

Enhancing Small Layout Operations



LCL & Livestock

Al Daumann

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Overall Clinic Goals & Outline

- Goals:
 - Present a brief summary of operational features to enhance operations on small layouts
 - Present details of Less than Car Load (LCL) and Livestock operational features for use on small layouts (and maybe larger ones too)

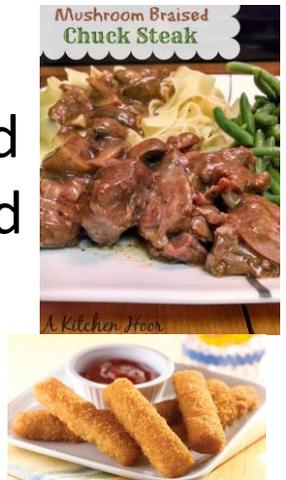
- Outline
 - Summary Of Operational Features To Enhance Operations
 - Why enhance operations (constraints, problems etc.)?
 - Author's layout summary as overall sample of small layout enhanced operations
 - LCL Operational Features To Enhance Operations
 - Introduction, key features, samples / case studies
 - Livestock Operational Features To Enhance Operations
 - Introduction, key features, samples / case studies
 - Overall summary

Why The Need To “Enhance Operations”?

- Medium and especially large layout operations are like a dinner featuring Porterhouse steak and Maine Lobster; appetizers, side dishes and desserts won't make or break the meal



- Small layout operations (such as my BR&W) are more like a dinner with an entrée of chuck steak and fish sticks; above average appetizers, side dishes and desserts are required to enhance the meal



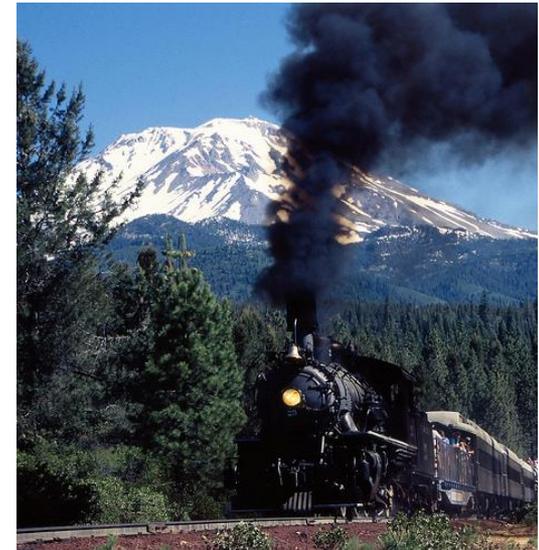
Enhancing BR&W Ops – Constraints, Problems & Case Study

- Layout owner is the only person at each session
 - Layout owner gets bored easily; looking for more variety
- Layout owner likes “big picture / systems view”
 - Commodities, trains had a decent plan, but looking to improve
- Interest in prototype symbols, blocks and trains grew
 - Wanted a plan beyond just trains on the ETT (i.e. wanted extras included)
 - What to do about empty moves? Employ more prototypical paperwork?
- In order to highlight some Ops enhancing approaches, author’s Burney, Redding & Western (BR&W) layout will be a case study:
 - Brief BR&W layout and operating session summary
 - Details regarding
 - Prototypical influenced waybills
 - Special Actions & Instructions (SA&Is)



Case Study - BR&W Size, Mainline, Era Etc.

- The BR&W is located in a 10' x 12' bedroom, plus a 3' x 4.5' closet, plus ~ 6' x 6' of "Joint Authority" in an adjacent laundry / utility room (for additional staging and a dispatcher desk)
- 105' mainline, double decked, 24" min radius, HO
- Proto-freelanced, Northern California, 1947
- Redding, CA to Bieber, CA modeled
 - Eureka, Sacramento & Alturas, CA as staging



Case Study - BR&W Operations Summary

- All BR&W power is steam (GN, ATSF & WP diesels “tolerated”)
- CC/WB
- 1:1 real time clock, 24 hr timetable
- TT&TO dispatching
- Ops sessions ~ 4 hrs (mid session break); hosted 90 sessions
- Guest crew size 3 (Redding YM, Bieber YM, Road Crew #1)
 - Layout owner is typically the Dispatcher, Road Crew #2
- Operations feature bridge traffic among GN, WP, SP & NWP
- Limited local industries (copper mining, lumber, livestock)
- LCL / small freight house ops, livestock ops, passenger & mail service



Above room size, mainline length, crew size etc. meet “small layout” criteria

BR&W Special Actions & Instructions

- Why Special Actions & Instructions (SA&Is) ?
 - SA&Is “enhance operations” by creating add’l moves / steps during the ops session that normally would be made between sessions or not at all



- Brief overview of the CCWB system these SA&Is enhance
- Listing & high level description of the SA&Is used on the BR&W

CCWB System Used On The BR&W

- Before getting into SA&I details, a brief BR&W CCWB overview
- The BR&W uses a CCWB system adapted from prototypical waybills Tony Thompson has popularized via his clinics & blogs
- BR&W CCs are ~ standard Old Line Graphics size
 - A key, non-prototypical, non-standard modification is the use of a prominent, two letter “station code” on the waybill
 - This modification is for “playability”, allowing crews to glance at, rather than read, the primary destination (SA = Sacramento)
 - The SA&I “card or slip” is typically placed in the CC in front of the WB during staging of the layout and may be removed by crew members during the session
 - Of course, there are exceptions ...

721 SOUTHERN PACIFIC COMPANY 721			
FREIGHT WAYBILL			
TO BE USED FOR THE S.W. CONTINENTS, CANADA AND LIFE (SUNDRY)			
TO STATION	STATE	FROM STATION	STATE
CONSIGNEE AND ADDRESS		SHIPPER	
ROUTE Show in route order		ANY CLASS OF CARS PERMITTED	
		LIMIT/CAPTY OF CARS PERMITTED	
		WEIGHTED	
		By General Use, 5-Station's Toned Waybill, 6-Station's, 7-Trail Classification	
NO. PAGES	DESCRIPTION OF ARTICLES		
ON C. L. TRAFFIC INSTRUCTIONS (Regarding Tonnage, Ventilation, Etc.) & EXCEPTIONS			

Above from:
<http://modelingthesp.blogspot.com/2010/12/waybills.html>

ROAD NAME	SP
CAR NO.	60730
TYPE	40' BOX
EMPTY CAR RETURN TO	
SACRAMENTO YARD	

INITIAL	MEMBER
R&W	812
CLASS	LENGTH/CAPACITY
SA	21' HOP LO
ROUTING	
SA	
FREIGHT WAYBILL	
TO STATION STATE	FROM STATION STATE
HMA	21' ORE LO
CONSIGNEE	
MARTINEZ CO COBLE MT CA	
SHIPPER	
MTN COPPER MINE #1	
CO (MOCOCO)	
NO. PAGES	DESCRIPTION OF ARTICLES
	C/L COPPER ORE

BR&W Road Crew Job Tools

The Train Brief contains key information for Road Crews (and to some extent, Yardmasters) in order to perform required tasks

The “Card Packet” consisting of the Locomotive Card, the revenue car CCs & WBs and the caboose card contain the remaining key info for Road Crews

BURNEY, REDDING & WESTERN

#215 – “AM Stock Special”

Departs: Alturas
 Works: Bieber Yd, Helper
 Destination: Redding Yd
 Class: 2
 Type: Livestock, Priority Frt
 Power: Fast Steam

The AM Stock Special hauls classified blocks of loaded livestock and other priority freight cars from Alturas to Redding. No 215’s primary job is picking up livestock in Bieber Yd and / or Helper bound for Redding and beyond. No 215 should not be filled with lower priority freight without the Trainmaster’s approval. No 215 terminates in Redding.

SAFETY IS JOB 1

11/20/2018

ROAD NAME BR&W	CAR NUMBER 35679	CAR NUMBER 1956	BR&W 100 Cab Cupola
LOCO NO. 58	LENGTH/CAPACITY 40' REEFER	LENGTH/CAPACITY 40' SD BOX	
TYPE 2-8-0	TSF	R-NWP	TOR: BB
CARS - LEVEL 34	PERISHABLE EIGHT WAYBILL	LESS THAN CAR LOAD FREIGHT WAYBILL	
CARS - 3 % 8	TYPE/CAPACITY 40' REEFER	TYPE/CAPACITY LCL 1/4 LD	
BB FUEL REFILL	FROM STATION STATE CLOVIS	FROM STATION STATE PORTLAND OR	
HP WATER REFILL	SHIPPER EL-MAR & PACK CO	SHIPPER HYSTER CORP	
WATER LAST TAKEN: REDDING	DESCRIPTION OF ARTICLES JGS	DESCRIPTION OF ARTICLES S SPARE PARTS	
INSTRUCTIONS REFILL WITH 5000 GALS (1 MINUTE REQUIRED)			

Special Actions & Instructions Used On The BR&W

- Passenger Operations SA&Is

- Passenger Tickets
- Bags Of Mail

BB	TICKET
Train	1
To	BIEBER CA
From	ALTURAS CA
Via	
2	COACH
(No of Tickets) (Kind of Tickets)	
Sleeping	
Car Space	
To	
From	

BB	MAIL
Train	12
To	BIEBER CA
From	BURNEY CA
Via	
2	
(No of Bags)	

- Freight Operations SA&Is

- Empty Moves (prototypical yellow) ->
- Livestock (prototypical white)->
- Reefers (prototypical pink)->
- Less than Car Load (LCL)
 - (non-prototypical blue) ->

BR&W	513
CLASS	SC
40'	STOCK-C
AT	LIVESTOCK
FREIGHT WAYBILL	
SPECIAL INSTRUCTION	
12 PM SAT	
8 AM FRI	
BEFORE TIME LISTED,	
WATER FOOD & REST REQ	

SFRD	35679
RS	40' REEFER
BR&W-SAC-ATSF	
EK	PERISHABLE
FREIGHT WAYBILL	
ARCATA CA	CLOVIS
DEPOT	EL-MAR
C/L 380 LUGS	PACK CO
TOMATOES	

BR&W	513
CLASS	SC
40'	STOCK-C
RD	EMPTY CAR BILL
FREIGHT WAYBILL	
REDDING CA	
BR&W AGENT	

- Steam Locomotive SA&Is

- Water & Fuel Service ->

ROAD NAME	BR&W
LOCO NO.	58
TYPE	2-8-0
CARS - LEVEL	36
CARS - 3%	8
BB	FUEL REFILL
HP	WATER REFILL
REDDING	
REFILL WITH 5000 GALS	
(1 MINUTE REQUIRED)	



NWP	1926
XM	40' SD BOX
BR&W-FUR-NWP	
SA	LESS THAN CAR LOAD
FREIGHT WAYBILL	
SACTO CA	ARCATA CA
FREIGHT	SIERRA
HOUSE	PACIFIC
4 PALLETS REDWOOD	
LUMBER	

- **NOTE: Each SA&I described above is essentially a “stand alone feature”**
 - One should be able to pick & choose among them based on need, applicability & interest

Freight Ops SA&Is – Empty Moves - Loading

- The approach for “Empty For Loading”
 - Having Yardmasters fill “Empty For Loading” requests (based on car type and the direction the load is eventually going) is another form of SA&I



Car Card w/Empty For Home Attached

CAR INITIAL ATSF	CAR NUMBER 60656
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W-SAC-ATSF	
SA EMPTY CAR BILL FOR HOME	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE SACTO CA	FROM STATION STATE
CONSIGNEE ATSF AGENT	SHIPPER
ROUTING BR&W-SAC-ATSF	



Where To Send Empty Which BR&W Interchange Load Passes Through Where Load Is Eventually Going

EK EMPTY CAR BILL FOR LOADING	
AAR CAR CLASS SC	TYPE/CAPYORDERED 40' STOCK-C
TO EUREKA CA	
SHIPPER MCKAY RANCH	
FOR LOADING	
SA JUNCTION/ INTERCHANGE SACRAMENTO CA	
DESTINATION STATION STATE TUCSON AZ	HOMEDIST 4



CC + Empty For Loading

CAR INITIAL ATSF	CAR NUMBER 60656
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W-SAC-ATSF	
EK EMPTY CAR BILL FOR LOADING	
AAR CAR CLASS SC	TYPE/CAPYORDERED 40' STOCK-C
TO EUREKA CA	
SHIPPER MCKAY RANCH	



LCL Operational Features To Enhance Operations

LCL Operational Features – General Introduction

- LCL operations fits clearly in the earlier definition of SA&Is since LCL “creates additional moves / steps during the session”
- The basic LCL operations concept on the BR&W involves having multiple waybills or slips in the car card representing different kinds of cargo, different destinations or both
- For ease of identification, LCL waybill slips use thin blue paper
- The BR&W main Freight House / Transload location is Redding Yd
 - Redding Yard being located at the junction of 3 lines / subdivisions make its location ideal

LCL Ops – LCL Slips (Inbound From Foreign RR Example)

- The approach for LCL is not really an SA&I
 - Rather, use bills or “slips” representing a ¼ load or ½ load
 - Redding Freight House “unloads & transfers” the LCL
 - Cars reloaded to common “off layout” destinations
 - On layout destinations grouped in a Peddler Car(s)



¼ load ½ load

All 3 LCL “Slips” Are In The CC (Closest Destination In Front)

CAR INITIAL NWP	CAR NUMBER 1956
AAR CAR CLASS XM	LENGTH/CAPACITY 40' SD BOX
ROUTING BR&W-EUR-NWP	
EK	EMPTY CAR BILL FOR HOME
AAR CAR CLASS XM	TYPE/CAPACITY 40' SD BOX
TO STATION STATE EUREKA CA	FROM STATION STATE
CONSIGNEE NWP AGENT	SHIPPER
ROUTING BR&W-EUR-NWP	

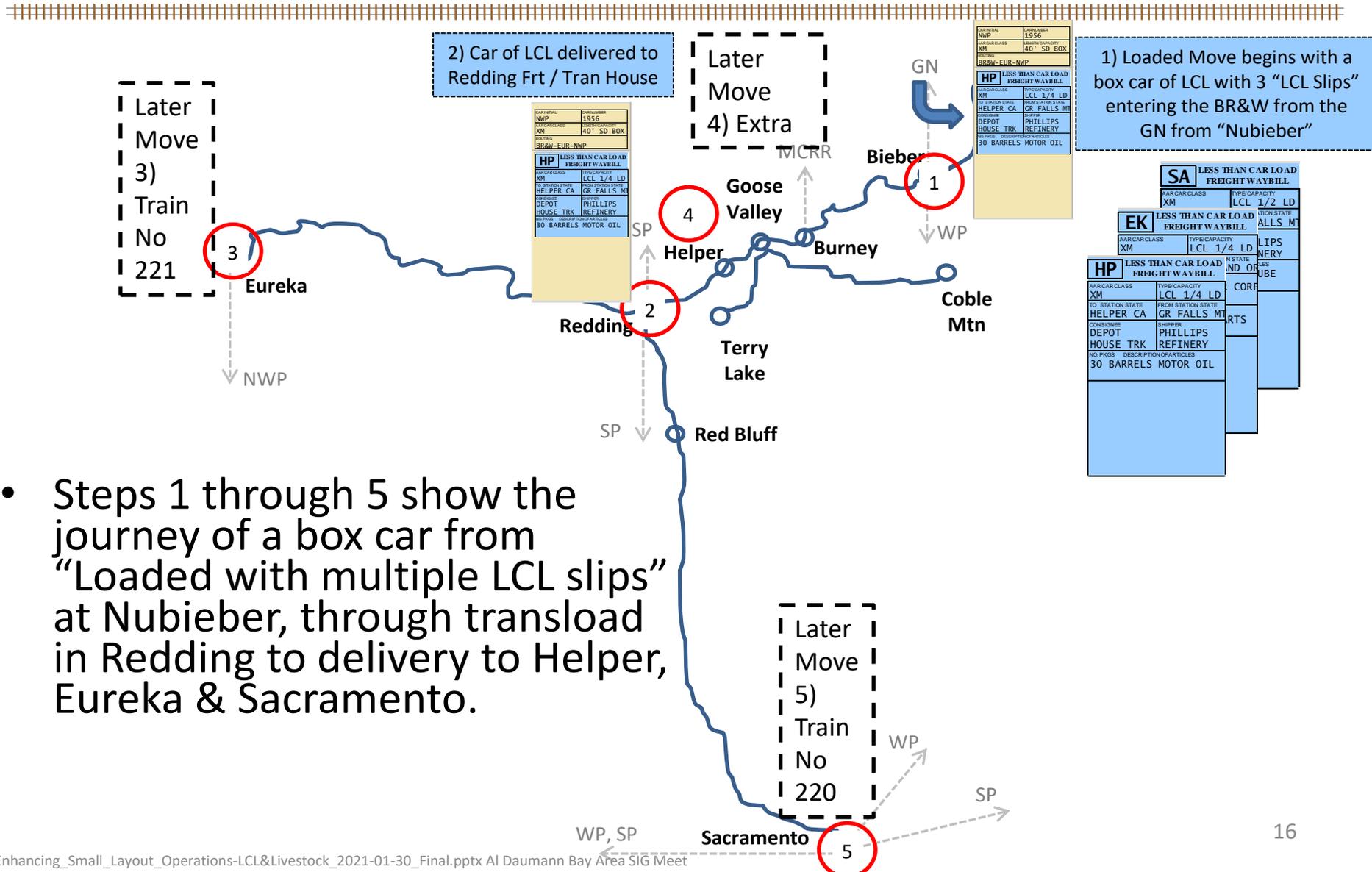
EK	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/4 LD
TO STATION STATE EUREKA CA	FROM STATION STATE PORTLAND OR
CONSIGNEE PORT OF EUREKA CA	SHIPPER HYSTER CORP
NO. PKGS DESCRIPTION OF ARTICLES 2 CRATES SPARE PARTS	

SA	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/2 LD
TO STATION STATE STOCKTN CA	FROM STATION STATE GR FALLS MT
CONSIGNEE WP ENG SERV	SHIPPER PHILLIPS REFINERY
NO. PKGS DESCRIPTION OF ARTICLES 45 BARRELS OF LUBE	

HP	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/4 LD
TO STATION STATE HELPER CA	FROM STATION STATE GR FALLS MT
CONSIGNEE DEPOT HOUSE TRK	SHIPPER PHILLIPS REFINERY
NO. PKGS DESCRIPTION OF ARTICLES 30 BARRELS MOTOR OIL	

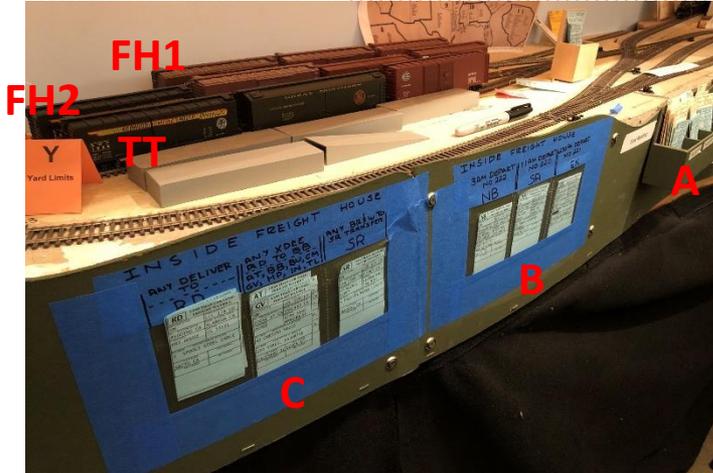
CAR INITIAL NWP	CAR NUMBER 1956
AAR CAR CLASS XM	LENGTH/CAPACITY 40' SD BOX
ROUTING BR&W-EUR-NWP	
HP	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/4 LD
TO STATION STATE HELPER CA	FROM STATION STATE GR FALLS MT
CONSIGNEE DEPOT HOUSE TRK	SHIPPER PHILLIPS REFINERY
NO. PKGS DESCRIPTION OF ARTICLES 30 BARRELS MOTOR OIL	

LCL Ops – LCL Example & Map

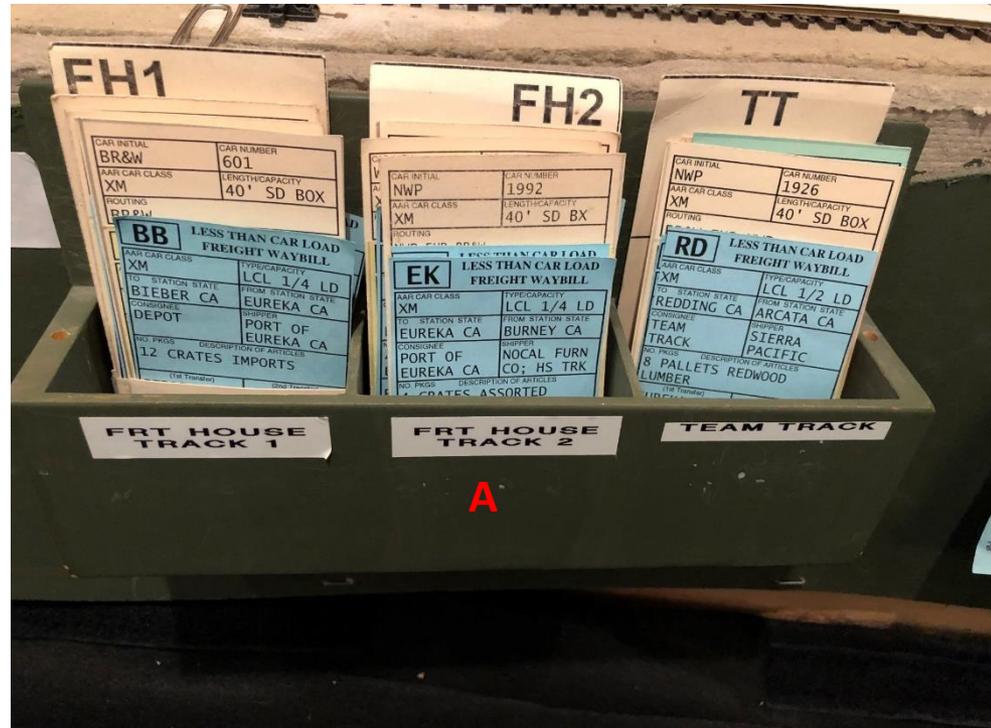


- Steps 1 through 5 show the journey of a box car from "Loaded with multiple LCL slips" at Nubieber, through transload in Redding to delivery to Helper, Eureka & Sacramento.

LCL Ops – At The Redding Freight House



Redding FH: 2 Trks, 4 Cars / Trk
(Team Trk (TT) in foreground)

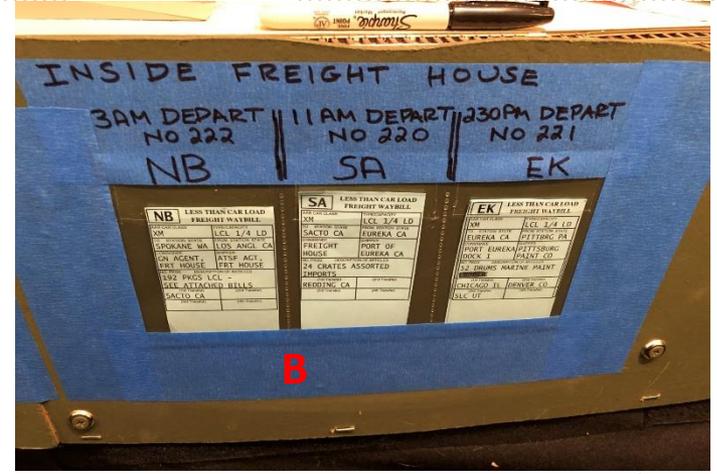


Redding Freight House – LCL In Cars

LCL Ops – At The Redding Freight House (Cont'd)

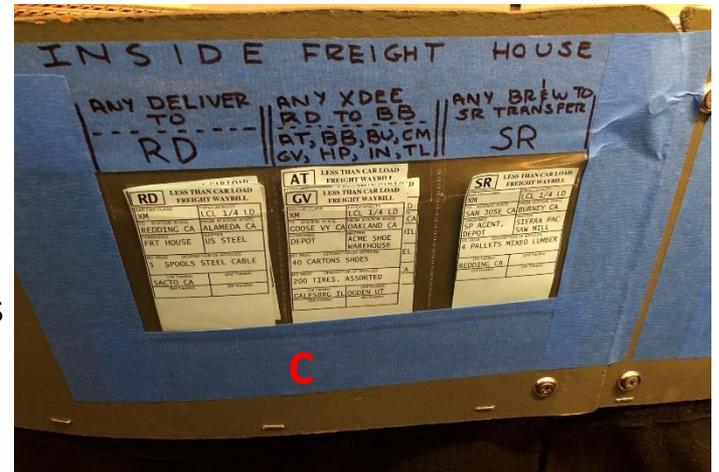


Redding FH: 2 Trks, 4 Cars / Trk (Team Trk in foreground)



LCL sorted by off layout destination / train

- Redding YM LCL / Frt House duties:
 - Move loaded cars with multiple destinations to Frt House
 - “Transload” LCL to like off layout destinations (foreign RRs); load in cars
 - Make connection w/specific 2nd Class Freights
 - Offload LCL for local delivery (Redding)
 - Load Peddler Car for on layout destinations
 - Add to extras running to toward Bieber Yd
 - Send / receive empty cars as needed



LCL sorted by on layout destination / train

LCL Ops – Frt House (2nd Class Train Connections)

BR&W Redding Freight House & REA Activity Summary

Start Time	Key Activity During Hour Listed	Train Coordination
12:00 AM	---- FREIGHT HOUSE ---	
1:00 AM	Finalize transfer & loading of LCL into a dedicated empty cars appropriate (AAR rules) for each of NB, AT, BB & TL	No 222 EK to NB
2:00 AM	CUTOFF TIME! Pull cars loaded with LCL for NB, AT, BB & TL from Frt House & transfer to RD yard for No 222	No 222 EK to NB
3:00 AM	No 222 departs w/ dedicated LCL cars for NB, AT, BB & TL (Peddler car(s) w/HP, GV & BU placed on XDEE trains to Bieber)	No 222 EK to NB
4:00 AM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	
5:00 AM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	
6:00 AM	---- FREIGHT HOUSE ---	
7:00 AM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	
8:00 AM	Finalize gathering of empty cars appropriate for SA	No 220 EK to SA
9:00 AM	Finalize transfer & loading of LCL into a dedicated empty car(s) appropriate (AAR rules) for SA	No 220 EK to SA
10:00 AM	CUTOFF TIME! Pull cars loaded with LCL for SA from Frt House & transfer to RD yard for No 220	No 220 EK to SA
11:00 AM	No 220 departs with dedicated LCL cars for SA; Finalize gathering of empty cars appropriate for EK (for No 221)	No 220 EK to SA

LCL Ops – Frt House (2nd Class Train Connections)

BR&W Redding Freight House & REA Activity Summary

Start Time	Key Activity During Hour Listed	Train Coordination
12:00 PM	---- FREIGHT HOUSE ---	
1:00 PM	Finalize transfer & loading of LCL into a dedicated empty car(s) appropriate (AAR rules) for EK	No 221 SA to EK
2:00 PM	<u>CUTOFF TIME!</u> Pull cars loaded with LCL for EK from Frt House & transfer to RD yard for No 221	No 221 SA to EK
3:00 PM	No 221 departs (note: 2:30 PM) with dedicated LCL cars for EK	No 221 SA to EK
4:00 PM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	
5:00 PM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	
6:00 PM	---- RAILWAY EXPRESS AGENCY (REA) / US POST OFFICE (USPO) ---	
7:00 PM	Finalize transfer & loading of Express into a dedicated empty cars appropriate (AAR rules) for each of NB, AT, BB & TL	No 12 EK to AT
8:00 PM	<u>CUTOFF TIME!</u> Pull cars loaded with Express for NB, AT, BB & TL from REA & transfer to RD yard for No 12	No 12 EK to AT
9:00 PM	No 12 departs (note: 9:30 PM) w/ dedicated REA cars for NB, AT, BB & TL	No 12 EK to AT
10:00 PM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	
11:00 PM	1) Spot inbound loaded LCL cars from arriving trains at FH; 2) "Unload LCL"; 3) Spot appropriate (AAR rules) empty cars from / to Frt House	

LCL Ops – LCL Slips (Outbound To Foreign RR Example)

- The inbound car shown earlier has been reloaded at the Redding Freight House
 - All LCL now bound for same (off layout) destination (EK)
 - NWP 1956 will be moved to Redding Yard body tracks
 - Ready for 2nd class train No 221 Eureka Expeditor



All 3 LCL “Slips” Are In The CC (Same Destination)

CAR INITIAL NWP	CAR NUMBER 1956
AAR CAR CLASS XM	LENGTH/CAPACITY 40' SD BOX
ROUTING BR&W-EUR-NWP	

EK	EMPTY CAR BILL FOR HOME
AAR CAR CLASS XM	TYPE/CAPACITY 40' SD BOX
TO STATION STATE EUREKA CA	FROM STATION STATE
CONSIGNEE NWP AGENT	SHIPPER
ROUTING BR&W-EUR-NWP	

EK	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/4 LD
TO STATION STATE EUREKA CA	FROM STATION STATE PORTLAND OR
CONSIGNEE PORT OF EUREKA CA	SHIPPER HYSTER CORP
NO. PKGS DESCRIPTION OF ARTICLES 2 CRATES SPARE PARTS	

EK	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/4 LD
TO STATION STATE EUREKA CA	FROM STATION STATE SLC UT
CONSIGNEE PORT EUREKA DOCK 3	SHIPPER D&RGW AGNT, FRT HOUSE
NO. PKGS DESCRIPTION OF ARTICLES 20 CRATES ASSORTED APPLIANCES	

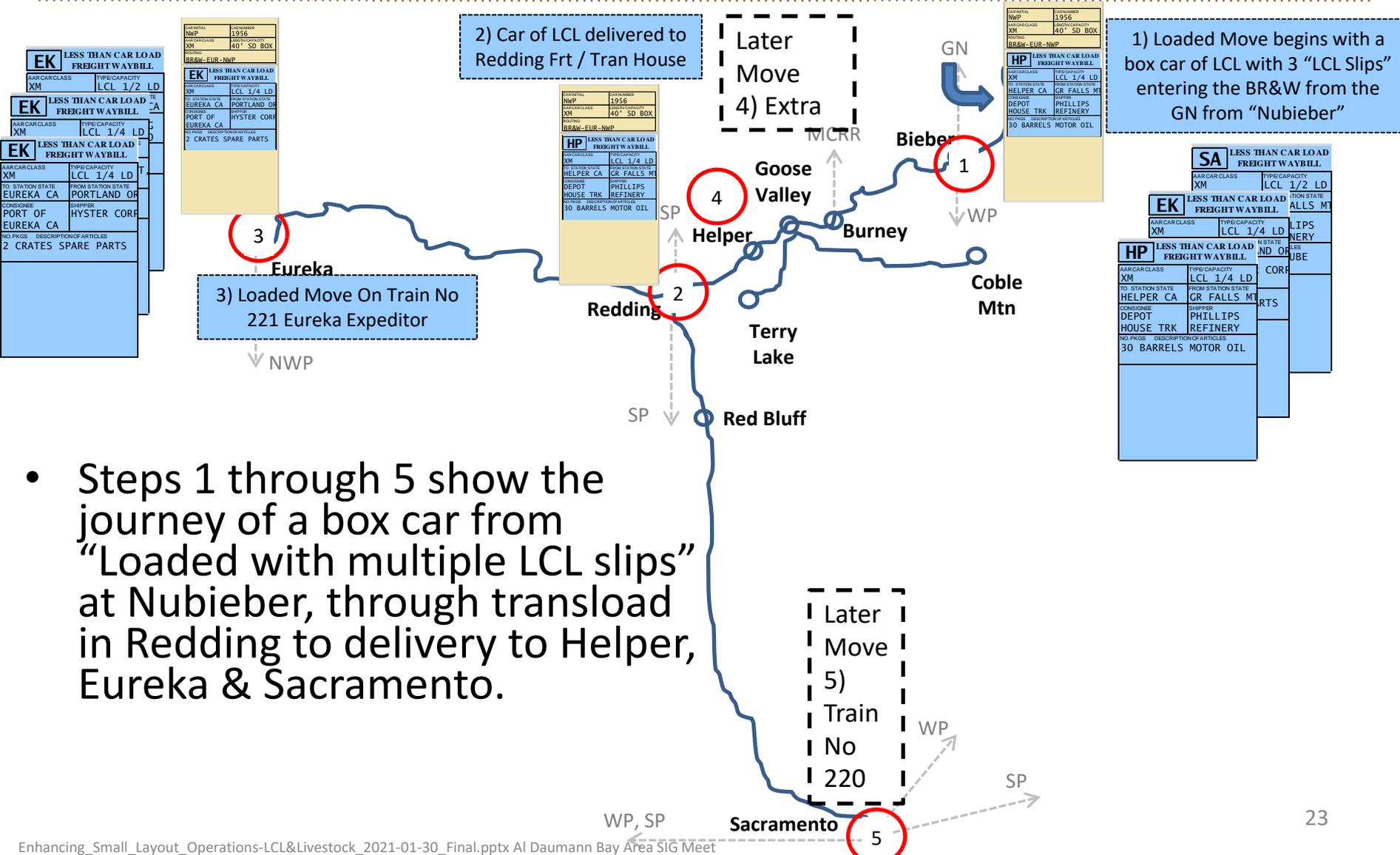
EK	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/2 LD
TO STATION STATE EUREKA CA	FROM STATION STATE ALTURAS CA
CONSIGNEE PORT OF EUREKA	SHIPPER PICKERING LUMBER CO
NO. PKGS DESCRIPTION OF ARTICLES 8 PALLETS MIXED	

CAR INITIAL NWP	CAR NUMBER 1956
AAR CAR CLASS XM	LENGTH/CAPACITY 40' SD BOX
ROUTING BR&W-EUR-NWP	

EK	LESS THAN CAR LOAD FREIGHT WAYBILL
AAR CAR CLASS XM	TYPE/CAPACITY LCL 1/4 LD
TO STATION STATE EUREKA CA	FROM STATION STATE PORTLAND OR
CONSIGNEE PORT OF EUREKA CA	SHIPPER HYSTER CORP
NO. PKGS DESCRIPTION OF ARTICLES 2 CRATES SPARE PARTS	



LCL Ops – LCL Example & Map



- Steps 1 through 5 show the journey of a box car from “Loaded with multiple LCL slips” at Nubieber, through transload in Redding to delivery to Helper, Eureka & Sacramento.

LCL Ops - Summary

- A description of a method of enhancing BR&W operations through the use of various aspects of LCL ops were shown
 - Use of thin blue slips in car cards to model multiple type of cargo and / or destinations in a single car
 - Inboard loaded cars with multiple destinations (both on and off layout)
 - Handling (off loading, transloading etc.) of LCL at the Redding Frt House
 - Coordination of loaded, single destination off layout cars with regular 2nd Class expedited trains (Employee Time Table, Freight House activity by hour)

- On the BR&W, regular and guest crews generally find the “LCL Ops” system just described to be an interesting and challenging enhancement to small layout operations on the BR&W



Livestock Operational Features To Maximize Operations

Livestock Ops Features – General Introduction

- Livestock operations also clearly fit the earlier definition of SA&Is since Livestock ops also “creates add’l moves / steps during the session”
- The basic livestock ops concept on the BR&W involves modeling the many different “states” that a stock car be in at a given time
 - Various car moves and associated SA&Is model the states and transitions among those states
- Livestock waybills generally follow prototype format, color etc.
- BR&W livestock ops are focused on Bieber Yd’s small “stock yard”
 - Bieber Yard is located near livestock raising in Alturas and connections with the Great Northern bringing livestock onto the BR&W
- BR&W livestock ops currently only consider cattle

Livestock Ops – Livestock Overview / Basic Aspects

- The approach for livestock ops
 - Use Livestock SA&Is & the 28hr/36hr rule to create a sense of “urgency” for a subset of stock cars traversing across the BR&W via the “UNLOAD BEFORE [time]”



Car Card w/Empty
For Home Attached

CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	

RD EMPTY CAR BILL FOR HOME	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE REDDING CA	FROM STATION STATE
CONSIGNEE BR&W AGENT	SHIPPER
ROUTING BR&W	

Livestock Freight
Waybill

AT LIVESTOCK FREIGHT WAYBILL	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE ALTURAS CA	FROM STATION STATE EUREKA
CONSIGNEE WILLOW CRK RANCH	SHIPPER MCKAY RANCH
NUMBER OF HEAD AND DESCRIPTION OF STOCK 37 HEAD BREEDER	
TIME LOADED	36 HR REQUEST SIGNED? NO

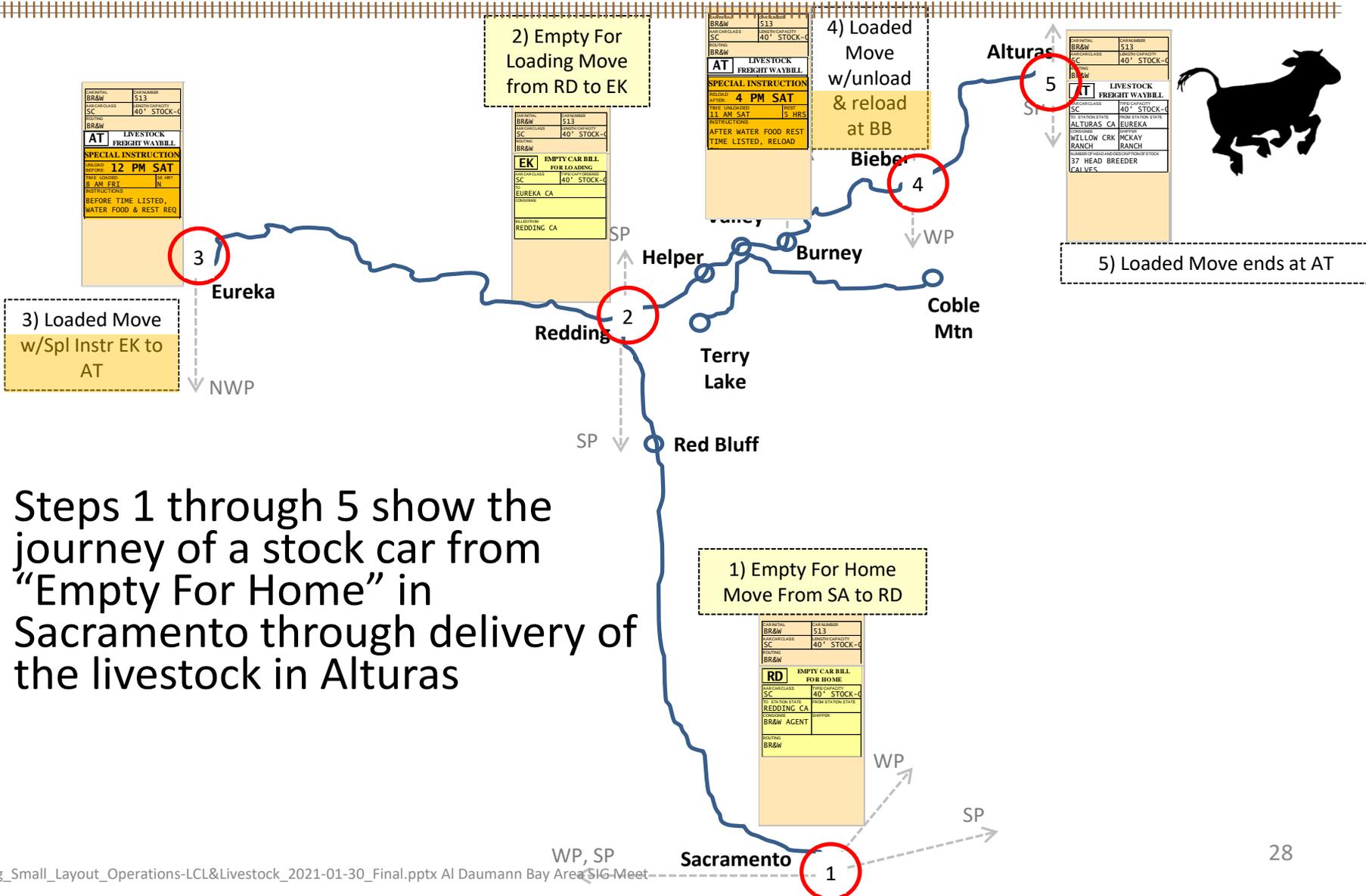
Livestock “Unload By” SA&I

SPECIAL INSTRUCTION	
UNLOAD BEFORE: 12 PM SAT	
TIME LOADED: 8 AM FRI	36 HR? N
INSTRUCTIONS BEFORE TIME LISTED, WATER FOOD & REST REQ	

CC + WB + SA&I

CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	
AT LIVESTOCK FREIGHT WAYBILL	
SPECIAL INSTRUCTION	
UNLOAD BEFORE: 12 PM SAT	
TIME LOADED: 8 AM FRI	36 HR? N
INSTRUCTIONS BEFORE TIME LISTED, WATER FOOD & REST REQ	

Livestock Ops – Livestock Example & Map



- Steps 1 through 5 show the journey of a stock car from “Empty For Home” in Sacramento through delivery of the livestock in Alturas

Livestock Ops – All Aspects

Car Card (beige) for car with freight trucks

Loaded Move (One sided bill)

Car "State")

CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	

RD EMPTY CAR BILL FOR HOME	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE REDDING CA	FROM STATION STATE
CONSIGNEE BR&W AGENT	SHIPPER

CAR IS DIRTY

CAR IS CLEAN

Empty RR Owned Car (returning to home road is default / part of car card)

Empty RR Owned Car (routed for loading)

AT LIVESTOCK FREIGHT WAYBILL	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE ALTURAS CA	FROM STATION STATE EUREKA
CONSIGNEE WILLOW CRK RANCH	SHIPPER MCKAY RANCH
NUMBER OF HEAD AND DESCRIPTION OF STOCK 37 HEAD BREEDER CALVES	
TIME LOADED	36 HR REQUEST SIGNED? NO

AT EMPTY CAR BILL FOR LOADING	
AAR CAR CLASS SC	TYPE/CAPYORDERED 40' STOCK-C
TO ALTURAS CA	
SHIPPER WILLOW CRK RANCH	
FOR LOADING	
SA	JUNCTION / INTERCHANGE SACRAMENTO CA
DESTINATION STATION STATE SAN FRANCISCO CA	

SPECIAL INSTRUCTION	
UNLOAD BEFORE 12 PM Sat	
TIME LOADED: 7 AM Fri	36 HR? N
INSTRUCTIONS BEFORE TIME LISTED, WATER FOOD & REST REQ	

"Special Instruction" Action / Overlay Card (Unloading Time Warning)

BB	CLEANING REQ'D
CAR TO BE SERVICED AT: CLEAN OUT TRACK	
INSTRUCTIONS CLEAN TIME 1 HR: REMOVE ALL BEDDING & LINING AND HOSE OUT CAR & ALLOW TO DRAIN	

"Special Instruction" Action / Overlay Card What = Clean Where = Bieber (BB)

Livestock Ops – Special Actions & Instructions

- The following “car state” slips indicate one of four stock car states:

CAR IS CLEAN	CAR HAS BEDDING
CAR IS DIRTY	CAR NEEDS BEDDING

Side 1

Side 2

- The following SA&Is direct activities and / or provide info related to stock cars:

SPECIAL INSTRUCTION		SPECIAL INSTRUCTION	
UNLOAD BEFORE	<i>12 PM Sat</i>	RELOAD AFTER:	<i>5 PM Sat</i>
TIME LOADED:	<i>7 AM Fri</i>	TIME UNLOADED:	<i>12 PM Sat</i>
INSTRUCTIONS	<i>36 HR? N</i>	REST	<i>5 HRS</i>
BEFORE TIME LISTED, WATER FOOD & REST REQ		AFTER WATER FOOD REST TIME LISTED, RELOAD OK	

Side 1

Side 2

BB	CLEANING REQ'D
CAR TO BE SERVICED AT: CLEAN OUT TRACK	
INSTRUCTIONS	
CLEAN TIME 1 HR: REMOVE ALL BEDDING & LINING AND HOSE OUT CAR & ALLOW TO DRAIN	

BB	BEDDING REQ'D
CAR TO BE SERVICED AT: CLEAN OUT TRACK	
INSTRUCTIONS	
BEDDING TIME 1 HR: LOAD 1" - 2" SAND	

Livestock Ops – At The Bieber Stock Yard

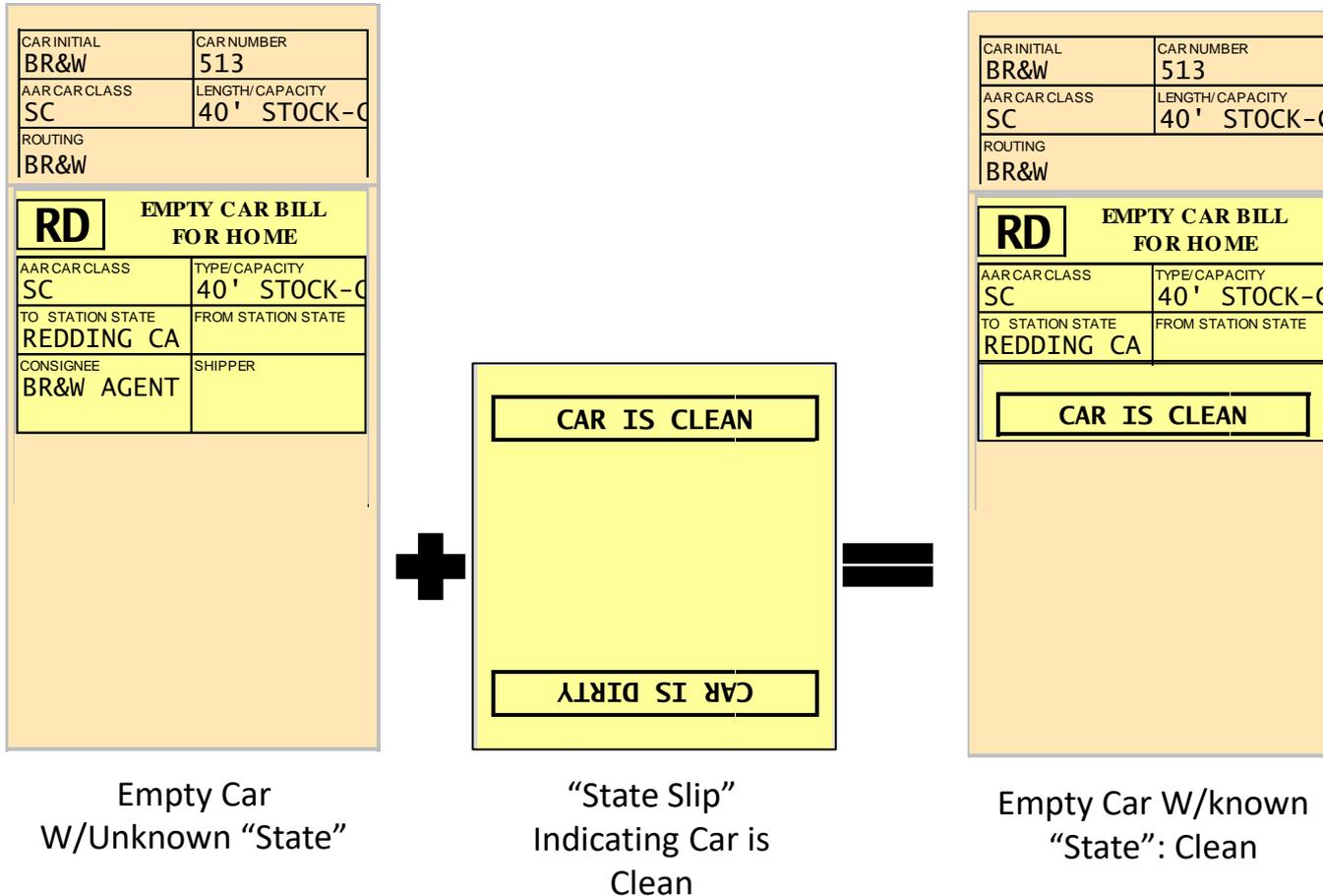


Bieber Yard - Stock Yard Area:

- A) 3 Spots (Load/Unload Stock Cars)
- B) 2 Spots (Cleanout / Add Bedding)
- C) 2 Spots (Team / Inbound Feed Etc.)

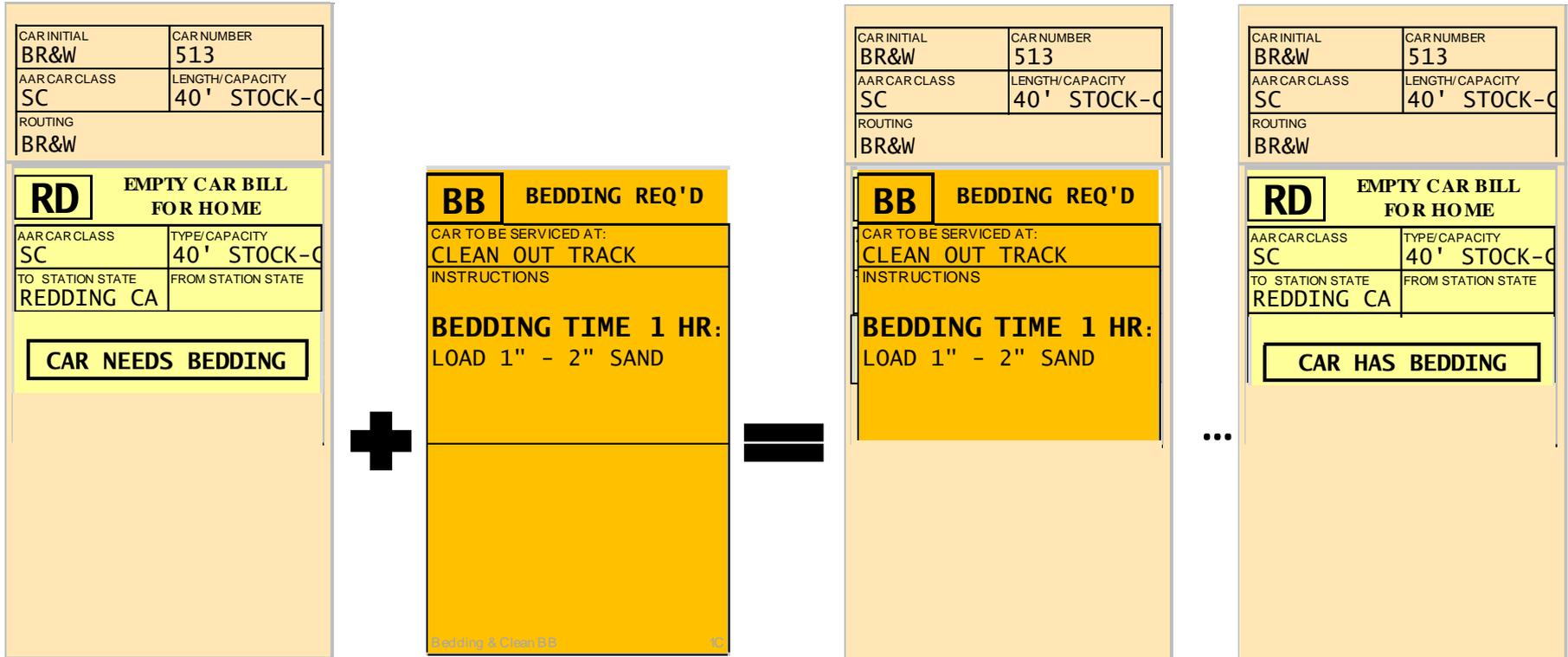
Livestock Ops – Modeling Stock Car / Ops “States”

- 1st step, indicate empty car is clean (empty, clean car in RD yard)



Livestock Ops – Modeling Stock Car / Ops “States”

- 2nd step, before loading w/livestock, car needs bedding



Empty Car W/known “State”: “Needs Bedding” (Change of State from “Clean”)

In between sessions, “Bedding Req’d” SA&I added to car card

SA&I – Directs car to be moved to Bieber Clean Out Track

After bedding added at BB, cleanout track (after 1 Hr), “State” is now clean, w/bedding

Livestock Ops – Modeling Stock Car / Ops “States”

- 3rd step, empty car w/bedding used to fill “empty request”

CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	
RD EMPTY CAR BILL FOR HOME	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE REDDING CA	FROM STATION STATE
CAR HAS BEDDING	



AT EMPTY CAR BILL FOR LOADING	
AAR CAR CLASS SC	TYPE/CAPYORDERED 40' STOCK-C
TO ALTURAS CA	
SHIPPER WILLOW CRK RANCH	
FOR LOADING	
SA	JUNCTION/ INTERCHANGE SACRAMENTO CA
DESTINATION STATION STATE SAN FRANCISCO CA	



CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	
AT EMPTY CAR BILL FOR LOADING	
AAR CAR CLASS SC	TYPE/CAPYORDERED 40' STOCK-C
TO ALTURAS CA	
CAR HAS BEDDING	

Empty Car W/known
“State”:
Clean, w/Bedding

Bieber Yard fills
“Empty For Loading”
request

Empty For Loading
bill directs car to be
moved to Alturas
(AT) for loading

Livestock Ops – Modeling Stock Car / Ops “States”

- 4th step, “load” car with livestock in staging (Alturas)

CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	
RD EMPTY CAR BILL FOR HOME	
AAR CAR CLASS SC	TYPE/CAPACITY 40' STOCK-C
TO STATION STATE REDDING CA	FROM STATION STATE
CAR HAS BEDDING	



SA LIVESTOCK FREIGHT WAYBILL	
AAR CAR CLASS SM	TYPE/CAPACITY 40' STOCK-M
TO STATION STATE STOCKTON CA	FROM STATION STATE ALTURAS CA
CONSIGNEE ALPINE PACKING	SHIPPER WILLOW CRK RANCH
NUMBER OF HEAD AND DESCRIPTION OF STOCK 23 HEAD CATTLE	
TIME LOADED	36 HR REQUEST SIGNED? NO



CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/CAPACITY 40' STOCK-C
ROUTING BR&W	
SA LIVESTOCK FREIGHT WAYBILL	
AAR CAR CLASS SM	TYPE/CAPACITY 40' STOCK-M
TO STATION STATE STOCKTON CA	FROM STATION STATE ALTURAS CA
CAR HAS BEDDING	

Empty Car W/known “State”:
Clean, w/Bedding at Alturas

During re-staging, Trainmaster “loads” car with livestock

Car now routed to Sacramento (SA)

Livestock Ops – Modeling Stock Car / Ops “States”

- 5th step, indicate when car is loaded, when needs unloading

CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/ CAPACITY 40' STOCK-C
ROUTING BR&W	
SA LIVESTOCK FREIGHT WAYBILL	
AAR CAR CLASS SM	TYPE/ CAPACITY 40' STOCK-M
TO STATION STATE STOCKTON CA	FROM STATION STATE ALTURAS CA
CAR HAS BEDDING	



SPECIAL INSTRUCTION	
UNLOAD BEFORE <i>12 PM Sat</i>	
TIME LOADED: <i>7 AM Fri</i>	36 HR? N
INSTRUCTIONS BEFORE TIME LISTED, WATER FOOD & REST REQ	



CAR INITIAL BR&W	CAR NUMBER 513
AAR CAR CLASS SC	LENGTH/ CAPACITY 40' STOCK-C
ROUTING BR&W	
SA LIVESTOCK FREIGHT WAYBILL	
SPECIAL INSTRUCTION	
UNLOAD BEFORE <i>12 PM Sat</i>	
TIME LOADED: <i>7 AM Fri</i>	36 HR? N
INSTRUCTIONS BEFORE TIME LISTED, WATER FOOD & REST REQ	

Empty Car W/known
“State”:
Clean, w/Bedding
at Alturas

During re-staging,
Trainmaster indicates
a “time loaded”

Car now must be
delivered or
unloaded by 12 PM
Sat (it’s always Sat
on the BR&W)

BR&W Transportation Plan – 24 Hr ETT

- 24 hr ETT (four 4 hour ops sessions w/ two hr regular train “gaps” in between)

BURNNEY, REDDING & WESTERN																													
EASTWARD										ALTURAS SUBDIVISION					WESTWARD														
Car Capacity		SECOND CLASS					FIRST CLASS					Distance from Eureka	Timetable No. 9		Telegraph Calls	Distance from Alturas	FIRST CLASS					SECOND CLASS							
Siding	Other Tracks	216 Sac Stk Special	232 Nubieber Express	220 Sac Expediter	222 Alturas Expediter	12 Mountain Mail	14 Capitol Mail	2 Empr Bldr GN Rwy	28 NW Chief ATSF Rwy	1	27		11	13			231	215	221	217									
		Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily											
Yard	30	DFNPWY	PM 11:05	PM 3:10	AM 10:45	AM 2:40	PM 9:10	PM 5:00	AM 4:40	....	TO Eureka	EK	105	AM	AM	PM	PM	AM	AM	PM	PM	AM	AM	PM	PM	AM	AM	PM	PM
12	94	DFJNPR SWY	s 11:08	s 3:12	s 10:48	s 2:42	s 9:13	s 5:02	s 4:42	14	TO-R Redding Jct	RD	91	s 4:22	s 8:15	s 4:00	s 8:03	s 2:03	s 10:28	s 2:13	s 10:53								
....	....	JPY								20	Ingot Jct / E Redding	....	85																
4	7	DPW		s 3:33		s 3:03	f 9:35		9:02	32	TO Helper	HP	73	4:20		f 3:57			s 10:25		s 10:50								
17	6	DJNPRW		s 3:53		s 3:06	f 9:39		9:05	61	TO-R Goose Valley Jct	GV	44	4:18		f 3:53			s 10:18		s 10:43								
8	10	DJP		s 3:54		s 3:07	f 9:43		9:06	70	TO Burney Jct	BU	35	4:17		f 3:49			s 10:17		s 10:42								
....	....	J								85	Fall River Mills	....	20																
12	40	DFNPRS WY		s 3:56		s 3:09	s 9:45		9:08	100	TO-R Bieber Jct	BB	5	4:15		s 3:45			s 10:15		s 10:40								
Yard	28	DFNPWY				s 3:23	s 9:58			105	TO Alturas	AT	....			s 3:30			s 10:00		s 10:23								
			Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily					Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily

SACRAMENTO SUBDIVISION																													
EASIWARD					FIRST CLASS					Distance from Redding Jct	Timetable No. 9		Telegraph Calls	Distance from Sacramento	WESTWARD														
Car Capacity		SECOND CLASS			FIRST CLASS			14	28		27	13			231	221													
Siding	Other Tracks	216 Sac Stk Special	220 Sac Expediter		Capitol Mail	NW Chief ATSF Rwy	Capitol Mail	NW Chief ATSF Rwy	NW Chief ATSF Rwy	Capitol Mail	Morning Perishable	Eureka Expediter																	
		Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily												
12	94	DFJNPR WY	s 11:08	s 10:48	s 5:02	s 4:42	TO-R Redding Jct	RD	10		s 8:30	s 8:20	s 2:15	s 2:30														
....	....	P	11:20	11:00	5:15	5:00		Red Bluff	....	6	s 8:15	s 8:03	s 2:03	s 2:13													
Yard	51	DFNPWY	s 11:23	s 11:03	s 5:18	s 5:03		TO Sacramento	SA	....	s 8:12	s 8:00	s 2:00	s 2:10														
			Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily

GOOSE VALLEY BRANCH																													
EASIWARD					FIRST CLASS					Distance from Terry Lake	Timetable No. 9		Telegraph Calls	Distance from Coble Mtn	WESTWARD														
Car Capacity		SECOND CLASS			FIRST CLASS																								
Siding	Other Tracks	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily									
Yard	14	DFNPWY								....	TO Terry Lake	TL	18															
17	6	DJNPRW								5	TO-R Goose Valley Jct	GV	13																
4	8	P								18	Coble Mountain	....	....														
			Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily	Leave Daily							

Livestock Operational Features - Summary

- A description of a method of enhancing BR&W operations through the use of various aspects of Livestock Ops were shown
 - Introduced concept of various “states” of empty livestock cars: 1) clean, 2) needs bedding, 3) has bedding and 4) dirty (not discussed in detail)
 - Additional examples of use of Empty For Loading shown
 - Introduced Livestock Ops related SA&Is: 1) Cleaning Req’d, 2) Bedding Req’d, 3) Unload Before ___ time and 4) Reload After ___ time (not discussed in detail)
 - Location of regular 2nd Class expedited trains with a livestock focus shown on the BR&W Employee Time Table

- As with LCL, on the BR&W, regular & guest crews generally find the “Livestock Ops” system described to be both interesting and challenging as an enhancement to small layout ops on the BR&W

Overall Summary

- A brief summary of operational features used to enhance operations on small layouts such as the BR&W was shown
 - Why enhance operations (constraints, problems etc.)?
 - Author's layout summary as overall sample of small layout enhanced operations
- Details of Less than Car Load (LCL) and Livestock Operations features for use on small layouts was shown, with BR&W examples / case studies
- Hopefully both beginner and more experienced operators (including those more experienced than the author) found a tidbit or two useful for their layouts or future operation sessions
- Thank you for your time and attention!