

SPEED TABLE

Time Per mile		Miles Per Hour	Time Per mile		Miles Per Hour
Minutes	Seconds		Minutes	Seconds	
0	45	80	1	12	50
0	46	78.8	1	15	48
0	47	76.6	1	20	45
0	48	75	1	25	42.8
0	49	73.5	1	30	40
0	50	72	1	40	36
0	51	70.6	1	45	34.3
0	52	69.2	1	50	32.7
0	53	67.9	2	..	30
0	54	66.6	2	10	27.6
0	55	65.4	2	15	26.6
0	56	64.2	2	20	25.7
0	57	63.1	2	30	24
0	58	62.0	2	40	22.5
0	59	61.0	2	45	21.8
1	..	60	2	50	21.2
1	1	59	3	..	20
1	2	58	3	9	19
1	3	57.1	3	20	18
1	4	56.2	3	31	17
1	5	55.3	3	45	16
1	6	54.5	4	..	15
1	7	53.7	5	..	12
1	8	52.9	6	..	10
1	9	52.1	7	30	8
1	10	51.4	10	..	6

NORTHERN PACIFIC RAILWAY COMPANY

Duluth and Superior Terminals

TIME TABLE 228

In Effect at 12:01 A. M.
Central Standard Time.

Sunday, March 5, 1950

For the Government of Employees only. The Company reserves the right to vary therefrom at pleasure. Be positive that you have the Current Time Table and destroy all previous numbers. Read carefully the Special Instructions and always carry for reference a copy of **OPERATING RULES**.

C. CORSER,
Superintendent.

C. V. BERGLUND,
General Manager.

R. E. MATTSON,
General Superintendent of
Transportation.

2 WESTWARD

FIRST SUBDIVISION

FIRST CLASS

	65	35	57	303	405	19	61	201	23	55	Distance from East D. M. & I. R. Jct.	Time Table No. 228 March 5, 1950
		G. N. 35		D. W. & P. 19	D. M. & I. R. 6	G. N. 19		D. M. & I. R. 1	G. N. 23			STATIONS
	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger		Telegraph Offices and Calls
	Daily	Ex. Sun.	Daily	Ex. Sun.	Daily	Daily	Ex. Sun.	Daily	Daily	Daily		...EAST D. M. & I. R. JCT....
					L 5.42 PM						0.0	DU.....DULUTH.....DN
	L 11.30 PM	L 9.30 PM	L 7.40 PM		A 5.45 ⁴⁰³ PM	L 4.30 PM	L 8.45 AM	L 8.20 AM	L 8.00 AM	L 7.35 AM	0.9	.....GARFIELD AVE.....
	11.33	A 9.32 PM	A 7.43 PM	L 7.19 PM		A 4.32 PM	8.47	8.23	A 8.02 AM	A 7.38 AM	1.9	.....20TH AVE. W....PD
	f 11.35			7.21			f 8.48	8.24			2.2	.....WEST D. M. & I. R. JCT....
	11.37			7.23			8.50	A 8.26 AM			2.8	.....S.OO LINE CROSSING.....
											3.6	.....D. W. & P. JCT....
	11.40			A 7.29 PM			8.53				4.5	.....D. W. & P. JCT....
	s 11.44						s 8.55				5.1	WU...WEST DULUTH...DN
	A 11.50 PM						A 8.57 AM				5.9	.....WEST DULUTH JCT. P
											7.7	.....RIVERSIDE JCT.....
											8.1	.....RIVERSIDE.....
											9.7	.....MORGAN PARK.....
											12.4	.....NEW DULUTH.....PD
											15.1	.....FOND DU LAC.....
	Daily	Ex. Sun.	Daily	Ex. Sun.	Daily	Daily	Ex. Sun.	Daily	Daily	Daily		Time Over Subdivision
	.20	.02	.03	.10	.04	.02	.12	.06	.02	.03		Average Speed Per Hour
	14.7	30.0	20.0	15.0	13.5	30.0	24.5	19.0	30.0	20.0		

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

EASTWARD

FIRST SUBDIVISION

FIRST CLASS

	56	20	204	62	24	400	304	58	36	66	Distance from Fond du Lac.	Time Table No. 228 March 5, 1950
		G. N. 20	D. M. & I. R. 2		G. N. 24	D. M. & I. R. 8	D. W. & P. 20		G. N. 36			STATIONS
	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger		Telegraph Offices and Calls
	Daily	Daily	Daily	Ex. Sun.	Daily	Daily	Ex. Mon.	Daily	Ex. Mon.	Daily		...EAST D. M. & I. R. JCT....
						A 9.04 AM					15.1	DU.....DULUTH.....DN
CTW XYZ	A 10.50 PM	A 7.45 PM	A 4.10 PM	A 12.35 PM	A 11.58 AM	L 9.00 AM		A 8.00 AM	A 7.15 AM	A 6.10 AM	14.2	.....GARFIELD AVE.....
X	L 10.45 PM	L 7.43 PM	4.07	12.32	L 11.56 AM		A 9.00 AM	L 7.57 AM	L 7.12 AM	5.56	13.2	.....20TH AVE. W....PD
X			4.06	f 12.31			8.58			f 5.53	12.9	.....WEST D. M. & I. R. JCT....
X			L 4.03 PM	12.29			8.56			5.50	12.3	.....S.OO LINE CROSSING.....
X				12.25			L 8.50 AM			5.45	11.5	.....D. W. & P. JCT....
X				s 12.23						s 5.43	10.6	WU...WEST DULUTH...DN
XY				L 12.21 PM						L 5.34 AM	9.2	.....WEST DULUTH JCT. P
											7.4	.....RIVERSIDE JCT.....
18											7.0	.....RIVERSIDE.....
											5.4	.....MORGAN PARK.....
18 LB5											2.7	.....NEW DULUTH.....PD
82 LB5											0.0	.....FOND DU LAC.....
	Daily	Daily	Daily	Ex. Sun.	Daily	Daily	Ex. Mon.	Daily	Ex. Mon.	Daily		Time Over Subdivision
	.05	.02	.07	.14	.02	.04	.10	.03	.03	.36		Average Speed Per Hour
	12.0	30.0	10.3	21.0	30.0	13.5	15.0	20.0	20.0	8.3		

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

FIRST SUBDIVISION Westward

3

Time Table No. 228

March 5, 1950

SECOND CLASS

623

627

STATIONS

Telegraph Office: and Calls

Freight

Freight

Daily

Daily

...EAST D. M. & I. R. JCT....

DU.....DULUTH.....DN

.....GARFIELD AVE.....

.....20TH AVE. W....PD

.....WEST D. M. & I. R. JCT..

.....500 LINE CROSSING.....

.....D. W. & P. JCT.....

WU..WEST DULUTH..DN

.....WEST DULUTH JCT..P

.....RIVERSIDE JCT.....

.....RIVERSIDE.....

.....MORGAN PARK.....

.....NEW DULUTH.....PD

.....FOND DU LAC.....

Daily

Daily

Time Over Subdivision

.03

.03

Average Speed Per Hour

20.0

20.0

SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

FIRST SUBDIVISION Eastward

Time Table No. 228

March 5, 1950

SECOND CLASS

624

626

628

C. M. St.
P. & P.
626

STATIONS

Telegraph Offices and Calls

Freight

Freight

Freight

Daily

Daily

Daily

...EAST D. M. & I. R. JCT....

DU.....DULUTH.....DN

.....GARFIELD AVE.....

.....20TH AVE. W....PD

.....WEST D. M. & I. R. JCT..

.....500 LINE CROSSING.....

.....D. W. & P. JCT.....

WU..WEST DULUTH..DN

.....WEST DULUTH JCT..P

.....RIVERSIDE JCT.....

.....RIVERSIDE.....

.....MORGAN PARK.....

.....NEW DULUTH.....PD

.....FOND DU LAC.....

Daily

Daily

Daily

Time Over Subdivision

.20

.20

.35

Average Speed Per Hour

10.8

10.8

8.4

SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

4 WESTWARD

SECOND SUBDIVISION

SECOND CLASS				FIRST CLASS								Time Table No. 228 March 5, 1950		Distance from Garfield Ave.
625	627	623	629	35	89	57	93	19	23	55	65			
C. M. St. P. & P. 625			N. P. 630	G. N. 85	Omaha 610		Omaha 612	G. N. 19	G. N. 23					
Freight	Freight	Freight	Freight	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	STATIONS		
Daily	Daily	Daily	Mon.-Wed. Fri.	Ex. Sun.	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Telegraph Offices and Calls		
	L 7.28 PM	PM 6.03		L 9.32 PM		L 7.43 PM		L 4.32 PM	PM 8.02 AM	L 7.38 AM		.....GARFIELD AVE.....	
L 7.50 PM	7.29	6.04	L 6.00 AM	9.34		7.45		4.34	8.04	7.40		.....RICES POINT.....P	
7.55	7.31	6.06	6.05	9.36	L 8.22 PM	7.46	L 4.50 PM	4.36	8.06	7.42		.....BRIDGE SWITCH.....	
7.59	7.34	6.09	6.09	9.39	8.25	7.49	4.53	4.40	8.10	7.45		.....ELEVATOR STATION.....	
8.00	7.36	6.11	6.11	9.42	A 8.28 PM	7.51	A 4.55 PM	4.42	8.12	7.47		.....OMAHA CONN.....	
												0.7 0.7 0.9 0.7 0.3		

BETWEEN OMAHA CONNECTION AND BELKNAP STREET TRAINS USING L. S. T. & T. RAILWAY
WILL BE GOVERNED BY L. S. T. & T. RY. TIME TABLE AND SPECIAL INSTRUCTIONS.

				s 9.45		s 7.52		s 4.45	s 8.15	s 7.50	L 12.06 AM	BY.....SUPERIOR U. D.....PDN	3.2
8.25	7.47	6.22	6.20	9.46		7.54		4.46	8.16	7.51	12.08	.....BELKNAP ST.....P	3.7
A 8.40 PM	A 8.15	A 6.50 PM	A 6.45 AM	A 9.55 PM		A s 8.05 PM		A 4.53 PM	A 8.23 AM	A s 8.00 AM	A s 12.20 AM	{CENTRAL AVE.....DN }	7.4
Daily	Daily	Daily	Mon., Wed., Fri.	Ex. Sun.	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Time Over Subdivision	
.50	.47	.47	.45	.23	.06	.22	.05	.21	.21	.22	.14	Average Speed Per Hour	
7.8	9.3	9.3	8.7	19.0	13.7	19.9	19.1	20.9	20.9	19.9	17.1		

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION. SINGLE TRACK
OPERATION OVER MINNESOTA DRAW ON ST. LOUIS RIVER BRIDGE, BETWEEN BRIDGE SWITCH AND ELEVATOR STATION—
INTERLOCKED. FIRST CLASS TRAINS USE L. S. T. & T. RAILWAY BETWEEN OMAHA CONNECTION AND BELKNAP STREET.

SECOND SUBDIVISION

EASTWARD

Water, Fuel Supplies, Turn Tables, Wyes and Yard Limbs.	Car Capacity of Sidings.	Station Numbers.	Distance from Central Ave.	Time Table No. 228 March 5, 1950										FIRST CLASS										SECOND CLASS						
				STATIONS																				630						
				Telegraph Offices and Calls																										
X		L 1	7.4 GARFIELD AVE.....										Double Track	A	7.12 AM		A	7.57 AM		A	11.56 AM	A	7.43 PM	A	10.45 PM				
CTW XYZ	Yard		6.7 RICES POINT..... P												7.10			7.54			11.54	7.41	10.43					A	4.30 PM
X			6.1 BRIDGE SWITCH.....												7.08	A	7.48 AM	7.52	A	11.48 AM	11.52	7.39	10.42						4.27
X			5.2 ELEVATOR STATION.....												7.04		7.44	7.49	11.45	11.47	7.34	10.38						4.23	
X			4.5 OMAHA CONN.....												7.02	L	7.42 AM	7.46	L	11.42 AM	11.45	7.31	10.35						4.20

BETWEEN OMAHA CONNECTION AND BELKNAP STREET TRAINS USING L. S. T. & T. RAILWAY
WILL BE GOVERNED BY L. S. T. & T. RY. TIME TABLE AND SPECIAL INSTRUCTIONS.

X	WB 67	4.2	BY.....SUPERIOR U. D.....PDN	A s 5.11 AM	s 7.00		s 7.44		s 11.43	s 7.30	s 10.34		
X		8.7	Auto. Block {BELKNAP ST.....P }	5.09	6.54		7.41		11.40	7.24	10.30		4.10
WXY	Yard	67	{CENTRAL AVE.....DN }	L 5.00 AM	L 6.48 AM		L 7.33 AM		L 11.33 AM	L 7.19 PM	L 10.25 PM		L 4.00 PM
				Daily	Ex. Mon.	Daily	Daily	Daily	Daily	Daily	Daily		Mon., Wed., Fri.
				.11	.24	.06	.24	.06	.23	.24	.20		.30
				22.3	18.5	16.0	18.2	16.0	19.0	18.2	21.9		13.0

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION. SINGLE TRACK
OPERATION OVER MINNESOTA DRAW ON ST. LOUIS RIVER BRIDGE, BETWEEN BRIDGE SWITCH AND ELEVATOR STATION—
INTERLOCKED. FIRST CLASS TRAINS USE L. S. T. & T. RAILWAY BETWEEN OMAHA CONNECTION AND BELKNAP STREET.
SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

WESTWARD

THIRD SUBDIVISION

EASTWARD 5

Water, Fuel, Scales, Turn Tables, Wyes and Yard Limits.	Car Capacity of Sidings.	Station Numbers.	FIRST CLASS					Distance from West Duluth Jct.	Time Table No. 228 March 5, 1950					Distance from L. S. T. & T. Ry. Jct.	FIRST CLASS				
			65	53	317	313	311		54	66	318	312	314						
				D. S. S. & A. 8	Soo Line 18	Soo Line 63	Soo Line 65		D. S. S. & A. 7		Soo Line 17	Soo Line 64	Soo Line 62						
			Passenger	Passenger	Passenger	Passenger	Passenger		Passenger	Passenger	Passenger	Passenger	Passenger						
			Daily	Ex. Sat.	Daily	Daily	Ex. Sun.		Ex. Sun.	Daily	Daily	Ex. Sun.	Daily						
XY		L5	L 11.50 PM					0.0	.....WEST DULUTH JCT.....P				3.3		A 5.34 AM				
X			11.53					0.3	.....ZENITH FURNACE.....				3.0		5.32				
X			11.55 PM	L 8.28 PM	L 6.13 PM	L 1.13 PM	L 8.43 AM	1.1	.....BERWIND JCT...P				2.2	A 5.16 AM	5.29	A 7.43 AM	A 4.02 PM	A 5.39 PM	
								1.8	.....GRASSY POINT DRAWBRIDGE.....				1.5						
X			A 12.05 AM	A 8.33 PM	A 6.18 PM	A 1.18 PM	A 8.48 AM	3.3	.....L. S. T. & T. RY. JCT.....				0.0	L 5.11 AM	L 5.20 AM	L 7.38 AM	L 3.57 PM	L 5.34 PM	

TRAINS USING L. S. T. & T. RAILWAY WEST OF L. S. T. & T. RY. JCT. WILL BE GOVERNED
BY L. S. T. & T. RY. TIME TABLE AND SPECIAL INSTRUCTIONS.

		Daily	Ex. Sat.	Daily	Daily	Ex. Sun.			Ex. Sun.	Daily	Daily	Ex. Sun.	Daily
		.15	.05	.05	.05	.05		Time Over Subdivision	.05	.14	.05	.05	.05
		18.2	24.0	24.0	24.0	24.0		Average Speed Per Hour	24.0	14.1	24.0	24.0	24.0

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

WESTWARD

FOURTH SUBDIVISION

EASTWARD

Water, Fuel, Scales, Turn Tables, Wyes and Yard Limits.	Car Capacity of Sidings	Station Numbers.	SECOND CLASS		FIRST CLASS		Distance from East End.	Time Table No. 228 March 5, 1950		Distance from Central Ave.	FIRST CLASS		SECOND CLASS	
			629	631		53					54	632	630	
				D. S. S. & A. 21		D. S. S. & A. 7					D. S. S. & A. 8	D. S. S. & A. 22		
			Freight	Freight	Passenger	Freight					Freight			
			Mon., Wed., Fri.	Daily	Ex. Sun.	Daily					Mon., Wed., Fri.			
WXY	Yard	63	L 3.45 PM	L 5.20 AM	L 4.51 AM	0.0	.....EAST END.....P		Double Track	4.1	A 9.10 PM	A 12.15 AM	A 6.58 AM
X	Yard	65	3.47	A 5.21 AM	A 4.52 AM	0.2	.....NEWTON AVENUE....			3.9	L 9.09 PM	L 12.14 AM	6.56
	Yard		3.52			1.6	.....HILL AVE.....P			2.5			6.51
X						3.0	.....SOO LINE CROSSING....			1.1			
WXY	Yard	67	A 3.59 PM			4.1	AJ.....CENTRAL AVE...DN			0.0			L 6.45 AM	
			Mon., Wed., Fri.	Daily	Ex. Sun.					Ex. Sat.	Daily	Mon., Wed., Fri.		
			.14	.01	.01		Time Over Subdivision			.01	.01	.13		
			17.6	12.0	12.0		Average Speed Per Hour			12.0	12.0	18.9		

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.
SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

ALL SUBDIVISIONS.

1. Speed Restrictions—

Maximum Speeds Permitted:

Passenger trains.....	75 MPH.
Freight and mixed trains.....	50 MPH.

The above speeds are subject to the restrictions of maximum speeds in miles per hour as shown by zones under each subdivision.

Reduce speed limits, within the zones listed, are designated by Advance-warning signs (diagonally upwards); Reduce speed signs (square with clipped corners); and Resume speed signs (vertical).

The Advance-warning signs are, except as otherwise specified, located approximately 3000 feet in advance of the Reduce speed signs, and the numerals on both signs indicate in miles per hour the maximum speed permitted from the Reduce speed sign to another Reduce speed limit, or to a sign indicating a higher speed, or to a Resume speed sign (RS).

If speeds authorized by zones or Reduce speed signs, are greater than that prescribed below for certain trains or engines, such trains or engines must not exceed the prescribed speeds.

Locations where reduced speeds are required, but not indicated by signs, are listed under the zones of maximum speeds permitted for each subdivision.

All trains and engines, except as otherwise specified:

Through crossovers, turnouts and gantlets, except where fixed signals provide otherwise.....15 MPH.

Handling steam wrecking cranes, pile drivers, locomotive cranes and similar equipment.....30 MPH.

Handling 4-wheel scale test cars (Main Line.....35 MPH.
Branch Lines.....25 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.	60 MPH.
Z-6, Z-7 and Z-8.....	60 MPH.	50 MPH.
Z-5, Y, Y-1, Y-3.....	40 MPH.	35 MPH.
Z-3, Z-4.....	35 MPH.	30 MPH.
S-4, T, T-1, W to W-5 inc. Y-2.....	50 MPH.	45 MPH.
Steam switch engines, without engine trucks, under all conditions.....	15 MPH.	15 MPH.
660 HP diesel-electric switch engines, 600 series.....	45 MPH.	45 MPH.
5400 HP and 6000 HP diesel-electric road engines.....	65 MPH.	65 MPH.
4500 HP diesel-electric passenger engines, 6500 series.....	75 MPH.	65 MPH.
900 HP, 1000 HP and 1500 HP diesel-electric switch engines and combination road-switch engines.....	60 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, Z-5.....	35 MPH.	
Y, Y-1, Y-3.....	30 MPH.	
Z-3, Z-4.....	25 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, T, T-1, W to W-5 inc., Y to Y-3 inc.....	25 MPH.
Z-3, Z-4.....	20 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, T, T-1, W to W-5, inc., Y to Y-3 inc.....	30 MPH.
Z-3, Z-4.....	25 MPH.

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

All A and Q classes.....	25 MPH.
All other classes.....	20 MPH.

On bridges—With either or both main and side rods removed;
Steam switch engines, without engine trucks.....15 MPH.
Other engines.....20 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 engines may be handled dead in trains at not to exceed the authorized operating speed specified for such engines.

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.

Where there are no governing restrictions specified for double headers in the special instructions for each subdivision, they will be governed by the most restrictive instructions applicable to a single engine when of the same class and to the heavier engine when of different classes.

Where double header restrictions are specified, double headers of different classes of engines will be governed by the restrictions applicable to double headers of the heavier class.

When necessary to doublehead a diesel-electric engine with a steam engine, except in case of emergency, the steam engine must be placed behind the diesel engine.

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

To avoid possibility of fire or damage to traction motors, diesel-electric engines must not be permitted to pass over or to stand on cinder pits containing live fire or hot cinders.

Under no circumstances should diesel-electric engines pass through water which is deep enough to touch the bottom of the traction motor frame. When passing through water, movement must always be at very slow speed (2 to 3 MPH).

Where diesel-electric multiple-unit engines are used to handle main line through passenger trains making few or no stops, the fireman will remain in the cab at all times while the train is in motion.

Where multiple-unit diesel-electric engines are used in freight service, both the fireman and the head brakeman shall not be absent at the same time from the leading cab while the train is under way on main track between stations.

Wrecking cranes—250 tons, 45 to 48 inc. must not be coupled directly to engine or tender of engines Classes A-2 to A-5 inc. or Z-5 to Z-8 inc., but must be separated from them by at least two cars of not over 169,000 pounds total weight, for movement over bridges.

3. Use of Mars headlight on engines so equipped—

The Mars headlight can be displayed with either stationary or oscillating white light at the same time that the standard headlight is in use, but cannot be displayed with either stationary or oscillating red light when the standard headlight is in use.

The Mars white light may be used in a stationary position as a substitute headlight in case of failure of the standard headlight, but will normally be used as an oscillating light during the time full display of standard headlight is required.

The Mars oscillating red light will be used when head end protection is required, either by day or by night by engineer control, if the train becomes disabled or is stopped suddenly due to unusual occurrence with the possibility of an adjacent track being obstructed, or if it overruns the clearance point at a meeting or waiting point, or at the end of double track or at a junction, or in any other emergency situation.

The engineer of an approaching train, finding oscillating red light displayed, must stop and then be governed by conditions existing. If on an adjacent track which he finds unobstructed and safe for operation, he may proceed at restricted speed until the standing train displaying the oscillating red light has been passed.

The Mars red light shall be displayed in stationary position when a train is occupying the main track at a meeting point with an opposing train until the headlight of the opposing train has been dimmed, per Rule 17 (B), after which the red headlight shall be extinguished, and the standard white headlight turned on dim until opposing train is into clear on siding.

The use of the red headlight does not in any manner relieve the train or engine men of responsibility for compliance with the provisions of Rules 99 and 102.

4. Rule D-97 applies to all subdivisions.
5. Except in case of fog, 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 in special cases when authorized by the Superintendent and protected by train order.
6. Rule 606: Emergency Signals are not used at inter-lockings or draw-bridges 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.
8. Cars will not be handled behind light-weight observation cars except in emergency or when so authorized by the Superintendent. In such cases passengers shall not be permitted to pass between such cars while train is in motion due to the unprotected opening. Gas-electric or diesel-electric motor cars, when handled dead in freight trains, must be behind caboose. 4-wheel scale test cars must be handled only in local freight trains. All scale test cars must be placed immediately ahead of caboose. Cranes or similar machines geared for self-propulsion moving on commercial billing, must not be handled in time freight trains. When handling pile driver 25, it must be coupled to either the regular tender or a flat or gondola car with open end next to cab end of pile driver to provide proper clearance. Open cars loaded with material which may shift, such as poles, pipe, timbers, etc., shall not be placed immediately next to diesel-electric engines nor to cabooses in trains.
9. Precautions must be taken on double track to prevent accidents from swinging doors or other loose construction attached to cars or engines. Trains handling logs must stop when being met or passed by passenger trains.
10. Electric Switch Locks—To operate the lock, unlock and open the door:
 - (a) If indicator shows proceed, turn lock handle to the left until it rests on stop block. Then line the switch in the usual manner and movement may be made at once.
 - (b) If indicator shows stop, and no conflicting train movement is evident, unlock the time release box and push the button which starts the time release. After three minutes indicator will normally show proceed then turn the lock handle to the left and line the switch.
 - (c) After final movement over the switch is made: Restore and lock switch in normal position. Turn the electric lock handle to the right until it rests on the stop block. Close and lock the door of the electric lock.
 - (d) Exception: If the electric lock is equipped with a wire seal emergency release, located at the left of the indicator, the seal must not be broken until after the time release has been operated and the electric lock fails to show proceed.

When emergency release is used, there must be a wait of three minutes before switch is lined for movement. After emergency release seal has been broken, immediately notify the train dispatcher so he may call the signal maintainer to reset the emergency release, as the signals will remain at stop until repairs are made.

11. Signal Operation at Spring Switches Equipped for Switch Key Operation—Unless otherwise provided, the normal position of the spring switch is for main track. The normal indication of main track signals is Proceed. The normal indication of siding signal is Stop. To clear the siding signal when train is ready to enter main track, insert switch key in control box and turn to right. If route is clear the siding signal will immediately clear. If siding signal does not clear by switch key operation, open release box and push the button which will put the time release mechanism into operation. After time release has operated, the siding signal will clear if there is no conflicting train movement. The release box door must be left open until leading wheels of train on the siding have passed the siding signal, then close and lock the release box door. If the siding signal has been cleared and train on the siding is not ready to depart, if necessary to clear signals for a main track movement, open the release box door and push the button which will start the time release mechanism. After the time release mechanism has started to operate, close and lock the release box door.
12. Pusher engines must not push on cabooses not equipped with steel sills.
13. Second class, inferior trains, and engines may run ahead of delayed first class trains without train order authority. Flagman must be stationed on the rear car, at all times. In case train is stopped on main track, flagman must protect as prescribed by Rule 99. Conductors and switch foremen will be held responsible for the strict observance of this rule.
14. Extra trains, and yard engines may move with current of traffic between West Duluth Jct. and Duluth (1st sub.); between Central Avenue and Rice's Point (2nd sub.); between Central Avenue and Allouez (4th sub.), and in either direction on single track and with the current of traffic on double track between West Duluth Jct. and Superior (3rd sub.) without train order authority.
15. The D. T. Ry. main track is the northmost track between the Hanna Coal Dock crossing and connection with Grassy Point main track. All switches leading from this track, when not in use, will be left lined for D. T. Ry.
16. All trains and engines using D. T. Ry. main track from connection of Missabe coal dock to east end of Zenith Furnace Company's lead, on Grassy Point line, will move in both directions at restricted speed, expecting to find the D. T. Ry. main track occupied.
17. D. T. Ry. connection, located at east end of Zenith Furnace Company's lead, Grassy Point line, will be considered a railroad crossing. Trains and engines using this connection will come to a full stop and make sure that track is clear before proceeding.
18. Bulletin Stations—

Duluth.	Union Depot, Rices Point Yard and Roundhouse
	Soo Line Passenger Station.
Superior.	Soo Line Yard and Roundhouse.
19. Standard Time Clocks—

Duluth—	Union Depot, Rices Point Yard Office and Round House.
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20. Watch Inspectors—

Duluth.....	Kanter's Jewelry Co.
Duluth.....	Herbert W. Schmidt.
Duluth.....	Harlan Wells.
West Duluth.....	W. F. Hurst.
Superior.....	L. J. Howatt.

FIRST SUBDIVISION

1. **Speed Restrictions—** Maximum Speeds Permitted
Zone—Between: Freight and Mixed Passenger

First class trains, within yard limits.....	Restricted Speed.
East D. M. & I. R. Jct., and West Duluth Jct.	30 30
West Duluth Jct., and Fond du Lac.....	15 15
Fond du Lac and Upper Power Plant.....	8 8
Over 21st Avenue West Crossing.....	15 15

2. **Bridge and Engine Restrictions—**Between Duluth and West Duluth Junction—Engines classes A-2 to A-5 inc. and Z-5 to Z-8 inc., not permitted.

All bridges—Trains handling wrecking cranes of 250 tons, or heavier, NP cranes 45, 46, 47 and 48..... 15 MPH.

Between West Duluth Junction and Fond du Lac—engines heavier than Class Q-4 not permitted.

Between Fond du Lac and upper Power Plant—engines heavier than Classes L-9 or L-10 not permitted.

At Riverside—Engines heavier than Classes L-9 and L-10 not permitted on tracks 1, 3 and 4 at Barnes-Duluth Plant.

Door over tracks entering shop building will not clear man on top of car.

3. **At Duluth—**City ordinance prohibits blocking street crossings at 1st Ave. East and 5th Ave. West for more than 5 minutes; or of any other crossing for more than 10 minutes.

Engine whistle will not be used between 3rd Ave. East and 5th Ave. West, or between 14th Ave. West and 85th Ave. West (except 85th Ave. West) except as an alarm or warning, or to signal towerman, to call for semaphore signals, as a safety precaution in backing cars or engines, or as a signal in testing air brakes. No engine or train will run within the city without having bell ringing while in motion, and approaching any street or avenue.

4. **At Garfield Avenue—**Normal position of junction switches will be for First Subdivision.

Trains stop not less than two hundred (200) feet from junction switches and not proceed until route is clear.

5. **At Nineteenth Avenue West—**Trains using the Dick tracks must not block crossing.

6. **At Twenty-first Avenue West—**Telephone at crossover—Eastward trains call yard (3 rings) for route when necessary.

7. **At West D. M. & I. R. Jct. Interlocking—**Trains will call for route as follows:

- o o o Martins track to D. M. & I. R. yard.
- o o o D. M. & I. R. yard to Martins track.
- o o o— Martins track to westward main.
- o o o o Martins track to D. T. main.
- o o o o D. T. main to Martins track.
- o Westward main to D. M. & I. R. yard.
- o D. M. & I. R. yard to eastward main.
- o o Eastward Main to Martin's track.
- — Through main track movements.

8. **At West Duluth Jct.—**Switch at west end wye will be kept set and locked for First Subdivision.

Yard engines will use west leg of wye and Fond du Lac line but will not leave cars on these tracks.

Switch at end of double track is dual control. Normal position is for the westward track.

To secure a restricting proceed interlocking indication, as per Rule 601-F, Figure (8), at the Westward Dwarf Signal, covering reverse movements on eastward track, engines or trains moving eastward through the dual control switch must, before reversing direction, clear the track circuit, the east end of which is located just east of the switch leading to the new Western Brass Company near 61st Avenue West.

9. **At Fond du Lac—**Trains will call upper Power Plant (Douglas 50) from New Duluth and secure permission to use track between Fond du Lac and Power Plant, but must secure authority from chief dispatcher to use track to lower Power Plant.

10. **Yard Limits—**Between East D. M. & I. R. Jct. at Fifth Ave. East and Lake Superior Division yard limit sign west of West Duluth Jct.

11. **Derail Switches—**Duluth—House Track No. 4. Fond du Lac, on main track.

12. **Register Stations—**Duluth Union Depot for trains arriving at or departing from Fifth Ave. Yard or Union Depot, Rice's Point Yard office for other trains.
West Duluth.

13. **Register Exceptions—**At Duluth first class trains arriving may register by Form 608, using tube at foot of east stairway for delivery to operator in "DU" office.

At West Duluth trains register by form 608. A check of register on form 602 may be issued by operator when authorized by train dispatcher, either instead of, or addition to, train order check.

14. **Clearance Exceptions—**Trains originating at East D. M. & I. R. Jct., Garfield Ave., 20th Ave. West, West D. M. & I. R. Jct., D. W. & P. Jct., West Duluth Jct. and Fond du Lac will not require clearance.

SECOND SUBDIVISION

1. **Speed Restrictions—** Maximum Speeds Permitted
Zone Between: Freight and Mixed Passenger

First Class trains, within yard limits.....	Restricted Speed.
Garfield Ave., and Central Ave.....	45 55
Superior and Central Ave., Great Northern engines Class P-2.....	40
Trains handling loaded ore cars.....	40
At Superior—Over switches at Belknap Street and Omaha Conn.....	15 MPH.

2. **Bridge and Engine Restrictions—**Engines classes A-2 to A-5 inc. and Z-5 to Z-8 inc., not permitted.

Bridge 2.1, St. Louis Bay..... 20 MPH.

All bridges—Trains handling wrecking cranes of 250 tons, or heavier, NP cranes 45, 46, 47 and 48..... 15 MPH

3. **At Garfield Avenue—**Normal position of junction switches will be for First Subdivision.

Trains will stop not less than two hundred (200) feet from junction switches and not proceed until route is clear.

4. **At Rice's Point—**Spring switches not equipped with facing point locks, roundhouse lead, 900 feet south of coal dock, indicate—

Yellow—Straight Track.

Green—Roundhouse Lead.

Normal position of switches designated below is as follows:

South End Rice's Point Yard,
switch from B to C yard lead (top switch). when lined for B yard lead;
No. 26 and 31 crossovers on Hump

(A Yard)..... when lined for Hump (A Yard) lead;

No. 26 and 31 crossovers on Load

(B Yard) lead..... when lined for Load (B Yard) lead.

North End Rice's Point Yard,

switch off outside lead for

lead to C Yard..... when lined for Load (B Yard) lead;

Crossover switch on inside lead..... when lined for inside lead;

Crossover switch off outside lead..... when lined for outside lead.

Roundhouse, hand throw switches No. 2 and No. 4 from the outgoing roundhouse tracks..... when lined for lead

Crossover switches from yard tracks to main track must be set for yard tracks when not in use, except where otherwise provided.

5. **At Rice's Point Interlocking—**Westward dwarf signal is located between Hump (A Yard) Lead and Load (B Yard) Lead at west end of yard. Top light governs movements to westward track and crossover to eastward track; bottom light governs movements to west end of Hump (A Yard) Lead. Normal position of east switch of crossover from Hump (A Yard) Lead to westward track is for westward track, and must be kept lined and locked in this position when not in use.

Push-button on mast of eastward home signal. If home signal indicates Stop, push-button should be operated, and movement governed by signal indication.

Trains will call for route as follows:

For through main track movements.....	
Eastward track to westward track.....	o & oo
Eastward track to yard.....	o & ooo
Yard to westward track.....	ooo & oo
Yard to eastward track.....	ooo & o
Westward track to eastward track.....	oo & o
Westward track to yard.....	oo & ooo

6. **Between Bridge Switch and Elevator Station, St. Louis River Bridge**—Interlocking signals govern use of tracks. Single track over Minnesota Draw. The three-light Home signal on eastward track west of Minnesota Draw indicates position of double track switch, position of draw and route:

Top Light—C. St. P. M. & O.
Middle Light—Great Northern
Bottom Light—Northern Pacific

The two-light Home signal on westward track east of Elevator Station indicates route:

Top Light—Straight main track.
Bottom Light—Great Northern freight track.]

Westward trains will stop before entering onto Wisconsin Draw.

Eastward trains will stop before entering onto Minnesota Draw.

Westward trains entering onto Minnesota Draw and Eastward trains entering onto Wisconsin Draw will be governed by signal at the approach and, if proceed signal is received, will not be required to stop

7. **At Superior**—City ordinance prohibits blocking any street crossing for more than 10 minutes, except in case of unavoidable breakdown.
8. **At Central Avenue**—Westward trains and engines may use eastward main track between west lead from yard and junction with Fourth (Terminal) Subdivision without protection. No. 1 track will be used as siding.
9. **Yard Limits**—From Garfield Ave. to yard limit sign west of 28th Street, Superior, and from yard limit sign east of Central Ave. to the yard limit sign just east of Soo Line crossing on Terminal Fourth Subdivision, and yard limit sign west of Central Ave. on Second Subdivision of Lake Superior Division.
10. **Derail Switches**—At approach to Minnesota Draw from Duluth. At Elevator Station.
At Superior—just East of N. P. freight house.
11. **Register Stations:**
Rice's Point for second class and inferior trains, except passenger extras.
Central Avenue.
12. **Register Exceptions**—At Central Avenue trains register by form 608. A check of register on form 602 may be issued by operator when authorized by train dispatcher, either instead of, or in addition to, train order check.
13. **Clearance Exceptions:**
Trains originating at Garfield Ave., Rice's Point (Yard), Bridge Switch, Elevator Station, Omaha Conn. and Belknap St. will not require clearance.
At Central Ave. eastward trains will not require clearance if train order signal is in the proceed position. Westward Great Northern trains enroute to Great Northern tracks, at the Interlocking, not governed by train order signal.

THIRD SUBDIVISION

1. **Speed Restrictions—** Maximum Speeds Permitted
Zones—Between: Freight and Mixed Passenger
First class trains, within yard limits..... Restricted Speed.
West Duluth Jct. and Zenith Furnace..... 30 30
Zenith Furnace and L. S. T. & T. Jct..... 40 40
At West Duluth Jct., around east leg of wye and passing Zenith Furnace Plant..... Restricted Speed.
2. **Bridge and Engine Restrictions**—Engines classes A-2 to A-5 inc. and Z-5 to Z-8 inc., not permitted.
All bridges—Trains handling wrecking cranes of 250 tons, or heavier, NP cranes 45, 46, 47 or 48..... 15 MPH.
Bridge 94.6, Grassy Point..... 20 MPH.
3. **At West Duluth Jct.**—Normal position of switches on east leg of wye is for Third (Terminal) Subdivision main track.
4. **Clearance Exceptions:**
Trains originating at West Duluth Jct., Berwind Jct. and L. S. T. & T. Ry. Jct. will not require clearance.
5. **Derails**—Winter St. just east of junction with Second Subdivision.
6. **Yard Limits**—Between West Duluth Jct. and yard limit sign west of Grassy Point drawbridge, and between yard limit sign east of L. S. T. & T. Ry. Jct. and Superior.

FOURTH SUBDIVISION

1. **Speed Restrictions—** Maximum Speeds Permitted
Zone—Between: All Trains and Engines
East End and Central Ave..... Restricted Speed.
Engines heavier than Classes A-2 and W-5..... 20 MPH.
Trains Handling Loaded Ore Cars..... 20 MPH.
2. **Bridge and Engine Restrictions:**
Engines Class W or heavier, over trestle approach to Ore Dock..... 15 MPH.
3. **At East End**—Normal position of switch at end of double track is for westward trains.
The approach signal of interlocking at Newton Ave. is an automatic block signal located on single track and governs the single track to end of double track and the westward track to Newton Ave. interlocking.
4. **At Newton Ave.**—No crossover between eastward and westward main tracks. Between CStPM&O connection at Newton Ave. and East End, the westward track will be used as single track by eastward trains and engines entering at Newton Ave. and by westward trains and engines. Other eastward movements will be made on eastward track.

5. **At Hill Avenue Yard**—Ore trains arriving will stop to clear east end of arriving tracks.
Trains weighing ore on automatic scale will move at about 3 MPH. Semaphore over scale house is operated by weighmaster, and engineers will be governed by its indications:
Green: Proper speed.
Yellow: Reduce speed.
Red: Stop.
6. **At Soo Line Crossing**—When using Soo Line tracks, Northern Pacific crews must have in their possession and be governed by current Soo Line Duluth and Superior Terminal Division Time Table, a supply of which is maintained at Rice's Point Yard office and roundhouse.
7. **At Central Ave.**—Normal position of spring switch at end of double track is for eastward trains.
Normal position of wye switch connection, between Terminal Second and Fourth Subdivisions, will be for direct route for Pokegama. These switches are governed by interlocking signals, equipped for switch-key operation. If use of switch key does not give "restricting" signal, proceed according to rule.
Normal position of switch at junction of Fourth and Second (Terminal) Subdivisions is for Second Subdivision.
8. **Yard Limits**—Tracks between yard limit signs west of East End and east of Allouez, and from yard limit sign east of Central Avenue to the yard limit sign just east of Soo Line crossing on terminal Fourth Subdivision.
9. Between Central Ave. and East End, train movements may be made with the current of traffic without train orders or double track clearance authority.
10. **Register Stations:**
Central Ave.
Soo Line 21st St. Yard Office, Superior, for D. S. S. & A. Ry.
11. **Register Exceptions**—At Central Ave. trains register by form 608. Eastward ore trains from Lake Superior 2nd Subdivision will not register. A check of register on Form 602 may be issued by operator when authorized by train dispatcher, either instead of, or in addition to, train order check.
12. **Clearance Exceptions**—Trains originating at East End and Hill Ave. will not require clearance.
Ore trains from Lake Superior 2nd Subdivision will not require clearance at Central Ave.

RAILROAD CROSSINGS AND INTERLOCKINGS.**First Sub-division**

West D. M. & I. R. Jct., Interlocking.
Soo Line Crossing, Automatic Interlocking.
D. W. & P. Jct., Interlocking.
West Duluth Jct., Automatic Interlocking.
Morgan Park, Minnesota Steel Co. Crossing.

Second Sub-division

Rice's Point, Interlocking.
Bridge Switch, Interlocking.
St. Louis River Drawbridge;
Minnesota Draw, Interlocking.
Wisconsin Draw, Interlocking.
Elevator Station, Interlocking.
Superior, Winter St., near Omaha Connection.

Third Sub-division

Zenith Furnace—D. M. & I. R. Ry. Crossing.
Berwind Jct., Interlocking, junction with Soo Line and D. W. & P.
Grassy Point Drawbridge, Interlocking.
G. N. Ry. Crossing.
L. S. T. & T. Ry. Jct.

Fourth Sub-division

Newton Avenue—C. St. P. M. & O. Crossing, Interlocking.
Soo Line Crossing, Interlocking.

G. M. HARE,
Asst. Superintendent.

C. B. WOLF,
Trainmaster.

N. M. LORENTZSEN,
Trainmaster.

M. R. SMITH,
Trainmaster-Roadmaster.

E. J. WIGG,
Chief Dispatcher.