

policies which at present are so pronounced a feature in this country.

THE SOO LINE AND THE HILL ROADS COMPARED.

The competition between the Great Northern and Northern Pacific and the Minneapolis St. Paul & Sault Ste. Marie has been of considerable interest for years and it is now expected that additional competitive building will be a development of the near future. This expectation is based in part on the purpose of Mr. Hill—if legislative opposition is overcome—to raise for the Great Northern and the Northern Pacific \$150,000,000 of capital. That some proportion of this capital will be expended in Canadian Pacific and in Soo territory is well understood. While the intentions of the Canadian Pacific are not so fully known, the expansion of the Soo in the last five years and the credit it has as a controlled line of the Canadian Pacific probably indicate that further important steps are not far away.

In the past, the Hill lines and the Soo road have shown a wide variation in earnings and in operation. In the fiscal year ended June 30, 1906, some of the items compared as follows:

	Soo	Great Nrn.	Nrn. Pacific
Gross earnings per mile.....	\$5,728	\$8,681	\$11,335
Operating expenses per mile.....	2,863	4,377	5,757
Net earnings per mile.....	2,865	4,304	5,578
Conducting transportation—per cent of gross earnings.....	29.8	24.7	25.6
Maintenance of way and structures per mile.....	\$ 506	\$1,092	\$1,387
Maintenance of equipment—per cent of gross earnings.....	9.4	9.4	9.7
Average mileage operated.....	2,020	5,906	5,401

These figures show the low cost of conducting transportation on the Hill roads, the relatively low gross earnings per mile of the Soo line and its greatly reduced expenditures for maintenance of way and structures per mile, as compared with the Great Northern and the Northern Pacific.

During a period of five years, or from the fiscal year ended June 30, 1901, to the fiscal year ended June 30, 1906, the three roads show great changes. Their reports indicate the extraordinary development which has taken place in the northwest. The changes in earnings and mileage are shown briefly in the following figures:

	Soo	Great Nrn.	Nrn. Pacific
Gross earnings per mile, 1900-1901.....	\$3,442	\$5,449	\$6,384
Per cent of increase in gross earnings per mile in 1905-06 over 1900-01.....	66	59	77
Average mileage operated 1900-01.....	1,312	5,202	5,100
Per cent of increase in five years, in average mileage operated.....	53	13	5.9
Passenger earnings—per cent of increase in five years.....	177	92	93
Freight earnings—per cent of increase in five years.....	156	80	87

With the addition of 53 per cent in mileage the Soo road has increased its gross earnings per mile 66 per cent, or less than the average increase of the two Hill lines, which added an average of 9.4 per cent to their mileage, but gained 68 per cent in gross earnings per mile. It might be fair to the Soo to say that, in order to gain 66 per cent in gross per mile, it has had to increase its mileage 53 per cent.

The greatest growth of the Soo line has followed the completion of important new lines. The construction within the five-year period included the line from Glenwood, Minn., to Emerson, Man., where connection is made with the Canadian Pacific line to Winnipeg, and the extension from Thief River Falls, Minn., west to Kenmare, N. D., on the original westward line of the Soo.

From January 11, 1906, to February 1, 1907, traders in New York stocks "bet down," to appropriate Mr. Hill's expression, Minneapolis St. Paul & Sault Ste. Marie preferred stock from 183¾ to 136¼. The common stock was depressed from 164 on March 24, 1906, to 107½ on February 1, 1907. How much of this decline is due to prevailing market conditions and what proportion is attributable to the anticipation of new and important competition from the Great Northern and the Northern Pacific lines no one can accurately say.

While the Hill stocks also have had declines that are starting in their severity, the reasons, apart from the general market situation, are plain. The Hill companies are facing competition from the Pacific coast extension of the Chicago Milwaukee & St. Paul, and the Great Northern policy and the charter of its chief operating company—the St. Paul Minneapolis & Manitoba—are under attack in Minnesota.

Primarily the Soo has been an important and valuable feeder and extension of the Canadian Pacific, while the Great Northern and Northern Pacific have the distinct advantages which belong to transcontinental roads. That the managements, however, are fully alive to the possibilities of the territories they serve is proved by the rapid progress of the three roads.

THE WOODLAWN ACCIDENT ON THE NEW YORK CENTRAL ELECTRIC.

The initial performance in heavy electric traction on steam railways in the United States has been attended with disastrous consequences and although some valuable experience will be gained in this new method of transportation, it has been at a terrible expense in life and property. The accident to the White Plains and Brewster express on the electrified portion of the New York Central near Woodlawn, which caused the death of 21 persons and injury to 140, will undoubtedly result in a searching inquiry as to the exact cause of the disaster as well as a general investigation of the safety of the electric line and its rolling equipment. The accident was on a 3-degree curve and while it is not possible to fix the blame at the present time the general impression is that the train entered the curve at an excessive speed and the track rails were spread, resulting in its derailment.

The engineer of maintenance of way testified at the coroner's inquest that one of the rails on the outside of the curve had been sprung sidewise and the spikes sheared off. The tire of one of the electric locomotive truck wheels was stripped off and it was found at a point far beyond where the third rail was torn up and bent and some reports say that a portion of it entered one of the coaches. It has been assumed that the breakage of this rail was caused by a broken collector shoe catching under it, and the initial cause of the accident has been attributed to this by some railway officials; but this is not likely to have been the case as the attachment of the collector shoe is to a light wooden beam.

The track rail on the 3-degree curve was elevated 4¼ inches, which is quite sufficient for the safety of ordinary rolling equipment at 60 miles an hour, and if the wreck is to be attributed solely to insufficient superelevation of the rail, the speed must have been far in excess of 60 miles an hour. It is understood that the scheduled speed of the train in the locality of the wreck was 57 miles an hour. The train was delayed six minutes at Mott Haven and it is probable that from that point on a speed in excess of 60 miles was obtained in order to make up time. With the two powerful electric locomotives it was possible to accelerate the light train they were hauling more than twice as fast as the best steam locomotives could have done and it is quite possible that the train entered the curve at a speed much in excess of the safe limits. It does not appear that any limitation had been made on speed or that means had been provided for indicating to the motorman how fast he was running.

It was a matter of common experience when the old steam engineers were in training for motormen on these electric locomotives that they were deceived as to speeds, and that they were often running very much faster than they knew. It is true that the New York Central has taken the greatest precaution to see that the new electric locomotives would operate safely on curves, and on tests they have been operating at speeds of 85 miles an hour on straight track and 78 miles an hour on 2-degree curves, but it is doubtful whether they were justified in allowing motormen to drive-