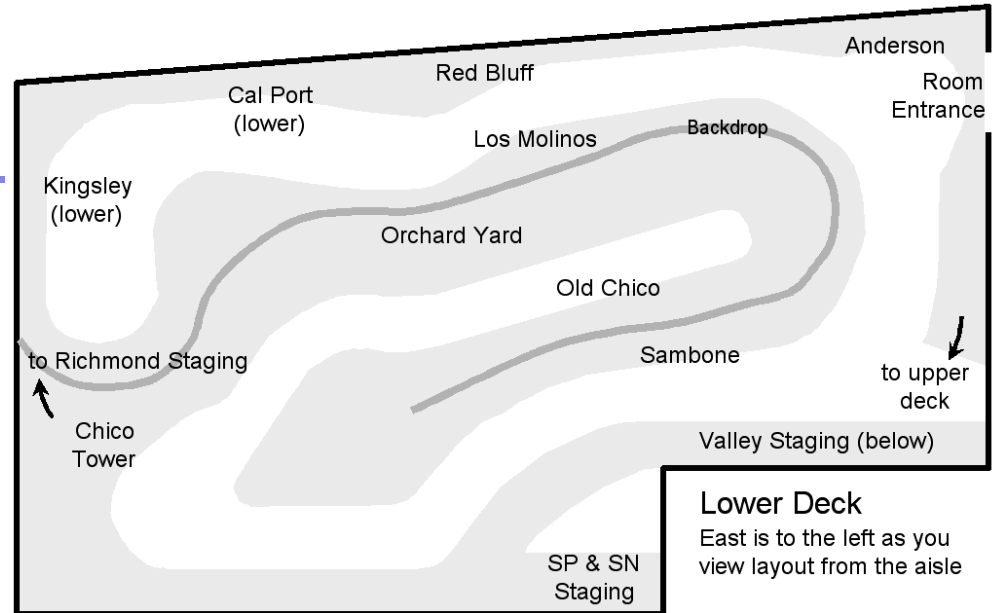
- Only portion of railroad was done
 - But still want to express concept
 - Staging at one end only
 - Layout, towns, industries would change radically over time -- flexibility necessary
- Crew had widely varied levels of ops experience
- No real railroad to “copy”
- Where to start?

Mechanics -- freelance

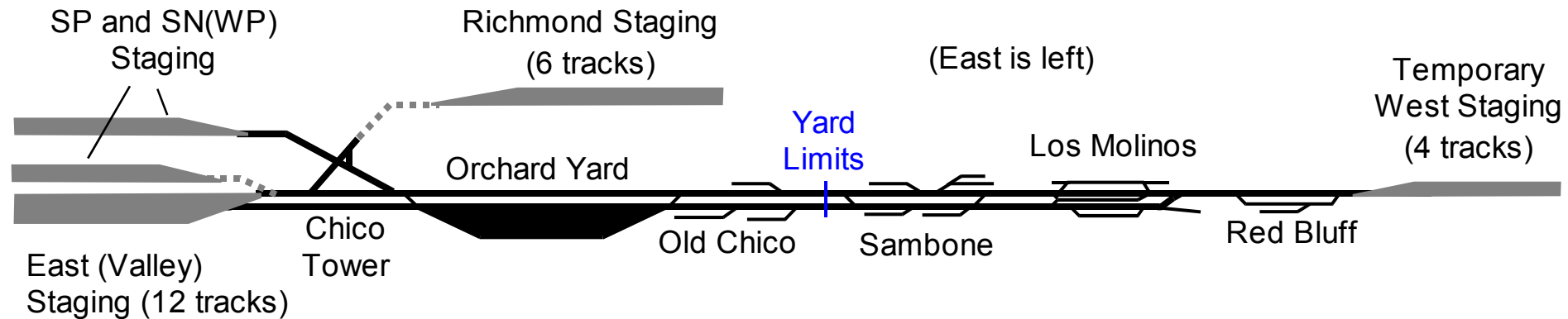
- Draw layout schematic
- Define key trains for personality and interaction
- Choose car-routing and traffic control
- Temporary staging to get started
- Grow crew op skills from early sessions
- Add trains, op roles, sophistication as layout expands

ATSF layout

- Runs perfectly
- Ops began with only lower deck
- Substantial staging at East end, none at West to start
- Substantial classification yard (or so I thought!)



Beginning schematic



- Temporary west staging added to allow more flexible operations

Getting started -- trains

- Personality Rick's highest priority
 - “Know the train and its work by the consist”
- ATSF-inspired trains
 - Shasta Fruit Express (after GFX)
 - Valley Super C (extension of Super C)
- Locals to three switching areas
- Pick-ups (“sweepers”) end-to-end

Looking at Los Molinos

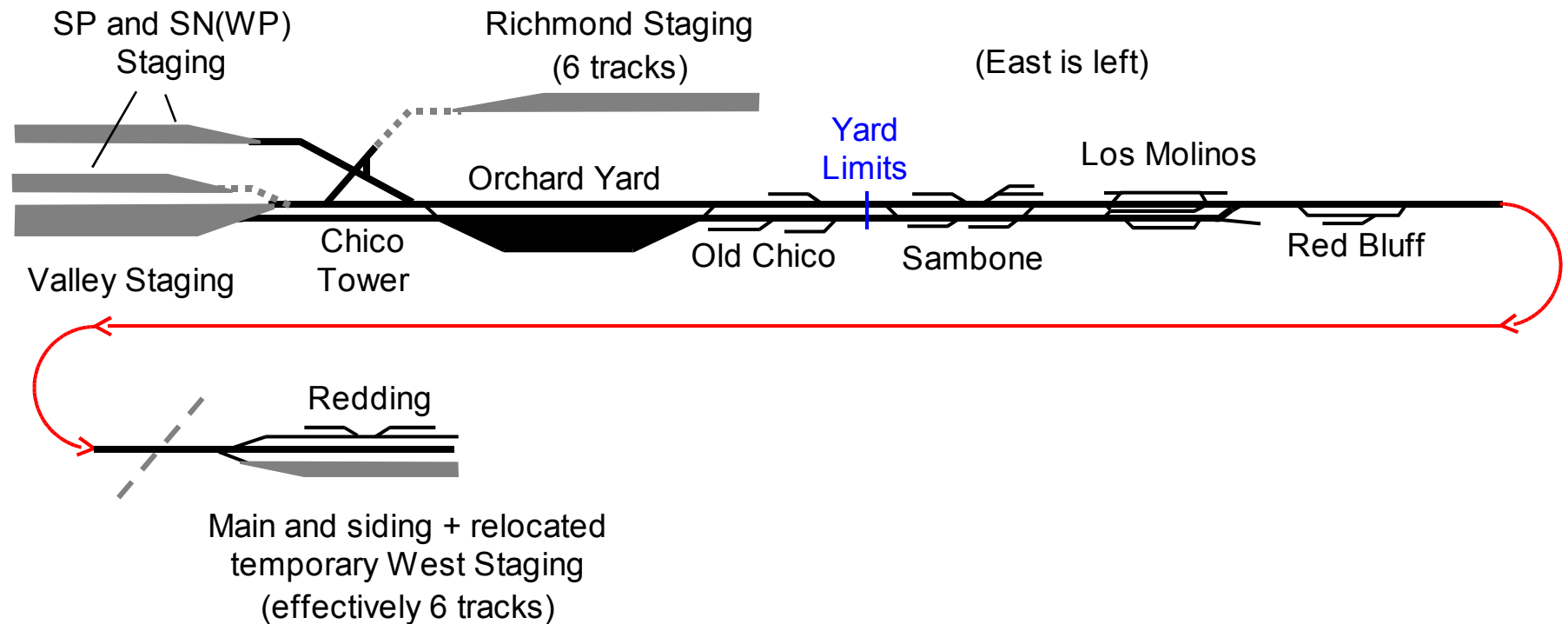
- Goal to make job unique, add interaction with other trains
 - Make it seem “remote” from other areas
- Set-up work related to two through trains
 - Shasta Fruit Express
 - Eastbound pick-up
- Rest of schedule built around this

Starting matters ... where you start does not

Incremental complexity

- “Holler and hope” dispatching for first session or two
- Added Track Warrants
- Adjusted jobs, timing, staging to accommodate experience
 - Balancing yard and road constant focus
 - Careful dispatching to manage staging
- ... and, loving it!

Expansion

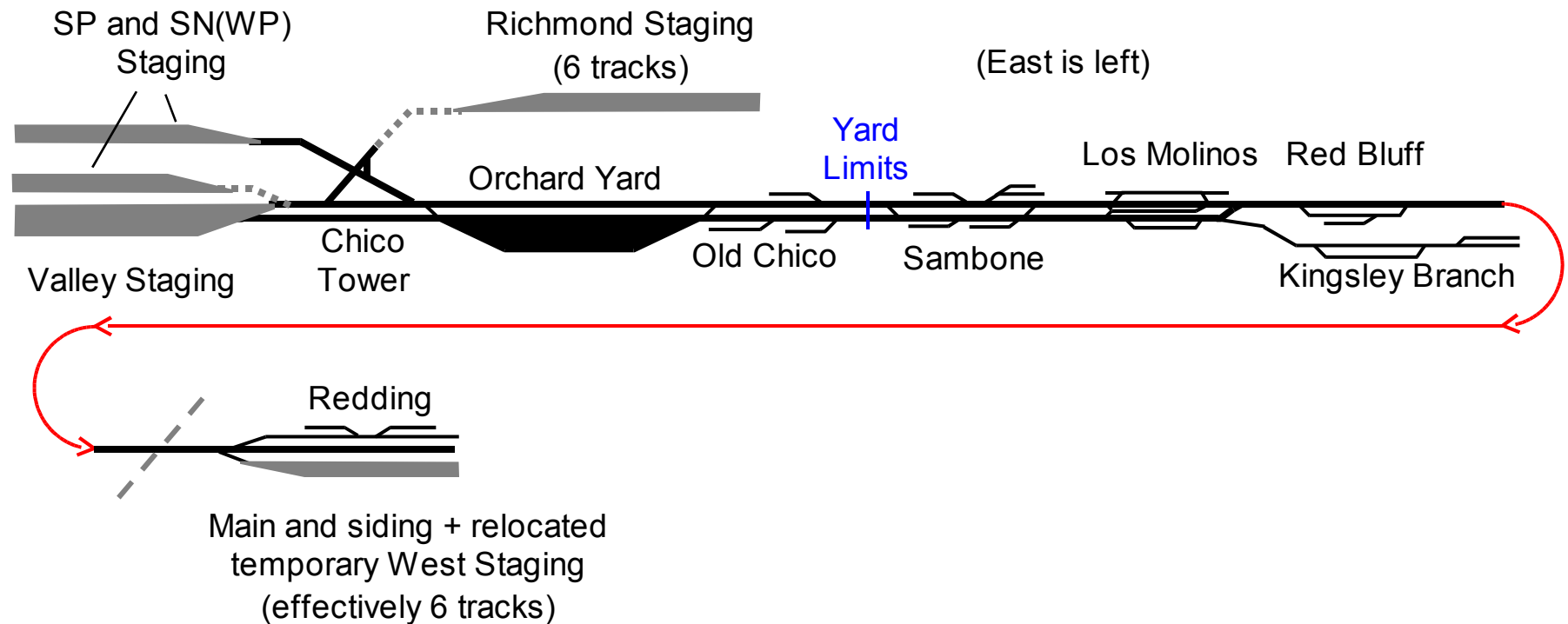


- Temporary Redding trackage to add switching location and staging capacity

Add more personality

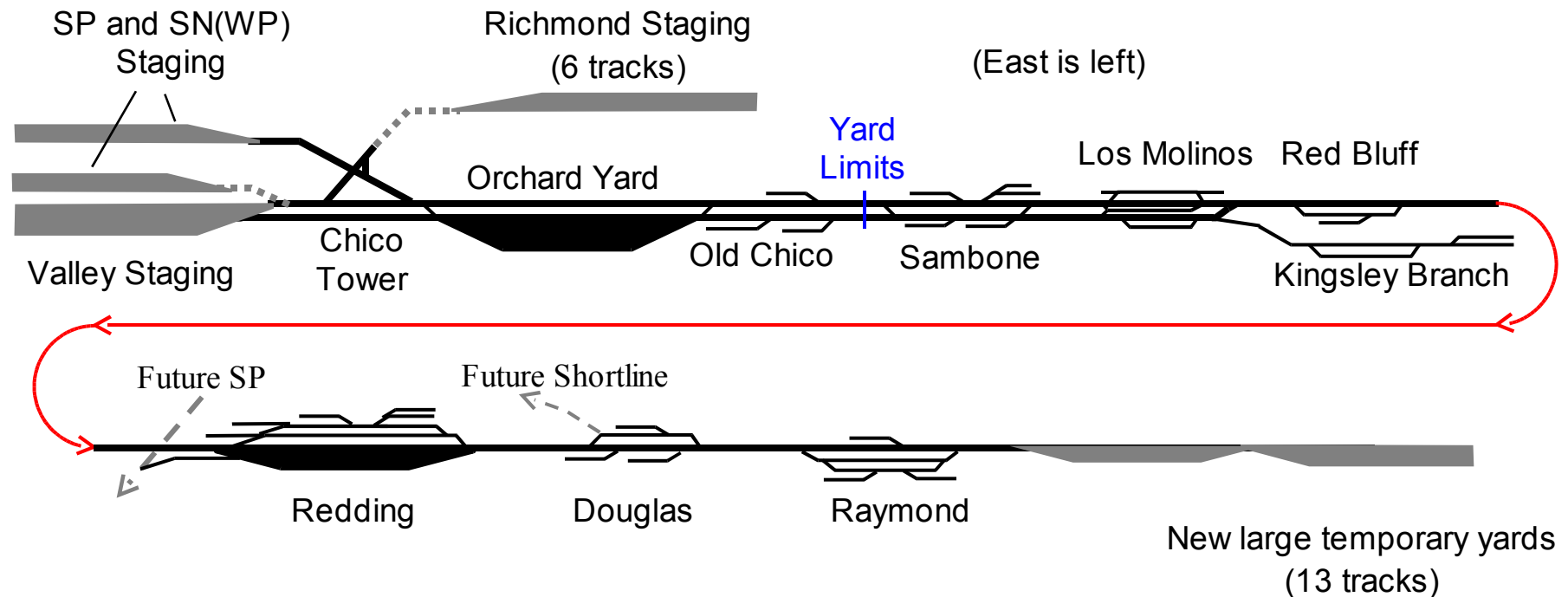
- “Red Dog” local (Redding and Red Bluff)
 - Staged “en route” in Redding
 - Did its own blocking
- Additional through trains
- Turned some through trains during lunch break to work around staging limitations

Another town, another railroad



- Kingsley Branch includes Cal Port cement plant served by SP over trackage rights

Big push and Redding's a satellite



- Redding now hosts a full-session switch job and is home to Douglas/Raymond Turn (the DRT or “Dirtbag”)

Mountain personality

- New segment is separate physically and ops-wise
- Redding Yard handles block swap interactions
- New mountain locals feel isolated
- Balancing yard and road still challenging
- Most of the early CC&WB and schedule work still useful

Three keys -- ATSF

- Personality

 - ATSF-inspired trains (SFX, VSC)

 - Unique consists, jobs, roles -- even in beginning!

 - Mountain segment feels different (and is popular)

- Interaction

 - Most trains have implied or actual connection with others (blocks of cars, etc)

 - Staged and live trains interact

- Balance

 - Yard workload manageable through pre-staging and remote jobs

 - Through and locals in balance by size of trains

 - Reset complexity vs. Personality and Interaction

 - Challenging but fun atmosphere

Building blocks -- ATSF

Theme and concept	1973 ATSF 4 th Dist.; visible Chico to McCloud (Sacramento to Portland)
Trains	Many unique ATSF-inspired trains: Fruit Express; Super C; et al
Schedule	Approx 30 trains + specials; 1:1 "railroad time"
Job roles & crew size	Started with 10-12, now 18-20; many varied roles
Car routing	Car-cards and waybills
Traffic control / communication	Track Warrants; FRS radios
Reset realities	Significant due to stub-end staging and unique train characters

Some issues and challenges

	Personality	Interaction	Balance
Car Routing	Non-Symmetry		
Traffic Control	Priorities		
Reset	Tweak & tune		

Some issues and challenges

	Personality	Interaction	Balance
Car Routing	Non-Symmetry	Self-Recovering	
Traffic Control	Priorities	Dwell time / capacity	
Reset	Tweak & tune	Lots 'o blocks	

Some issues and challenges

	Personality	Interaction	Balance
Car Routing	Non-Symmetry	Self-Recovering	Yard Workload
Traffic Control	Priorities	Dwell time / capacity	Challenge vs. stress
Reset	Tweak & tune	Lots 'o blocks	Ops vs. reset time

Op session design -- what matters

- Know the story you want to tell
- Think Personality, Interaction, Balance
- Pick a place to start

Prototype layouts can begin from timetables, etc.

Others can pick trains and / or interaction and work from there

Starting matters more than where you start

- Operate early and often for feedback

References

- Operations SIG
www.opsig.org
- Layout Design SIG
www.ldsig.org
- Books (alphabetical by author)
 - “Track Planning for Realistic Operation” by John Armstrong (Kalmbach, 1998)
 - “How to Operate your Model Railroad” by Bruce A. Chubb (Kalmbach, 1977 -- out of print)
 - “Realistic Model Railroad Operation” by Tony Koester (Kalmbach, 2003)

For full copy of slides ...

- Download from the web:
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