



The Northwestern Pacific in HO; Recreating the Railroad and its Operations

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Iron Horse Express

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Clinic Outline

- **Review of Historical Modeling Concept**
- **Introduction to the Prototype NWP.**
- **Layout Design Issues and Decisions.**
- **Obtaining Look and Feel of the NWP.**
- **Analyzing and Modeling NWP Operations.**



“Historical Modeling”

- Results in an **operating** layout that recreates the essence of a selected prototype so that you and your visitors/fellow modelers can allow themselves to imagine that they are in fact seeing/operating that prototype at that time in history.
- Absolute accuracy is secondary to overall scheme and impression. However, selected unique features are critical.



A Stagecraft Model: Three Components, All Equally Important

- **The Stage: How it Looks**
 - Scenery, etc.
 - Track
 - Structures
- **The Players: Equipment**
 - Locomotives
 - Rolling Stock
 - Etc.
- **The Script: Operating Scheme**



Unavoidable Compromises

Affect all Three Components

- Everything is smaller and closer together.
- Track arrangements
 - Shorter sidings, less tracks.
- Structures - smaller, stand-ins, approximations, etc..
- Trains shorter.
- Traffic more dense.

Select what to model in detail versus by suggestion. Employ selective representation using key signature elements.



Assumption:

Without Formal Operating Sessions the Layout is Not Complete. Period.



First Steps: Select ...

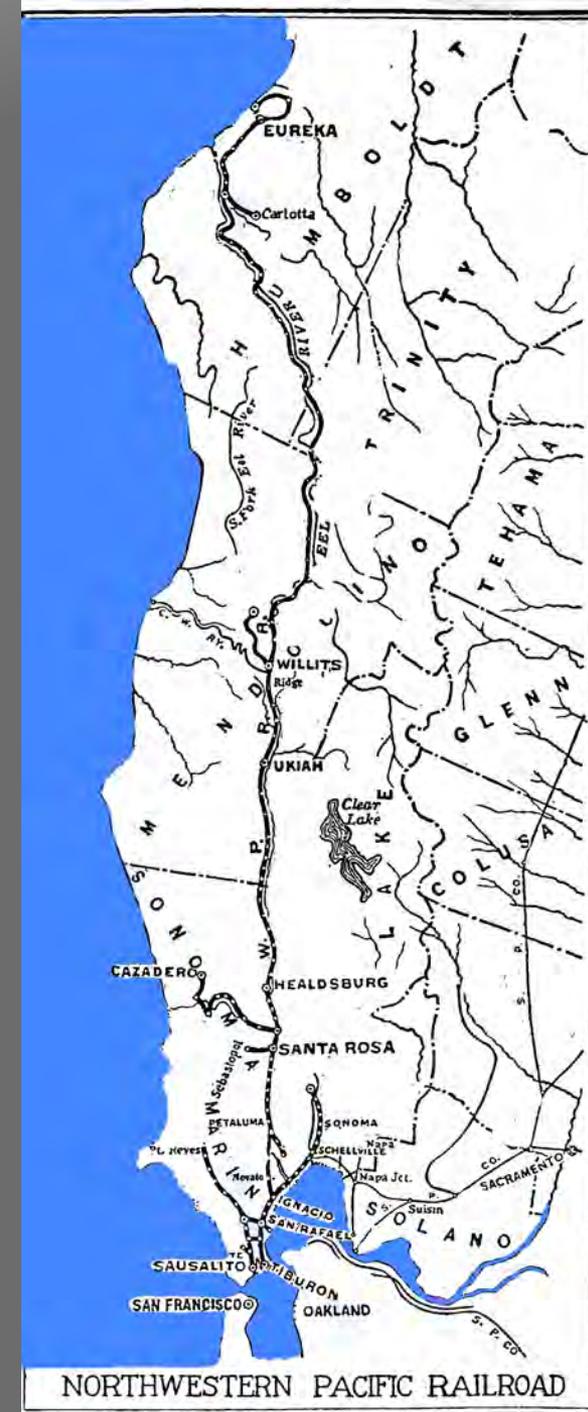
(What, When, Where)

- **Prototype Railroad.**
- **Era.**
- **Specific Locations.**



Northwestern Pacific (NWP)

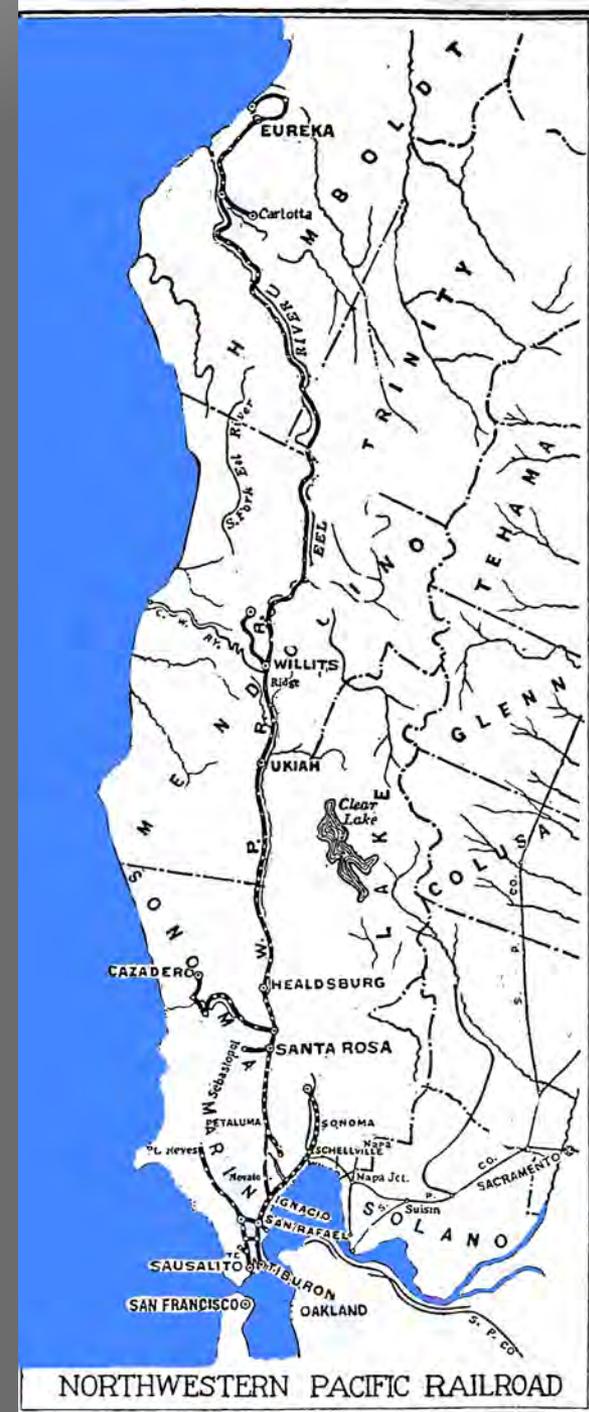
- Tiburon to Eureka, 278 miles.
- Primarily carried lumber, some dairy and fruit products.
- Northern & Southern Subdivisions.
- Interchanges
 - Schellville, Suisun, Napa Jct.
 - Tiburon by Ferry.
 - CA Western, P&SR, various logging roads.





Brief History of NWP

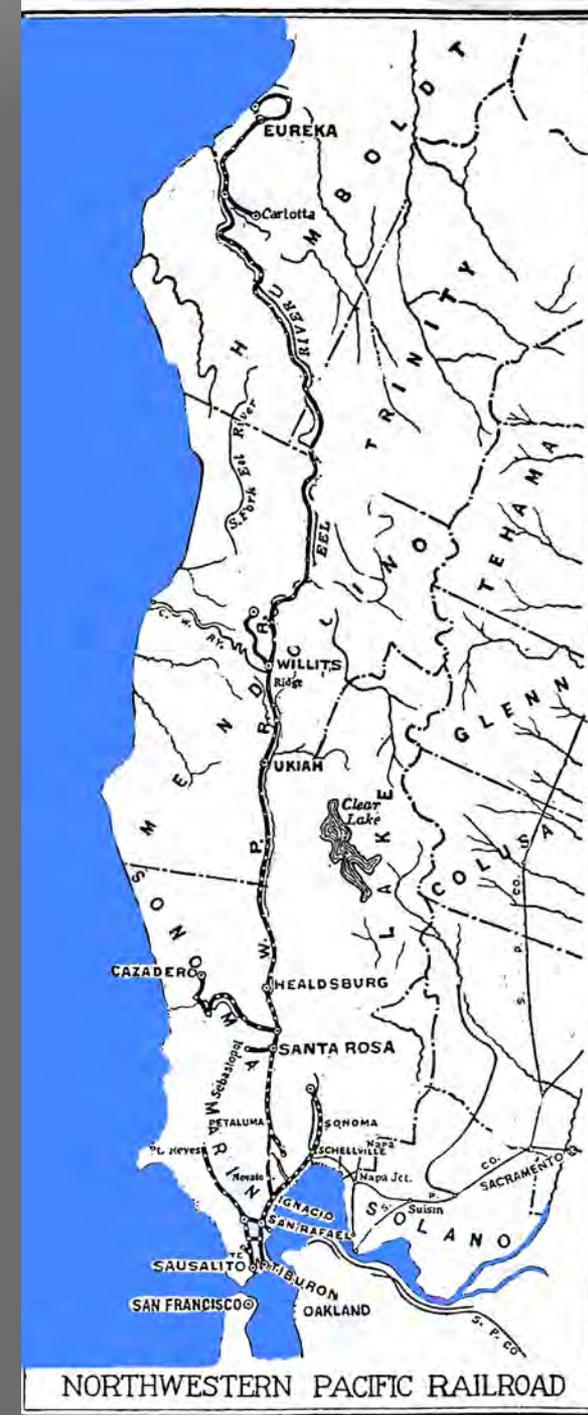
- 1906: NWP incorporated as joint Santa Fe and SP venture, consolidating 43 (?) existing lines.
- 1914: Construction completed.
- 1929: Santa Fe bows out; NWP now SP subsidiary.
- 1932: SP acquires P&SR, which is NWP operated until demise in 1984.
- 1953: Entire line dieselized.
- 1958: Through passenger service ended.





History of NWP II

- 1984: SP sells line above Willits to Eureka Southern, bankrupt in 1986, shut down in 1992.
- 1990s: Public Agencies assume ownership (GGBHD, NCRA).
- 1993-1998: California Northern operates Suisun to Willits.
- NCRA briefly operates “new NWP.”
- 2011: A new operator, NWP, begins freight service.
- April 2012: Begin installation new rail/ties for SMART.





The RR' s Mission

- **Ship Out**
 - Lumber
 - River Rock (Gravel)
 - Apples & Apple Products (P&SR)
 - Egg and Dairy Products
 - Wine
 - Livestock
- **Ship In**
 - Feed (P&SR)
 - LCL
 - Support Materials
 - Empties



My NWP

- 1958-60, early fall (for apples).
- Modeled towns selected for operational function: Petaluma, Santa Rosa, Sebastopol, Healdsburg, Willits. Includes Petaluma & Santa Rosa, interchange with California Western.
- Ends of line (Eureka, Tiburon, Schellville etc.) are “staged.”
- Trains & operations patterned after prototype 1958 timetable.





Why 1958?

- **I Like Black Widows.**
- **I Like C-30 Cabooses.**
- **Last Year of Passenger Service (i.e., the “Redwood”).**



NWP Traffic

Revenue freight traffic, in millions of net ton-miles (P&SR not incl)

Year	Traffic
1925	150
1944	348
1960	604
1970	421

Source: ICC annual reports



Layout Design

- Available Space - About 12 x 17 feet, give or take, in part of a two car garage.
- Walk Around Design, Once Through Scene.
- Walk-in, no Duckunders.
- Walk-in from end, not side, to maximize siding/yard length.
- Isle minimum 36 inches wide.
- L-Girder, Multi-Deck connected By Helix.
- Hidden Staging, point to point, with continuous run option.
- Viewblocks to create a series of dioramas.
- Mainline minimum radius 26 inches. Most turnouts #6.



Track Planning: Santa Rosa





NWP Depots



Willits



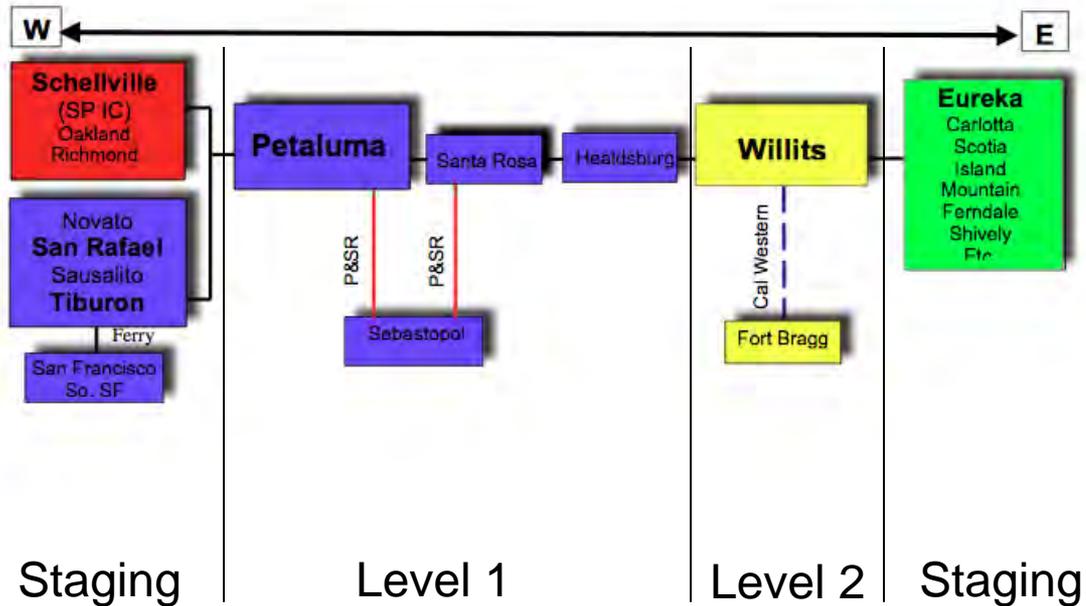
Petaluma



Santa Rosa



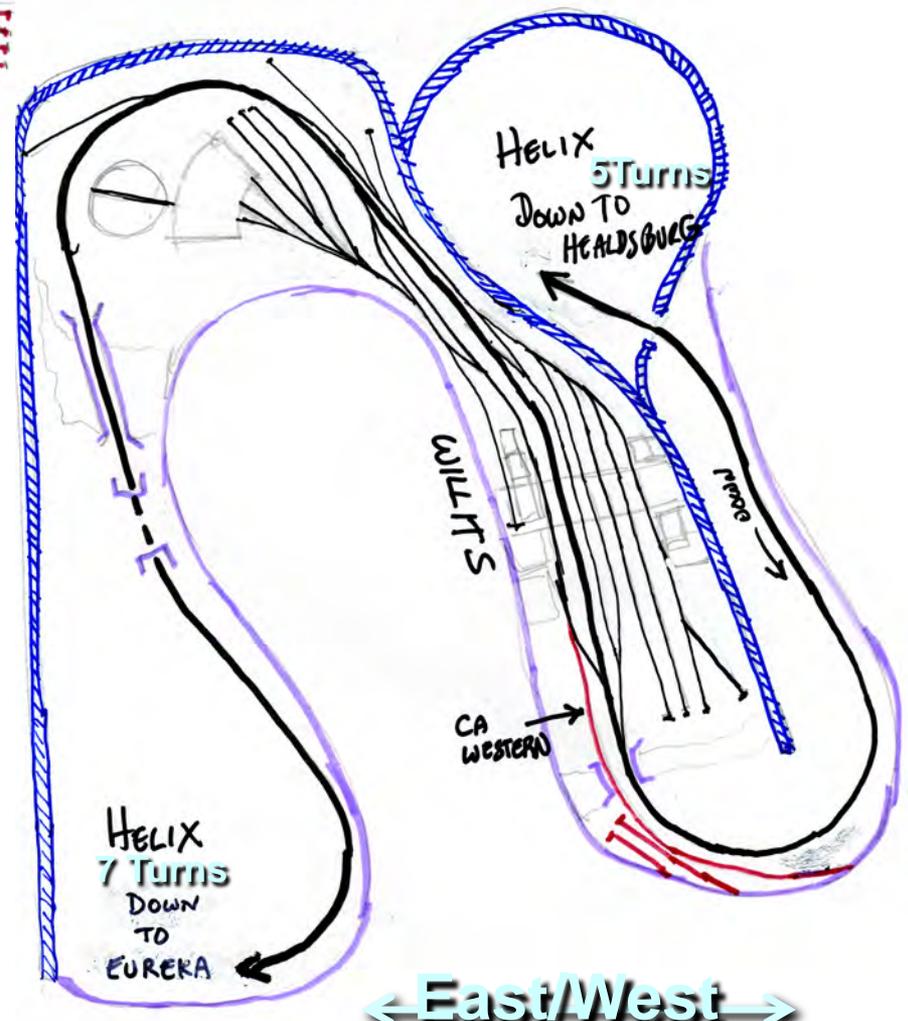
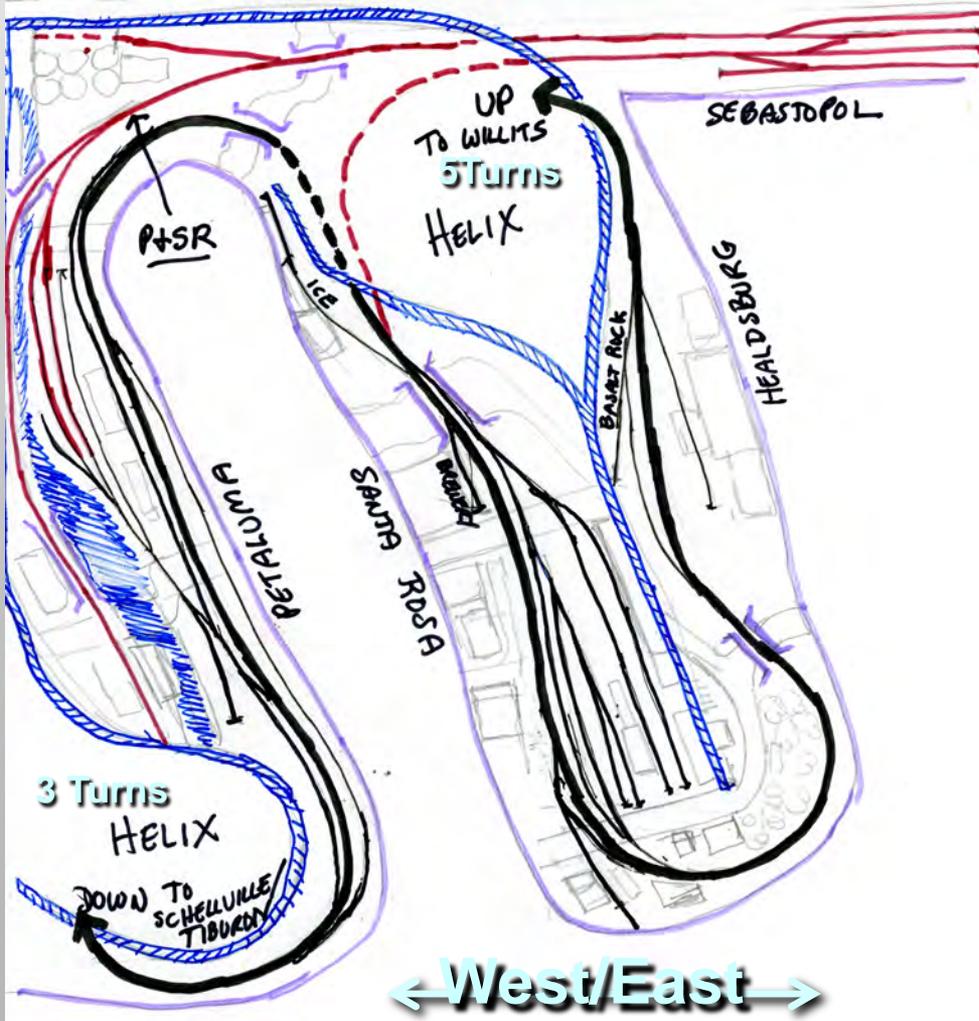
Schematic View I





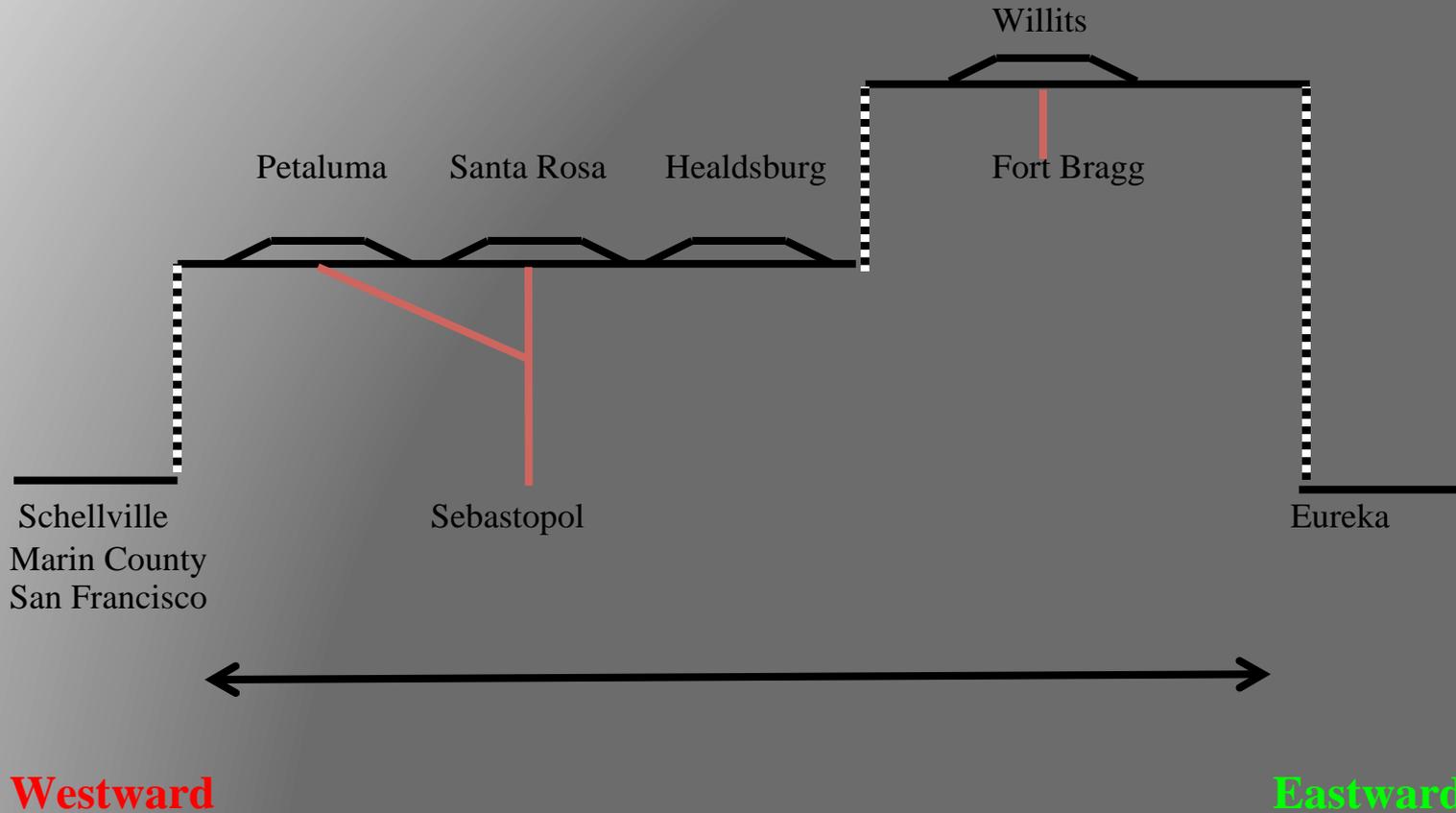
Track Plan (Not to Scale)

Lower/Upper Levels





Schematic View II











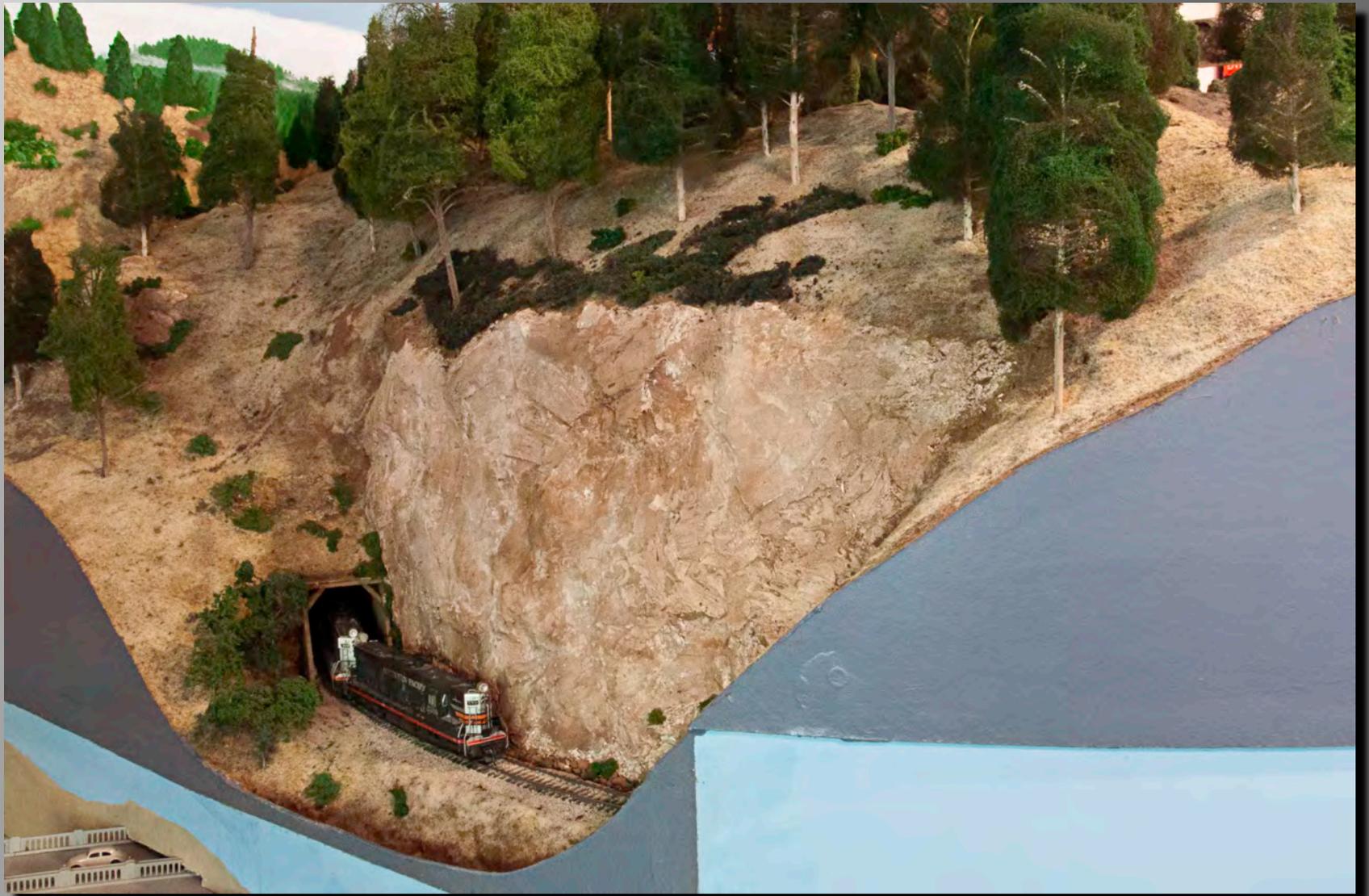
Helix Issues

Pros and Cons

- **Cons**
 - **Lots of Hidden Track (14 ft/loop), Trains Out of Sight.**
 - **Take Lots of Space**
- **Pros**
 - **Easy Way to Change Elevation Over Small Distance.**
 - **Uses Elapsed Time to Simulate Longer Distances Between Locations.**



Herniated (Offset) Helix





Helix Cutout





Hidden Staging





The Stage: Scenic Features



North of Santa Rosa





Eel River Canyon





Outlet Creek





Hillside Oak Forest





The Stage: Track and Structures



Petaluma





Petaluma's Old Mill



Santa Rosa





Willits





Commercial Street
Willits, CA





The Players

Locomotives and Rolling Stock



SP Locomotives Leased to NWP in 1958

NW2 2

SW8 8

SW900 3

SD7 25

SD9 3

*(Stindt, FA: The Northwestern Pacific
Railroad Vol. 2, 1985)*



Primary Motive Power: "Cadillacs"

EMD
SD7s





EMD SD9s





**Rebuilt SP C-30-1
Caboose**

Freight Cars





P&SR 44 Tonners



NWPRRHS



Operations





Ground Rules of Operation

- Train Orders
- Standard Car Cards/Waybills
- Train Length Limited to 12 Cars as Dictated by Siding Length.

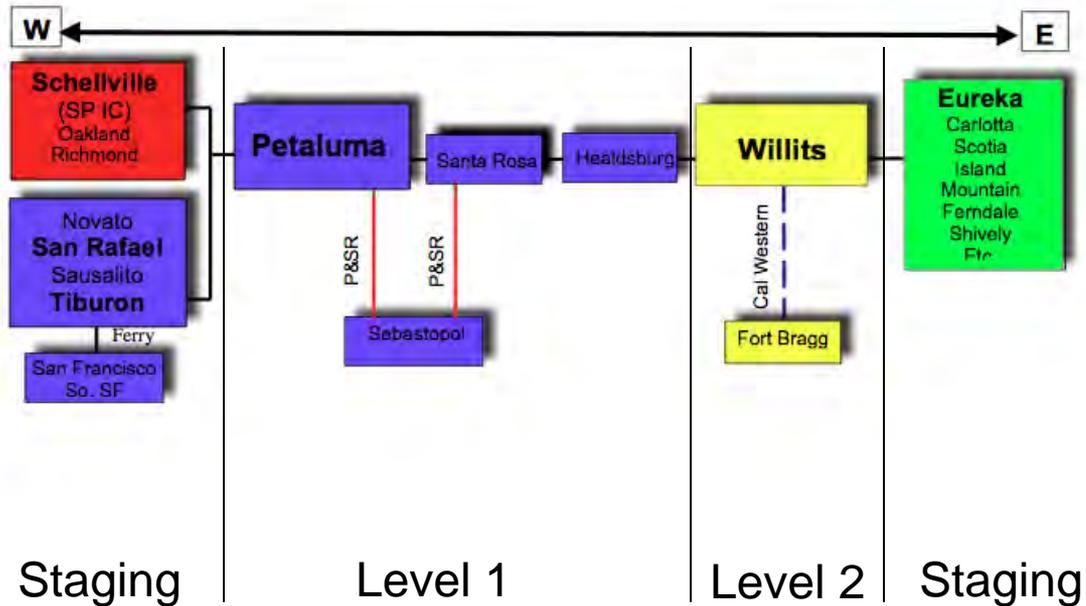


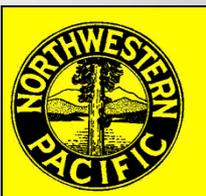
Types of Trains

- **2nd Class Freights (Westward)**
- **Extra Freights (Primarily Eastward)**
- **Locals**
- **Redwood (1st Class)**
- **P&SR**



Schematic View





2nd Class Freights Approach Final Destination

SOUTHERN DIVISION—SANTA ROSA SUBDIVISION										3
		EAST- WARD			Timetable No. 40 April 27, 1958 SCHELLVILLE BRANCH		WESTWARD			
Capacity of sidings		Mile Post Location			Station Number	Distance from Ignacio	SECOND CLASS			
			STATIONS				81 Freight	85 Freight		
						Arrive Daily	Arrive Daily			
Yd. Limits	BDP	44.8	TO-R	SONOMA 4.4	620	19.9	AM 5.35	PM 8.35		
	KWYP	40.4	TO-R	SCHELLVILLE 9.6	616	15.5				
		30.8		RECLAMATION 2.3	606	5.9				
	IP	28.5		BLACK POINT 3.6	604	3.8				
Yard Limits 68	YP	24.9		IGNACIO	22	0.0	4.29 AM	7.29 PM		
							Leave Daily	Leave Daily		
							81	85		



Simplified Timetable no. 40

Southern Division - Santa Rosa Subdivision

Eastward		Westward	
First Class		First Class	Second Class
4	Stations	3	81
6.15 AM	Tiburon	5.20 PM	
	Ignatio		4.29 AM
8.06 AM	Petaluma	3.39 PM	7.29 PM
8.33 AM	Santa Rosa	3.16 PM	4.02 AM
11.20 AM	Willits	12.31 PM	3.33 AM
			6.33 PM
			12.01 AM
			3.00 PM

Northern Division - South Fork Subdivision

Eastward		Westward	
First Class		First Class	Second Class
4	Stations	3	75
11.35 AM	Willits	12.15 PM	77
5.10 PM	Eureka	6.45 AM	4.15 PM
			3.30 AM
			10.25 AM
			10.00 PM



Staggered 2nd Class Freights

Time



Dep Eureka

77



Arr Willits 3:30 AM

81



Dep Willits 12:01 AM

75



Arr Willits 4:15 PM

85



Dep Willits 3:00 PM



Operational Issues

- Entire prototype system is “dark.” TTTO operation.
- Extras/unscheduled trains not on TT.
- Number of eastward extras equals number of westward trains and assume that all trains run; makes op session setup practical.



Modeled NWP Timetable

Northwestern Pacific Railroad Company												
Capacity of sidings	EASTWARD		Mile Post Location	Timetable No. 43 April 26, 1959	Station Number	Distance from Willits	WESTWARD					
	FIRST CLASS						FIRST CLASS		SECOND CLASS		SECOND CLASS	
		4 Redwood					3 Redwood		75 Freight	77 Freight	81 Freight	85 Freight
		Leave Mon., Thurs. and Sat.					Arrive Sun., Tues. and Fri.		Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily
		AM 11:30	6.5	TIBURON	5	131.4	PM 2:00					
			17.0	SAN RAFAEL	14	122.5						
		12:00	24.9	IGNATIO	22	114.6	1:30			Via Black Point Via Black Point		
		12:30	38.5	PETALUMA	36	101.0	1:00			5:00 AM 4:00 PM		
		12:45	53.8	SANTA ROSA	51	85.7	12:45			4:45 3:45		
			68.0	HEALDSBURG	65	71.5						
			114.0	UKIAH	111	25.5						
		1:45	139.5	WILLITS	136	0.0	12:00	6:00 PM	8:00 AM	4:00 AM 3:00 PM		
			194.5	ISLAND MOUNTAIN	191							
			255.8	SCOTIA	253							
			266.1	FORTUNA	263							
		3:00 PM	284.1	EUREKA	281		10:00 AM	4:00 PM	6:00 AM			
		Arrive Mon., Thurs. and Sat.					Leave Sun., Tues. and Fri.	Leave Daily	Leave Daily	Leave Daily		
		4					3		75	77		
									81	85		



Train Sheet Lists All Trains

Northwestern Pacific Railroad Company

Dispatcher's record of movement of trains

Date October 3, 1958

Santa Rosa Division

Eastward Trains

Westward Trains

Extra	Petaluma Local	Redwood 4	San Rafael Local	Gravel Train	Extra	schedule train	81	77	Redwood 3	Petaluma Local	85	75	Gravel Train
B	P	F	E	G	A	Staging Track/Origin	W	D	H	SR	W	C	HB
5333	1423	5327	5316	5206	5363	engine	5309	5334	990	1423	5334	5444	5206
5324			5328		5317	engine	5325	5281		5281	5321		
		---				caboose			---				
						conductor							
						engineer							
						Mile-post							
						Stations							
		AM				6.5	Tiburon	Staging		PM			
		11:30				17.0	San Rafael	Staging		2:00			
						24.9	Ignatio - To Schellville	Staging	Via Black Point	1:30		Via Black Point	
		12:00				38.5	Petaluma	10	AM	1:00		PM	
		12:30							5:00			4:00	
		12:45				53.8	Santa Rosa	11	4:45		12:45		3:45
						68.0	Healdsburg	5					
						114.0	Ukiah	Helix					
		1:45				139.5	Willits	12	4:00 AM	# 8:00 AM	12:00	3:00 PM	6:00 PM
						194.5	Island Mountain	Staging					
						255.6	Scotia	Staging					
						266.1	Fortuna	Staging					
		3:00 PM				284.1	Eureka	Staging	# 6:00 AM	10:00 AM		4:00 PM	



A Script for Planning Train Movements

Sequence of Trains

4:00 AM Train 81 Willits to Santa Rosa main, meet Extra 5333E
4:00 AM Extra 5333E Schellville (Staging A) to Petaluma
Extra 5333E Petaluma to Santa Rosa siding, meet Train 81
5:00 AM Gravel Train San Rafael (Staging E) to Petaluma
6:00 AM Train 77 Eureka (Staging D) to Willits
6:15 AM Train 81 Santa Rosa to Petaluma after meet with Extra 5333E
Extra 5333E Santa Rosa to Willits after meet with Train 81
6:30 AM Train 81 Arrives Petaluma
Gravel Train Arrives Petaluma
7:30 AM Train 81 Petaluma to Schellville (Staging A)
8:00 AM Train 77 Arrives Willits
8:30 AM Gravel Train Petaluma to Healdsburg
10:00 AM Train 3 Eureka (Staging D) to Willits
10:00 AM Petaluma Local Petaluma to Santa Rosa
Extra 5333E Willits to Eureka after arrival Train 3 (Staging D, Bk End)
11:00 AM San Rafael Local San Rafael (Staging E) to Petaluma
11:30 AM Train 4 Tiburon (Staging F) to Petaluma
12:00 PM Train 3 Willits to Santa Rosa, waits for Train 4
12:00 PM San Rafael Local Arrives Petaluma
12:30 AM Train 4 Petaluma to Santa Rosa, waits for Train 3
12:45 PM Train 3 Santa Rosa to Petaluma
12:45 AM Train 4 Santa Rosa to Willits
1:00 PM Train 3 Petaluma to Tiburon (Staging F)
1:30 PM Extra 5281E Schellville (Staging B) to Petaluma
1:45 PM Train 4 Willits to Eureka (Staging D)
Extra 5281E Arrives Petaluma
Gravel Train Healdsburg to Petaluma
2:15 PM Train 85 Willits to Santa Rosa, meet Extra 5281E
3:00 PM Extra 5281E Petaluma to Santa Rosa siding, meet Train 85
3:45 PM Train 85 Santa Rosa to Petaluma after meet with Extra 5281E
Extra 5281E Santa Rosa to Willits after meet with Train 85
4:00 PM Train 75 Eureka (Staging C) to Willits
4:00 PM Train 85 Arrives Petaluma
Extra 5281E Arrives Willits
5:00 PM Train 85 Petaluma to Schellville (Staging B)
5:45 PM Gravel Train Petaluma to San Rafael (Staging E)
6:00 PM Extra 5281E Willits for Eureka (Staging C) after meet with Train 75
7:00 PM San Rafael Local Petaluma to San Rafael (Staging E)

- a) Departure Times for Extras Set In Advance.
- b) Avoid Staging Track Conflicts.
- c) Limit Meets to Where Practical.



“Prefab” Train Orders

Sample Prototype Orders

4-29 1956 4046 C. S. 2500

TRAIN ORDER No. 10 MARCH 23 195 1961

To C & E ENGINE 5316

From the Collection of Ken Secrest

At SCHELLVILLE STATION X Opr. M.

ENGINE 5316 RUN EXTRA SCHELLVILLE TO WILLITS

EXTRA 5316 EAST DO NOT OBTAIN CLEARANCE AT
PETALUMA

P N

Repeated and Complete Time 1:39 AM M. SHIPLEY Opr.

To C & E

ENG 4317

At WILLITS STATION X Opr. M.

ENG 4317 RUN EXTRA WILLITS TO EUREKA

THIS ORDER ANNULLED AT 1240 PM

CLK



Preprinted Orders

C.S. 2600

C.S. 2600

TRAIN ORDER No. 1 OCT 3 19 58

To C & E ENG 5309

At WILLITS X Opr. M.
STATION

ENG 5309 RUN NO 81 WILLITS TO
SCHELLVILLE (A)

MEET EXTRA 5363E AT SANTA ROSA TAKE MAIN

Repeated and Complete Time M Opr.

TRAIN ORDER No. 2 OCT 3 19 58

To C & E ENG 5363

At SCHELLVILLE X Opr. M.
STATION

ENG 5363 RUN EXTRA SCHELLVILLE (A)
TO WILLITS

MEET NO 81 AT SANTA ROSA TAKE SIDING

Repeated and Complete Time M



The "Office"





Traffic Patterns





Santa Rosa	PFE Icing Plant (via P&SR)		
	PPPC		
	CA Packing Co.		
	Freight Station		
	Grace Brothers		
	Mead Clarke		
Sebastopol	TreeTop Apple (via P&SR)	Reefer (empty)	Reefer (apples etc)
	Cooperative Cannery	Boxcar (boxes)	
	Furusho Bros Packing House	Reefers	
	VacuDry Co.		
Healdsburg	Del Monte Cannery	Reefer, Boxcar	
	Fruit Packing	Reefer (empty)	Reefer (pears etc)
	Roma Vista Winery	Reefer (grapes), Boxcar (bottles etc)	Tank (wine), Reefer
	Lumber Co.	Flats	
	Basalt Rock	Hopper (empty)	Hopper (sand, gravel)
Willits	Union Lumber (via CW)	Flat (empty), Boxcar (empty)	Flat, Boxcar
	Freight House		
	Engine Yard	Tank (diesel fuel)	
	Mill	Flat (empty), Boxcar (empty)	Flat, Boxcar
	Redwood Lumber		
	Louisiana Pacific	Flat (empty), Boxcar (empty)	Flat, Boxcar
Scotia	Pacific Lumber	Flat (empty), Boxcar (empty)	Flat, Boxcar
	Fernbridge	Humboldt Creamery	Reefer (empty)
????	Cement company		

Industry List Used to Create Waybills



Tale of Two Trains





Train 81

- **# 75 Arrives Willits from Eureka w/9 cars @ 6 PM**
 - **Drops off 5**
 - **2 w/logs for Redwood Lumber**
 - **2 MTs for Willard Lumber**
 - **1 stock car for cattle pen**



Train 81 cont.

- **# 81 Departs Willits @ 4 AM w/12 cars**
 - 4 from #75
 - Pacific Lumber Scotia to Oakland
 - Lumber Samoa to Schellville
 - Pacific Lumber Carlotta to Schellville
 - MT Box Eureka to Schellville
 - 8 Pickups
 - 2 Stock cars for Swift/So San Francisco
 - 2 Stock cars for Schellville/Oakland cattle pens
 - 2 Loads from Union Lumber (via CW) to Schellville/Oakland
 - 1 MT tank to Chevron/Richmond
 - 1 Load Louisiana Pacific to Schellville



Train 81 cont.

- **After meet w/X5309E @ Santa Rosa #81 arrives Petaluma 5 AM**
 - Drops 2
 - 2 Stock cars for Swift/So San Francisco
 - 2 Pickups
 - 1 wine tank Roma Wine to Schellville
 - MT Box to Schellville
- **Departs Petaluma**



Extra 5309E

- **Leaves Schellville w/9 cars, arrives Petaluma**
 - **Drops 3**
 - 1 Cement hopper for Shamrock
 - 1 Diesel oil tank for Tiburon yard
 - 1 Reefer PFE/Santa Rosa
 - **2 Pickups**
 - 1 Iced reefer to Humboldt Creamery/Ferndale
 - 1 MT gondola to Humboldt Bay Lumber/Eureka
 - **Continues with**
 - 1 MT to Pacific lumber/Carlotta
 - 2 MT to Georgia Pacific/Samoa
 - 1 MT to Simpson Lumber/Eureka
 - 1 Oil tank to Shell/Eureka
 - 1 MT gondola Eureka
- **Departs Petaluma w/8 cars**



Extra 5309E cont.

- After meet w/#81 in Santa Rosa, arrives at Willits
 - Drops none
 - 1 Pickup
 - 1 MT gondola to Simpson Plywood/Eureka
- Departs Willits for Eureka w/9 cars



Closing Remarks/ Questions

- **Tony Thompson Type Waybills?**
- **Switch Lists instead of Car Cards?**
- **Clearance Forms?**
- **Train Registers?**
- **Radio Talk w/Dispatch?**