Op Session Design

Freelance and Prototype

Byron Henderson
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

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

Cars for #61 in Keddie

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

#182 LF to work Westwood
Getting the most from staging

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

- Town maps indicate "virtual" industries
- Manual switchlists include instructions
- Yard lists track cars three ways
- Sequence timetable
## Building blocks -- WP

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

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

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<td>Yard Workload</td>
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<td>Priorities</td>
<td>Dwell time / capacity</td>
<td>Challenge vs. stress</td>
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<td>Tweak &amp; tune</td>
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<td>Ops vs. reset time</td>
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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:
  www.modelrail.us
  (look for “PCR ‘04” link on home page)

- Send an email:
  mrsvc@earthlink.net

- Drop me a note:
  Byron Henderson
  15559 Union Ave; #122
  Los Gatos, CA 95032