

Historical.—Replacing the horse car systems, used in Montreal and Toronto as early as 1861, electric street railways were first seen in operation in Canada in 1885, when a successful experimental railway was constructed and operated at the Toronto Exhibition grounds. Before many years their safety and convenience resulted in the discarding of the older system. An electric system 7 miles in length was opened at St. Catharines in 1887, using the double overhead trolley. This was followed by the completion of the Ottawa Electric railway in 1891, and the electrification of the Montreal and Toronto systems in 1892. The street railways of other eastern cities were generally electrified during the 1890's, while in the newer western cities electricity was used from the commencement. In the cities of the East electric street railways are generally operated by private companies under franchises from the city, while in a considerable number of cities in Ontario and the West the street railways are owned and operated by the city, a fact which is indicated in Table 27. In 1921, on the expiry of the 30-year franchise of the Toronto Street Railway Co., the railway in this second largest city of Canada was taken over by the city and is now being operated by a transportation commission.

Where possible, water power with turbine engines is used for generating purposes. Where this is not available steam power is necessary, and although this is a more expensive method, modern devices have greatly reduced the cost per h.p. Many difficulties are met in operating the cars during the winter season, owing to snow, ice and sleet. These, however, have been overcome by the use of sweepers, scrapers and ploughs. The single overhead trolley system has been found the most suitable and is in general use.

In addition to the street railways there is quite a large mileage of electric suburban or interurban lines, especially in the Toronto, Niagara and lake Erie district, where considerable freight traffic is carried, and on the Pacific coast, where the British Columbia Electric Railway operates several hundred freight cars.

Development of Electric Railway Traffic.—Figures for the year 1893 show that 30 companies, with a paid-up capital of about \$9,000,000, operated 256 miles of railway. By 1897, 35 companies made returns showing 583 miles of track, 1,156 cars, 26,431,017 miles run, 83,811,306 passengers carried and capital of \$18,727,355. In 1904, 46 companies showed 766 miles of track, 2,384 cars, 42,066,124 miles run, 181,689,998 passengers and capital of \$30,314,730. The statistics for 1928 show that during that year 59 companies with a capital of \$221,302,236, had 2,513 miles computed as single track, 5,749 cars, locomotives, etc., 133,689,589 miles run, and 808,023,615 fare passengers. The number of employees in the service of electric railways on Dec. 31, 1928 was 18,697, as compared with 18,090 in 1927. Total salaries and wages for the year 1928 were \$26,494,063, as against \$25,891,020 in 1927.

Statistics of Electric Railways.—Summary statistics of the operation of electric railways in Canada from 1901 to 1928 inclusive are given by years in Table 24. It may be noted in this table that the carriage of freight reached its maximum in 1928, with 3,892,114 tons, while the number of fare passengers carried in 1928 was over 3,000,000 greater than the maximum in 1920. In Table 25 statistics of mileage and equipment are given for the latest four calendar years, and annual statistics of the capital liability of electric railways are furnished from 1908 in Table 26. Detailed figures of the mileage operated, the capital liability, the earnings, operating expenses, employees, and salaries and wages, are given for 1928 in Table 27, while Table 28 shows by years from 1919 to 1928 the number of passengers, employees and others killed and injured on electric railways in Canada.