

**RATING OF ENGINES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS**

Total weight of train exclusive of engine and tender, which the different classes of engines will haul in each direction between stations named, under favorable weather conditions. A deduction of ten per cent may be made for time freight trains.  
Between stations for which no rating is shown maximum will apply.

TYPE OF ENGINE	NUMBERS (Inclusive)	PORTLAND AND SEATTLE							
		WESTWARD				EASTWARD			
		Albina to Vader	Vader to Napavine	Napavine to Centralia	Centralia to Argo	Argo to Centralia	Centralia to Napavine	Napavine to Albina	
C 57	22 179 30 190	3000	1500	3830	3000	3000	1300	3200	
T 69	22 161	3410	1770	4135	3410	3135	1470	3500	
T 63	22 162	2595	1330	3150	2595	2380	1090	3500	
MacA 57	23 210	2870	1485	3480	2870	2635	1280	3500	
MacA 63	26 214 28 211	4000	2000	4500	4000	3655	1715	5500	
P 77	22 149	4500	2200	5000	4200	3950	1840	6000	
P 77	25 167 28 178	2570	1305	3100	2570	2350	1070	3500	
MT 73	29 230	4500	2200	5000	4200	3950	1840	6000	

**EXPLANATION**

"P"..... Pacific  
 "T"..... Ten Wheeler  
 "C"..... Consolidation  
 "MacA"..... MacArthur  
 "MT"..... Mountain  
 EXAMPLE: Consolidation engine having 57 inch drivers, cylinders 22 inch diameter and 30 inch stroke, and weighing 179,000 pounds on drivers: C 57 22 179

TYPE OF ENGINE	NUMBERS (Inclusive)	CENTRALIA AND HOQUIAM						CENTRALIA AND TONO	EAST OLYMPIA AND OLYMPIA EASTWARD
		EASTWARD			WESTWARD				
		Hoquiam to Cosmopolis	Cosmopolis to Centralia	Centralia to Cosmopolis	Centralia to Cosmopolis	Cosmopolis to Hoquiam			
C 57	20 167 30 172	1490	2875	3355	3355	1490	2200	1175	
C 57	22 179 30 190	1325	3880	4290	4290	1700	2520	1515	
T 63	20 113	625	1930	2245	2245	695	1340	500	
T 64	22 145	710	2275	2560	2560	820	1590	885	
T 57	20 119	740	2375	2765	2765	855	1630	980	
T 57	20 125	710	2505	2920	2920	905	1720	980	
T 69	22 161	1020	2840	3310	3310	1570	1865	1170	
T 63	22 162	1120	3110	3625	3625	1650	1975	1280	
MacA 57	23 207	1515	4490	4980	4980	1960			
P 77	22 149	710	2505	2920	2920	905	1720	980	

**UNION PACIFIC RAILROAD COMPANY**  
 Northwestern District

**Oregon Division**

**Special Instructions No. 5**

**Effective Saturday, December 1, 1945**

Superseding Special Rules No. 4

Employees whose duties are in any way affected thereby, must have a copy of these instructions with them while on duty.

**A. McALLISTER, Superintendent**  
**L. A. COLLINS, General Superintendent**  
**M. C. WILLIAMS, General Manager**

2 (R). In addition to employes designated in Rule 2, following employes must use watches that have been examined and certified to by a designated inspector:

- |                         |                         |
|-------------------------|-------------------------|
| Safety Agents           | Traveling Firemen       |
| Trainmasters            | Station Agents          |
| Assistant Trainmasters  | Operators               |
| Traveling Conductors    | Assistant Yardmasters   |
| Road Foremen of Engines | Outside Hostler Helpers |

17 (R). Headlights on all engines must be kept burning while between St. Johns Jct. and Peninsula Jct., day and night.

19 (R). At Huntington, Pendleton, La Grande and Seattle, when passenger trains, except those with electric lighted markers, are being switched from rear, markers must be removed to prevent obscuring view of enginemen. On trains having electric lighted markers, marker lights must be turned off while train is being switched from the rear.

24 (R). At Albina, indicators may be placed on engines by enginemen before making light movement to Portland.

27 (R). Switch lights will not be used on:

- |                   |                     |
|-------------------|---------------------|
| Joseph Branch     | Grass Valley Branch |
| Pilot Rock Branch | Tono Branch         |
| Hepner Branch     | Olympia Branch      |
| Condon Branch     |                     |

Trains and engines must approach facing point switches on these branches prepared to stop if switch is not in normal position.

28 (R). A white indicator board displayed at a station will indicate to trains doing local work that there are cars to be moved or freight to be loaded.

32 (R). Within the city limits of Pendleton it is unlawful to sound engine whistle except to signal flagman or to prevent accident not otherwise avoidable.

83 (R). Clearance must be received as follows:

- |              |   |
|--------------|---|
| Umatilla     | —all trains;  |
| Black River  | —all westward trains;   |
| Centralia    | —all westward Grays Harbor Branch trains originating at Blakeslee Jct.; |
| Centralia    | —all eastward Tono Branch trains originating at Wabash;                 |
| Independence | —all westward C. M. St. P. & P. trains originating at Helsing Jct.;     |
| Baker        | —all trains.  |

Northern Pacific clearance must be received as follows:

- |  |   |
|--|---|
| Reservation                                  | —all eastward second class and extra trains passing through Tacoma; |
| Tacoma, N. P. Fifteenth St. telegraph office | —all eastward second class and extra trains originating at Tacoma.  |

Trains are not required to receive clearance as per Rule 83 (B) as follows:

- |              |   |
|--------------|---|
| Joseph       | —all regular trains, when no operator on duty;    |
| East Olympia | —all westward trains Olympia Branch;              |
| Argo         | —all westward C. M. St. P. & P. passenger trains. |

83 (S). Information required by Rule S-83 need not be received at:

- |                |  |
|----------------|--|
| Peninsula Jct. | —all westward trains and engines;  |
| Argo           | —all westward U. P. and C. M. St. P. & P. trains and engines, but must move at restricted speed Argo to Seattle. |

Conductors of the following trains may register by registering ticket, Form 2642, per Rule 83 (A), when operator on duty:

- |             |                          |
|-------------|--------------------------|
| Baker       | —all first class trains; |
| Rieth       | —all first class trains; |
| Black River | —all trains.             |

Train registering exceptions:

- |           |  |
|-----------|--|
| Albina    | —only trains which originate or terminate at that station will register;   |
| Argo      | —only trains which originate or terminate in U. P. yard at that station will register;   |
| Centralia | —Tono Branch trains originating or terminating at Wabash, and Grays Harbor Branch trains originating or terminating at Blakeslee Jct. must register in U. P. train register in N. P. telegraph office; |
| Vancouver | —all trains must register in U. P. train register.   |

93 (R). Yard limits at the following stations include the territory shown:

- |           |  |
|-----------|--|
| Albina    | —from 930 feet west of Signal 63 to North Portland Jct. and to M.P. 10, Kenton Line, including East Portland, Albina and Kenton; |
| Troutdale | —on Kenton Line only.  |

93 (S). The following instructions govern while using trackage of Northern Pacific Terminal Company at Portland:

Trains and engines using Tracks 1 to 10, inclusive, must move at restricted speed when passing a train receiving or discharging passengers, and must not cross under "High Shed" at passenger station unless proceed signal is received from station master or his assistant.

In making this movement with yard engines, a member of crew and not more than one, must ride on leading footboard and when cars are being pushed must ride on front of leading car in direction engine is moving.

A flagman must precede the movement of yard engines over crossings in front of baggage room unless proceed signal is received from station master, baggage master, or their assistant.

Trains and engines must not exceed ten miles per hour between Seventeenth Avenue and passenger station, and six miles per hour between north end of passenger station tracks and Front Avenue.

Interlocking at south end of freight and passenger yards governs all trains and engines entering or leaving yards.

When the home signal indicates Stop, the following whistle signals will be used to call for desired route: (When conditions are favorable, hand or lantern signals should be used instead of whistle signals.)

- |                             |       |   |
|-----------------------------|-------|---|
| For Albina                  | ..... | o |
| For Troutdale               | ..... | o |
| For S. P. Main Line         | ..... | o |
| For S. P. Yard              | ..... | o |
| For East Second Street      | ..... | o |
| For S. P. & S. to East Side | ..... | o |

When the home signal indicates Proceed, the whistle signal must not be sounded.

98 (R). JUNCTIONS AND RAILROAD CROSSINGS.

Location	Railroad Crossed, or Junction With	Trains Which Have Precedence	How Governed
Rieth. (M.P. 211.3)	Third Sub-division.		See Special Instruction 98 (T).
Umatilla. (M.P. 183.9)	Washington Division.		See Special Instruction 98 (U).
East Portland. (S.E. Second Ave. between S.E. Salmon and S. E. Madison Sts.)	P. E. P.	U. P.	Stop signs.

Continued on page 3.

2

98 (R).—Continued.

Location	Railroad Crossed, or Junction With	Trains Which Have Precedence	How Governed
East Portland. (S.E. Second Ave. and S.E. Morrison St.)	P. E. P.	U. P.	Stop signs.
Peninsula Jct. (M.P. 5.8 Kenton Line)	Seattle main track.		See Special Instruction 663 (T).
Helsing Jct.	C.M.St.P.&P.	U. P.	Automatic block signals. See Special Instruction 509 (S).
Schafer Bros. Crossing.	Schafer Bros. Logging Ry.	U. P.	Cabin Interlocking. See Special Instruction 663 (R).
South Aberdeen. (Donovan Mill)	N. P.	N. P.	Stop signs.
Olympia. (Jefferson and 7th Sts.)	N. P.	U. P.	Stop signs.
Tacoma. (Dempsey Mill Spur)	N. P.	N. P.	Stop signs.
Tacoma Yard.	N. P.	N. P.	Stop signs.
Seattle. (Spokane and Whatcom Aves.)	N. P.		Stop signs.
Seattle. (Whatcom Ave. and Holgate St.)	N. P.		Stop signs.
Seattle. (Whatcom Ave. and Massachusetts St.)	N. P.		Stop signs.
Seattle. (Railroad Ave. and Atlantic St.)	N. P. C.M.St.P.&P.		Stop signs, and signals from watchman.

98 (S). All trains and engines must stop at stop signs and not proceed onto draw span of bridge between Montesano and South Montesano until they have called for, received and acknowledged proceed signal from bridge tender, and in addition must be governed by position of derail located 128 feet east and derail located 195 feet west of trestle leading to drawbridge. During certain hours each day draw span will be left open for river traffic and derails will be set in derailing position. If necessary for train or engine to use drawbridge during such hours, engineer will sound one long, one short and one long blast of engine whistle to call bridge tender on duty, and if bridge tender does not respond promptly, a member of crew must be sent to bridge tender's house to notify him that bridge is to be used.

98 (T). At Rieth, when a train is approaching on Third Subdivision main track, a train from Pilot Rock Branch must not open the switch to nor obstruct the Third Subdivision main track until the approaching train has stopped or passed.

98 (U). At Umatilla, Oregon Division trains must stop clear of junction switch connecting east leg of wye and Washington Division main track and must not proceed until information required by Rule S-83 is obtained.

If a train is seen approaching on Washington Division main track, switch must not be opened nor Washington Division main track occupied until approaching train has stopped or passed.

98 (V). All trains and engines must stop at stop signs and not proceed onto draw span of bridge at Tacoma until they have called for, received and acknowledged proceed signal from bridge tender.

99 (R). At Hood River and The Dalles, when passenger train stops at passenger station, engineer will not sound whistle for flagman to protect rear of train, but when on the time of a first class train or in foggy or stormy weather, when ready to proceed, flagman must be recalled by engine whistle.

These instructions do not relieve conductor or flagman of the responsibility of protecting as required by the rules.

99 (S). On Joseph, Condon, Tono, Pilot Rock, Grass Valley, Olympia, Hepner and Grays Harbor Branches, between 6 A.M. and 6 P.M. daily, all extra trains must run at restricted speed, looking out carefully at all points for track cars and men working on track without flag protection. Speed on curves must be such as to be able to stop within one-half the distance track is seen to be clear and whistle signal 14 (L) must be sounded frequently.

103 (R). In switching with an engine equipped with footboards, when there are no cars ahead of the engine, a yardman or trainman (and not more than one) must ride on leading footboard in direction the engine is moving, except as follows:

- When the switches to be passed over can be plainly seen to be properly lined;
  - Where the movement is over a crossing protected by a crossing watchman on duty;
  - Over street crossings at Portland, Albina, Kenton and on Second Street at East Portland;
  - At Umatilla, over public crossing just east of M.P. 184;
  - At La Grande, over Fir Street and Greenwood Street;
  - At Seattle, over Spokane Street, Harbor Island;
  - At Seattle, over Spokane Street, Alaskan Way.
- Where through movement is made:
- Between Rieth and Pendleton;
  - Between Argo and Seattle passenger station or local yard;
  - Along East Marginal Way, Seattle.

103 (S). Cars, except business cars equipped with spotlight, must not be shoved ahead of engines through tunnel between St. Johns Jct. and Peninsula Jct.

103 (T). At Bridal Veil, in switching tracks serving lumber company, movement over the two ramp crossings must be protected by a member of crew preceding movement.

At Fifteenth Street, Tacoma, all trains and engines must stop and a member of the crew must be sent ahead to act as crossing watchman.

On Grays Harbor Branch, between 8 A.M. and 6 P.M. daily, all trains must approach M.P. 45 at restricted speed, expecting to find logging trucks crossing track at new spur.

104 (R). Switches will be set normally at:

- Hinkle, junction switch—for line via Munley;
- Umatilla, wye switch connection with Ore. Div. main track—for wye;
- Messner, junction switch—for line via Munley;
- Crates, spring switch at end of double track—for eastward trains;
- Kenton, cross-over switch—for extension;
- Tacoma Jct., junction switch—for C. M. St. P. & P.;
- Joseph, main track switch east leg of wye—for wye;
- Joseph, switch at stem of wye—for east leg of wye;
- Enterprise, west switch of cross-over between main track and house track—for house track;
- Aberdeen, switch at end of double track—for eastward trains;
- South Montesano, wye switch on Montesano Branch—for east leg of wye;
- Helsing Jct., junction switch—for U. P. main track.

3

104 (S). At Tacoma, when cross-over switches and double slip switches from Northern Pacific double track to U. P. drawbridge line are handled by trainmen account switchtender not on duty, all such switches must be returned to normal position after movement is completed.

105 (R). THE SPEED SHOWN BELOW MUST NOT BE EXCEEDED:

Note.—The designation "Str." includes trains with Diesel-electric power units and comprising all streamline or light weight roller bearing equipment.

The designation "Psgr." includes other passenger, mail and express trains including train powered with steam engine or train powered with Diesel-electric power unit comprising one or more conventional cars, also Diesel-electric power unit running light and mixed trains without freight equipment.

The designation "Frt." includes freight trains, mixed trains with freight equipment and light engines with or without cabooses.

When a freight engine is used in passenger service on branches the speed specified under "Frt." must not be exceeded.

Location	Maximum Speed Miles per Hour			Remarks
	Str.	Psgr.	Frt.	
At any point.	90	60	40	
At any point.		40	40	Motor trains and inspection bus cars.
At any point.		50		When caboose is handled in train consisting of passenger equipment. When lesser speeds for passenger trains are prescribed, such speeds will apply.
At any point.		55	40	With 3800 and 3900 class engines.
At any point.		45	40	With 4000, 5000 and 9000 class engines.
At any point.		50	40	With MacArthur type engines with 63-inch drivers.
At any point.		35	35	With MacArthur type engines with 57-inch drivers.
At any point.		35	35	With 3500 class Mallet, Consolidation and Ten Wheeler type engines.
At any point.		20	20	With 0-6-0 and 0-8-0 type yard engines.
At any point.			35	Light engines.
At any point.	20	20	20	Engines running backward.
Between Biggs and Crates.	20	20	20	Moving against current of traffic.
At any point.			25	Trains handling company roadway machines on their own wheels.
At any point.			25	With Rodger or Hart ballast cars loaded with gravel.

105 (R).—Continued.

Location	Maximum Speed Miles per Hour			Remarks
	Str.	Psgr.	Frt.	
At any point.			15	Jordan spreaders and other snow machines of spreader type, when in operation.
At any point.			20	Trains handling logs, unless cars are staked and wired in accordance with A.A.R. rules.
Through truss bridges.			6	
At any point. Main Line.			30	Trains handling scale test car.
Branch Lines.			25	
At any point.		35	35	With C. M. St. P. & P. class L engines.
At any point.		35	35	With C. M. St. P. & P. class K1 engines, equipped with swing motion trucks.
At any point.		25	25	With C. M. St. P. & P. class K1 engines, equipped with rigid trucks.
At any point.		35	35	With C. M. St. P. & P. freight engines with single trucks when handling or helping passenger trains.
Within yard limits. Main Line.	40	40	25	Speed must be as much slower as conditions require.
Branch Lines.		30	15	
Through tunnels.	40	40	25	Speed must be as much slower as conditions require.
Using cross-overs or turn-outs.	15	15	15	
On tracks other than main tracks.	15	15	15	
Interlocking.	15	15	15	
Railroad crossings at grade.	15	15	15	
On 3-degree curves.	60	50	40	Figure on stake at beginning of curve indicates degree of curvature.
On 4-degree curves.	55	45	35	
On 5 and 6-degree curves.	45	35	25	
On 7 and 8-degree curves.	40	30	20	
On curves of 7-degrees and over.		25	20	With 2-10-2 type engines.

105 (R).—Continued.

Location	Maximum Speed Miles per Hour			Remarks
	Str.	Psgr.	Frt.	
On 9 and 10-degree curves.	35	25	20	
Over spring switches.	15	15	15	When using turn-outs.
Over spring switches.	20	20	20	When not using turn-outs, but where switch points will be caused to oscillate under such movement, or when movement is over facing point switch.
Through cross-overs, turn-outs and on wyes.			5	With 9000 class engines.
<b>First Subdivision</b> Leonard to Durkee.			25	Descending grade.
Pleasant Valley to Leonard.	50	40	20	Descending grade.
Between Pleasant Valley and Quartz.	60	50	25	Descending grade.
Baker.	15	15	15	Over street crossings within city limits.
Telocaset to Union Jct.	55	45	25	Descending grade.
<b>Second Subdivision.</b> Between Hilgard and Huron.	35	25	20	Ascending and descending grade.
Pendleton.	12	12	12	Over Thompson, Main and Aura Streets.
Pendleton.	20	20	20	Over other street crossings within city limits.
<b>Third Subdivision.</b> Echo.	30	30	30	Over first road crossing east and west of depot.
Hermiston.	15	15	15	Over road crossing east end of depot.
Umatilla.		25		Track No. 7.
The Dalles.	12	12	12	Over street crossings.
<b>Fourth Subdivision.</b> Troutdale.		30		Nos. 12 and 18, to permit exchange of mail.
Between Kenton and Troutdale.		45	35	
East Portland.	8	8	8	Over frogs and crossings and through interlocking, east end Willamette River Bridge.

105 (R).—Continued.

Location	Maximum Speed Miles per Hour			Remarks
	Str.	Psgr.	Frt.	
Between East Portland and Albina.	8	8	8	Curve at Globe Mill.
Between Portland and Albina.	8			Backing up.
Between Portland and Albina.	10	10	10	Over street crossings.
<b>Fifth Subdivision.</b> Over slip switch, Lucile St., Argo.		10	10	With 7000 and 7800 class engines.
<b>Joseph Branch.</b> Between La Grande and M.P. 25.		35	30	
Between M.P. 25 and M.P. 55.		30	25	
Between M.P. 55 and M.P. 72.		35	30	
Between M.P. 72 and Joseph.		30	25	
<b>Pilot Rock Branch.</b> At any point.		15	15	
<b>Heppner Branch.</b> At any point.		30	25	
<b>Condon Branch.</b> At any point.		30	25	
Between Speece and Mikkalo.		25	15	On descending grades.
Between Barnett and Rock Creek.		25	15	On descending grades.
<b>Grass Valley Branch.</b> At any point.		30	25	
Between Kent and M.P. 39.		25	15	
Between M.P. 33 and Thornberry.		30	20	On descending grades.
Between Thornberry and Biggs.		20	10	On descending grade.
<b>Grays Harbor Branch.</b> At any point.		40	35	
At any point.			25	Trains handling rock.

Location	Maximum Speed Miles per Hour			Remarks
	Str.	Psgr.	Frnt.	
Preacher's Slough to M.P. 47.		10	10	
Aberdeen.		20	20	Within city limits.
Aberdeen.		10	10	Over street crossings.
Cosmopolis.		20	15	Within city limits.
Cosmopolis.			8	With logs within city limits.
Blue Slough.			6	On rollways.
Tono Branch. At any point.		30	15	
Olympia Branch. At any point.		30	20	

105 (S). SPEED RESTRICTIONS ON OTHER THAN MAIN TRACKS:

Location	Maximum Speed Miles per Hour		Remarks
	Psgr.	Frnt.	
Lime, high line track and connections.		10	
Duncan, wye.		8	
Echo, mill spur and wool warehouse.		6	
Hermiston, on house track west of McNaught warehouse.		6	
Hermiston, Standard and Union Oil spurs.		6	
Umatilla, wye.	10	10	

105 (T). At Gibbon, trains using siding will clear No. 2 track at east and west ends when length of train will permit.

At Hood River, when necessary to take siding, eastward passenger, mail and express trains will use cross-over from main track to siding.

105 (U). At stations where eastward and westward sidings are shown, the eastward siding is east of the westward siding, except at Baker the eastward siding is west of the westward siding.

107 (R). At Pendleton, while passenger engine or passenger train is being serviced on main track or No. 1 track, movement must not be made on adjacent track unless member of crew precedes movement.

D-151 (R). At points shown below, trains and engines may move against the current of traffic without being preceded by a flagman, except when a first class train is due or when the view is obscured by weather or other conditions:

The Dalles —between Signal 867 and Signal 838;  
Albina and Portland—on parallel tracks between Portland and East Portland or Harding Street, Albina.

200 (R). Lights will not be kept burning at night in train order signals on branches when operators are not on duty, and trains must be governed by the day indication of such signals.

208 (R). Except at initial stations, when a train's superiority is restricted at the point where the order is issued to it, the order must not be made complete to the train which is being advanced until the operator has placed two torpedoes on the rail not less than 1000 feet from the train order signal in the direction of the restricted train, and the train dispatcher has been notified that torpedoes have been placed.

209 (R). Operators must not typewrite Union Pacific train orders or clearances.

408 (R). Clearance Form B received by eastward train or engine at Rieth will authorize movement in automatic block signal territory between Rieth and east switch No. 1 track Pendleton, and movement in CTC territory east of Pendleton.

Clearance Form B received by westward train or engine originating at Pendleton or east of Pendleton, will authorize movement in automatic block signal territory between east switch No. 1 track Pendleton and Rieth.

509 (R). Between Huntington and Portland, Rule S-509 (A) applies.

509 (S). Movement of trains and engines between Helsing Jct. and Independence is governed by automatic block signals and when signals indicate Proceed, trains or engines may proceed regardless of first class trains.

At Helsing Jct., when signal at junction switch displays Stop indication after junction switch is opened, westward C. M. St. P. & P. trains must comply with Rule 509 (A) and Grays Harbor Branch main track must not be occupied except under protection in accordance with Rule 99 against westward trains on Grays Harbor Branch.

518 (R). In CTC territory, bus cars, light weight motor trains of three cars or less, any engine without cars, or cuts of less than four cars, must not be permitted to stand on sanded rails on main track or between the fouling point and the switch on sidings.

605 (R). To indicate the route to be used through interlocking, the following whistle signals will be used:

At East Portland:

For Portland..... ———  
For Albina..... ——— o  
For Graham..... ———  
For S. P. Main Line..... o ———  
For S.E. Second Ave..... o o ———  
For S. P. yard..... o ——— o  
For transfer track..... ——— o ———  
For East Side Freight Terminal..... o o ———

At St. Johns Jct.:

For North Portland Jct..... ———  
For Kenton..... ——— o  
For St. Johns..... o ———

Continued on page 7.

605 (R).—Continued.

At Peninsula Jct.:

As westward trains or engines approach and pass whistling posts and microphones located approximately one-half mile in advance of home interlocking signals on Kenton Line and North Portland Jct. Line, engineers will sound whistle signals as follows:

For tunnel and main track to Albina... ———  
For tunnel and yard lead to Albina.... ——— o

At Argo:

For Seattle..... ———  
For yard lead..... ——— o ———  
From Seattle to Pacific Coast R. R..... ——— o ———  
From Argo yard to Georgetown lead..... ——— o

605 (S). At Troutdale, upper arm of interlocking signal located just east of junction switch governs westward movement via Graham and lower arm governs westward movement via Kenton.

Proceed indication of interlocking signal located just west of junction switch will authorize eastward trains from Kenton to proceed to train order office.

663 (R). At Schafer Bros. Crossing, Grays Harbor Branch, interlocking signal will automatically change from Stop to Proceed indication upon approach of train when crossing is not occupied. When signal fails to change to Proceed and crossing is not occupied, a member of crew must examine derails, and if found in non-derailing position, and no one in interlocking station, train may proceed through interlocking under flag protection, but must move at restricted speed.

663 (S). Movement of trains and engines between St. Johns Jct. and Peninsula Jct. is governed by interlocking which is operated from St. Johns Jct.

When a train or engine is stopped by interlocking signal at junction of North Portland and Kenton Lines, member of crew must immediately notify operator at St. Johns Jct. If operator is unable to clear signal, he must communicate with train dispatcher who may authorize flagman to precede the train or engine, examine route and report to operator at St. Johns Jct. If track is clear, operator will then authorize train or engine to proceed at restricted speed.

A member of crew must obtain authority from operator at St. Johns Jct. before hand-operating any switch within interlocking limits and before hand-operating electrically controlled switch at junction of North Portland and Kenton Lines. After using electrically controlled switch, it must be restored to position in which it was found and operator at St. Johns Jct. notified.

663 (T). Movement over railroad crossing with Seattle main track M.P. 5.8, just west of Peninsula Jct., is governed by color light signals on each side of crossing.

Before movement is made over this crossing on track between Kenton and Barnes, member of crew must obtain authority from operator at St. Johns Jct. If Seattle main track is clear so movement can be authorized, operator will line No. 9 switch for Kenton Line and set derail No. 1 in normal position, then notify member of crew who will line derails for movement over the crossing. When movement has been completed, derails must be placed in derailing position and operator at St. Johns Jct. notified.

711 (R). The following passengers only may be carried on freight trains between stations at which the trains stop:

- Persons in charge of live stock or other freight when provided with proper transportation;
- Employees of Union Pacific Railroad with annual pass when traveling on company business requiring use of freight trains;
- Other persons with annual or trip pass only when endorsed "Good on Freight Trains";
- Passengers holding revenue tickets with permit issued by superintendent;
- Passengers with tickets on trains 313 and 314, Bend Branch.

Agents and conductors must notify passengers, stockmen, messengers and caretakers that they must ride in the place provided for them and must not get on or

off caboose, drover cars or other cars while train is in motion, and that in all cases the train will be stopped at designated points for this purpose.

726 (R). Trainmen, enginemen, yardmen, agents, and other employes who in any way handle or care for explosives and other dangerous articles must familiarize themselves with the regulations and instructions governing the handling of them.

Whenever placards or car certificates become detached or lost in transit, they must be replaced. If both car certificates are missing, proper inspection, in so far as possible, must be made and new car certificates applied. (BE 589-c)

Conductors must notify engineers of the presence and location in the train of cars containing explosives before leaving the initial station or station where such cars are picked up.

Cars placarded "Explosives" must be placed in through freight trains near the middle of the trains and must be not nearer than the sixteenth car from the engine, or a caboose in service if next to engine, electric locomotive, or motor car, nor the eleventh car from the rear end caboose, if the length of the train will permit. Cars placarded "Explosives" in all cases must be not nearer than the second car from engine, electric locomotive, motor car, or caboose. Where helper engines or electric locomotives are employed ahead of caboose, cars placarded "Explosives" must be separated from such helpers by at least one car. (BE 589-g)

Cars placarded "Explosives" may be placed in local freight trains, or mixed trains when authorized herein, not nearer than the second car from the engine, electric locomotive, motor car, or a caboose in service, when placing them near the middle of the train would require additional switching at way stations. (BE 589-h)

Cars placarded "Explosives" must not be placed in through or local trains next to dead engines, placarded tank cars, wooden-frame flat or gondola cars; or carloads of pipe, lumber, poles, iron, steel, or similar lading which by shifting may break through end of car placarded "Explosives" due to rough handling; refrigerator cars equipped with automatic refrigeration of the gas-burning type; nor next to cars containing lighted heaters, stoves, or lanterns; or cars with live stock or poultry occupied by an attendant. (BE 589-i)

Cars placarded "Explosives" must not be placed in through or local trains next to cars which bear "Dangerous" placards, unless the remainder of the train consists only of such cars. (BE 589-j)

Placarded loaded tank cars must not be placed in trains next to cars placarded "Explosives" nor next to cars containing lighted heaters, stoves, or lanterns; nor next to refrigerator cars equipped with automatic refrigeration of the gas-burning type; nor next to flat cars with lading such as logs, lumber, rails, or pipe, or gondola cars with such lading higher than ends, that is liable to shift. In through trains such tank cars must not be placed nearer than the sixth car from the engine, electric locomotive or motor car, or a caboose in service, and in local trains not nearer than the second car from engine, electric locomotive, motor car or a caboose in service, when length of train permits and cars other than loaded tank cars are in the train. (BE 589-k)

When handling cars placarded "Explosives" in yards or on sidings, explosives cars must be coupled to engine, electric locomotive, or motor car, protected by a car between. (BE 589-l)

Cars placarded "Explosives" must be so placed in yards or on sidings that they will be subject to as little handling as possible, and be removed from all danger of fire. Such cars must not be placed on tracks under bridges and should not be placed in or alongside passenger sheds or stations; and, when avoidable, engines on parallel tracks must not be allowed to stand opposite or near them. (BE 589-n)

When necessary to switch a train in which there are cars loaded with explosives, such cars should be set over before switching is commenced, and when switching completed, cars should be picked up and replaced in train. All moves with cars loaded with explosives must be made with air brakes cut in and operative and with hand brakes operative. Cars must be shoved to a stop, coupled carefully, and all unnecessary shocks avoided.

Cars containing dangerous explosives, class A, poison gases or liquids, class A, and tank cars requiring "Dangerous" placards must not be hauled in a passenger train. If freight train service is not operated such cars must be hauled in mixed trains. (BE 589-v)

Continued on page 8.

726 (R).—Continued.

In mixed train service or where passengers are carried in a caboose car of a freight train, a car containing a shipment of dangerous explosives, class A, or poison gases or liquids, class A, or a tank car placarded "Dangerous" may be hauled but such cars must not be placed next to cars carrying passengers; and whenever it is practicable to do so cars placarded "Explosives" must be placed between cars not bearing "Dangerous" or "Poison Gas" placards. (BE 589-w)

Empty tank cars must not be moved from stations unless dome cover and all outlet caps have been replaced and wrenched tight, shipping tags and cards removed from car, and "Inflammable" placards removed or replaced by "Dangerous Empty" placards.

726 (S). Cars of poison gas, class A, accompanied by gas handlers, must not be cut off while in motion and must be coupled carefully and all unnecessary shocks must be avoided. Other cars must not be cut off and allowed to strike a car placarded "Poison Gas".

Cars of poison gas, class A, in drums, tanks or bombs, and car containing gas handlers' equipment if present must be placed in trains and must be kept at all times next to and ahead of car or cars occupied by gas handlers who will accompany such shipments to destination.

Cars of poison gas, class A, must not be placed in trains next to other cars placarded "Explosives" or "Dangerous".

Cars placarded both "Explosives" and "Poison Gas" must be placed in trains ahead of car or cars containing the gas handling crew and their equipment and the position of the car in the train in so far as the "Explosives" placard is concerned is waived.

726 (T). In CTC or other territory where open flame switch heaters are used, cars loaded with explosives or inflammables must not be permitted to stand over switch heater. If stop is made with such cars standing over open flame heater, flame must be extinguished.

727 (R). There are close clearances above and at the side of main tracks as follows, and in addition thereto, at platforms and other structures above and at the side of industry, stock and other tracks. (See Rule M.)

Location	Structure or Obstruction	Clearance of engine or car is close at—
At all stations.....	Mail cranes.....	Side.
<b>First Subdivision</b>		
M.P. 388.40.....	Bridge.....	Side.
M.P. 387.75.....	Bridge.....	Side.
M.P. 387.36.....	Bridge.....	Side.
M.P. 386.92.....	Bridge.....	Side.
M.P. 386.62.....	Bridge.....	Side.
M.P. 385.95.....	Bridge.....	Side.
M.P. 385.19.....	Bridge.....	Side.
M.P. 385.02.....	Bridge.....	Side.
Lime.....	Overhead bridge.....	Side.
M.P. 384.42.....	Bridge.....	Side.
M.P. 383.27.....	Bridge.....	Side.
M.P. 382.02.....	Bridge.....	Side.
M.P. 381.9.....	Overhead bridge.....	Top.
M.P. 381.66.....	Bridge.....	Side.
M.P. 381.41.....	Bridge.....	Side.
M.P. 380.44.....	Bridge.....	Side.
M.P. 380.22.....	Bridge.....	Side.
M.P. 379.62.....	Bridge.....	Side.
M.P. 378.60.....	Tunnel No. 6.....	Side.
M.P. 378.75.....	Bridge.....	Side.
M.P. 378.19.....	Bridge.....	Side.
M.P. 377.15.....	Bridge.....	Side.

727 (R).—Continued.

Location	Structure or Obstruction	Clearance of engine or car is close at—
<b>First Subdivision</b>		
M.P. 376.84.....	Bridge.....	Side.
M.P. 376.11.....	Bridge.....	Side.
M.P. 375.62.....	Bridge.....	Side.
M.P. 374.80.....	Bridge.....	Side.
M.P. 374.52.....	Bridge.....	Side.
M.P. 373.90.....	Bridge.....	Side.
M.P. 373.76.....	Bridge.....	Side.
M.P. 373.00.....	Bridge.....	Side.
M.P. 372.91.....	Bridge.....	Side.
M.P. 372.00.....	Bridge.....	Side.
Durkee.....	Standpipe.....	Side.
Durkee.....	Water tank spout.....	Side.
M.P. 366.74.....	Bridge.....	Side.
Pleasant Valley.....	Water tank spout.....	Side.
M.P. 343.94.....	Bridge.....	Side.
North Powder.....	Overhead bridge.....	Top and side.
North Powder.....	Water tank spout.....	Side.
Telocaset.....	Water tank spout.....	Side.
M.P. 312.07.....	Overhead bridge.....	Side.
Union Jet.....	Water tank spout.....	Side.
<b>Second Subdivision</b>		
La Grande (Second St.).....	Viaduct.....	Top.
M.P. 288.02.....	Bridge.....	Side.
Hilgard.....	Water tank spout.....	Side.
Motanic.....	Water tank spout.....	Side.
Kamela.....	Water tank spout.....	Side.
M.P. 252.52.....	Bridge.....	Top.
M.P. 251.18.....	Bridge.....	Side.
Duncan.....	Water tank spout.....	Side.
M.P. 231.67.....	Bridge.....	Side.
Gibbon.....	Water tank spout.....	Side.
M.P. 230.57.....	Bridge.....	Side.
Cayuse.....	Water tank spout.....	Side.
M.P. 226.86.....	Bridge.....	Side.
M.P. 214.42.....	Bridge.....	Side.
<b>Third Subdivision</b>		
M.P. 206.21.....	Bridge.....	Side.
M.P. 205.84.....	Bridge.....	Side.
M.P. 204.91.....	Bridge.....	Side.
M.P. 204.15.....	Tunnel No. 3½.....	Top and side.
M.P. 198.26.....	Bridge.....	Side.
Echo.....	Water tank spout.....	Side.
M.P. 187.2.....	Overhead bridge.....	Top and side.
Munley.....	Water tank spout.....	Side.
M.P. 182.4 (W. of Umatilla).....	Bridge.....	Side.
M.P. 148.49.....	Bridge.....	Side.
Arlington.....	Water tank spout.....	Side.
Arlington.....	Standpipe.....	Side.
M.P. 114.3.....	Bridge.....	Side.
Day.....	Water tank spout.....	Side.
M.P. 104.46.....	Bridge.....	Side.
Ainsworth.....	Standpipe.....	Side.
M.P. 99.51.....	Bridge.....	Side.
M.P. 92.8.....	Overhead bridge.....	Side.

727 (R).—Continued.

Location	Structure or Obstruction	Clearance of engine or car is close at—
<b>Fourth Subdivision</b>		
The Dalles.....	Standpipes.....	Side.
M.P. 74.1.....	Tunnel No. 3.....	Side.
M.P. 71.4.....	Tunnel No. 2.....	Top and side.
M.P. 69.40.....	Bridge.....	Side.
M.P. 63.32.....	Bridge.....	Side.
M.P. 61.03.....	Bridge.....	Side.
Wyeth.....	Water tank spout.....	Side.
M.P. 39.90.....	Bridge.....	Side.
M.P. 32.15.....	Bridge.....	Side.
M.P. 31.85.....	Bridge.....	Side.
M.P. 29.65.....	Bridge.....	Side.
M.P. 26.01.....	Bridge.....	Side.
M.P. 15.82.....	Bridge.....	Side.
Troutdale.....	Train order signal.....	Side.
M.P. 15.4.....	Overhead bridge.....	Top.
M.P. 10.3.....	Underpass handrails.....	Side.
M.P. 8.5.....	Underpass handrails.....	Side.
M.P. 4.5.....	Tunnel.....	Top and side.
M.P. 4.2 (N.E. 63rd Ave.).....	Overhead bridge.....	Top.
M.P. 3.8 (N.E. 53rd Ave.).....	Overhead bridge.....	Side.
M.P. 3.5 (N.E. 49th Ave.).....	Overhead bridge.....	Top.
M.P. 0.43 (Willamette River)	Bridge.....	Side.
<b>Fifth Subdivision</b>		
Tacoma.....	N. P. overhead bridge to draw span.....	Top and side.
Tacoma.....	Viaduct.....	Top and side.
M.P. 144.92.....	Bridge.....	Side.
M.P. 146.93.....	Bridge.....	Side.
M.P. 174.6.....	Bridge.....	Side.
Seattle (Albro Place).....	Overhead bridge.....	Side.
Seattle (Eighth Ave. So.).....	Overhead bridge.....	Top.
Seattle (Dearborn Ave.).....	Overhead bridge.....	Top and side.
Seattle.....	Depot umbrella shed.....	Top and side.
Seattle (Jackson St.).....	Overhead bridge.....	Top.
<b>Olympia Branch</b>		
M.P. 5.2.....	Tunnel No. 25.....	Top and side.
M.P. 6.7.....	Overhead bridge.....	Top and side.
Olympia.....	Water tank spout.....	Side.
<b>Grays Harbor Branch</b>		
M.P. 1.25.....	Bridge.....	Side.
M.P. 4.35.....	Bridge.....	Side.
Independence.....	Water tank spout.....	Side.
South Elma.....	Water tank spout.....	Side.
M.P. 43.53.....	Overhead bridge.....	Top and side.
M.P. 43.64.....	Overhead bridge.....	Top.
M.P. 53.33.....	Bridge.....	Side.
Aberdeen.....	Depot umbrella shed.....	Side.
<b>Montesano Branch</b>		
M.P. 0.31.....	Bridge.....	Side.
<b>Tono Branch</b>		
Tono.....	Coal mine tipple.....	Top and side.

727 (R).—Continued.

Location	Structure or Obstruction	Clearance of engine or car is close at—
<b>St. Johns Branch</b>		
M.P. 6.93.....	Overhead bridge.....	Top and side.
<b>Joseph Branch</b>		
M.P. 2.48.....	Bridge.....	Side.
Elgin.....	Water tank spout.....	Side.
M.P. 32.58.....	Water tank spout.....	Side.
M.P. 48.97.....	Water tank spout.....	Side.
<b>Grass Valley Branch</b>		
Biggs.....	Water tank spout.....	Side.
Wasco.....	Water tank spout.....	Side.
Grass Valley.....	Water tank spout.....	Side.
<b>Heppler Branch</b>		
Ione.....	Water tank spout.....	Side.
Cecil.....	Water tank spout.....	Side.

727 (S). In moving cars on tracks under trolley wires, employes are warned that overhead clearances to such wires and side clearances to supporting poles are close at locations shown below. Trolley wires must not be touched and careful lookout must be kept for low and broken wires.

Station	Location	
East Portland.....	S.E. Second Ave. and S.E. Morrison St.	P. E. P.
East Portland.....	S.E. Second Ave. and S.E. Hawthorne Blvd.	P. E. P.
Albina.....	N. Larrabee Ave.	P. E. P.
Albina.....	N. Interstate Ave.	P. E. P.
Black River.....		C. M. St. P. & P.
Argo-Seattle.....	Argo yard lead and between Argo and Seattle passenger station.....	C. M. St. P. & P.

727 (T). At Portland, account curvature causing impaired clearance, 3800 and 3900 class engines, with or without cars, entering or leaving Union Station, must know that engines on adjacent tracks at south end of yard are into clear before passing them.

At south end of Union Station, clearance is very close and will not clear a man on side of car between tracks 1 and 2, 3 and 4, 5 and 6, 7 and 8, 9 and 10, from interlocking signals to point 100 feet north of the crossing.

727 (U). On Grass Valley Branch, employes must not ride on the side of cars or engines while moving in trains, as there are a number of places on this branch where clearance is impaired by narrow cuts.

At Olympia, account insufficient clearance between N. P. connection scale track and main track, trains or engines must not attempt to pass on main track if trains or engines are moving on connection.

At Aberdeen, account insufficient clearance between coach track No. 1 just east of passenger station and main track at turnout, trains and engines must not attempt to pass on main track if trains or engines are moving on coach track No. 1.

At La Grande, look out for close clearance on tracks 4 and 5, which have less clearance than other tracks in yard.

**727 (V).** Trains handling cars or loads of excess height or in excess of 12 feet in width must keep close lookout for close clearances and where overhead or side clearance is doubtful, movement must be stopped and adequate protection provided.

Cars of excess height, as per stencil or placard, must not be switched with except in placing them in and taking them out of trains. In switching movements such cars must not be cut off while in motion, but must be shoved to a stop with air brakes operative. No one will be permitted to ride on top of such cars.

Loads of excess width must not be stored on nor moved over yard tracks where clearance is insufficient, unless there is an intervening track between trains or cars containing loads of excess width. No one will be permitted to ride on the side of such cars.

Trains handling wide loads must obtain meeting or passing order with other trains handling wide loads at stations where they will have a track between them.

When a train which is handling a wide load is notified by train order of another train handling a wide load, the train dispatcher must be notified so that meeting or passing point can be arranged.

Crews of trains receiving notice of wide load in other trains must inspect their train for open or swinging doors or anything projecting beyond normal clearance.

**800 (R).** Flangers on snow plows, spreaders and engines so equipped must be raised when passing over bridges, highway crossings, railroad crossings, frogs and switches and through interlocking limits.

**802 (R).** Cars designated below must be handled in rear of train, and next to caboose in the order named:

- Drover cars, occupied or unoccupied;
- Wooden underframe cars;
- Seale test cars;
- Any car unsafe to be handled in head end of train;
- Cars with emergency couplers;
- Cars tagged "Handle Only at Rear End of Train";
- Outfit cars.

Steel underframe outfit cars may be handled on head end of train when cars are to be set out or are picked up between terminals.

Rotary snow plows handled in freight trains must be next to the caboose with rotary wheel to the rear.

Live stock must be handled in head end of train when practicable. Horses moving in stock cars must be handled at least three cars from the engine.

In freight trains consisting of over 75 cars, passenger express refrigerators must be handled on rear of train not more than fifteen cars from caboose.

**802 (S).** In handling a dead engine it must be placed twelve cars behind the road engine, and if a second dead engine is in the train, the second dead engine should be twenty-five cars behind the road engine. In handling three dead engines in train, fifteen cars must be placed between each engine.

Dead engines, disabled engines or engines with one or more rods removed must not be moved in fast trains when possible to avoid it.

With a side rod or main rod removed, a speed of 15 miles per hour must not be exceeded.

With side rods and main rods in place, the speed may be increased to 25 miles per hour, unless otherwise restricted.

Shay, Climax, Heisler and similar type engines, when not in gear, may be handled at speed permitted for freight trains unless waybill specifies a lower speed, or attendant makes written request for a lower speed.

**802 (U).** Helper engine on passenger train must be coupled ahead of train engine.

On freight train, when not used on head end, helper engine must be cut in on rear as close ahead of caboose as conditions permit but always ahead of cars listed in Special Instruction 802 (R).

In helper territory, on freight trains, Mallet engines must not be doubleheaded, except from Rieth to Gibbon, Huntington to Durkee, and La Grande to Union Jct.

**802 (V).** An engine in helper service equipped with pilot plow requiring extension coupler must be placed at head end of train.

**803 (R).** At Troutdale, when train is delayed at Sun Dial Crossing of road to Aluminum Plant, crossing must be cut.

At Tacoma, when practicable, westward freight train must pull rear of train over 15th Street crossing before taking water.

**805 (R).** At Huntington, La Grande, Rieth, Umatilla, The Dalles, Albina and Argo, caboose track switches must be kept lined and locked for running lead. Before coupling to caboose on such tracks, caboose supply employes on or about cabooses must be warned before couplings are made.

**805 (S).** Trains containing drover cars must not be pushed by an engine at the rear. If it becomes necessary, in an emergency, to clear main track by use of an engine at rear of train, the drover cars must first be vacated. Switching must not be done with drover cars, except in handling to or from trains.

**805 (T).** When coupling an engine or cars to passenger equipment, coupling must be tested by stretching slack after coupling is made.

After coupling to cars standing on grade, slack must be stretched and it must be known that air brakes are fully charged before releasing hand brakes.

After coupling a tite-lock coupler to any coupler, it must be seen that knuckle is securely locked in closed position.

When coupling other type coupler to tite-lock coupler, knuckle on tite-lock coupler must be closed and knuckle on other coupler must be open, to be closed by impact of car.

After cars are coupled, tite-lock couplers must be inspected to see that tell-tale hole is visible just below bottom of coupler head and that knuckle is locked.

**805 (U).** A streamline train with motive power attached must not be pushed from the rear except in an emergency when it is necessary to push train into clear. When such movement is necessary, extreme care must be used due to weight of motive power. It must be known that all brakes are released before movement is started.

**806 (R).** In CTC territory, when cars are set out on sidings on grade where there are no derrails, in addition to setting hand brakes and blocking wheels, cars must be chained to rail. When such cars are picked up, crew will take chain to terminal.

**811 (R).** Freight cars with bad order couplers may be handled in trains only under the following conditions:

- When containing live stock or perishables, may be chained up in train and handled to first repair point;
- When not containing live stock or perishables, may be chained up in train and handled to first available side track where must be set out;
- When loaded or empty, may be handled behind the caboose to destination or to first terminal, provided the good coupler can be coupled to the caboose and in addition is secured by chain, and has air and hand brakes operative. On ascending grades a trainman must ride such car.

**812 (R).** When a stop is made by a streamline train, due to some unusual condition, both sides of the train must be inspected before proceeding.

**812 (S).** Freight trains must stop and entire train must be inspected by train crew at the following points:

- Arlington or Blalock —Eastward and westward;
- Castle Rock —Eastward;
- Rocky Point (or at Castle Rock or Kalama when train stops there) —Westward;
- Wyeth, Farley, Cascade Locks or Bonneville (or at Dodson when train stops there for other purpose) —Eastward and westward.

**814 (R).** Referring to Rule 814, at Centralia and Hoquiam, Northern Pacific air brake rules will apply.

10

**817 (R).** Between Huntington and Rieth, engines must not be run backward in helper service where wye tracks or turntables are available, except in an emergency. When such back-up movement is necessary, engineer must secure authority from train dispatcher.

**817 (S).** On passenger trains backing up between Portland and East Portland, a trainman must be stationed on rear of train ready to apply brakes in emergency. Air whistle must be sounded when approaching Front Street, Portland, and at other points where conditions require.

**819 (R).** At Huntington, La Grande, Pendleton, Rieth, Umatilla, The Dalles, Albina and Argo, road engines and trains, and yard movements approaching leads, must stop before fouling lead unless it is known that switches are properly lined and lead is clear.

Before a train starts out of yard track, brakeman will precede the movement to a point where it is known route is clear.

Before a light engine starts out of yard track, the engineer and fireman must know that switches are properly lined and that route is clear.

**854 (R).** On trains moving over Willamette River Bridge, trainman must be on rear car.

**920 (R).** Enginemen on freight engines which are equipped with smoke deflectors, must test deflectors before entering St. Johns Tunnel and if found inoperative by air pressure, train must be stopped, and deflectors raised by hand. Such cases of inoperative deflectors must be reported to superintendent and master mechanic by wire from first open telegraph office at which stop is made, and in addition, must be reported on arrival at terminal.

**923 (R).** On streamline trains, Diesel electric locomotives must not be operated in road service, except by an engineer who has been qualified by proper officer for Diesel-electric road service.

**934 (R).** 700 class and heavier engines must not go on the following tracks:

- Baker —Sand spur;
- Meacham —Casey Mill spur beyond Mt. Emily switch;
- Graham —Pool & McGonigle east track;
- Near M.P. 4 —Wet Wash Laundry Co. spur;
- Bruun —Doernbecher Mfg. Co. middle spur, rear end;
- Albina —Albina Engine & Machine Works spur;
- Kenton —Schlessler Bros. spur;
- Beall Pipe & Tank spur;
- St. Johns —All sidings and spurs.

At Telncaset, engines turning on wye must back through the east leg and head out the west leg of wye.

At Bridal Veil, engines must not go on track scales.

2100, 2200, 2500 class and heavier engines must not go on the following tracks:

- Baker —Davis Lumber Co. spur;
- Pendleton —Bluett spur;
- Collins spur (except may use center track);
- Walters Mill spur (except may use track to point 150 feet beyond Nelson platform);
- Richfield Oil spur;
- Dillon —Spur;
- The Dalles —Track 19;
- Cross-over between spurs at freight house;
- Cross-over between lead and laundry spur;
- Old roundhouse spur;

**934 (R).**—Continued.

- East Portland —North leg of wye tracks, except the following engines may be operated: 7000 class engines equipped with Alco lateral device on No. 1 and No. 3 drivers and 3800 and 3900 class engines;
- Curve on back track;
- Lead to S.E. Second Avenue;
- Globe Mill tracks;
- Albina —Coach tracks 5 and 6, west turnouts;
- Store lead;
- Old rip track 2 east of track crossing;
- Old rip tracks 3, 4, 5, 6, 7, and 8;
- North River Avenue track;
- Montgomery Dock track;
- Pacific Coast Elevator track;
- Portland Flouring Mills spurs 1, 2, 3 and Jocko;
- Kenton —All spurs;
- West end of team track;
- North Portland —All yard tracks and spurs;
- Tacoma —All tracks west from main line past gas plant toward Carstens Packing Plant and Glacier Dock, except that 2100, 2500 and 7000 class engines may be used to and from Carstens Stock Yards;
- Argo —South end of No. 1 pocket track;
- Coach yard tracks;
- Rip tracks;
- 101 track;
- Joseph Branch —All tracks;
- Heppner Branch —All tracks, except 2100 and 5400 class and Mallet type engines may go on all tracks within yard limits at Heppner Jet.;
- Condon Branch —All tracks;
- Grass Valley Branch —All tracks;
- Cosmopolis —Wye tracks;
- Bay City Mill tracks;
- South Aberdeen Belt Line;
- Tono —From road crossing at station east;
- Middle cross-over to scale track;
- Olympia Branch —All tracks;
- Pilot Rock Branch —All tracks.

5400 class and heavier engines must not go on the following tracks:

- Baker —Texaco Oil spur;
- W. H. Ellis spur;
- Baker Grocery spur;
- La Grande —Mt. Emily Lumber Co. twm mill spurs;
- Wye track, except in emergency when movement must be very slow over east leg of wye, account sharp curvature;
- Echo —Mill track west of pavement;
- Staufield —Industry track;
- Castle —Stock track;
- Willows —House track;
- Arlington —Standard Oil spur;
- Hook —House track;
- Grays Harbor Branch—All tracks.

11

Continued on page 12.

934 (R).—Continued.

7000 and 7800 class and heavier engines must not go on the following tracks:

- Huntington —West leg of old wye spur;
- Lime —High line;
- Durkee —House track;
- Pleasant Valley —Coal track and wye;
- La Grande —400 feet of west end engine track 3;
- Freight house track;
- Kamela —Ash pit tracks;
- Pendleton —All yard tracks except 1, 2, 4, and 6; house track and short coach track;
- Umatilla —Jones-Scott spur; sand and gravel spur;
- The Dalles —Roundhouse track leading to Stall 1;
- Libby-McNeil Dryfresh tracks;
- Hood River —Cross-over at freight house;
- Cascade Locks —Standard Oil track;
- Clarnie to East Portland —All spurs;
- Albina —All tracks except main leads and main yard tracks and enginehouse leads;
- Track 6 leading to enginehouse track.

9000 class engines must not go on the following tracks;

- Huntington —Engine lead to turntable on north side of roundhouse, known as hill track;
- Stock tracks.

934 (S). 3800 and 3900 class engines must not use eastward track over Willamette River Bridge.

MacArthur type engines, with or without cars, except Engines 2166 to 2171, inclusive, and Engines 2528 and 2529, must not make movement on westward track (nearest river) between East Portland and Harding Street, Albina.

**AIR BRAKES.**

1006 (R). Engines in freight or mixed train service will carry 90 pounds brake pipe pressure between Rieth and Huntington.

Passenger, freight and mixed trains will carry 90 pounds brake pipe pressure on Grass Valley and Condon Branches. Passenger and mixed trains will carry 90 pounds brake pipe pressure on Bend Branch.

1035 (R). Running test as prescribed in Air Brake Rules 1035, 1035 (A), 1035 (B) and 1035 (C) must be made before descending grades as follows:

- First Subdivision —eastward and westward trains at Encina and Telocaset;
- Second Subdivision —eastward and westward trains at Kamela;
- Fourth Subdivision —westward trains at M.P. 6 east of Grabam;
- Condon Branch —westward trains at Speece, Mikkalo and Shutler;
- Grass Valley Branch—westward trains at Kent, M.P. 34, Klondike and Wasco;
- Grass Valley Branch—eastward trains at Sandon and M.P. 35;
- Bend Branch —westward trains at M.P. 100.

1041 (R). Brake pipe test as prescribed in Air Brake Rule 1041 must be made on all freight trains before descending grade between Encina and Leonard, Encina and Baker, Telocaset and Lun, Telocaset and Union Jct., Kamela and Hilgard and between Kamela and Duncan, and this test must also be made at intermediate

points on these grades by single engine trains, and trains with helper on head end, ascending the grade, and by all trains descending grade, whenever engine is changed, cars picked up or set out, air hose parted, angle cock turned, or when train has been standing for 30 minutes or more.

This test must also be made on all freight and mixed trains before descending grade on Condon Branch between Barnett and Rock Creek and on Grass Valley Branch between Biggs and Klondike, and this test must also be made at intermediate points on these grades either ascending or descending, whenever engine is changed, cars picked up or set out, air hose parted, angle cock turned or when train has been standing for 30 minutes or more.

1042 (R). Retaining valves must be used on descending grades as follows:

All retaining valves must be used on passenger, mail and express trains, descending grade between Huron and Hilgard.

Freight trains descending grades between Encina and Leonard, and between Hilgard and Huron must use one operative retaining valve for each fifty tons of train but in no case less than one-half of all retaining valves in train. If engineer finds it difficult to hold train or to recharge train, he will request train crew to turn up additional retaining valves necessary to insure safe control of train, stopping train if necessary.

Between Telocaset and Union Jct., and between Huron and Duncan, trains averaging not to exceed fifty gross tons per car may be handled without the use of retaining valves when handled by engines equipped with two air compressors which are operative. On trains averaging to exceed fifty gross tons per car, or trains handled by engines having one compressor, one-half of all retaining valves must be used.

Retaining valves must be used consecutively from head end of train.

At Union Jct. and Hilgard, freight trains must reduce speed, and stop if necessary, to enable trainmen to handle retaining valves.

Condon Branch, on all trains, M.P. 35 to Mikkalo, Barnett to Rock Creek and M.P. 2 to Arlington, all retaining valves must be used.

Grass Valley Branch, on passenger trains Thornberry to Biggs, and on freight or mixed trains M.P. 33 to Moro, Klondike to Biggs and Sandon to Hay Canyon, all retaining valves must be used.

On Bend Branch, freight and mixed trains on descending grades between M.P. 100 and South Jct., trains averaging not to exceed 50 gross tons per car may be handled without use of retaining valves. On trains averaging in excess of 50 gross tons per car, one-half of the retaining valves will be used consecutively from the head end of the train.

On freight trains, trainmen must patrol top of train when retaining valves are used.

1042 (S). When retaining valves are used, freight and mixed trains will use five minutes moving first mile after turning up retaining valves, 4 minutes moving second mile and 3 minutes moving each mile thereafter, except where slower speed is otherwise prescribed.

1046 (R). Freight trains must stop and remain standing ten minutes to allow wheels to cool at the following points:

- Hindman—Eastward;
- Leonard —Eastward;
- Glover —Eastward;
- Meacham—Westward;
- Huron —Westward.

When eastward freight trains stop at Motanic and remain standing ten minutes, stop need not be made at Glover to cool wheels.

1047 (R). Westward freight and mixed trains must stop and trainmen must inspect and adjust piston travel at Barnett, Grass Valley, Thornberry and Madras.

**RATING OF ENGINES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS**

Total weight of train exclusive of engine and tender, which the different classes of engines will haul in each direction between stations named, under favorable weather conditions. A deduction of ten per cent may be made for time freight trains.

Between stations for which no rating is shown maximum will apply.

TYPE OF ENGINE	NUMBERS (Inclusive)	HUNTINGTON AND LA GRANDE									
		WESTWARD					EASTWARD				
		Huntington to Durkee	Durkee to Encina	Encina to Lun	Lun to Telocaset	Telocaset to La Grande	La Grande to Union Jct.	Union Jct. to Telocaset	Telocaset to Baker	Baker to Encina	Encina to Huntington
C 57 $\frac{22}{30}$ 179	710 to 729	1150	525	2800	1270	2180	2800	785	1710	785	3000
C 57 $\frac{22}{30}$ 190	730 to 768	1265	575	3000	1470	2510	3000	890	1970	890	3000
T 63 $\frac{22}{28}$ 162	1755 to 1760	1070	475	2460	1070	2700	2700	690	2000	690	2700
T 69 $\frac{22}{28}$ 161	1742 to 1754	980	440	2240	980	2700	2700	640	2000	640	2700
MacA 57 $\frac{23\frac{1}{4}}{30}$ 210	1900 to 1949 2000 to 2034 2100 to 2165	1725	700	3500	1725	3500	3300	1000	2900	1000	6000
MacA 63 $\frac{26}{28}$ 214 211	2166 to 2171 2203 to 2294 2504 to 2564 2700 to 2735	1825	725	3500	1825	3500	3500	1100	3300	1100	6000
P 77 $\frac{25}{28}$ 167 $\frac{25}{28}$ 178	2860 to 2899 3218 to 3225 3226 to 3227	1190	525	3000	1190	2700	2700	760	2200	760	3000
P 77 $\frac{22}{28}$ 149	3201 to 3217	960	440	2250	960	2700	2700	640	2000	640	2700
MS 59 $\frac{23-23}{30}$ 472	3500 to 3564 3705	3200	1470	8000	3200	8000	8000	2200	4630	2200	8000
MS 69 $\frac{22-22}{32}$ 400	3800 to 3839	3200	1470	8000	3200	8000	8000	2200	4630	2200	8000
TTT 63 $\frac{29\frac{1}{2}}{30}$ 292	5315 to 5318 5400 to 5414	2350	1045	6000	2350	6000	6000	1485	3215	1485	6000
MT 73 $\frac{29}{28}$ 230	7000 to 7039 7850 to 7869	1700	700	3500	1700	3500	3500	1000	2900	1000	6000

**EXPLANATION**

- "P".....Pacific
- "T".....Ten Wheeler
- "C".....Consolidation
- "MacA".....MacArthur
- "MS".....Mallet Simple
- "TTT".....Two-Ten-Two
- "MT".....Mountain

EXAMPLE: Consolidation engine having 57 inch drivers, cylinders 22 inch diameter and 30 inch stroke, and weighing 179,000 pounds on drivers:

C 57  $\frac{22}{30}$  179

