

with series relays. The rotary starting panels are located near the rotary converters, and are separate from the main switchboard. In addition to the main lightning arresters, aluminum surge protectors are installed directly across the armatures of each of the rotaries. The operation of the substations is proving very satisfactory, the design of the rotary converters permitting very heavy momentary overloads without injurious sparking. The complete electrical equipment was built by Canadian General Electric Co., at its Peterborough works.

The contact system.—In general the side bracket type of catenary construction is employed; 25,000 volt high tension transmission is carried on the same poles; also the feed wire, the telephone and signalling system. The standard pole spacing on tangents is 150 ft. More than 30% of the main line mileage is curved track, and on account of this the pole spacing varies according to the curvature. The standard pole length for construction is 35 ft.; for transmission and catenary 40 ft. Local conditions, such as crossing of railways, telephone and telegraph and public highway, increase these lengths.

The details of the material used in supporting the contact system are along standard lines, some modifications having been made to meet local conditions. All pole line hardware is either galvanized or sherardized. The messenger cable consists of 7/16 in. high standard steel strand, 90,000 lb. per sq. in., supporting a 4/0 standard grooved trolley wire. Five-point catenary construction is used with 23 in. deflection. A 4/0 feed wire is run all along the line and tapped into the trolley every half mile. The contact system is anchored every half mile, on tangents, and against a curve at both ends. The line is sectionalized at all substations, and where the voltage changes from 1,500 to 600 volt. The high tension transmission consists of 3-phase, 25 cycle, 115,000 C/M copper cable and is supported on a buerrow bracket construction. All along the line is a 5/16 in. ground wire, protecting the line from lightning and grounded every half mile. Three types of bonds have been used, one brass welded, one gas welded and one electric welded bond. The track is cross bonded with a 4/0 copper cable every half mile; also cross bonded on the intersections and switches. The entire electrical installation was designed and constructed by the company's own engineering staff.

This line between Lambton and Guelph was opened for operation on April 14 of this year. The passenger cars were described in Canadian Railway & Marine World in March, 1916, and May, 1917.

The present daily passenger service consists of 2 cars each way between Toronto and Guelph, 1 additional car between Toronto and Georgetown, and 5 additional cars each way between Toronto and Cooksville. The Sunday service consists of 2 cars each way between Toronto and Guelph, 2 cars each way between Toronto and Georgetown, and 1 each way between Toronto and Cooksville.

On the lines in Toronto last year, the track on Dundas St., from Keele St. to Gilmour Ave., and on Keele St. for 500 ft. north of Dundas St., making a total distance of 4,500 ft., was relaid with a 93 lb. grooved girder rail 7 in. high. This year the switches have been renewed with heavier steel, on Dundas St. at Gilmour Ave., near Mavety St., and on the Davenport line at the Y. At the junction with the Weston line at the corner of St. Clair Ave., and Keele St. This is preparatory

to running the interurban cars into the city.

For the foregoing information, photographs, etc., we are indebted to H. T. Hazen, M.Can.Soc.C.E., Chief Engineer, and T. Malm, Electrical and Mechanical Engineer.

The Death of H. G. Matthews.

H. G. Matthews, General Manager, Quebec Ry., Light, Heat & Power Co., died at the Jeffrey Hale Hospital, Quebec, July 4, following an operation for intestinal tumor. He had been in poor health for some months and was unable to attend the Canadian Electric Railway Association's annual meeting in Montreal early in June, but he went to his office nearly every day until June 28. On June 29 he was taken to the hospital and was operated on on July 3, when it was found that gangrene had set in, affecting the main blood arteries of the intestines. He died the following morning. The removal of his body from his house to the station



The Late H. G. Matthews

at Quebec was attended by over 100 mormen and conductors in uniform, and representatives of many local clubs, societies and public bodies. The funeral took place at Mount Royal Cemetery, Montreal, July 6, and was attended by the President of the company, Sir Rodolphe Forget, several directors and other friends, including representatives of the Montreal Tramways Co. and the Montreal Light, Heat & Power Co.

Mr. Matthews was born at Montreal, July 1, 1878, and educated at the Montreal High School. After being with the Marconi Wireless Telegraph Co. of Canada from Dec. 1903 as Sec.-Treas., and from Oct. 1908 also as General Manager, he entered Quebec Ry., Light, Heat & Power Co.'s service in Aug., 1911, as Assistant to the President. In Jan., 1912, he was also appointed General Manager. He was also President, Lotbiniere & Megantic Ry. Co., and a director of all the subsidiary companies of the Q.R.L.H. & P.Co. He was a member of the Garrison

Club, the Quebec Board of Trade, the Quebec Golf Club, a director of the Y.M.C.A., and also a member of the executive and legislation committees of the Canadian Electric Railway Association. He was unmarried, and is survived by his mother, one sister and one brother.

Reported Offer of Sale by British Columbia Electric Railway.

The Mayor of Vancouver stated recently that at one of the conferences during the British Columbia Electric Ry. employes' strike, G. Kidd, General Manager, said the company was willing to sell out its entire system on the mainland, and on Vancouver Island. The mayor's statement was that the company suggested that the B.C. Government purchase the company's hydro electric power plants on the mainland and on Vancouver Island, as well as the interurban lines, viz., the Saanich, Chilliwack, Lulu Island and Steveston lines, and the line between Vancouver and New Westminster, and that Victoria, Vancouver, North Vancouver and New Westminster take over the various local systems within their respective boundaries. The idea is that the cities would purchase power at a fixed rate from the government owned and government controlled plants. General Manager Kidd is reported as saying that the company would be willing to accept provincial bonds and city issues of debentures at a reasonable rate of interest in payment for the properties. The price reported to be set on the various properties is said to approximate \$30,000,000. The proposition is reported to have been unofficially laid before the city councils of Vancouver, Victoria and New Westminster and to have been received with favor. No action will be taken by either body unless a definite proposition is made. Nothing has been said as to any offer having been made to the B.C. Government.

Mr. Kidd, in an interview, stated that such an offer had been made in general terms. The plan was one that would require special legislation to allow of the transfer of charter privileges and permit the three cities concerned to carry out the line of procedure outlined. But if all three cities signified their willingness to do their share in the plan, and passed recommendations to the provincial government to that effect, he thought the government would be sure to look upon the matter favorably and the necessary financing would be satisfactorily arranged.

Toronto Ry. Pape Ave. Extension Delayed.—At a hearing by the Ontario Railway and Municipal Board, July 13, as to why the Pape Ave. extension ordered by the board had not been carried out by June 1, both the company and the city declared that the reason the work was not completed was that it was impossible to get either T or girder rails. The rails were on order, but it was not expected that delivery could be obtained until the autumn. The board considered that everything possible had been done, and enlarged the order to Sept. 14.

Edmonton Municipal Ry. and other Public Utilities' Results. In publishing some information in this subject in our July issue, page 287, it was, owing to an error in typewriting, which was not discovered in proof reading, stated that "A. G. Davidson, City Commissioner," had supplied the matter. The City Commissioner is A. G. Harrison.