

# Great Northern Compared with Other Roads

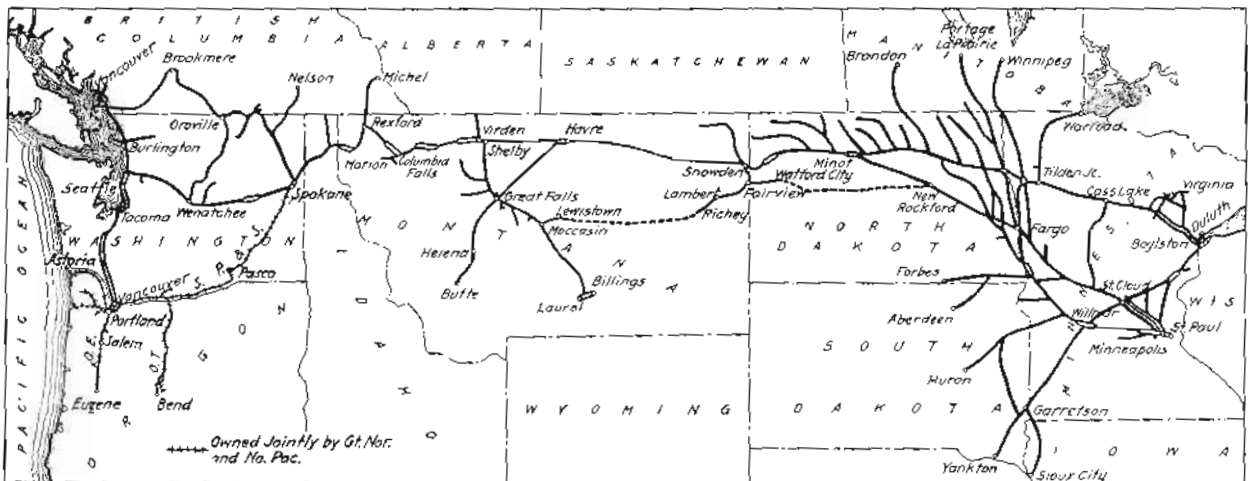
*Has been unable to overcome effects of low rates and slow increase in traffic*

THE Great Northern annual report for 1924 shows net income after charges of \$17,941,600, equivalent to \$7.19 a share on the \$249,558,418 outstanding preferred stock. Net income in 1923 was \$18,067,947, equivalent to \$7.24 a share. The 1924 net income was the lowest with one exception, namely, 1922, for many years of Great Northern history, although it will be noted that the net income for 1924 was only slightly less than that for 1923.

The chief trouble with the Great Northern seems to be nothing else than that it is a northwestern road. This makes it worth while to ascertain how the property may stand in comparison with the other roads in the northwestern region or with the roads in the western district as a whole.

There is presented in Table I a comparison based principally on the data which appeared in the article in

enue per ton per mile in the northwestern region was 46 per cent; in the western district as a whole, 43 per cent, while for the United States as a whole there was an increase of 58 per cent. In revenue ton-miles the northwestern region showed in 1924 as compared with the fiscal year ended June 30, 1916, an increase of only 3 per cent, whereas the western district showed an increase of 21 per cent and the United States an increase of 14 per cent. As a result of this combination of circumstances, chiefly, the net railway operating income of the northwestern carriers in 1924 was 29 per cent less than their standard return during the period of federal control, or their average annual net railway operating income for the three years ended June 30, 1917. The western district as a whole showed a decrease of 7 per cent and the United States as a whole an increase of 9 per cent. In the southern and southwestern regions as



The Great Northern

the *Railway Age* of July 25, entitled "The Trend of Railway Earnings Shown in Charts," by H. M. Sperry. In that article comparisons were made of the revenue ton-miles and revenue per ton-mile of the several regions for 1923 and 1924 with the figures for the year ended June 30, 1916, and similarly the net railway operating income of the regions was compared with their standard return for operations during the period of federal control. While the Sperry study did not attempt to take sides in the present controversy relative to the reorganization of the Chicago, Milwaukee & St. Paul, which is serving to throw so much light on the situation of the northwestern carriers, figures 2 and 3 of the article apparently did show that it was lack of traffic as much as the unfortunately low rate level which was handicapping the roads in the northwestern region.

Thus, in comparing 1924 with the fiscal year ended June 30, 1916, it was developed that the increase in rev-

enue per ton per mile in the northwestern region was 46 per cent; in the western district as a whole, 43 per cent, while for the United States as a whole there was an increase of 58 per cent. In revenue ton-miles the northwestern region showed in 1924 as compared with the fiscal year ended June 30, 1916, an increase of only 3 per cent, whereas the western district showed an increase of 21 per cent and the United States an increase of 14 per cent.

### Rate Increase Only 38 Per Cent

Table I shows how the Great Northern fits into this picture. Its revenue per ton per mile in 1924 is seen to be but 38 per cent in excess of its revenue ton-mile earnings for the year ended June 30, 1916, an increase much below the admittedly small increase for the northwestern region as a whole, likewise below the increase for the western district and substantially below the increase for the country. As concerns Great Northern traffic, in 1924 as compared with 1916 there was an increase of 3.6 per cent—about the same as the northwestern region's increase of 3 per cent but trailing the figure of 21 per cent for the western district and the figure of 14

per cent for the United States. However, whereas in 1924 the northwestern region had net railway operating income 29 per cent less than the standard return, the Great Northern had a decrease of 15½ per cent. This per cent, while showing a better result than the region, was not as satisfactory as was shown by the western district's 7 per cent decrease and not nearly as satisfactory as the United States' 9 per cent increase. The figures in the table include also data for 1923. These figures are better than those for 1924 but the relationships as between the Great Northern and the groupings with which it is compared are about the same as in 1924. In either case the Great Northern has had about the same increase in traffic as the northwestern region. It has had a substantially smaller increase in revenue per ton per mile but it has not suffered so greatly from the standpoint of its net railway operating income as its neighbor roads in the northwest.

**Is Great Northern Suffering from Lack of Traffic?**

These details would seem to indicate that the Great Northern is at the present time suffering from a low rate level and from lack of traffic alike. In some way, however, it has so improved its efficiency of operation that while its net income has suffered in great degree it has not suffered to quite the same extent as have the roads in the northwestern region as a whole.

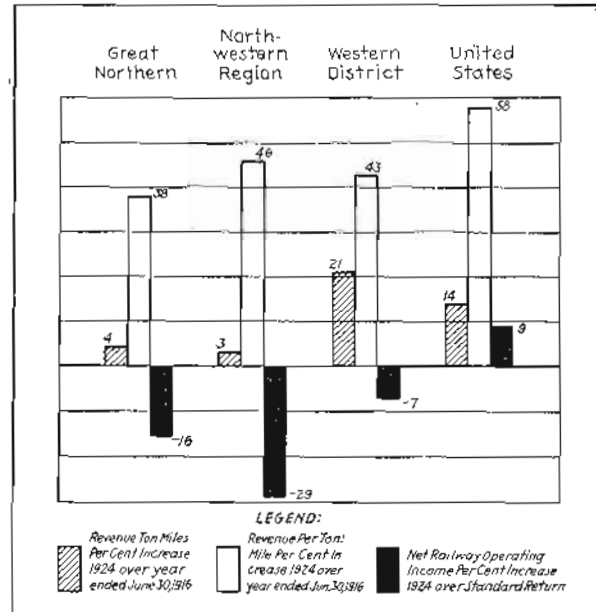
The full significance of the Great Northern's increase of but 3.6 per cent in 1924 as compared with 1916, or of the increase of 12 per cent for 1923, is best understood when it is realized that prior to the war railway traffic on the railroads of this country as a whole used to double in about 12 to 14 years, or on the average of 7 or 8 per cent a year. The year ended June 30, 1916 was the best year in Great Northern's history up to that time. The traffic for the year 1916 has been exceeded in every year since with the exception of three. However, the fact that in 1923 the increase over 1916 was but 12 per cent or about the average of 1½ per cent a year would seem to justify those who speak of the lack of prosperity in the Northwest, of the handicaps of Panama Canal competition or, indeed, it may indicate that the period of expansion in the northwestern region of this country has temporarily ceased. As far as the traffic figures indicate, the situation is not good. As concerns the increase of 38 per cent in rates for the past 8½ years with the increase in costs that has taken place in this time, it is indeed surprising that with this small increase the Great Northern should have been able to come through as well as it has.

**More Ore—Less Lumber**

The Great Northern differs from its two leading neighbors in the northwestern region with respect to its heavy traffic in iron ore on the one hand and its considerably smaller volume of lumber traffic on the other. The ore traffic in 1924 totaled 13,539,021 tons and constituted 42.8 per cent of the total revenue tonnage. This indicates that ore bears about the same relation to Great Northern affairs that coal bears to the operations of coal carrying roads. The 1924 ore tonnage was 23 per cent less than in 1923 but in 1923 the ore tonnage was about the largest in the road's history—the expression "about the largest" being used advisedly because it is only since 1920 that the Great Northern has been reporting freight commodity statistics in its annual reports. The 1923 ore tonnage totaled 17,676,007 and it was 49 per cent of the road's total revenue tonnage. The importance of the ore tonnage is that its volume varies with the prosperity of the steel industry and not with the agricultural prosperity of the Northwest. The steel industry has been rather more prosperous than has agriculture in the North-

west, so it is to be supposed that iron ore, except as its volume has varied with the marked variations in steel production, has been somewhat of a sustaining factor in the Great Northern's general situation. In the recently issued Great Northern annual report, the view is expressed that the ore traffic in 1925 will be about the same as it was in 1924.

In 1924, the Great Northern carried 3,500,672 tons of products of forests whereas the Northern Pacific moved 8,713,309 tons and the Chicago, Milwaukee & St. Paul 10,134,257 tons. In each case the 1924 figures were less than those for 1923. The Great Northern's percentage of products of forests to total revenue tons was 10.5 per



Comparison of Trend of Great Northern Traffic and Earnings

cent while that of the Northern Pacific was 36.3 per cent and that of the Milwaukee 21.5 per cent. It has been fairly generally agreed that the competition of the Panama Canal has been felt most acutely by the northwestern roads with reference to their lumber traffic. Because of the Great Northern's comparatively small proportion of lumber traffic it has been believed that the Great Northern has probably suffered less from Panama Canal competition than have other roads. It is, of course, to be borne in mind that Panama Canal competition has also been pointedly effective with reference to high grade traffic moving westbound in cars otherwise being returned empty for lumber traffic.

However, it was noted above that in a comparison with 1916 the Great Northern increase in traffic has been only about as great as for the northwestern region as a whole. In 1923, the Great Northern moved only 12 per cent more revenue ton-miles than in the year ended June 30, 1916, and in 1924 only 3.6 per cent more. The Northern Pacific moved less revenue ton-miles in either 1923 or 1924 than in 1916. The Milwaukee, inclusive of the Chicago, Terre Haute & Southeastern, carried 14 per cent more revenue ton-miles in 1923 than in 1916, and in 1924 5 per cent more. It apparently is not difficult to explain why the Great Northern and the Milwaukee have had increases in their traffic since 1916—however comparatively slight as compared with pre-war rates of increase or increases in the country as a whole—while the Northern Pacific has had a decrease. The answer is to

be found in branch line—the Milwaukee while the Northwestern part verification else—it appears has had a great is concerned

**The Chi**

At this point was noted above acquired subsidiary cent more revenue ended June 3 from the figure

TABLE I—GREAT N IN NORTHWEST Net railway operating standard return in per cent

Year ended	Standard Return 1923—Net Railway Operating Income % of standard revenue 1924—Net revenue % of standard revenue
1916	4
1917	3
1918	21
1919	14
1920	9
1921	14
1922	9
1923	14
1924	4

12 per cent in the western district United States. 1924 over 1916 in the northwestern district and 14 per those who contend Paul's difficulties its troubles. That it certainly has

Year ended	Mileage
1914	7,781
1915	8,061
1916	8,053
Year ended Dec. 31	
1916	8,098
1917	8,233
1918	8,260
1919	8,220
1920	8,174
1921	8,163
1922	8,261
1923	8,254
1924	8,251

that it should have of traffic must be St. Paul's handicap an increase of 14 shown for 1923—cent a year—cent in traffic at all There is a further

be found in the fact that the greater development of the branch line or feeder mileage of the Great Northern and the Milwaukee is in the eastern part of the northwest while the Northern Pacific has developed more in the western part. Whatever may be the cause—greater diversification of agriculture, the ore traffic or whatever else—it appears that the eastern section of the northwest has had a greater growth as far as railway traffic volume is concerned than has the western section.

**The Chicago, Milwaukee & St. Paul's Traffic**

At this point a slight digression may be in order. It was noted above that the Milwaukee, including its recently acquired subsidiary, the C. T. H. & S. E., moved 14 per cent more revenue ton-miles in 1923 than in the year ended June 30, 1916. This compared, it will be noted from the figures presented in Table I, with increases of

Great Northern lumber traffic that should not escape notice. The Great Northern and the Northern Pacific each have a half interest in the Spokane, Portland & Seattle, which in turn owns all the capital stock of the Oregon Trunk. These lines reach virgin lumber country in the state of Oregon. It is to be supposed that as the lumbering industry continues the tendency will be to turn to this area for supply. In that case, the Great Northern will be given its share of the traffic from the new lumber districts and will be measurably assisted by the fact that its lines reach a widespread territory in the eastern part of the northwestern region where the road's branch line development is greatest in extent, and traffic to which region cannot be affected by Panama Canal competition.

**1924 Compared with 1923**

In 1924, the Great Northern moved, as above noted, 23 per cent less iron ore than in 1923. Its total revenue tons were 12.96 per cent less than in 1924 but otherwise were the largest in the company's history. In the case of revenue ton-miles, the 1924 total showed a decrease of 7.55 per cent from 1923, but besides being less than that year they were less also than in 1917, 1918 and 1920. The total operating revenues were \$110,243,104 as compared with \$120,077,771 in 1923, a decrease of 8.2 per cent. Total operating expenses were \$75,212,058, comparing with \$86,750,523 in 1923, which was a decrease of 13.3 per cent. The chief significance of this marked decrease in operating expenses was the fact that the operating ratio of 68.2 was the smallest reported for any year since 1917.

The net operating revenues, that is, revenues less expenses, totaled \$35,031,046, which was an increase of \$1,703,797. Unfortunately this increase was not carried down to net railway operating income. This resulted because there was an increase of \$1,144,515 in taxes and because a credit equipment rent balance of \$806,631 in 1923 was changed to a net debit balance of \$304,269, in 1924, the difference being \$1,110,900. It is something new for the Great Northern to report a debit per diem balance. The result came about apparently from reductions in the amount of equipment which the Northern now owns but probably the most important factor was the casing in the car situation which permitted the company to keep its own cars on its own rails instead of having them in the East where they would, to be sure, yield a dollar a day but where, at the same time, they would not

TABLE I—GREAT NORTHERN TRENDS COMPARED WITH THOSE OF OTHER ROADS IN NORTHWESTERN REGION, WESTERN DISTRICT AND UNITED STATES  
Net railway operating income for 1923 and 1924 shown in percentage of standard return. Revenue ton-miles and revenue per ton-mile shown in percentages of figures for year ended June 30, 1916

	Great Northern	Northwestern Region	Western District	United States
Standard return	\$28,666,681	\$148,734,272	\$404,692,751	\$906,894,745
1923—Net railway operating income	21,731,992	112,236,458	374,556,464	983,736,225
% of standard return	86.27	75.46	92.55	108.47
1924—Net ry. op. income	24,201,287	104,873,704	378,080,991	987,133,417
% of standard return	84.42	70.51	93.42	108.85
1916—Rev. ton-miles, thous.	7,809,817	45,017,216	312,846,134	340,689,980
1923—Rev. ton-miles, thous.	8,754,273	50,255,257	337,142,098	413,479,011
% of 1916	112.09	111.64	121.52	121.37
1924—Rev. ton-miles, thous.	8,093,116	46,394,281	336,082,649	388,872,920
% of 1916	103.63	103.06	120.59	114.14
1916—Rev. per ton-mile, cents	0.771	0.778	0.843	0.707
1923—Rev. per ton-mile, cents	1.070	1.131	1.228	1.116
% of 1916	138.78	145.37	145.67	157.85
1924—Rev. per ton-mile, cents	1.064	1.137	1.209	1.116
% of 1916	138.00	146.14	143.41	157.85

12 per cent in the northwestern region, 22 per cent in the western district and with 21 per cent in the whole United States. The St. Paul's increase in traffic in 1924 over 1916 was 4 per cent, comparing with 3 per cent in the northwestern region, 21 per cent in the western district and 14 per cent in the United States. There are those who contend that loss of traffic is not one of the St. Paul's difficulties but that low rates are the only cause of its troubles. The St. Paul may not have lost traffic but it certainly has not had the increase in traffic

TABLE II—GREAT NORTHERN OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1924

Year ended June 30	Mileage	Revenue tons	Revenue ton miles	Average haul	Revenue per ton mile cents	Revenue train load	Revenue car load	Total operating revenues	Total operating expenses	Net operating revenue	Operating ratio	Net after charges
1914	7,781	30,857,598	6,930,296,000	225	0.795	663	22.44	\$76,854,937	\$47,769,774	\$29,085,164	62.16	\$20,453,551
1915	8,061	23,453,059	5,773,780,000	246	0.817	650	21.58	67,162,858	36,828,275	30,334,583	54.83	20,618,270
1916	8,053	28,927,130	7,809,817,000	270	0.771	663	22.87	81,262,478	43,914,076	37,348,402	54.04	27,600,614
Year ended Dec. 31												
1916	8,098	30,389,386	8,018,210,000	264	0.761	661	22.65	83,181,729	48,569,302	34,612,528	58.39	21,040,172
1917	8,233	30,650,814	8,399,349,000	274	0.766	671	23.72	88,598,735	59,282,156	29,316,578	66.91	20,063,270
1918	8,260	30,948,659	8,344,787,000	286	0.870	684	25.89	100,698,520	84,429,245	16,269,275	83.84	22,139,586
1919	8,220	27,390,432	7,923,569,000	291	0.970	663	24.66	106,562,145	86,786,273	19,775,871	81.44	19,304,097
1920	8,174	32,948,292	8,518,841,000	259	1.054	684	25.34	122,597,865	113,947,115	8,650,751	92.94	28,469,926
1921	8,163	19,533,134	5,740,921,000	294	1.301	607	24.31	101,317,294	80,496,912	20,820,291	79.45	10,865,672
1922	8,261	27,450,587	6,882,465,000	251	1.134	656	23.96	103,452,937	79,636,038	23,816,899	76.98	18,067,947
1923	8,254	36,385,396	8,754,273,000	241	1.070	712	25.31	120,077,771	86,750,523	33,327,248	71.21	17,941,600
1924	8,251	31,669,750	8,093,136,000	256	1.064	770	24.58	110,243,104	75,212,058	35,031,046	68.2	17,941,600

that it should have had. This means simply that lack of traffic must be properly conceded to be one of the St. Paul's handicaps, because when all is said and done an increase of 14 per cent in traffic in 7½ years as was shown for 1923—or an average increase of less than 2 per cent a year—can hardly be considered any increase in traffic at all.

There is a further factor of interest with reference to

be available for Great Northern traffic. President Budd in his annual report further explains that it was necessary for the Great Northern "to pay rental for a large number of foreign cars which it accumulated and used in moving the heavy grain crops."

Net railway operating income of \$24,201,287 compared with \$24,731,992 in 1923, which was a decrease of \$530,705. The decrease in operating expenses was made up

as follows: Maintenance of way expenses decreased \$1,366,774 or 9 per cent; transportation expenses decreased \$6,081,455 or 13.5 per cent; maintenance of equipment expenses decreased \$4,621,336 or 21.3 per cent. This factor of the marked decrease in maintenance of equipment expenses for 1924 as compared with 1923 has been commented on several times in these reviews of the operations of the various railroads. **The decrease in the case of the Great Northern was somewhat larger than for most railroads.** It was occasioned by the fact that the charges for equipment repairs in 1923 were high due to the shop strike and the equipment rehabilitation program that many roads carried out. Thus, the Great Northern showed for 1924 a decrease in the primary account of repairs to locomotives of \$1,627,721 or 20.4 per cent. There was a decrease of \$1,209,143 or 16.4 per cent in freight car repairs, and similarly a decrease of \$1,304,872 in the primary account of freight train car retirements. In fact, in 1924 there was a credit balance in this account. The Great Northern in 1924 expended for new equipment purchased, for equipment built in company shops and for improvements to equipment, \$8,517,893. So great were the retirements, however, that there was charged off for this purpose \$10,671,354 resulting in a net credit to the investment in equipment account of \$2,153,460.

In a period of five years, the Great Northern has shown no substantial change in the number of locomotives owned but it has had a substantial increase in the total tractive force. The number of freight cars owned at the end of the year was about 6,000 less than at the end of 1923 and less even than on June 30, 1914. The total carrying capacity in tons of these cars was less than at the end of 1923 but, as would be expected, it showed a marked increase over the total for preceding years. With further reference to the Great Northern's equipment situation, the road reported for the month of May, 1925, 9.7 per cent of its cars unserviceable. In May also 22.3 per cent of its locomotives were unserviceable, but it had stored in serviceable condition, 131 or about one-fifth of the total.

#### Transportation Expenses Reduced

Another feature of interest is the reduction of 13.5 per cent in transportation expenses. The ratio of transportation expenses to total operating revenues in 1923 was 37.6 per cent, but in 1924 this was reduced to 35.4 per cent. Over one-half of the total decrease in transportation expenses was accounted for by fuel, the charges for fuel for train locomotives in 1924 being 26.2 per cent less than in 1923. This was the result of lower fuel prices and also marked savings in fuel consumption. In 1924, the Great Northern fuel consumption was 140 lb. of coal per 1,000 gross ton-miles as compared with 150 in 1923. It is further of interest that in 1924 the Great Northern reported the largest average revenue train load in its history, the figure of 770 comparing with the best previous figure of 712 in 1923. It is only seldom that a railroad succeeds in reporting such a marked increase in its average train loading with a reduction of nearly 8 per cent in its revenue ton-miles.

The Great Northern is starting 1925 somewhat better than it started out in 1924. Gross earnings for the first six months were \$46,840,306 as compared with \$45,677,659 for the first six months of 1924. The six-months report shows substantial reductions in operating expenses and a marked improvement in the per diem situation. Although thus far in 1925 the road is still reporting a debit equipment rent balance, this balance is less than one-half that in the first six months of 1924. Net railway operating income to June 30, 1925 was \$6,844,566 compared with \$5,810,101 for the first six months of 1924.

## Steel Dump Car Embodies New Features

**A** NEW line of air operated dump cars with capacities ranging from 12 to 45 cu. yd. has been placed on the market by the Koppel Industrial Car & Equipment Company, which is owned and operated as a subsidiary of the Pressed Steel Car Company, Pittsburgh, Pa. These cars are of a type in which the entire body tilts on a row of body hinges mounted on the center sill, a distinctive feature being that the hinges are of a three-point type. Normally the body rests at a center point but during the dumping movement the turning point is shifted further out. This arrangement throws the discharge edge of the body out considerably further from the rail than would be the case with a single point hinge without increasing the height of the car. The construc-

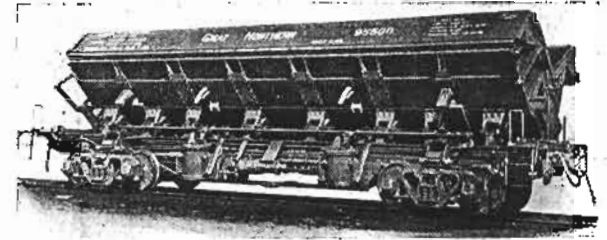


The Car Is Said to Be Entirely Self Clearing

tion of the car permits dumping at an angle that is said to make it entirely self-clearing.

The dumping is actuated by means of vertical cylinders on each side of the center sill. Single cylinders are provided on each side on all cars of capacities ranging from 12 to 25 cu. yd. and twin cylinders on each side of cars having capacities ranging from 30 to 45 cu. yd. The design of the car is such that the operation is entirely automatic.

A new locking mechanism of the compression type is used which supports the body at four points over the bolsters by compression members which are automatically removed when the dumping operation takes place. When



A View of the Car, Showing the Operating Equipment

dumped at an angle of 45 deg. the car body is arrested by contact with friction brake bumpers mounted on the ends of the underframe bolsters. These bumpers reduce the shock on the trucks and underframe. The mechanism for lifting the sides or doors of the car is of a new design. The normal opening required is about six feet but practically any reasonable door or discharge opening can be obtained. It is said that these cars will dump their load at a distance from the rail which makes the use of aprons or floor extensions unnecessary, although the cars can be equipped with doors that drop down to serve as aprons, if desired.