

**DO IT THE SAFE WAY
—OR DON'T DO IT**

RULE 10-I

Oral authorization and acknowledgments between Foremen and Engineers for trains to pass "Red Conditional Stop" signs must be worded in the following forms:

NWP FOREMAN..... AT MP..... CALLING NWP (Train No.).....

(After train answers giving his identification): (i.e.) NWP Train.....

Foreman's Response

"THIS IS NWP FOREMAN..... IN CHARGE OF THE WORK BETWEEN MP..... AND MP..... NWP TRAIN ORDER NO..... WE ARE IN THE CLEAR AND YOU MAY PROCEED PAST THE RED CONDITIONAL STOP SIGN AND THROUGH THE LIMITS OF ORDER AT..... MPH (REPEAT)..... MPH."*

Engineer's Response

"THIS IS ENGINEER NWP TRAIN... I MAY PROCEED PAST THE RED CONDITIONAL STOP SIGN AND THROUGH THE LIMITS OF ORDER NO.... BETWEEN MP AND MP AT (Speed). REPEAT (Speed) MILES PER HOUR."

Foreman must acknowledge Engineer's response as follows: "NWP TRAIN ORDER NO....., BETWEEN MP..... AND MP..... MPH* OK."

*When no speed restriction account above Form "Y" Train Order, tell train engineer "At Maximum Authorized Speed."

SPEED TABLE

TIME PER MILE	MILES PER HOUR
1'11"	50.7
1'12"	50
1'13"	49.3
1'14"	48.6
1'15"	48
1'16"	47.4
1'17"	46.8
1'18"	46.2
1'19"	45.6
1'20"	45
1'25"	42.4
1'30"	40
1'35"	37.9
1'40"	36
1'45"	34.3
1'50"	32.7
1'55"	31.3
2'00"	30
2'15"	26.7
2'30"	24
2'45"	21.8
3'00"	20
3'30"	17.1
4'00"	15
5'00"	12
6'00"	10
7'00"	8.6
7'30"	8
8'00"	7.5
10'00"	6

NORTHWESTERN PACIFIC RAILROAD COMPANY

AND PETALUMA AND SANTA ROSA RAILROAD COMPANY



TIMETABLE

4

EFFECTIVE SUNDAY, OCTOBER 31, 1976

AT 12:01 A.M.

PACIFIC STANDARD TIME

FOR THE GOVERNMENT AND INFORMATION
OF EMPLOYEES ONLY

W. M. JONES,
Vice President and General Manager.

H. B. FOWLER,
District Superintendent.

TRAINMASTERS

M. P. FORD..... Eureka
G. E. BOSWELL..... Santa Rosa

TRAINMASTER ROAD FOREMAN OF ENGINES

J. D. LEWIS..... Willits

CHIEF TRAIN DISPATCHER

C. L. KENNEDY..... Roseville

TIMETABLE NO. 4, OCTOBER 31, 1976

EAST- WARD			WEST- WARD
Mile Post Location		Station Number	Distance from Eureka
	STATIONS SIDING CAPACITIES AND FACILITIES		
40.4	Yd Lmts R SCHELLVILLE BY	23730	273.1
28.8	11.6 TO BLACK POINT IPQ	24043	261.5
25.6	Yd Lmts R 6078 IGNACIO YP	24050	258.3
25.8	5.5 BURDELL P	24209	252.8
31.3	4354 Yd Lmts 7.2 TO-R PETALUMA BKIPQ	24220	245.6
38.5	5574 Yd Lmts 15.3 TO-R SANTA ROSA BKYPQ	24410	230.3
53.8	4.7 FULTON P	24426	225.6
58.5	3638 Yd Lmts 9.5 TO-R HEALDSBURG BKPKQ	24441	216.1
68.0	6492 Yd Lmts 7.8 GEYSERVILLE P	24454	208.3
75.8	9.4 CLOVERDALE P	24463	198.9
85.2	4175 14.9 HOPLAND P	24473	184.0
100.1	Yd Lmts TO-R UKIAH BKPO	24479	170.1
114.0	6993 Yd Lmts 8.1 REDWOOD VALLEY P	24486	162.0
122.1	320 9.3 RIDGE P	24493	152.7
131.4	Yd Lmts TO-R WILLITS BKYPQ	24500	144.6
139.5	6501 13.0 LONGVALE	24533	131.6
152.5	1360 5.6 FARLEY	24538	126.0
158.1	1050 17.4 NASHMEAD	24557	108.6
175.5	Yd Lmts ISLAND MOUNTAIN PO	24607	89.6
194.5	14.5 ALDARPOINT	24623	75.1
209.0	7060 Yd Lmts 7.6 FORT SEWARD PQ	24632	67.5
216.6	2939 20.7 SOUTH FORK	24705	46.8
237.3	3628 18.3 R SCOTIA B	24729	28.5
255.6	1613 7.1 R ALTON	24740	21.4
262.7	3711 1.8 ROHNERVILLE	24805	19.6
264.5	1800 4.2 FERNBRIDGE	24815	15.4
268.7	3890 9.1 SOUTH BAY	24831	6.3
277.8	Yd Lmts TO-R EUREKA BKYPQ	24840	0.0
284.1	6.3 273.1		

EAST- WARD			WEST- WARD	
Mile Post Location		Station Number	Distance	
	STATIONS SIDING CAPACITIES AND FACILITIES			
	SAN RAFAEL BRANCH			
14.3	Yard Limits	DETOUR	24110	
17.0		2.7 SAN RAFAEL Y	24105	
25.8		8.8 IGNACIO YP	24050	
		(11.5)		
	SONOMA BRANCH			
44.4	Yd. Limits	SONOMA	24000	
40.4		4.0 R SCHELLVILLE RVP	23730	
		(4.0)		
	CARLOTTA BRANCH			
262.7	1613 R	ALTON	24740	
267.7	5.0	CARLOTTA	24745	
		(5.0)		
	KORBLEX BRANCH			
284.1	TO-R Yard Limits	EUREKA BKYPQ	24840	
292.5		8.4 ARCATA Y	24920	
295.2		2.7 KORBLEX	24930	
		(11.1)		
	SAMOA BRANCH			
292.5	Yd. Limits	ARCATA Y	24920	
300.5		8.0 SAMOA	24950	
		(8.0)		
	ADDITIONAL STATIONS			
	Capacity and Direction of Entry into Spurs	Mile Post	NAME	Station No.
	900W P	27.8	Novato..... (Spur)	24205
	2463	39.2	Park Siding.....	24241
	460W	41.0	Crown..... (Spur)	24244
	780E P	46.1	Cotati..... (Spur)	24251
	375E	48.7	Wilfred..... (Spur)	24254
	250W	50.7	Todd..... (Spur)	24257
	1126E P	62.6	Windor..... (Spur)	24432
	407W	66.4	Grant..... (Spur)	24436
	1169E P	72.1	Lytton..... (Spur)	24450
	221W	77.0	Omus..... (Spur)	24455
	1840 P	81.1	Asti.....	24459
	800E P	120.0	Calpella..... (Spur)	24484
	502W P	124.0	Laughlin..... (Spur)	24488
	1835	166.5	Dos Rios.....	24547
	630	184.3	Bell Springs.....	24565
	2416	253.5	Glynn.....	24727
	942E	259.0	Stone.....	24737
	1148	266.1	Fortuna.....	24810
	440W	271.0	Loleta..... (Spur)	24818
			San Rafael Branch	
	385W	14.9	Greenbrae..... (Spur)	24109
			Sonoma Branch	
	183E	42.3	Vineburg..... (Spur)	24008
	188E	44.2	Sebastiani..... (Spur)	24003
			Samoa Branch	
		297.5	Manila.....	24940

RULE 5. Eureka: Time for trains will apply at the west switch to train yard, MP 282.1.

TIMETABLE NO. 4

PETALUMA AND SANTA ROSA RAILROAD COMPANY

EAST- WARD	Mile Post Location	STATIONS	Station Number	WEST- WARD
				Distance from Denman
	0	Petaluma BKPQ	24309	3.6
		" —NWPRR.....	24310	
	1.4	West Petaluma.....	24321	4.1
	1.0	Park Siding.....	24241	2.6
	3.6	Denman.....	24332	0
				Distance from Sagu
	11.3	Turner.....	24334	11.9
	15.4	Bassett.....	24343	6.2
	16.7	Sebastopol.....	24345	4.9
	19.0	Molino.....	24350	2.0
	19.6	Barlow.....	24352	2.0
	20.9	Graton.....	24355	0.7
	21.5	Manzana.....	24357	0.1
	21.6	Sagu.....	24358	0.0
EAST- WARD	Mile Post Location	SANTA ROSA BRANCH	Station Number	WEST- WARD
				Distance from Santa Rosa
	23.2	Santa Rosa BYP	24365	0
		" —NWPRR.....	24380	
	20.2	Leddy.....	24375	3.5
	17.7	Gravenstein.....	24370	5.5
	16.7	Sebastopol.....	24345	6.5

RULE A. The P&SRR operates under the Rules and Regulations of the Transportation Dept. of the NWP RR. Employees must know they have in their possession copy of the Rules and Regulations of the NWP RR effective October 31, 1976.

RULE 10-H. First, second and third paragraphs are revised to read:

When a yellow flag is required it will be displayed to right of track in direction of approach, one-half mile from structure or track over which speed of trains must be restricted.

Trains must not exceed the speed specified by train order, timetable bulletin, or otherwise; or **RESTRICTED SPEED** if no speed is specified, commencing one-half mile beyond yellow flag, until rear of train clears the restricted limit.

When yellow flag is displayed and speed is not specified by train order, timetable bulletin or otherwise, trains must proceed expecting to find a red flag or red light that may be displayed one-half mile beyond the yellow flag.

RULE 10-J. Speed signs to left of track:

Westward	Reading
MP 16.25	10

RULE 93. Yard limits are established to include all tracks.

RULE 103.

Petaluma: Flashing light signals at Washington Street, West Petaluma, are not actuated for movement until equipment is within fifty (50) feet of crossing. Trains and engines must not proceed over crossing until flashing light signals are operating. Equipment must not be left standing on track within one hundred (100) feet of the crossing.

Switching movements over Washington Street, Petaluma, must not be made until a member of the crew has provided warning to traffic.

Uncontrolled movement of cars over this crossing is prohibited.

Basset: Warning devices at grade crossing No. 67-14.7 are not actuated until equipment is within fifty feet of crossing. Movement must not be made past stop signs until warning devices have been operating twenty seconds.

Denman: Warning devices at grade crossing No. 67-3.1 are not actuated until equipment is within fifty feet of crossing. Movement must not be made past stop signs until warning devices have been operating twenty seconds.

Sebastopol: Movements over Bodega-Santa Rosa Ave. must not enter the crossing until traffic signal on Main St. displays flashing yellow signal. When flashing yellow light is displayed and movement does not enter crossing within 1½ minutes, crossing must not be entered until traffic light displays green aspect for Main St. traffic.

Trains and Engines must stop before crossing Sebastopol Avenue and then proceed over crossing with **caution**.

MISCELLANEOUS

All engines are restricted from operating on the PSRR except the following: ES408, ES409, ES415, AS407, AS409, AS410 and GS407.

Sebastopol: Chain across main track must be replaced after movement is completed.

Load Limit (car and contents):

Petaluma-Denman.....	263,000 pounds
Turner-Sagu.....	220,000 pounds
Santa Rosa-Leddy.....	263,000 pounds
Leddy-Sebastopol.....	220,000 pounds

SPEED RESTRICTIONS

Movements must not exceed the following maximum speeds (shown in miles per hour):

Between:

Turner and MP 15.5.....	10
MP 15.5 and Sagu.....	15
Petaluma, West Petaluma and Denman.....	10
Santa Rosa and Sebastopol.....	15

Through sidings, yard and other tracks, crossovers and turnouts..... 10

The above speeds are the maximum speeds permitted. Speed must be further reduced as prescribed by speed signs or by timetable bulletin.

SPECIAL INSTRUCTIONS

DEFINITIONS

Holidays:

New Year's Day, January 1.
 Washington's Birthday, third Monday in February.
 Decoration Day, last Monday in May.
 Independence Day, July 4.
 Labor Day, first Monday in September.
 Thanksgiving Day, fourth Thursday in November.
 Christmas Day, December 25.

Note. ADD:

Flammable Compressed Gas (FCG): also applies to Flammable Gas (FG).

RULE A. Employes must know they have in their possession copy of Rules and Regulations of the Transportation Department effective October 31, 1976.

RULE P. LOCATION OF OVERHEAD AND SIDE STRUCTURES NOT STANDARD CLEARANCE ON MAIN TRACK AND SIDINGS

MP	Location	Description
37.8	Schellville	Bridge Side
28.5	Black Point	Drawbridge Side
37.2	Petaluma	Drawbridge. Overhead and side
68.0	Healdsburg	Steel bridge over Russian River Side

RULE 4-B. Scotia: Bulletins will be posted and maintained in caboose.

RULE 5. Time applies at the following locations:
Schellville: At east switch.

Willits: For trains via Longvale at MP 141.35 (just west of Highway 101 crossing).

Eureka: For trains at west switch to train yard MP 282.1.

RULE 10-H. On all branch lines, yellow flags will be displayed one-half mile instead of two miles from point of restriction.

RULE 10-J. First sentence second paragraph is revised to read:

Speed signs that prescribe reduction in speed will be located one and one-half miles from initial point of restriction, and where used to authorize increase in speed will be located at point where higher speed commences.

Speed signs to left of track:

Westward	Reading
MP 264.25	35
MP 113.50	30
Eastward	Reading
MP 54.45	40

RULE S-72. Westward trains are superior to trains of the same class in the opposite direction.

RULE 83-A. At the following stations only trains indicated will register:

Ignacio	Trains instructed by train orders. (Train register located in phone booth near station sign, Ignacio.)
Petaluma	Trains originating and terminating.
Santa Rosa	Trains originating and terminating. (Train register located in tie-up shack.)
Healdsburg	Trains originating and terminating.
Ukiah	Trains originating and terminating.
Scotia	Trains originating and terminating. (Train register in concrete building vicinity of Yoder switch).
Alton	Extra trains departing Alton on Carlotta Branch.

RULE S-90. First paragraph is revised to read:

Approaching a meeting or waiting point, engineer must sound signal 16(l) at least one and one-half miles before reaching station, and engineer must immediately acknowledge by sounding signal 14(n).

RULE 93. Yard limits are established at the following stations:

West MP		East MP
14.30	Detour (San Rafael Branch)	27.05
26.80	Ignacio	
44.40	Schellville	38.25
36.38	Petaluma	40.30
52.36	Santa Rosa	56.56
64.68	Healdsburg	69.71
74.26	Geyserville	78.39
110.84	Ukiah	116.10
120.21	Redwood Valley	122.39
137.90	Willits	141.40
193.94	Island Mountain	195.62
214.25	Fort Seward	218.50
280.56	Eureka (Korblex Branch)	End of NWP Track
	" (Samoa Branch)	End of NWP Track

RULE 99-C. Will apply between Redwood Valley and Eureka.

RULE 103. Except as otherwise provided in this rule or by other Special Instructions or timetable bulletins, a public grade crossing which is blocked by a stopped train, other than a passenger train, must be opened within ten minutes, unless no vehicle or pedestrian is waiting at the crossing. Such a cleared crossing must be left open until it is known that train is ready to depart. When recoupling at public crossings trains shall be moved promptly consistent with safety.

Switching movements over public grade crossings should be avoided whenever reasonably possible. If not reasonably possible, such crossings must be cleared frequently to allow a vehicle or pedestrian to pass and must not be occupied continuously for longer than ten minutes unless no vehicle or pedestrian is waiting at the crossing.

Cars or locomotives must not be left standing, nor switches left open, within the controlling circuits of automatic gate protection devices unless time-out features are provided to allow the gate arms to rise.

In the event of any uncontrolled blockage involving more than one grade crossing and a peace officer is on the scene, primary consideration shall be given to the clearing of that crossing which, in the peace officer's judgment, will result in minimum delay to vehicular traffic.

Train or yard crew member of a train blocking a public crossing shall immediately take all reasonable steps, consistent with the safe operation of such train, to clear the crossing upon receiving information from a peace officer, member of any fire department, or operator of an emergency vehicle, that emergency circumstances require the clearing of the crossing.

In the event of any uncontrolled blocking not otherwise provided for in this rule, crossing shall be cleared with reasonable dispatch.

RULE 103. Ninth paragraph will apply at the following locations:

Station	Location	Mile Post
*Santa Rosa	Third Street	53.7
**Ukiah	Perkins Street	114.0
South Bay	Railroad Ave.	277.9

*May be operated for movements from other than main track by operating key release on side of instrument case on east side of crossing and on relay post on west side of crossing.

**May be operated for movement over Lucas track by operating key release on relay post on west side of crossing.

Switch key may be removed but circuit must be occupied within one minute or gate will rise.

Detour: Warning devices at crossing No. 5C-14.0 are not actuated until equipment is within fifty feet of crossing. Movement must not be made past stop sign until crossing warning devices have been operating twenty seconds.

San Rafael: Pedestrian crosswalk located at Los Gallinas Avenue, MP 19.3, must not be blocked by standing trains or cars.

Vineburg: Warning devices at crossing No. 5H-42.3 are not actuated until equipment is within fifty feet of crossing. Movement must not be made past stop sign until warning devices have been operating twenty seconds.

Alton: Warning devices at crossing No. 5R-262.85, on Carlotta Branch, are not actuated until equipment is within fifty feet of crossing. Movement must not be made past stop sign until warning devices have been operating twenty seconds.

RULE 104. Normal position of junction switch of Carlotta Branch at Alton is for siding:

Normal position of junction switch at Carlotta is for the Northwestern Pacific R.R.Co. track.

RULE 105. Eastward Trains will use Siding at Burdell, Mile Post 31.3.

At the following stations, sidings are located as shown below:

Santa Rosa: On east side of main track, from East Switch MP 54.97, to MP 53.85 (10 feet east of Sixth St.).

Healdsburg: On east side of main track, from east switch MP 67.40 (10 feet west of Bailhache Ave.) to west switch.

RULE 206. Will not apply to Southern Pacific engines.

RULE 211(c). Is revised to read:

Oral authority to engineer of closely approaching train as follows:

"This is N.W.P. Operator (station). I have a Form 'N' train order to advance (train) on main track."

RULE 221. Unit for display of flashing light installed at the following locations:

Station	Location	Direction
Petaluma	East end siding	Eastward trains
Healdsburg	West end siding	Eastward trains

Black Point is train order office for eastward trains only.

Santa Rosa . . . is train order office for trains originating and terminating between 12:01 AM and 4:59 PM only.

RULE S-240. MOVEMENTS OF TRAINS BY STAFF SYSTEM

Applies at following location:

Territory	Register Location
Alton to Carlotta	Alton

When engine is changed before completion of a trip, crew must indicate on train register that trip was originated with Engine No. and completed with Engine No.

RULES S-240 and S-244. At locations where movement of extra trains or engines are authorized by use of train register, all lines of each page of the train register must be used and filled in before turning and starting a new page.

SPRING SWITCHES

RULE 538. Spring switches not equipped with facing point locks, equipped with switch point indicators, are located as follows:

Location	Normal Position
Burdell	West Switch Siding
Burdell	East Switch Main Track
Geyserville	East Switch Main Track
Redwood Valley	East Switch Main Track

RULE 540. Switch point indicator, indicating position of switch for facing point movement at above locations, are located from 25 to 100 feet in approach to switch.

INTERLOCKING

RULE 606. Black Point Drawbridge: Limits extend from eastward signal at MP 29.01 to westward signal at MP 28.70.

Petaluma Drawbridge: Limits extend from eastward signal at MP 37.10 to westward signal at MP 37.30.

GENERAL REGULATIONS

RULE 811. The crew must eat as a unit, and conductor will notify train dispatcher in advance where they intend to do so.

RULE 825. Many new cars are equipped with truck mounted brakes, (Wabcopac, Nycopac, etc.). The hand brake is effective on these cars on "B" end only. It will be necessary to check "B" end of these cars to determine that hand brake has been released.

At Willits train crews must not release hand brakes until engine is coupled and brake pipe is charged.

Rail skids are located at Ridge and Rounds lumber company spur.

When using rail skid it must be placed on rail and leading wheel of first car in descending direction run onto rail skid and hand brakes set if brakes are operative before engine is detached. Train crews picking up cars from these locations must remove rail skid and return to proper location and locked where locks are provided.

Cars set out on grade with defective hand brake must have another car with hand brake securely set placed below and against the bad order car.

HOT BOX DETECTORS

RULE 827. Train crews are to be familiar with the locations of these detectors:

SCANNER SITES:

MP	Direction	Location
48.9	East and West	Wilfred
256.0	East and West	Scotia

If means of communication is available, engineer must inform conductor and helper engineer, if any, when approaching hot box detector. Crews on helper engine and on rear end of train must acknowledge and advise engineer of indications displayed in addition to taking appropriate action in accordance with applicable rules and special instructions.

Hot box detector scanner sites have a white light continuously displayed on track side of instrument house, except when a hot bearing is detected, at which time light will start flashing. Crew members must be alert for the light and, when flashing, conductor and engineer must immediately orally compare observation when means of communication is available.

Absence of white light must be promptly reported to train dispatcher and does not require train inspection.

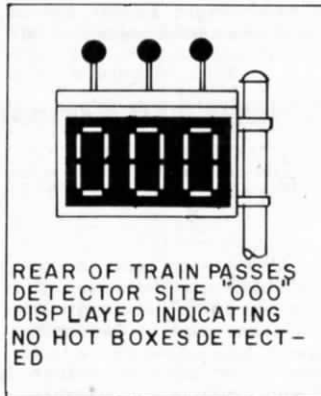
Actuation of hot box detector requires train to be immediately stopped for inspection. To accomplish this without causing journal to seize from the brake application, dynamic brake must be used when practicable. When working power and hot box detector has been actuated, brakes should be applied with an initial reduction, reducing power and applying dynamic brake as soon as possible consistent with good train handling, adding to the reduction as may be necessary to complete the stop.

SPECIAL INSTRUCTIONS

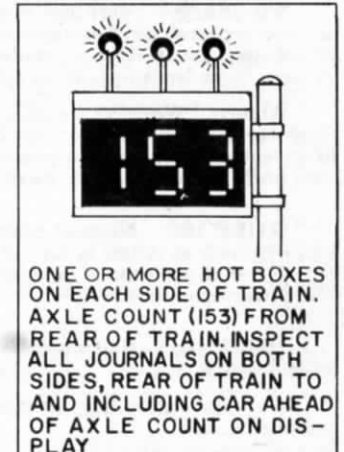
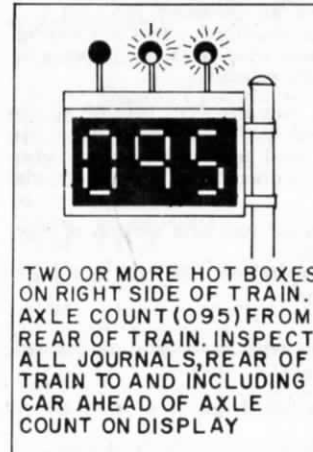
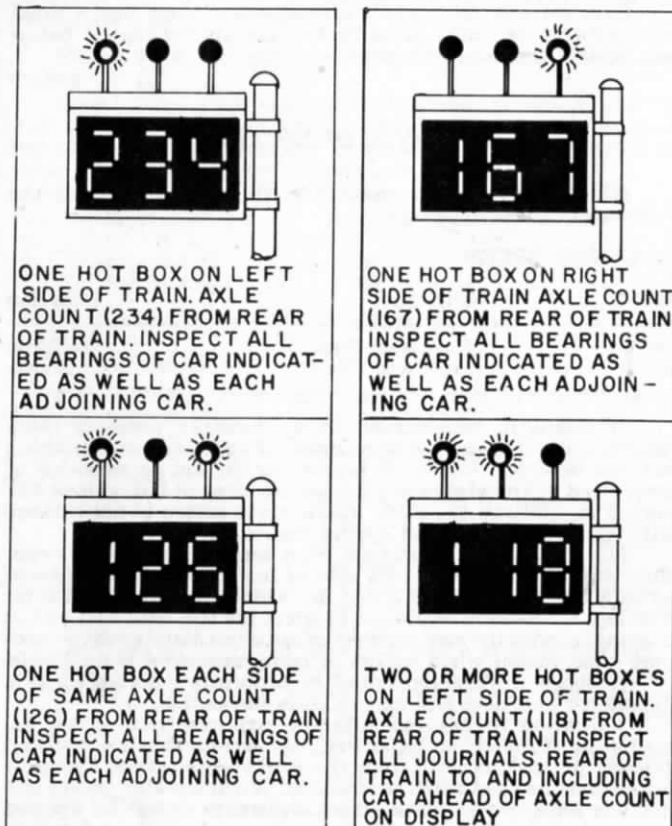
TYPE C. MONITOR DISPLAY BOARD WITH INDICATOR LIGHTS.

A Monitor Display Board and hot box indicator lights, as shown in diagram, are mounted on a signal mast at side of track. The display board is illuminated as train passes and will display zeros in the absence of a hot bearing. Two seconds after the train passes the detector, the display board will display numerals indicating the accumulated axle count from the hot bearing to the rear of the train.

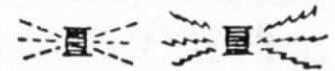
Absence of any numerical display after passage of a train must be promptly reported to train dispatcher.



The indicator lights are normally dark, but when hot bearing is detected, will display flashing white aspect as illustrated below:



WHITE (IN SERVICE) LIGHT



As the train passes the detector, the right or left hot box indicator light on top of the board starts to flash immediately upon detection of a hot journal, indicating the side of the train having the overheated journal.

A flashing indicator light in the center indicates that another hot bearing (or bearings) was detected subsequent to the hot bearing which is numerically indicated on the display board.

When any indicator light displays flashing white aspect, train must be stopped promptly and inspection made to locate car with hot bearing.

Lights and illuminated numerals will automatically cancel out ninety (90) seconds after entire train passes detector.

When hot bearing is not located then all journals of car indicated by detector as well as five (5) cars on either side of the car involved must be inspected.

When it is known hot bearing has been detected by crew member observing the flashing white light displayed on track side of instrument house, and a numerical readout is not displayed on the display board, then train must be stopped promptly and all bearings of train must be inspected.

CHECKING FOR JOURNALS SUSPECTED OF OVERHEATING

Whenever an overheated journal is suspected due to hot box detector activation, rolling inspection or visual symptoms, a walking inspection must be made to find the exact car and journal and to observe for other physical defects on the train.

Inspection must be carefully made in accordance with instructions in Superintendent's Special Notices.

For roller bearing cars special attention to proper use of tempilstiks, loose or missing cap screws, temperature sensitive cap screws and loose or leaking seals.

For plain bearing cars, look for low oil; brass, pad or wedge defective or out of place, or water in journal box.

REPORTING OF HOT BOXES

When hot box detectors are actuated the following information is to be reported at next terminal in telegraph message form identified by symbol H.B. addressed jointly to **Superintendent, Division Engineer, Signal Supervisor, and Chief Train Dispatcher, also General Manager Amtrak, San Francisco** when an Amtrak passenger train is involved.

1. Date and time stopped and M.P. location.
2. Train identification.
3. Car number and location in train (whether or not defect found).
4. Box location (1, 2, 3 or 4 from hand brake end of car, right or left side facing hand brake).
5. Disposition of car: If set out, state where. If inspection shows that it was not necessary to set out even though bearing was warm enough to activate the detector, advise what corrective action was taken to permit movement of car. If roller bearing equipped, so state.

NOTE: Report all cases where train passes over the detector without an indication having been displayed, but develops a hot bearing between detector and a point 20 miles beyond detector.

Whenever a roller bearing car experiences two successive hot box detector actuations and overheated journal or other cause of actuation cannot be found after required inspections were made and five (5) cars checked either side, car may be continued in train with provision that conductor must report same at best terminal and inspection is made by qualified maintenance personnel.

Train dispatcher to notify terminal of mandatory inspection when brought to his attention.

Any roller bearing car, which experiences three (3) successive hot box detector actuations, must be set out.

Train dispatcher must:

1. Notify Car Department of cars set out.
2. Notify Car Department of cars which are known to have had two successive hot box detector actuations.
3. Submit CS-7159A "Preliminary Report of Overheated Journals" whenever hot box is experienced except if on actuation of type "D" yard approach hot box detector.

Connecting crews, if any, must be notified by incoming crew of failure to locate hot bearing if indication is received on any hot box detector system and car is not set out.

**ROLLER BEARINGS
LOOSE OR MISSING CAP SCREWS**

During inspection by trainmen, if any roller bearing is found with one cap screw loose or missing and hot box detector has not been activated and check with tempilstik reveals no overheated condition, train may proceed to the next terminal where car must be set out.

Under the same circumstances, when two or more roller bearing cap screws are found loose or missing, train may proceed with caution to the first available track where car must be set out.

CONTINUOUS WELDED RAIL (CWR) TRAINS

Continuous welded rail (CWR) trains consist of a tiedown car and a number of roller-rack cars and may contain other cars, such as threader cars and elevator cars to accompany movement. A steel-end box car, refrigerator car, or high-side gondola car must be positioned on each end of CWR train as a buffer car during all movements except preparatory to and during unloading.

In addition to other requirements of this rule, when a CWR train is stopped for any reason, inspection must immediately be made of as much of train as practicable and the following items checked if train is carrying a full or partial load:

- a. Check for undesired movement of rail. The tops of rails are painted adjacent to the tiedown rack on the tiedown car which is located near center of train. Paint marks on each tier of rail must be in line; otherwise, this is an indication of an undesired movement of rail.
- b. Check each rail end to make certain it overhangs the last supporting roller by at least 12 feet and is no closer than 12 feet from the next empty roller. Rails are marked 12 feet from each end.
- c. When a load contains continuous lengths of rail made up of more than one piece, check to see that rail joints are secured with at least four bolts, properly tightened, and that rail ends have not pulled apart.
- d. Check coupler operating levers to make certain they are in position to prevent uncoupling and that coupler operating lever locking devices are in position and locked.

When any of these conditions are not as required, train must not be moved until train dispatcher has been contacted and further instructions are received.

RULES 827-A and 838. FLAMMABLE COMPRESSED GAS (FCG).

Following are shipping names of Flammable Compressed Gas (FCG):

Standard Transportation Classification Code	Shipping Name
4905705	Butadiene, inhibited (butadiene from alcohol)
4905704	Butadiene, inhibited (butadiene from petroleum)
4905703	Butadiene, inhibited (butadiene, impure, for further refining)
4905706	Butane
4905706	Liquefied petroleum gas (butane)
4905702	Butane (butane, impure, for further refining)
4905702	Liquefied petroleum gas (butane, impure, for further refining)
4905727	Compressed gases, n.o.s. (dispersant gases, nec. flammable)
4905748	Compressed gases, n.o.s. (iso-butene)
4905775	Compressed gases, n.o.s. (refrigerants, nec. liquid, flammable)
4905713	Cyclopropane
4905716	Difluoroethane
4905719	Difluoromonochloroethane
4905510	Dimethylamine, anhydrous
4905725	Dimethyl ether
4905734	Ethylene
4905749	Hydrocarbon gas, liquefied
4905749	Liquefied hydrocarbon gas
4905746	Hydrogen
4905745	Hydrogen, liquefied
4905410	Hydrogen sulfide
4905747	Isobutane
4905747	Liquefied petroleum gas (isobutane)
4905750	Isobutane (isobutane for further refinery processing)
4905750	Liquefied petroleum gas (isobutane for further refinery processing)
4905752	Liquefied petroleum gas
4905707	Liquefied petroleum gas (butene gas, liquefied)
4905711	Liquefied petroleum gas (butylene, impure for further refining)
4905780	Liquefied petroleum gas (pintsch gas)
4905758	Methylacetylene—propadiene, stabilized
4905761	Methyl chloride
4905764	Methyl chloride—methylene chloride mixture
4905520	Methyl mercaptan
4905530	Monomethylamine, anhydrous
4905781	Propane
4905781	Liquefied petroleum gas (propane)
4905785	Trifluorochloroethylene
4905540	Trimethylamine, anhydrous
4905792	Vinyl chloride
4905795	Vinyl methyl ether, inhibited

SPECIAL INSTRUCTIONS

When necessary to provide helper engine for trains handling cars containing Flammable Compressed Gas (FCG), helper engine must be placed in accordance with helper service instructions and there must be a proper separation of the helper engine from cars containing Flammable Compressed Gas (FCG).

Trains handling cars containing Flammable Compressed Gas (FCG) must not exceed 55 MPH. Where maximum authorized speed is less than 55 MPH and more than 25 MPH, train must be operated at 5 MPH less than maximum authorized speed. Such trains are further restricted to speeds shown at locations specified in instructions under subdivisions.

RULE 827-A. Trains handling tank cars containing Flammable Compressed Gas (FCG) must stop and inspect train at the following location(s):

Eastward Trains

Geyserville, vicinity of MP 75.8.
West of Hwy Crossing, vicinity of MP 262.7.
West of Hilfiker Lane, vicinity of MP 281.5.

Westward Trains

East of Singley Crossing, vicinity of MP 269.4.
East of Outlet Creek Crossing, vicinity of MP 144.
Redwood Valley, vicinity of MP 120.21.
East of Hwy 128 Crossing, vicinity of MP 75.8.

RULE 829. In addition to other train inspection requirements, when a train stops to be met or passed by a continuous welded rail (CWR) train, the CWR train must also be inspected to determine rails are in position in the roller racks, that ends of continuous rail are not closer than 12 feet from the next empty roller and that they overhang the last supporting roller by at least 12 feet, and to see that cars are properly coupled with locking devices in place.

RULE 872. Enginemen taking charge of engines at Eureka, Willits and Schellville will consider engines as having been amply supplied with fuel, sand and equipped with prescribed signals, tools, supplies and flagging equipment in serviceable condition.

RULE 874. When radio communication is used under provisions of this rule the following will govern, for example:

APPROACHING

	Hot box detector on right (or left).
Head end "NWP Extra 9200 West	Wide load detector on right (or left).
	Dragging equipment detector on right (or left).
	Person inspecting train on right (or left)."
Rear end "NWP Extra 9200 West (Repeat)."

AFTER PASSING

Rear end "Highball the , NWP Extra 9200 West."*
Head end "Highball the , NWP Extra 9200 West."*

*Stop or other appropriate response if detector or person inspecting train so indicates.

RULE 958. First paragraph is revised to read:

Employes shall identify the radio station from which they are calling by prefacing their call with the railroad name, for example: 'NWP Caboose Train Second 802 calling NWP Engine Second 802, over' and to answer a call, announce, for example: 'This is NWP Caboose, Train Second 802, over.'

AIR BRAKE RULES

RULE 3. A full independent brake application on road locomotives, classes EP636, GE628, GF630, GF633, EF623, EF630, EF636, EF8508 results in a brake cylinder pressure of 72 PSI. This brake cylinder pressure must be maintained to provide required braking power at very low speeds or when stopped. Under no circumstances must self-lapping portion of independent brake valve be changed except to obtain brake cylinder pressure of 72 PSI from a full independent brake application.

RULE 9. The following series of cars are equipped with ABEL brake system, which has automatic changeover feature to provide proper brake function when car is loaded and when empty.

SSW 75700-75799	Gondolas
SSW 78500-78599	Hoppers (Open Top)
SP 333500-334399	Gondolas
SP 337500-337599	Gondolas
SP 345000-345669	Gondolas
SP 354000-354749	Gondolas
SP 463500-463999	Hoppers (Open Top)
SP 464000-464899	Hoppers (Open Top)
SP 467500-467549	Hoppers (Open Top)
SP 480000-480193	Hoppers (Open Top)
SP 491000-491059	Hoppers (Covered)
SP 492000-492039	Hoppers (Covered)
SP 500604	Flat Cars
SP 590000-590099	Flat Cars

Before leaving a station or point where such cars have been added to the consist, engineer must actuate the automatic change-over feature by reducing brake pipe pressure to below 20 pounds whether cars are loaded or empty.

The following series of cars are equipped with ABDEL brake system which has automatic changeover feature to provide proper brake function when car is loaded and when empty. This feature is fully automatic on these series and requires no action on part of engineer.

SP 337600-337699	Gondolas
SP 354750-355059	Gondolas
SP 595500-595624	Cradle Flats

RULE 14. Dynamic brake will be used on descending grade by helper engines placed at or near rear of freight train unless relieved of the requirement by road engineer.

RULE 17. Retaining valves must be used on freight and mixed trains on descending grades as follows:

Redwood Valley to Willits
Willits to Redwood Valley

Without dynamic brake in operation:

One retaining valve for each 80 tons in train. If gross tonnage exceeds 80 tons per operative brake, retaining valves must be used on all cars and speed must not exceed 10 MPH.

With dynamic brake in operation:

Permissible Tons Per Unit Without Retaining Valves	Basic Dynamic Brake	
	4-Axle	6-Axle

With dynamic brake in operation but without pressure maintaining system of braking:	Basic Dynamic Brake	
	4-Axle	6-Axle
Redwood Valley to Willits.....	525	800
Willits to Redwood Valley.....	375	550

	Extended Range Dynamic Brake		
	4-Axle	6-Axle	8-Axle

With dynamic brake in operation but without pressure main- taining system of braking:	Basic Dynamic Brake		
	4-Axle	6-Axle	8-Axle
Redwood Valley to Willits..	675	1000	1325
Willits to Redwood Valley..	450	675	900

With dynamic brake in operation and with pressure maintaining system of braking:	Basic Dynamic Brake		
	4-Axle	6-Axle	8-Axle
Redwood Valley to Willits.....	1600	2400	
Willits to Redwood Valley.....	800	1200	

	Extended Range Dynamic Brake		
	4-Axle	6-Axle	8-Axle

With dynamic brake in operation and with pressure maintaining system of braking:	Extended Range Dynamic Brake		
	4-Axle	6-Axle	8-Axle
Redwood Valley to Willits..	2000	3000	4000
Willits to Redwood Valley..	1000	1500	2000

If permissible tonnage is exceeded, one retaining valve must be used for each 150 tons in excess thereof.

When dynamic brakes are not used on helper engine(s), tonnage of such engine(s) must be added to that of train in determining the number of retaining valves required.

RULE 25-B. When radio communication is available, employ at rear of train will notify road engineer the amount of air pressure as indicated on the caboose gauge approximately one mile before reaching Ridge.

When helpers are employed and radio communication is available, they will also notify road engineer the brake pipe pressure as shown on the helper unit.

RULE 27. First paragraph is revised to read:

Refer to Rule 102 of the Rules and Regulations of the Transportation Department regarding procedures when a train or engine with a cut of cars, in motion, on main track or siding has an emergency application of air brakes.

RULE 33. Redwood Valley-Willits:

Maximum tonnage per operative brake—80 tons except with dynamic brake and pressure maintaining system of braking in operation with not more than 15 cars for each six axles of dynamic brake with speed not exceeding 15 MPH and with all retaining valves on loaded cars in high pressure position110 ton

Should dynamic brake failure occur while handling in excess of 80 tons per operative brake train may proceed at speed not exceeding 10 MPH if in judgment of conductor and engineer it is safe to do so and provided retaining valves are used as prescribed by Air Brake Rule 17.

MISCELLANEOUS

1. HELPER SERVICE:

The following covers engine tractive effort in pounds:

Engine Model	Classification	Starting Tractive Effort
C 415	AS415	62,750
RS 11	AS418-1 to 6	65,000
RS 32	AS420	63,750
C 630	AS600-1	102,000
RSD 15	AS624-1	92,500
C 628	AS628-2	97,750
C 630	AS630-1	101,000
GP 9	EF418-1 to 9; EF418C-1-2; EF418E-1-2-3	64,200
GP 20	EF420-1-2; EF420C-1-2	65,100
GP 30	EF423-1; EF423C-1	66,100
GP 35	EF425-1 to 4; EF425C-1-2-3	66,000
GP 40	EF430C-1	67,560
SD 9	EF618-1 to 5; EF618E-1-2	89,700
SD 39	EF623-1-2	104,150
SD 35	EF625-1	95,540
SD 40	EF630-1-2	102,750
SD 40-2	EF630-3-4	102,100
SD 45	EF636-1 to 6; EF636C-1 to 5	103,470
SD 45-2	EF636-7 to 10-12-15; EF636C-6 to 9	102,600
SD 45X	EF642-1-2	103,240
DD 35	EF850B-1	131,750
GP 40P2	EP430-1	70,200
SDP 45	EP636-1	102,500
SW 1200	ES412	62,250
SW 1500	ES415-1 to 6	65,000
MP 15	ES415-7	65,400
SD 7	EX615-1 to 4	82,500
SD 38	EX620-1	104,000
U 25 B	GF425-1-2-3	67,800
U 28 B	GF428-1	67,890
U 28 C	GF628-1	103,120
U 30 C	GF630-1-2	104,850
U 33 C	GF633-1 to 10	104,710
U 50	GF850	139,250

NOTE: For classification of engines, see Item 3.

A. Rule for entraining one helper engine:

- (1) On trains of less than 100 cars, helper engine consisting of not more than two six-axle operating units totaling 179,400 pounds tractive effort nor more than two four-axle operating units totaling 135,600 pounds tractive effort or a combination of one four-axle and one six-axle operating unit totaling 157,600 pounds tractive effort may be placed behind caboose.
- (2) On trains of 100 or more cars helper engine consisting of only one unit may be placed behind caboose.
- (3) Helper engine that does not qualify under (1) or (2) must be entrained as near as practicable to shove 1/3 and pull 2/3 of tonnage handled by helper engine.

B. Rule for entraining more than one helper engine:

- (1) Trains having more than one helper engine must have each engine entrained as near as practicable so that it will shove 1/3 and pull 2/3 of tonnage handled.
- (2) Trains powered with two helper engines, one of which qualifies to be placed behind caboose, must entrain the swing helper as near as practicable to shove 1/3 and pull 2/3 of tonnage handled by the swing helper.

C. Air must be cut in on all helper engines and helper engine must not be coupled nor uncoupled while train is in motion.

SPECIAL INSTRUCTIONS

D. Road engineer and helper engineer must communicate any change affecting the operation of their train when means of communication is available. When speed is being held above 8 MPH on ascending grade, helper engineer must regulate amperage during speed reductions or speed increased to maintain the amperage indicated before speed change; if speed of train drops below 8 MPH or when coming to a stop on ascending grade, helper engineer must regulate amperage during speed reduction to maintain the amperage indicated before speed change, then close throttle just before train stops.

E. When speed of trains powered with 12,000 or more horsepower on the head end and with helper engine drops below 16 MPH, road engineer must reduce throttle to Run 6. When train speed drops below 16 MPH, head end power being reduced to Run 6 may result in helper power working in short time rating. The short time rating must not be exceeded. If it appears that short time rating will be exceeded, assistance must be requested from train dispatcher. If assistance cannot be obtained, grade must be doubled.

F. Trailing tonnage must not exceed that amount of tonnage listed under column "Maximum Tonnage to be Handled by Road Engine With Helper Entrained" for territory over which helper will be used. Should the amount of tonnage computed exceed the maximum tonnage listed, it may be necessary to isolate road units or add helper power. If practical, isolate units behind the lead unit leaving operating units next to the train. Weight of those units isolated and separated from the train by operating units need not be added to train weight in computing location of helper.

If units have to be isolated next to the train, weight of these units must be added to the train when computing location of the helper.

If units are moved dead in consist, they should be placed next to the train and their weight added to the tonnage of the train.

UNLESS OTHERWISE RESTRICTED MAXIMUM TONNAGE TO BE HANDLED BY ROAD ENGINES WITH HELPERS ENTRAINED:

TERRITORY

Willits-Redwood Valley (W).....	4,800
Redwood Valley-Willits (E).....	3,000

UNLESS OTHERWISE RESTRICTED MAXIMUM TONNAGE TO BE HANDLED BEHIND HELPER ENGINES:

TERRITORY

Willits-Redwood Valley (W).....	4,080
Redwood Valley-Willits (E).....	2,550

G. In locating helper engine(s) in train, the following example of calculating tonnage for road engine and helper engine(s) will be used:

EXAMPLE:

Train: 42 loads, 87 empties =	5756 tons.
Four-unit road engine (2-GF630, 1-EF623, 1-EF625).	
Three-unit helper engine (2-EF623, 1-EF630).	
Total road horsepower	10800
Total helper horsepower	7600
Total horsepower	18400

(1) Divide total horsepower by tonnage =

$$\frac{18400}{5756} = 3.196 \text{ HP/T}$$

(2) Divide road horsepower by HP/T factor =

$$\frac{10800}{3.196} = 3379 \text{ tons}$$

Road engine will handle 3379 tons

(3) Divide helper horsepower by HP/T factor =

$$\frac{7600}{3.196} = 2377 \text{ tons}$$

(4) To determine 1/3 of helper tonnage divide

$$\frac{2377}{3} = 792 \text{ tons}$$

Helper engine will shove 792 tons.

(5) To determine 2/3 of helper tonnage multiply 792 x 2 = 1584 tons
Helper engine will pull 1584 tons.

(6) Under no circumstances should the tonnage that will trail the helper engine exceed that amount indicated in the chart.

(7) Should tonnage trailing road or helper engine, as computed above, exceed the amount indicated in the chart it will be necessary to:

- (a) Reduce tonnage or
- (b) Relocate helper in compliance with instructions. (Item D under General) or,
- (c) Add additional helper(s) of sufficient horsepower to handle tonnage in excess of amounts indicated in chart. Additional helper(s) may be placed behind caboose if they meet requirements of item A 1., if not they are to be entrained as follows:

EXAMPLE:

Train: 170 loads, 2 empties =	13,980 tons
Three-unit road (1-EF630, 1-EF636, 1-GF633)	
Four-unit swing helper (1-EF630, 2-EF636, 1-GF633)	
Two-unit rear helper (1-EF618, 1-EF630)	
Total road horsepower	9900
Total swing helper horsepower	13500
Total rear helper horsepower	4800
Total horsepower	28200

(1) Divide total horsepower by tonnage =

$$\frac{28200}{13980} = 2.017 \text{ HP/T}$$

(2) Divide road horsepower by HP/T factor =

$$\frac{9900}{2.017} = 4908 \text{ tons}$$

Road engine will handle 4908 tons

(3) Divide swing helper horsepower by HP/T factor =

$$\frac{13500}{2.017} = 6693 \text{ tons}$$

Swing helper will handle 6693 tons (total)

(4) To determine 1/3 of swing helper tonnage =

$$\frac{6693}{3} = 2231 \text{ tons}$$

Swing helper will shove 2231 tons

(5) To determine 2/3 of swing helper tonnage =

$$2231 \times 2 = 4462 \text{ tons}$$

Swing helper will pull 4462 tons

(6) Divide rear helper horsepower by HP/T factor =

$$\frac{4800}{2.017} = 2380 \text{ tons}$$

Rear helper will handle 2380 tons (total)

(7) To determine 1/3 of rear helper tonnage = $\frac{2380}{3} = 793$ tons
 Rear helper will shove 793 tons.

(8) To determine 2/3 of rear helper tonnage = $793 \times 2 = 1586$ tons
 Rear helper will pull 1586 tons.

GENERAL:

- A. At locations designated by the Superintendent, road power must not exceed 24 axles of operative power.
- B. Helper engine must not be placed on head end of train without authority being obtained from train dispatcher.
- C. AS415, AS420, ES412 and ES415 class, except ES415 class numbers 2680-2759 units must not be cut into train in helper service. ES415 class numbers 2400-2679 may be cut into train and used in helper service providing coupler stops are applied and locked on both ends of the engine. No more than two of these units may be placed behind the caboose.
- D. Should it become necessary to relocate the helper at other than the shove 1/3, pull 2/3 location in order to separate helper from restrictive cars or in compliance with maximum tonnage trailing helper limitations, the helper may be relocated, but under no circumstances in relocations may helper shove less than 30% nor more than 45% of the total tonnage to be handled by the helper.

2. PLACEMENT OF RESTRICTED CARS IN TRAIN WITH OR WITHOUT HELPER:

- (a) Between Eureka and Redwood Valley empty 70-foot-long or longer equipment must be entrained ten or more cars behind road engine and ten or more cars ahead of helper engine. A flat with one van or one container, whether loaded or empty, must be considered as an empty.
- (b) When average weight of cars in train, other than locals or switchers, is more than 60 tons per car, do not handle any cars which weigh less than 50 tons within five cars of road engine. These instructions will not apply to continuous welded rail (CWR) trains.
- (c) Certain USAX and DODX flat cars in series 38016 thru 38665 and 39095 thru 39199 are restricted to movement on rear of train and behind any helper engine. Restricted cars will be indicated on Conductor's train list at terminals. When cars listed in above series are picked up at locations other than a terminal, they must be entrained on rear of train and behind any helper unless it is determined that cars are not restricted.
- (d) Cars measuring less than 35 feet over coupler pulling faces must not be handled in train coupled to cars longer than 60 feet over coupler pulling faces.

At locations where a Train Mass Profile (graph) is furnished train crews, it will identify a car measuring less than 35 feet over coupler pulling faces with the letter "S," and cars measuring over 60 feet between pulling faces will be identified by the letter "L."

Because the majority of cars measuring under 35 feet are tank cars, car code "TS" will identify these cars on train list and /or switch list.

3. CLASSIFICATIONS ARE DESCRIPTIVE OF ENGINES AS FOLLOWS:

E F 4 15 A C 01

Denotes Order of Purchase for Units of same Classification.

Denotes Ownership if other than SPT Co.:
 C = SSW Ownership.
 E = SP Equipment Co. owned, leased to SPT Co.
 S = SP Equipment Co. owned, leased to SSW Ry.

Denotes Car Body Type with Control Cab;
 B = Booster; No Letter = Road Switcher Type.

Denotes Horsepower in Hundreds: 00 = Not Powered; 18 = 1750-1800 HP, etc.

Denotes Number of Axles.

Denotes Service Assignment: F = Freight; M = Misc.; P = Passenger; S = Switcher.

Denotes Builder: A = Alco; E = EMD; G = GE; S = SPT.

4. SPEED RESTRICTIONS FOR ENGINES: Maximum speed shown below is subject to further restrictions applicable to certain territories as shown in Speed Restrictions for Trains:

MAXIMUM SPEED AND LENGTH OF ENGINES

CLASSIFICATION	ENGINE NUMBERS	MAXIMUM SPEED EXCEPT#	LENGTH (FEET)
AS600	1000-1002	70	70
ES406	1004	45	44
ES408	1100-1128	65	44
ES408B	1150-1153	65	44
ES409	1190-1199	65	44
AS409	1200-1281	60	45
ES410	1300-1337	65	44
ES615	1400-1442	70	61
AS410	1820, 1842	60	45
ES412	2250-2316	65	44
AS415	2400-2409	65	54
ES415	2450-2689	65	45
ES415	2690-2759	65	48
AS418	2900-2903; 2905-2936	70	57
AS618	2951-2970	70	58
ES620	2971-2976	70	69
EP418	3001-3002; 3004-3010	70	56
AS624	3100-3102	25*	67
AS628	3110-3136	25*	69
AS630	3140-3153	25*	69
EP418	3186-3196	70	56
EP430	3197-3199	70	63
EP636	3200-3209	70	71
EF418	3300-3822	70	56
EF618	3827-3964	70	61
AS420	4000-4009	70	57
EF420	4030-4153	70	56
EF618	4300-4451	70	61
EF423	5000-5017	70	56
GS407	5100	55	37
EF623	5300-5325	70	66
EF425	6500-6681	70	56
GF425	6700-6767; 6800-6865	70	60
EF625	6900-6953	70	61
GF428	7025-7028	70	60
GF628	7150-7159	70	67
EF430	7600-7607	70	59

SPECIAL INSTRUCTIONS

CLASSIFICATION	ENGINE NUMBERS	MAXIMUM SPEED EXCEPT#	LENGTH (FEET)
GF630	7900-7936	70	67
EF630	8300-8306; 8350-8356	70	71
EF630	8400-8488	70	66
GF633	8585-8796	70	67
EF636	8800-9156	70	66
EF636	9157-9404	70	71
EF642	9500-9505	70	71
EF850B	9900-9902	70	88
GF850	9950-9952	70	84
EF630	UP 3000-3242	70	66
EF636	UP 3600-3637	70	66

#When operated in multiple unit control, on head end of train or running light and engineer is in other than the leading control cab in direction of movement, speed must not exceed 30 MPH. 'A' type units (indicated by letter 'A' following classification numerals) operating in reverse as lead unit in direction of movement must not exceed 30 MPH.

*May be handled isolated in multiple, dead in multiple, or dead in train at maximum speed of 70 MPH.

**When operated in multiple unit control with engineer in other than lead unit in direction of movement must not exceed 30 MPH.

Engines handled dead must not exceed speed shown in tables.

ANY LOCOMOTIVE NOT LISTED.....35 MPH*

*Except when other speed is authorized by train order.

5. OTHER INSTRUCTIONS

A. Movement of Locomotives

1. Engines equipped with multiple unit controls (MU) and alignment control couplers, weighing 150,000 pounds or more, may be handled on head end of train; if weighing less than 150,000 pounds, must be placed near rear of train in accordance with Item 5.

2. ES415 class units, 2680-2759, are equipped with alignment control couplers and may be MU'd in engine consist without regard to location. These engines also may be moved dead on head end of train first behind working units.

3. ES415 class units, 2450-2679, are equipped with hinged coupler stops. With coupler stops in place, these engines may be MU'd in engine consist without regard to location, or may be moved dead on head end of train first behind working units.

For use in road service, MU service, or dead in train, the coupler stops must be closed (swung in) into coupler opening against coupler pocket side with locking pin secured behind coupler carrier on both ends of engine.

For use in switching service the coupler stops must be opened (swung back) against end of engine and locking pin secured in bracket provided.

Locking pins must be in place (whether coupler stop is swung back or swung in) to insure securement of the coupler stop.

4. Many switcher-type engines are not equipped with alignment control couplers or hinged coupler stops. Included are engine classes AS415, AS420, and certain ES412 units (2266, 2271, 2272, 2275, 2276, 2279, 2282-2288 inclusive). These engines are equipped with dynamic brake wire and must, if practicable, be MU'd in accordance with the following rules:

- (a) One switcher unit may be MU'd on head end of a road consist, provided no other engine consist or cars are coupled ahead of such road consist and provided the train is operating in territory where dynamic braking is not required.
- (b) One switcher unit may be MU'd on the rear end of a single unit road engine handling a train provided the train is operating in territory where dynamic braking is not required and no reverse movements are to be made with cars.
- (c) When operating with a mixed consist of road and switcher units in territory where dynamic braking is required, not more than two switcher units of the types listed in Item 4 will be used, subject to the following additional restrictions:
 - (1) If one unit is used, it will be placed as the second unit in engine consist.
 - (2) If two units are used, they will be placed as second and third units in engine consist.
 - (3) A road-type unit must be coupled against the train.
 - (4) If necessary to make a reverse move with cars or train, lead unit must be isolated.
- (d) If it is necessary to operate a mixed consist of road and switcher units with more than two switcher units of the types listed in Item 4, all switcher units must be placed in the lead. If reverse movement is made with cars or train, all units ahead of the two rear switcher units must be isolated.
- (e) If engine consist is made up entirely of switcher units listed in Item 4, not more than two units may be on the line when making a reverse movement with cars or train and those units on line must be located closest to the train.

5. When necessary to handle IN A TRAIN (not MU'd with locomotive consist) engines in classes ES406, ES408, ES408B, ES409E, AS409, ES410E, AS410, ES412 (except units listed in Item 4), GS407, ES412E, AS415, AS420, must be prepared for dead movement as required by Item 6 and placed in train as follows:

- (a) On head end first behind engine handling train, provided train does not exceed 800 tons.
- (b) On trains of more than 800 tons, these units must be moved not less than 5 nor more than 10 cars ahead of rear of train and behind any helper engine.
- (c) Not more than two of these engines may be moved in a train and when two are moved they must be separated by a car not longer than 50 feet.
- (d) Foreign line engines not equipped with alignment control couplers are to be considered the same as engine classes listed in Item 5.

6. Preparation of Air Equipment for Movement Dead In Train.

ALL UNITS: Reduce main reservoir pressure to 25 lbs. above zero.

Cut in dead engine feature.

Remove automatic brake valve handle in running position or with 26-L equipment, remove in handle off position.

If brake valve handles cannot be removed, they must be blocked in running position.

IN ADDITION:

24 RL equipment:

Close brake pipe cut out cock and place the dual ported cut out cock in cut-in position. Open the end cocks on actuating pipe and independent application and release pipe.

6 SL or 14 EL equipment:

Close the brake pipe cut out cock, or place the rotair valve or 3 position brake pipe cut out cock in dead position.

26 L equipment:

Place the brake pipe cut off valve in cut-out position. Place the dual ported cut out cock in open or cut in position, or place the MU 2a valve in lead or dead position. Open the end cocks on actuating pipe and brake cylinder equalizing pipe.

7. Extreme caution must be used during dynamic braking or when making reverse move to prevent jackknifing and track damage.

B. Dead or disabled engines, and equipment listed in timetable which requires movement at reduced speed must first be reported as ready to move to the Chief Train Dispatcher, who will designate the train in which the engine or equipment is to be moved. Any such engine must not be handled in train until train order designating maximum speed is issued.

C. Engines operated with engineer in other than lead unit in direction of movement, must not exceed 20 MPH when approaching highway or street crossing at grade, subject to further restrictions imposed by local conditions.

D. Movement of foreign line engines, in service or dead in train, must not be authorized until provisions of Current Line Clearance Circular have been complied with.

E. When a unit or units in locomotive consist emit excessive smoke through exhaust stacks other than from a cold start, prompt report must be made to train dispatcher who will arrange to notify roundhouse foreman or locomotive maintenance forces on duty at first maintenance facility where train is scheduled to stop. Unit number, time and location where excessive smoking of unit was first observed must be reported.

When a yard engine is observed emitting excessive smoke, report must be made to roundhouse foreman or locomotive maintenance forces on duty.

In addition, engineer must make appropriate entry on work report, Form CS 2326.

F. Not more than ten diesel units in operation may be used on head end of any freight train.

G. Unless otherwise authorized, trains handling passenger cars with flat spots on wheels in excess of 3/4 inches in length must not exceed 10 MPH. When flat spots are not in excess of 3/4 inches long such cars may be operated at maximum authorized speeds.

H. Gross weight of SPMW 6400-6439 100-ton air dump cars cannot exceed the gross weight shown in Special Instructions or Line Clearance Circular for each branch line. Also, cars must not be dumped on curves of 25 degrees or more, or operated through curves of 35 degrees or more.

I. Forward brakeman on freight trains will ride the lead unit when a seat is available.

J. Open-top cars with lading height exceeding fifteen (15) feet six (6) inches, except cars transporting highway trucks or trailers, multi-level freight cars either loaded or unloaded, and automobile underframe cars, shall be entrained at least five (5) cars distance from engine or caboose if length of train permits on trains operating in or through the States of California and Nevada.

K. MAXIMUM SPEED PERMITTED WITH CERTAIN EQUIPMENT	MPH MAIN TRACKS OTHER THAN BRANCHES	MPH MAIN TRACKS ON BRANCHES
Double or triple loads		25
Scale test cars	40**	30
Except: SPMW 2042, 2025, WO-3	65	49
Locomotive Crane/Pile Drivers		
SPMW 6603 & 6604		
With boom in place, either end forward ^①	25*	15*
With boom disconnected, heavy end forward	45	25
boom end forward	20*	15*
With boom disconnected and removable counterweight properly positioned, either end forward	55	25
SPMW 4028, 4029, SSW96405:		
With boom in place, either end forward ^①	25*	15*
With boom disconnected, heavy end forward	40	25
boom end forward	20*	15*
with boom disconnected and removable counterweight properly positioned, either end forward	40	25
SPMW 4027		
SPMW 5870		
4088		5874
4091		5899
5437		6601
5479		6602
5595		SSW96404
5852		NWPMW 31:
With boom in place, either end forward ^①	25*	15*
With boom disconnected, heavy end forward	45	25
boom end forward	20*	15*
Steam Pile Driver: SPMW 4053	35	25*
Jordan Spreaders, except SPMW 8001:		
Running backward	25	20
Moving forward (prepared for travel)	35	35

*These speeds must not be exceeded, and on curves where authorized speed is more than 15 MPH speed must be reduced to 5 MPH less than shown in timetable and on speed signs.

**Scale Test Car NBS-1 to be handled on trains not more than 20 cars ahead of caboose and speed of train handling NBS-1 not to exceed 60 MPH. Unless specifically authorized, SPMW 4027, 4028, 4029, 4088, 5479, 5595, 5852, 5870, 5874, 5899, 6601, 6602, 6603, 6604, SSW 96404 and SSW 96405 must not operate over lines having maximum load limits of less than 263,000 lbs., and must observe all restrictions applying to cars weighing over 210,000 lbs.

① When moving in train with boom in place, operator must be on board.

Trains handling Pacific Lumber Company (TPL) logging cars must not exceed 15 MPH.

L. SP 354000-354199 series wood chip cars exceed clearances east of MP 90 and must not be moved beyond that point. Trains handling loaded cars in above series, must reduce speed of train not exceeding 10 MPH over Healdsburg bridge, MP 67.62. On all movements, cars must be separated at least five cars from engine or caboose, train length permitting.

M. Couple-in-Motion Track Scale located at Mile Post 31.3, Main Track, Burdell, designed to weigh on westward movement only.

Westward trains for interchange at Schellville will weigh. Other trains will weigh when instructed.

SPECIAL INSTRUCTIONS

Westward trains must not exceed 4 MPH from a point 500 feet east of scale until train is clear of scale.

Speed indicator lights will indicate the following:

Steady white light . . . Permissive speed for weighing.
 Blinking white light . . . Excessive speed for weighing.

Speed must be controlled to obtain steady aspect while weighing.

N. Except when handling cabooses on or near the head end in local or road switcher service and when handling only a few cars, cabooses are not to be moved other than at rear of train.

O. Following units will not be operated between Willits and Eureka or on the Petaluma & Santa Rosa Railroad:

Class	Model
EF 850	DD 35
GF 850	U 50
EF 642	SD 45X
EF 636	SD 45-SD45-2
GF 633	U 33C
EF 630	SD 40
GF 630	U 30C
GF 628	U 28
AF 628	C 628
EF 625	SD 35
EF 623	SD 39
ES 620	SD 38

P. Not more than 12600 operating horsepower will be used on head end of train between Willits and Redwood Valley. Not more than 10 diesel units in operation may be used on head end of any freight train. Excess horsepower and/or units in road consist, must be either isolated, or if tonnage requires, transferred to helper consist.

Q. San Rafael Branch: Main track out of service every weekend from 12:01 PM Friday until 12:01 PM Monday between Greenbrae, MP 14.9, and Detour, MP 14.3 account open structure.

R. LOAD LIMIT (car and contents):

*Schellville-Willits	263,000 pounds
Willits-Eureka	251,000 pounds
Schellville-Sonoma	240,000 pounds
Ignacio-Detour	240,000 pounds
Alton-Carlotta	240,000 pounds
Eureka-Korblex	240,000 pounds
**Arcata-Samoa	240,000 pounds

*Any car 45' 0" or less in length over end sills having excess of 251,000 gross weight on rail must be handled at speed not exceeding 10 MPH when moving through Russian River Bridge, MP 67.72 Healdsburg.

**Except load limit on wharf Samoa Yard must not exceed 169,000 pounds.

Where 263,000 pound load limit applies: Gross weight of 263,000 pounds or less applies to uniformly loaded four-axle cars having trucks spaced 23' 0" or more center to center and maximum axle spacing of 5' 6".

Unless authorized by Superintendent, heavier loads must not be handled.

S. Engines listed must not operate on tracks shown below:

Class of Engine	Restricted Tracks
All engines . . . San Rafael . . .	Beyond tipple on Shamrock spur.
All engines . . . Petaluma . . .	Beyond second road crossing (city yard) on spur serving Gerwicks.
All engines . . . Healdsburg . . .	Beyond tipple on Basalt spur.
All engines . . . Firco	Beyond engine restriction sign placed 100 feet east of derail.
All engines except ES408 or ES409 series . . . South Bay	Beyond engine restriction sign placed 547 feet from point of switch on PG&E Spur.
All engines except ES408 or ES409 series . . . Samoa	Beyond engine restriction sign placed 100 feet from end of long track serving warehouse No. 14, Georgia-Pacific Co.

T. LIGHT-TYPE INDICATORS

Schellville Yard, MP 39.06: Advance Switch Point Indicator located 300 feet east of east switch. Green aspect indicates switch points in normal position. Red or dark aspect indicates train must stop and inspect switch points before proceeding over switch.

Healdsburg: Warning light has been installed on top of tipple on Basalt Spur. No movement will be permitted beyond tipple until green aspect is displayed on this warning light, which indicates that movable overhead gravel loader has been retracted to lawful clearance.

Scotia Bluff: Light-type indicators are installed at MP 256.85 and MP 257.49. Protective equipment is installed on trestle to detect disturbance from falling rocks or high water. On approach, lunar aspect indicates proceed; yellow aspect indicates proceed at reduced speed not to exceed 4 MPH over trestle and trainmen and enginemen most closely observe the trestle to determine if trestle has been displaced or damaged.

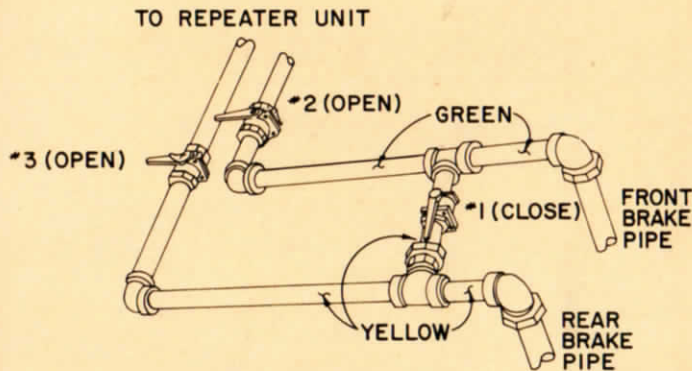
U. REPEATER AIR CAR (RAC) SP-260-266

The repeater air car is utilized to increase efficiency of train air brakes on long trains and during cold weather. The purpose of repeater relay equipment is to accept pneumatic signals from the brake pipe of forward portion of a train, and by relay action, produce a corresponding response in the brake pipe of the rear section of the train.

The repeater relay car has the ability to produce faster train charging time, reduce or eliminate brake pipe pressure gradient, more uniform braking forces, and faster brake application and release times.

A. Procedure for adding Repeater Air Car to a train to use Repeater Car Air Equipment.

1. Place as near to center of train as makeup will permit.
2. The RAC car is operational in either direction. The front brake pipe must be coupled to the portion of the train to which the road engine is attached. The rear brake pipe must be coupled to the other end of the train.
 The angle cock on the unused brake pipe on each end of the car must be closed.
3. Where repeater air car is positioned in train and front and rear brake pipes have been properly connected and opened, then close the brake pipe bypass cock No. 1 and open the two repeater relay cutout cocks Nos. 2 and 3, all located inside of car.

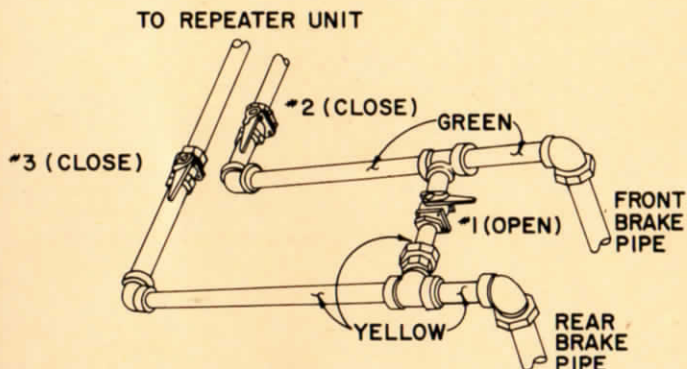


Note: If for any reason it becomes necessary to transfer control of air brakes to the helper engine located in the portion of the train **behind** the RAC car with the RAC air equipment in operation, the brake pipe hose connections must be changed. The forward brake pipe must be coupled to the portion of the train having the brake valve which is controlling the train. The rear brake pipe must be coupled to the other end of the train.

- The repeater relay valve No. 5 is a variable valve and is employed to reestablish a satisfactory brake pipe pressure on the rear portion of train. A regulator and gage to indicate pounds of differential is provided. Trainline pressure on rear portion of train must not be increased above 90 PSI at RAC car. Preferred adjustment is to have the rear brake pipe 1.5 to 2 lbs. above the front brake pipe.

B. Procedure for cutting the RAC car out of train.

- Close the repeater relay cutout cocks Nos. 2 and 3.
- Open the brake pipe bypass cock No. 1—**All located inside the car.**
- The car diesel engine and compressor are to remain running except during layover time.



C. Procedure for adding Repeater Air Car to a train when Repeater Car Air Equipment is not to be used.

- Close the repeater relay cutout cocks Nos. 2 and 3.
- Open the brake pipe bypass cock No. 1—**All located inside the car.**
- Forward brake pipe must be coupled to portion of the train to which the road engine is attached.
Rear brake pipe must be coupled to the other end of the train. The angle cock on the unused brake pipe on each end of the car must be closed.

D. Train operation of Repeater Air Cars.

- With the repeater air car in operation, proceed with terminal air test as prescribed in the air brake rules and regulations.
- All rules outlined in the air brake rules and regulations governing train handling shall be adhered to while repeater air car is part of any train.
- If required, the repeater air car may be cut out by closing the repeater relay cutout cocks Nos. 2 and 3 and opening the brake pipe bypass cock No. 1—**All located inside car.** This provides for normal train operation without the repeater relay equipment operating.
- If yard air is used to charge the train, it **must** be cut in ahead of the repeater air car.
- The RAC car must not be kicked, dropped, or humped and must be handled next to switch engine when being cut into or out of train and when being moved to caboose track.
- During a pickup or setout, or at any time the engine is **separated from the train and the air car is in operation in the train, it is absolutely essential that the trainline angle cock be left open on the train.**

F. Loss of Main Reservoir Air on RAC car.

- The depletion of main reservoir air to below 100 lbs. will initiate a service brake pipe reduction in the forward and rear portions of the train. The rotating red light on top of car will operate.
- In addition to the red rotating light, a radio signal will be initiated and will transmit a series of short beeps for a period of approximately ten seconds and then cease. It will reset itself automatically upon an increase of main reservoir pressure above 110 pounds.
- If in power, throttle must be reduced to idle and automatic brake valve placed in full service zone until train stops.
- If in dynamic braking, automatic brake valve must be placed in full service zone and dynamic braking lever handled as prescribed by rules.
- Train must be immediately secured before determining reason for main reservoir air depletion.

F. Setting RAC car out of train.

- If it becomes necessary to set RAC car out of train, shut down compressor engine in car and secure car per rules.

Instructions for starting and shutting down compressor engine posted inside of car.

SPECIAL INSTRUCTIONS

SPEED RESTRICTIONS FOR TRAINS: Maximum speed of trains in territory shown below is subject to further restrictions applicable to engines in the train as shown in **SPEED RESTRICTIONS FOR ENGINES and OTHER SPEED RESTRICTIONS** appearing on page 11 of Special Instructions for All Divisions. Speed must be further reduced as prescribed by speed signs, except as specifically authorized by Special Instructions herein, or by timetable bulletin.

Trains and engines handling tank cars containing Flammable Compressed Gas (FCG) must not exceed 25 MPH between the following locations:

- Novato—MP 27 and MP 30
- Cotati—MP 45 and MP 47
- Fortuna—MP 265 and MP 267.

EASTWARD		ALL TRAINS	WESTWARD		ALL TRAINS
MP	MP		MP	MP	
SCHELLVILLE TO EUREKA:			EUREKA TO SCHELLVILLE:		
40.39 to 29.01	29.01	30	284.10 to 282.00	282.00	10
29.01 to 28.74 (bridge)	28.74	20	282.00 to 273.21	273.21	40
28.74 to 25.57 (25.82)	25.57	25	273.21 to 273.17	273.17	20
25.82 to 30.46	30.46	40	273.17 to 270.60	270.60	35
30.46 to 31.68 (Burdell)	31.68	15	270.60 to 262.75	262.75	40
31.68 to 36.85	36.85	40	262.75 to 258.08	258.08	35
36.85 to 39.25	39.25	20	258.08 to 257.00 (Scotia Bluff)	257.00	20
39.25 to 44.10	44.10	35	257.00 to 247.20	247.20	30
44.10 to 53.00	53.00	40	247.20 to 246.85	246.85	25
53.00 to 54.45	54.45	25	246.85 to 228.13	228.13	30
54.45 to 67.60	67.60	40	228.13 to 141.40	141.40	25
67.60 to 68.58	68.58	25	141.40 to 122.15	122.15	20
68.58 to 85.53	85.53	40	122.15 to 114.54	114.54	30
85.53 to 88.50	88.50	30	114.54 to 113.50	113.50	25
88.50 to 98.80	98.80	25	113.50 to 98.80	98.80	30
98.80 to 113.50	113.50	30	98.80 to 88.50	88.50	25
113.50 to 114.54	114.54	25	88.50 to 85.53	85.53	30
114.54 to 122.15	122.15	30	85.53 to 77.10	77.10	40
122.15 to 141.40	141.40	20	77.10 to 77.09 (Spring Switch)	77.09	35
141.40 to 228.13	228.13	25	77.09 to 68.58	68.58	40
228.13 to 246.85	246.85	30	68.58 to 67.60	67.60	25
246.85 to 247.20	247.20	25	67.60 to 54.45	54.45	40
247.20 to 257.00	257.00	30	54.45 to 53.00	53.00	25
257.00 to 258.08 (Scotia Bluff)	258.08	20	53.00 to 44.10	44.10	40
258.08 to 262.75	262.75	35	44.10 to 39.25	39.25	35
262.75 to 270.60	270.60	40	39.25 to 36.85	36.85	20
270.60 to 273.17	273.17	35	36.85 to 31.68	31.68	40
273.17 to 273.21	273.21	20	31.68 to 30.46 (Burdell)	30.46	15
273.21 to 282.00	282.00	40	30.46 to 25.82 (25.57)	25.82	40
282.00 to 284.10	284.10	10	25.82 to 28.74	28.74	25
			28.74 to 29.01 (bridge)	29.01	20
			29.01 to 40.39	40.39	30
DETOUR TO IGNACIO:			IGNACIO TO DETOUR:		
14.33 to 17.00	17.00	10	25.82 to 25.75	25.75	10
17.00 to 25.75	25.75	20	25.75 to 17.00	17.00	20
25.75 to 25.82	25.82	10	17.00 to 14.33	14.33	10
SONOMA TO SCHELLVILLE:			SCHELLVILLE TO SONOMA:		
44.45 to 40.39	40.39	15	40.39 to 44.45	44.45	15
EUREKA TO KORBLEX:			KORBLEX TO EUREKA:		
284.10 to 285.80	285.80	10	295.57 to 292.23	292.23	20
285.80 to 292.10	292.10	25	292.23 to 292.10	292.10	10
292.10 to 292.23	292.23	10	292.10 to 285.80	285.80	25
292.23 to 295.57	295.57	20	285.80 to 284.10	284.10	10
ARCATA TO SOMOA:			SAMOA TO ARCATA:		
292.90 to 293.51	293.51	10	300.53 to 293.51	293.51	25
293.51 to 300.53	300.53	25	293.51 to 292.90	292.90	10
EASTWARD, ALTON TO CARLOTTA:			CARLOTTA TO ALTON:		
262.74 to 262.92	262.92	10	267.72 to 262.92	262.92	25
262.92 to 267.72	267.72	25	262.92 to 262.74	262.74	10

SPEED RESTRICTIONS FOR OTHER THAN MAIN TRACKS	With caution Not Exceeding MPH
Through Sidings, yards and other tracks, balloon tracks, crossovers and turnouts	10
Except:	
Through Siding at Burdell	35