

NORTHERN PACIFIC RAILWAY COMPANY

Rocky Mountain Division

Special Instructions No. 8

**In Effect at 12:01 A. M.
Mountain Standard Time.**

Tuesday, January 1, 1946

These instructions constitute a part of the Time Table currently in effect.

Employees 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.

**J. F. ALSIP,
Assistant General Manager.**

**DAN HEALY,
Superintendent.**

**F. R. BARTLES,
General Manager**

**C. V. BERGLUND,
General Superintendent of
Transportation.**

ALL SUBDIVISIONS.

1. Speed Restrictions—

Maximum Speeds Permitted—

The maximum speeds in miles per hour permitted are listed by zones for each Subdivision.

Except on mountain grades, passenger trains with diesel-electric engines and all light weight cars may run at speeds ten (10) miles per hour faster than passenger trains with steam engines.

Speed Restrictions Account Curves, etc.—

Reductions of speeds, within the zones listed for each Subdivision, when necessitated by curves or for other reasons, are designated by Advance Warning, Reduce Speed and Resume Speed signs.

The maximum permissible speeds in miles per hour for trains with steam engines are shown on the signs.

Except on mountain grades, passenger trains with diesel-electric engines and all light weight cars may operate through the restricted zones at speeds ten (10) miles per hour faster than those shown on the signs.

Speed Restrictions, Miscellaneous—

The locations where reduced speeds are required, for such reasons as city ordinances, bridges, etc., where not designated by Advance Warning, Reduce Speed and Resume Speed signs, are listed for each Subdivision and appear directly after the list of maximum speeds permitted.

J Manifest freight trains35 MPH.

All trains and engines:

Through crossovers, turnouts and gantlets.....15 MPH.

Over spring switches—

In facing point direction,

If not equipped with facing point lock..... 30 MPH.

If equipped with facing point lock.....Normal Speed

In trailing point direction,

When movement actuates switch points..... 30 MPH.

On track for which switch is lined.....Normal Speed

If any movement is through turnout, the allowable turnout speed must be observed.

Handling steam wrecking cranes, pile drivers or

locomotive cranes30 MPH.

Picking up train orders from operators.....30 MPH.

Engines—

Classes—

Handling
trains

Running
light

All A and Q (except on passenger
trains where higher speed is authorized).....60 MPH.

Z-6, Z-7 and Z-860 MPH. 50 MPH.

Z-5, Y, Y-1, Y-340 MPH. 35 MPH.

Z-3, Z-435 MPH. 30 MPH.

S-4, T, T-1, W to W-5 inc., Y-2.....50 MPH. 45 MPH.

S-1045 MPH. 40 MPH.

Steam switch engines, without engine

trucks, under all conditions.....15 MPH. 15 MPH.

660 HP diesel-electric switch engines,

Nos. 125 to 130 inc.....45 MPH. 45 MPH.

5400 HP diesel-electric road engines,

Nos. 6000 to 6010 inc.....65 MPH. 65 MPH.

900 HP and 1000 HP diesel-electric

switch engines and combination

road-switch engines60 MPH. 60 MPH.

Coming from shops, under steam, to prevent running hot:

All A and Q and classes Z-6, Z-7 and Z-8.....50 MPH.

S-4, T, T-1, W to W-5 inc., Y-2.....35 MPH.

Z-5, S-10, Y, Y-1, Y-3.....30 MPH.

Z-3, Z-425 MPH.

Main Line—With main and side rods removed:

All A and Q and classes Z-6, Z-7 and Z-8.....30 MPH.

Z-5, S-4, S-10, T, T-1, W to W-5 inc.,

Y to Y-3 inc.....25 MPH.

Z-3, Z-420 MPH.

With main rods removed and side rods in place:

All A and Q and classes Z-6, Z-7 and Z-8.....35 MPH.

Z-5, S-4, S-10, T, T-1, W to W-5 inc.,

Y to Y-3 inc.....30 MPH.

Z-3, Z-425 MPH.

Branch Lines—With either or both main and side rods removed:

All A and Q classes25 MPH.

All other classes20 MPH.

On bridges—With either or both main and side rods removed:

Steam switch engines, without engine trucks15 MPH.

Other engines20 MPH.

In the event the above speeds are in excess of 50% of the permissible speed for operating the engine in working order over any bridge carrying speed restrictions, speed on such bridges shall be 50% of the permissible speed for engine in working order.

Dead engines going to shops or being transferred from one district to another with all rods up or in place, the piston rod parted from the crosshead and removed and the valve motion disconnected and blocked, may be moved in trains at not to exceed the permissible speed of freight trains operating in the territory over which the engines are to be moved, or the operating speed restriction for track or bridges for that class of engine, whichever is the lower.

Engines handled in this manner when coming from shops must not exceed the operating speeds specified for engines coming from shops under steam.

Diesel-electric, 660 HP Nos. 125 to 130 inc., when

handled dead in train45 MPH.

Diesel-electric, other engines, when handled dead

in train50 MPH.

Bridge or other restrictions must be observed for these engines the same as when in operating condition.

2. Single and Double Headers; operation—track and bridges—general.

Except as otherwise provided, double header operation of engines of the same class carry the restrictions applicable to single headers of that class. Double headers of engines of different classes carry the restrictions applicable to double headers of the heavier class of the combination.

Double-Heading Restrictions—Engines classes A-2 to A-5 or Z-5 to Z-8 inclusive:

When necessary to use two such engines on freight trains, the second engine must be cut in at the middle or in the rear portion of the train. When such engines are used as helpers on passenger trains handled by engines of the same class, such helper engine must be placed on the rear of the train. When engines of these classes are used to double-head with engines of W or other A or Z classes, the A-2 to A-5 or Z-5 to Z-8 inclusive, must be the lead engine.

Diesel engines—Except as otherwise provided, diesel-electric engines of the 6000 series and all diesel switch engines may be operated over bridges under the same restrictions shown for Class T engines.

3. Lights will not be displayed by night on train order signals on the 8th, 9th, 10th, 11th, 12th, 13th, 14th and 15th subdivisions. Trains will be governed by the day indication of these train order signals.

4. Rule D-97 applies to all divisions.

5. Except in case of fogs, storms, or otherwise bad weather, yellow signals may be used, without flagmen, when placed as prescribed by Rule 10(h) to indicate approach to a red signal on Low Line (between Logan and Bozeman via Powers first subdivision) and on 8th, 9th, 10th, 11th, 12th, 13th, 14th and 15th subdivisions, and also in special cases authorized by the superintendent and protected by train order.

6. Rule 606: Emergency Signals are not used at interlockings or drawbridges operated by the Northern Pacific Railway.

7. Test of hand brakes of gas-electric motor cars must be made once each trip. If crew has charge of moving car prior to leaving initial station, test will be made during such movement; otherwise as soon as possible after leaving initial station. On cars equipped with "Deadman's Control", conductor and engineer will cooperate in making test.

Gas-electric motors cars, when handled dead in freight trains, must be behind caboose.

8. Precautions must be taken on double track to prevent accidents from swinging doors or other loose construction attached to cars or locomotives.

9. Electric Switch Locks—To operate, open door of electric switch lock and, if indicator shows "proceed", move lock lever to the left, which will unlock switch and permit it to be opened, and movement may be made at once. If indicator shows "stop", and conflicting train movement is not evident, open door of release box and push the push button. This will start operation of clockwork release which will run down in three minutes and, at the end of that time, indicator will show "proceed" and switch can be unlocked by moving lever to the left. Restore lock lever, close and lock doors of electric locks and release boxes when switches are restored to normal position.

10. On double track, trains handling logs will not be permitted to meet passenger trains between stations. Conductors will notify train dispatcher when there are logs in their trains and secure train order that passenger trains will be held at next station until they have arrived. On single track, trains handling logs when meeting passenger trains will not proceed unless the passenger train is standing still or has moved by the log cars. Conductors of all trains picking up logs must know personally that cars are not overloaded or improperly loaded and are safe to move without loss of lading.

11. Pusher engines must not push on cabooses not equipped with steel sills.

12. Mountain Grade Operation—

At meeting points established by train orders:

Unless otherwise directed, the ascending train will take siding.

Descending freight or mixed trains holding main track must not pass the upper switch of the siding until ascending train is clear of main track.

Descending freight and mixed trains and light engines must not exceed one mile in three minutes.

Trains handling express or expedited freight having a consist of cars equipped for passenger train operation, or with a small percentage of freight refrigerators intermingled, will be governed by speed specified for passenger trains descending mountain grades.

Special trains having a consist throughout of cars of the type designated as Special Troop Sleeping and Troop Kitchen cars, when operating on descending grades designated as Mountain Grades, must have retaining valves used on all cars. Retaining valve handles to be turned to the slow direct exhaust (uppermost) position just before passing summit of grade and turned down when foot of mountain grade is reached.

Trains having a consist of more than twenty passenger equipment cars having LN, UC, PC or D22 type triple valves adjusted to function as graduated release, turn up retaining valve handles on three-fourths of the cars from head end of train. When more than one-fourth of the cars are in direct release turn up all retaining valve handles.

For special instructions applicable to any specific mountain grade, see "Mountain Grade Operation" for the Subdivision on which it is located.

13. Bulletin Stations:—

Livingston, Bozeman, Logan, Whitehall, Butte.
Helena, Garrison, Missoula, St. Regis, Wallace, Paradise.
Silver Bow—for Union Pacific trains.

14. Standard Time Clocks:—

Livingston, Bozeman, Logan, Whitehall, Butte, Helena, Garrison, Missoula, Wallace and Paradise.

15. Watch Inspectors:—

Lytle and Jondrow, Livingston. S. V. Justus, Whitehall.
Bozeman Jewelry Co., Bozeman. R. W. Crawford, Helena.
S. and S. Jewelry Co., Butte. Kohn Jewelry Co., Missoula.
H. E. Rakeman, Polson. H. M. Hueman, Wallace.

FIRST SUBDIVISION.

(MAIN LINE)

1. Speed Restrictions—	Freight and mixed	Passenger Steam	Diesel
Zone—Between			
Livingston and Muir			
Ascending	40	40	40
Descending	20	36	36
Ascending or Descending against the current of traffic	20	25	25
Muir and West End	30	30	30
West End and 1400 ft. west of MP 135 (3 miles west of Chestnut)			
Ascending	30	30	30
Descending	20	36	36
Ascending or Descending against the current of traffic	20	25	25
1400 ft. west of MP 135 and Bozeman	50	60	70
Ascending or Descending against the current of traffic	20	25	25
Bozeman and Logan,			
via Powers	35	35	45
via Manhattan	50	70	80
Logan and Helena	50	60	70
At Belgrade Tower Interlocking,			
via Manhattan	50	70	70
via Powers { westward	20	20	20
{ eastward	40	40	40

At Livingston, from crossover leading from eastward track to hump track and into yard..... 8 MPH.

2. Bridge and Engine Restrictions—

Bridge 164 Gallatin River—Engines class Z-5.....20 MPH.

Engines classes Z-6, Z-7 and Z-8.....30 MPH.

At Livingston—Engines classes Z-5, Z-6, Z-7 and Z-8 cannot be moved over shop lead.

No simultaneous movement of Z-4, Z-5, Z-6, Z-7 or Z-8 engines permitted from or to No. 6 or scale track, to leads north and south of No. 6 track east of subway account short clearance.

At Bozeman, engines must not pass over coal dock hopper pit. Engines classes A-2 to A-5 and Z-5 to Z-8 inc., moving on stockyard track must not pass over the Milwaukee crossing.

At Manhattan, Class W-3 and heavier engines must not use wye.

At Logan, engines heavier than Class W not permitted on hopper pit of coal dock.

At Trident—No. 5 track cannot be used across coal hopper at cement plant. On tracks 2 and 3 hold onto enough cars so that engine does not pass the chutes located on these tracks.

Engines class Z-6 and heavier not permitted on cement plant tracks north of the siding.

At Townsend, engines must not pass over coal dock hopper pit.

At East Helena, engines heavier than class W not permitted on McClelland Spur.

Overhead bridge at cinder track just east of American Smelting and Refining Company ore bins will not clear engines or cars of greater height than 9 feet 6 inches from top of rail.

Engines classes Z-5, Z-6, Z-7 and Z-8 not permitted on following tracks;

Livingston, all except through tracks in main yard or to roundhouse or wye.

Muir, both spurs.

West End, spur.

Bozeman, cannery track 100 feet west of Rouse Ave. crossing to end of track, track to upper yard.

Story, spur.

Belgrade, stockyard track west of stock yard, elevator track.

Manhattan, all tracks except siding and house track.

Trident, tracks 5 and 6 over hoppers at cement plant.

Clarkston, spur.

Lombard, spur leading off west end of siding.

Brewer, spur.

Townsend, mill spur, and wye track.

Clow, spur.

Placer, spur.

Louisville, spur from crossing to end.

East Helena, all tracks except sidings.

Helena, all except main yard tracks and tracks to turntable, coal dock, roundhouse and wye.

3. **At Helena**—Eastward freight trains use lead extension when moving from yard. Crossover from main track westward to the lead at MP 237 will be used by westward freight trains entering yard. Normal position of west switch of this crossover is for movement east via lead extension.
Third Subdivision instructions govern.
4. **At Logan**—Operators will handle the switch just east of the station platform for all eastward train movements to Low Line, but authority must be obtained from the train dispatcher before lining the switch. When trains are directed by train order to wait for or meet a train at the Low Line switch, it refers to the switch just east of the station platform.
Eastward freight trains must not block highway crossing west of passenger station between 7:00 a. m. and 5:00 p. m., when delayed for any cause, except taking water.
5. **Between Muir and West End—Single track.** Interlocking Rules govern except that for movement to single track, trains must not pass an interlocking "Stop" signal without train order authority. Train movements over single track will be governed by interlocking signals and rules.
Rule S-83 will not apply. Switching movements inside the interlocking limits may be made on authority from operator at West End, in which case switches will be thrown by hand.
At Muir—Helper engines will not require clearance for movement Muir to Livingston moving with current of traffic if interlocking signal indicates proceed for the movement. Operator at West End must obtain authority from the train dispatcher before displaying the proceed indication for this movement. Authority must be secured from the train dispatcher before engines leave the eastward main track spur to make a reverse movement.
The operator must obtain authority from the dispatcher before lining the remote dual control switch for an eastward movement to the westward main track. Such authority will not be given by the dispatcher if there is a train on the westward track that has departed Livingston, nor will the dispatcher clear a train at Livingston until the movement is completed after having given permission for such a lineup.
6. **At Bozeman**—Normal position of double track switch is for eastward track. Normal position of Low Line switch is for the main track via Manhattan.
7. **At Livingston**—Normal position of double track switch is for the eastward track.
8. **Dual Control and Spring Switches**—
At Helena, spring switch at east end of lead extension, equipped with facing point lock.
At Bozeman, the end of double track switch and Low Line switch are dual control switches, and may be electrically operated with remote control by the operator at Bozeman.
At West End, dual control switch at end of double track.
At Muir, dual control switch at end of double track and at west end of siding, and may be electrically operated with remote control by the operator at West End.
At Livingston, spring switch at west end hump track, trailing, not equipped with facing point lock.
9. **Sidings**—
At Townsend—south siding is eastward; north siding is westward.
At Winston—north siding is eastward; south siding is westward.
At East Helena—south siding is eastward; north siding is westward.
At Helena—second track north of passenger station is siding for passenger trains.
10. **Extra Trains**—Bozeman to Logan, will run via Manhattan; Logan to Bozeman, will run via Powers, unless otherwise instructed by train order.
11. Whistle signals 14(t) and 14(u) will be used by trains at Bozeman and Logan on Low Line, as occasion requires.
12. **Mountain Grade Operation**—
Mountain grade between Livingston and 1400 ft. west of MP 135, three (3) miles west of Chestnut. See all subdivisions item No. 12.
Air brake tests must be made in accordance with Air Brake Rule 35 before leaving Bozeman and Livingston.

90 pounds brake pipe pressure must be maintained on eastward freight or mixed trains, West End to Livingston yard and 70 pounds on westward freight or mixed trains, Muir to Bozeman. On westward trains having tonnage in excess of 50 tons per brake, the brake pipe pressure must be increased to 90 pounds before passing Muir and maintained to Helena.

On trains of all empty cars, retaining valves must be used on one-third of the cars, alternating beginning with the head car.

On eastward freight or mixed trains, at Bozeman or before leaving West End, retaining valve handles must be turned up on all loads and one-half the empties alternating the empties and turned down when stop is made in yard at Livingston.

When stop is made at west crossover west end of Livingston yard, retaining valve handles on rear half of train will be turned down.

On westward freight or mixed trains, at Livingston or before leaving Muir, retaining valve handles must be turned up on all loads and one-third of the empties, to be turned down at Bozeman.

Freight trains, when handling 1500 tons or less, need not use retaining valves Muir to Bozeman, except when tonnage exceeds 50 tons per brake, then retaining valves must be used on one-half the cars in the train, beginning with the head car.

13. **Pusher District**—Between Livingston and Bozeman and between Townsend and Helena.

When two helper engines, class A or heavier, are used over Bozeman mountain, one engine will be placed ahead of caboose.

14. **Yard Limits**—Tracks between yard limit signs east of Muir and west of West End, operated as one yard. Westward trains will not require rear end protection between end of double track at Muir and west switch of westward siding at West End. Eastward trains will not require rear end protection between end of double track at West End and east switch of crossover at Muir.

15. **Register Stations**—

Livingston, Bozeman, Logan, Helena.

16. **Register and Clearance Exceptions**—At Bozeman and Logan, trains may register by Form 608 and will not require a clearance if train order signal indicates proceed.

SECOND SUBDIVISION.

(MAIN LINE)

1. **Speed Restrictions**—
Zone—Between

	Freight and mixed	Passenger Steam	Diesel
Logan and Sappington.....	50	70	80
At Sappington Interlocking			
Westward	40	40	40
Eastward	45	55	55
Sappington and two miles east of Pipestone	50	60	70
Two miles east of Pipestone and Spire Rock—Ascending.....	30	30	30
Descending.....	20	30	30
Spire Rock and Homestake—			
Ascending	30	30	30
Descending	20	25	25
Homestake and MP 68 (east of MU Transfer)—Ascending	30	30	30
Descending	20	30	30
MP 68 and Butte	35	60	70
At Butte—Within city limits,			All trains.
On main track			20 MPH.
On other tracks			15 MPH.
Approach passenger station at			Restricted Speed.

2. **Bridge and Engine Restrictions**—

Bridge 4-1, Madison River—engines classes A-2, A-3, A-4 and A-555 MPH.
Same classes, doubleheaded50 MPH.
Bridge 51, Spire Rock Viaduct, Bridge 52, Pipestone Viaduct and Bridge 63, Highview Viaduct—Engines class Z-5.....10 MPH.
Engines classes Z-7 and Z-820 MPH.
Engines classes A-2, A-3, A-4, A-5 and Z-630 MPH.
At Logan, engines heavier than class W not permitted on hopper pit of coal dock.

At Whitehall, engines must not pass over coal dock hopper pit. Between Whitehall and Butte engines classes A-2 to A-5 inc. must not be doubleheaded.

Engines classes Z-6, Z-7 and Z-8 not permitted on following tracks:

Willow Creek, house and stock yard.

Welch, quarry spur.

M. U. Transfer, coal dock and tracks 3 and 4.

Butte, all tracks, except 1, 2, 3, 11, 12, 13, Old main and siding.

3. **At Logan**—Train order signal does not govern second sub-division trains.

4. **At Whitehall**—

The west switch of the cross-over at the passenger station is the west end of the siding.

5. **Double Track**—The normal position of switches at M. U. Transfer and Butte is for westward track.

6. Whistle signal 14(r) and 14(s) will be used by Second Sub-division trains at Logan, as occasion requires.

7. **Mountain Grade Operation**—Mountain grade between two (2) miles east of Pipestone and two (2) miles east of M. U. Transfer. See all subdivisions item No. 12.

Passenger trains descending must not exceed any one (1) mile in two (2) minutes.

Eastward freight or mixed trains will stop at Spire Rock to cool wheels and inspect train.

Air brake test must be made in accordance with Air Brake Rule 35 before leaving Butte or Highview on eastward, and Whitehall or Homestake on westward freight or mixed trains.

90 pounds brake pipe pressure must be maintained on freight and mixed trains in both directions between Whitehall and Butte descending mountain grade, and also on eastward trains Whitehall to Livingston, and conductors must know by caboose gauge that this pressure is attained before making terminal test.

On westward freight or mixed trains, at Whitehall or Homestake, retaining valve handles must be turned up on all cars and turned down at Butte.

On eastward freight or mixed trains, at Butte or Highview, retaining valve handles must be turned up on all cars and turned down at Whitehall.

8. **Helper District**—Between Whitehall and Butte. Arrival of helper engines at M. U. transfer will be telephoned by engineers to operator at Butte.

9. **Yard Limits**—Tracks between yard limit signs east of Homestake and west of Highview operated as one yard.

Tracks between yard limit signs east of M. U. Transfer and west of Butte operated as one yard.

10. **Register Stations**—

Logan, Butte.

Whitehall for second class and inferior trains.

THIRD SUBDIVISION.

(MAIN LINE)

1. **Speed Restrictions**—

Zone—Between	Freight and mixed	Passenger Steam	Diesel
Helena and east switch Birdseye	50	60	70
except G. N. Crossing Interlocking	30	30	30
Birdseye (east switch) and Austin			
Ascending	30	30	30
Descending	20	30	30
Austin and Blossburg			
Ascending	30	30	30
Descending	20	25	25
Through Mullan tunnel, use not less than	----	Two and one-half minutes	
Blossburg and Garrison	50	60	70
Westward Track—			
Garrison and Drummond	50	60	70
Drummond and Missoula	50	70	80
Eastward Track—			
Garrison and Clinton	50	60	70
Clinton and Missoula	50	70	80
At Missoula, over Taylor and Madison street crossings, first class trains			25 MPH.

Between Bearmouth and Drummond, due to the CMStP&P tracks paralleling the eastward track, the reduce speed sign located 1200 feet west of MP 78, the zone sign at curve 3000 feet west of MP 77 and the resume speed sign at east end of this curve are located north of westward track.

2. **Bridge and Engine Restrictions**—

At Blossburg, track from 400 feet north of wye tail switch to Clay Pit restricted to the use of engines classes W or Z-3.

At Avon, engines must not pass, and trainmen must not ride platform side of cars by ore loading platform.

At McQuarrie Gravel Pit, engines or high cars must not be moved under gravel hopper located 1400 feet from head block. Hopper will not clear man on side of car.

Engines classes Z-5, Z-6, Z-7 and Z-8 not permitted on following tracks:

Helena, all tracks except main yard tracks and tracks to turntable, coal dock, roundhouse and wye.

Fort Harrison, beyond east side of highway crossing.

Birdseye, spur.

Weed, spur.

Skyline, spur

Vent Plant, spur.

Blossburg, Clay pit spur.

Sampson, spur.

Garrison—Coach track east of passenger station beyond 120 feet west of standpipe, material yard track and stull spur west end of yard.

Gold Creek, spur from stockyard to end of spur.

Drummond, beyond 151 feet west of switch on stem of wye.

Nimrod, spur.

Bonita, spur.

Clinton, spur.

Bonner, all tracks in ACM Co. yard except High Line to first highway crossing.

Missoula, all tracks except main yard tracks, tracks to coal dock, turntable and wye.

Wrecking cranes numbers 45, 46, 47 and 48 will clear bridges 37, 38, 41 and 43, between Helena and Garrison, five and one-half inches at one foot three inches above rails.

3. **At Helena**—End of double track is at first cross-over switch west of Roberts Street crossing. Normal position of switch is for eastward track. Movements from eastward track to freight yard will be made through first crossover east of overhead bridge.

4. **At Garrison**—The crossover just west of passenger station has a section of track about 500 feet long between insulated joints at fouling points, that is not protected by automatic block signals. Rule 511 does not apply to this crossover, but trains or engines using this crossover must comply with Rule 513.

Time of train No. 4 applies at boot track switch located just east of passenger station.

When train rights permit, train No. 287 may use eastward main track from crossover east of coal dock to boot track switch.

Eastward trains moving against the current of traffic into Garrison will re-enter eastward main track at crossover just west of passenger station.

5. **At Austin, Skyline and Garrison**—The east switch of the westward siding at Austin, the east switch of the siding at Skyline, and the east and west switches of the cross-over from the third to fourth sub-division at Garrison are dual control. At Austin and Skyline the normal position of the switches is for the main track. At Garrison the normal position of the east switch is for the third sub-division and the west switch for the fourth sub-division.

6. **At Austin and Skyline**—The derail switch at the east end of Skyline siding and at the east end of the westward siding at Austin will be kept closed when sidings are clear.

7. **At Ventilating Plant**—When leaving cars on tail of spur, the switch must be lined for the track leading to the trestle.

8. **At Missoula**—Westward freight trains will, unless otherwise directed, head into the old yard just east of Woody Street.

9. **Spring Switches**—

Tobin—One at end of double track, equipped with facing point lock. Normal position for eastward track.

Garrison—One at east end of yard lead east of coal dock, and one at east end of crossover from Fourth Subdivision to westward main track, both equipped with facing point locks. One at

west end of west crossover from Fourth Subdivision to westward main track and one at west end of siding, not equipped with facing point locks.

10. Sidings—

At Helena, second track north of passenger station is siding for passenger trains.

At Austin, south siding is westward, north siding is eastward.

At Blossburg, south siding is eastward; north siding is westward.

11. Staff Block System between Blossburg and Skyline—

No train will move between Skyline and Blossburg until engine-man of the leading engine has received a staff from the operator which must be delivered to the operator at the opposite end of the block. Possession of the staff makes a train superior to all other trains between Skyline and Blossburg.

No eastward train will leave Blossburg, and no westward train will leave Skyline unless the train order signal indicates proceed. When a staff has been delivered to the operator at Skyline or Blossburg, it must not be used for another train movement until it has been passed through the staff machine; and it must not be placed in the staff machine until the rear of the train from which the staff is received has passed the train order signal at least 300 feet and the signal has again been placed at "Stop," unless for any reason the rear of the train does not pass the train order signal, in which event the operator will, upon written advice of the conductor that the Staff Block is Clear, place the staff in the machine.

At Blossburg when westward freight trains have helper engines on rear, the operator will not put the staff in machine until caboose has been dropped onto train and helper engines are clear of main track.

12. Mountain Grade Operation—Mountain grade between east switch Birdseye and Blossburg. See all subdivisions item No. 12. Eastward trains, unless otherwise instructed, will take siding at Blossburg, test air and obtain staff before again using the main track.

Normal indication of train order signal governing eastward movements at Blossburg, Skyline and Austin is Stop. At Skyline and Austin the indication will not be changed to Proceed to permit second class and inferior trains (except light engines or engine and caboose only) to follow first class or passenger extra trains from these stations until preceding train is reported clear at next station in advance.

Operators at Blossburg, Skyline and Austin must keep a record, beginning at 12:01 A. M., of all eastward trains passing their station and notify the operator at the next station in each direction the departing time of such trains. Eastward second-class and inferior trains, other than passenger extras and light engines, will obtain a meet order before leaving Blossburg on all superior westward trains, if unable to reach double track for such trains.

Operator will close east switches of both sidings at Blossburg after departure of eastward trains. Operators at Austin and Skyline will close the west switch of siding after departure of westward trains.

Eastward freight and mixed trains:

Air brake tests must be made in accordance with Air Brake Rule 35 before leaving Garrison or Blossburg. When the test is made at Garrison, a brake pipe test must be made at Blossburg before retaining valve handles are turned up and following the parting of the hose between the helper engine and caboose. If, for any reason, the brake pipe or hose couplings have been parted after the test is made at Garrison, a terminal test must be made at Blossburg and a second card filled out.

The air brakes must be charged to a maximum of 90 pounds brake pipe pressure at Blossburg and conductors must know by caboose gauge that this pressure is attained before making terminal test, and 90 pounds brake pipe pressure must be maintained descending mountain grade.

Retaining valve handles must be turned up before leaving Blossburg on all loaded cars and on one-half the empties, alternating the empties.

On trains of all empty cars, retaining valve handles must be turned up on one-third of the cars, alternating beginning with the head car.

Trains must stop at Austin to cool wheels and inspect train and at Fort Harrison to turn down retaining valve handles, inspect train and cool wheels.

Ventilating plant east end of Mullan Tunnel will be operated as follows:

When fan is in operation westward freight trains will not exceed a speed of seven (7) MPH through Mullan Tunnel, and when there is a helper engine on rear of train, lead engine will so regulate the speed that the entire train will not exceed this speed through the tunnel.

If the plant fails, train and engine men and yard master at Helena will be notified so that helper engines may be turned out of Helena. If the failure of the plant occurs after a train has left Helena, they will be notified by the dispatcher, or if it has departed from Skyline they will be flagged by the engineer at the ventilating plant, in which case train and engine men will arrange to use necessary precaution for personal protection through the tunnel.

13. Helper District between Helena and Blossburg.

14. Pusher District between Garrison and Blossburg.

At Blossburg—Pusher engines will come to full stop after cutting off from train, and will not turn head light on until caboose has passed telegraph office.

15. Register Stations—

Helena Yard, Garrison, Missoula.

16. Register and Clearance Exceptions—At Garrison, trains may register by Form 608 and will not require clearance if the train order signal indicates proceed.

FOURTH SUBDIVISION.

(MAIN LINE)

1. Speed Restrictions—

Zone—Between	Freight and mixed	Passenger Steam	Diesel
Butte and Hackney	50	60	70
Hackney and Garrison	50	65	75
except Dempsey—Interlocking			
Eastward	45	60	60
Westward	50	60	60
At Butte—Within city limits,		All trains.	
On main track		20 MPH.	
On other tracks		15 MPH.	
Approach passenger station at		Restricted Speed.	

2. Bridge and Engine Restrictions—Bridges 11-1 and 11-2 Silver Bow Creek; Bridge 21 Deer Lodge River,

Engines classes Z-5, Z-7 and Z-830 MPH.

Engines classes Z-5, Z-6, Z-7 and Z-8 not permitted on following tracks:

Butte, all except 1, 2, 3, 11, 12, 13, Old main and siding.

M. U. Transfer, coal dock and 3 and 4.

Silver Bow, all except siding.

Stuart, spur.

Deer Lodge, all except siding.

Kohr, spur.

3. Card Train Order (Form AB) will govern the movement of trains between Butte and Silver Bow, and trains must not move in this territory unless conductor and engineer each hold a card properly filled out.

At Silver Bow the normal position of eastward train order signal is "stop" and must not be cleared except for delivery of card without restrictions. If an eastward train is to meet an opposing train at Silver Bow it must be brought to a stop before card is delivered.

4. At Durant—Station platform will not clear man on steps of car or engine.

5. At Dempsey—Interlocking—Power operated smash boards are located twenty feet in advance of each home signal.

When a westward train, having a meet, finds westward home signal in "stop" position, it will wait a reasonable time before operating hand release in order to give eastward train time to get into clear on siding after which home signal should go to clear. An eastward or westward train, handling more cars than siding will hold, will not go to Dempsey to be met or passed by another train, without train order authority.

6. **At Garrison**—Train order signal does not govern fourth subdivision trains.

When train rights permit, train No. 287 may use eastward main track from crossover east of coal dock to boot track switch. Third Subdivision instructions govern.

7. Whistle Signal 14(r) and 14(s) will be used by Fourth Subdivision trains at Garrison, as occasion requires.

8. **Spring Switches**—

Garrison—One at east end of yard lead east of coal dock, and one at east end of crossover from Fourth Subdivision to westward main track, both equipped with facing point locks. One at west end of west crossover from Fourth Subdivision to westward main track and one at west end of siding, not equipped with facing point locks.

9. **Register Stations**—Butte, Garrison.
Silver Bow for UP trains.

FIFTH SUBDIVISION.

(MAIN LINE)

1. **Speed Restrictions**—

Zone—Between	Freight and mixed	Passenger Steam Diesel
Missoula and Paradise	50	60 60
except, Huson—Interlocking....	45	50 50
At Missoula, first class trains .....	....	25 MPH.

2. **Bridge and Engine Restrictions**—

Bridge 168, near Rivulet, engines classes A-2, A-3, A-4, A-5, Z-5, Z-6, Z-7 and Z-8.....20 MPH.
Engines classes A to A-5 inc. and Z-5 to Z-8 inc. not permitted on following tracks:

Missoula, all tracks except tracks in main train yard, to coal dock, water tank, turntable, roundhouse and wye.
Grass Valley, beyond clearance points.
Lothrop log spur, engines heavier than Class W-5, not permitted beyond 200 ft. west of switch.
Rivulet, coal dock beyond clearance points.
Westfall, spur beyond clearance points.
St. Regis, engine house and house track.
Quinns, spur beyond clearance point.

3. **At Frenchtown**, westward trains holding main track meeting eastward trains, stop east of signal overlap sign located near middle of siding, to avoid giving eastward trains two stop signal indications between Huson and Frenchtown.

4. **At Huson—Interlocking**—

Movements westward over interlocking crossing from siding on a proceed indication of home interlocking signal must enter the circuit west of home signal before siding switch is closed.

5. **At St. Regis**—The clearance under the Milwaukee overhead crossing is seven and one-half (7½) inches short of standard 22 feet.

6. **Spring Switches**—

Missoula—One at west end lead to westward main track, not equipped with facing point lock.
DeSmet—One at west end east crossover and one at east end west crossover, both equipped with facing point locks.

7. **Extra Trains**—Between Missoula and Paradise will run via Fifth Subdivision unless otherwise instructed by train order.

8. Whistle signal 14(r) and 14(s) will be used by Fifth Subdivision trains at Desmet and Paradise, as occasion requires.

9. **Register Stations**—Missoula and Paradise.

SIXTH SUBDIVISION.

(MAIN LINE)

Zone—Between	Freight and mixed	Passenger Steam Diesel
DeSmet and one mile west	50	60 70
One mile west of DeSmet and MP 19 (east of Arlee)		
Descending	20	30 30
Ascending	30	30 30
MP 19 and MP 20, east of Arlee.....	50	60 70
MP 20 and MP 34 (three miles west of Ravalli)	50	70 80
MP 34 and Paradise	50	65 75

2. **Bridge and Engine Restrictions**—

Bridge 55, Flathead River—

Engines classes A-2 to A-5 inclusive, W-3 and W-5 and Z-6 to Z-8 inclusive 20 MPH.
Single header, class Z-5 10 MPH.
Double header, class Z-5 not permitted
Trains handling Wrecking cranes 45, 46, 47 and 48.... 20 MPH.

Engines classes A-2 to A-5 and Z-5 to Z-8 inclusive, not permitted on following tracks:

Evarto—Spur track and beyond 200 feet north of wye stem switch.

Arlee—Beyond 200 feet north of wye stem switch.

Flathead—Spur.

Ravalli—House track and stock spur.

Dixon—Stock spur.

Perma—Stock spur.

3. **At Arlee**—Normal position of switch at east end of siding is for house track.

4. **At Ravalli**—Normal position of switch at west end of siding is for house track.

5. **At Paradise**—House track north of passenger station is siding for passenger trains.

6. **Spring Switches**—

DeSmet—One at west end east crossover and one at east end west crossover, both equipped with facing point locks.

7. **Extra Trains** between Missoula and Paradise will run via Fifth Subdivision unless otherwise instructed by train order.

8. **Mountain Grade Operation**—Mountain grade between one (1) mile west of DeSmet and two (2) miles east of Arlee. See all subdivisions item No. 12.

Air brake tests must be made in accordance with Air Brake Rule 35 before leaving Evarto. On freight and mixed trains the air brakes must be charged to a maximum of 90 pounds brake pipe pressure at Evarto and conductors must know by caboose gauge that this pressure is attained before making terminal test, and 90 pounds brake pipe pressure must be maintained descending mountain grade.

On freight or mixed trains, retaining valves must be used on all cars, Evarto to just west of MP 3 (west of DeSmet) and Evarto to Arlee.

9. **Helper District**—Between Missoula and Arlee.

10. **Register Stations**—

Paradise.

11. **Clearance Exceptions**—

At DeSmet—Trains will not require a clearance if the train order signal indicates proceed.

EIGHTH SUBDIVISION. (PARK BRANCH)

1. **Speed Restrictions—**
Zone—Between
Livingston and Gardiner 40 MPH.
At Gardiner, on circle 10 MPH.
2. **Bridge and Engine Restrictions—**Engines A-2 and heavier not permitted.
3. **At Electric—**Siding is one (1) mile west of station.
4. **Register Stations—**
Livingston, Gardiner.

NINTH SUBDIVISION. (CAMP CREEK BRANCH)

1. **Speed Restrictions—**
Zone—Between
Manhattan and Anceney 30 MPH.
2. **Bridge and Engine Restrictions—**Class W-3 and heavier not permitted.
3. **At Manhattan—**Train order signal does not govern ninth subdivision trains.
4. **Manhattan Wye—**Eastward trains will obtain necessary information from dispatcher as to overdue trains before occupying First Subdivision main track.
5. **At Anceney—**Derail located on main track three hundred thirty (330) feet east of east switch. Derail to be left in derail position and east switch of industry track lined for main track when occupied by cars.

TENTH SUBDIVISION. (RED BLUFF BRANCH)

1. **Speed Restrictions—**
Zone—Between
Sappington and two miles west 25 MPH.
Two miles west of Sappington and
Two miles east of Harrison, Mountain Grade,
Descending 15 MPH.
(Not exceeding any one mile in four (4) minutes)
Ascending 25 MPH.
Two miles east of Harrison and Norris 25 MPH.
2. **Bridge and Engine Restrictions—**Engines heavier than Class W not permitted. Bridge 14, Norwegian Gulch, five (5) miles per hour.
Bridge 2—Wrecking cranes 45, 46, 47 or 48 not permitted.
Heavy Car Restrictions, Bridge 2, Antelope Creek:
Trains handling cars with total weight exceeding 214,000 pounds, or cars less than 30 ft. long with total weight exceeding 169,000 pounds in groups or coupled to engine or tender 10 MPH.
If such short cars are separated from each other and from engine or tender with one car 40 ft. long with total weight not over 169,000 pounds speed restriction will not apply.
3. **Mountain Grade Operation—**Mountain grade two (2) miles west of Sappington to two (2) miles east of Harrison.
Retaining valves must be used on all cars Harrison to Sappington.
See all subdivisions item No. 12.
4. **Register Stations—**
Sappington, Norris.
5. **Clearance Exceptions—**
At Sappington—No. 823 will not require a clearance.

ELEVENTH SUBDIVISION. (RUBY VALLEY BRANCH)

1. **Speed Restrictions—**
Zone—Between
Whitehall and Alder 25 MPH.
except at Interlocking, 2 miles west of Whitehall 20 MPH.
2. **Bridge and Engine Restrictions—**Engines Classes Q3, T and heavier not permitted.
Bridge 9, Jefferson River, engines class Q-1 doubleheader not permitted.
Engines classes Q, S-4, S-10 and single header Q-1 8 MPH.
Wrecking cranes 41, 42, 43 or 44 must be spaced from engine with one empty car and not exceed 15 MPH.
Wrecking cranes 45, 46, 47 or 48 not permitted.
Heavy Car Restrictions, cars with total weight exceeding 214,000 pounds not permitted.
Cars with total weight exceeding 169,000 pounds must be separated from each other and from engine or tender with one car 40 ft. long with total weight not over 169,000 pounds and trains handling not exceed 8 MPH.
3. **At Whitehall—**Train order signal does not govern eleventh subdivision trains.
4. **At Alder—**Derail located on west end of house track, one hundred forty (140) feet from head block.
Normal position of the east switch of the stockyard track is for the stockyard track.
5. **Register Stations—**
Whitehall, Alder.

TWELFTH SUBDIVISION. (PHILIPSBURG BRANCH)

1. **Speed Restrictions—**
Zone—Between
Drummond and Philipsburg 25 MPH.
except, Drummond—Interlocking 20 MPH.
2. **Bridge and Engine Restrictions—**
Engines Classes Q-1, T and heavier not permitted.
Bridge 0-1, Hellgate River—
Engines classes Q, S-4, S-10 8 MPH.
Wrecking cranes 41, 42, 43 or 44 must be spaced from engine with one empty car and not exceed 15 MPH.
Wrecking cranes 45, 46, 47 or 48 not permitted.
Heavy Car Restrictions, Bridges 0-1 and 14—Cars with total weight exceeding 214,000 pounds not permitted.
Cars with total weight exceeding 169,000 pounds must be separated from each other and engine or tender with one car 40 ft. long with total weight not over 169,000 pounds and trains handling not exceed 8 MPH.
3. **At Drummond—**Train order signal does not govern twelfth subdivision trains.
4. **Register Stations—**Drummond, Philipsburg.
5. **Derail Switches—**
Philipsburg 650 feet east of station on main track.
On Main Track—Fifty feet west of MP 1.

THIRTEENTH SUBDIVISION. (BITTER ROOT BRANCH)

1. **Speed Restrictions—**
Zone—Between
Missoula and Kenspur 35 MPH.
Kenspur and MP 54 40 MPH.
MP 54 and Darby 30 MPH.
except, Missoula and Darby; trains handling steam
wrecking derrick, pile driver or locomotive crane 20 MPH.
Trains handling loaded 70 ton Hart cars 30 MPH.
At Stevensville—Over highway crossing 1817 feet east of passenger station 20 MPH.

2. Bridge and Engine Restrictions—

Bridge O. Missoula River—Engine Class Z-5 not permitted.
Engine Classes A-2, A-3, A-4, A-5, Z-6, Z-7 and Z-8—10 MPH.
Engine Classes A, A-1, Z-3 and Z-4—20 MPH.
Between Post and Darby; engines classes heavier than W, W-1 and W-2, not permitted.
Bridges 4, 11-1 and 23-2, trains handling wrecking cranes 45, 46, 47 or 48—15 MPH.
Bridge 51—Engines—20 MPH.
Wrecking cranes 45, 46, 47 or 48 not permitted.

Bridges 4, 11-1, 23-2 and 51.

Heavy Car Restrictions—

Cars with total weight exceeding 214,000 pounds not permitted except on authority of superintendent.

Cars with total weight exceeding 169,000 pounds must be separated from engine or tender with one car 40 ft. long with total weight not over 169,000 pounds.

Cars less than 30 ft. long with total weight exceeding 169,000 pounds must be separated from each other and from engine or tender with one car 40 ft. long with total weight not over 169,000 pounds.

At Hamilton, engines class W or heavier not permitted beyond first culvert on dehydrating spur.

3. At Darby—Normal position of west switch of siding is for siding.

Normal position of spur switch is for spur.

4. Register Stations—Missoula, Darby.

FOURTEENTH SUBDIVISION.

(FLATHEAD VALLEY BRANCH)

1. Speed Restrictions—

Zone—Between	Freight and mixed	Passenger
Dixon and Polson	25	30 MPH.

2. Bridge and Engine Restrictions—

Engines class A and heavier not permitted.

3. At Dixon—Train order signal does not govern fourteenth subdivision trains.

4. Register Stations—Dixon, Polson.

FIFTEENTH SUBDIVISION.

(COEUR D'ALENE BRANCH)

1. Speed Restrictions—

Zone—Between	Freight and mixed	Passenger
Haugan and Saltese	20	30 MPH.

Saltese and Mullan, on Mountain Grades,

Descending—Passenger trains will not exceed any one mile in two and one-half (2½) minutes.

Freight trains will not exceed any one mile in four minutes.

Light engines will not exceed any one mile in three minutes.

Ascending—

MP 32 to Lookout, and Mullan to Lookout..... 24 MPH.

	Freight and mixed	Passenger
Mullan and Wallace	20	30 MPH.

At Wallace, over public crossings 6 MPH.

2. Bridge and Engine Restrictions—

Between MP 29 (between Saltese and Borax) and Wallace, all W classes engines not permitted.

Between Haugan and Wallace, engines classes A, Z-3 and heavier not permitted, except engines 4020, 4021, 4022 and 4025 are permitted.

Bridge 42, just west of Dorsey..... 5 MPH.

Do not make air brake application while train is on this bridge, except in emergency.

Bridge 57 South Fork of Coeur d'Alene River—Wallace Yard. Engines classes Q-5, Q-6, W-3, W-5 and Z-3 five (5) MPH. Classes Q-4, S-4, T and W and lighter, ten (10) MPH.

Bridge 57-A—On scale track opposite Bridge 57, all engines prohibited standing or moving.

Wrecking cranes 41, 42, 43 or 44—Bridge 57.....15 MPH.

Not permitted on Bridge 57-A.

Wrecking cranes 45, 46, 47 or 48 not permitted on Bridges 57 or 57-A.

Heavy Car Restrictions—Bridges 57 and 57-A—

Cars with total weight exceeding 214,000 pounds not permitted except on authority of superintendent.

Cars less than 30 ft. long with total weight exceeding 169,000 pounds must be separated from each other and from engine or tender and cars 30 ft. or more long with total weight exceeding 169,000 pounds must be separated from engine or tender with one car 40 ft. long total weight not over 169,000 pounds and trains handling not over10 MPH.

3. At St. Regis—Train order signal does not govern Fifteenth Subdivision trains.

4. At Lookout—Freight trains and light engines will follow passenger and freight trains in either direction twenty (20) minutes. Passenger trains will follow freight trains or light engines in either direction fifteen (15) minutes. South siding is eastward, north siding is westward.

5. Mountain Grade Operation—Mountain grade between Saltese and Mullan. See all subdivisions item No. 12. Air brake test must be made in accordance with Air Brake Rule 35 before leaving Lookout.

The air brakes must be charged to a maximum of ninety (90) pounds pressure on freight trains at Lookout, and conductors must know by caboose gauge that this pressure is attained before making terminal test. Enginemen will maintain a working basis of ninety (90) pounds, Lookout to Saltese and Lookout to Mullan.

Retaining valves must be used on all cars Lookout to Saltese and Lookout to Mullan.

Safety switch at foot of four per cent grade at Sohon and Dorsey will be kept set and locked for main track, except when doubling trains to Lookout, when switches will be opened between head and rear portion of train.

Train and engine men using the Hercules high line at Wallace must leave a flagman at the foot of the grade to protect return movement. Train and engine men must at all times expect to find a flagman at this point.

6. Helper District—Between Saltese and Wallace.

7. Register Stations—

St. Regis. Haugan. Wallace. Lookout.

SIXTEENTH SUBDIVISION.

(BURKE BRANCH)

1. Between Wallace and Burke Northern Pacific Railway trains will operate over the Union Pacific Railway and be governed by Union Pacific Railway time table and rules.

2. At Dorn—Engines not permitted inside loading shed.

3. **Mountain Grade Operations**—Mountain grade between Burke and Wallace. At the initial point of descent and trains originating east of and picking up at Dorn will make air brake test in accordance with Air Brake Rule 35.
- The air brakes must be charged to a maximum of ninety (90) pounds pressure on freight trains at Burke and conductors must know by caboose gauge that this pressure is attained before making terminal test. Enginemen will maintain a working basis of ninety (90) pounds pressure Burke to Wallace.
- Retaining valves must be used on all cars Burke to Wallace.
- See all subdivisions item No. 12.
4. **Register Station**—Wallace.

SEVENTEENTH SUBDIVISION. (SUNSET BRANCH)

1. **Speed Restrictions**—
Zone—Between
Wallace and Bunn—
Descending, trains will not exceed any one (1) mile in four (4) minutes, and light engines any one (1) mile in three (3) minutes.
Ascending, all trains20 MPH.
2. Trains will not require train orders or clearance, and will be governed by Rule 93.
3. **Mountain Grade Operations**—Mountain grade between Bunn and Wallace. Air brake test will be made in accordance with Air Brake Rule 35 before leaving Bunn.
- The air brakes must be charged to a maximum of ninety (90) pounds pressure on freight trains at Bunn and conductors must know by caboose gauge that this pressure is attained before making terminal test. Enginemen will maintain a working basis of ninety (90) pounds Bunn to Wallace.
- Retaining valves must be used on all cars Bunn to Wallace.
- See all subdivisions item No. 12.
4. **Register Station**—Wallace.

Note—Length of load 52 feet.
Heights and widths in table allow 9 inches clearance.

MAXIMUM CLEARANCES.

Table is based on open car loading equally divided on either side of center line of car.

LIMIT OF LOAD--MEASUREMENT											Governing Structure
Height Above Top of Rail											
1'0" Wide	2'0" Wide	3'0" Wide	4'0" Wide	5'0" Wide	6'0" Wide	7'0" Wide	8'0" Wide	Max. Height	Max. Width		
1st Subdivision.	19'6"	19'4"	19'1"	18'10"	18'7"	18'3"	17'10"	17'4"	19'6"	11'6"	Hoppers Tunnel
1st Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
2nd Subdivision.	18'1"	18'0"	18'0"	17'10"	17'9"	17'6"	17'3"	17'2"	18'1"	11'6"	Homestake Tunnel and Tunnel at M. P. 57½
1st Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	Bridge 167.8
3rd Subdivision.	17'8"	17'7"	17'5"	17'3"	17'0"	16'9"	16'6"	16'1"	17'8"	11'6"	Iron Ridge Tunnel
3rd Subdivision.	20'9"	20'6"	20'2"	19'10"	19'5"	18'11"	18'4"	17'8"	20'9"	11'6"	Garrison and Bonita Tunnels
4th Subdivision.	19'0"	19'0"	19'0"	19'0"	19'0"	19'0"	19'0"	19'0"	19'0"	11'6"	B. A. & P. Overhead
5th Subdivision.	17'8"	17'8"	17'8"	17'8"	17'8"	17'6"	17'3"	17'1"	16'11"	11'6"	Tunnel No. 7 at M. P. 177½ on 6°30' Curve
6th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
8th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
9th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
10th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
11th Subdivision.	19'3"	19'3"	19'3"	19'3"	19'3"	19'3"	19'3"	19'3"	19'3"	11'6"	Bridge No. 9 Jefferson River
12th Subdivision.	20'6"	20'6"	20'6"	20'6"	20'6"	20'6"	20'6"	20'6"	20'6"	11'6"	Bridge O-1
13th Subdivision.	19'4"	19'4"	19'4"	19'4"	19'4"	19'4"	19'4"	19'4"	19'4"	11'6"	Bridge 57
14th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
15th Subdivision.	21'1"	20'9"	20'9"	20'6"	20'3"	19'11"	19'6"	19'3"	21'1"	11'6"	Tunnel No. 1—1 mile west of Borax
16th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	
17th Subdivision.	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	21'0"	11'6"	

Table is based on open car loading equally divided on either side of center line of car.

LIMIT OF LOAD--MEASUREMENT

ROCKY MTS.

ROCKY MTS.

ROCKY MTS.

ROCKY MTS.

ROCKY MTS.

TONNAGE RATINGS.

EASTWARD	ENGINES							
	Ruling Grade	A	W Sup.	W-3	W-5	Z-2 Z-3	Z-4	Z-6 Z-7-8
Paradise to Missoula (Via St. Regis)....	0.4	4500	2800	4000	4500	...	....	6500
Paradise - Dixon....	0.4	.....	2800	.....	.....	.....	.....	.....
Dixon - Arlee.	1.0	.....	1800	2000	.....	.....	.....	.....
Arlee - Evaro.	2.2	.....	700	850	850	.....	.....	.....
Evaro - Missoula....	Down	.....	Car	Limit	.....	.....	.....	.....
Missoula - Garrison..	0.4	.....	2400	3700	.....	4500	.....	7000
Garrison - Elliston..	1.0	.....	1600	2000	.....	2500	.....	3700
Elliston - Blossburg..	1.4	.....	1100	1500	.....	2100	.....	2700
Blossburg - Helena..	Down	.....	Car	Limit	.....	.....	.....	.....
Garrison - Stuart....	0.7	.....	1800	2500	.....	.....	.....	4200
Stuart - Butte.....	1.0	.....	1500	2100	.....	.....	.....	3700
Wallace - Dorsey....	2.2	.....	.....	850	.....	1200	.....	.....
Dorsey - Lookout. ...	4.0	.....	.....	.....	.....	600	.....	.....
Lookout - Sohon....	Down	.....	Limit	2600	tons	.....	.....	.....
Sohon - St. Regis....	Down	.....	Car	Limit	.....	.....	.....	.....
WESTWARD								
Helena - Blossburg..	2.2	.....	700	850	.....	1150	1550	1400
Blossburg or Butte to Missoula.....	Down	.....	Car	Limit	.....	.....	.....	.....
Missoula to Paradise (Via St. Regis)....	0.4	.....	Car	Limit	.....	.....	.....	.....
DeSmet - Evaro....	2.2	.....	700	850	850	...	.....	.....
Evaro - Paradise....	Down	.....	Car	Limit	.....	.....	.....	.....
St. Regis - Saltese. ...	1.0	.....	.....	.....	.....	2500	.....	.....
Saltese - Sohon.....	2.2	.....	.....	.....	.....	1200	.....	.....
Sohon - Lookout....	4.0	.....	.....	.....	.....	600	.....	.....
Lookout - Dorsey....	Down	.....	Limit	2000	tons	.....	.....	.....
Dorsey - Wallace....	Down	.....	Car	Limit	.....	...	.....	.....

F. G. COOK,
Ass't Supt.

H. LIVESEY,
Trainmaster.

R. J. FARRELL,
Trainmaster.

J. A. BRYAN,
Trainmaster.

C. L. ALLEN,
Trainmaster.

H. B. AVERY,
Chief Dispatcher.