



**GET THERE SAFELY
SOMEONE CARES**

SUPERINTENDENT TRANSPORTATION

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K. P. WOOD Stockton

ASSISTANT DISTRICT SUPERINTENDENT

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M. W. HAMMOND Salt Lake City

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J. M. STARR Oakland
R. R. AHERN Stockton
R. L. MEYER Stockton

TRAINMASTER

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R. M. VERHAEGE Milpitas-San Jose
R. P. McCARTHY Sacramento
K. B. SCHULTHIES Keddie
M. E. GRAHAM Portola
L. E. THOMAS Elko

TRAINMASTER-ROAD FOREMEN ENGINES

V. H. EDWARDS Oroville
R. K. HARRISON Winnemucca

ROAD FOREMEN ENGINES

C. H. MATHEWS Stockton
J. W. HAMMOND Keddie

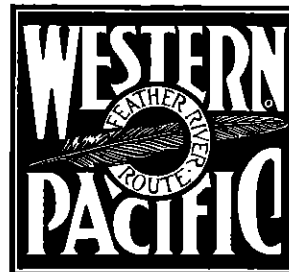
ASSISTANT TRAINMASTER

R. B. KENNEY Fremont
C. M. HAMMOND Sacramento
L. J. FISCHER, JR. Portola
F. M. RANKIN Wendover

CHIEF TRAIN DISPATCHER

A. KINICKI Sacramento

**THE
WESTERN PACIFIC
RAILROAD CO.**



**SIERRA DISTRICT
TIMETABLE**

1

EFFECTIVE SUNDAY, JULY 19, 1970

AT 12:01 A.M.

PACIFIC STANDARD TIME

**FOR THE GOVERNMENT AND INFORMATION
OF EMPLOYEES ONLY**

D. H. MacLEOD,
Vice President and General Manager.

K. V. PLUMMER, JR.,
General Superintendent Transportation.

J. H. BROWN,
District Superintendent.

THIRD SUBDIVISION — Westward

Mile Post	Station Numbers	Miles from Portola	TIME TABLE NO. 1 JULY 19, 1970 STATIONS ↓ SIDING CAPACITY IN FEET			61 AP	55 GWP	57 PBF	66 PNX	63 WPW	53 GWS	67 WMX
			TO		BKF YPO	AM	AM	PM		PM	PM	AM
202.9	203	115.5	TO	OROVILLE (Yard)	BKF YPO	9.00	8.10	3.30		8.00	4.30	1.00
209.1	205	112.3	4687	3.2 OROVILLE (Siding)	P							
213.9	214	107.5	6285	4.8 KRAMM	P							
220.0	220	101.4	6385	6.1 ELSEY	P							
226.0	226	95.4	6515	6.0 JAMES	P							
234.9	235	86.5	6935	8.9 POE	P							
239.5	240	81.9	5976	4.6 PULGA	P							
243.5	244	77.9	4005	4.0 CRESTA	P							
247.6	248	73.8	4064	4.1 MERLIN	P							
255.6	255	65.8	6741	8.0 CAMP RODGERS	P							
260.1	260	61.3	4657	4.5 BELDEN	P							
264.6	265	56.8	3669	4.5 RICHBAR	P							
270.2	270	51.2	4756	5.6 VIRGILIA	P							
273.7	274	47.7	4233	3.5 TWIN	P							
277.3	277	44.1	4180	3.6 PAXTON	P							
281.5	281	39.9	TO 7518	4.2 KEDDIE	KFPY		5.10 AM		3.00 PM	4.30	1.30 PM	
287.9	288	33.5	3791	6.4 QUINCY JUNCTION	P							
296.4	296	25.0	4632	8.5 SPRING GARDEN	P							
301.6	302	19.8	4174	5.2 SLOAT	P							
305.4	305	16.0	4332	3.8 TWO RIVERS	P							
310.4	310	11.0	4832	5.0 BLAIRSDEN	P							
318.7	319	2.7	4158	8.3 MABIE	P							
321.4	321	0.0	TO Yard	2.7 PORTOLA	BKF YPO	5.00 AM		11.30 AM	12.01 PM	1.00 PM		9.00 PM
						AP 61	GWP 55	PBF 57	PNX 66	WPW 63	GWS 53	WMX 67

FIFTH SUBDIVISION — Eastward

Mile Post	Station Numbers	Miles from Portola	TIME TABLE NO. 1								Second Class		
			JULY 19, 1970								Leave Daily		
			STATIONS								Ex. Sunday		
			↓ SIDING CAPACITY IN FEET					58 SJP	62 GGM	52 CIX	68 MSL	64 WPE	220 LOCAL FREIGHT
321.4	321	0.0	TO Yard	PORTOLA	BKF YPO	AM 12.01	AM 12.15	AM 11.45	PM 1.30	PM 6.30	AM 3.45		
			5770	6.1 HAWLEY	P						4.00		
327.5	328	6.1	6245	11.6 CHILCOOT	P						4.25		
339.1	339	17.7	3000	2.7 RENO JCT.	YP						4.35 AM		
341.8	342	20.4	6126	3.8 SCOTTS	P								
345.6	346	24.2	3645	6.9 RED ROCK	P								
352.5	353	31.1	6369	10.1 DOYLE	P								
362.6	363	41.2	4193	9.1 HERLONG (Cal.)	P								
371.7	372	50.3	6162	11.8 FLANIGAN (Nev.)	P								
383.5	384	62.1		0.9 SP CONNECTION	P								
384.4	384	63.0	6162	9.3 SAND PASS	P								
393.7	394	72.3	6152	11.0 SANO	P								
404.7	405	83.3	5647	11.6 REYNARD	P								
416.3	416	94.9	6160	14.5 PHIL	P								
430.8	431	109.4	6289	7.1 GERLACH	KYP								
437.9	438	116.5	6145	13.3 TREGO	P								
451.2	451	129.8	6150	10.1 CHOLONA	P								
461.3	461	139.9	6158	9.3 RONDA	P								
470.6	471	149.2	6167	8.8 FLOKA	P								
479.4	479	158.0	6156	8.2 ANTELOPE	P								
487.6	488	166.2	6163	9.0 JUNGO	P								
496.6	497	175.2	6148	12.0 GASKELL	P								
508.6	509	187.2	6145	10.6 RAGLAN	P								
519.2	519	197.8	TO Yard	13.1 WINNEMUCCA	BK FPY	5.00 AM	5.15 AM	4.00 PM	6.30 PM	1.30 AM			
532.3	532	210.9											
						SJP 58	GGM 62	CIX 52	MSL 68	WPE 64	Arrive Daily Ex. Sunday		
											220		

FIFTH SUBDIVISION — Westward

Mile Post	Station Numbers	Miles from Winnemucca	TIME TABLE NO. 1 JULY 19, 1970 STATIONS ↓ SIDING CAPACITY IN FEET			63	57	67	61			
			TO Yard		BKF YPO	WPW AM	PBF AM	WMX PM	AP AM			
321.4	321	210.9	5770	PORTOLA	P	11.00	11.20	6.00	2.00			
			6245	HAWLEY 6.1	P							
327.5	328	204.8	3000	CHILCOOT 11.6	P							
339.1	339	193.2	6126	RENO JCT. 2.7	YP							
341.8	342	190.5	3645	SCOTTS 3.8	P							
345.6	346	186.7	6369	RED ROCK 6.9	P							
352.5	353	179.8	4193	DOYLE 10.1	P							
362.6	363	169.7	6162	HERLONG (Cal.) 9.1	P							
371.7	372	160.6	6162	FLANIGAN (Nev.) 11.8	P							
383.5	384	148.8	6162	SP CONNECTION 0.9	P							
384.4	384	147.9	6162	SAND PASS 9.3	P							
393.7	394	138.6	6152	SANO 11.0	P							
404.7	405	127.6	5647	REYNARD 11.6	P							
416.3	416	116.0	6160	PHIL 14.5	P							
430.8	431	101.5	6289	GERLACH 7.1	KYP							
437.9	438	94.4	6145	TREGO 13.3	P							
451.2	451	81.1	6150	CHOLONA 10.1	P							
461.3	461	71.0	6158	RONDA 9.3	P							
470.6	471	61.7	6167	FLOKA 8.8	P							
479.4	479	52.9	6156	ANTELOPE 8.2	P							
487.6	488	44.7	6163	JUNGO 9.0	P							
496.6	497	35.7	6148	GASKELL 12.0	P							
508.6	509	23.7	6145	RAGLAN 10.6	P							
519.2	519	13.1	TO Yard	WINNEMUCCA 13.1	BK FPY	4.00 AM	7.15 AM	1.45 PM	9.45 PM			
532.3	532	0.0										
						WPW 63	PBF 57	WMX 67	AP 61			

EASTWARD

RENO BRANCH

WESTWARD

SECOND CLASS		Miles from Reno Junction	TIME TABLE NO. 1 JULY 19, 1970 STATIONS SIDING CAPACITIES AND FACILITIES			Station Numbers	THIRD CLASS	
220 Local Freight Leave Daily Ex. Sunday							219 Local Freight Arrive Daily Ex. Sunday	
	AM 4.40	0.0	56	RENO JUNCTION	YP	342	AM 10.50	
	5.10	10.1	12	^{10.1} PEAVINE, (CAL.)		10342	10.18	
	5.30	16.2	15	^{6.1} COPPERFIELD, (NEV.)		16342	9.59	
	5.39	18.8	25	^{2.6} ANDERSON		19342	9.51	
	5.47	21.3	Spur 1E15	^{2.5} MARTIN		21342	9.43	
	5.55	23.37	Spur 1E3	^{2.07} PANTHER		23342	9.35	
	6.05	28.53	18	^{5.16} NORTH RENO		29342	9.25	
	6.13	30.3	14	^{1.77} COMSTOCK		30342	9.17	
	6.14	30.6	42	^{0.3} SIERRA PACIFIC		31342	9.16	
	6.15	30.7	Spur 1W23	^{0.1} VAUGHN MILL NO. 1		31342	9.15	
	6.20	31.2	Spur 1W24	^{0.5} VAUGHN MILL NO. 2		31342	9.10	
	6.23	31.42	Spur 1W24	^{0.22} ROCKY MOUNT NO. 1		31342	9.07	
	6.25	31.57	Spur 1E40	^{0.15} ROCKY MOUNT NO. 2		31342	9.05	
	6.30 AM	33.1	Yd. Lmts. TO-R	^{1.53} RENO	O	33342	9.00 AM	
	Arrive Daily Ex. Sunday						Leave Daily Ex. Sunday	
	220						219	

RULE 82-A. Is modified to the extent that trains may be authorized at Portola to operate on the Reno Branch. No. 220 may leave Reno Jct. without clearance.

RULE 204. Train orders may be issued to trains at Portola which affect their movement on the Reno Branch.

Rocky Mount No. 2. No derail, keep hand brakes set and do not leave cars east of first road crossing.

DERAIL located on main track at MP 31.69 which is 630 feet east of Rocky Mount No. 2, must be lined and locked for main track except when switching is being done on Vaughn Mill No. 1, Vaughn Mill No. 2, Rocky Mount No. 1, or on Rocky Mount No. 2 spurs. This derail must first be opened and locked open while switching is being done and not be re-lined for main track until switching is completed and cars properly coupled to engine, and have been charged to full air pressure.

Reno. Movements over street crossings east and west of Nevada Transportation Company warehouse must be protected by flagman.

Trains or engines must approach East 6th Street carefully. This crossing is protected by flasher lights and bell signals.

Flasher light and bell signals, 4th St.—Engines or cars must stop within 30 feet of and before fouling outer edge of sidewalks on either side of 4th Street, before entering or occupying either crossing from either direction.

Yellow marker lights installed on top of instrument case will be illuminated upon occupancy of track circuit and after 15 to 18 seconds will flash. Movement into or through the crossing may then be made. If yellow marker fails to light, flag protection must be provided unless signals are known to be operating. This to provide 20 second operation of signals prior to occupancy of crossing by engine or cars as required by Nevada State Law.

Cars or engines must not be spotted within signal circuit limits as indicated by illumination or flashing of marker lights on these instrument cases.

LOYALTON BRANCH

		0.0	120	HAWLEY	P	328		
		11.8	100	^{11.8} LOYALTON		12328		

RULE 201. Train order authority is not required on Loyalton Branch and all movements on branch must be made at yard speed.

Trains or engines moving over Highway crossing No. 4-E-12.4 Loyalton must come to a complete stop then be protected by a member of the crew in order to warn highway traffic that crossing is to be blocked.

Special Instructions

ALL SUBDIVISIONS

All times as shown for trains at Stations on schedule pages current timetable are Pacific Standard Time.

GENERAL RULE M. Add. Employes are prohibited from riding or walking on roof of any moving car.

DEFINITIONS

Division — Delete.

Add:

District — That portion of a railroad assigned to the supervision of a superintendent.

Subdivision — Change: A portion of a district designated by timetable.

RULE 3. Add. Within T.C.S. limits recording on prescribed form of time comparison, any variation, or "set" will not be required.

RULE 4-B. Last paragraph. Conductors, engineers, and engine foremen must record the number of the last bulletin in Remarks column of Time Return and Delay report to indicate they have read and understand the latest and all previous bulletins.

RULE 6-A. Symbols described in second paragraph will be placed at right instead of left side of station name.

Symbols for Double Track, Automatic Block Signal System, and Traffic Control System will not be indicated by brackets in Time Table, and the following will govern.

Automatic Block Signal System extends from:
East switch Moccasin to MP 7.7.

Traffic Control System extends from:
Oroville to Winnemucca.
Keddie to and including east switch Moccasin.

Joint Track extends from:
Westwood to Mason.

RULE 10-I. Add. After stopping, train may proceed when proceed signal is given with a green flag, but must not exceed restricted speed through the restricted area unless otherwise instructed by the foreman in charge.

When a form W train order has expired and "PROCEED PREPARED TO STOP" and "CONDITIONAL STOP" signs have not been removed, and it is evident that the foreman and gang is not working in the designated limits and have left such limits, contact the train dispatcher and be governed by his instructions. If unable to contact the train dispatcher at that point, a flagman will precede the train through the limits of restriction who must carefully examine track and structures. The train dispatcher must be advised of circumstances at first point of communication.

Form W orders, unless annulled, must be retained and observed during a continuous trip or tour of duty.

RULES 10-H and 10-I. Add. When green banner is not encountered at the point the restriction ends train will proceed at restricted speed to the first point of communication and be governed by instructions received from the train dispatcher.

RULE 10-J. Delete third and fourth paragraphs.

RULE 5-17. Figures indicating "Car Capacity" are number of cars, based on average allowance of 48 feet per car, that tracks will hold between clearance points, plus 250 feet for engine and caboose.

Outside of T.C.S. territory care must be taken to see that flag protection is furnished ahead when taking siding to meet trains unless it is definitely known that train is clear of the main track. After train comes to rest in the siding, the head end must receive a stop signal from the rear end indicating that train is clear of the main track. Until such signal has been received by head end, headlight will be displayed and flag protection provided. This does not in any way relieve the approaching train from complying with provisions of Rule S-90.

RULE 34. When seats are available, all working brakemen riding head end of train will ride in lead unit.

RULES 71, 72 and 92. Schedules not designated as first, second or third class have no timetable superiority, and are for information only.

RULE S-72. OUTSIDE OF T.C.S. TERRITORY WESTWARD TRAINS ARE SUPERIOR TO EASTWARD TRAINS OF THE SAME CLASS.

RULE 101-B. When tracks are covered by water and it is known they are safe for movement, engines may be operated over them only if the water is below the traction motor frames, not exceeding 5 MPH.

RULE 103-B. Add. **TRAIN MOVEMENTS** — Trains moving under conditions that may require them to stop must, where possible, stop to clear public grade crossings. When not possible to stop clear of such crossings and train cannot proceed immediately, crews on other than passenger trains must cut these crossings within 10 minutes unless no vehicles are waiting at or closely approaching the crossing. Public crossings must be left open until it is known that trains are ready to depart. Crews required to pick up, set out, or perform switching operations must, when track room exists, stop their trains back a sufficient distance to avoid blocking public crossings when coupling trains and while charging train lines. When recoupling at public crossings, trains shall be moved promptly consistent with safety.

SWITCHING MOVEMENTS — Switching movements over public grade crossings should be avoided whenever possible. If not possible, such crossings must be cleared frequently to allow vehicles to pass and must not be occupied continuously for longer than 10 minutes unless it can be seen that no vehicles are waiting at or closely approaching the crossing.

GRADE CROSSING PROTECTION CIRCUITS — Cars or locomotives must not be left standing nor switches left open within the controlling circuits of automatic gate protection devices unless timeout features are provided to allow the gate arms to rise.

RULE 104. All switches connecting sidings with other tracks, except main track, after being used, must be left lined for siding.

RULE 110. Freight trains need not stop for train inspection if train is operating normally, except westward trains on Third Subdivision requiring use of retainers must stop for inspection at Belden unless train has been inspected at Keddie, in which case, they may run from Keddie to Kramm for inspection.

Where stops are made for other reasons, inspection of train must be made as often as practicable.

If stops for train inspection are contemplated and if practicable to do so, train dispatcher should be notified in advance of any such stops.

When conditions restrict visibility, the conductor will designate any stops or additional stops for inspection that in his judgment, are necessary.

When crew members on head end of trains observe personnel giving their train an inspection and radio communication is available between engine and caboose, they will alert crew members on caboose of such inspections and all crew members be alert for either hand signals or radio communication from personnel making such inspections.

RULE 509. When a train becomes disabled in a block between stations, and the conductor or engineer has given train dispatcher assurance it is unable to proceed, the train dispatcher may, after an understanding has been reached with the conductor or engineer of the disabled train, orally authorize another train in opposing direction to enter the block under flag protection to relieve the disabled train. When a train is reported disabled to the train dispatcher, it must thereafter not be moved in either direction until relief train has arrived, or unless otherwise instructed by the train dispatcher.

RULE 540. Add. Except as otherwise provided, within T.C.S. limits, Rules Nos. 82, 82-A, 83, 83-A, 83-B, 83-C, 92, 95, 96 and 97 will not apply.

RULE 541. Add. Instructions relating to track or other conditions within T.C.S. limits may be issued by train order, bulletin, other written notice, or may be issued orally to member of crew. Member of crew of a train entering T.C.S. at an intermediate point must ascertain from train dispatcher what instructions are in effect on that portion of T.C.S. over which movement is to be made.

RULE 547. When a train is standing or switching in a block at a station, train dispatcher may authorize another train to flag into the block to perform work. Crew of train so authorized

must have an understanding with crew of train occupying the block before entering and must fully protect their movements against any movements by the train originally occupying the block.

The granting of work authority does not relieve trains or engines from complying with the indications of any interlocking signals within the working limits. Any movements within the interlocking limits or to enter the interlocking limits must be made in accordance with interlocking rules, except when a train or yard engine, after entering the limits as prescribed by such rules, finds it necessary to temporarily leave a portion of their train or switch cut within the interlocking limits and permit their engine to leave the interlocking limits in the process of completing a switch movement, they may, after stopping, pass the interlocking signal governing entrance to the interlocking limits in stop position to again couple to their train or switch cut. In such cases if the crossing involved has been left clear, no movement must be made to foul or cross same without first protecting against movement on conflicting route.

RULE 550. When a train or engine is to clear the main track at an electrically-locked switch, after it has entered the block in which the switch is located, the train dispatcher must hold all signals governing movement into that block at STOP and apply red tags to the levers controlling such signals. When movement is clear of main track and switch again normal, crew member will then report to train dispatcher that train or engine is clear. Until crew member so reports train dispatcher must not remove red tags from levers controlling the signals involved.

RULE 550-A. Trains and engines must not clear the main track at hand-operated switches not equipped with electric locks in territory where maximum speed is greater than 20 MPH.

RULE 825. Modified to extent that engines not exceeding two units or 3500 H.P. may be used behind 400 and 600 series cabooses.

RULE 826. When necessary to handle a car ahead of the engine between stations, it must be chained to engine unless air brakes are cut in and operative.

RULE 831. When steam shovels, cranes, pile drivers, ditchers, spreaders or similar equipment are handled in trains, other than work trains in service, they must be placed on rear, unless otherwise directed. If picked up at a point where they cannot be placed on rear, they may be placed on head end and switched to rear at first station where possible to do so.

AUTOMATIC BLOCK, TRAFFIC CONTROL AND INTER-LOCKING SIGNAL INDICATIONS
ADD

RULE	ASPECT	NAME	INDICATION
282-A	FY	HIGH	Proceed approaching next signal not exceeding 50 miles per hour.
	FY	APPROACH	

INTERLOCKING PLANTS AND SIGNALS AND RAILROAD CROSSINGS NOT INTERLOCKED

At certain Interlocking Crossings aspects per Rules 281 through 292 will be supplemented by semaphore arms as follows:

RULE 281. A single semaphore arm 60 degrees below horizontal position.
NAME. CLEAR.
INDICATION. PROCEED.

RULE 292. A single square-ended red semaphore arm in horizontal position.
NAME. STOP.
INDICATION. STOP.

AIR BRAKE RULE 22

Retainers will not be used on freight trains unless in the judgment of the engineer their use is necessary. If retainers are necessary, a sufficient number will be used to control the speed of the train while brake pipe pressure is being restored. When used, they will be applied to cars on head end in a block of not less than fifteen cars and in a low-pressure position (horizontal). Should wheels show a tendency to heat, retainers must be alternated.

YARD OPERATIONS

OROVILLE - BETWEEN WEST AND EAST SWITCHING LIMITS

(A) RULE 547. Will apply within above limits, with work authority limited to not more than four blocks at any one time. Engine foreman must obtain authority from train dispatcher whenever switching is to be done in a block or blocks and, when switching is completed, engine foreman personally must release block or blocks to the train dispatcher.

When initially entering a block at a switch where there is no signal or electric lock, permission must be obtained from the train dispatcher and three minutes must elapse after switch is opened before engine or cars foul main track.

A yard engine may be granted work authority including a block in which a train is standing (provided such train has not been granted block work authority) for the purpose of switching such train. When such authority is granted signal indication is not required for entrance to the block nor must three minutes elapse after opening switch not protected by signal or electric lock to enter the block provided train to be switched can be seen stopped in the block. If it becomes necessary to switch such train from both ends or for a second engine to enter the same block on end of train opposite the end on which train is to be worked, to perform other work, both engines may be granted authority to work in the same block. Under such arrangements a portion of the train must be left at all times in the block originally occupied and after switching is completed the work authority will be considered cancelled.

(B) Certain switches within above limits are not electrically-locked or signalled. Switch crews using such switches within a block under work authority may leave and return to the main track without additional authority from the train dispatcher provided they have left a car or cars on main track or main track switch open with a man in charge.

If main track has been cleared and switches restored to normal position new authorization must be obtained from the train dispatcher before returning to the main track.

(C) Engine foreman must notify train dispatcher when leaving or intending to leave main track at an intermediate switch except when working under work authority. A block must not be released to the train dispatcher in advance when work authority has been granted but blocks must be released promptly when switching has been completed or specified time has expired in order to avoid delay to trains.

(D) Train dispatcher may grant permission to different engines in different parts of the same block to operate a dual-control switch by hand or use the main track for switching and will not be required to protect work limits by absolute signals in each direction or apply red tags to the signal levers. However, he must not grant such permission if a train or engine is moving by signal indication in the block toward point where work is to be done or is closely approaching such block.

(E) Switch to house track, Oroville, operates derrails on east end of house track and east end of team track simultaneously.

(F) Oroville Yard. Yard track indicators located opposite absolute signals governing movements of eastward or westward freight trains into yard will indicate to trains or engines the number of the track on which they are to yard their trains.

When indicator is dark yardmaster must be contacted at head-in switch to obtain track assignment unless previously received.

(G) Main track and inside crossover switches at east end of train yard, MP 203.75, are dual-control. When either switch is placed in hand-throw position, the other switch is disconnected from power operation and it is then unnecessary to place it in hand-throw position.

Signals governing movement over inside dual-control switch are controlled by the train dispatcher. When these signals display aspect per Rule 288, movements may be made over this switch without placing it in hand-throw position. If signals display STOP aspect per Rule 292 and reason is not apparent, or if call light is lighted on adjacent telephone booth, train dispatcher must be contacted promptly.

THIRD SUBDIVISION

RULE 105. Sidings on third subdivision (except Keddie), are included in signal circuits. None of these sidings may be occupied or fouled unless authorized by an absolute signal indication or by permission of the train dispatcher.

Grays Flat Spur, MP 272.6. Cars must not be left at top of hill or on descending grade on this spur.

Twain. RULE 827. Dual control power operated split point derail in service at clear point, west end Twain siding. Deraill operates in conjunction with power operated main track switch.

When west switch Twain is hand operated, power operated derail must also be hand operated. Rule 545 will govern.

Permasco car skates on posts approximately 15 car lengths and 30 car lengths west of east switch Twain.

When setting out cars on this siding see they are used. If cars already on siding, arrange to couple cars to be set out with the cars already there, resetting skates under outside pair of wheels of truck of first car on the down hill side. When coupling into car or cars on siding make coupling carefully and see skates removed before cars are pulled or pushed.

When all cars are removed from siding crews making pick up will see skates are re-hung on post or pole in place provided.

In addition to the use of Permasco car skates, provisions of second paragraph Rule 827 pertaining to use of hand brakes are also applicable.

Keddie.

(a) When calling in flagman from east on Fourth Subdivision enginemen will sound six long blasts of horn.

(b) All switches leading in or out of siding (No. 1 track), must be left lined for the siding. Inside crossover switch at the west end of siding is dual-control, power-operated and, when in power position, works simultaneously with west siding main track crossover switch. When west siding main track crossover switch is in hand-operated position, inside crossover switch must also be hand operated.

DRAGGING EQUIPMENT DETECTORS

West switch Poe. Indicator lamp 50 feet west of detector. **Signal 2238.** Indicator lamp 50 feet east.

When indicator lamp is actuated, it will display a lighted "D" and trains must be stopped promptly before reaching West Branch Bridge, and inspection made.

FOURTH SUBDIVISION

Markers must be burning through Tunnels 1, 2, 3 and 6.

Flashing lunar white indicator light displaying letter "C" located at MP 8.4. When lighted and flashing it indicates signal at MP 7.7 displaying aspect per Rule 281 or Rule 285.

When lunar indicator is not flashing, westward trains approach signal at MP 7.7 prepared to stop.

RULES 83, 83-A, 83-B, 83-C. When a regular train is checked on the train register at Keddie, or identification is made of a train at Keddie or between Keddie and East Moccasin, such identification or train register check may be applied at East Moccasin. Trains will retain their identification between Keddie and East Moccasin.

RULE 827. Permasco car skates at Moccasin, Greenville, Lassen View, Robbers Creek, Lodge Pole, Jellico, Willow Springs and Little Valley.

When setting cars out on any of these sidings, see that they are used. If cars already on siding, arrange to couple cars to be set out with the cars already there, resetting skates under outside pair of wheels of truck of first car on the down hill side. When coupling into car or cars on siding, make coupling carefully and see skates removed before cars are pulled or pushed.

When all cars are removed from siding, crew making pickup will see skates are re-hung on post or pole in place provided.

In addition to the use of Permasco car skates, provisions of second paragraph Rule 827 pertaining to use of hand brakes are also applicable.

Keddie. (a) When calling in flagmen from east on Fourth Subdivision, enginemen will sound six long blasts of horn.

(b) Upper unit of 2-unit absolute signal governs eastward movement from Keddie Yard to the Fourth Subdivision. **RULE 509** is applicable.

Absolute dwarf signal on Fourth Subdivision lead when displaying aspect per **RULE 288** will govern westward movement from Fourth Subdivision to siding or yard.

Indian Creek. Switch is not equipped with electric lock. Be governed by **RULE 550-A.**

Clear Creek Junction. The 33-car siding is the interchange track with Almanor Railroad Company and trackage between Western Pacific main track switch and yard limit board 2000 feet beyond end of the 33-car siding toward Chester is joint track for interchange purposes. Movements over this trackage are under operating rules governing operations within yard limits. Switch point derail on Almanor RR main track 400 feet from junction switch.

Normal position junction switch lined for Western Pacific main track.

Westwood. No. 2 track and old electric siding connected with No. 2 track at west end will be used as siding.

Deraills on west end old electric siding and house track must be kept in derail position except when being used. East switch of old electric siding must be left lined for siding.

Poison Lake. Switch point derail at clearance point west end of log loading track. This derail must be left in derailing position except when track is actually being switched.

FIFTH SUBDIVISION

RULE 105. North siding Winnemucca is included in signal circuits and must not be occupied or fouled unless authorized by an absolute signal indication or by permission of the train dispatcher.

OPERATION OF TRAINS AND ENGINES BETWEEN EAST AND WEST TRAIN YARD SWITCHES PORTOLA

(A) Signal aspect per Rule 288 displayed by automatic signals or indicators between east train yard switch MP 322.13 and west train yard switch MP 320.25, authorizes yard switching or engine movement on main track within these limits.

(B) The absence of signal aspect per Rule 288, or its removal, is an indication that the train dispatcher desires the main track cleared for through train movements. Howlers controlled by the train dispatcher are located throughout the yard, and when operated the main track must be cleared immediately.

(C) When main track is used on authority of signal aspect per Rule 288, all movements must be made at yard speed.

(D) When a westward train or engine is stopped at absolute signal at east train yard switch, MP 322.13, or an eastward train or engine is stopped at absolute signal at west train yard switch, MP 320.25, by a STOP indication and train or engine is instructed by the train dispatcher to proceed under flag protection per Rule 509 (A) 2, it must be preceded by a flagman. When next signal or indicator in advance can be seen displaying aspect per Rule 288, and intervening track to such signal can be seen to be clear, train or engine may pick up flagman and proceed at yard speed.

(E) Eastward absolute signals at west train yard switch are under electrically-coordinated joint control of train dispatchers for the Third and Fifth Subdivisions.

Permission to take switch or derail at west end train yard in hand-throw must be obtained from Third Subdivision train dispatcher. Third Subdivision train dispatcher will in turn contact Fifth Subdivision train dispatcher for his concurrence.

When west train yard switch is in hand-operated position, derailing switch, if used, must also be hand-operated.

(F) Derail at west end of west siding is hand-operated independent of switch. Derail will actuate signals on main track when not in derailing position.

(G) Yard track indicators located opposite absolute signals governing movements of eastward or westward freight trains into yard will indicate to such trains the number of the track on which they are to yard their trains.

When indicator is dark yardmaster must be contacted at head-in switch to obtain track assignment.

OPERATION OF SP TRAINS BETWEEN FLANIGAN AND WESO INCLUSIVE FIFTH AND SIXTH SUBDIVISIONS

RULE 801. SP trains and engines are authorized to operate over WP tracks between Flanigan and Weso, subject to WP Rules, Timetable, Special Instructions, and Timetable Bulletins.

RULES 82-A and 204. Wendel. SP trains will be authorized by clearance at Wendel which will be authority for movement on WP track Flanigan to Winnemucca. Train orders may be issued at Wendel which will affect movement Flanigan to Winnemucca.

Flanigan. Connection to SP at MP 384.4. Connection switch east connected and is equipped with a dual-control power-operated switch.

Absolute signal governing westward movement governs movement over connection. "S" light indicators mounted on signal indicate as follows:

"S" light illuminated to the right of the mast indicates route lined to SP connection.

"S" light illuminated to the left of the mast indicates route lined for WP into Flanigan siding.

Movement through connection to WP main track is governed by upper unit of absolute signal located at clear point west end SP double track Flanigan, (SP MP 336.51).

All signals governing movement through SP connection MP 384.4 are absolute signals under control of WP train dispatcher. "SA" and "P" apply to SP trains only, WP Rule 509 applies.

SP trains may enter or leave WP track on PROCEED signal indication, without member of crew contacting train dispatcher, but must contact WP train dispatcher promptly if they are unable to comply with authority granted by signal aspect.

Winnemucca. Westward SP trains will be authorized by clearance at WP Winnemucca which will be authority for movement Winnemucca to Flanigan.

Eastward SP trains will be authorized by clearance at WP Winnemucca which will be authority for movement on WP track Weso to Carlin.

After having been properly cleared, will be governed by signal indication without member of crew contacting train dispatcher.

RULES 83-A and 83-B. Eastward SP trains will register by ticket at WP Winnemucca. Train order form "R" will be issued to eastward SP trains at WP Winnemucca on overdue superior SP trains at Weso.

HOT BOX DETECTORS ARE IN SERVICE AT THE FOLLOWING LOCATIONS:

MP 358.34 between Red Rock and Doyle
Westbound "H" indicator located MP 354.3
Eastbound "H" indicator located MP 360.2
Westbound trains stop at West Red Rock
Eastbound trains stop at East Doyle

MP 434.25 between Phil and Gerlach
Westbound "H" indicator located MP 431.54 and 431.92
Eastbound "H" indicator located MP 436.93 and 437.31
Westbound trains stop at West Phil
Eastbound trains stop at East Gerlach

MP 475 between Ronda and Floka
Westbound "H" indicator located MP 472.5
Eastbound "H" indicator located MP 477.5
Westbound trains stop at West Ronda
Eastbound trains stop at East Floka

Hot Box indicator will normally display a flashing "H" until approaching train has been checked. If no hot journal is found, the indicator will change to a steady "H".

If the "H" indicator is still flashing when passed, a hot journal has been found and the train must stop at the location outlined above.

Call the train dispatcher by telephone for location of hot journal. He will advise the side of the train noted, the car count ahead of caboose or behind the engine and the axle number from the head end of the car. The crew must check the car shown, also the car ahead and the car behind that car. It will not be necessary to inspect the entire train with the following exception:

When multiple alarms are seen on the graph, this condition can be caused by heavy braking of the train while passing the detector account sparks generated by the brake shoes, and also by abnormal operation of the carrier system. It is easily possible for a genuine hot box to be missed under these conditions and the train must therefore be inspected.

A light out in the "H" indicator must be regarded as a flashing "H".

YARD LIMITS

WEST MP	EAST MP
K-111.2 Bieber	BN- 86.5
(3.1 miles east of station)	
BI-32.43 Reno	End of Branch

SWITCHING LIMITS

WEST MP	EAST MP
201.44 Oroville	210.04
280.0 Keddie	282.47
	K-0.48
319.94 Portola	323.09
437.03 Gerlach	439.45
530.02 Winnemucca	533.6
21.3 North Reno (Reno Branch)	30.5

SPURS AND COMMERCIAL TRACKS

STATIONS	MILE POST	CONNECTED	CAPACITY	Station No.
JARBO	P 236.1	Both Ends	17	236
GRIZZLY	P 246.1	1 E	11	246
ROCK CREEK	P 249.1	1 E	13	249
TOBIN	P 253.1	Both Ends	55	253
DALITE	P 256.8	1 W	12	257
GRAY'S FLAT	P 272.6	1 W	74	273
POZLA	P 349.0	Both Ends	33	349
INDIAN CREEK	P 3.1	1 W	14	3281
CHENEY	13.9	1 E	16	14281
CHENEY (South)	13.9	Both Ends	7	14281
POISON LAKE	P 70.4	1 W	40	70281
LITTLE VALLEY LUMBER CO	P 95.4	1 W	12	96281
SULPHUR	P 474.5	1 W	30	475

TUNNEL LOCATIONS

Tunnel Number	West Portal Mile Post	East Portal Mile Post	Length Feet
4	224.66	225.12	2410.0
5	227.34	227.90	2922.5
6	228.14	228.63	2583.0
7	229.54	230.38	4406.5
8	230.42	232.11	8856.3
9	236.37	236.48	551.8
10	237.01	237.05	231.8
11	237.33	237.37	223.8
12	237.69	237.70	51.4
13	244.92	244.96	195.9
14	246.25	246.29	244.9
15	250.10	250.69	3117.81
16	257.43	257.54	600.9
17	257.85	257.91	324.5
18	258.08	258.11	150.1
19	258.16	258.19	164.0
20	258.32	258.38	291.5
21	258.85	258.93	405.0
22	259.55	259.61	306.1
23	262.87	263.11	1257.7
24	263.89	264.01	616.1
25	265.20	265.23	186.4
26	271.58	271.66	446.0
27	278.42	278.49	364.4
28	278.96	279.06	608.6
29	279.19	279.30	587.8
30	279.55	279.65	537.5
31	280.08	280.21	687.3
32	280.37	280.48	595.2
33	283.06	283.30	1270.7
34	283.71	283.77	304.6
35	297.18	298.57	7343.7
36	316.00	316.14	762.7
37	340.34	341.47	6001.7

KEDDIE TO BIEBER

Tunnel Number	West Portal Mile Post	East Portal Mile Post	Length Feet
1	0.00	0.12	685.9
2	0.97	1.08	588.3
3	2.61	2.73	621.0
4	3.39	3.47	470.2
5	3.71	3.76	278.7
6	21.03	21.24	1103.0

TRACKS ON WHICH ENGINE MOVEMENTS RESTRICTED

Location and description of Track	Class of Engine	Prohibited
OROVILLE Ehman Spur	All except one unit.	Beyond restricting sign.
BELDEN, House Spur	All	Beyond MP 260
WESTWOOD Standard Oil Spur**	All	Beyond 220 feet from frog.
POISON LAKE Log Loading Track	All	Beyond 1125 feet from derail.
PORTOLA, Scale Track	All	Live rail.
PORTOLA, Scale Track	All, except one unit.	Dead rail.
SULPHUR	All	Beyond 300 feet east of ore ramp.
JUNGO	All	West of loading ramp No. 1 or 2 spur.

**Necessary to have hold of at least 4 cars to switch Standard Oil Spur.

BRANCHES

RENO, Scale Track	All	Live Rail
RENO and LOYALTON BRANCHES RS-70 and RS-68 Units & All over 4 units.		Entire Branch
LOYALTON, Standard Oil Co. spur	All, except one unit	Beyond frog

TONNAGE RATING

ENGINE NUMBER	3rd Subdivision	4th SUBDIVISION		5th Subdivision	Reno Branch	Loyalton Branch
		Keddle-Greenville Almanor-Bieber	Greenville to Almanor			
EASTWARD						
Ruling Grade	1.0%	1.5%	2.2%	0.8%	1.2%	0.4%
913-926	1375	1080	810	1850	1150	3400
501-511	880	600	435	880	800	2645
551-564 } 581-585 } 601-608 }	1150	790	535	1150	1050	3340
701-713 } 725-732 }	1375	1080	810	1850	1150	3400
751-769	2130	1470	1050	2570	1800	4350
2001-2010	2000	1250	850	2400	1550	3800
3001-3022	2100	1400	950	2450	1725	4125
3501-3526	2130	1470	1000	2570	1800	4350
WESTWARD						
Ruling Grade	-1.0%	Bieber-Halls Flat 1.8%	Halls Flat to Keddle 1.0%	1%	1.8%	0.0%
913-926	DESCENDING GRADE NO TONNAGE LIMIT	1035	1825	1710	810	3800
501-511		530	1350	880	435	2645
551-564 } 581-585 } 601-608 }		660	1855	1150	700	3340
701-713 } 725-732 }		1035	1825	1850	810	3800
751-769		1230	2130	2130	1230	4500
2001-2010		1050	2000	2000	1050	3800
3001-3022		1150	2100	2100	1150	4300
3501-3526		1230	2130	2130	1230	4500

Ratings shown above are for one unit engine, and for actual tonnage, and based on maximum grade each subdivision.

Between points where grades are less than maximum greater tonnage can be handled.

MAXIMUM SPEEDS IN MILES PER HOUR Between	MAXIMUM SPEEDS	
	1	2
Fourth Subdivision		
MP 0.0 and MP 1.1	15	15
MP 1.1 and MP 6.19	25	25
MP 6.19 and West Switch Green- ville	40	35
West Switch Greenville and MP 17.19 (Eastward)	35	30
West Switch Greenville and MP 17.19 (Westward)	25	25
MP 17.19 and MP 34.55	25	25
MP 34.55 and MP 43.52	30	30
MP 43.52 and MP 78.71	45	45
MP 78.71 and MP 93.4	25	25
MP 93.4 and MP 98.1	30	25
MP 98.1 and MP 106.53	25	25
MP 106.53 and MP 111.81	30	25

Unless otherwise advised, trains on Fourth Subdivision will operate at speeds shown under Column 1.

MAXIMUM SPEEDS IN MILES PER HOUR Between	MAXIMUM SPEEDS	
	1 Trains Not Exceeding 5500 Tons	2 Trains Exceeding 100 Cars or 5500 Tons
Third Subdivision		
MP 201.9 and MP 205.47	45	35
MP 205.47 and MP 226.9	50	40
MP 226.9 and MP 232.2	35	35
MP 232.2 and MP 275.3	30	25
MP 275.3 and MP 282.9	25	25
West wye switch Keddie, diverging route	15	15
MP 282.9 and MP 294.0	35	30
MP 294.0 and MP 295.1	30	25
MP 295.1 and MP 298.53	35	30
MP 298.53 and MP 299.75	30	25
MP 299.75 and MP 316.1	35	30
MP 316.1 and MP 316.98	30	25
MP 316.98 and MP 320.3	35	30
MP 320.3 and Portola	20	20
Fifth Subdivision		
Portola and MP 321.7	20	20
MP 321.7 and MP 323.7 on curve	40	30
MP 323.7 and MP 347.8	50	40
MP 347.8 and MP 348.5 on curves	45	35
MP 348.5 and MP 358.65	55	45
MP 358.65 and MP 374.0	50	50
MP 374.0 and MP 382.9	60	50
MP 382.9 and MP 384.2	50	50
MP 384.3 WP-SP Conn. using Turnout	20	20
MP 384.2 and MP 390.7	60	50
MP 390.7 and MP 397.8	45	35
MP 397.8 and MP 398.5	55	40
MP 398.5 and MP 488.3	60	50
MP 488.3 and MP 489.9	55	45
MP 489.9 and MP 497.25	40	30
MP 497.25 and MP 530.7, Win- nemucca	60	50
MP 530.7 and MP 532.3, Win- nemucca	55	45

Trains approaching interlocked crossings must reduce to speed shown before engine passes home signal.

On curves speed will be reduced below the maximums or restrictions provided, where necessary, on all Subdivisions and Branches, to insure safety.

SPEED RESTRICTIONS In Miles Per Hour Between	Maximum	Restrictions
Loyalton Branch	15	..
Reno Branch		
Reno Jct. and MP 30	25	..
Martin Spur		10
MP 30 and Reno	15	..
SP-WP Interchange Connection, Reno	5

On curves speed will be reduced below the maximums or restrictions provided where necessary, on all Subdivisions and Branches to insure safety.

SPEED RESTRICTIONS FOR ENGINES: Maximum speed in miles per hour shown below is subject to further restrictions applicable to certain territories as shown in Maximum Speeds:

WESTERN PACIFIC

Class	Unit HP	Engine Maximum Speed	Class	Unit HP	Engine Maximum Speed
D-239 (913-926)	1500	65	S-62 (601-608)	1200	30
S-50 (501-503)	600	45	RS-62 (701-713)	1500	65
S-50 (504-511)	660	35	RS-62 (725-732)	1750	65
S-57 (551-564)	1000	35	RS-64 (2001-2010)	2000	71
S-57 (559-564)			RS-65 (3001-3022)	2500	71
in multiple	1000	30	RS-68 (3501-3526)	3000	71
S-60 (581-585)	1000	65	RS-70 (751-769)	3000	75

Foreign railroad diesel units, when used, will be permitted maximum speeds but will not exceed maximum speed stenciled in cab of each unit.

WATCH INSPECTORS

Location	Name	Title
San Francisco	K. I. Dunlap	Manager of Time Service
San Francisco	A. Solari	Watch Inspector
Roseville	Martin's Jewelers	Watch Inspector
Marysville	Young's Jewelers	Watch Inspector
Oroville	Chuck's Time Shop	Watch Inspector
Reno	R. Hertz & Bros.	Watch Inspector
Winnemucca	Dan Ramasco	Watch Inspector

RAILROAD SURGEONS

Location	Name	Title
San Francisco	Dr. M. E. Childress	Chief Surgeon
San Francisco	Dr. C. E. Smith	Ass't Chief Surgeon
Marysville	Dr. L. D. Bugni	Local Surgeon
Oroville	Dr. Charles Benninger, Jr.	Local Surgeon
Oroville	Dr. C. Craviotto	Local Surgeon
Oroville	Dr. J. E. Patrick	Local Surgeon
Oroville	Dr. E. S. Fortner, Jr.	Local Surgeon
Oroville	Dr. W. H. Bunstock	Local Surgeon
Oroville	Dr. J. Floyd	Local Surgeon
Oroville	Dr. R. D. Bethel	Oculist
Quincy	Dr. D. H. Mansell, Jr.	Local Surgeon
Quincy	Dr. I. G. Althouse	Local Surgeon
Quincy	Dr. S. L. Christenson	Local Surgeon
Quincy	Dr. W. B. McKnight	Local Surgeon
Quincy	Dr. M. L. Whitney	Local Surgeon
Greenville	Dr. W. C. Batson	Local Surgeon
Westwood	Dr. H. G. Levin	Local Surgeon
Bieber	Dr. A. O. Meier	Local Surgeon
Portola	Dr. C. W. Brown	Division Surgeon
Portola	Dr. W. S. Bross, Jr.	Ass't Division Surgeon
Reno	Dr. G. G. Lenz	Local Surgeon
Reno	Dr. D. F. Guisto	Local Surgeon
Reno	Dr. K. F. Maclean	Local Surgeon
Reno	Dr. W. M. Tappan	Local Surgeon
Reno	Dr. G. R. Magee	Oculist
Reno	Dr. G. F. Magee	Oculist
Winnemucca	Dr. K. L. Hartoch	Local Surgeon

OTHER MAXIMUM SPEEDS

Maximum MPH

Engines operated in a movement other than from the leading control unit in the direction of movement. On curves and approaching highway or street crossings at grade	20
Where conditions require, speed must be further reduced to insure safety.	
Through turnouts, crossovers, on sidings and on all inside tracks* (except as otherwise provided for)	10
*On inside tracks when curvature or other conditions require, speed will be further reduced to insure safe operation.	
Through turnouts with power-operated switches in reverse position, Kramm, Elsey, James, East switch Portola to East switch Winnemucca inclusive, and through sidings at the stations and within the limits listed above	20
Trains handling WP derrick No. 37 - straight track	35
On curves 5 MPH less than speed prescribed but not exceeding	30
Trains handling derricks (other than WP derrick No. 37). Third and Fourth Subdivisions.....	25
All other Subdivisions	30
Reno Branch.....	20
Loyalton Branch.....	10
Trains handling steam shovels, cranes, rotary plows, or pile drivers on own wheels Third and Fourth Subdivisions.....	20
All other subdivisions and Branches.....	25
Trains handling WP Car Series 10301 to 10400	45
Trains handling loaded air dump cars.....	25
Scale test cars on own wheels must be handled next to caboose and trains handling such cars will not exceed Between Oroville and Winnemucca.....	30
Between Keddie and Bieber	25
Branches.....	20
Hot Box detectors, when stop is required by continuing flashing "H" to designated stop point.....	15

MISCELLANEOUS

Trains handling engines dead in train must not exceed the maximum speed for such class engine.

Engines dead in train must be handled next behind engine handling train.

Locomotives dead in train must have automatic brake valves cut out in cab and brake valve handle locked in "running" position on 24 RL equipment or handles removed in "handle off" position on 26 L equipment; independent brake valve handles removed in "running" position; dead engine feature cut in; distributing valve pops set to 15 PSI pressure; and rotair valve set to "passenger" position on units equipped with 24 RL brake equipment. The isolation switch must be placed in "start" position; main battery switch pulled; the selector lever in "off" and the reverser handle removed from control stand in the "neutral" position; all switches at engineers control stand in "off" position; and all reversers locked in "neutral" position on 501, 504, 551, 581, 601, 701, 725 and 913 class units. Also on locomotives equipped with an alertor, break the seal and close the alertor cut out cock.

During freezing weather engine water cooling system must be drained on any type engine being towed.

When the plow end of Jordan Spreaders 6, 7 or 13 are to be coupled to other cars or engines, an empty flat car must be placed next to plow end, to prevent damage to engine or equipment.

RULE 10-I

RADIO COMMUNICATION

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

Foremen's Response

THIS IS W.P. FOREMAN IN CHARGE OF THE WORK BETWEEN MP..... AND MP..... W.P. TRAIN ORDER NO. WE ARE IN THE CLEAR AND YOU MAY PROCEED PAST THE RED CONDITIONAL STOP SIGN AND THROUGH THE LIMITS OF THE ORDER AT M.P.H.

Engineer's Response

THIS IS ENGINEER W.P./S.P. TRAIN I MAY PROCEED PAST THE RED CONDITIONAL STOP SIGN AND THROUGH THE LIMITS OF W.P. ORDER NO. BETWEEN M.P. AND M.P. AT (Speed) REPEAT (Speed) MILES PER HOUR.

Foreman must acknowledge Engineer's response as follows:

W.P./S.P. TRAIN, BETWEEN M.P. AND M.P. (Speed) MILES PER HOUR, OK ON ORDER NO.

If radio communications are not available, Rule 10-I must be complied with.

SPEED TABLE

TIME PER MILE	MILES PER HOUR
36"	100
37"	97.3
38"	94.7
39"	92.3
40"	90
41"	87.8
42"	85.7
43"	83.7
44"	81.8
45"	80
46"	78.3
47"	76.6
48"	75
49"	73.5
50"	72
51"	70.6
52"	69.2
53"	67.9
54"	66.7
55"	65.5
56"	64.3
57"	63.2
58"	62.1
59"	61
1'00"	60
1'01"	59
1'02"	58.1
1'03"	57.1
1'04"	56.2
1'05"	55.4
1'06"	54.5
1'07"	53.7
1'08"	52.9
1'09"	52.2
1'10"	51.4
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