

Electric Railways

An intimate relationship exists between any municipality and the local railway system.

Both progress or stagnate together.

The B. C. E. R. Company and the Vancouver district

A very interesting review, covering the early history and the present operating conditions on the British Columbia Electric Railway System in Vancouver, B.C., and surrounding cities and towns, is published in the April issue of Brill magazine. This issue also contains a brief biography of Mr. George Kidd, the general manager of this railway. Those who have followed the situation at the coast during the last ten or fifteen years know that the wonderful progress made by the city of Vancouver particularly, has been due to the almost lavish expenditure of money by the British Columbia Electric Railway Company, in extending their lines and opening up new branches of the electrical industry. It is reasonable to suppose that, given a fair chance, the same methods of this company will play an important part in the rapid commercial recovery which Vancouver and other coast towns and cities are expected to make in the next two or three years. The following review taken from the article mentioned, will therefore be read with considerable interest:—

British Columbia's commercial metropolis, Vancouver, in the words of Earl Grey "the recognized gateway between the east and the west," is situated on the Pacific Coast of Canada, in a commanding position on a peninsula formed by the Fraser River and Burrard Inlet. To the south may be seen the waters of the Fraser River, to the west the Gulf of Georgia, and to the north Burrard Inlet and the main harbor, and beyond this the younger sister city of North Vancouver and the mountains of the coast range. This situation is a strategic one, as the city is the terminus of four trans-continental lines of railway and the home port of the Canadian Pacific Railway Royal Mail Steamships to China and Japan, and the Canadian Australian Royal Mail Steamships to Australia and New Zealand.

Vancouver was incorporated in 1886 and is a young city of rapid growth. The population in 1893 was 16,000, and now the number in Greater Vancouver is estimated as more than 150,000. In the summer months the bathing beaches of Vancouver are a daily source of pleasure to all; they are situated close to the best residential sections and reached easily and quickly by electric car. Stanley Park, which comprises a thousand acres of primeval forest, is also within a few minutes of the centre of the business district of Vancouver, with electric cars running to the entrance. The electric car service of Vancouver and its surrounding territory is furnished by the British Columbia Electric Railway Company, Limited.

The sister city, North Vancouver, is placed with a southern exposure facing Vancouver itself, to which there is a frequent service of ferries. By electric car can be easily reached the canyons of the Capilano, Lynn and Seymour Creeks, which are among the scenic wonders of the world.

New Westminster, a city of 15,000, is reached in 45 minutes from Vancouver by three interurban electric railways. This city is situated on the Fraser River, is an important fresh-water port, and has many points of interest, including a million-dollar bridge spanning the river, great lumber mills (one of them the largest in the world) and a number of salmon canneries. Salmon canneries are also to be seen at Steveston, at the mouth of the main arm of the Fraser River. This is the principal centre of the fishing industry in British Columbia and is also easily reached by interurban electric car from Vancouver and New Westminster.

The city of Victoria, situated on Vancouver Island, is the seat of government and the capital of British Columbia. It is the oldest city in the province, dating back to 1846, when it was known as Camosun, a Hudson Bay Company's trading post. The city leaped into prominence during the gold excitement in 1858 and grew rapidly in trade and population. Its population is estimated at 40,000. The street car service in the city is operated by the British Columbia Electric Railway, as is also an interurban line known as the Saanich Division, extending for a distance of 23 miles from Victoria to Deep Bay, and running through the fertile lands of the Saanich peninsula.

An Extensive Interurban System

The interurban system of the British Columbia Electric Railway comprises two divisions, known as the Interurban Division of the Mainland system and the Saanich Division on Vancouver Island; of the total mileage of track, namely 350.65 miles, owned or operated by this company, 180.48 miles is represented by interurban trackage.

On the Mainland, the Interurban Division consists of three lines, connecting the cities of Vancouver and New Westminster, with a branch line crossing the rich farming lands of Lulu Island to the cannery town of Steveston. Another interurban division called the Fraser Valley Line, crosses the Fraser River at New Westminster and runs eastward between the river and the international boundary for more than sixty miles to the town of Chilliwack. The combination of transportation facilities and electric power at low rates has resulted in the location of numerous industries along these interurban lines.

The interurban line connecting the cities of Vancouver and New Westminster was practically the first interurban line to operate in Canada, having commenced service in August, 1891. There is a considerable suburban population along this route. The line is double-tracked all the way, and trains of one or two cars run at twenty-minute intervals, with local trains doubling this service between Vancouver and Central Park during the rush hours of the day. Central Park is situated about half way between Vancouver and New Westminster, and it is between Vancouver and Central Park that the heaviest travel prevails. An average of sixteen cars is employed in this interurban service, and the run of 12.5 miles is made in forty-five minutes, with an average of twenty-six stops. About 5,000 passengers are carried daily on this line.

What is known as the Second District is the Interurban

Line from Vancouver to Eburne, on the north arm of the Fraser River, and thence to Steveston. This is a branch of the Canadian Pacific Railway which was leased and electrified in 1905. From Eburne there is a connecting line with New Westminster, which forms a second route between the two cities. From Vancouver to Eburne Junction, a distance of 6.6 miles, the line is double-tracked and passes through suburban residential districts. From Eburne this line crosses a bridge over the Fraser River and runs for about 8 miles through the Delta lands of Lulu Island, which are remarkable for their fertility and productiveness. At Brighouse, on this branch, ten miles from Vancouver, is Minoru Park Race Track, to which trains of three to five cars are run at fifteen-minute intervals during the race meets. The branch from Eburne Junction to New Westminster follows the north arm of the Fraser River through market gardens and suburban districts, joining the tracks of the interurban line known as District 1, about half a mile from New Westminster Station. From Vancouver to Eburne trains of one or two cars run at half-hour intervals with a fifteen-minute service during the rush-hour periods in the morning and evening, making the trip in twenty-five minutes, with an average of fifteen stops. Beyond Eburne trains run every hour alternately over each branch, giving a two-hour service to Steveston and New Westminster, respectively. Between Eburne and New Westminster the run of 10.6 miles is made in twenty-five minutes, with about eight stops, requiring a schedule speed of more than twenty-five miles per hour with maximum running speed of forty-five miles per hour.

The third interurban route between Vancouver and New Westminster is known as District 4. For the first 2.7 miles the route taken is similar to that of District 1. At the 2.7 mile point the line turns eastward through the Burnaby district, crossing the Great Northern Railway at Ardley, and skirting the southern shore of Burrard Lake to Sapperton, which is the eastern suburb of the city of New Westminster, whence the city line is taken for 2.4 miles to the terminal station. The country through which District 4 runs is only sparsely settled as yet. An hourly service is maintained on this line in the morning and evening and every two hours the rest of the day. The run from Vancouver to New Westminster takes fifty-five minutes, and the 9.6 miles of track outside the cities are covered in twenty-seven minutes, with an average of eight stops.

The Fraser Valley Line

The Fraser Valley Line from New Westminster to Chilliwack is known as District 3. This line is 63.8 miles long. Leaving New Westminster the Fraser River is crossed on a steel bridge about a mile long owned by the Government of British Columbia and used jointly by the British Columbia Electric, Great Northern and Canadian Northern Pacific Railways. The line then ascends the ridge south of the river, passing through heavily timbered country. After crossing this bridge the line crosses the Great Northern Railway tracks at the town of Cloverdale, where there is an interchange with that road, and turns back towards the Fraser River, running through Langley Prairie, a rich farming and dairying district. At Abbotsford, 39.3 miles from New Westminster, is a large freight yard with connections to the Canadian Pacific Railway. From this point to Huntingdon, about 4 miles, large dairy farms are passed, and at Huntingdon are more interchange tracks connecting with the Northern Pacific, Canadian Pacific and Bellingham & Northern Railways, the latter being part of the Chicago, Milwaukee & St. Paul system.

Leaving Huntingdon the line swings eastward across Sumas Prairie till it crosses the low-lying lands around Sumas Lake on a fourteen-foot embankment more than three miles long. These lands are frequently submerged during the summer freshets of the Fraser River, but the rest of the year afford fine pasture land; and an extensive reclamation scheme is

being developed to convert the area of 30,000 acres into first-class farming lands. After crossing the Vedder River, the line enters the Chilliwack Valley, which is one of the most fertile and best developed districts in the Lower Mainland. The population of this district is about 6,000, of which approximately one-third are residents of Chilliwack. Farming, fruit growing and hop growing are carried on profitably in this district.

All passenger trains on this district make direct connection at New Westminster with the interurban trains operating between Vancouver and New Westminster, the 63.8 miles on the Fraser Valley Line being covered in two hours and fifty-five minutes, and the whole seventy-six miles from Vancouver to Chilliwack in three hours and thirty-five minutes. On the Fraser Valley Line are six regular stops and, with flag stops, the total is about thirty. The total number of passengers carried on the Interurban Lines during 1915 was 4,022,781, and the passenger car mileage was 1,890,227.

Terminal Stations

In Vancouver there are two interurban terminal stations. The main terminus is in the heart of the business district and occupies part of the ground floor of the head offices of the company in a handsome building erected at a cost of about \$500,000. Trains leave here over two routes to New Westminster, averaging about eighty trains daily. The second Interurban terminus in Vancouver is known as the Granville Street Station and is located near the south end of a bridge across False Creek which forms the entrance to the business district from the southwestern section of the city. From this point interurban trains leave for New Westminster and Steveston via Eburne Junction. The regular daily traffic consists of twenty-three trains and thirty-three locals.

New Westminster is the centre of interurban traffic—here the three inter-city lines and the Fraser Valley line converge. The number of trains departing daily from this point averages eighty-five. The station is close to the business centre of the city and occupies one end of a block fronting on the main business thoroughfare. The passenger equipment of the company averages about 50 to 55 feet over the bumpers and between 60 and 70 seated passengers.

The main distributing freight yard is in the west end of New Westminster near the junction of the first and second district lines. This yard contains about three miles of storage tracks and a repair track, and will hold more than three hundred cars. Local freight in New Westminster is handled at a freight shed on the river-front near the passenger terminal.

In Vancouver the central freight yard is two blocks south of the passenger terminal and so situated that when business becomes too congested to be handled by entrance over city lines an independent entrance through the railway yards round False Creek can be effected. At present the yard has a capacity of 130 cars, besides storage and yard accommodation for service and maintenance of way equipment, passenger cars, etc.

District No. 2

On the Lulu Island Line, known as District 2, a large part of the traffic is between the mills and the factories around False Creek and the Canadian Pacific Railway yards, and the electrified interchange tracks will accommodate about one hundred cars. Industrial spurs and sidings are numerous all over the system, with yards and freight sheds at all important shipping points.

A feature which is of special interest, particularly at this time, is the intimate relationship which exists between the Interurban system of the British Columbia Electric Railway and the surrounding transcontinental steam railroads. The

operation of the interurban system is conducted essentially on steam road lines, particularly with regard to freight, and standard steam road rules are everywhere in force. Freight interchanges are established with steam lines as follows:—At Vancouver—two with Canadian Pacific Railway, one with Great Northern Railway; New Westminster—with the Canadian Pacific Railway; Cloverdale (Fraser Valley Line)—with the Great Northern Railway; Abbotsford (Fraser Valley Line)—with Canadian Pacific Railway; Huntingdon (Fraser Valley Line)—with Canadian Pacific, Northern Pacific and Bellingham & Northern Railway; Chilliwack (Fraser Valley Line)—with the Canadian Northern Pacific Railway; and at Victoria there are freight connections with local lines operated by the Canadian Pacific and Great Northern systems.

Co-operate With Steam Lines

The fact that these interchanges exist has been taken advantage of and through rates have been published from almost all points on the British Columbia Electric Interurban system to practically all points in Canada and the United States. The freight revenue forms an increasing proportion of the total revenue, and by means of through bookings, on freight there is every prospect of an increasing importance attaching to this side of the business. During the year 1915 4,238 foreign cars were interchanged, and the total freight tonnage handled over interurban lines was 224,300, and the total freight car mileage was 763,658. Car-load freight is handled by trains daily over each line, in M.C.B. standard cars hauled by locomotives and in charge of regular freight crews, in some cases operating at night so as to keep clear of the passenger traffic, and by extra locals to clean up cars and siding when necessary to relieve the through trains. The company's freight equipment, in addition to about thirty locomotives, consists of 192 box cars, 200 flat and logging cars, 22 steel gondolas and 33 miscellaneous rock and gravel cars, besides a number of stock cars and cabooses. Express and light freight is handled on motor express trains, some of which operate on time table, making regular trips. On the short lines an express car makes regular trips over each branch.

The Power Supply

The power supply for the electric street and interurban railways and light and power systems of the company on the Mainland of British Columbia is generated for the most part at the company's two Lake Buntzen hydro-electric generating stations situated at sea-level on the North Arm of Burrard Inlet and about 16 miles from the city of Vancouver. The principal storage reservoir for the operation of these plants is Lake Coquitlam; from this lake water is conducted through a tunnel 12,775 feet long to Lake Buntzen, 400 feet above sea-level, thence through pipe lines to the power house. There are two generating stations, one having a capacity of 21,000 kw. and the other 26,700 kw.

Energy from these generating stations is transmitted to the various sub-stations over two two-circuit transmission lines, the more recently constructed lines being supported on steel towers. The two power houses are also tied together by a transmission line. At the present time, the transmission voltage is 34,600, but on the completion of construction of a new transformer station on the outskirts of Vancouver, this voltage will be increased to 60,000. In addition to these generating stations, the company owns a modern steam turbine plant of 13,000 kw. capacity, which is situated in the heart of Vancouver. From these generating stations, the energy is transmitted to the company's sub-stations, which are well distributed throughout the Lower Mainland.

The Chatham, Wallaceburg & Lake Erie Railway Co. recently increased the wages of their road employees by 5c per hour, making the minimum 22c and the maximum 27c.

The "Safety First" Movement on Canadian Electric Railways

In a recent issue we described with illustrations the campaign of the Quebec Railway, Light & Power Company, for the prevention of accidents on their tramway lines, and reproduced among other interesting items Accident Talks, Nos. 1 and 2, which had been distributed by this company, hung at prominent places in the street cars and given all possible publicity in other ways. In the present issue we are reproducing the next two Talks, Nos. 3 and 4. It will be remembered that these are printed in English on one side of the sheet and in French on the reverse side. There can be no doubt that the warnings given to the general public in this way have been the means of bringing this question much more prominently to the attention of the company's patrons, thus making it easier for the motorman to avoid accidents.

We are also indebted to the general manager of the Hull Electric Railway Company, Mr. G. Gordon Gale, for a brief description of the campaign as carried out in that city. Mr. Gale advises that they have been keenly alive to the possibilities of an active "Safety First" campaign ever since the inception of this movement and that the following features have been given special attention. We quote from Mr. Gale's letter:—

Special Features of the Hull Electric Campaign

"1. The distribution of 'Safety First' Calendars in the schools throughout the whole district.

"2. The operation of 'Safety First' Films in Moving Picture Theatres in the city, and in our Amusement Park Theatre.

"3. 'Safety First' Bulletins, including newspaper items, Magazine articles, etc., are posted from time to time on notice boards in the Reading Rooms.

"4. 'Safety First' literature, copies of addresses, etc., are distributed among our employees.

"5. All Rules, Regulations and Instructions are based upon 'Safety First' principles.

"6. 'Safety First' methods and precautions are explained and emphasized whenever an accident or other occurrence arises due to neglect or carelessness.

"This procedure has shown very satisfactory results, particularly, in so far as our employees are concerned. It will however, take years of undiminished effort to educate the general public to exercise care when travelling on, or moving around street cars.

"There is no doubt however, as shown by the results already obtained, that a campaign of this kind is justified. It is therefore, our intention to continue to work along these, and such other lines as seem advisable."

"Old Timers" Safety First Association

The following letter also shows that the Winnipeg Electric Railway Company have been deeply impressed with the importance of this work. They write:—

"For a considerable time this Company has been conducting a vigorous 'Safety First' campaign. In December, 1914, and during the first few months of 1915, we published a number of advertisements in the daily papers along 'Safety First' lines. A general safety committee of 100 (or approximately 100) of employees who had been ten years or more in the Company's service was formed. These men came from all departments of the Company and adopted as their emblem a button in royal blue and gold, bearing the letters—'W. E. R.' and the words 'Old Timers' Association—Safety First.' They are pledged to do everything in their power to prevent accidents, and to assist and instruct new men whenever possible. From time to time circulars were issued to motormen and conductors along 'Safety First' lines by the traffic superintendent, and in addition, circulars were sent to the Public School teachers throughout Winnipeg, containing