that this congestion was recognized the Canadian Railway Board directed the Tunnel Company to prepare plans for operation under more sanitary conditions.

This, then, was the task given to Bion. J. Arnold, consulting engineer, of Chicago, to increase the possible capacity for handling traffic, and to obviate the danger and inconvenience due to the presence of the locomotive gases in the tunnel. The efficiency and cost of the various available systems were studied, and his report favored the alternating current, using a three-phase system for the distribution of power required for pumping and for shop motors, with a single phase distribution for locomotives and lighting.

The locomotives were designed with sufficient capacity to develop a drawbar pull of 50,000 pounds when operating at a speed of ten miles per hour, and it was estimated that such a locomotive would be able to make the complete trip through the tunnel with a 1,000-ton train in fifteen minutes, and thus provide a capacity three times larger than the actual maximum demands at present. Three locomotives have been provided for this service, each consisting of two half units, each half unit mounted on three pairs of axles driven through gears by three single phase motors, with a nominal rating of 250 horse-power, each making the rating of the unit 1,500 horse-power, with a liberal overloading rating, making it possible to develop 2,000 horse-power.

The power for the plant is steam-generated. The power house is situated on the Port Huron bank of the St. Clair River.

The event, which was celebrated by the presence of a large number of railway and newspaper men, marked an important episode in the history of electric traction. It impressed upon those present the possibilities of electricity. If in twelve miles of yards electricity can be successfully used for shunting, is it too much to expect that in a few years in many of the yards in our large cities we will have electric locomotives? From yard work to main line work will be a short step, and it is being realized that the road which first secures for the traveller a smoke-and-cinder-free train will have a distinct advantage.

THE BROCKVILLE, WESTPORT AND NORTH-WESTERN RAILWAY.

The annual report of the B.W. and N.W.R. for the year ending June 30th, 1908, shows increased earnings. A comparison of the earnings and expenses for the last five years shows:—

	Earnings.	Operating Expenses.
1904	$48,431 25	$30,792 66
1905	54,045 76	30,145 74
1906	59,318 99	29,748 85
1907	62,023 00	27,067 37
1908	62,276 66	30,157 76

The traffic and mileage statistics, etc., were:—

Passengers carried earning revenue	70,418
Tons freight carried earning revenue	24,395
Miles run by passenger trains	29,000
Miles run by freight and mixed trains	28,170
Total miles run by trains	57,170
Gross passenger, mail and express and sundry receipts	$33,154 06
Gross freight receipts	29,122 60
Average receipts per passenger per mile (cents)	.013
Passenger earnings per mile of road	736.75
Passenger earnings per train mile	1.143
Average receipts for freight per ton per mile (cents)	.039
Freight earnings per mile of road	647.168
Freight earnings per train mile	1.089
Gross earnings per mile of road	1,383.92
Operating expenses per mile of road	713.53
Gross earnings per train mile	1.088
Operating expenses per train mile (cents)	.527
Average cost of maintenance of way per mile of road	116.702
Average cost of improvements to roadway per mile of road	172.848

The company's assets are placed at $1,420,628.78. It is equipped with four locomotives, ten passenger, mail and express cars, eighteen box and platform cars, one snow-plough car. Mr. C. Heilshom is general manager, and Mr. W. J. O. Curle superintendent.

CANADIAN SOCIETY OF CIVIL ENGINEERS, MONTREAL.

A paper on "Modern Retort Coke Ovens," with special reference to the practice of the N.S. Steel and Coal Company, was read before a meeting of the mining section of the C.S.C.E., on the evening of the 10th instant, by the author, Mr. C. L. Cantley. Mr. Cantley showed lantern slides illustrating the various types of ovens and their evolution. Ovens of different companies in the United States and Canada, including those of the Dominion Iron and Steel Company, and more especially the Nova Scotia Steel and Coal Company, were shown. The interest of the audience, as shown in the discussion following the lecture, focussed on the comparative advantages of the original bee-hive type and the modern retort oven, and more particularly in the sub-division of the latter into bi-product and non-bi-product ovens.

In the course of the lecture, it was pointed out that the N.S. Steel & Coal Co. installed first the Bernard oven, which was a non bi-product oven, afterwards they adopted the Bauer, a bi-product oven, while, in selecting their last ovens, they returned to the Bernard oven. It was the reason for this change, which aroused the discussion regarding the respective merits of the ovens. Drs. Porter and Stansfield and Mr. Cantley were the principal participants in the discussion, and they essentially agreed with each other in most of the points touched upon.

The opinion was that the main advantage of the bee-hive oven was that it could be installed at a lower cost than the others. It also turned out a more superior coke; but it seemed to be granted that the coke was finer than actually required, and that the modern retort oven produced good enough coke for practical purposes. The advantage of the retort oven was that it could convert more kinds of coal into coke and at a lesser cost, operating expenses being reduced by utilizing, in different ways, the gas produced. The bi-product oven was evidently not yet economical in Canada, the reason for this being that there was not sufficient market for the bi-products, such as ammonia and tar, in the vicinity of the ovens. The heavy freight charges, entailed by the long distances between the producing point and the market for these bi-products, was the reason for this. Doubtless, as these causes were removed by the increase in population, the lowering of freights or the establishing of coke ovens close to the centres of population, the bi-product oven would gain in popularity.