GREAT NORTHERN RAILWAY COMPANY

CASCADE DIVISION

Special Instructions No. 1

EFFECTIVE 12:01 A. M.
PACIFIC TIME

Tuesday, July 1, 1947

These Instructions constitute a part of the Time-Table currently in effect. Employes whose duties are in any way affected by the Time-Table must have a copy of the Current Special Instructions and Current Time-Table with them on duty.

I. E. CLARY, Superintendent
I. E. MANION, General Manager
J. B. SMITH, General Superintendent Transportation

FIRST SUBDIVISION

(Main Line)

1. MAXIMUM SPEED FOR TRAINS.

For Streamliner, see Item 1, Page 14.

Between	Passenger	Freight
Wenatchee and Merritt	50 MPH	50 MPH
Merritt and Skykomish	30 MPH	20 MPH
Skykomish and Baring	60 MPH	50 MPH
Baring and Gold Bar	35 MPH	35 MPH
Gold Bar and Seattle	60 MPH	50 MPH

Where zone speed for Streamliner is lower than the maximum permissible speed for other trains, zone speed will govern.

2. SPEED RESTRICTIONS.

Cashmere, Over public crossing Main Street	25 MPH
Bridge 370, Dryden, R-1, R-2	20 MPH
Bridge 371, Dryden, R-1, R-2	10 MPH
Bridge 372, Dryden, R-1, R-2	10 MPH
Bridge 385, Berne 2 mi. east of, Q-1, S-1, N-3	20 MPH
R-1, R-2	10 MPH
Bridge 406, Scenic 4 mi. west of, R-1, R-2	20 MPH
Bridge 408, Tonga 3 mi. east of, Q-1, R-1, R-2	20 MPH
Bridge 4, Ballard	15 MPH
Skykomish, over public crossings	15 MPH
Monroe, thru town limits	25 MPH
Everett, over public crossing Pacific Avenue	8 MPH
Edmonds, thru town limits	8 MPH
Interbay, over NP Ry crossing	15 MPH
Seattle, thru tunnel King Street Station	20 MPH
Seattle, over public crossings	20 MPH
Trains handling snow machinery:	
Between Skykomish and Merritt	25 MPH
Between Merritt and Wenatchee	30 MPH
Between Skykomish and Lowell	30 MPH
Between Home Signals of Interlockings at:	20 MPH

Pacific Avenue.
Everett Jct.
North Portal.
South Portal.

3. ENGINE RESTRICTIONS ON INDUSTRY TRACKS.

Heavier than O-4 engines not permitted on: Snohomish, Columbia Packing Co. Spur.

O-1 and heavier engines not permitted Seattle, King Street Terminal, on north end of tunnel tracks 1 and 3.

Seattle, three puzzle switches just west of Holgate Street provide for movement between main tracks King St. Station, second Avenue yard and G. N. Mud track. Normal position of switches is for movement with current of traffic on main tracks to and from King Street Station and two switch targets on each puzzle switch indicate Green for normal position. These switches are equipped with movable frog points operated by lever located between the two switch stands on each of the three puzzle switches. Two sets of switch points, as well as the frog points, must be properly lined for each diversion move. All switch points and frog points must be carefully checked for each diverging move and checked after switches are restored to normal position.

Everett, O-class and heavier engines not permitted on track at Everett Flour Mill on Bayside.

Skykomish, all GN engines prohibited on Wood Spur.

If necessary to set out or pick up on any of the above tracks hold on to enough cars as reachers.

Delta, trains running via this yard with R engines must make their set out or pick up on tracks 1, 2, 3, or 4.

4. TRAIN REGISTER EXCEPTIONS.

Appleyard, register is for second and inferior class trains.

Wenatchee, register is for first class trains and passenger extras.

Monroe, register only for CMStP&P RR trains.

Snohomish, register only for NP Ry trains and eastward NP Ry trains register by ticket.

Lowell, NP Jct., register only for NP Ry trains.

Lowell Jct., register only for CMStP&P RR trains and is located 32d Street and McDougall Avenue, Everett.

Interbay, first class trains register by ticket.

Interbay, engineers and conductors of trains originating which operate over joint track south of Seattle must register at yard office and show number of last bulletin issued by NP and GN.

5. CLEARANCE PROVISIONS AND EXCEPTIONS RULE 83(B).

At Everett Jct., trains for which this point is the initial station may proceed on authority of clearance under which such trains arrive.

6. RESTRICTED CLEARANCES.

IN ELECTRIFIED ZONE ALL WIRES MUST BE CONSIDERED ALIVE UNLESS A CLEARANCE HAS BEEN OBTAINED FROM OPERATOR AT SKYKOMISH SUBSTATION. BETWEEN WENATCHEE AND SKYKOMISH TELEGRAPH AND TELEPHONE WIRES ARE LOCATED ALONG HIGHWAY AND CONSEQUENTLY NO ATTEMPT MUST BE MADE TO CONNECT TELEPHONE APPARATUS TO ANY WIRES LOCATED ALONG TRACK.

Between Appleyard and Skykomish, high voltage electric wires in electrified zone at some points will not clear man on top of cars. Train and engine men must keep off top of cars and engines while passing thru this territory, except in emergency and then use extreme care.

The following overhead wires crossing our track, and trolley in electrified zone, do not have standard clearance of 27 ft. from top of rail:

Between Appleyard and Wenatchee, overhead bridge,

Main track	19′ 9″.
Lead track	21′ 0″.
Cashmere, ½ mile west of, overhead bridge	19′ 11″.
Dryden, bridge 370, thru-truss	19′ 5″.
Chumstick, tunnel No. 13	19′ 2″.
Winton, Swede tunnel No. 13.5	19′ 0″.
Winton, tunnel No. 14	19′ 11″.
Berne-Scenic, Cascade tunnel No. 15	19′ 3″.
Startup, public crossing, MP 1758	24′ 9″.
MP 1762, 528 ft. west of	25′ 6″.
MP 1770, 700 ft. west of Fry's Spur switch	25′ 3″.
MP 1770, 900 ft. west of Fry's Spur switch	26′ 9″.
MP 1770, 925 ft. west of Fry's Spur switch	25′ 1″.
Snohomish, NP overhead bridge	19′ 0″.
Snohomish, MP 1775	25′ 9″.
300 ft. west MP 1775	25′ 9″.

Skykomish, targets on roundhouse switch stands will not clear man riding on side of cars or engines.

Seattle, King Street station, close clearance between eaves of umbrella shed and sides of cabs, P-2 and larger engines.

7. Between Appleyard and Wenatchee, eastward First Subdivision freight trains will use main track, westward freight trains will use lead track entering main track at crossover just west of passenger station, Wenatchee, or Olds crossover, unless otherwise instructed by Yardmaster.

8. Olds crossover is located 950 ft. east of MP 1653 on main track and 2200 ft. south of MP 3 on W-O line as connection to main track. Between this point and Wenatchee this track will be designated as yard lead instead of W-O main track and will be operated under Yard rules and all trains using this track must expect to find track occupied. Normal position of both switches is for main track movement.

9. Olds crossover, spring switches: Normal position of East switch is for crossover. Normal position of West switch is for main track. Rules 520 to 525, inclusive, govern.

Westward trains moving from the W-O line lead to First Subdivision and required to wait for Westward trains on First Subdivision, shall stop east of sign reading "Wait Here" located approximately 1000 ft. east of east switch of Olds crossover so there will be no interference with westward train movements on First Subdivision.

If a westward train on the Olds lead which must wait enters track section between "Wait" sign and the governing signal at the East switch Olds crossover and this signal indicates "Proceed" trainman must operate push button marked "R" located in iron box marked "Release" locked with switch lock, in order not to interfere with main track movement for which his train is waiting.

If push button "R" is operated and wait is not required, system may be restored to normal condition by operating push button "N".
If a westward train on the Olds lead with train rights to proceed to First Subdivision is stopped by automatic signal at east switch of Olds crossover trainman must operate clockwork release located in iron box locked with switch lock and marked "Release" by turning knob to right as far as it will go, holding a few seconds and releasing knob to return to its normal position after an interval of approximately two minutes. If signal desired does not indicate Proceed trainman may signal his train to proceed in accordance with his train rights and automatic signal and spring switch rules.
Westward trains to W-O line must stop before passing governing signal at east switch of Olds crossover and line switch by hand for W-O line, then proceed in accordance with signal indication. Switch must be returned to normal position after movement over it has been completed.

10. Between Appleyard and Skykomish copies of train orders will be given head end of train so when helper engine or engines are cut in at intermediate stations one copy can be delivered to each helper engineer.
On trains having helper engines, whether passenger or freight, operators will hand up train orders to the rear trainman by train order hoop.

11. Cashmere, control switch for manual operation of highway crossing signals, Division Street just west of depot, located in control box, locked with a switch lock, on cable post. To set crossing signals in stop position, open circuit control switch by pulling handle down. After using, place handle in normal position and lock control box.

12. Winton, Berne, Scenic, electric knife switches located in depot provide manual control of signals at these locations so that signals can be set to display Stop-indication in case any defect is discovered while trains are passing these depots. Trains stopped by any of these three signals will not proceed until instructed by trainmen to do so. Knife switches are connected to westward automatic block signal at west switch, Scenic and Winton, and to eastward automatic block signal at east switch, Berne.
Berne, two rail clamps have been placed in the depot for emergency use. When necessary for any train to set out bad order car on the siding at Berne, train crew must get these clamps from the depot and see they are properly secured to the rail on the east end of the car, properly blocked so will be no danger of car running away. Crew that picks up the bad order car see clamps are removed and replaced in the depot.

13. Cascade tunnel, track between Berne and Scenic is controlled by positive block in both directions. When stopped by a Stop-indication at automatic block signal located near entrance to tunnel, train must not proceed unless authorized by train order to do so. In case of loss of power or other emergency, a train in the tunnel may make a forward or backward movement to Scenic or Berne without flag protection and may pass signals indicating Stop and proceed at restricted speed without stopping.

14. Tonga, water tank 3 miles east.

15. Skykomish, unless otherwise directed by train dispatcher extension on east end of siding for use only by eastward trains and in no case will train or cars be left on this extension without engine coupled and air brakes operative.

16. Baring, water tank 1.26 miles west.

17. Everett tunnel, track between Everett Jct. and west switch, Pacific Avenue, is controlled by positive block in both directions. When stopped by a Stop-indication at the home signal trains must not proceed unless authorized by train order to do so. A train or engine within these limits may make a forward or backward movement without flag protection.

18. Everett, Electric switch machine, west siding switch Pacific Ave. is equipped with two levers for hand operation. These are latched and locked with a switch lock. Move "Short" lever to position displaying "Hand". Move lever marked "Hand Throw" slowly until clutch engages and switch points begin to move with "Hand Throw" lever. Switch may now be lined by hand as desired. "Short" lever shall be left in position displaying "Hand Throw" until all switching, or other train or engine movements over the switch, has been completed, when "Hand Throw" lever shall be latched in either position and "Short" lever shall be moved to position displaying "Power" and locked. All home signals will indicate Stop during the period "Short" lever is in position displaying "Hand".
Under no circumstances shall a hand signal be given for a train or engine movement over an interlocking switch unless the "Short" lever is in position displaying "Hand" and the switch has been lined in the position desired by the "Hand Throw" lever.

19. Between NP Jct. and Delta (freight yard) 3.26 miles west, trains and engines will be governed by NP Ry time-table and Special Instructions.

20. Interbay, main track is a single track between 700 ft. east of NP Ry crossing and 4000 ft. west of bridge 4, Ballard. Each end of this single track is equipped with a spring switch, normal position is for trains entering double track.
Color light type dwarf signal 4.8 governing eastward movements from yard lead to main track thru spring switch near 23d Avenue overhead bridge is interconnected with and is a part of the automatic block signal system.
When an eastward movement is to be made from yard lead to main track, trainmen shall operate push button "R" at signal 4.8. If no conflicting movement is being made on main track and spring switch is in proper operating condition, signal 4.8 will indicate proceed after a time interval of two minutes. After push button "R" is operated a white light will be displayed if operation is effective.
If push button "R" is operated and the intended movement is not made, or main track switch is not lined, push button "N" must be operated to restore signal system to normal condition to avoid delays to trains on main track. Push button "N" must never be operated, after push button "R" if the intended movement is to be made.
Westward freight trains will enter yard at the connection from westward main track at east end of yard unless otherwise instructed by yardmaster. Trains or engines must stop east of signal 5.3 and not proceed until trainmen have lined switch to enter yard.

21. Interbay yard, pilot light on dwarf signal 5.1 adjacent to crossover where trains enter main track, for purpose of calling employes' attention to signal when getting off cars or engines between tracks.

22. Seattle Tunnel. Train and engine movements between North Portal and South Portal Interlocking Towers are controlled by semi-automatic interlocking signals, and a positive block is maintained in both directions. A train or engine may make a forward or backward movement without flag protection within these limits, observing governing signal indications. A train or engine may enter the tunnel against the current of traffic for short or switching movements as required, when governing home signal indicates proceed. However, no train or engine will make a complete through movement from one tower to the other against the current of traffic, or pass a home signal displaying Stop indication unless furnished "Tunnel Card" signed by the operator.
When moving against the current of traffic do not exceed 10 MPH.
Interlocking signal located at North Portal of Seattle tunnel and controlled from South Portal Tower will display indications in accordance with Rules 601-A, 601-C and 601-D.
Green over Red (Rule 601-C) displayed indicates route thru South Portal Interlocker to eastward main track (Tunnel track 4) properly lined.
Red over Yellow (Rule 601-D) displayed indicates diverging route thru South Portal Interlocker properly lined.
While these indications repeat the indications of the dwarf signal of color light type located at the South Portal of Seattle tunnel governing southward train and engine movements to eastward main track (Tunnel Track 4) and other station tracks of King St. station, emergencies may arise which may cause a change in the indications of this dwarf signal after southward train or engine has entered the tunnel and enginemen and trainmen must be on the alert to observe such change which will be indicated by the display of a yellow light and the sounding of a horn at the special southbound approach signal located in the tunnel about twelve hundred (1200) feet north of the South Portal.

Dwarf signal of color light type, located between eastward and westward main tracks, south end King St. station, Seattle, governing westward train and engine movements on eastward main track (Tunnel Track 4) is controlled from South Portal Tower.
When Red is displayed, Rule 601-A governs.
When Yellow is displayed, Rule 601-E governs.
When a train or engine is stopped by the Stop indication of this signal, towerman must be informed of desire to make westward movement on eastward track by four operations of the push button located on top of the signal.
Tunnel directions are North from South Portal to North Portal and South from North Portal to South Portal.

23. Seattle, train, yard and engine movements between GN freight yard and 5th Avenue tracks will be made via NP and UP main track Oregon Street connection and their time-tables and Special Instructions will govern.

24. **SPEED TEST BOARDS.**

Engineers shall test speed of their trains passing following points as compared with Speed Table:
Both directions, between MP 1779 and MP 1780, west of Snohomish.
Eastward, between MP 11.4 and MP 12.5 east of Ballard.

25. **CROSSOVERS ON DOUBLE TRACK.**

Facing point.	Trailing point.
	MP 7.36 east of Ballard.
	MP 14.5 one-fourth mi. west of Richmond Beach depot.
	MP 15.02 Standard Oil spur, east of Richmond Beach.
	MP 17.92 east of Edmonds.
	MP 24.29 between Meadowdale & Mukilteo.
	MP 28.40 Mukilteo depot.
	MP 29.21 east of Mukilteo.
	MP 31.33 GN oil spur west of Everett Jct.

26. **EMERGENCY TELEPHONES.**

Leavenworth, west switch ..... Booth
Tunnel 13.5, east end ..... Booth
Winton, west switch ..... Booth
Old Gaynor ..... Booth
Berne, east switch ..... Booth
Cascade Tunnel No. 15, in each refuge bay.
Scenic, west switch ..... Booth
Alpine ..... Old Depot
Skykomish, east switch ..... Booth
Grotto, west switch ..... Booth
Reiter, 2 miles east ..... Booth
Reiter, Gravel pit ..... Booth
Gold Bar, west switch ..... Booth
Monroe, east switch ..... Booth
Pacific Avenue, west switch ..... Booth
Everett Tunnel No. 16, east end ..... Booth
Everett Jct. ..... Booth
Mosher, crossover ..... Booth
MP 15, Standard Oil Spur ..... Booth
MP 11.5 ..... Booth
MP 9.5 ..... Booth
Ballard, crossover switch ..... Booth
Interbay yard, east end ..... Booth

27. **SPRING SWITCHES WITH FACING POINT LOCK.**

Wenatchee Olds crossover (Connection to W-O line) east and west crossover switches.
Merritt ..... east and west siding switch.
Skykomish ..... east and west siding switch.
Baring ..... east and west siding switch.
Monroe ..... east and west siding switch.
Snohomish ..... east and west siding switch.
Interbay ..... yard lead switch near 23d Avenue overhead bridge.
Normal position is for main track.
Interbay ..... east end double track.
Normal position is for eastward main track.
Interbay ..... west end double track.
Normal position is for westward main track.

28. **MANUAL INTERLOCKINGS.**

Ballard ..... Salmon Bay drawbridge.
North Portal, South Portal ..... King Street tunnel and terminal tracks.

29. **MANUAL INTERLOCKINGS WITH DUAL CONTROL SWITCHES.**

Pacific Avenue ..... west siding switch.
Everett Jct. ..... end of double track and junction with Second Subdivision.
These switches are electrically controlled by operator at passenger station, Everett.

30. **AUTOMATIC INTERLOCKINGS.**

Interbay ..... NP Ry crossing.

31. **INSTRUCTIONS GOVERNING OPERATION OF TRAINS IN ELECTRIFIED TERRITORY.**

Between Peshastin and 1 mile east of east switch, Leavenworth, between 1 mile west of west switch, Leavenworth, and Winton tunnel, when, for any reason, single trains in excess of 3500 tons with three General Electric engines coupled on the head end are stopped on heavy grade specified above will double their trains into either Leavenworth or Winton and will not attempt to start train on Chumstick Line to avoid damage to equipment and excessive delays.
When helper engine is operated on freight trains, conductors must see that helper engine is cut into train so that not more than rated tonnage of the helper engine will be trailing. When train does not have full tonnage for all of the engines, tonnage in the train must be prorated between the train engine and the helper engine.
When necessary to make a backup movement on ascending mountain grade sufficient hand brakes must be set on rear end to hold up the slack; then when ready to proceed ahead, hand brakes must be released starting from the rear car first and working toward the head end of train so the slack will run out gradually and avoid break-in-two.
Engineers, when practicable, must operate helper engines from controls on the right side.
Between Skykomish and Wenatchee, in handling trains of 5000 tons or over, see that 15 heavily constructed cars with large A.A.R. drawbars and heavy draft rigging are placed next behind engines with the heavy drawbar pull.
Helper engines on eastward tonnage trains will drop their regeneration load at 20 MPH at foot of 2.2 grade, Merritt, and pick it up again starting down Winton Hill and will drop their regeneration load at 20 MPH when stopping at Dryden to cut out helper.
Westward helper engines will not assist train engineer thru regeneration in making final stop at Skykomish.
Holding capacity of units in regeneration are as follows:

1 General Electric,	1400 tons on 2.2 grade,	
	1900 tons on 1.6 grade at 15 to 18 MPH.	
1 Westinghouse,	1250 tons on 2.2 grade,	
	1750 tons on 1.6 grade at 15 to 18 MPH.	

Tonnage rating of electric engines on 2.2 grade:

General Electric,	1000 tons per cab.
Westinghouse,	750 tons per cab.

Steam derricks, ditchers, and other roadway machines must not be worked within 200 ft. of tunnel portals within the electrified territory unless power is turned off on the trolley line.
Arrangements for handling of the power shall be made with Electrical Superintendent or his representatives.
General Electric engines 5010 to 5017 inclusive, operating between Appleyard and Skykomish, are equipped with high voltage connectors at the top of each end of cabs so that when engines are coupled together these connectors contact each other.
These connectors are painted red, and when any pantagraph of a coupled number of these units is in contact with the trolley wire, all of these connectors are energized.
Do not come in contact with these connectors.
Diesel freight engines, 5400 H. P., have the following tonnage ratings:

2.2 grades, 2000 trailing tons.
1.6 grades, 3000 trailing tons.
1.0 grades, 4800 trailing tons.

These 5400 H. P. diesel engines will handle 2000 tons, Skykomish to Berne, in helper service and the same combination of electric engines should be operated thru Skykomish to Berne.

Diesel engines will handle 1500 tons single thru Cascade tunnel eastward.

The electric holding brakes on these engines will hold at approximately 17 MPH the same tonnage on a descending grade that the engine will pull up the grade at continuous tractive effort. That is, the regenerative brake on these engines will hold 2000 tons on a 2.2 grade, 3000 tons on a 1.6 grade and 4800 tons on a 1.0 grade at approximately 17 MPH. At either a higher or lower speed than this, the engines will handle less than this maximum tonnage. On the 2.2 grade, diesel engines should be cut into the train approximately 1800 tons from the rear end which is the tonnage the diesel engines can hold with the electric brake at from approximately 15 to 20 MPH.

This brake was not designed as a stopping brake, but is primarily for holding trains on long grades and engineers in the electrified territory must not expect diesel engine holding brake to have the capacity for slowing down heavy freight trains that the electric engines have.

Diesel engines must not be cut in ahead of the electric engines in either direction.

Engineers on diesel engines will not use any power to push train at any point from Berne to Appleyard, except when stop is made at Winton, and then only to get the train started at speed of 10 MPH.

All trains approaching Skykomish, with diesel engines cut in as helper, must stop before passing automatic block signal 1731.7, east of east switch, before proceeding into yard regardless of signal indication.

Diesel engines, 5400 H.P., operated on eastward freight trains thru Cascade tunnel will be governed as follows:

1. Engage both cooling fans on all four units of the diesel leaving Skykomish and control the engine cooling water temperatures between 155 and 165 degrees by proper shutter regulation.
2. When diesel engine passes Scenic depot, open all four radiator shutters on the two rear units wide open.
3. When diesel engine enters tunnel, reduce throttle to No. 6 position and operate diesel engine thru tunnel in No. 6 throttle.
4. Regulate water temperature on the two leading cabs with the radiator shutters to maintain a water temperature of between 155 and 165 degrees.
5. Hot engine alarms are set at 195 degrees and should the hot engine alarm sound on either of the two rear cabs, isolate the unit with high temperature and handle train on three units thru tunnel. Place the unit back on the line after water temperature is reduced to normal and check water level in engine cooling water tanks. Should the water level fall below minimum level as indicated in the water glass, shut engine down.
6. If, for any reason, eastward trains being handled or helped by diesel engines are stopped in tunnel, diesel engines must be closed down and members of crew on both head end and rear end of train must communicate with each other on telephones located in each bay of the tunnel and have a thorough understanding with entire crew whether train will be backed out of tunnel or doubled out to Berne. If backed out to Scenic, train must be stopped before passing east siding switch and not back down main track unless protected by train order or flagman, or backing in on siding, it must be known siding is clear. In making these moves definite understanding must be had with all members of the crew as to what is to be done to avoid accident.
7. Report maximum engine water temperature reached in tunnel each trip on the engineer's work report on arrival at Appleyard.

SECOND SUBDIVISION

(Vancouver Line)

1. MAXIMUM SPEED FOR TRAINS.

Between	Passenger	Freight
Everett Jct. and Samish	55 MPH	45 MPH
Samish and Bellingham	40 MPH	30 MPH
Bellingham and Vancouver	55 MPH	45 MPH

2. SPEED RESTRICTIONS.

Everett, Bond, Hewitt, California, 24th St. Crossings	6 MPH
Delta Jct., between home signals of interlocking	20 MPH
Bridge 10, Delta	10 MPH
Bridge 11, Marysville, Q-1, R-1, R-2, S-1, N-3	5 MPH
All other engines	10 MPH
Bridge 12, Marysville, Q-1, R-1, R-2, S-1, N-3	5 MPH
All other engines	10 MPH
Marysville, thru city limits	8 MPH
Bridge 14, Silvana Q-1, R-1, R-2, S-1, N-3	20 MPH
Bridge 15, Silvana R-1, R-2	20 MPH
Mt. Vernon, thru city limits	8 MPH
Bridge 36, Mt. Vernon .. Q-1, R-1, R-2, S-1, N-3	5 MPH
All other engines	25 MPH
Burlington, thru city limits	8 MPH
Burlington, Third Subdivision crossing	8 MPH
South Bellingham, over street crossing to street crossing just north of freight depot, Bellingham	10 MPH
South Bellingham, NP Ry crossing	8 MPH
Bellingham, CMStP&P RR Crossings, Army St., Commercial Street and Pine Street	8 MPH
Bridge 64, Ferndale Q-1, R-1, R-2, S-1, N-3	5 MPH
Blaine, thru city limits	8 MPH
Bridge 66, Blaine Q-1, R-1, R-2, S-1, N-3	20 MPH
Bridge 69, Crescent ..... Passenger	25 MPH
Freight	15 MPH
Bridge 70, Colebrook ..... Passenger	25 MPH
Freight	15 MPH
White Rock-Crescent, October 15 to May 1, between MP 123 and MP 127	20 MPH
New Westminster, Fraser River Bridge	6 MPH
North Wye switch, Fraser River Bridge	4 MPH
Over Front & Columbia St. Crossings	25 MPH
Sapperton, Brunette St.	10 MPH
Vancouver, Burrard Inlet, CPR Crossing, Powell St.	8 MPH

Trains will run at restricted speed at points where slides or falling rock are liable to be encountered between Samish tunnel and 2 miles north of Bellingham.

3. ENGINE RESTRICTIONS.

Between White Rock and Vancouver, engines heavier than O-1 and O-4 prohibited.

4. ENGINE RESTRICTIONS ON INDUSTRY TRACKS.

Blaine, all engines not permitted on dock track. If necessary to set out or pick up on this track hold on to enough cars as reachers.

5. TRAIN REGISTER EXCEPTIONS.

Vancouver, Vancouver Jct. C. N. Jct., trains arriving will register in G. N. train order office at Vancouver.

Delta, register only for trains originating and terminating.

New Westminster, all trains may register by register ticket.

6. CLEARANCE PROVISIONS AND EXCEPTIONS RULE 83(B).

Everett Jct., trains for which this point is the initial station may proceed on authority of clearance under which such trains arrive.

7. RESTRICTED CLEARANCES.

The following overhead wires crossing our track do not have standard clearance of 27 ft. from top of rail:

Delta, south wye switch	25′
Marysville, industry track	23′
Stanwood, house track and industry track	24′
Fir, English Lumber Co. spur 1.3 mi. south	25′
Mt. Vernon, Union Oil Company spur	25′ 10″
Burlington, Carnation Milk Company Spur	25′ 6″

New Westminster, high voltage electric wires on Fraser River bridge will not clear man on top of cars. Train and engine men must keep off top of cars and engines while passing over this bridge, except in emergency and then use extreme caution.
New Westminster, retaining wall Front Street crossing in front of penitentiary will not clear man on side of car or engine.

8. Delta (freight yard) located 1.08 miles south of Delta Jct. is provided with: Standard Clock, Bulletins, Train Register, Water, Oil, Wye, Track Scale, Turntable.

9. Delta, private road crossing near yard office, train, yard and engine movements over this crossing must be protected as prescribed by Rule 103.

10. Blaine-White Rock, trains will not pass International Border without permission of Customs and Immigration Inspectors.

11. White Rock, between 2 miles south and Ocean Park, from May 15 to September 15, engineers will sound engine whistle frequently and bell must be rung continuously.

12. Still Creek, northward trains having wait or meet orders to fulfill at this point will stand south of Renfrew Street crossing until train to be met or passed is in the block to avoid circuit operating crossing signals at Grandview Highway, 13th Avenue.

13. Sapperton, push buttons and instructions for their operation are located in iron box locked with a switch lock near south wye switch and north siding switch for control of wigwag signals at Brunette Street crossing. Care must be exercised in the use of push button control to avoid unnecessary operation of crossing signals during switching movements.
Push button boxes must be kept closed and locked, except as required to be open for immediate use.

14. Vancouver, National Harbours Board Railway operate jointly with GN Ry over Great Northern tracks between Water Front and connection with GN main track north of the roundhouse; also between north leg of wye from main track switch and connection with Canadian National Railway in the Great Northern South Yard, all of which is located within yard limits of Vancouver.
Telephones for City and train dispatcher are located in booth near Great Northern main track connection. There is also a City Telephone and train register in the National Harbours Board yard office.
Movements in both directions over the Burrard Inlet line must be recorded in train register.
Before movement is made over Burrard Inlet line in either direction, yard foreman or engineer will communicate with the yard office of the National Harbours Board Railway to ascertain if it is safe to proceed; air brakes must be cut in and operative on all engines and cars; the engine must be on the leading end of the cars during hours of darkness.
Speed restrictions:
8 MPH over Georgia, Kiefer, Pender and Cordova Streets.
10 MPH over Union Street on northward movements; southward movements must stop before passing over Union Street and a member of the crew must be on ground at crossing to protect traffic.

15. The Board of Railway Commissioners for Canada, General Order 571, forbids the handling of freight cars in main line passenger trains.

16. **SPEED TEST BOARDS.**
Engineers shall test speed of their trains passing following points as compared with Speed Table:
Both directions, between MP 65½ and 66½ between Mt. Vernon and Fir.
Southward, between MP 149 and MP 150, North of Endot.

17. **CROSSOVERS ON DOUBLE TRACK.**

Facing point.	Trailing point.
	2054 ft. North of MP 152.
	Dominion Bridge Co. spur.

18. **EMERGENCY TELEPHONES.**

Between Delta Jct. and wye	Booth
Bridge 11	Watchman Cabin
Kruse Jct.	Booth
Belleville Pit, switch	Booth
MP 76	Booth
MP 86	Watchman Cabin
Samish water tank	Booth
Sockeye, highway crossing	Booth
So. Bellingham, tool house	Booth
No. Bellingham, cement spur	Booth
Custer, south switch	Booth
MP 125	Booth
Fraser Mill Spur	Booth
Sapperton scale house.	
Dominion Bridge	Booth
Endot	Booth
Still Creek	Booth
B. I. Jct.	Booth

19. **SPRING SWITCHES WITH FACING POINT LOCK.**
Mt. Vernon, south siding switch.
Normal position is for main track.
Endot, end of double track.
Normal position is for northward main track.
Still Creek, end of double track.
Normal position is for southward main track.

20. **MANUAL INTERLOCKINGS.**
Delta Jct., drawbridge 10 and NP Ry crossing.
Marysville, 1.25 miles south of drawbridge 11.
0.50 miles south of drawbridge 12.
Fir, 1.34 miles south of English Lbr. Co. crossing.
New Westminster-Fraser River Jct., drawbridge and junction with CN and BCE Rys.
New Westminster-Fraser River Jct., when, for any reason, a proceed indication cannot be displayed at the home signal, no train or engine movement shall be made over bridge, except on authority of regular Dominion Government clearance.
Delta Jct., whistle signals for routes:

Main track	1 long.
From north to Delta yard	1 long, 1 short.
From south to Delta yard	2 long, 1 short.
From Delta yard to north	2 long.
From Delta yard to south	3 long, 1 short.
From NP Ry connection to north	1 long, 1 short, 1 long.
From north to NP Ry connection	1 long, 1 short, 2 long.

21. **AUTOMATIC INTERLOCKINGS.**
Still Creek, 1.84 miles south of B. C. E. Ry crossing.

22. **SEMI-AUTOMATIC INTERLOCKINGS.**
New Westminster, 0.50 miles north CPR crossing, Crossover to Waterfront track.
New Westminster, 1 mile north, Fraser Mill Spur.
Vancouver, CPR Crossing at Burrard Inlet.
New Westminster, crossover to water front track:
GN train or engine movements between main track and water front track over CPR crossing are governed by electric lock at main track switch stand. Both switches of crossover are lined by operation of main track switch stand. Instructions for their operation are posted in lock box locked with a switch lock. After using lock box must be locked.
New Westminster, Fraser Mill Spur CPR crossing:
Normal position of gates is stop for Great Northern.
GN train or engine movements over CPR crossing are governed by manually operated gates electrically locked. Instructions for their operation are posted in lock box locked with a switch lock located at gate. After using lock box must be locked.
Vancouver, CPR crossing at Burrard Inlet:
Normal position of gates is stop for Great Northern.
GN train or engine movements over CPR crossing are governed by manually operated gates electrically locked. Instructions for their operation are posted in lock box locked with a switch lock located at gate adjacent to Powell Street.
Operation of this gate also operates gate on opposite side of CPR tracks by means of mechanical connection.
GN westward trains or engines shall stop clear of Powell Street until gates are opened and the way is clear for movement across CPR tracks to avoid blocking traffic on Powell Street. Wigwag type crossing signals governing traffic on Powell Street are manually controlled by handle of electric gate lock. After using lock box must be locked.

23. **RAILROAD CROSSINGS PROTECTED BY GATES.**

Burlington, Third Subdivision crossing.
Normal position is clear for Second Subdivision.
South Bellingham, 1.14 miles north of NP Ry crossing.
Normal position is clear for Great Northern.
Bellingham, CMStP&P RR crossings.
1 at Army Street, 1 at Commercial Street.
2 at Pine Street.
Normal position is clear for Great Northern.
Vancouver, Main Street, BCE Ry crossing.
Normal position is stop for Great Northern.
Trains, engines or cars must not be moved over this crossing until a member of the crew is stationed at the crossing to protect traffic on Main Street.

24. **SWITCH INDICATORS.**

Vancouver, indicators are located near switches on each side of main track at the junction of the Burrard Inlet Line and Prior Yard, roundhouse lead and wye tracks about 800 ft. south of Vancouver Jct.

First class trains must approach B. I. Line and roundhouse lead switches prepared to stop unless block signals governing movement over these switches indicate proceed and main track is seen to be clear. Yard and engine movements may be made in either direction across main track at this point on the time of delayed first class trains without flag protection provided yellow light is displayed in the indicator. First class trains will be considered delayed when they are more than ten minutes past due out of Vancouver Jct. or CN Jct.

The member of the crew who is to line switches must first operate push button "R" for route desired and hold a few seconds. Both the trainman and the engineer must observe and be governed by the indicator before lining switches or fouling main track.

If the indicator displays a yellow light when push button "R" is operated, switches may be lined and movement made immediately without waiting as prescribed by Rule 513. The yellow light will be extinguished by the lining of main track switch. If a yellow light is not displayed in the indicator when push button "R" is operated, every precaution, consistent with train rights and operating rules, must be taken before lining switch or fouling main track.

If push button "R" is operated and the intended movement is not made, or main track switch is not lined, push button "N" must be operated to restore signal system to normal condition to avoid delays to trains on main track. Push button "N" must never be operated after push button "R" if the intended movement is to be made.

Push button boxes must be kept closed and locked, except as required to be open for immediate use.

Vancouver, B. C., Glen Drive Yard, light type indicator located at clearing point of main track switch 840 ft. North of CN Jct. Train or engine movements must stop clear of main track.

Member of crew who is to line switch must first operate push button "R" for route and hold a few seconds. Both train and engine men must observe and be governed by the indicator before fouling switch or main track.

If indicator displays a yellow light when push button "R" is operated, switch may be lined and movement made immediately without waiting as prescribed by Rule 513, providing all first-class trains due or past due have passed. Yellow light will be extinguished by lining main track switch. If yellow light is not displayed in the indicator when push button "R" is operated movement must not be made without flag protection.

If push button "R" is operated and intended movement is not made, or main track switch is not lined, push button "N" must be operated to restore signal system to normal condition to avoid delays to trains on main track. Push button "N" must never be operated after push button "R" if intended movement is to be made.

Push button boxes must be kept closed and locked, except as required to be open for immediate use.

THIRD SUBDIVISION

(Anacortes Line)

1. **MAXIMUM SPEED FOR TRAINS.**

Between

Rockport and Anacortes, all trains	20 MPH

2. **SPEED RESTRICTIONS.**

Bridge 12, Whitney	10 MPH
Bridge 52, Concrete	10 MPH
Trains handling loaded log cars	10 MPH

3. **ENGINE RESTRICTIONS.**

Engines heavier than class indicated are prohibited:
Between Burlington and Rockport, F-8.
Between Burlington and Anacortes, F-1.

4. **ENGINE RESTRICTIONS ON INDUSTRY TRACKS.**

Engines not permitted on industry tracks at:
Anacortes, Puget Sound Mill & Lumber Co. log dump trestle
Anacortes Canning Co. spur track.
Sedro-Woolley, Skagit Steel & Iron Works north spur.
If necessary to set out or pick up on these tracks hold on to enough cars as reachers.

5. **CLEARANCE PROVISIONS AND EXCEPTIONS RULE 83(B).**

Burlington, Third Subdivision trains must secure clearance.

6. Concrete, water station is closed, call on agent for instructions in emergency.

7. Color light type signals, and semaphore type approach signals, under control of Bridge Tender, govern train and engine movements over Drawbridge #12 near Whitmarsh. Interlocking Signal Rules govern in the use of these signals, but do not modify any other rules or restrictions applying to train and engine movements over this drawbridge.

ALL SUBDIVISIONS

1. INSTRUCTIONS GOVERNING THE OPERATION OF STREAMLINER TRAINS.

CLEARING OF STREAMLINERS.

The time of No. 1 must be cleared by westward first class trains not less than 5 minutes before No. 1 is due to leave the last station where time is shown, and by other westward trains not less than 10 minutes before No. 1 is due to leave the last station where time is shown.

The time of No. 1 must be cleared by eastward first class trains, except No. 2, not less than 10 minutes at all stations, and by other eastward trains not less than 15 minutes.

The time of No. 2 must be cleared by eastward first class trains not less than 5 minutes before No. 2 is due to leave the last station where time is shown, and by other eastward trains not less than 10 minutes before No. 2 is due to leave the last station where time is shown.

The time of No. 2 must be cleared by westward first class trains, except No. 1, not less than 10 minutes at all stations, and by other westward trains not less than 15 minutes.

Within yard limits, all trains and engines except first-class must clear the main track not less than ten minutes before Nos. 1 and 2 are due to leave last station where time is shown.

MAXIMUM SPEED OF STREAMLINERS.

Maximum speed of Streamliner trains, consisting of Streamliner cars hauled by Diesel engines, will be designated by distinctive roadway signs in the shape of the letter "D", with silver gray Scotchlite background.

Except as directly affected by restrictions under Items 1 and 2, All Subdivisions, of Special Instructions No. 1, the "D" signs designate zone speed territories and the numerals thereon indicate in miles per hour the maximum permissible speed which will govern until the next zone is reached.

Between Ballard and Seattle, Streamliners will be governed by speed restriction as indicated under Item 2, First Subdivision. Other trains will be governed by other roadway signs.

Where zone speed for Streamliner is lower than the maximum permissible speed for other trains, zone speed will govern.

Where the movement is from a higher to a lower speed zone the zone sign is located approximately 5000 ft. from the point where the lower speed becomes effective. When the movement is from a lower to a higher speed zone the zone sign is located at the point where speed may be increased. Zone territories are listed herein for the convenience of employes.

MAXIMUM SPEED EXCEPTIONS:

When a Streamliner is detoured over Great Northern tracks outside of regular Streamliner territory, the Streamliner must not exceed by more than 10 MPH the maximum permissible speed for other passenger trains in the territory operated.

When Streamliner is operated against the current of traffic in double track territory the Streamliner must not exceed the maximum permissible speed for other passenger trains.

When Streamliner is handled by steam engine, or when other passenger trains are operated on Streamliner schedule, or when train consists of mixed Streamliner and conventional type equipment, the train must not exceed maximum permissible speed for other passenger trains in territory operated.

In event of failure of the electric straight air brakes, or if electric brakes cannot be used on account of cars not equipped with electric straight air brakes being handled in the train, the automatic air brakes will be used and Superintendent notified. In this event speed of train will not exceed the maximum permissible speed for other passenger trains.

ZONE TERRITORIES AND MAXIMUM SPEED OF STREAMLINERS.

Stations	Zone Territories Between Mile Posts			Maximum Speed MPH Westward	Eastward
Wenatchee	1646.8	and	1650.3	55	55
	1650.3	"	1661.0	45	45
Cashmere	1661.0	"	1661.3	25	25
	1661.3	"	1669.0	50	50
Peshastin	1669.0	"	1693.0	60	60
Merritt	1693.0	"	1696.5	30	30
Bridge 385	1696.5	"	1696.8	20	20
	1696.8	"	1728.0	30	30
Bridge 418	1728.0	"	1728.4	20	20
Skykomish	1728.4	"	1732.5	30	30
	1732.5	"	1741.6	50	50
Halford	1741.6	"	1753.8	35	35
Gold Bar	1753.8	"	1768.3	60	60
Monroe	1768.3	"	1769.3	25	25
	1769.3	"	1782.7	60	60
Pacific Ave.	1782.7	"	1782.9	8	8
	1782.9	"	1784.0	20	20
Everett Jct.	33.0	"	32.2	20	20
	32.2	"	17.6	60	60
Edmonds	17.6	"	17.4	8	8
	17.4	"	8.8	60	60
	8.8	"	6.5	55	55
Ballard Sta.	6.5	"	6.2	15	15
N. P. Ry. crossing	6.2	"	4.0	35	35
Seattle	4.0	"	0.	20	20

2. SPEED RESTRICTIONS GENERAL.

(a) For the guidance of Employes handling passenger and freight trains except Streamliners standard roadway signs, with silver gray Scotchlite background, are located on engineer's side of track and will indicate where speed must be reduced.
The "Reduce Speed" sign set in an upward angle of 45 degrees is located approximately 3000 feet from where the lower speed becomes effective and numerals thereon indicate in miles per hour the permissible speed thru the restricted area.
The "Resume Speed" sign set in a vertical position with letters "RS" thereon indicates that normal speed may be resumed.
Where these signs have two sets of figures the numerals preceded with letter "P" apply to passenger trains, except Streamliners, and letter "F" to freight trains.
(b) When passenger trains are handled by freight engines or when freight cars, except cars equipped with passenger trucks and steel wheels, are handled in passenger trains, the train will not exceed maximum permissible speed for freight trains in the territory operated.
(c) Speed shown on Speed Limit Plates on engines must not be exceeded.

(d) F-8, G-3 and M class engines	40 MPH
Diesel engines 2300-2324	50 MPH
2325-2341	70 MPH
Steam engines backing up	20 MPH
Steam engines in forward motion running light or with caboose only	35 MPH
Diesel and Electric engines light or with caboose only	50 MPH
Trains handling steam derricks, pile drivers, ditchers, cranes, steam shovels, dozers, etc. on Main Track except on 6 degree curves or sharper, and on Branch Lines	25 MPH 15 MPH
Trains handling ore cars or air dump cars loaded with ore or gravel and scale test car on Main Track	30 MPH
except on 6 degree curves or sharper and on Branch Lines	20 MPH
Unless conditions require a further speed restriction, trains or engines moving against the current of traffic on double track thru interlockings	15 MPH
Trains or engines over drawbridges	15 MPH
Trains or engines moving on main routes actuating points of spring switches	35 MPH
Trains or engines moving in facing point direction at spring switches without facing point lock	25 MPH
Trains or engines thru No. 20 turnouts at:	35 MPH

Skykomish, east siding switch.
Interbay, end of double track east end of yard.
Still Creek, end of double track.
Endot, end of double track.

Trains or engines thru No. 15 turnouts at: ..... 25 MPH
Wenatchee, east and west crossover switch west end of yard.
Merritt, east and west siding switch.
Skykomish, west siding switch.
Baring, east and west siding switch.
Monroe, east and west siding switch.
Snohomish, east and west siding switch.
Everett Jct., junction switch end of double track.
Interbay, end of double track west end of yard.
yard lead switch near 23d Ave. overhead bridge.
Trains or engines thru all other turnouts..... 15 MPH
Between Ballard and Seattle, Streamliners will be governed by speed restriction as indicated under Item 2, First Subdivision.

3. **MOVEMENT OF ENGINES DEAD IN TRAINS.**

Class O and larger engines will be placed not to exceed 15 cars behind road engine. In electrified zone only class R engine will be handled on head end, all others near rear.
Class F-8 and smaller engines will be placed next ahead of caboose.
Diesel engines 2300-2341 must be handled on rear of train.
Not less than five cars will be placed between all engines.
Trains handling steam engines dead in train with side rods on both sides will not exceed 40 MPH; and without side rods will not exceed 10 MPH.
Trains handling Electric, Diesel and Gas Electric engines dead in train will not exceed following speeds:

50 and 51, 75 to 150	35 MPH
175 to 207, 225 to 231	60 MPH
250 and 251	65 MPH
252, 253, 258 and 259	40 MPH
260 and 261	65 MPH
262 and 263, 300 to 305, 400 to 428	40 MPH
500 to 512	75 MPH
2300 to 2324	50 MPH
2325 to 2341	60 MPH
5000 to 5008B	45 MPH
5010 to 5019	55 MPH

4. Under Rule 2 of the Consolidated Code of Operating Rules, watches that have been examined and certified to by a designated inspector must be used by train dispatchers and yardmen.

5. The following Consolidated Code of Operating Rules and definitions do not apply to Great Northern or Northern Pacific employes, unless they work in joint territory where such rules are in effect:

10 f	251-264 incl.	Manual Block System
14 t, u, v, w	300-373 (A) incl.	Block Stations
210	S-509 (A)	Cab Signals
217	606, a, b, c, d	
225	636	

6. (a) Not more than one employe will ride on leading footboard of engine, then outside of rail, preferably on engineer's side.

(b) Employes are prohibited from riding on pilot or pilot beam of engine, or on footboard between engine and cars when cars are being pulled, shoved, switched, or while coupling is being made.
Streamliner cars are equipped with diaphragm full width of the car. There is no clearance between the ends of these cars when coupled. Employes must stay entirely in the clear while these cars are being switched or coupled.

(c) When adjustment is necessary to drawbar, knuckle pin, or locking block, prior to making coupling, or when coupling fails, engines or cars must be separated, not less than 10 feet and action taken to prevent movement before going between cars.

(d) Where helper engine is used behind caboose helping train, helper pilot will ride engine, and engine will be uncoupled by trainman from caboose platform.

(e) When heading out of sidings, freight trains with helper engine behind caboose, must regulate speed so that rear trainman can line switch and get on caboose instead of tank of helper engine. This as a matter of safety because employes are prohibited from using running board of engine or passing from front of engine to caboose while train is in motion.

(f) Employes are forbidden to stand with feet resting upon car trucks, truck frame, or oil box while car is in motion.

(g) Riding on open cars containing lading which may shift is prohibited, except as required to operate hand brakes or to ride the lead car when cars are being pushed. Employes must make every effort to station themselves to prevent injury, and on gondola cars must not stand or place arm, leg, or other part of body between sides or end of car and lading.

(h) Trainmen or other employes, when carrying baggage or other articles, except brake club and lantern, are prohibited from climbing up or walking over top of train.

(i) Employes are forbidden to ride on top or sides or stand on top of air dump cars, either loaded or empty.

(j) Jumping from the top of one car to the top of another car on adjacent track is prohibited.

(k) When passing around the end of a standing car or train, always keep a clearance of at least fifteen feet.

7. Snow or ice should not be allowed to accumulate on footboards.

8. Employes who desire to wear colored glasses while on duty are obliged to purchase them from Company storekeeper.

9. Brakemen with less than one year of experience should not be used as flagman except in emergency, and then Superintendent will be notified by wire.

10. Double heading trains is prohibited, except as authorized by Superintendent.

11. When operating snow machines in non-block signal territory, no train should be permitted to follow closer than a station apart; when that cannot be done, they will be blocked not less than thirty minutes apart.

12. After severe blizzard or dirt storm, employes on first train over road must exercise care to avoid accident caused by striking drift without first having drifts faced with hand shovels, cutting in far enough to get beyond the hard snow and giving a perpendicular wall to strike against instead of slope or wedgelike shape.

13. When operating snow dozer, flanger will be operated by competent employe, and conductor in charge will ride in the dozer.

14. On snow and dirt dozers, every precaution must be taken to see that cage, flangers and wings clear all obstacles when in service and are properly secured when in thru trains, and dozers properly turned. Hand screws must be tightened to raise flanger on dozers as high as possible before making a back-up movement, and must not be released until the dozing work is actually to start. Hand screws holding the cage on dozers must be tightened or chains otherwise fastened, except when dozer has air in cylinders and is attended by an employee.

15. Loaded dump cars should not be handled on double track after dark, but if necessary to do so, close watch must be kept by trainmen and if a car dumps its load, train must be stopped and protection afforded on the opposite track.

16. Account necessity of heating road oil to permit faster flowing, such cars will not be spotted in the immediate vicinity of any buildings due to fire hazard.

17. When dining cars or other non-platform cars are placed on the rear of passenger trains, in addition to flexible gate being closed and fastened in place, rear door of car must be kept locked with coach key.

18. Kicking or dropping cars into tracks on which there are occupied outfit cars is prohibited.

19. Baggage cars returned deadhead when moved in storage mail service in opposite direction will be accompanied by waybill carrying notation "Deadhead mail car, no material of any character other than U. S. Mail or mail sacks to be loaded in it". Conductors will be held responsible for compliance of waybill instructions.

20. Baggage cars on trains 1 and 2, and dormitory cars on trains 3, 4, 7 and 8 carry 100 ft. of steam hose in two 50 ft. lengths for emergency use in the event of steam failure on the train engine and a non-steam train line engine is furnished to handle the train. On one of the 50 ft. lengths, one end is equipped with standard connection to fit steam dome of engine and other end equipped with standard Vapor No. 312 steam coupler which fits

all steam conduits. The other 50 ft. hose has both ends equipped with Vapor No. 312 steam coupler. Fastened to base of reel is an extra combination Vapor No. 312 steam coupler, which can be attached to hose with steam dome connection and in case of steam line failure on a car both hose can be used to run around such car so can be taken to first terminal, but car to be drained before proceeding.

21. Unless otherwise provided, when passenger trains are operated against the current of traffic on double track or through sidings, conductors shall notify Railway Postal Clerks, trains shall stop at points where U. S. Mail is usually picked up and conductors are responsible for delivery of mail to postal car.

22. Conductors will report by wire all flat spots on wheels of passenger cars. Any cars having flat spots on wheels of more than two and one-half inches long must be set out.

23. Pullman Troop Sleepers and Pullman Troop Kitchen cars have two separate sets of brake equipment cylinders. When necessary to release air brakes both of these cylinders must be bled off to avoid slid flat wheels.

24. Conductors will see that multiple sheet metal protectors are returned to equipment box on baggage cars when extra journal bearings are used.

25. Where journal boxes on passenger cars are equipped with spring packing retainers and it becomes necessary to repack or rebrass journal, trainmen will see packing retainer is put back in place.

26. When necessary to set out equipment due to hot journal, be sure that all traces of fire are extinguished, and journal box properly marked.

27. Telephones located in booths and freight houses must have switch cut out after using, and must be kept secured by lock except when being used.

28. Conditions make it necessary to handle in trains and in switching movements certain equipment of extreme height and width and all employes are warned to keep off top of these cars when moving and also such standing cars in electrified zone, except in case of emergency as height of cars is such that man standing on top of cars will not have proper overhead clearance at many tunnels and structures. Train engine and yard men are cautioned to be on the lookout for such equipment and in absence of previous advice, wire proper officer for instructions.

29. The contract with the Western Fruit Express Company does not relieve the Railway Company of responsibility for proper handling of perishable freight on the road and at points where the Express Company does not maintain representatives. Conductors on trains carrying perishable freight will ascertain from waybills class of service required and light or extinguish heaters and manipulate vents in accordance with current instructions for handling perishable freight issued by the National Perishable Freight Committee, copies of which are furnished to all interested parties.

30. **HANDLING OF EXPLOSIVES, INFLAMMABLE AND CORROSIVE LIQUIDS.**

Cars placarded explosives moving in thru trains must be handled not less than 16th car from road engine, one car from helper engine, and 11 cars from caboose. These cars may be handled second car from engine or caboose in local trains. These cars must not be placed in train next to loaded tank cars, flat or gondola cars loaded with pipe, lumber, poles, iron, steel or refrigerator cars equipped with gas burning heaters, stoves or lanterns, or next to box cars bearing inflammable or corrosive liquids. Cars containing explosives must have air and hand brakes in operative condition, and must not be cut off while in motion.

The following will govern handling of shipments of explosives by express and handled in passenger trains:

Carload shipments of explosives may be made by Express and handled in passenger trains when in sealed express car properly placarded.

Less than carload shipments may be made in so-called Express peddler car with messenger in charge when such car is assigned to the handling of express and baggage exclusively provided shipments are accompanied by an authorized representative of

the United States Government while on our trains. Placarded loaded tank cars must not be placed in train next to cars containing lighted heaters, stoves, lanterns, or gas burning type refrigerators, or next to flat or gondola cars loaded with logs, lumber, rails, pipe, or anything that is liable to shift and cars must not be handled less than the 6th car from engine or caboose when possible to do so. Loaded tank cars must not be cut off in motion until all preceding cars have cleared route, and in turn cleared, before any cars are allowed to follow.

Further details governing handling of Explosives, Inflammable and Corrosive Liquids may be found in I.C.C. Regulations.

31. The use of open flame lights, burning oil lanterns, and smoking is prohibited when handling gasoline or other flammable oils, also in and around the operating cab of gas-electric engines.

32. Gas-Electric engines must not be fueled while occupied by passengers, or coupled to cars occupied by passengers.

33. Delivery of gasoline or other flammable oils must not be made after dark.

34. The normal position of a spring switch with facing point lock is identified by a color light type signal displaying a lunar white light for train or engine movements in a trailing point direction and for movements in facing point direction when conditions require.

35. The normal position of a spring switch without facing point lock is identified by a triangular yellow target on switch stand with letter "S" in black, and "lunar white" light in switch lamp in place of green light displayed in both directions thru or over the switch.

36. Trains when departing from stations, either from siding or main track in trailing point movement which actuate points of spring switches, a member of the crew must observe the indication of the governing signal in the opposite direction after rear end of train has passed thru switch to ascertain if switch points return to normal position. If this signal indicates Stop and no immediate train movement or other cause is evident report the fact to the Superintendent from the first available point of communication.

37. **SWITCH INDICATORS AT SPRING SWITCHES.**

A Switch Indicator, consisting of a single yellow light unit (normally dark) and a switch-key-controller mounted on an iron mast located at the clearance point of a siding, must be operated by a member of the crew who, together with the engineer, must observe and be governed by its indication before fouling main track or making movement from a siding to the main track thru a spring switch in automatic signal territory, unless the movement is made immediately after an opposing train has passed the switch.

If the Indicator displays a yellow light when the switch-key-controller is operated, train or engine movement to the main track may be made immediately in accordance with train rights and operating rules. Display of yellow light must continue until the leading wheels have passed the clearance point.

If the Indicator does not display a yellow light when the switch-key-controller is operated, every precaution consistent with train rights and operating rules must be taken to provide proper protection before passing the clearance point and fouling the main track.

To operate Switch Indicator, insert switch key in controller and turn clockwise toward "R", and hold a few seconds. If yellow light is displayed and intended movement is not made, insert switch key in controller and turn counter-clockwise toward "N" to restore signal system to normal condition to avoid delays to trains on main track.

Switch-key-controller must never be operated toward "N" after having been operated toward "R" if intended movement to the main track is to be made.

38. Facing point locks on hand operated switches are indicated by a six inch yellow stripe painted on target staff. Be positive locking device is restored to normal position after using. A running switch must not be made thru this type switch.

39. Unless otherwise displayed, yard limit signs of the reflectorized type consist of letter "Y" and approach signs, one mile distant, are diamond shaped.

40. Employes are forbidden to go out on ledges, running boards, or any other outside structure of ditchers, steam shovels, cranes or other similar machines while moving.

41. Employes must not go out on exterior of cab or use running board, nor hang from gangway or steps of moving engine.
Using the narrow ledge along the bottom of the engine cabs to pass to or from cab to running board or to work from is prohibited. This narrow ledge is to be used only in case of extreme emergency when it is necessary to escape from the cab in this manner to prevent injury from escaping steam, hot water, fire or similar causes.
If necessary to get out on running board of engine, engine must not be moving and employe shall use the steps that are provided on the front of the engine from pilot to running board. On engine in roundhouse or shop it is permissible to use ladders or special built stair platforms.

42. Under Consolidated Code Rule 24, engine number only will be displayed in indicators on engines so equipped. This will also apply when our engines are operating over Northern Pacific tracks. Between Klamath Falls and Chemult Southern Pacific rules will govern.

43. When picking up train orders on head end of train it must be done from window of engine cab and never from gangway or steps.

44. While Consolidated Code Rule 204(A) prescribes that copies of train orders will be furnished the rear trainman, such orders will only be furnished on trains designated as follows:
Nos. 1, 2, 3, 4, 7, 8, 9, 10, 28, 29, 30, 355, 358, 359, 360 and sections thereof; also any extra passenger trains whether operated as section of regular trains or as a passenger extra.

45. When no color indication is displayed by a train order signal of the color light type, trains which have not been notified must stop. Trains thus stopped may proceed after securing clearance from operator. If there is no operator on duty, call the operator and secure clearance. Failing to contact operator communicate with train dispatcher for instructions before proceeding. Report the fact to the Superintendent from the first available point of communication.

46. When engine is being spotted for purpose of taking fuel or water, or leaving there, it will not be moved until it is positively known that employes are located where they will not be injured. Manhole cover must not be opened until actually necessary and closed immediately after using. Avoid overflowing engine tanks particularly during freezing weather to prevent ice forming on ground, grab irons, tanks and foot boards of engines.

47. Employes must see that manhole covers on fuel oil cistern of oil burning engines are securely fastened by all lugs after fuel oil has been taken.

48. On stoker equipped engines, stoker must be stopped before employes attempt to pass thru or perform any work in the coal space of tender.

49. Employes who are authorized to move engines at shops and roundhouses, either on inside or outside tracks, must, by inspection, know before moving engine that it is in condition to be moved, and be positive that no one is working underneath or around it that is liable to be injured. When necessary to work under engine on outside tracks another employe will stand watch to prevent engine being moved.

50. When moving engines or heater cars in or about roundhouse tracks, employes in charge of such movement must see man is stationed on rear end of engine or on leading end of heater car while movements are being made and at night white light must be displayed on the rear end of engine or heater car.

51. No employe will move the reverse lever of an engine without first knowing that no one is working around links or other parts who might be injured thereby.

52. Employes firing up boilers must see that boiler is full of water, that reverse lever is in center of quadrant with throttle closed and cylinder cocks open before starting fire to generate steam in boiler.

53. The hole in fire box door of oil burning engines will be closed except when being used for sanding purposes.

54. Air hose on diesel and electric engines must be hooked up in hose fastener when not in use.

55. Before leaving any engines terminal, enginemen will make proper tests and inspections of water glasses, gauge cocks, water column and injectors, and will not leave the terminal unless all these are in proper working order.
Should enginemen on steam engines find that the water is not in sight in water glass, and if water cannot be raised to bottom gauge cock or water glass by opening throttle, on oil burning engines the fire must be extinguished immediately, and on coal burning engines the fire must be knocked out or smothered to the extent there will be no damage done to the crown sheet. If water can be raised to the bottom gauge cock or water glass the water level should be built up by use of the pump, or injector, or both.
Should the low water alarm whistle blow, on any engine so equipped, enginemen will immediately ascertain where the water level is in the boiler by blowing out water glasses and the water column, and being sure that water glass mounting valves are open and if water cannot be raised to the bottom gauge cock or water glass by opening throttle, enginemen will be governed by instructions in the preceding paragraph.

56. Wheel slip light on Diesel engines functions because of a difference in voltage between two traction motors. This is caused by the power wheels revolving at different speeds which may be due to either one pair of wheels slipping or sliding.
When one pair of wheels slip on one or more trucks the Wheel Slip Light on the engineer's instrument panel will light intermittently.
When one pair of wheels lock or skid, due to a broken pinion or axle gear, or the armature shaft frozen on its bearings, the Wheel Slip Signal will light and give a continuous warning as long as power is being supplied to the motors.
When the Wheel Slip Light gives continuous warning, the train should be brought to a stop and positive observation made to ascertain whether or not all the Diesel truck wheels are turning. In the event that a pair of wheels is locked, Superintendent should be notified immediately and no attempt made to move engine until properly authorized.

57. On Diesel road engines consisting of one or more units in freight and passenger service, the following will govern in the event of emergency:
In the event that enginemen observe Diesel engine emitting fire, smoke or water; or in event of derailment, fire in one of the units; or broken connecting rod or other rotating part in the one of the engines causing excessive pounding, the enginemen should immediately shut down all the engines from the operating position in the engineer's control station in the cab. This can be done on road engines by pushing the button at the end of the throttle handle with the thumb and then moving the throttle forward to the farthest position. The fuel pump switch at the control box should also be pulled; and in the event of fire, the emergency fuel cut-off valve cord should be pulled.
If there is any question in the engineer's mind as to what is occurring in the trailing cabs, all the units should be shut down from the operating cab as stated above and details investigated when the train has stopped.
In the event of a fire in the engine, fire fighting equipment should be operated in accordance with the instructions mounted in each engine cab.

58. Diesel engines are provided with bayonet gauges or lubricating oil sight glasses which provide a means of determining the lubricating oil level in the engine. The oil level should always be between the "Low" and "High" limits. Any increase in oil level in the crankcase above the "Full" mark would indicate a fuel oil or water leak into the oil pan. If this condition is found, the engine should be shut down and not again operated until a qualified mechanic or supervisor ascertains whether the engine is in safe condition to continue operation.

59. When necessary to shut down one of the engines on freight or passenger Diesel engines during freezing weather the following will govern:

(a) Engine should be drained to low level and "G" valve opened.

(b) Steam admission valve to engine must be opened to supply steam to engine cooling system from steam generator.

60. MARS LIGHT.

Engineers operating engines equipped with Mars Light must familiarize themselves with the instructions and will be governed by the following:

Mars Light on engines are of a type that will display either a white, or emergency red, oscillating light. An operating headlight panel switch is located to the right of the engineer. First turn on dynamo motor generator snap switch adjacent to panel switch, then turn on snap switch on headlight panel switch. This will start the oscillating motion of the light. The operating lever on headlight panel may then be placed in one of the following positions: emergency red - off - full - dim - which will display corresponding light; bright emergency red light—bright white light—dim white light. This light takes a 480 watt, 12 volt globe.

The Mars Light on engines will be used in addition to the headlight and will be displayed in the same manner as the headlight as prescribed by Rules 17 and 17(B) of the Consolidated Code of Operating Rules.

When necessary, the Mars Light can be used as an emergency headlight in case of failure of regular headlight, or as a focus light in territories where there is falling rock. When used as a focus light the Mars Light will come to a stop by turning off the oscillating snap switch, then by operating the push button on the headlight panel switch it can be focused to any position desired.

When necessary to use the Mars Light as a protection light on engine, the engineer must immediately place the operating lever in red position and it must be used in that position by day or night when protection is required in double and single track territory such as—when a train is disabled or stopped suddenly by an emergency application of the air brakes; over-running the fouling point at meeting or waiting points, at end of double track or a junction; or other emergencies when in the judgment of the conductor or engineer protection is necessary at front end of train or engine.

Engineer of an approaching train finding a Mars Light displayed in red position must immediately stop and if running on an adjacent track will not proceed until it has been ascertained that track is clear and will then proceed at restricted speed until train has been passed.

The use of the emergency red oscillating light at either the head end or rear end of train does not in any way relieve enginemen and train men from complying with requirements of Rules 99 and 102 of the Consolidated Code of Operating Rules or the observance of other rules.

Conductors and trainmen on trains equipped with Mars Light at rear of train must familiarize themselves with instructions on the type of light and location of switches which control the light and will be governed by the following:

Mars emergency red oscillating light on cars are of two types—Automatic Control and Portable Manual Control. The Master Switch, emergency switch, pilot light and detailed instructions covering operation of light are located in locker inside of car.

There are two emergency switches on business cars, lounge and parlor cars with non-vestibule ends—one inside of car and the other on outside at rear under body of car on engineer's side. When the master switch is cut out the Mars Light may be turned on and off by either of these emergency switches.

On cars equipped with automatic control light, immediately as the train departs from its initial station the flagman must at once turn on the master switch which will set the automatic control and emergency red light into operation; it will continue to operate automatically when train speed is below 18 MPH and off when above that speed. Light will remain burning during stops.

If the automatic control feature fails, the Mars Light will remain burning continuously regardless of train speed. Under such condition flagman must promptly cut out master switch and operate light manually with emergency switches.

Portable Mars Light can be turned on and off by a pull and push switch mounted on outside casing of light. Before coupling another car on rear the Portable light must be removed.

Automatic control or Portable Mars red light must be displayed by day or night each time train stops; also, when moving under circumstances in which it might be overtaken by another train or engine, and, also during foggy and stormy weather. When necessary to protect train at speeds above 18 MPH the flagman may operate light manually with the emergency switch complying at all times with requirements of Rule 99.

Flagman must make frequent inspection to determine that Mars Light is functioning properly, particularly when going out to flag.

The pilot light must not be depended on as indicating that the Mars Light is burning. If pilot light is burning and Mars Light is out this is an indication that Mars Light globe is burned out. If both Mars Light and pilot light are not burning check the fuses. If this fails to correct, the conductor will wire Car Foreman at next terminal. Spare globes are carried in rack in the locker. Mars Light on cars take a 250 Watt, 32 Volt globe.

The Mars Light must be extinguished under following conditions:

(a) When train is standing at the initial and terminal stations.

(b) When switching is to be performed from rear end of trains.

(c) When train is on siding to be passed by another train.

(d) When operating in double track or in territory where another train is approaching from the rear on an adjacent track, but not until the flagman has definitely ascertained that the approaching train is running on the adjacent track.

The terms "Initial" and "Terminal" stations as used herein refer to the starting and ending points of the train run, such as St. Paul, Duluth, Seattle, etc.

61. ON ENGINES, PASSENGER AND FREIGHT CARS EQUIPPED WITH ROLLER BEARINGS, EMPLOYES WILL BE GOVERNED AS FOLLOWS:

American Steel Foundries' type roller bearings have the roller bearing in the hub of the wheel and standard journal brasses in the journal box. Should the roller bearing fail, or overheat, the axle will then turn on the conventional brass in the journal box and should be given the same attention as standard non-roller bearing boxes. If the roller bearings should fail in such a manner as to permit the wheel to wobble on the axle, care must be exercised, train moved slowly to first siding and car set out.

Roller bearing failures on cars or engines equipped with roller bearings in the journal boxes may be due to lack of oil. If the box is not blazing, the oil plug in the cover should be removed and engine or valve oil added. Oil must never be added to a box that is blazing. After the oil has been added and plug replaced, the train should proceed at reduced speed and care exercised until it is apparent that the box will run cool. A car equipped with roller bearing that is on fire must be closely watched, train moved slowly to first siding and car set out. Prompt report of all roller bearing failures occurring on engines and cars must be made to the Superintendent from the first available point of communication.

Some engines and cars equipped with roller bearings have heat indicators or stench bombs inserted in the housing of boxes which release a strong pungent odor in the event of excessive journal box temperatures. When this odor is detected train must be stopped at once and box located. Compare the temperature of this box with the other boxes on the same engine or car, check the oil level, and if there is no evidence of overheating, train may proceed, but if the box is overheating, proceed only as instructed in the preceding paragraph.

62. TRAIN INSPECTION.

On passenger trains frequent running inspection shall be made from the vestibules in various parts of the train and trainman should so place himself so as to take advantage of air currents or other atmospheric conditions. When stops are made for water or fuel, or when on siding at meeting points and at other stops where in the judgment of the conductor it is necessary, a careful inspection shall be made of the running gear.

Freight and mixed trains when stopped for the purpose of taking fuel, water, meeting trains, station work, train orders, etc., conductors must see that careful inspection is made of running gear before proceeding, and when practicable such stops should be made between switches. This, however, does not relieve trainmen from making inspection when other stops permit or whenever in the judgment of the conductor it is necessary.

During stormy weather, when view of running gear is obscured, or if other conditions require, more frequent inspections shall be made.

Engine and trainmen must frequently look along both sides of the train from the head end and the rear end, especially while rounding curves and approaching sidings, to observe condition of train. They must be on the lookout for signals given by other employes who may observe defects on passing trains.

Frequent inspection shall be made by trainmen of track behind moving train to detect if anything on the train is dragging so that if any indications of fresh marks on the track are observed the train may be brought to a stop as quickly as possible to avoid derailment. When caboose is equipped with electric spot light it shall be used at night to make such track inspection; when not so equipped trainmen shall use electric lantern for this purpose.

During winter weather at points where inspections are made train line in first four cars behind engine shall be thoroughly blown out to prevent ice from forming in train line due to moisture accumulation.

These instructions do not supersede Rules 713 and 812 of the Consolidated Code of Operating rules, but are supplementary thereto.

63. Rule D-97 is in effect on this division.

64. Trains handling flat or skeleton cars loaded with logs must stop at appropriate locations immediately before passing over through-truss bridges or through tunnels and make thorough inspection of all cars of logs in their train, making certain train and lading are in safe condition before proceeding. Extra stops en route will be made for this purpose when in the judgment of the conductor it is necessary.

Trainmen must maintain watch behind their trains for logs that may have rolled off cars and if main track is fouled take prompt action to protect trains.

On double track, conductors must notify train dispatcher when logs are to be handled and the log train must be at stop when being passed by other trains, except that when two trains handling logs are passed, either one should stop until the other train has pulled by whether on siding or double track.

On single track, trains handling logs must be at stop when meeting or being passed by passenger and freight trains, except when there are more cars than siding will hold, it is permissible for log train to pull by such trains at restricted speed.

In electrified zone and double track territory, logs must be secured to cars by chains or cables.

Unless conditions require further speed restrictions, trains handling logs must not exceed 25 MPH.

No trains may pass under overhead railroad bridge at Snohomish when cars loaded with logs are passing over this bridge.

65. **GREAT NORTHERN BULLETINS ON TENANT LINES.**

NP RY .....Everett, Auburn, Sumas, Seattle.
CMStP&P RR .....Everett, Tacoma, Enumclaw.
Canadian National Ry .....Port Mann.
National Harbours Board Ry..Vancouver, B. C.

66. Engineers making stops to take water with long heavy freight trains will cut off their engines and not attempt to spot at water spout.

67. SP&S Ry furnishes copy of their Terminal Division bulletins to Interbay roundhouse, Interbay Yard office and PD office, Seattle for convenience of our employes entering their tracks from the north.

68. Red signs have been placed on frost boxes of water tanks and oil tanks, as follows:

Oil Tanks—in case of emergency, close large valve in frost box.
Water Tanks—in case of emergency, close large valve in frost box.

LOCATION OF TUNNELS

First Subdivision:

Tunnel No. 13 —2 miles west of Chumstick.
Length—2601'.
O. H. Clearance 19' 2" to trolley wire.

Tunnel No. 13.5—4.7 miles west of Chumstick.
Length—788'.
O. H. Clearance 19' 0" to trolley wire.

Tunnel No. 14 —1.08 miles east of Winton.
Length—4059.4'.
O. H. Clearance—19' 11" to trolley wire.

Tunnel No. 15 —Between Berne and Scenic.
Length—41152'.
O. H. Clearance—19' 3" to trolley wire.

Tunnel No. 16 —0.24 miles east of Everett.
Length—2440'.
Height—21.1'.

Tunnel No. 17 —0.10 miles east of Seattle.
Length—5141.5'.
Height—23.3'.

Second Subdivision:

Tunnel No. 18 —0.33 miles north of Samish.
Length—1113'.
Height—21.2'.

Tunnel No. 19 —0.66 miles south of Sockeye.
Length—141.3'.
Height—20.5'.

Tunnel No. 20 —0.45 miles south of Sockeye.
Length—328.5'.
Height—20.35'.

Tunnel No. 21 —2.12 miles north of Sockeye.
Length—713.2'.
Height—20.9'.

WATCH INSPECTORS

Funk's Jewelry Store, Wenatchee.

F. M. Merryfield, 1707 Hewitt Ave., Everett.

Weisfield & Goldberg, 414 Pike St., Seattle.

Peter Michael, 223 Pine St., Seattle.

A. T. Crumpacker, 5308 Ballard Avenue, Seattle.

Mierow's Inc., 1105 Broadway, Tacoma.

C. K. Ahern, Centralia.

Kenneth A. Wade, Burlington.

E. H. Easton, Bellingham.

S. E. Edwards, New Westminster.

W. H. Grassie, 607 Hastings, Vancouver, B. C.

Weisfield & Goldberg, 530 S. W. Washington St., Portland, Ore.

SPEED TABLE

Time Min.	Per Mile Sec.	Miles Per Hour	Time Min.	Per Mile Sec.	Miles Per Hour
	40	90.0	1	12	50.0
	41	87.8	1	14	48.6
	42	85.7	1	16	47.4
	43	83.7	1	18	46.1
	44	81.8	1	20	45.0
	45	80.0	1	22	43.9
	46	78.3	1	24	42.9
	47	76.6	1	26	41.9
	48	75.0	1	28	40.9
	49	73.5	1	30	40.0
	50	72.0	1	33	38.7
	51	70.6	1	36	37.5
	52	69.2	1	39	36.4
	53	67.9	1	42	35.3
	54	66.6	1	45	34.3
	55	65.4	1	50	32.7
	56	64.2	1	55	31.3
	57	63.1	2	—	30.0
	58	62.0	2	10	27.7
	59	61.0	2	20	25.7
1	—	60.0	2	30	24.0
1	1	59.0	2	40	22.5
1	2	58.0	3	—	20.0
1	3	57.1	3	30	17.1
1	4	56.2	4	—	15.0
1	5	55.3	5	—	12.0
1	6	54.5	6	—	10.0
1	7	53.7	7	—	8.5
1	8	52.9	8	—	7.5
1	9	52.1	9	—	6.7
1	10	51.4	10	—	6.0

G. E. Wellein, Chief Dispatcher, Seattle.

R. N. Whitman, Trainmaster, Interbay.

H. B. Bassett, Trainmaster, Seattle.

E. T. Carter, Trainmaster, Everett.

E. J. Gardner, Trainmaster, Portland.