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C A N A D A  
DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
TRANSPORTATION BRANCH

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SUMMARY  
of  
OPERATING REVENUES EXPENSES & STATISTICS  
of  
RAILWAYS  
With Annual Operating Revenues of \$500,000  
For Year Ended  
DECEMBER 31, 1928

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Published by Authority of the Hon. James Malcolm, M.P.,  
Minister of Trade and Commerce

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OTTAWA

1929

History of the City

of New York

DEPARTMENT OF TRADE AND COMMERCE  
DOMINION BUREAU OF STATISTICS  
TRANSPORTATION BRANCH  
OTTAWA

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Dominion Statistician, R.H. Coats, B.A., F.S.S., (Hon.), F.R.S.C.  
Chief, Transportation Branch, G.S. Wrong, B.Sc.

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OPERATING REVENUES EXPENSES & STATISTICS

STEAM RAILWAYS OF CANADA

WITH ANNUAL OPERATING REVENUES OF \$500,000

FOR THE YEAR ENDED DECEMBER 31, 1928

Canadian railways earned larger gross revenues than in any previous year, exceeding the 1927 revenues, which were the previous record, by \$58,043,972, or 11.6 per cent. Operating expenses were heavier than for 1927 by \$30,883,686 and the net operating revenue, which was also a new high record, amounted to \$120,019,800, or \$27,160,285 more than for 1927.

Freight traffic was heavier than in 1927 by 19.3 per cent. The heavy carryover of the 1927 grain crop and the record harvest of 1928 were large factors in this record traffic. The increase in tonnage of wheat alone was over 5 million tons. Mine products increased by 1,399,136 tons, forest products by 635,015 tons and manufactures and miscellaneous freight by 3,315,333 tons.

The number of passengers carried continued to decrease, being less than for any of the previous six years, but the passenger miles were slightly greater than in 1923, the peak year. The average passenger journey was 81.3 miles as against 76.4 miles in 1927 and 68.6 miles in 1923. This means that the long haul traffic is growing and that the short haul traffic has declined, due to the automobile.

The pay roll was heavier than in 1927 by \$16,826,739 and the number of employees increased by 8,427. These monthly data exclude certain employees engaged in other than railway operations which are included in the annual reports, but the 1928 and 1927 data in these monthly reports are comparable. The operating ratio of 78.48 per cent is the lowest in the past 10 years and the average freight receipt per ton mile was also the smallest since 1918. The heavy movement of grain was chiefly responsible for this low rate.

The first item in the tables on pages 3 and 4, marked "Maritime F.R.R." is the loss in revenues on the Eastern Lines, Canadian National Railway, due to reductions in the published tariffs ordered by the Maritime Freight Rates Act, effective July 1, 1927. The other railways operating in the territory affected by the Act were allowed to make similar reductions in their charges and to bill on the Board of Railway Commissioners for the difference and they included such bills in their current freight revenues. The Eastern Lines, however, do not collect these differences from the Railway Commission, but the Dominion Government makes a separate appropriation under the Act at the end of the year for the deficit of the railway, including these losses in revenue due to the reductions in rates ordered by the Act. These amounts were not included in the revenues in the monthly reports, but the adjustment has been made in the summary report, thus placing the gross revenues, net revenues, and operating income on the same basis as for the other railways, and also for both years 1927 and 1928.

EASTERN LINES, CANADIAN NATIONAL RAILWAYS: Gross revenues, including the adjustments for reductions ordered by the Maritime Freight Rates Act, as explained above, were larger than in 1927 by \$1,796,603 and operating income showed a deficit of \$4,204,096 as against a deficit of \$4,242,535 in 1927, or a betterment of \$38,439.

The freight traffic was heavier by 9.8 per cent and passenger miles also showed a small increase although the number of passengers carried declined by 2.4 per cent. The traffic density was only 1,700 revenue tons per day per mile of



# DECLARATION OF THE

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road as against 2,741 tons on the Canadian National and 3,452 tons, or more than twice the density, on the Canadian Pacific.

CANADIAN NATIONAL RAILWAYS: Canadian National lines in Canada, exclusive of the Eastern Lines, showed an increase in net operating revenues of \$11,376,538, or an increase of nearly one-third over the 1927 net revenues. Large increases in freight traffic increased the freight revenue by \$21,564,209, or 14.4 per cent, and an increase of 3.1 in passenger miles increased the passenger revenue by \$854,466, or 2.8 per cent, and all other revenues also showed increases, the total gross revenues being larger by \$24,886,570. Operating expenses were heavier by \$13,510,031, or 7.8 per cent, and the total pay roll increased by \$8,622,055, or 6.2 per cent, for an increase in the number of employees of 3,905, or 4.2 per cent. Freight trains were loaded almost 100 gross tons over the 1927 trains and carried an average of 55.8 more revenue tons.

The lines in the United States showed an increase in gross revenues of \$3,028,976 and an increase in net operating revenues of \$1,606,349 despite the losses of the New England lines.

The entire system, exclusive of the Eastern Lines, showed a net operating revenue of \$58,383,577 and an operating income of \$48,422,197, as against \$45,400,690 and \$38,063,132 respectively in 1927.

CANADIAN PACIFIC RAILWAY: Both gross and net operating revenues for 1928 were the largest earned, exceeding those for 1927 by \$28,600,867 and \$13,789,119 respectively.

Revenue ton miles showed an increase over 1927 of 24.4 per cent, the tonnage and the length of haul both showing increases. The number of passengers carried decreased by 2.4 per cent, but an increase in the average journey of 5.9 miles increased the passenger miles by 3.8 per cent and passenger revenues were higher by \$747,483, or 2.2 per cent. The pay roll increased by \$7,440,123, or 7.6 per cent and the average number of employees by 4,242, or 6.8 per cent. Freight traffic density, or revenue ton miles per mile of road, was 22 per cent greater than in 1927 but passenger traffic increased by only 2 per cent. The average freight revenue per train mile increased by 16 cents with an increase of 52.1 revenue tons per train, but the passenger train revenue per train mile showed a slight decrease. The operating ratio of 75.46 per cent was the lowest since 1918.

25/3/29/GA

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

WASHINGTON, D. C. 20240

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OPERATING REVENUES, EXPENSES & STATISTICS  
STEAM RAILWAYS OF CANADA  
WITH ANNUAL OPERATING REVENUES OF \$500,000  
For Twelve Months ended December 31, 1928

1928

1927

OPERATING REVENUES

Maritime F.R.R.	\$ 2,151,527.75	\$ 931,809.89
Freight	407,250,689.37	355,513,784.13
Passenger	82,749,110.48	81,102,500.87
Mail	7,674,213.63	7,548,953.31
Express	22,692,164.39	21,984,211.71
Other freight train	35,078.57	31,721.69
Other passenger train	8,480,394.36	8,156,185.21
Water line	2,609,703.59	2,522,055.96
All other	24,150,236.41	21,957,923.37
Total railway operating revenues	557,793,118.55	499,749,146.14

OPERATING EXPENSES

Maintenance of way and structures	\$96,068,424.59	\$85,402,985.42
Maintenance of equipment	101,443,805.38	93,524,763.21
Traffic	17,935,014.07	17,580,964.47
Transportation	205,711,945.98	193,256,708.82
Miscellaneous operations	5,867,104.59	5,575,629.37
General	12,492,908.98	12,408,151.36
Trans. for investment	Cr. 1,745,885.08	859,570.62
Total railway operating expenses	437,773,318.51	406,889,632.03

OPERATING INCOME

Net operating revenue	\$120,019,800.04	\$92,859,514.11
Railway tax accruals	11,003,779.08	9,733,694.46
Uncollectable revenues	36,952.40	40,826.41
Hire of equipment	Dr. 3,167,799.96	Dr. 700,266.78
Joint facilities rents	Dr. 259,062.21	Cr. 42,986.31
Operating income	105,552,306.39	82,427,712.77

OPERATING STATISTICS

Average miles of road operated	39,720.88	39,427.69
No. of tons carried (Rev.Fr.)	136,473,786	123,149,126
No. of tons carried one mile " "	41,506,814,968	34,800,203,879
No. of tons carried one mile (All Fr.)	46,254,215,421	39,180,100,983
Gross ton miles, excl. of locomotive & tender	102,988,327,005	87,981,367,089
No. of revenue passengers carried	38,194,116	39,445,643
No. of revenue pass. carried one mile	3,103,859,924	3,015,555,759
# Freight train miles	73,912,119	67,143,322
# Passenger train miles	50,760,603	49,512,978
Total train miles (Rev. & Non Rev.)	125,517,195	120,883,690
Freight car miles-loaded	1,781,261,417	1,548,396,698
Freight car miles-empty	900,960,514	788,004,565
Passenger train car miles	469,348,409	365,329,016
Total amount of pay roll	\$275,796,910.19	\$258,970,170.67
Number of employees	176,848	168,421

DAILY AVERAGES PER MILE OF ROAD OPERATED

Operating revenue	\$38.37	\$34.73
Operating expenses	\$30.11	\$28.27
No. of tons moved one mile (Rev.Fr.)	2,855	2,418
No. of tons moved one mile (All Fr.)	3,113	2,723
No. of rev. passengers carried one mile	214	210

#AVERAGES PER FREIGHT TRAIN MILE

Freight revenue	\$5.54	\$5.31
No. of tons of freight (Rev.Fr.)	561.6	518.3
No. of tons of freight (All Fr.)	625.7	583.5
Gross ton miles	1393.4	1310.4
Loaded freight cars	24.1	23.1
Empty freight cars	12.2	11.7

#AVERAGES PER PASSENGER TRAIN MILE

Passenger train revenues	\$2.40	\$2.40
Passengers carried	61.1	60.9
Passenger cars	9.2	7.4
Average operating expenses per train mile	\$3.49	\$3.37
Average length of haul (Rev.Fr.) Miles	304.1	282.6
Average passenger journey Miles	81.3	76.4
Average tons per loaded freight car mile	26.0	25.3
Av. freight receipt per revenue ton mile	.986¢	1.024¢
Av. passenger receipt per passenger per mile	2.666¢	2.689¢
Ratio of pay roll to operating revenues	49.4%	51.8%
Ratio of operating expenses to revenues	78.48%	81.42%

# Contains a proportion of mixed train miles.





## OPERATING REVENUES, EXPENSES &amp; STATISTICS

## EASTERN LINES

## CANADIAN NATIONAL RAILWAYS

For Twelve Months ended December 31, 1928

	1928	1927
<b>OPERATING REVENUES</b> (Maritime F.R.R.)	\$ 2,151,527.75	\$ 931,809.89
Freight	16,869,815.28	16,309,775.57
Passenger	4,959,716.92	4,958,950.85
Mail	806,526.10	798,917.16
Express	1,759,691.16	1,749,991.46
Other freight train	-	-
Other passenger train	551,792.40	520,986.03
Water line	-	-
All other	860,277.69	892,313.16
Total railway operating revenues	27,959,347.30	26,162,744.12
<b>OPERATING EXPENSES</b>		
Maintenance of way and structures	\$7,997,429.36	\$7,365,243.81
Maintenance of equipment	5,664,650.29	5,556,937.77
Traffic	809,040.96	764,675.63
Transportation	15,340,874.73	14,661,570.10
Miscellaneous operations	401,150.37	396,619.47
General	1,323,105.15	1,282,222.30
Trans. for investment	Cr. 52,899.34	Cr. 37,686.22
Total railway operating expenses	31,483,351.52	29,989,582.86
<b>OPERATING INCOME</b>		
Net operating revenue	Dr. \$3,524,004.22	Dr. \$3,826,838.74
Railway tax accruals	258,971.59	260,840.18
Uncollectable revenues	6,388.02	2,632.25
Hire of equipment	Dr. 433,416.28	Dr. 125,832.12
Joint facilities rents	Cr. 18,683.91	Dr. 26,391.99
Operating income	Dr. 4,204,096.20	Dr. 4,242,535.28
<b>OPERATING STATISTICS</b>		
Average miles of road operated	3,107.73	3,107.99
No. of tons carried (Rev.Fr.)	6,813,493	6,304,155
No. of tons carried one mile " "	1,933,797,089	1,760,548,737
No. of tons carried one mile (All Fr.)	2,110,254,057	1,989,827,073
Gross ton miles, excl. of locomotive & tender	4,641,737,154	4,403,377,424
No. of revenue passengers carried	3,680,105	3,770,930
No. of revenue pass. carried one mile	220,025,029	217,544,918
#Freight train miles	4,506,856	4,292,241
#Passenger train miles	3,916,948	3,835,800
Total train miles (Rev. & Non Rev.)	8,766,546	8,432,805
Freight car miles-loaded	90,602,584	84,467,255
Freight car miles-empty	27,468,868	28,867,685
Passenger train car miles	26,898,100	26,277,952
Total amount of pay roll (Included in Canadian Lines)		
Number of employees " " " "		
<b>DAILY AVERAGES PER MILE OF ROAD OPERATED</b>		
Operating revenue	\$24.58	\$26.16
Operating expenses	\$27.68	\$26.43
No. of tons moved one mile (Rev.Fr.)	1,700	1,551
No. of tons moved one mile (All Fr.)	1,855	1,753
No. of revenue passengers carried one mile	193	192
<b>#AVERAGES PER FREIGHT TRAIN MILE</b>		
Freight revenue	\$4.22	\$ 4.02
No. of tons of freight (Rev.Fr.)	429.1	410.2
No. of tons of freight (All Fr.)	468.2	463.6
Gross ton miles	1029.9	1025.9
Loaded freight cars	20.1	19.7
Empty freight cars	6.1	6.7
<b>#AVERAGES PER PASSENGER TRAIN MILE</b>		
Passenger train revenues	\$2.06	\$2.09
Passengers carried	56.2	56.7
Passenger cars	6.9	6.9
Average operating expenses per train mile	\$3.59	\$3.56
Average length of haul (Rev.Fr.) Miles	283.8	279.3
Average Passenger Journey Miles	59.8	57.7
Average tons per loaded freight car mile	23.3	23.6
Av. freight receipt per rev. ton mile	.984¢	.973¢
Av. passenger receipt per passenger per mile	2.254¢	2.280¢
Ratio of pay roll to operating revenues (Included in Canadian Lines)		
Ratio of operating expenses to revenues	112.60%	114.63%
# Contains a proportion of mixed train miles.		





**OPERATING REVENUES, EXPENSES & STATISTICS**  
**CANADIAN NATIONAL RAILWAYS**

For the Twelve Months ended December 31, 1928.

	1928	1927
<b>OPERATING REVENUES</b>		
Freight	\$171,427,899.90	\$149,863,690.55
Passenger	31,118,926.25	30,264,459.63
Mail	2,522,621.12	2,404,282.64
Express	12,632,398.75	11,960,637.03
Other freight train	-	-
Other passenger train	2,891,366.73	2,756,374.61
Water line	-	-
All other	11,866,364.64	10,323,562.86
Total railway operating revenues	232,459,577.39	207,573,007.32
<b>OPERATING EXPENSES</b>		
Maintenance of way and structures	\$41,560,090.13	\$37,314,880.55
Maintenance of equipment	40,997,751.79	37,600,724.19
Traffic	6,140,230.40	5,841,555.76
Transportation	91,811,560.51	85,622,493.25
Miscellaneous operations	2,026,111.14	1,949,763.14
General	5,408,498.07	5,251,571.21
Trans. for investment	Cr. 1,647,420.78	Cr. 794,198.19
Total railway operating expenses	186,296,821.26	172,786,789.91
<b>OPERATING INCOME</b>		
Net operating revenue	\$46,162,756.13	\$34,786,217.41
Railway tax accruals	3,152,991.15	2,972,607.49
Uncollectable revenues	33,583.97	34,130.25
Hire of equipment	Dr. 723,467.72	Cr. 938,336.60
Joint facilities rents	Cr. 344,739.92	Cr. 377,748.25
Operating income	42,597,453.21	33,095,564.52
<b>OPERATING STATISTICS</b>		
Average miles of road operated	17,829.23	17,745.69
No. of tons carried (Rev. Fr.)	51,685,623	45,722,106
No. of tons carried one mile " "	17,884,008,828	15,091,609,712
No. of tons carried one mile (All Fr.)	20,105,260,262	17,100,159,855
Gross ton miles, excl. of locomotive & tender	44,090,849,885	38,299,960,290
No. of revenue passengers carried	15,479,982	16,093,204
No. of revenue pass. carried one mile	1,195,264,113	1,158,933,400
# Freight train miles	29,674,026	27,596,176
# Passenger train miles	20,455,974	19,585,880
Total train miles (Rev. & Non Rev.)	52,788,416	49,405,207
Freight car miles-loaded	764,995,987	669,805,532
Freight car miles-empty	389,636,980	351,277,659
Passenger train car miles	147,994,567	140,686,046
Total amount of pay roll (Including Eastern Lines)	\$148,288,701	\$139,666,646
Number of employees " " "	95,931	92,026
<b>DAILY AVERAGES PER MILE OF ROAD OPERATED</b>		
Operating revenue	\$35.62	\$32.05
Operating expenses	\$28.55	\$26.68
No. of tons moved one mile (Rev. Fr.)	2,741	2,330
No. of tons moved one mile (All Fr.)	3,081	2,640
No. of rev. passengers carried one mile	183	179
<b># AVERAGES PER FREIGHT TRAIN MILE</b>		
Freight revenue	\$5.78	\$5.43
No. of tons of freight (Rev. Fr.)	602.7	546.9
No. of tons of freight (All Fr.)	677.5	619.7
Gross ton miles	1435.8	1387.9
Loaded freight cars	25.8	24.3
Empty freight cars	13.1	12.7
<b># AVERAGES PER PASSENGER TRAIN MILE</b>		
Passenger train revenues	\$2.40	\$2.42
Passengers carried	58.4	59.2
Passenger cars	7.2	7.2
Average operating expenses per train mile	\$3.53	\$3.50
Average length of haul (Rev. Fr.) Miles	346.0	330.1
Average passenger journey Miles	77.2	72.0
Average tons per loaded freight car mile	26.3	25.5
Av. freight receipt per revenue ton mile	.959¢	.993¢
Av. passenger receipt per passenger per mile	2.604¢	2.611¢
x Ratio of pay roll to operating revenues	57.4%	60.0%
Ratio of operating expenses to revenues	80.14%	83.24%

x Revenue of Eastern Lines included to determine ratio.

# Contains a proportion of mixed train miles.





OPERATING REVENUES, EXPENSES & STATISTICS  
CANADIAN PACIFIC RAILWAY  
 For the Twelve Months ended December 31, 1928

	1928	1927
<u>OPERATING REVENUES</u>		
Freight	\$169,544,853.94	\$142,546,087.93
Passenger	35,334,447.33	34,586,963.69
Mail	3,693,194.30	3,708,771.73
Express	5,702,228.12	5,644,047.32
Other freight train	26,664.75	10,145.88
Other passenger train	4,624,544.45	4,465,492.33
Water line	2,244,432.29	2,124,553.08
All other	9,235,988.92	8,719,424.44
Total railway operating revenues	230,406,354.10	201,805,486.40
<u>OPERATING EXPENSES</u>		
Maintenance of way and structures	\$35,812,412.79	\$30,661,299.34
Maintenance of equipment	43,710,377.79	39,492,507.72
Traffic	9,883,512.69	9,943,414.85
Transportation	77,974,056.72	72,695,171.84
Miscellaneous Operations	2,764,441.34	2,624,302.01
General	3,727,171.53	3,643,528.60
Trans. for investment	--	--
Total railway operating expenses	173,871,972.86	159,060,224.36
<u>OPERATING INCOME</u>		
Net operating revenue	\$56,534,381.24	\$42,745,262.04
Railway tax accruals	6,044,287.36	4,999,197.72
Uncollectable revenues	--	--
Hire of equipment	Cr. 1,120,272.73	Cr. 1,448,549.13
Joint facilities rents	Cr. 84,085.08	Cr. 320,957.95
Operating income	51,694,451.69	39,515,571.40
<u>OPERATING STATISTICS</u>		
Average miles of road operated	14,292.8	14,073.7
No. of tons carried (Rev. Fr.)	40,326,781	34,374,152
No. of tons carried one mile " "	18,059,513,709	14,514,230,389
No. of tons carried one mile (All Fr.)	20,317,476,901	16,566,870,900
Gross ton miles, excl. of locomotive & tender	43,290,252,268	35,260,089,357
No. of revenue passengers carried	13,279,570	13,602,337
No. of rev. passengers carried one mile	1,318,741,121	1,270,090,498
# Freight train miles	31,668,728	27,481,210
# Passenger train miles	20,513,939	20,034,848
Total train miles (Rev. & Non Rev.)	53,554,795	48,800,857
Freight car miles-loaded	727,860,892	607,067,159
Freight car miles-empty	365,222,853	296,471,121
Passenger train car miles	153,724,650	153,151,594
Total amount of pay roll	\$105,020,061.72	\$97,579,938.22
Number of employees	66,971	62,729
<u>DAILY AVERAGES PER MILE OF ROAD OPERATED</u>		
Operating revenue	\$44.04	\$39.29
Operating expenses	\$33.24	\$30.96
No. of tons moved one mile (Rev. Fr.)	3,452	2,825
No. of tons moved one mile (All Fr.)	3,884	3,225
No. of rev. passengers carried one mile	252	247
<u># AVERAGES PER FREIGHT TRAIN MILE</u>		
Freight revenue	\$5.35	\$5.19
No. of tons of freight (Rev. Fr.)	570.3	522.2
No. of tons of freight (All Fr.)	641.6	602.8
Gross ton miles	1367.0	1283.1
Loaded freight cars	23.0	22.1
Empty freight cars	11.5	10.8
<u># AVERAGES PER PASSENGER TRAIN MILE</u>		
Passenger train revenues	\$2.41	\$2.42
Passengers carried	64.3	63.4
Passenger cars	7.7	7.6
Average operating expenses per train mile	\$3.25	\$3.26
Average length of haul (Rev. Fr.) Miles	447.8	422.2
Average passenger journey Miles	99.3	93.4
Average tons per loaded freight car mile	27.9	27.3
Av. freight receipt per rev. ton mile	.939¢	.982¢
Av. passenger receipt per passenger per mile	2.679¢	2.723¢
Ratio of pay roll to operating revenues	45.6%	48.4%
Ratio of operating expenses to revenues	75.46%	76.82%

# Contains a proportion of mixed train miles.

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1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations (1) and (2) under the assumption that the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition. It is shown that the system has a unique solution in the neighborhood of the initial point.

2. In the second part, the problem of the continuation of the solution is considered. It is shown that the solution can be continued as long as the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.

3. The third part of the paper is devoted to the study of the stability of the solution. It is shown that the solution is stable with respect to the initial conditions.

4. In the fourth part, the problem of the dependence of the solution on the parameters of the system is considered. It is shown that the solution depends continuously on the parameters.

5. The fifth part of the paper is devoted to the study of the asymptotic behavior of the solution. It is shown that the solution tends to a certain limit as  $t$  goes to infinity.

6. In the sixth part, the problem of the existence of periodic solutions is considered. It is shown that the system has a periodic solution if the functions  $f$  and  $g$  are periodic and satisfy the Lipschitz condition.

7. The seventh part of the paper is devoted to the study of the bifurcation of solutions. It is shown that the system has a bifurcation point if the functions  $f$  and  $g$  are nonlinear and satisfy the Lipschitz condition.

8. In the eighth part, the problem of the existence of chaotic solutions is considered. It is shown that the system has a chaotic solution if the functions  $f$  and  $g$  are nonlinear and satisfy the Lipschitz condition.

9. The ninth part of the paper is devoted to the study of the global behavior of the solution. It is shown that the solution exists for all  $t$  if the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.

10. In the tenth part, the problem of the existence of invariant sets is considered. It is shown that the system has an invariant set if the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.

11. The eleventh part of the paper is devoted to the study of the ergodic properties of the solution. It is shown that the solution is ergodic if the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.

12. In the twelfth part, the problem of the existence of attractors is considered. It is shown that the system has an attractor if the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.

13. The thirteenth part of the paper is devoted to the study of the global bifurcation of solutions. It is shown that the system has a global bifurcation point if the functions  $f$  and  $g$  are nonlinear and satisfy the Lipschitz condition.

14. In the fourteenth part, the problem of the existence of homoclinic orbits is considered. It is shown that the system has a homoclinic orbit if the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.

15. The fifteenth part of the paper is devoted to the study of the global behavior of the solution. It is shown that the solution exists for all  $t$  if the functions  $f$  and  $g$  are continuous and satisfy the Lipschitz condition.



CANADIAN NATIONAL SYSTEM(Steam Lines in Canada & United States)For Twelve Months Ended December 31, 1928OPERATING REVENUES

	<u>1928</u>	<u>1927</u>
Canadian Lines	\$232,459,577.39	\$207,573,007.32
Duluth, Winnipeg & Pacific	2,573,964.97	2,571,529.18
Grand Trunk Western Lines	39,018,975.51	35,767,510.74
New England Lines	<u>2,579,403.35</u>	<u>2,804,327.16</u>
Total	<u>276,631,921.22</u>	<u>248,716,374.40</u>

OPERATING EXPENSES

Canadian Lines	\$186,296,821.26	\$172,786,789.91
Duluth, Winnipeg & Pacific	2,115,239.13	2,115,663.97
Grand Trunk Western Lines	27,014,778.46	25,689,551.47
New England Lines	<u>2,821,504.83</u>	<u>2,723,678.94</u>
Total	<u>218,248,343.68</u>	<u>203,315,684.29</u>

NET OPERATING REVENUE

Canadian Lines	\$46,162,756.13	\$34,786,217.41
Duluth, Winnipeg & Pacific	458,725.84	455,865.21
Grand Trunk Western Lines	12,004,197.05	10,077,959.27
New England Lines	<u>Dr. 242,101.48</u>	<u>80,648.22</u>
Total	<u>58,383,577.54</u>	<u>45,400,690.11</u>

OPERATING INCOME

Canadian Lines	\$42,597,453.21	\$33,095,564.52
Duluth, Winnipeg & Pacific	320,633.55	364,607.88
Grand Trunk Western Lines	6,619,565.02	5,429,719.55
New England Lines	<u>Dr. 1,115,453.92</u>	<u>Dr. 826,759.58</u>
Total	<u>48,422,197.86</u>	<u>38,063,132.37</u>



1971-1972

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