1.00P 2.15P Spokane 2.15P.
1.9
1.05 2.08 N. P. Crossg 2.08P
0.5
1.08 2.05 S. I. Jct. 2.05P
4.4
1.15 1.58 Millwood 1.58
5.7
1.23 1.50 Austin 2.06
2.7
1.26 1.46 Otis 2.10
2.8
1.29 1.42 East Farms 2.14
4.1
1.33 1.36 Grand Jct. 2.20
3.4
1.37 1.31 Coeur d'Alene Jct. 2.25
3.8
1.41 1.26 Caseys Spur 2.30
2
1.49 1.17 Chilco 2.39
2.4
1.55 1.13 Carlin Jct. 2.43
3.8
1.56 1.06x Athol 2.50x
7.4
2.04 12.57 Clagstone
4.1
2.08 12.51 Edgemere
3.5
2.12 12.47 Yard
2.1
2.14 12.44 Sawyer
4.7
2.19 12.37 Morton
4.3
2.24 12.30 Gravel Pit
2.9
2.27 12.27 Dover
3.0
2.35 12.20a Sandpoint
12.1
12.02P Samuels
3.1
11.57A Elmira
5.6
11.48 Shiloh
2.1
11.44 Naples

UNION PACIFIC RAILROAD COMPANY
Northwestern District

Oregon Division

Special Instructions No. 11

Effective Tuesday, April 1, 1952

Superseding Special Instructions No. 10

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

L. A. COLLINS,
General Manager

E. H. BAILEY,
General Superintendent

A. McALLISTER,
Superintendent

Press of ABBOTT, KERNS & BELL COMPANY, Portland, Oregon, U.S.A.

Railroad Watches

2 (R). Employes listed below and other employes as may be designated, are not subject to Operating Rules 2 and 2 (A), but they must, while on duty, have a reliable railroad grade watch* which must not vary more than 30 seconds from correct time:

(*A railroad grade watch is one equipped with a lever set.)

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

(†Except when assigned in offices where standard clock is located.)

2 (S). Officers and employes must not make solicitation in connection with the sale of watches.

2 (T). Employes must present their watches to officers and supervisors upon request.

2 (U). Referring to Operating Rule 2, yard helpers of crews making main track movements are subject to provisions of this rule.

Where Time Applies

5 (R). At Biggs, time shown in time-table schedules and in train orders applies at the end of double track.

Signals

7 (R). Conductors and engineers of trains or engines which operate in territory where they are governed by the rules of another railroad must know that they have equipment necessary to enable them to fully comply with such rules.

7 (S). When starting trains with Diesel-electric helper on rear end of train, trainmen will be stationed in a position to relay signals to start from head end to crew on helper engine.

When it is not possible to relay signals, the following method will be used:

When ready to move, engineer on head end will make a 15-pound automatic brake pipe reduction, return brake valve to running position and wait three minutes. Engineer on helper engine will start three minutes after his gauge shows brake pipe pressure being restored.

8 (R). Yellow flags by day and yellow lights by night will be used by switchtenders and herders.

Proceed signals as well as stop signals given by switchtenders must be answered.

8 (S). Electric lanterns may be used by switchtenders, herders and interlocking signalmen for displaying yellow lights.

Reduce and Resume Speed Signs

10 (R). Reduce Speed sign showing by figures the maximum speed permitted, placed on engineer's side of track, indicates that the track 2500 feet distant is in condition for a speed of not more than indicated by the sign. Example: 60-40-25 will indicate maximum speed of 60 MPH for streamline trains, 40 MPH for DE-Psgr. and Psgr. trains, 25 MPH for freight trains.

Resume Speed sign placed on engineer's side of track, indicates that the Reduce Speed location has been passed.

The entire train must pass over the designated location at the specified speed.

Such speed restrictions will also be shown in time-table or superintendent's bulletin.

Headlights

17 (R). The following will govern use of oscillating red headlight:

When train becomes disabled or makes sudden stop due to unusual occurrence, or when an adjacent track is obstructed or there is possibility of it being obstructed, if red headlight is not set in motion automatically, engineer must immediately set it in motion by manual operation.

A train on adjacent track must stop before passing headlight and be governed by Operating Rule 102.

When head end protection is required, engineer will immediately display red headlight. When occupying main track in meeting an opposing train, except in CTC territory, red headlight will be displayed until opposing train dims its headlight in accordance with Operating Rule 17 (B), after which, if switch is lined to permit opposing train to enter siding, red headlight will be extinguished.

Engineer finding red headlight displayed by opposing train, must stop before passing headlight, ascertain the cause and be governed by conditions.

Display of red headlight does not relieve enginemen nor trainmen from protecting front of train in accordance with Operating Rule 99, when required.

If red headlight has been set in motion automatically and necessity no longer exists, engineer must extinguish it.

When standing at terminals and red headlight is not required, it must be extinguished.

17 (S). Except on Fifth Subdivision, headlight must be displayed, burning bright, to the front of every train by day and night, except as otherwise prescribed by the rules.

17 (T). Where Operating Rule 17 refers to rear of tender, it also applies to rear of Diesel-electric locomotives.

17 (U). At night, oscillating white headlight must be set in motion passing through cities and towns and approaching and passing over public crossings at grade.

Markers and Rear End Lights

19 (R). Oscillating red rear end light on passenger trains will be used as a night signal in accordance with Operating Rule 9 and must be displayed from sunset to sunrise and when day signals cannot be seen due to weather or other conditions. Also at any time train is moving under circumstances in which it may be overtaken by another train.

Red rear end light must be extinguished when train is clear of main track and rear end protection is not required.

The displaying and extinguishing of red rear end light must be done by trainman.

Display of red rear end light does not relieve trainmen nor enginemen from complying with Operating Rule 99 nor any other rule.

19 (S). On portions of the division where there is no joint operation of trains with another company, in complying with Operating Rule 19 (A) at night, when a red light is not available, a marker lamp displaying red light to rear must be wired or otherwise securely fastened to rear end of rear car.

19 (T). At any point when switching passenger trains from the rear except trains having electric lighted markers, marker lamps must be removed to prevent obscuring view of engineman. On train having electric lighted markers, lights must be extinguished while train is being switched from the rear.

Indicators

24 (R). Referring to Operating Rule 24: Helper engines will display their engine number in indicators, except when used on head end of train, train number will be displayed.

Switch Lights

27 (R). At stations where reflectorized type switch lamps are in use, in case of headlight failure, or engine backing up, trains and engines must approach facing point switches at restricted speed.

27 (S). Switch lights will not be used on branches shown below:

Joseph	Pomeroy	Tucannon
Pilot Rock	Dayton	Connell
Heppner	Sierra Nevada	Wallace
Condon	Tono	Pleasant Valley
Grass Valley	Olympia	

Pendleton, except main track switches in Walla Walla yard

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

Conditional Stops

28 (R). A green and white signal will be used to stop designated trains at conditional stops shown in time-table.

28 (S). 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.

Use of Engine Whistle

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

At Walla Walla, the use of the engine whistle at the public crossings at West Cherry Street and Gardeners' Association just west of Mill Creek Bridge, is prohibited except to prevent accident not otherwise avoidable.

Clearances

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

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 CMStP&P trains originating at Helsing Jct.;
Walla Walla —all trains;
Wallula —Yakima and Wallula Branch trains;
Ayer —all trains;
Spokane —all westward trains originating at West Spokane.

83 (S). Northern Pacific clearance must be received as follows:

Reservation —all eastward second-class and extra trains passing through Tacoma;
Tacoma, McCarver Street —all eastward second-class and extra trains originating at Tacoma.

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

Troutdale —trains entering or leaving Kenton Line if train order signal indicates Proceed;
East Olympia—all westward trains Olympia Branch;
Argo —all westward CMStP&P passenger trains;
Richland Junction —Trains 361 and 373.
Attalia —all trains;
N. P. Crossing, Spokane —all eastward S. I. trains;
Tucannon —all trains;
Bolles —all trains;
Midvale —all trains;
Turner —all westward trains.

When there is no operator on duty, trains are not required to receive a clearance as per Operating Rule 83 (B) as follows:

Joseph
Hooper Jct.
Starbuck
La Crosse
Sunnyside
Connell
Moscow
Burke

83 (U).

A clearance received at	By	Will confer the same authority on	As when received at
Wallula	Eastward trains	Yakima Branch	Attalia
Ayer	Eastward trains	Connell Branch	Hooper Jct.
La Crosse	Westward trains	Sixth Subdivision	Hooper Jct.
Walla Walla	Eastward trains	Dayton Branch	Bolles
Dayton	Westward trains	Pendleton Branch	Bolles

Train Registering Exceptions

83 (V). At Seattle, information required by Operating Rule D-83 will be issued to CMStP&P first-class trains by train order and delivered by operator on platform to conductor who will register by registering ticket.

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

Peninsula Jct.—all westward trains and engines;
Argo —all westward U. P. and CMStP&P trains and engines, but must move at restricted speed Argo to Seattle;

N. P. Crossing, Spokane—all eastward trains and engines.

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

La Grande —Nos. 105 and 106;
Black River —all trains;
N. P. Crossing, Spokane—all first-class trains;
Marengo —Union Pacific first-class trains;
Hooper Jct. —all trains Sixth subdivision;
Ayer —all first-class trains;
Manito —all trains.

The information required by Operating Rule S-83 obtained by eastward Sixth Subdivision trains at Wallula may be accepted as applying at Attalia for eastward Yakima Branch 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 by N. P. Form 608 and will be furnished check of register by train order or register check Form 602 issued by operator;
Zillah —only first-class trains will register.

83 (X). Information required by Operating Rules S-83 and D-83 need not be obtained by Nos. 105 and 106 entering CTC territory.

83 (Y). Information required by Operating Rule S-83 need not be received at Attalia by westward trains.

Westward Sixth Subdivision trains and engines may move Attalia to Wallula against or ahead of Nos. 63 and 64 when automatic interlocking signal at Attalia displays Proceed indication.

Westward Yakima Branch trains and engines may move Attalia to Wallula against or ahead of first-class trains when automatic interlocking signal at Attalia displays Proceed indication after junction switch is opened.

Westward first-class trains at or seen to be approaching the junction at Attalia will have precedence over other westward trains and engines Attalia to Wallula.

Movements in Yards

93 (R). Yard limits include territory shown:

Albina —from 930 feet west of Signal 6.3 to North Portland Jct. and to M.P. 10, Kenton Line, including East Portland, Albina and Kenton;
Troutdale —on Kenton Line only;
Oregon Trunk Jct.—on Bend Branch only;
Aberdeen —between yard limit sign just east of Cosmopolis and N. P. yard limit sign at Myrtle St. west of Aberdeen depot;
Spokane —between yard limit sign west of West Spokane and yard limit sign at Hill.

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

All trains must not exceed 6 MPH when moving on depot yard tracks.

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 High Shed at passenger station unless proceed signal is received from station master or his assistant.

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..... —— ——
For S. P. Main Line..... o ——
For S. P. Yard..... o —— o
For East Second Street..... o o ——
For S. P. & S. to East Side.. o o ——

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

93 (T). Tracks of U. P. and N. P. within yard limits at Zillah, Wallula and Huntsville are used jointly by trains and engines of both companies for switching purposes, being governed by Operating Rule 93.

93 (U). Trains and engines are authorized to cross N. P. main track at Athena to make movements to and from Preston-Shaffer elevator, being governed by Operating Rule 93.

93 (V). At Spokane Union Station, trains and engines will be governed by signals from switchtenders.

Freight equipment, other than caboose and low cars, must be handled through Spokane Union Station on Track 5.

Track 5, the most northerly track in Spokane Union Station yard, will normally be used as the running track.

93 (W). At Seattle Union Station, trains and engines on eastward main track must stop clear of Signal 1827-A when waiting for eastward trains that are to use crossover from Tracks 7 and 12.

Railroad Crossings and Junctions

98 (R). Trains and engines must be governed by the following at the railroad crossings and junctions indicated:

Location	Railroad Crossed, or Junction With	Trains Which Have Precedence	How Governed
East Portland. (S.E. Second Ave. between S.E. Main and S.E. Madison Sts.)	S. P. & S.	U. P.	Stop signs.
Peninsula Jct. (M.P. 5.8 Kenton Line)	Seattle main track.		Special Instruction 663 (S).
Helsing Jct.	C. M. St. P. & P.	U. P.	Automatic block signals. Special Instruction 261 (S).
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, Tidewater.	N. P.		Semiautomatic interlocking. Special Instruction 98 (S).

Continued on opposite side.

98 (R). Continued.

Location	Railroad Crossed, or Junction With	Trains Which Have Precedence	How Governed
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.)	P. C. N. P. C. M. St. P. & P.		Stop signs, and signals from watchman.
Ayer. (M.P. 264.0)	Sixth Subdivision and Tekoa-Ayer Branch.		Special Instruction 98 (T).
Attalia. N. P. Crossing (M.P. 212.0)	N. P.		Automatic Interlocking. Operating Rule 672.
N. P. Crossing. (M.P. 212.6)	N. P.		Automatic Interlocking. Operating Rule 672.
Marengo. (M.P. 3064)	C. M. St. P. & P.		Special Instruction 98 (U).
Spokane. N. P. Crossing (M.P. 163.5) G. N. Crossing (M.P. 164.2)	N. P. G. N.		Interlocking. Interlocking.
Manito. (M.P. 143.4)	C. M. St. P. & P.		Special Instruction 98 (U).
Farmington. (M.P. 103.2)	N. P.	U. P., except passenger trains have precedence over freight trains.	Gate set normally against N. P.
Garfield. (M.P. 95.3)	N. P.	U. P.	Stop signs.
Colfax. (M.P. 77.1)	G. N.	U. P.	Gate and automatic interlocking signals. Gate set normally against G. N.
Oakesdalo. (M.P. 39.75)	G. N.	U. P.	Stop signs.
Oakesdale. (M.P. 39.73)	N. P.	N. P.	Stop signs.
Thornton. (M.P. 30.67)	G. N.	U. P.	Gate.
Riparia. (M.P. 17.3)	N. P.	U. P., except that passenger trains have precedence over freight trains.	Gate set normally against N. P.
Walla Walla. (M.P. 47.9)	N. P.	U. P.	Stop signs.
Walla Walla. (M.P. 47.3)	W. W. V.	U. P.	Gate.

Continued on page 5.

98 (R). Continued.

Location	Railroad Crossed, or Junction With	Trains Which Have Precedence	How Governed
Langdon (M.P. 44.2)	W. W. V.	U. P.	Gate.
Milton. (M.P. 37.0)	W. W. V.	U. P.	Gate
Villard. (M.P. 7.3)	N. P.	N. P.	Stop signs.
Parker. (M.P. 91.3)	N. P.		Automatic Interlocking.
Donald. (M.P. 89.35)	N. P. (gauntlet track).		Automatic Interlocking. Special Instruction 672 (R).
Auker. (M.P. 28.9)	W. W. V.	U. P.	Gate.
Dayton. (M.P. 13.10)	N. P.	U. P.	Stop signs.
Dayton. (M.P. 13.11)	N. P.	U. P.	Stop signs.
Pullman. (M.P. 19.3)	N. P.	U. P.	Stop signs.
Wallace. (M.P. 80.4)	N.P.	U. P.	Stop signs.
Wallace. (M.P. 80.6)	N. P.	U. P.	Stop signs.

98 (S). At N. P. Crossing, Tacoma-Tidewater, when stopped by semi-automatic interlocking signal and no conflicting movement is evident, a member of crew must go to the crossing, remove padlock from derail switch machine, and then operate time release. At expiration of time interval, indicator lamp will light to indicate that lock is released to permit operation of derail. After derail is properly lined, if signal does not change to an indication permitting the train or engine to proceed, member of crew will signal his engineer to proceed if no train or engine is approaching on conflicting route.

98 (T). At Ayer, movement of trains and engines from Tekoa-Ayer Branch from junction to depot is authorized by proceed indication of automatic block signal.

When signal displays Stop indication after switch is opened, train or engine must wait three minutes, and if no conflicting movement is evident, may proceed without sending a flagman ahead, but must move at restricted speed.

Westward first-class trains at or seen to be approaching junction will have precedence over other westward trains and engines from junction to depot.

98 (U). At Marengo, eastward C. M. St. P. & P. trains and engines are governed by Dwarf Signal 3068 in making movement to Union Pacific main track. When dwarf signal displays Stop indication after operation of time release, movement may be made only under flag protection. (See Operating Rules 522 and 523.)

At Manito, westward C. M. St. P. & P. trains approaching junction switch must sound one long, one short and one long sound of engine whistle. When Signal 1437 displays Stop indication, train may proceed without stopping when proceed signal is received from switchtender, but engineer must see that junction switch is properly lined and must proceed at restricted speed.

98 (V). At N. P. Crossing, Spokane, Spokane International trains and engines must stop clear of Signal 1640. If there is no conflicting movement, junction switch may be lined for movement to Union Pacific track. When Signal 1640 displays Stop indication after switch is opened, train or engine must wait three minutes and if no conflicting movement is evident, may proceed after sending flagman ahead, but must move at restricted speed.

Drawbridges

98 (W). Trains and engines after stopping at stop signs must not proceed onto draw span of bridge between Montesano and South

Continued on opposite side.

98 (W). Continued.

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, notify Agent Montesano or dispatcher to call drawbridge operator.

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

98 (Y). At drawbridge, M.P. 23.45 Wallace Branch, trains and engines after stopping at stop sign must sound four short sounds of engine whistle and may proceed when proceed signal is received from bridge tender. If proceed signal is not received from bridge tender, flagman must be sent ahead to drawbridge to give proceed signal if draw span is found properly closed and locked.

Two long sounds of engine whistle must be sounded before moving over bridge.

No bridge tender on duty between 5 A.M. and 9 A.M. and between 5 P.M. and 9 P.M. During these hours draw span will be left open for river traffic.

98 (Z). At M.P. 17.23, Tekoa-Ayer Branch, trains must stop before passing over drawbridge and then proceed if draw span is seen to be closed.

Flag Protection

99 (R). On portions of the division where there is no joint operation of trains with another company, last paragraph of Operating Rule 99 is modified as follows:

"Night signals—A white light, not less than ten torpedoes and six red fusees."

At night and during foggy and stormy weather, a lighted red fusee will be used for hand signals required by Operating Rule 99.

99 (S). 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 (T). Trains may be relieved from protecting against following extra trains by train order, Example 7 of train order Form Z, only on the following branch lines:

Connell Branch between Hooper Jct. and Connell.
Dayton Branch between Dayton and Turner.

Pomeroy Branch	Heppner Branch
Umatilla Branch	Condon Branch
Joseph Branch	Grass Valley Branch
Pilot Rock Branch	Tono Branch

99 (U). On following branches between 6 A.M. and 6 P.M. daily, a speed of 10 MPH must not be exceeded by all extra trains approaching and moving on curves and where view is obscured, 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 (1) must be sounded frequently:

Condon Branch;	Alto to Bolles (on Pendleton Branch);
Tono Branch;	Heppner Branch;
Grass Valley Branch;	Grays Harbor Branch;
Olympia Branch,	Moscow Branch;
Dayton Branch;	Pomeroy Branch;
Starbuck to Relief (on Tucannon Branch);	Umatilla Branch.
Hooper Jct. to Connell (on Connell Branch);	

Unusual Conditions

101 (R). At Pilot Rock, trains and engines must move at restricted speed, keeping a lookout for cars on or foul of main track west of derail.

101 (S). On Bridge 365.32 over Spokane River and Latah Creek between West Spokane and Cowles, and on Bridge 271.70 over Snake River between Joso and Chew, trainmen and enginemen must watch train and track closely and be prepared to stop should an emergency arise.

Cars or Train Left Behind

102 (R). On portions of the division where there is no joint operation of trains with another company, in complying with Operating Rule 102 (A), if no light is available to be placed on front end of cars left behind, when conditions make it necessary, a trainman must remain at front end of such cars to signal engineer when returning.

Riding on Footboards of Engines

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 movement is over crossing protected by 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.

When Diesel-electric locomotive is used, a yardman or trainman may ride on side steps or platform in direction engine is moving instead of on leading footboard.

Public Crossings

103 (S). At public crossing protected by crossing watchman and crossing gates, yard crews must know gates are down and crossing protected before making movement over the crossing with engine or car; otherwise crossing must be protected by member of crew.

103 (T). The following instructions apply at public crossings protected by automatic crossing signals or automatic crossing gates where a crossing watchman is not on duty:

When the rear of a train, engine or yard movement has passed over such crossing and a back-up movement onto or over the crossing is then to be made, or, when a switching or engine movement is to be made against the current of traffic over such crossing, the crossing must be protected by a member of the crew as provided in Operating Rule 103.

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

At Baker, street crossings at Campbell and Auburn Streets, east of depot, must not be blocked in excess of five minutes by freight trains.

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.

103 (V). At The Dalles, public crossings must not be blocked longer than 10 minutes. When a train is to be delayed getting in or out of the yard, crossings must be cut immediately.

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

103 (W). At Barnhart, when movements are made over public crossing to ballast pit, a member of crew must be stationed in each direction to stop highway traffic.

103 (X). The following will govern trains and engines at the public crossings named below:

Location	Instructions
Spokane—Monroe Street.	Normal position of gate is across track. Movement must not be made until gate is open and proceed signal given from middle of street by a momber of crew. Gate must be returned to normal position after each movement.

Continued on opposite side.

103 (X). Continued.

Location	Instructions
Spokane—Medelia and Washington Street.	All engines using switching tracks must stop clear of crossing and member of crew will ascertain that flashing light signals are operating and bells ringing before proceeding over crossing. Cars must not be left within 30 feet on either side of crossing.
Spokane—Division Street.	Instructions for Monroe Street also apply at Division Street, except it is not necessary to send flagman ahead of train or engine when electric signals are operating covering movements on old main line. Unless absolutely necessary, movements across street must not be made between 6:00 AM and 8:00 AM, 11:30 AM and 1:30 PM, 5:00 PM and 7:00 PM. Between 6:00 AM and midnight, the number of movements across the street is limited to twenty, and the street must not be crossed when to do so would interrupt traffic.
Tekoa—County road at junction switch to McGoldrick's Spur.	Flagman must be on ground and stop traffic before movement is made over the crossing.

Handling Cars Ahead of Engine

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

Switches

104 (R). No. 14 turn-outs are installed at all power operated switches in CTC territory except siding switches at Hilgard, Meacham, Duncan, and west siding switch at Gibbon.

Other switches equipped with No. 14 turn-outs are indicated by a figure "14" on switch target.

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

La Grande: Joseph Branch switch—for drill track,
Switch to north side lead and roundhouse—for drill track;
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;
Hinkle, junction switch, Umatilla Branch—for running track;
Hinkle, wye switches—for running track;
Arlington, Condon Branch switch—for Condon Branch;
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.;
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;
Hooper Jct. (Connell Branch)—for line via Park;
Seltice—for line via Colfax;
Winona—for line via Colfax;
Tucannon—for line via Pataha;
Walla Walla passenger station, east switch to No. 2 track—for
No. 2 track when passenger equipment is left on No. 1 track;
East wye switch Pendleton Branch—for Wallula Branch;
Wye switch Wallula Branch—for movement to east leg of wye;
Yakima, Walnut Street—for main switching lead.

104 (T). At Tacoma, when cross-over switches from Northern Pacific double track to U. P. drawbridge line are handled by trainmen, all such switches must be returned to normal position after movement is completed.

Electric Switch Locks

104 (U). Electric lock is in service on east switch of facing point cross-over between main tracks just west of the subway east of Spokane passenger station (compass directions).

Continued on page 7.

104 (U). Continued.

If electric lock fails to release and no train movement is being made on the outward main track, or from Milwaukee roundhouse lead to outward main track, seal may be broken on electric lock and Milwaukee switch key inserted in opening at base of lock. When key is turned to the right, lock will be released. Failure of electric lock must be reported promptly to the Milwaukee chief dispatcher.

104 (V). When authority to operate an electric locked switch has been received, following will govern:

Switch operating lever must be left in its socket and no attempt made to operate switch until indicator at the lock shows lock released.

This indication is given in one of the following ways:

Indicator changes to Clear position;

The word "Clear" or "Unlocked" appears;

Small light on face of electric lock which flashes during operation of time element changes to a steady light.

After indication is received showing lock has released, lock and switch may be operated and train or engine may proceed without waiting three minutes as required by Operating Rule 513.

Lifting, or attempting to move switch operating lever before lock has released will result in binding of the lock rod, which will prevent movement of lock lever.

104 (W). In using electric lock when communication has failed, or electric lock is out of order, mechanical release seal on lock so equipped may be broken. After high lock has been released by moving crank to left or, on low lock, by removing padlock and releasing electric lock with switch key, member of crew must wait three minutes before lining switch; after which, train or engine may proceed as required by Operating Rule 509.

After using the switch or derail equipped with high electric lock, switch and derail must be returned to normal position and locked; crank on electric lock must be restored to normal position against stop block. Door of case must be locked and, except when communication has failed, dispatcher notified.

Main Track Derails

104 (X). Main track derails are located at the following points:

Pomeroy (opposite water tank) (90 feet west of section house)	Derail will be set in derailing position only when cars are left standing on main track above it.
Dayton (100 feet east of depot) (150 feet east of west switch to cannery track)	
McAdam (500 feet west of west switch) Wacota (500 feet west of west switch) Estes (500 feet west of west switch) Sulphur (500 feet west of west switch)	Derail will be set in derailing position only when cars are spotted to foul the main track, or when the warehouse track switches are set so as to permit loaders to drop cars west onto main track.
Wallace (M.P. 81.13)	Spring switch point set in derailing position at all times and must be changed for eastward movement.
Wallace (350 feet east of depot)	Derail will be set in derailing position only when passenger train is left standing on main track at the depot west of derail.
Gem (M.P. 84)	Derail will be set in derailing position only while switching is being done above it.
Burke (M.P. 86.3)	
Burke (M.P. 86.4)	Derail must be set in derailing position at all times when not being used.
Sierra Nevada Spur (300 feet east of refinery track switch)	Spring switch point must be set in derailing position at all times except when changed for descending movement.
Sierra Nevada Spur (west of No. 1 track switch at zinc plant)	Derail will be set in derailing position only when cars are left standing on main track above it.

Speed Restrictions

105 (R). That part of last paragraph of Rule 93 reading, "(See Special Instructions, 105-R)" is changed to read, "See speed restrictions in time-table."

Sidings

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

105 (T). At stations where eastward and westward sidings are shown, the eastward siding is east of the westward siding.

Movements Against Current of Traffic

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

The Dalles—between Block Signals 867 and 838;

Albina and Portland—on parallel tracks between Portland and East Portland or Harding Street, Albina;

Spokane—between Union Station and cross-over near sand house at West Spokane.

D-151 (S). Unless otherwise instructed, all trains will be routed with current of traffic between East Portland and Albina. When trains are being handled by engines prohibited from moving with current of traffic and it is necessary to operate them over the other track, switchtenders at Albina and towermen at East Portland must see that movement is properly protected by notifying yard engines and other movements.

Train Order Signals

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.

200 (S). At Kennewick, when train order signal displays Stop indication, stop must be made before engine passes train order signal unless proceed signal is received from operator.

Train Orders

208 (R). Except at initial stations, when a train's superiority is restricted for an opposing train 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.

Movement of Trains by Block Signals

261 (R). Between east switch of No. 1 track, Pendleton, and Rieth, trains will be governed by automatic block signals whose indications will supersede the superiority of trains for both opposing and following movements on main track.

Signals located at each end of Umatilla River bridge are controlled by train dispatcher and govern movements over bridge to or from main track or No. 1 track. When one of these signals displays Stop indication and cause is unknown, conductor or engineer of train stopped by such signal must communicate with train dispatcher and be governed by his instructions.

When movement is authorized by train dispatcher, or when communication fails, flagman must be sent ahead. A member of crew must move selector lever on dual control switch to HAND position and it must be known that switch is lined for the movement to be made. After engine has passed over switch, stop must be made and selector lever restored to MOTOR position.

261 (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.

Continued on page 8.

261 (S). Continued.

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 Operating Rule 509 (A) and Grays Harbor Branch main track must not be occupied except under protection in accordance with Operating Rule 99 against westward trains on Grays Harbor Branch.

Special C.T.C. Rules

266 (R). At Pendleton, trains from Pendleton Branch to extension of Track 6, must obtain permission from train dispatcher at La Grande before passing Signal 2165.

266 (S). At Encina, Telocaset and Kamela, Clearance Form B required by CTC Rule 402 need not be received by light engine leaving those stations, but movement must be governed by signal indication.

266 (T). 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 of No. 1 track, Pendleton, and Rieth.

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

267 (R). At Huntington, when Signal 3893 displays Stop indication, and at Baker, when Signal 3417 or 3424 displays Stop indication, and at La Grande, when Signal 2897 or Signal 2902 displays Stop indication, member of crew of train stopped by such signal must communicate with train dispatcher for instructions.

If movement is authorized by train dispatcher, train may proceed without receipt of Clearance Form C, but movement must be made at restricted speed and must be preceded by flagman to next signal.

Approach Signal Indication

284 (R). On Spokane-Tekoa Branch, when a signal displays Approach indication, trains or engines must immediately reduce speed to one-half the authorized speed at that location, but not exceeding 20 miles per hour, and as much slower as necessary in order to be able to stop before passing the next signal.

Staff System—Yakima Branch

301 (R). Movements of trains and engines on the Government trackage between Richland Junction (Yakima Branch) and yard limit sign on Government trackage at M.P. 43.8, are governed by staff operation.

Divided staff, lettered "A" and "B", will be used and staff boxes are located at Richland Junction and at M.P. 43.8.

When only one train movement is to be made in the staff limits, dispatcher will notify the crew and that crew must have both staffs "A" and "B" in their possession and retain them for the round trip.

When two trains are to be run in these limits, the first train must not enter the staff limits until it has been ascertained that both staffs are in box at that point, and has taken staff "A" for their movement. Second train entering staff limits must have staff "B" in their possession.

After moving through the staff limits, both staffs must be left in staff box. Staff box must be left locked at all times.

Conductor of train which is to move, or has moved, through the staff limits, must register his train on train register at Richland Junction, and indicate staff used, either "A" or "B", or both.

Train or engine movements on Government trackage from end of staff system into interchange yard and wye at North Richland (which is ten miles from Richland Junction) will be governed by yard limit rules and instructions issued by Government dispatcher. When two trains are run, the first train arriving at interchange yard must remain at that point until the second train arrives.

Slide Detector Signals

509 (R). On Yakima Branch, between M.P. 41 and M.P. 42, slide detector signals, designated by triangular number plates, are in service. When signal displays Stop indication, train must stop before passing and may then proceed at restricted speed to signal at opposite end of protected territory, looking out for damaged rail or obstruction, and wire report must be made to chief dispatcher and superintendent.

Block Signals

509 (S). Between Rieth and Portland, Spokane and Umatilla and between Spokane and Manito, Operating Rule S-509 (A) applies.

509 (T). When a slide warning device plug is found pulled but no obstruction on or damage to track is found, the plug must be replaced, if practicable, and conductor must make wire report to train dispatcher from first open telegraph office.

509 (V). At Marengo, dwarf signal governs movements from east leg of wye to main track. After switch is opened, signal will display yellow indication when block is clear, except when block is occupied west of Signal 3066, signal will not display yellow indication until three minutes after switch is opened.

Track Occupancy Indicators

512 (R). Trainmen must observe indication displayed by track occupancy indicators before changing derail or main track switch.

A switch must not be opened to permit a movement to a main track when Occupied indication is displayed, unless the movement is properly protected.

Indication displayed by track occupancy indicator is not authority for a train or engine movement, and does not relieve enginemen and trainmen from protecting the train as required by the rules.

Standing on Sanded Rail

518 (R). Bus cars, light weight motor trains of three cars or less, any locomotive 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.

Routes Through Interlocking

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 —

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. .... — • —
From Argo yard to Georgetown lead ... — o

At N. P. Crossing, Spokane:

For Spokane Union Station ..... o o o
For old yard ..... o o o o
For East Spokane ..... o o o o
For N. P. transfer ..... o o o
For G. N. transfer ..... — —

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

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

Interlocking

663 (R). 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 (S). Movement over railroad crossing with Seattle main track M.P. 5.8, just west of Peninsula Jct., is governed by color light signals. Electric lock derails are in use. Trains or engines must obtain authority from operator at St. Johns for movement over this crossing, and operator will release electric lock for operation of derails. After movement is completed, derails must be restored to normal position and locked with switch lock and operator notified. If operator is unable to release electric lock, he may authorize member of crew to break seal on end of switch machine and unlock with switch key.

663 (T). When eastward interlocking signal located on cantilever at M.P. 3.3, Kenton Line, displays Stop indication, permission must be obtained from operator at St. Johns Junction before proceeding.

663 (U). At Columbia River Bridge, M.P. 7.44, Yakima Branch, when a train is stopped by semi-automatic interlocking signal, a flagman must be sent to drawbridge to give proceed signal if derail and draw span are properly closed. Two long sounds of engine whistle must be sounded before proceeding, and movement must be made at restricted speed. Eastward trains stopped at this bridge must stand clear of N. P. Crossing, Villard.

672 (R). At Yakima River Bridge, M.P. 89.35, Yakima Branch, trains and engines are governed by automatic interlocking signals and must approach gauntlet track at restricted speed. A train or engine stopped by an interlocking signal must comply with Operating Rule 672. If signal does not change its indication after one minute, flag protection must be provided for movement between home signals governing gauntlet track.

Passengers on Freight Trains

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;

Employes 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 365 and 366 between Dayton and Walla Walla.

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.

Close Clearances

714 (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 Operating Rule M.)

Location	Structure or obstruction	Clearance of engine or car is close at—
At all stations	Mail cranes	Side.

Continued on opposite side.

714 (R). Continued.

Location	Structure or obstruction	Clearance of engine or car is close at—
First Subdivision		
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. 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. 383.02	Bridge	Side.
M.P. 381.90	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. 378.75	Bridge	Side.
M.P. 378.60	Tunnel No. 6	Side.
M.P. 378.19	Bridge	Side.
M.P. 377.15	Bridge	Side.
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	Two overhead bridges	Side and top.
North Powder	Water tank spout	Side.
Telocaset	Water tank spout	Side.
M.P. 312.07	Overhead bridge	Side.
Second Subdivision		
La Grande	Second Street 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. 238.67	Bridge	Side.
Gibbon	Water tank spout	Side.
M.P. 230.57	Bridge	Side.
M.P. 226.86	Bridge	Side.
M.P. 214.42	Bridge	Side.
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	Side.
M.P. 198.26	Bridge	Side.
Echo	Water tank spout	Side.
M.P. 187.2	Overhead bridge	Top and side.
Joseph Branch		
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.

Continued on page 10.

714 (R). Continued.

Location	Structure or obstruction	Clearance of engine or car is close at—
Third Subdivision		
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.
Fourth Subdivision		
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.
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.
Portland	Depot umbrella shed	Top and side.
Fifth Subdivision		
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.
Olympia Branch		
M.P. 5.2	Tunnel No. 25	Top and side.
M.P. 5.77	Tunnel No. 26	Top.
M.P. 6.7	Overhead bridge	Top and side.
Olympia	Water tank spout	Side.
Grays Harbor Branch		
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. 53.33	Bridge	Side.
Aberdeen	Depot umbrella shed	Side.
Montesano Branch		
M.P. 0.31	Bridge	Side.

Continued on opposite side.

714 (R). Continued.

Location	Structure or obstruction	Clearance of engine or car is close at—
Tono Branch		
Tono	Coal mine tipple	Top and side.
St. Johns Branch		
M.P. 6.93	Overhead bridge	Top and side.
Grass Valley Branch		
Biggs	Water tank spout	Side.
Wasco	Water tank spout	Side.
Grass Valley	Water tank spout	Side.
Heppner Branch		
Ione	Water tank spout	Side.
Cecil	Water tank spout	Side.
Sixth Subdivision		
M.P. 199.93	Bridge	Side.
M.P. 210.11	Bridge	Side.
M.P. 229.5	Tunnel No. 7	Top and side.
M.P. 235.02	Tunnel No. 8	Top and side.
M.P. 242.4	Tunnel No. 9	Top and side.
M.P. 275.1	Tunnel No. 10	Top and side.
M.P. 275.5	Tunnel No. 11	Top and side.
M.P. 276.0	Tunnel No. 12	Top and side.
M.P. 276.3	Tunnel No. 13	Top and side.
M.P. 276.5	Tunnel No. 14	Top and side.
M.P. 278.36	Overhead bridge	Top and side.
M.P. 281.3	Tunnel No. 15	Top and side.
M.P. 286.78	Overhead bridge	Top and side.
M.P. 292.1	Tunnel No. 16	Top and side.
M.P. 294.4	Tunnel No. 17	Top and side.
M.P. 305.62	Overhead bridge	Top and side.
Marengo	Oil tank spout	Top and side.
M.P. 325.70	Overhead bridge	Top and side.
M.P. 329.46	Overhead bridge	Top and side.
M.P. 337.20	Overhead bridge	Top and side.
M.P. 352.13	Bridge	Side.
M.P. 353.57	Overhead bridge	Top.
M.P. 353.94	Overhead bridge	Top.
M.P. 357.48	Overhead bridge	Top and side.
M.P. 357.95	Overhead bridge	Top and side.
M.P. 363.76	Overhead bridge	Side.
Spokane	Umbrella sheds	Side.
Yakima Branch		
M.P. 7.44	Bridge	Top and side.
M.P. 11.52	Bridge	Side.
M.P. 14.16	Overhead bridge	Top and side.
M.P. 16.06	Bridge	Side.
M.P. 24.35	Overhead bridge	Top.
M.P. 35.89	Bridge	Top and side.
M.P. 53.36	Bridge	Side.
M.P. 56.83	Bridge	Side.
M.P. 58.03	Bridge	Side.
M.P. 58.19	Bridge	Side.
M.P. 73.03	Bridge	Side.
M.P. 73.20	Bridge	Side.
M.P. 73.30	Bridge	Side.
M.P. 89.35	Bridge	Top and side.
Union Gap	Overhead bridge	Top.
Yakima, First Avenue and C Street	Traffic light	Top.
Tekoa-Ayer Branch		
M.P. 17.23	Bridge	Top and side.
M.P. 19.96	Bridge	Side.
M.P. 26.73	Bridge	Side.
M.P. 77.23	Bridge	Top and side.
M.P. 90.27	Bridge	Top and side.

Continued on page 11.

714 (R). Continued.

Location	Structure or obstruction	Clearance of engine or car is close at—
Tekoa-Ayer Branch (Cont.)		
M.P. 93.01	Bridge	Side.
M.P. 94.70	Overhead bridge	Top.
M.P. 98.03	Bridge	Side.
M.P. 112.97	Overhead bridge	Top.
M.P. 115.79	Bridge	Side.
M.P. 115.86	Overhead bridge	Top.
Spokane-Tekoa Branch		
M.P. 143.67	Overhead bridge	Side.
M.P. 163.56	Bridge	Side.
M.P. 164.06	Bridge	Top and side.
Spokane	Market Street bridge	Top and side.
Spokane	Division Street bridge	Top.
Spokane	Tunnel, westward track	Top and side.
Spokane	Tunnel, eastward track	Top and side.
Moscow Branch		
M.P. 8.54	Bridge	Top and side.
M.P. 18.77	Bridge	Top.
M.P. 18.97	Bridge	Top and side.
M.P. 19.28	Overhead bridge	Top.
Wallace Branch		
M.P. 0.14	Bridge	Side.
M.P. 16.30	Bridge	Top and side.
M.P. 23.45	Bridge	Top and side.
M.P. 55.56	Bridge	Side.
M.P. 58.01	Bridge	Top and side.
M.P. 62.14	Bridge	Top and side.
M.P. 63.48	Bridge	Top and side.
M.P. 64.03	Bridge	Side.
M.P. 72.59	Bridge	Side.
M.P. 79.36	Bridge	Top and side.
Pleasant Valley Branch		
M.P. 1.51	Bridge	Top and side.
M.P. 41.21	Overhead bridge	Top.
Pendleton Branch		
M.P. 0.51	Bridge	Top.
M.P. 36.86	Bridge	Side.
M.P. 74.14	Overhead bridge	Top and side.
Wallula Branch		
M.P. 10.01	Overhead bridge	Top and side.
M.P. 14.32	Bridge	Side.
Connell Branch		
M.P. 15.13	Bridge	Side.
M.P. 15.71	Overhead bridge	Top and side.

714 (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.

714 (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.

714 (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 Pullman, when switching Sutherland spur, trainmen should work on north side between spur track and main track; when switching team track should work on south side between team track and main track.

714 (V). At Tono, due to impaired overhead clearance, only low gondola type cars may be moved under loading tipple on siding. All moves must be made at slow speed.

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

High and Wide Cars

714 (X). 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.

Handling of Explosives and Inflammables

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.

Placards on Cars

BE 589 (b). A car requiring car certificates and "Explosives", or "Dangerous", "Dangerous-Class D Poison", or "Poison Gas" placards under the provisions of this part shall not be transported unless such freight car is at all times placarded and certificated as required by this part. Placards or car certificates lost in transit shall be replaced at next inspection point and those not required must be removed.

BE 589 (b). (1) At points where trains are inspected, cars placarded "Explosives" and adjacent cars shall be inspected; such cars shall continue in movement only when inspection shows them to be in condition for safe transportation.

Continued on page 12.

726 (R). Continued.

Switching Cars Containing Explosives or Poison Gas

BE 589 (c). A car placarded "Explosives" or placarded "Poison Gas" shall not be cut off while in motion. No car moving under its own momentum shall be allowed to strike any car placarded "Explosives," or placarded "Poison Gas." No freight car placarded "Explosives" or placarded "Poison Gas" shall be coupled into with more force than is necessary to complete the coupling.

BE 589 (c). (1) When transporting a car placarded "Explosives" in terminals, yards, side tracks, or sidings, such cars shall be separated from the engine by at least one non-placarded car.

BE 589 (c). (2) Closed cars placarded "Explosives" shall have doors closed before they are moved.

Switching of Cars Containing Dangerous Articles

BE 589 (d). In switching operations where use of hand brakes is necessary, a placarded loaded tank car, or a draft which includes a placarded loaded tank car shall not be cut off until the preceding car or cars clear the ladder track and the draft containing the placarded loaded tank car, or a placarded loaded tank car shall in turn clear the ladder before another car is allowed to follow.

BE 589 (d). (1) In switching operations where hand brakes are used, it shall be determined by trial that a car placarded "Dangerous" or that a car occupied by a rider in a draft containing a car placarded "Dangerous" has its hand brakes in proper working condition before it is cut off.

Placement of Freight Cars Containing Explosives, in Yards, on Sidings, or Sidetracks

BE 589 (e). Cars placarded "Explosives" shall be so placed that they will be safe from all probable danger of fire. Freight cars placarded "Explosives" shall not be placed under bridges or overhead highway crossings, nor in or alongside of passenger sheds or stations except for loading or unloading purposes.

Notice to Crews of Cars Containing Explosives in Freight Trains or Mixed Trains

BE 589 (f). At all terminals or other places where trains are made up by crews other than road crew accompanying the outbound movement of cars, the railroad shall execute a consecutively numbered notice showing the location in the freight train or mixed train of every car placarded "Explosives." A copy of such notice shall be delivered to the train and engine crew and a copy thereof showing delivery to the train and engine crew shall be kept on file by the railroad at each point where such notice is given. At points other than terminals where train or engine crews are changed, the notice shall be transferred from crew to crew.

Position in Freight Train or Mixed Train of Cars Containing Explosives

BE 589 (g). In a freight train or a mixed train either standing or during transportation thereof, a car placarded "Explosives" shall, when length of train permits, be placed not nearer than the sixteenth car from both the engine or occupied caboose, except:

(1) When the length of freight train or mixed train will not permit it to be so placed, it shall be placed near the middle of the train.

(2) When transported in a freight train made up in "blocks" or classifications, a car placarded "Explosives" shall be placed near the middle of the "block" or classification in which moving, but not nearer than the sixth car from both the engine or occupied caboose.

(3) When transported in a freight train or a mixed train performing pickup and/or setoff service, it shall be placed not nearer than the second car from both the engine or occupied caboose, except as provided in paragraph (l) of this section.

Separating Cars Placarded "Explosives" From Other Cars in Train

BE 589 (h). In a freight train or a mixed train either standing or during transportation thereof, a car placarded "Explosives" must not be handled next to:

1. Occupied passenger car, other than car occupied by gas handlers or military personnel accompanying shipments.
2. Occupied combination car, other than car occupied by gas handlers or military personnel accompanying shipments.

Continued on opposite side.

726 (R). Continued.

3. Any car placarded "Dangerous."
4. Engine.
5. Any car placarded "Poison Gas."
6. Wooden underframe car (except on narrow gauge railroads).
7. Loaded flat car.
8. Open-top car when any of the lading extends or protrudes above or beyond the ends or sides thereof.
9. Car equipped with automatic refrigeration of the gas-burning type.
10. Car containing lighted heaters, stoves or lanterns.
11. Car loaded with live animals or fowl, occupied by an attendant.
12. Occupied caboose except as provided in paragraph (l) of this section.

Position in Train of Loaded Placarded Tank Car

BE 589 (i). In a freight train or a mixed train, except a train consisting entirely of placarded loaded tank cars and as provided in paragraph (j) of this section, a placarded loaded tank car shall when the length of the train permits, be not nearer than the sixth car from the engine, occupied caboose or passenger car.

BE 589 (i). (1) When the length of the freight train or mixed train will not permit it to be so placed, it shall be not nearer than the second car from the engine, occupied caboose or passenger car.

BE 589 (i). (2) When transported in a freight train engaged in "pickup" or "setoff" service, a placarded loaded tank car shall be not nearer than the second car from both engine or occupied caboose.

Separating Loaded Tank Cars Placarded "Dangerous" From Other Cars in Train

BE 589 (j). In a freight train or mixed train either standing or during transportation thereof, a placarded loaded tank car must not be handled next to:

1. Occupied passenger car, other than gas handlers accompanying shipment.
2. Occupied combination car, other than gas handlers accompanying shipment.
3. Any car placarded "Explosives."
4. Engine (except when train consists only of placarded loaded tank cars).
5. Any car placarded "Poison Gas."
6. Wooden under-frame car (except on narrow gauge railroads).
7. Loaded flat cars.
8. Open-top car when any of the lading extends or protrudes above or beyond the ends or sides thereof.
9. Car equipped with automatic refrigeration of the gas-burning type.
10. Car containing lighted heaters, stoves, or lanterns.
11. Car loaded with live animals or fowl, occupied by an attendant.
12. Occupied caboose (except when train consists only of placarded loaded cars).

Position in Freight Train or Mixed Train of Cars Placarded "Poison Gas" or Containing Poison Liquids Class A

BE 589 (k). In a freight train or mixed train either standing or during transportation thereof, a car placarded "Poison Gas" or containing poison liquids, Class A, shall not be next to other freight cars placarded "Explosives" or cars placarded "Dangerous."

Position in Freight Train or Mixed Train of Cars Placarded "Explosives" and "Poison Gas" or Containing Poison Liquids when Accompanied by Cars Carrying Gas Handling Crews

BE 589 (l). A car placarded "Poison Gas" or containing poison liquids Class A in drums, tanks or bombs, or a car placarded both "Explosives" and "Poison Gas" shall at all times be next to and ahead of the car occupied by gas handling crews, when accompanying such car.

BE 589 (l) (1) A car or cars placarded "Explosives" shall be next to and ahead of a car occupied by guards accompanying such car, except that when the car occupied by guards is equipped with a heater it shall be the fourth car behind the car or cars placarded "Explosives."

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726 (R). Continued.

Cars Containing Explosives or Poison Gas and Tank Cars Placarded "Dangerous" in Passenger or Mixed Trains

BE 589 (m). Cars containing explosives, Class A, poison gases or liquids, Class A, and tank cars requiring "Dangerous" placards shall not be transported in a passenger train. Such cars may be transported in mixed trains but only at such times and between such points that freight train service is not in operation.

BE 589 (m). (1) Cars containing explosives, Class A, poison gases or liquids, Class A, and tank cars placarded "Dangerous" shall not be transported next to occupied cabooses or cars carrying passengers in mixed trains except as provided in paragraph (1) of this section.

BE 589 (m). (2) When a car containing explosives, Class B, or dangerous articles other than explosives requiring labels (not including Class A poison gases or liquids) is moved in a mixed train and such car is not occupied by an employe of the carrier, placards must be applied to the car as required by these regulations.

Position in Train of Cars Containing Class D Poisons

BE 589 (n). In a freight train or mixed train either standing or during transportation thereof, a car placarded "Dangerous-Class-D Poison" must not be handled next to cars placarded "Explosives" or next to carload shipments of undeveloped film.

Empty Tank Cars

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.

Open Flame Switch Heaters

726 (S). 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.

Carbon Monoxide Fumes

733 (R). There is hazard of carbon monoxide fumes from exhaust of Diesel and gasoline engines and precautions must be taken to avoid possibility of accident therefrom.

Exhaust from such engines must not be located in close proximity of fresh air intake of passenger cars and care must be exercised at all times that there is sufficient ventilation where such engines are operated.

Trains Stopped in Tunnels

733 (S). Dangerous gases present in exhausts from various types of locomotives, steam generators, or engines of the Waukesha type, may cause incapacitation or fatalities if in sufficient concentration as might result when a train is stopped in a tunnel.

In the event a passenger train, regardless of the type of power being used, is stopped in a tunnel, cars within the tunnel must have air circulating systems, including air conditioning systems, ice machines and engine generators, shut off, fresh air intake shutters closed, and blower fans shut off.

Certain gases are not readily detected by odors and this action must be taken immediately and time not wasted in determining when train may be started. Take safe course and act at once.

When a Diesel-electric locomotive is stopped in a tunnel under conditions preventing prompt movement, Diesel engines must be promptly shut down.

Shutting Off Diesel Propulsion Engines

733 (T). When Diesel propulsion engines are shut off, air brakes must be fully applied and in addition, front and rear of a traction wheel must be blocked and sufficient hand brakes must be applied throughout the train to prevent movement should air brakes leak off.

During freezing weather, when Diesel engines are shut down, cooling water must be drained to winter level and if necessary to prevent damage to engine must be drained completely.

Local conditions must be carefully considered, as there may be situations where the exhaust gases are being carried away from the train by air currents, or where proximity to tunnel opening would

Continued on opposite side.

733 (T). Continued.

make it unnecessary to shut down these engines. Safety of passengers and members of the crew must be the first consideration.

Train dispatcher should be notified immediately so that proper arrangements can be made for protection of persons and equipment.

Power Transmission Wires

734 (R). Power transmission wires carrying 2300 volt circuit are located on top arms of signal pole lines and on top arms of joint telegraph and signal pole lines.

Diesel-Electric Locomotives

735 (R). Adjustments must not be attempted nor made in high voltage cabinets of Diesel-electric locomotives until engine has first been isolated and stopped and units have come to a stop.

736 (R). When Diesel-electric switch locomotive is to be idle in excess of 30 minutes, main engine must be stopped.

When Diesel-electric road locomotive is to be idle for one hour at initial or intermediate stations, main engines must be stopped.

Exception: In such cases, engines must not be stopped when outside temperature is below 35 degrees.

When Diesel engines are stopped at terminals when a heavy rain is falling, enginemen will call on mechanical forces for covers to be placed over exhaust stacks.

When Diesel engines are stopped, hand brakes must be applied.

Dead Engines

740 (R). 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.

Helper Engines

741 (R). Helper locomotive on passenger train must be coupled ahead of train locomotive, and will not be placed on rear of passenger trains except in case of emergency or unusual circumstances, then only for such distance as it is safe.

On freight train, when not used on head end, helper locomotive 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-type locomotives must not be doubleheaded. Locomotives must not be doubleheaded over Snake River Bridge 17.23 at Riparia.

741 (S). Locomotive in helper service equipped with pilot plow requiring extension coupler must be placed at head end of train.

741 (T). Between Tekoa and Chatcolet, locomotives 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.

741 (U). On freight trains with all-steel caboose, helper locomotive, but not more than one, may be used behind caboose when there are no cars listed in Special Instruction 802 (R) in train.

Not more than two locomotives may be on head end of train, and Mallet-type locomotive must not be doubleheaded except as follows:

From Huntington to Durkee;
From Baker to Telocaset;
From La Grande to Union Jct.;
From Hinkle to Gibbon;
Trains handling not to exceed 3500 tons, between Union Jct. and Telocaset, and between Baker and Encina.

Continued on page 14.

741 (U). Continued.

When not used on head end of train, or behind all-steel caboose as provided above, helper locomotive must be cut in on rear of train as close ahead of caboose as conditions will permit, but always ahead of cars listed in Special Instruction 802 (R).

Flangers on Snow Plows, etc.

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

Outfit Cars

801 (R). Referring to Operating Rule 810 and M. of W. and Signal Rule 1521, women and children may be permitted to occupy outfit cars during movement of such cars.

Position of Cars in Trains

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;
Scale 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.

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 steam 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, except between Wallula and Umatilla when it would cause delay or extra switching.

802 (S). Open top or flat cars loaded with pipe, rail, lumber, poles or other lading which has tendency to shift, must be handled in head end of train, but must not be entrained immediately behind Diesel-electric locomotive.

Exception: Open top cars containing shipments of creosoted lumber, piling, etc., handled by coal burning locomotive, must be entrained in rear portion of train.

802 (T). Open top or flat cars loaded with glass shipments, packed with straw or excelsior, handled by coal burning locomotive, must be entrained next to caboose.

Cars on Sidings

804 (R). On Sixth Subdivision, cars may be placed for loading and storage on all industrial tracks, and all sidings equipped with derails when authorized by chief dispatcher.

Cars Partly Loaded or Unloaded

805 (R). All persons are prohibited from riding in cars while being switched, which are in the process of loading or unloading. Part loads will not be switched unless properly broken down or properly braced to prevent contents falling and being damaged. Before switching with or moving cars which are in the process of loading or unloading, persons working in the car must be notified and trainmen and yardmen should see that cars are not switched with until cars are vacated.

Cars With Roller Bearings

806 (R). Cars equipped with roller bearings will start with much less effort than those otherwise equipped. When such cars are set out, either in yards or on line, hand brakes must be set, if there is any possibility of their moving.

Chaining Cars to Rail

806 (S). Between Huntington and Pendleton, when cars are set out on sidings on grade where there are no derails, in addition to setting hand brakes and blocking wheels, cars must be chained to rail. When cars are picked up, crew must take chain to terminal.

Cars with Bad Order Couplers

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.

Hot Boxes

812 (R). When a hot box is detected on a train between stations, in addition to Operating Rule 812, the following will govern:

As quickly as hot box is detected train must be stopped, hot box inspected and no attempt made to run to next station until it has been ascertained it is safe to do so.

When car is set out account hot box, packing must be removed, fire extinguished and dirt, gravel or snow placed on top of box at back end over top of dust guard opening, after which lid on journal box must be closed. Thorough inspection must be made of car after attending to hot box to insure no fire on car body, and in all such cases, two members of crew must make this inspection, one of whom must be the conductor.

Inspection of Trains

812 (S). On locomotive, tender and freight car wheels, flat spots two and one-half inches or longer, or if there are two or more adjoining spots each two inches or longer, and on passenger cars including streamline train equipment one inch or longer, are condemnable and when discovered in train, conductor or engineer must immediately report to chief dispatcher and be governed by his instructions.

812 (T). When a train with Diesel-electric locomotive is passing, trainmen, enginemen, yardmen and others should observe wheels under power units to see if wheels are turning. In event locked wheels are noticed, stop signal must be given to crew of passing train and proper precautions taken to prevent damage to equipment.

812 (U). 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 (V). When leaving regular inspection points, a trainman must be at head end of train and make careful inspection of train as it pulls by, giving particular attention to brake equipment.

812 (W). Freight trains must stop and entire train must be inspected in accordance with Operating Rule 812 at the following points:

Encina	—Eastward and westward;
Kamela	—Eastward and westward;
Arlington or Blalock	—Eastward and westward;
Castle Rock (or at Kelso or Longview Jct. when train stops for other purpose)	—Eastward;
Rocky Point (or at Castle Rock or Kalama when train stops for other purpose)	—Westward;
Wyeth, Cascade Locks or Bonneville (or at Dodson when train stops for other purpose)	—Eastward and westward;
Marengo	—Eastward and westward;
Page or Simmons	—Eastward and westward.

812 (X). In addition to inspection required by other rules, streamline trains must be given close running inspection by rear trainmen and enginemen on the following curves:

First Subdivision—
M.P. 363 and M.P. 364.5 —single curve;
M.P. 326.5 and M.P. 327.5 —single curve;
M. P. 302.4 and M.P. 303 —single curve.

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812 (X). Continued.

Second Subdivision—		
	M.P. 281.5 and M.P. 282	—single curve;
	M.P. 257.2 and M.P. 257.8	—single curve.
Nolin	M.P. 197.8 to M.P. 198.6	—reverse curves;
Echo	M.P. 191.6	—single curve;
Third Subdivision—		
Westland	M.P. 180.1	—single curve;
Castle-Peters	M.P. 159.5 to M.P. 161.4	—reverse curves;
Arlington	M.P. 138.2	—single curve;
Blalock	M.P. 129.4 to M.P. 130.0	—reverse curves;
Biggs	M.P. 103.8	—single curve.
Fourth Subdivision—		
Mosier	M.P. 68.8 to M.P. 69.2	—reverse curves;
Wyeth	M.P. 49.3 to M.P. 49.7	—reverse curves;
Troutdale	M.P. 14.9 to M.P. 15.9	—reverse curves.

After rear trainman has completed inspection on the above curves, if everything is all right, he must give engine crew hand signal to proceed; this signal must be acknowledged by two long sounds of engine whistle.

If anything unusual is detected, train must be stopped and walking inspection of train must be made before proceeding.

N. P. Air Brake Rules

814 (R). On tracks operated by Northern Pacific Railway, Northern Pacific air brake rules will apply.

Switching Cars With Air Brakes Cut In

815 (R). Air must be cut in and automatic brake used when switching passenger train cars and occupied outfit cars; however, independent or straight air brake may be used when making couplings. Engineman must exercise care to avoid rough handling.

Passenger Trains Backing Up

817 (R) 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.

Turning on Wye at Telocaset

819 (R). At Telocaset, when steam locomotive headed west is to be turned on wye, locomotive will back around west leg of wye, then head around east leg of wye.

Movements on Leads and Yard Tracks

820 (R). At Huntington, La Grande, Pendleton, Hinkle, The Dalles, Kenton, Albina, Argo, Ayer, Walla Walla, Wallula, Yakima, Tekoa and Spokane, 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.

Track Scales

821 (R). Locomotives must not be moved over live rails of track scales and when moved over dead rails of track scales, a speed of 5 MPH must not be exceeded.

Sanders or injectors must not be used over track scales and locomotives or cars must not stand on dead rail over scale deck or platform of track scales.

Cars to be weighed must be stopped on scales and uncoupled at both ends while being weighed, except on scales equipped with automatic weighing device.

Cars must not be violently stopped by impact, sudden application of brakes or by blocking wheels. After cars are weighed, they must not be moved over live rails if possible to avoid it. When making impact with cars on scales, speed must not exceed 2 MPH and 4 MPH must not be exceeded over scales in any case.

Cars on live rail must not be moved by other cars or engines moving on dead rail, or vice versa. Cars must not be moved over scale with one truck on live rail and other truck on dead rail.

Caboose Tracks

822 (R). At Huntington, La Grande, Hinkle, The Dalles, Albina, Argo, Ayer, Walla Walla, Yakima, Tekoa and Spokane, 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.

Drover Cars

823 (R). Trains handling 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.

Coupling Passenger Cars

824 (R). 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 tight lock coupler to any coupler, it must be seen that knuckle is securely locked in closed position.

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

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

Movement of Diesel Locomotives

825 (R). When a Diesel-electric locomotive consisting of two "A" units operated rear end to rear end, with or without "B" unit or units, is to be moved by hostlers in yards or around enginehouses, locomotive must be operated from lead "A" unit according to direction in which movement is to be made.

Position of Brakemen on Trains

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

Closing Doors on Freight Cars

900 (R). Referring to Operating Rule 900:

Conductors will be held responsible for knowing that doors on cars in their train are properly closed. When necessary to close doors found open, hasps and locking mechanisms must be operated to keep secured. When doors of cars in train, or on cars to be picked up, cannot be closed by trainmen the car must be considered as bad order and car set out. Wire report of such occurrence must be made to superintendent, chief dispatcher and car foreman.

Smoke Deflectors

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.

Engine Supplies

920 (S). On portions of the division where there is no joint operation of trains with another company, red light in cab of engine will not be required.

Movements Around Fueling Tracks, Etc.

920 (U). Before moving an engine and during movement of an engine in the vicinity of fueling and servicing tracks, engineers and hostlers must sound whistle to warn men working about such tracks.

Continued on opposite side.

Fireman Handling Locomotive

923 (R). Referring to Operating Rule 923: Engineers must not permit any unauthorized person to handle the locomotive. The fireman, when competent, may handle the locomotive when in road freight and yard service under the supervision of the engineer, the engineer being responsible. The fireman must not be permitted to handle the locomotive when in road passenger service, except in emergency.

Leaving Locomotives Unattended

923 (S). Locomotive must not be left without a man in charge, except at designated places and under authorized conditions. Locomotives must not be left standing so they will block or foul adjacent tracks.

When locomotive coupled to cars is left unattended, hand brakes must be set on not less than ten cars, or on all cars in case locomotive is coupled to only ten cars or less.

Engineer must see that air compressors are running, throttle closed, latched and safety pin inserted, cylinder cocks opened, independent or straight air brakes applied in full application position and brake cylinder pressure noted before leaving locomotive. Driver and tender brake cut-out cocks must be cut in, reverse lever latched in center position when on level track, and when on a grade, the reverse lever must be placed in the corner position in ascending grade direction.

When a Diesel-electric locomotive is left unattended, reverse handle must be placed in neutral position and handle removed, independent brake set in full application position, field generator switch pulled and hand brake set on each unit.

923 (T). Where engine crews with 800, 3800 and 3900 class locomotives eat at intermediate stations, one member of crew must stay with engine at all times.

Oil-Burning Engines

923 (U). Adequate spot fire to provide near maximum steam pressure must be maintained on oil-burning engines when not working steam to avoid fire box leakage.

Use of Blow-off Cocks and Sludge Removers

925 (R). Except where blow-down boxes are provided, engineers must not use sludge removers when engines are standing.

Sludge removers must not be used while:

Moving through stations or terminals when adjacent to buildings or switches;
Passing block signals, CTC instrument houses or relay boxes;
Passing coal chutes;
Passing through truss or girder bridges;
Passing through, or immediately adjacent to tunnels.

When required by roundhouse employe, engineer will open sludge remover at terminal only enough and only a sufficient length of time to permit taking water sample.

Blow-off cocks must not be used:

At stations or terminals when adjacent to buildings or switches;
Near cars on adjacent tracks;
Near block signals, CTC instrument houses or relay boxes;
At coal chutes or water columns;
On truss or girder bridges;
On curves or near highways;
Passing through, or immediately adjacent to tunnels.

Fireman must not open left blow-off cock unless so instructed by engineer.

Diesel Motors Cut Out

928 (R). When Diesel units are operating with less than full complement of motors or when it is necessary to cut out one or more of the motors at any time enroute, train dispatcher must be notified immediately.

Speedometers

928 (S). On locomotive equipped with speedometer, engineer must verify accuracy of speedometer not less than twice during each trip, by using watch to make time check between mile posts.

First check will be made at first opportunity after departure from point where engineer takes charge of locomotive. Care should be exercised to make check while speed is constant between mile posts, and, when possible, speed should be 30 MPH or over.

When check indicates speedometer is not registering correctly, wire report must be made to train dispatcher promptly as possible, giving miles per hour that speedometer is slow or fast.

Inspecting Locomotives

928 (T). When standing at inspection points, and when stopped in yards and at points between terminals where time will permit, Engineers must get on ground and inspect both sides of their locomotive. This applies to both passenger and freight trains, and to any type of locomotive.

Duties of Employes on Diesel Locomotives

932 (R). On Diesel-electric locomotives in road service, not more than five men may ride in control cab.

The following instructions will govern firemen and head brakemen in performing their duties on Diesel-electric locomotives in road service, and will supersede and cancel all previous instructions, either written or oral, not consistent therewith.

Firemen will patrol engine rooms and make inspection of engine, temperatures, steam heat facilities and other parts, and give such attention as may be required. Any unusual condition or irregularity detected must be reported to engineer, and fireman will be governed by engineer's instructions.

On multiple-unit Diesel-electric locomotives on high-speed, streamlined, or main line through passenger trains, a fireman shall be in control cab at all times when the train is in motion.

This applies to the following trains:

Nos.	Between
11- 12	Huntington and Portland;
17- 18	Huntington and Portland;
19- 20	Spokane and Portland;
105-106	Huntington and Portland;
457-458	Portland and Seattle.

This rule shall be strictly observed and firemen who violate it shall be subject to discipline.

When a fireman is required by this rule to remain in control cab at all times while train is in motion, his patrol of engine rooms will be made at initial stations and at other stops when time will permit. At points where firemen change, incoming fireman will assist outgoing fireman in making patrol.

On other trains, fireman will patrol engine rooms at initial stations and at other stops. When time between stops is 30 minutes or more, and at such other times as may be directed by engineer, fireman will patrol engine rooms while train is in motion.

On freight trains, head brakeman must ride in control cab except while performing duties requiring him to be elsewhere, as specifically provided by rules. When necessary to ride elsewhere in freight locomotive, he will immediately return to control cab on signal from engineer. When fireman is patrolling engine rooms while train is in motion, head brakeman must remain in control cab during fireman's absence and must observe signals and other conditions prescribed by Operating Rule 854.

When necessary for trainmen to ride in cab of trailing unit, they must not occupy engineer's seat and must not tamper with or manipulate any of the switches or valves nor place feet on dashboard or windshield.

Unauthorized persons, including deadhead trainmen and enginemen must not occupy cab of trailing unit of Diesel-electric locomotive on any train.

800 Class Locomotives

933 (R). 800 class locomotives must not be worked with less than 33% cut-off to avoid hot main pins.

Track Restrictions

934 (R). Engines heavier than indicated below must not go on the tracks named.

(Exception: Tracks which may be used by 0-6-0 and heavier engines may be used by Diesel switch engines.)

Location	Track	Heaviest Engine Permitted
Huntington	Stock tracks	2-10-2.
Lime	River hole track	Light MacArthur.
	High line	Heavy MacArthur.

Continued on page 17.

934 (R). Continued.

Location	Track	Heaviest Engine Permitted
Baker	Sand spur	Light Consolidation.
	Davis Lumber Co. spur	Consolidation.
	Texaco Oil spur	Heavy MacArthur.
	W. H. Ellis spur	Heavy MacArthur.
	Baker Grocery spur	Heavy MacArthur.
La Grando	Mt. Emily Lumber Co. two mill spurs	Heavy MacArthur.
	Wye track, except in emergency when movement must be very slow over east leg of wye account curvature	Heavy MacArthur.
	400 feet of west end of engine track 3	Heavy MacArthur.
	Freight house track	Heavy MacArthur.
Hilgard	Between tail of wye switch and Mt. Emily interchange track	Heavy MacArthur.
	Mt. Emily yard tracks, beyond a point 500 feet inside entering yard switch	None permitted.
Meacham	Casey Mill spur beyond Mt. Emily switch	Light Consolidation.
	Log loading track beyond Casey Mill spur switch	2-10-2.
Thorn Hollow	Warehouse track	Heavy MacArthur.
Joseph Branch①	All tracks	Consolidation, except 6018 and 6080.
Pilot Rock Branch	All tracks	Consolidation, except 6018 and 6080.
Pendleton	Bluett spur	Consolidation.
	Collins spur	Consolidation.
	All yard tracks except 1, 2, 4 and 6, house track and short coach track	Consolidation.
	Richfield Oil spur	Consolidation.
	Walters Mill spur	Heavy MacArthur.
	Three tracks on Collins Mill spur	Heavy MacArthur.
	Standard Oil spur	Heavy MacArthur.
	House track	Heavy MacArthur.
	Harris Pine Mills	Heavy MacArthur.
	Team track	Heavy MacArthur.
	All hole tracks to point 100 feet east of clearance points	Heavy MacArthur.
	Wye track	Mallet, except 2-10-2 type not permitted.
Echo	Mill track west of pavement	7000 class except 5400 class may use all except west 200 ft.
Hermiston	Shell Oil spur	2-10-2 and 800 class must not use.
Umatilla	Jones-Scott spur	Heavy MacArthur.
	Sand and gravel spur	Heavy MacArthur.
Arlington	Standard Oil spur	7000 class.
Dillon	Spur track	Consolidation.
Tho Dalles	Port Dock tracks	Consolidation.
	Track 19	7000 class.
	Old roundhouse spur	7000 class.
	Roundhouse track leading to Stall 1	Heavy MacArthur.
	Libby-McNeill Dryfresh tracks	Heavy MacArthur.
Bridal Veil	Track scales	None permitted.

Continued on opposite side.

934 (R). Continued.

Location	Track	Heaviest Engine Permitted
Clarnie to East Portland	All spur tracks	Heavy MacArthur.
Graham	Pool & McGonigle cast track	0-6-0.
Near M.P. 4	Wet Wash Laundry Co. spur	0-6-0.
Bruun	Doernbecher Mfg. Co. middle spur, rear end	0-6-0.
East Portland②	North leg of wye tracks	Consolidation.
	Curve on back track	Consolidation.
	Lead to S.E. Second Avenue	Consolidation.
	Globe Mill tracks	Consolidation.
Albina	Albina Engine & Machine Works spur	0-6-0.
	Coach tracks 5 and 6, west turnouts	Consolidation.
	Store lead	Consolidation.
	Old rip track 2 east of track crossing	Consolidation.
	Old rip tracks 3, 4, 5, 6, 7 and 8	Consolidation.
	North River Avenue track	Consolidation.
	Luckenbach dock tracks	Consolidation.
	Quaker Oats spurs 1, 2 and 3 and Jocko	Consolidation.
	Gravel dock tracks	Consolidation.
	All tracks except main leads and main yard tracks and engine-house leads	Heavy MacArthur.
	Track 6 leading to enginehouse track	Heavy MacArthur.
	Pole track	2-10-2.
St. Johns	All sidings and spurs	0-6-0.
Terminal No. 4	All tracks	0-6-0
Swan Island	Industrial tracks	Diesel-oloctric yard engines only.
Kenton	Armour spur	0-6-0.
	Beall Pipe & Tank tracks	0-6-0.
	All spurs	Consolidation.
	West ond of team track	Consolidation.
North Portland	All yurd tracks and spurs	Consolidation.
Tacoma	All tracks west from main line past gas plant toward Carstens Packing Plant and Glacier Dock	7000 class, except 7800 class must not use.
	Scale track	3900, 7000 and 7800 class must not use.
Argo	South end of No. 1 pocket track	Consolidation.
	Coach yard tracks	Consolidation.
	Rip tracks	Consolidation.
	101 track	Consolidation.

①Heavy Pacific type engines must not be turned on wyo at Wallowa and must not go beyond platform on Bowman Hicks spur, and must move very carefully on lime kiln track at Enterprise.

②At East Portland, 7000 class without Alco lateral device on No. 1 and No. 3 drivers must not use north leg of wye tracks,

3800 and 3900 class engines must not use eastward track over Willamette River Bridge, nor track 3, Union Station, Portland, and when used on passenger trains which operate through Albina, must use track nearest river between East Portland and Harding Street.

MacArthur type engines, with or without cars, except Engines 2166 to 2171, inclusive, and Engines 2528 and 2529, must not make movements between East Portland and Block Signal 1.1, Kenton Line over track nearest river.

2-10-2 and 800 class engines must not use wye track at East Portland and two parallel tracks between East Portland and Block Signal 1.1, Kenton Line

Continued on page 18.

934 (R). Continued.

Location	Track	Heaviest Engine Permitted
Wallula	N. P. 1, 2, 3	7000 class.
	O. W. 1, 2, 3	7000 class.
	N. P. main beyond O. W. 1 east switch	7000 class.
	West switch north siding	7000 class.
Attalia	Hole track	7000 class.
Hooper Jct.	West leg of wye	7000 class.
East Spokane	Lead to Lehigh Cement Co. and Clack Oil Co.	Consolidation.
	Industry track	0-6-0.
Spokane	Spokane Flour Mill trestle	Consolidation.
	Centennial Mill scale	Consolidation.
	Olson's log rollway	None permitted.
Heppner Branch	All tracks outside Hoppner Jct. yard limits	Consolidation, except 6018 and 6080.
Condon Branch	All tracks	Consolidation, except 6018 and 6080.
Grass Valley Branch	All tracks	Consolidation, except 6018 and 6080.
Grays Harbor Branch	All tracks	Heavy MacArthur.
Cosmopolis	Wye tracks	Consolidation.
	Bay City mill track	Consolidation.
	South Aberdeen Belt Line	Consolidation.
Tono Branch	All tracks	Heavy MacArthur.
Tono	Middle cross-over to scale track	Consolidation.
Olympia Branch	All tracks	Consolidation, except engines 6018 and 6080.
Olympia	Industry tracks	Consolidation.
	Dock tracks	Consolidation.
	Wye track	Consolidation.
	East Olympia	Heavy MacArthur.
Yakima Branch⑧	M.P. 56 to Yakima	Consolidation.
	Attalia to M.P. 56	Heavy MacArthur.
Pendleton Branch	All tracks	Heavy MacArthur.
Walla Walla	Switch back curve leading to Libby, McNeill & Libby plant	0-6-0
	Rose Street cross-over	0-6-0.
	Gardeners' Assn. track	0-6-0
	Eureka Mill track	0-6-0.
	Pacific Fruit spur	0-6-0.
	Cannery spur	0-6-0
	Garden City Mill spur	0-6-0.
	Dixie-Dudley track	Pacific.
	Switches at east end of tracks 2 and 3	Consolidation.
	Old N. P. transfer	Consolidation
	All industry tracks	Consolidation.
	West leg of wye	Consolidation, except MacArthur type may head around from passenger depot.

⑧At Yakima, east of Cherry Street, when switching between Walnut and Cherry Streets, engine will hold onto sufficient cars to make it unnecessary to put engines through lead tracks connecting with Seattle main.

Continued on opposite side.

934 (R). Continued.

Location	Track	Heaviest engine permitted
Milton	Mill track	Consolidation.
	Utah Cannery track	Consolidation.
	East end of Valley Food track	Consolidation.
Dayton Brauch	All tracks	Consolidation, except 6018 and 6080.
Wallula Branch	All tracks	Heavy MacArthur.
Pomeroy Branch	All tracks	Consolidation, except engines 6080 and 6018.
Connell Branch	La Crosso to Hooper Jct.	Heavy MacArthur.
	Hooper Jct. to Connell	Consolidation, except 6018 and 6080.
Tucannon Branch	All tracks	Heavy MacArthur.
Pleasant Valley Branch	All tracks	Heavy MacArthur.
Tekoa-Ayer Branch	All tracks	Heavy MacArthur.
Tekoa	East switch of elevator track	Pacific.
Riparia	Spur track 1	Pacific.
Moscow Branch	All tracks	Consolidation.
Spokane-Tekoa Branch	Spokane to Manito	3500 class.
	Manito to Tekoa	Heavy MacArthur.
Wallace Branch	Tekoa to Wallace	Heavy MacArthur
	Wallace to Burke	Consolidation.
Kellogg	Sierra Nevada spur	Consolidation.
Wallace	Standard Oil track	Consolidation, except 2100 class may use.
	Coeur d'Alene Hardware track	Consolidation.
Bradley	Empire State and Sweenoy Mill scale tracks beyond 350 feet from switches connecting with Sierra Nevada spur	Must not be used by engines or cars.
Gem	Highline coal trestle and ore bins.	None permitted.

934 (S). Steam derrick 03041 can be used only on main line and the following branch lines:

Joseph Branch
Umatilla Branch

934 (T). On branch lines north of Hinkle and Pendleton the maximum weight of cars that may be handled between stations is 200,000 pounds except that between Spokane and Manito on Spokane-Tekoa Branch there is no limit.

Exception: Pile driver 0321 weighing 222,200 pounds, may be handled on all branch lines except between Hooper Jct. and Connell on Connell Branch.

When handling pile driver 0321, or a car weighing 200,000 pounds gross over Bridge 17.23 at Riparia, there must be at least four cars between such car or pile driver and engine or between pile driver and any car weighing more than 160,000 pounds gross.

When handling derrick 0310 there must be at least five cars between derrick and locomotive, or between derrick and any car weighing more than 240,000 pounds gross.

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Air Brake Rules

1006 (R). Engines in freight or mixed train service will carry 90 pounds brake pipe pressure on the First and Second Subdivisions, Sierra Nevada Spur, between Wallace and Burke and on descending grades between Crest and Colfax, Alto and Bolles, Barrett and Weston, Lovell and Chatcolet, Relief and Starbuck, and on Grass Valley and Condon branches and in mixed train service on Bend Branch.

1030 (R). Where Sperry rail-detector car is working when temperature is below freezing, trains, engines and track cars must be operated at a safe speed, using sand where necessary to overcome slippery condition caused by use of calcium chloride solution by rail car.

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:

Encina	—westward and eastward;
Telocaset	—westward and eastward;
Kamela	—westward and eastward;
Fourth Subdivision	—westward trains at M.P. 6 east of Graham;
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;

1035 (R). Continued.

Bend Branch	—westward trains at M.P. 100;
Spokane-Tekoa Branch	—eastward trains at Darknell and Freeman;
Tekoa-Ayer Branch	—westward trains at Jerita;
	—eastward trains at Crest;
Pendleton Branch	—eastward trains at Weston;
	—westward trains at Alto;
Wallace Branch	—eastward and westward trains at Watt;
	—eastward trains at Burke.

1035 (S). At Spokane Union Station, passenger trains will make running air test only after leaving the elevated structure.

1040 (R). Before descending grade Jerita to Hay, Mica to Chester and Watt to Lovell, after stop has been made, brakes must be fully applied and before proceeding it must be known that brake pipe pressure is restored as indicated by caboose gauge, and that rear brakes are released. In the absence of caboose gauge, application and release test of brake on rear car must be made as prescribed in Air Brake Rule 1040.

1041 (R). Brake pipe test as prescribed in Air Brake Rule 1041 must 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.

Brake pipe test, as prescribed in Air Brake Rule 1041, must be made on all freight trains before descending grade Weston to Barrett, Relief to Starbuck, Alto to Menoken, Crest to Colfax, Watt to Chatcolet, Burke to Wallace, Sierra Nevada Branch end of track to Bradley, Encina, eastward and westward, Telocaset, eastward and westward, Kamela, eastward and westward.

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

Condon Branch, all trains, M.P. 35 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.

Continued on opposite side.

1042 (R). Continued.

On freight trains descending grades Mica to Chester and Darknell to Rockford and on freight and mixed trains Jerita to Hay, Alto to Menoken, Turner to Dayton, trains averaging not to exceed fifty gross tons per car, may be handled without the use of retaining valves. On trains averaging to exceed fifty gross tons per car, one-half of all retaining valves must be used. Retaining valves must be used consecutively from head end of train.

On all trains Crest to Colfax, Relief to Starbuck, Weston to Barrett, Burke to Wallace and Sierra Nevada Branch end of track to Bradley, all retaining valves must be used.

Freight trains descending grades between Watt and Lovell and between Watt and Chatcolet, if engineer finds it difficult to control train or to recharge train, he will request train crew to turn up sufficient retaining valves to insure safe control of train, stopping train if necessary.

On freight trains, trainmen must patrol top of train where 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.

1042 (T). On the following branches, gross weight of train, exclusive of engine and tender, must not exceed an average of sixty-five tons per effective brake:

Tekoa-Ayer Branch —between Crest and Colfax;
Pendleton Branch —between Weston and Barrett;
Tucannon Branch —between Relief and Starbuck.

1042 (U). Retaining valves must be used on trains handled with steam locomotives or Diesel-electric locomotives with dynamic brake not in operation when descending grades as follows:

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

Freight trains descending grades between Encina and Durkee 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 control 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 air compressor, one-half of all retaining valves must be used.

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

Between Duncan and Gibbon, when in judgment of engineer train is hard to control, retaining valves will be used on request of engineer and train will stop at Gibbon to turn down retaining valves.

When retaining valves are used, freight and mixed trains will use five minutes moving first mile after turning up retaining valves, four minutes moving second mile and three minutes moving each mile thereafter, except where slower speed is otherwise prescribed.

1042 (V). The following will govern use of retaining valves on freight trains when handled on descending grades by Diesel-electric locomotives with dynamic brake in operation:

(a) Westward between Kamela and Huron and eastward between Kamela and Hilgard:

2 Unit Locomotive	3 Unit Locomotive	4 Unit Locomotive
1375 tons or less: None.	2063 tons or less: None.	2750 tons or less: None.
Over 1375 tons: One retaining valve must be used for each 55 tons in excess of 1375 tons, but not less than 15 retaining valves must be used.	Over 2063 tons: One retaining valve must be used for each 55 tons in excess of 2063 tons, but not less than 15 retaining valves must be used.	Over 2750 tons: One retaining valve must be used for each 55 tons in excess of 2750 tons, but not less than 15 retaining valves must be used.

Continued on page 20.

1042 (V). Continued.

(b) Eastward between Encina and Oxman:

2 Unit Locomotive	3 Unit Locomotive	4 Unit Locomotive
2000 tons or less: None. Over 2000 tons and not exceeding 2250 tons averaging not to exceed 60 tons per operative brake: None. Over 2000 tons and not exceeding 2250 tons averaging more than 60 tons per operative brake, also over 2250 tons: One retaining valve must be used for each 60 tons in excess of 2000 or 2250 tons as the case may be, but not less than 15 retaining valves must be used.	3000 tons or less: None. Over 3000 tons and not exceeding 3375 tons averaging not to exceed 60 tons per operative brake: None. Over 3000 tons and not exceeding 3375 tons averaging more than 60 tons per operative brake, also over 3375 tons: One retaining valve must be used for each 60 tons in excess of 3000 or 3375 tons as the case may be, but not less than 15 retaining valves must be used.	4000 tons or less: None. Over 4000 tons and not exceeding 4500 tons averaging not to exceed 60 tons per operative brake: None. Over 4000 tons and not exceeding 4500 tons averaging more than 60 tons per operative brake, also over 4500 tons: One retaining valve must be used for each 60 tons in excess of 4000 or 4500 tons as the case may be, but not less than 15 retaining valves must be used.

(c) Westward between Telocaset and Union Junction:

2 Unit Locomotive	3 Unit Locomotive	4 Unit Locomotive
3000 tons or less: None. Over 3000 tons: One retaining valve must be used for each 60 tons in excess of 3000 tons, but not less than 15 retaining valves must be used.	4500 tons or less: None. Over 4500 tons: One retaining valve must be used for each 60 tons in excess of 4500 tons, but not less than 15 retaining valves must be used.	6000 tons or less: None. Over 6000 tons: One retaining valve must be used for each 60 tons in excess of 6000 tons, but not less than 15 retaining valves must be used.

(d) If due to any condition engineer or conductor considers a particular train cannot be safely handled beyond Huron or Oxman as prescribed in Paragraphs (a) and (b) of this rule without use of

Continued on opposite side.

Medicine Hat 11.30A
lethbridge 3.30A
Calgary 11.15P
lethbridge 3.15A
lethbridge 3.50A
Mc head 4.35A
Mc head 4.35A
Crows Nest 6.35A
Crows Nest 5.45A 3.45P
Elko

1042 (V). Continued.

retaining valves, trains must be stopped and remain standing ten minutes at Huron or Oxman to cool wheels and inspect train.

(e) During dynamic brake operation firemen must make frequent inspections to determine if dynamic brake is properly operating on each power unit and report results of each inspection to the engineer.

(f) If dynamic brake is inoperative on any power unit of locomotive, dynamic brake must not be used and retaining valves must be used as prescribed by Special Instruction 1042 (U).

(g) When use of retaining valves is required, these valves must be used consecutively from head end of train.

(h) Additional retaining valves must be used in accordance with provisions of Air Brake Rule 1042 (B) when in the judgment of the engineer or conductor use thereof is necessary.

(i) When retaining valves are in use, speed of 20 MPH must not be exceeded.

(j) Trainmen must patrol tops of trains when retaining valves are in use.

(k) Conductor must advise engineer number of cars, total tonnage, average tons per operative brake, and location of loads and empties in train.

1046 (R). Freight trains handled with steam locomotives or Diesel-electric locomotives with dynamic brake not in operation must stop and remain standing ten minutes to allow wheels to cool and inspect train at the following points when retaining valves are required to be used beyond these points:

Oxman —Eastward;
M.P. 279 —Eastward;
Meacham—Westward;
Huron —Westward.

When eastward freight trains stop at Motanic and remain standing ten minutes stop need not be made at M.P. 279 to cool wheels and inspect train.

1046 (R). Eastward freight and mixed trains must stop at Blue Mountain and remain standing ten minutes to allow wheels to cool and inspect train.

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

Cranbrook 8.45A
Cranbrook 8.55A
Yahk 9.55A
Yahk 10.05A
Kingsgate 10.20A
Eastport 10.35A
Bonners Ferry 11.25a
Sandpoint 12.20a
Athol 1.06x
Spokane 2.15P

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	FIRST AND SECOND SUBDIVISIONS															
		Huntington to Durkee	Durkee to Encina	Encina to North Powder	North Powder to Tolocaset	Tolocaset to La Grande	La Grande to Hilgard	Hilgard to Kamela	Kamela to Hinkle	Hinkle to Duncan	Duncan to Kamela	Kamela to La Grande	La Grande to Union Jct.	Union Jct. to Tolocaset	Tolocaset to Baker	Baker to Encina	Encina to Huntington
C 57 $\frac{22}{30}$ 190	730 to 768	1265	575	3000	1470	2510	1265	575	3500	1250	605	3000	3000	890	1970	890	3000
MacA 57 $\frac{23\frac{3}{4}}{30}$ 210	1900 to 1949 2000 to 2034 2100 to 2165	1725	700	3500	1725	3500	1725	700	4000	1510	700	4000	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	1825	725	4000	1600	725	4000	3500	1100	3300	1100	6000
P 77 $\frac{25}{28}$ 167	2860 to 2899 3218 to 3225	1190	525	3000	1190	2700	1190	525	3250	1150	525	2700	2700	760	2200	760	3000
$\frac{25}{28}$ 178	3226 to 3227																
P 77 $\frac{22}{28}$ 149	3201 to 3217	960	440	2250	960	2700	960	440	2700	800	420	2700	2700	640	2400	640	2700
MS 59 $\frac{23\text{-}23}{30}$ 472	3500 to 3564 3705	3000	1470	8000	3200	8000	3000	1470	8000	3200	1470	8000	8000	2200	4630	2200	8000
MS 69 $\frac{22\text{-}22}{32}$ 400	3800 to 3839																
$\frac{21\text{-}21}{32}$ 406	3930 to 3998																
TTT 63 $\frac{29\frac{1}{2}}{30}$ 292	5315 to 5318 5400 to 5414	2350	1045	6000	2350	6000	2350	1045	5000	2350	1045	6000	6000	1485	3215	1485	6000
MT73 $\frac{29}{28}$ 230	7000 to 7039 7850 to 7869	1700	700	3500	1700	3500	1725	700	4000	1600	700	4000	3500	1000	2900	1000	6000

TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS														
EMD	1400 Series	1500	1	1190	560	3000	1190	2500	1190	560	3000	1190	610	3000	3000	820	3000	820	3000
EMD	1500 Series	1500	1	1610	750	3500	1610	3500	1610	750	4000	1610	840	4000	3500	1120	4000	1120	6000
EMD	900	1500	1	840	410	2250	840	2700	840	410	2700	600	410	2700	2700	640	2000	640	2700
EMD	1000-1095	YdSw 1000	1	1100	560	3000	1250	3000	1100	560	3000	1100	560	3000	3000	890	2250	890	3000
ALCO	1100-1153	1500	1	1610	675	3500	1600	3560	1600	675	3500	1600	675	3500	3500	1050	3500	1050	3500
Baldwin	1200-1210	1500	1	1610	675	3500	1600	3500	1600	675	3500	1600	675	3500	3500	1050	3500	1050	3500
FM	1300-1304	YdSw 1000	1	1100	560	3000	1100	3000	1100	560	3000	1100	560	3000	3000	890	3000	890	3000
EMD	1800-1824	YdSw 1200	1	1300	590	3250	1300	3250	1300	590	3250	1300	590	3250	3250	960	3250	960	3250
ALCO	1180-1195	RdSw 1500	1	1610	675	3500	1600	3560	1600	675	3500	1600	675	3500	3500	1050	3500	1050	3500
Baldwin	1250	RdSw 1500	1	1610	675	3500	1600	3500	1600	675	3500	1600	675	3500	3500	1050	3500	1050	3500

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10-2
MT	Mountain

EXAMPLE: Consolidation locomotive 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

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	THIRD SUBDIVISION					FOURTH SUBDIVISION						CONDON BRANCH								
		The Dalles to Seufert	Seufert to Messner	Messner to Hinkle	Hinkle to Munley	Munley to The Dalles	The Dalles to Dodson	Dodson to Albina via Kenton	Albina to Hood River via Kenton	Hood River to The Dalles	Troutdale to Portland via Graham	Portland to Troutdale via Graham	Arlington to Rock Creek	Rock Creek to Barnett	Barnett to Mikkalo	Mikkalo to Gwendolen	Gwendolen to Condon	Condon to Clem	Clem to Mikkalo	Mikkalo to Shutler	Shutler to Arlington
C 57 $\frac{22}{30}$ 190	730 to 768	2650	2900	2000	3500	4000	2895	4500	2895	4250	2510	1250	560	400	560	2250	560	2550	560	1550	3000
MacA 57 $\frac{23¾}{30}$ 210	1900 to 1949 2000 to 2034 2100 to 2165	3050	3850	2750	4000	4500	3380	5000	3400	4550	2930	1455									
MacA 63 $\frac{26}{28}$ 214 211	2166 to 2171 2203 to 2294 2504 to 2564 2700 to 2735	3155	4250	2850	4000	4500	3500	5500	3500	4750	3155	1560									
P 77 $\frac{25}{28}$ 167	2860 to 2899 3218 to 3225	2385	2900	2000	3250	3500	2830	4500	2820	3800	2385	1145									
P 77 $\frac{25}{28}$ 178	3226 to 3227																				
P 77 $\frac{22}{28}$ 149	3201 to 3217	1875	2200	1600	2700	3000	2175	3185	2175	3450	1875	900									
MS 59 $\frac{23-23}{30}$ 472	3500 to 3564 3705	6000	8000	6000	8000	8000	7000	8000	7000	8000	5875	3000									
MS 69 $\frac{22-22}{32}$ 400	3800 to 3839																				
MS 69 $\frac{21-21}{32}$ 406	3930 to 3999																				
TTT 63 $\frac{29½}{30}$ 292	5315 to 5318 5400 to 5414	4000	6000	4000	5000	6000	5190	7000	5190	6000	4100	2040									
MT 73 $\frac{29}{28}$ 230	7000 to 7039 7850 to 7869	3155	4250	2850	4000	4500	3500	5500	3500	4750	3155	1560									

TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS																		
EMD	900-983	Psgr 1500	1	1450	1875	1175	1375	1875	1875	3000	2000	1875	1750	875	400	325	400	325	750	1500	438	1175	1500
EMD	926-927B	Psgr 2250	1	2175	2813	1763	2063	2813	2813	4500	3000	2813	2625	1313	600	488	600	488	1125	2250	656	1763	2250
EMD	1000-1095	YdSw 1000	1	2200	3300	1900	2000	3000	3000	4000	3000	3000	3000	1250	600	450	600	450	1100	3000	600	1500	3000
EMD	1800-1824	YdSw 1200	1	2400	3500	2100	2200	3200	3200	4300	3200	3200	3200	1350	650	500	650	500	1200	3200	700	1700	3200
ALCO	1180-1195	RdSw 1500	1	2900	3750	2350	2750	3750	3750	6000	4000	3750	3500	1750	800	650	800	650	1500	3000	875	2350	3000
Baldwin	1250	RdSw 1500	1	2900	3750	2350	2750	3750	3750	6000	4000	3750	3500	1750	800	650	800	650	1500	3000	875	2350	3000
EMD	1400 Series	Frt 1500	1	2750	3500	2250	2500	3500	3500	5000	3750	3500	3200	1600	750	565	650	575	1400	3000	700	2250	3000
EMD	1500 Series	Frt 1500	1	2900	3750	2350	2750	3750	3750	7000	4000	3750	3500	1750	800	650	800	650	1500	3000	875	2350	3000

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10-2
MT	Mountain

EXAMPLE: Consolidation locomotive 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

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	JOSEPH BRANCH						PILOT ROCK BRANCH		UMATILLA BRANCH		HEPPNER BRANCH		
		La Grande to Lostine	Lostine to Enterprise	Enterprise to Joseph	Joseph to Readiown	Readiown to Elgin	Elgin to La Grande	Rieth to Pilot Rock	Pilot Rock to Rieth	Irrigon to Hinkle	Hinkle to Irrigon	Heppner Jct. to Ione	Ione to Heppner	Heppner to Heppner Jct.
C 57 — 22/30 — 190	730 to 768	1925	1500	1015	2515	1925	2515	1150	1150	1295	3800	1500	1150	3000
MacA 57 — 23½/30 — 210	1900 to 1949 2000 to 2034 2100 to 2165									1700	4000			
MacA 63 — 26/28 — 214/211	2166 to 2171 2203 to 2294 2504 to 2564 2700 to 2735									1825	4000			
P 77 — 22/28 — 149	3201 to 3217	1020	800	555	1740	875	1740	800	800					
P 77 — 25/28 — 167	3218 to 3225	1350	1100	700	1840	1000	1840	800	800					
TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS											
EMD	900-983	Psgr 1500	1	1500	1200	850	3500	1500	2200	805	1750	1100	1875	1175	805	1500
EMD	926-927B	Psgr 2250	1	1750	1400	1000	3500	1750	2550	1208	2625	1650	2813	1763	1208	2250
EMD	1000-1095	YdSw 1000	1	2300	1750	1300	3500	2300	3500	1015	3500	1800	3000	1550	1015	3000
ALCO	1100-1153	YdSw1000	1	2500	1800	1550	3700	2500	3750	1015	3500	1800	3000	1550	1015	3000
Baldwin	1200-1210	YdSw 1000	1	2500	1800	1550	3500	2500	3750	1200	3700	1800	3000	1015	1015	3000
FM	1300-1304	YdSw 1000	1	2500	1850	1550	3500	1850	4000	1610	3500	1800	3000	1600	1100	3000
EMD	1800-1824	YdSw 1200	1	2500	1950	1500	3500	2500	3700	1610	3500	2000	3200	1750	1015	3200
ALCO	1180-1195	RdSw 1500	1									2200	3750	2350	1610	3000
Baldwin	1250	RdSw 1500	1									2200	3750	2350	1610	3000
EMD	1400 Series	Frt 1500	1									1700	3500	2250	1250	3000
EMD	1500 Series	Frt 1500	1	2650	2200	1650	4000	2650	4000	1610	3500	1900	3750	2350	1610	3000

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10-2
MT	Mountain

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

C 57 — 22/30 — 179

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	GRASS VALLEY BRANCH										BEND BRANCH				
		Biggs to Thornbery	Thornbery to Klondike	Klondike to Hay Canyon	Hay Canyon to Moro	Moro to Grass Valley	Grass Valley to Kent	Kent to Erekino	Erekino to Hay Canyon	Hay Canyon to Sandon	Sandon to Biggs	O. T. Jct. to North Jct.	North Jct. to South Jct.	South Jct. to Madras	Madras to Bend	Bend to O. T. Jct.
C 57 $\frac{22}{30}$ 190	730 to 768	345	550	1100	720	650	870	850	2000	700	2000	1500	1730	1000	1500	3000
MacA 57 $\frac{23¾}{30}$ 207	1900 to 1949 2000 to 2034 2100 to 2165											1815	2060	1165	1815	3425
MacA 63 $\frac{26}{28}$ 214 211	2166 to 2171 2203 to 2294 2504 to 2564 2700 to 2735											1850	2100	1190	1830	4000

TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS													
EMD	900-983	Psgr 1500	1	263	438	700	425	450	700	600	1500	500	1500	1000	1175	600	1000	1175
EMD	926-927B	Psgr 2250	1	394	656	1050	638	675	1050	900	2250	750	2250	1500	1763	900	1500	1763
EMD	1000-1095	YdSw 1000	1	325	450	1100	425	650	800	850	3000	650	3000	1500	1700	950	1400	1700
ALCO	1100-1153	RdSw 1500	1	325	450	1100	425	650	800	850	3000	650	3000	1500	1700	950	1400	1700
Baldwin	1200-1210	RdSw 1500	1	325	450	1100	425	650	800	850	3000	650	3000	1500	1700	950	1400	1700
FM	1300-1304	Frt 1500	1	325	450	1100	425	650	800	850	3000	650	3000	1500	1700	950	1400	1700
EMD	1800-1824	YdSw 1200	1	375	500	1200	500	700	1000	1050	3200	750	3200	1650	1850	1050	1550	1850
ALCO	1180-1195	RdSw 1500	1	525	875	1400	850	900	1400	1200	3000	1000	3000	2000	2350	1200	2000	2350
Baldwin	1250	RdSw 1500	1	525	875	1400	850	900	1400	1200	3000	1000	3000	2000	2350	1200	2000	2350
EMD	1400 Series	Frt 1500	1	475	800	1000	750	775	1200	1100	3500	850	3000	1900	2100	1100	1900	2250
EMD	1500 Series	Frt 1500	1	525	875	1400	850	900	1400	1200	3000	1000	3000	2000	2350	1200	2000	2350

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10-2
MT	Mountain

EXAMPLE: Consolidation locomotive 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

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	FIFTH SUBDIVISION						GRAYS HARBOR BRANCH				TONO BRANCH		OLYMPIA BRANCH	
		Albina to Vader	Vader to Napavine	Napavine to Argo	Argo to Centralia	Centralia to Napavine	Napavine to Albina	Hoquiam to Cosmopolis	Cosmopolis to Centralia	Centralia to Cosmopolis	Cosmopolis to Hoquiam	Centralia to Tono	Tono to Centralia	Olympia to East Olympia	East Olympia to Olympia
C 57 — 22/30 — 190	730 to 768	3410	1770	4135	3135	1470	3500	1325	3880	4290	1700	2520	3515	1400	3500
MacA 57 — 23¾/50 — 210	1900 to 1949 2000 to 2034 2100 to 2165	4000	2000	4500	3655	1715	5500	1515	4490	4980	1960				
MacA 63 — 26/28 — 214, 211	2166 to 2171 2203 to 2294 2504 to 2564 2700 to 2735	4500	2200	5000	3950	1840	6000								
P 77 — 22/28 — 149	3201 to 3217	2570	1305	3100	2350	1070	3500	710	2505	2920	905	1720	1980	900	1750
P 77 — 25/28 — 167, 178	2860 to 2899 3218 to 3225 3226 to 3227	3500	1650	8700	3000	1365	4000								
MT 73 — 29/28 — 230	7000 to 7039 7850 to 7869	4500	2200	5000	3950	1840	6000								
MS 69 — 21-21/32 — 406	3930 to 3999	8000	4000	8000	7500	3750	8000								

TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS												
EMD	900-983	Psgr 1500	1	2200	1125	2200	2200	1075	2200	850	2250	2500	1075	1500	1750	900	1750
EMD	926-927B	Psgr 2250	1	3300	1688	3300	3300	1613	3300	1275	3375	3750	1613	2250	2625	1350	2625
EMD	1000-1095	YdSw 1000	1	3500	1800	8500	3500	1650	3500	1200	3200	3800	1500	2500	3500	1400	3500
EMD	1800-1824	YdSw 1200	1	3700	1900	3700	3700	1750	3700	1400	3400	4000	1700	2700	3700	1500	2700
ALCO	1100-1153	RdSw 1500	1	4400	2250	4400	4400	2150	4400	1700	4500	5000	2150	3000	3500	1800	3500
Baldwin	1200-1210	RdSw 1500	1	4400	2250	4400	4400	2150	4400	1700	4500	5000	2150	3000	3500	1800	3500
FM	1300-1304	Frt 1500	1	4200	2100	4250	4200	2000	4250	1425	4000	4400	1900	2750	3500	1650	3500
EMD	1500 Series	Frt 1500	1	4400	2250	4400	4400	2150	4400	1700	4500	5000	2150	3000	3500	1800	3500

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10-2
MT	Mountain

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

C 57 — 22/30 — 179

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotiveand tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	SIXTH SUBDIVISION											SPOKANE-TEKOA BRANCH					
		Spokane to Geib	Geib to Page	Page to Humorist	Humorist to Wallula	Wallula to Juniper	Juniper to Hinkle	Hinkle to Wallula	Wallula to Humorist	Humorist to Ayer	Ayer to Geib	Geib to Spokane	Spokane to Chester	Chester to Fairfield	Fairfield to Latah	Latah to Tekoa	Tekoa to Freeman	Freeman to Spokane
C 57 $\frac{22}{30}$ 190	730 to 768	2300	4000	3200	4000	2700	2000	4000	2700	3400	2300	4000	1305	825	1240	1800	1150	2500
MacA 57 $\frac{23¼}{30}$ 207	2100 to 2165	2500	5500	3700	5500	3000	2750	4500	3000	4500	2700	5500	1540	1000	1460	2120	1355	3500
MacA 63 $\frac{26}{28}$ 211 214	2166 to 2171 2500 to 2531	2550	5600	3750	5600	3030	2850	5000	3030	4600	2730	6000	1555	1010	1475	2140	1370	3500
P 77 $\frac{22}{28}$ 149	3200 to 3217	1380	1380	1970	1970	1520	2000	3500	1520	2075	1380	1380	900	550	855	1245	795	2000
P 77 $\frac{25}{28}$ 167 178	3218 to 3225 3226 to 3227	1785	1785	2545	2545	1960	1600	3000	1960	2675	1785	1785	1165	710	1005	1605	1025	2000
MS 59 $\frac{23\text{-}23}{30}$ 472	3500 to 3564 8705 3803 to 3805	5200	8000	7500	8000	6000	6000	8000	6000	6000	5200	8000						8000
TTT63 $\frac{29½}{30}$ 292	5400to 5414	3550	7500	5500	7500	4500	4000	6000	4500	7000	4000	7000	✓					7000
MT73 $\frac{29}{28}$ 230	7861 to 7869	2500	5500	3700	5500	3000	2850	4500	3000	4500	2700	5500	1540	1000	1460	2120	1355	4500

TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS															
EMD	900-983	Psgr 1500	1	1275	2800	1875	1800	1875	1175	1875	1515	2300	1365	3000	938	610	875	1175	783	2000
EMD	926-927B	Psgr 2250	1	1763	4200	2813	4200	2813	1763	2813	2273	3450	1763	4500	1406	915	1313	1763	1174	3000
EMD	1000-1095	YdSw 1000	1	1900	3500	3200	3500	3300	1900	3300	2200	3500	1900	3500	1175	750	1042	2000	964	3500
EMD	1800-1824	YdSw 1200	1	2150	3700	3400	3700	3500	2100	3500	2400	3700	2100	3700	1275	825	1140	2150	1050	3700
ALCO	1100-1195	RdSw 1500	1	2550	5600	3750	5600	3750	2350	3750	3030	4600	2730	6600	1875	1220	1750	2350	1565	4000
Baldwin	1200-1250	RdSw 1500	1	2550	5600	3750	5600	3750	2350	3750	3030	4600	2730	6000	1875	1220	1750	2350	1565	4000
EMD	1400 Series	Frt 1500	1	2300	4000	3200	4000	3500	2250	3500	2700	3400	2300	4000	1750	1130	1650	2200	1435	4000
EMD	1500 Series	Frt 1500	1	2550	5600	3750	5600	3750	2350	3750	3030	4600	2730	6000	1875	1220	1750	2350	1565	4000

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10 2
MT	Mountain

EXAMPLE: Consolidation locomotive 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

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	TEKOAAYER BRANCH														CONNELL BRANCH		
		Tekoa to Garfield	Garfield to Colfax	Colfax to Crest	Crest to Winona	Winona to Jerita	Jerita to Ayer	Ayer to Riparia	Riparia to Hay	Hay to Jerita	Jerita to Winona	Winona to Meekanonum	Meekanonum to Crest	Crest to Elberton	Elberton to Tekoa	La Crosse to Hooper Jct.	Hooper Jct. to Connell	Connell to La Crosse
C 57 $\frac{22}{30}$ 190	730 to 768	1200	3000	430	2750	1450	3500	2065	965	980	1350	1325	975	1500	1050	3500	1450	1000
MacA 57 $\frac{23¾}{30}$ 207	2100 to 2165	1300	3500	500	3000	1700	3500	2550	1125	1150	1700	1550	1150	2000	1125	3500	1700	1200
MacA 63 $\frac{26}{28}$ 211	2166 to 2171	1350	3500	510	3250	1750	3500	2650	1175	1200	1770	1650	1200	2200	1250	3500	1750	1250
TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS															
EMD	900-983	Psgr 1500	1	800	1750	338	1750	925	1500	1750	725	525	950	900	700	1175	750	1750	750	750
EMD	926-927B	Psgr 2250	1	1200	2625	506	2625	1388	2250	2625	1088	788	1425	1350	1050	1763	1125	2625	1125	1125
EMD	1000-1095	YdSw 1000	1	1200	3500	400	3500	1500	4000	3200	1150	700	1500	1400	1000	2000	1150	3500	1100	1200
EMD	1800-1824	YdSw 1200	1	1300	3700	450	3700	1650	5000	3400	1250	750	1650	1550	1100	2200	1250	3700	1200	1300
ALCO	1100-1153	RdSw 1500	1	1600	3500	675	3500	1850	5000	3500	1450	1050	1900	1800	1400	2350	1500	3500	1500	1500
Baldwin	1200-1210	RdSw 1500	1	1600	3500	675	3500	1850	5000	3500	1450	1050	1900	1800	1400	2350	1500	3500	1500	1500
FM	1300-1304	Frt 1500	1	1450	3500	625	3500	1700	5000	3500	1300	900	1750	1650	1250	2250	1350	3500	1350	1400
EMD	1500 Series	Frt 1500	1	1600	3500	675	3500	1850	5000	3500	1450	1050	1900	1800	1400	2350	1500			

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	WALLACE BRANCH										PLEASANT VALLEY BRANCH				
		Tekoa to Watt	Watt to Enaville	Enaville to Kellogg	Kellogg to Wallace	Wallace to Gem	Gem to Burke	Burke to Wallace	Wallace to Chatcolet	Chatcolet to Watt	Watt to Tekoa	Seltice to Willada	Willada to Winona	Winona to St. John	St. John to Oakesdale	Oakesdale to Seltice
C 57 $\frac{22}{30}$ 190	730 to 768	825	3500	2300	1250	250	225	750	3500	825	3500	1210	2250	1210	900	2100
MacA 57 $\frac{23¾}{30}$ 207	2100	1010	4000	2650	1450	300	275	750	4000	1010	4000	1400	2500	1450	1000	2250
MacA 63 $\frac{26}{28}$ 211 214	2166 to 2171 2500 to 2531	1070	4500	2750	1500	350	300	750	4250	1050	4000	1475	2750	1500	1150	2500
TYPE	NUMBERS (Inclusive)	H.P.	No. UNITS													
EMD	900-983	Psgr 1500	1	550	1125	875	750	225	200	750	1500	413	1750	925	1750	788	700	1175
EMD	926-927B	Psgr 2250	1	825	1688	1313	1125	338	300	750	2250	619	2625	1388	1113	1181	1050	1763
EMD	1000-1095	YdSw 1000	1	800	1700	1200	1200	275	225	750	2500	550	2500	1400	3000	1150	950	1900
EMD	1800-1824	YdSw 1200	1	850	1850	1300	1300	300	275	750	2700	600	2750	1550	3200	1250	1025	2100
ALCO	1100-1153	RdSw 1500	1	1100	2250	1750	1500	450	400	750	3000	825	3500	1850	3500	1575	1400	2350
Baldwin	1200-1210	RdSw 1500	1	1100	2250	1750	1500	450	400	750	3000	825	3500	1850	3500	1575	1400	2350
FM	1300-1304	Frt 1500	1	1000	2000	1500	1400	375	350	750	2500	775	2500	1600	3000	1410	1130	2200
EMD	1500 Series	Frt 1500	1											1850	3500	1575	1400	2350

EXPLANATION

P	Pacific
C	Consolidation
MacA	MacArthur
MS	Mallet Simple
TTT	2-10-2
MT	Mountain

EXAMPLE: Consolidation locomotive 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

Rating shown is for single unit. If more than one unit, rating of combined units will govern.

RATING OF STEAM AND DIESEL-ELECTRIC LOCOMOTIVES IN FREIGHT SERVICE IN TONS OF 2000 POUNDS

Total weight of train exclusive of locomotive and tender, which the different classes of locomotives 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.

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	YAKIMA BRANCH		NORTH RICHLAND BRANCH		WALLULA BRANCH		PENDLETON BRANCH						
		Attalia to Yakima	Yakima to Attalia	Richland Jct. to North Richland	North Richland to Richland Jct.	Wallula to Walla Walla	Walla Walla to Wallula	Pendleton to Walla Walla	Walla Walla to Bolles	Bolles to Alto	Alto to Walla Walla	Walla Walla to Milton	Milton to Weston	Weston to Pendleton
C 57 $\frac{22}{30}$ 190	730 to 768	2400	3000	1600	1600	1310	3500	1185	1040	785	1210	1350	700	2200
MacA 57 $\frac{23¾}{30}$ 207	2100	2650	3500	2600	2600	1495	4000	1450	1310	1060	1550	1700	840	2750
EMD	900-983	Pagr 1500	1	1400	1500	1540	1540	1130	2500	800	700	500	788	850	463	1750
EMD	926-927B	Pagr 2250	1	2100	2250	2450	2450	1500	3500	1200	1050	750	1181	1275	694	2625
EMD	1000-1095	YdSw 1000	1	1700	3000	2600	2600	1450	3500	1150	1050	750	1150	1250	775	2700
EMD	1800-1924	YdSw 1200	1	1850	3200	2750	2750	1550	3750	1250	1125	800	1250	1350	850	2900
ALCO	1100-1153	RdSw 1500	1	2800	3000	2600	2600	1450	3500	1600	1400	1000	1575	1700	925	3500
Baldwin	1200-1210	RdSw 1500	1	2800	3000	2600	2600	1450	3500	1600	1400	1000	1575	1700	925	3500
FM	1300-1304	Frt 1500	1	2400	3000	2600	2600	1450	3500	1425	1250	975	1410	1550	800	3500
ALCO	1180-1195	RdSw 1500	1			3100	3100	16 0	4000							
Baldwin	1250	RdSw 1500	1			3100	3100	1600	4000							
EMD	1400 Series	Frt 1500	1			2850	2850	1450	3750							
EMD	1500 Series	Frt 1500	1	2800	3000	3100	3100	1600	4000	1600	1400	1000	1575	1700	925	3500

TYPE OF LOCOMOTIVE	NUMBERS (Inclusive)	DAYTON BRANCH				POMEROY BRANCH				MOSCOW BRANCH	
		Bolles to Dayton	Dayton to Turner	Turner to Dayton	Dayton to Bolles	Tucannon to Pomeroy	Pomeroy to Tucannon	Relief to Starbuck	Starbuck to Relief	Colfax to Moscow	Moscow to Colfax
C 57 $\frac{22}{30}$ 190	730 to 768	1500	785	785	1700	2200	2500	750	340	1450	3500
MacA 57 $\frac{23¾}{30}$ 207	2100									1700	3500
MacA 63 $\frac{26}{28}$ 211 214	2166 to 2171 2500 to 2531									1750	4000
P 77 $\frac{22}{28}$ 149	3200	850	540	540	1200	1800	2000	750	260		
EMD	900-983	Pagr 1500	1	645	575	575	1500	750	1750	1750	313	950	1750
EMD	926-927B	Pagr 2250	1	968	863	863	2250	1125	2625	2625	469	1325	2625
EMD	1000-1095	YdSw 1000	1	1600	875	875	3000	1200	3500	3500	300	1200	3500
EMD	1800-1824	YdSw 1200	1	1750	950	950	3200	1300	3700	3700	350	1300	3700
ALCO	1100-1153	RdSw 1500	1	1600	875	875	3000	1500	3500	3500	625	1700	3500
Baldwin	1200-1210	RdSw 1500	1	1600	875	875	3000	1500	3500	3500	625	1700	3500
FM	1300-1304	Frt 1500	1	1600	875	875	3000	1350	3500	3500	490	1700	3500
ALCO	1180-1195	RdSw 1500	1	1675	1150	1150	3000						
Baldwin	1250	RdSw 1500	1	1675	1150	1150	3000						
EMD	1400 Series	Frt 1500	1	1675	1000	1000	3000						
EMD	1500 Series	Frt 1500	1	1750	1150	1150	3000	1500	3500	3500	625	1700	3500

EXPLANATION

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

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