

Signal System.

A portion of the system is equipped with a signal system of all-electric design, while the other portion is equipped with the electro-pneumatic system, all being arranged with single overlap and with automatic stops throughout the lines, which are under cover. The well-nigh perfect results obtained from the signal system may be interesting, as from the signal failure reports for the year ending Aug. 31, 1911, the failure of signals was in the ratio of 1 to 1,050,784; automatic stops at the ratio of 1 to 2,793,591.

Ventilation.

In the construction of these tunnels, a point which may be of general interest is that of ventilation and temperature in the tunnels. The maintenance of continuity in the single tube system is carried out as far as possible, and only at stations with island platforms or at junctions is there any break in this continuity. The result is that the trains themselves force the column of air through the tunnels to points where exhaust fans are installed, which remove this air column as it is pushed forward to the fans. At the same time at other points intake fans for supplying fresh air from the outside are installed, which force fresh air into the tunnels in the rear of trains to supply the displacement. By actual test and experiment as to the movement of the column of air ahead of trains, it has been found that 60 per cent. of the entire tunnel displacement is pushed forward by the moving trains. I stated just above that fresh air is taken in by intake fans. It will be obvious that in the hot summer months when the external temperature is higher than the temperature in the tunnels forcing air into the tunnels or the changing of the tunnel air with the outside atmosphere would not tend to lower the temperature in the tunnels, but, on the contrary, might tend to increase it. Furthermore, there must of necessity be a large heating effect from the operation of motors, journal bearings and from brakes, as well as the great volume of heat generated by the passengers themselves, and it, therefore, becomes of the utmost necessity to actually lower the temperature in the tunnels.

Cooling Effect of Construction.

The construction of the Hudson & Manhattan tunnels, as well as the tunnels of the Pennsylvania Railroad, is for the most part with an exterior metal lining of concrete, but in every case the lining itself is in contact with the moist exterior soil, thereby providing the means of properly absorbing and radiating the heat within the subway into the exterior soil. The effect of this construction has been most satisfactory to the management as well as to the travelling public, with the result that the temperature in the tunnels throughout the year, both winter and summer, does not vary more than 10 degrees.

Repair Facilities.

In the early operation of the railroad, when only the Hoboken line was completed, and it was desirable to commence operation at once, even with an incomplete railroad, we had no car yard in the open and cars had to be inspected and maintained standing on tracks underground. At a later date, when we were able to extend our lines into New Jersey and get our car shops and yards in operation, it was readily seen how absolutely essential it is in the operation of any such tunnel railroad as this to have the inspection and maintenance of cars executed in the open where there is plenty of natural light. The cheapest thing possible in the maintenance and care of car equipment is daylight, and any underground tunnel must be considered only with proper provision for car-shops and yards in the open daylight.

RAILROAD AND COMPANY EARNINGS.

The following are the railroad earnings for the week ended October 21st:—

	1910.	1911.	Increase or decrease.
C. P. R.	\$2,302,000	\$2,532,000	+ \$230,000
G. T. R.	963,374	1,023,892	+ 60,518
C. N. R.	403,900	459,000	+ 55,100
T. & N. O.	25,486	45,660	+ 20,174

The Ontario Power Company of Niagara Falls and the Ontario Transmission Company, Limited, report combined earnings for the nine months ended September 30 last as follows:—

Gross earnings	\$622,443
Operating expenses	110,192
Net earnings	\$512,251
Other income	64,756
Total net	\$577,007
Interest charges	504,293
Surplus	\$72,714

The Ontario Transmission Company, Limited, reports transmission line rental for the nine months ended September 30th of \$120,735; interest on bonds, \$66,409, so that there was a surplus for the period of \$54,325.

PERSONAL.

The main offices of **A. Eugene Michel** and staff, Advertising Engineers, have been moved into the Park Row Building, 21 Park Row, New York, where larger space has been secured, as necessitated by constantly increasing business. Temporarily the photo retouching and illustrating department will remain in the Hudson Terminal Buildings, but all business will be managed from the new offices.

A. Leo Miéville, A.M. Can. Soc. C.E., has just reached Toronto in order to look after the interests of W. H. Allen, Son & Co., Ltd., Bedford, England, in conjunction with Messrs. Chapman and Walker, of Toronto, Canadian agents of W. H. Allen, Son & Co. Mr. Miéville is no stranger to this country, having been until recently on the staff of the Winnipeg Civic Power Commission.

Mr. James C. Armstrong, A.I.E.E., has opened an office in the Traders Bank Building in this city. Mr. Armstrong is a graduate of the University of Michigan, class '09, and since graduating has devoted his time to the acquirement of practical knowledge along special lines. His experience includes the design of some important cement plants, and a first-hand knowledge of naval marine construction and design, both on this continent and in Great Britain; also he has studied and investigated the mechanical equipment of railroad shops and has given special attention to equipment for this class of work of a specific nature. Of recent years he has been on the engineering staff of the Ontario Power Co. and the International Railroad of Buffalo, New York, and in the Porcupine mining district. In his new capacity he will specialize in power plant work, industrial plants, street railways and mine equipment.

ROCHESTER CONVENTION PROGRAMME BEING PREPARED.

The programme of the eighth annual convention of the American Road Builders' Association, to be held in Rochester, N.Y., Nov. 14 to 17, is now being prepared, and several interesting features have already been arranged.