

trouble, due to the wheels being too far from the load in the axle. A change has been made in the truck to do away with this trouble. In ordering another rotary a special specification has been made for the truck so that it can be quickly changed to the narrow gauge. The work of a rotary on the W.P. & Y. is probably as hard as can be found anywhere, if not harder, & there were several breakdowns last winter, the most serious one being the knocking out of a back cylinder head & with it about half the back cylinder flanger, the break extending into the steam port. This was caused by the rod bolts letting go. A break was also found in the bed plate of the rotary, which has been repaired. On several occasions last winter as many as 4 engines were pushing the rotary in the very hardest kind of snow.

The G.T.R. recently placed an order, divided between two locomotive works in the U.S., for 12 mogul locomotives, to be used on the 1st district extending through the New England States to Portland, Me. These locomotives will be of the same character & design as the moguls now being built at the Co.'s Montreal shops, which have already been described in these columns. Following are the general dimensions:

Cylinders, diameter and stroke, 20 x 26 in.
Driving wheels, 62 in. diameter.
Wheel base, drivers, 15 ft. 8 in.
Wheel base, total, 24 ft. 1 in.
Weight on drivers, 138,176 lbs.
Weight on truck, 23,800 lbs.
Total weight of engine, 161,976 lbs.
Weight of tender with coal and water, 112,000 lbs.
Tender capacity, 5,000 U.S. gallons.
Boiler, 62 in. diameter.
Fire box, 120 x 40½ ins.
Tubes, 283, 2 in. diameter, 11 ft. 11 in. long.
Boiler pressure, 200 lbs. per sq. in.
Fuel, bituminous coal.
Heating surface, tubes, 1,803 sq. ft.; firebox, 188.1 sq. ft.; total, 1,991.1 sq. ft.
Grate area, 33.43 sq. ft.

Orders have recently been placed in the United States for 5 consolidation locomotives & 1 ten-wheeled passenger locomotive for the Intercolonial, to be delivered in Feb., 1901. Following are the general dimensions:

CONSOLIDATION LOCOMOTIVES.

Cylinders, Cleveland patent, 21 in. x 28 in.
Driving wheel diameter, 56 in.
Wheel base drivers, 15 ft. 0 in.
total, 26 ft. 1 in.
Weight on drivers, in working order, 150,000 lbs.
truck, 25,000 lbs.
Total weight of engine, 175,000 lbs.
Weight of tender with coal and water, 100,000 lbs.
Tender capacity, 3,500 imperial gallons.
Boiler, smoke box end, 66 in.
Firebox, 114 in. x 41 in.
Tubes—no. 269; diameter, 2 in.; length, 14 ft. 0 in.
Boiler pressure, 200 lbs.
Fuel, bituminous coal.
Heating surface—tubes, 1,972 sq. ft.
firebox, 192 sq. ft.
total, 2,164 sq. ft.
Grate area, about 32½ sq. ft.

TEN-WHEEL PASSENGER ENGINE.

Cylinders, Cleveland patent, 20 in. x 26 in.
Driving wheel diameter, 72 in.
Wheel base drivers, 13 ft. 1 in.
total, 26 ft. 2 in.
Weight on drivers, 108,000 lbs.
Weight on truck, 42,000 lbs.
Total weight of engine, 150,000 lbs.
Weight of tender with fuel and water, 100,000 lbs.
Tender capacity, 3,500 imperial gallons.
Boiler, extended wagon-top, 60 in. diameter.
Firebox, 108 in. long and 41 in. wide.
Tubes—no. 272; diameter, 2 in.; length, 14 ft.
Boiler pressure, 200 lbs.
Fuel, bituminous coal.
Heating surface—tubes, 2,200 sq. ft.
firebox, 185 sq. ft.
total, 2,385 sq. ft.

The Canadian Transfer Co., Ltd., which has recently taken over the business of the Montreal Transfer Co., Ltd., in Montreal, & of the Verrall Transfer Co., in Toronto & Hamilton, was incorporated under the Dominion Companies' Act in Feb., 1898, the capital and stock being placed at \$100,000, & the head office located in Montreal. The letters patent passed out of the hands of the incorporators, & the present officers are, President, Lt.-Col. F. C. Henshaw; other directors, H. Paton, C. Cassils, J. Tough, G. R.

Starke; Secretary-Treasurer, F. M. McRobie; Outside Superintendent at Montreal, J. Miller; Superintendent at Toronto, G. W. Verrall. The Co. has contracts with the C.P.R., the G.T.R., the I.C.R., the R. & O. Navigation Co., & the Niagara Navigation Co. At present its operations are confined to Montreal, Toronto, & Hamilton, but it will probably extend to other cities, & Ottawa is likely to be one of the first to be added.

Minneapolis, St. Paul & Sault Ste. Marie Ry.

Following is the report of this subsidiary company of the C.P.R. for the year ended June 30 last:—

This being the first printed report the Co. has issued it is proper to give a brief history of the organization. The Minneapolis, Sault Ste. Marie & Atlantic Ry. Co. was organized in 1883, under the general incorporation laws of the State of Wisconsin, & during the years from 1884 to 1887, constructed & operated the line extending from Minneapolis to Sault Ste. Marie, 494 miles; the Minneapolis & Pacific Ry. Co. was organized in 1884, & the Minneapolis & St. Croix Ry. Co. in 1885, under the laws of Minnesota; the former Co. constructed the line from Minneapolis to Boynton, N.D., in 1886 & 1887, about 288 miles. The Aberdeen, Bismarck & Northwestern Ry. Co. was organized in 1883, under the general incorporation laws of the Territory of Dakota; this Co. graded & bridged a line from Aberdeen to Bismarck & acquired terminal properties in both places, but never laid any track.

In 1888 the above companies were consolidated, & all their rights, properties & franchises united & vested in one single corporation, the Minneapolis, St. Paul & Sault Ste. Marie Ry. Co., under the statutes & general laws of the states above referred to. The consolidated company thus acquired about 800 miles of road in operation. Its stock was issued to the extent of 140,000 shares common & 70,000 preferred, in exchange for the stock of the several constituent companies. The Minneapolis & Pacific Ry. Co. had issued \$4,290,000 & the Minneapolis, Sault Ste. Marie & Atlantic Ry. Co. \$10,000,000 5% bonds. The consolidated company executed a mortgage providing for the issuance of \$21,000,000 of bonds on the 800 miles of road already constructed & \$20,000 a mile on each additional mile thereafter constructed; sufficient of the bonds were reserved to retire at par value the bonds of the constituent companies. In 1890 an arrangement was effected whereby the holders of the outstanding consolidated bonds surrendered 15% of the same & received in lieu thereof income certificates to the amount of \$771,000, due in 1900, & at the same time a reduction of the rate of interest from 5 to 4%, the C.P.R. Co. guaranteeing the latter amount; the same privilege, i.e., the C.P.R. Co.'s guarantee of 4% was extended to the holders of the M. & P. & M., S. Ste. M. & A. bonds, & finally the entire issue of bonds was thus reduced to a 4% basis.

Since the consolidation the Co. has extended its lines in Dakota to the Canadian boundary, where it connects with the C.P.R. at Portal, thus making a through Pacific Coast route from the Twin Cities, & has also extended the Boynton line towards Bismarck to Braddock, a portion of the old grade of the Aberdeen, Bismarck & Northwestern being thus utilized; additional mileage has been added in Wisconsin & Michigan, so that the Co. now owns 1,278 miles of road, all in excellent condition. Sufficient mileage has been constructed to entitle the Co. to issue \$1,128,000 of its first consolidated mortgage bonds & which are available for extensions or improvements when required.

The gross earnings as compared with the

previous year show an increase of 18.4%; operating expenses, 3.7%; net earnings, 37.7%; fixed charges, taxes & terminal rentals, 13.6%; surplus earnings, 134.9%; passenger earnings, 32.3%, & freight earnings, 16%.

The fixed charges were increased during the year by the issuance of \$3,500,000 of 4% 2nd mortgage bonds; the proceeds of these were used to retire income & interest dividend certificates, aggregating \$970,241.58, payment of the amount advanced by the C.-P.R. Co. for construction & equipment account, payment of car trust notes, purchase & improvement of the Minneapolis terminals, purchase of additional equipment, etc.

During the year the line from Rapid River north to Trenary, 24 miles, was completed.

The Co. purchased grounds for freight terminals at Minneapolis, & a freight house, 50x500, with 2-story office at one end, is now building; also a passenger station for the accommodation of local trains. The grounds are centrally located & as convenient & desirable as any in the city; they will contain 3 miles of tracks, including main line & storage tracks, which will be ample to take care of the business at that point; the grounds are now being graded & the entire plant will be ready for occupancy by Oct. 1. A considerable saving of terminal rental will thus be effected.

During the year 40 miles of 60 lb. steel rails were re-laid with 72 lb. steel, & an additional 33 miles are now being replaced with 80 lb. rails; when completed the Co. will have 200 miles of heavy steel between Minneapolis & Gladstone; the line from Valley City to Portal, N.D., 262.86 miles, was provided with 72 lb. rails when constructed; the balance of the line is laid with 60 lb. rails.

During the year 2,641 lineal ft. of wooden bridges were filled with earth, & eight wooden span bridges were replaced with steel spans, thus making further repairs unnecessary; the cost of the wooden spans was charged to operating expenses. One hundred miles of road was ballasted with gravel.

The equipment is in excellent condition, & was increased during the year by the purchase of 200 freight cars of 60,000 lbs. capacity each, equipped with air brakes & automatic couplers; also 40 new refrigerator cars.

The Co.'s large, general shops at Shoreham received general repairs, including new roofs & 4 new steam boilers; also, extensive repairs were made to the coal, merchandise, flour & ore docks at Gladstone, Mich., thus insuring decreased maintenance expenses; the high standard of the balance of the buildings has been maintained, & in fact, the road-bed, buildings & other fixtures were never in better condition & repair than at present.

The work of the Industrial Development Department during the past few years is apparent in the substantial increase in settlers & farm acreage & the establishment of numerous industries along the line, all of which have contributed toward the increased earnings of the year.

The average rate per ton per mile was 6.58 mills as compared with 5.80 mills during the preceding year. The average miles operated during the year was 1,285.74; the gross earnings per mile were \$4,006.39 as compared with \$3,470.07 per mile during the previous year, & \$2,446.32 during 1894 on an average of 1,188.71 miles.

EARNINGS AND EXPENSES.

Passenger.....	\$ 822,908 78
Freight.....	3,974,398 70
Express, mail & miscellaneous.....	353,880 43
	\$5,151,187 91
Maintenance of way & structures.....	\$ 537,647 15
Maintenance of equipment.....	445,792 52
Conducting transportation.....	1,459,516 97
General expenses.....	111,626 35
	\$2,554,582 99