

GREAT
NORTHERN
RAILWAY

C. RIFF

with the state railway department, will be completed in Aug. °

The Northern Pacific Ry. Co. secured two charters authorizing construction of a large mileage of railways in Manitoba. One of these, the Manitoba Central Ry., was obtained in 1901, and the other, the Manitoba, Midland and Western Ry., came before the Legislature at its recent session for renewal. This bill was defeated when it came before the Railway Committee. On behalf of the promoters of the bill it is claimed that the building of 900 miles of railway, for which no subsidies would be asked, has been prevented; while the Winnipeg Telegram, the Provincial Government newspaper, says: "The N. P. now has a charter under which it can build. If it wants to build it can do so, and its building will be welcomed by the Government and by everyone in the Province. If the N.P. wishes to build lines in this Province it will receive all the encouragement it needs. But there is absolutely no evidence to show that the N.P. has altered its intention expressed last year, to build no more lines in this Province. It was only after the company had declared that it would do nothing more in the way of railway construction or reduction of rates that the Government decided to take over the road. If the Co. has changed its mind within the year, it can proceed to build at once. It has a charter and will get all reasonable encouragement from the Government and the people." (Feb., pg. 59.) See also Manitoba, Midland and Western Ry.

May
1902

Nova Scotia Eastern Ry. Co. — Application

Great Northern Ry., U.S.A.—The annual report, recently issued, mentions the following among the subsidiary lines built during the past year:—Montana and Great Northern, Jennings to Gateway, Mont. (on the International boundary), 50.08 miles, opened for operation July 10, 1902; Crow's Nest Southern, Gateway to Morrissey Jct., B.C., 44.26 miles, with a spur from Morrissey Jct., to Morrissey, B.C., 4.21 miles, opened for operation on Sept. 15, 1902; Washington and Great Northern, Marcus to Boundary, Wash., 27.66 miles, and from the International boundary to Republic, Wash., 31.92 miles, opened for operation on Aug. 17, 1902; Vancouver, Victoria and Eastern Ry. and Navigation Co., from International boundary line at Rideau, B.C., to the boundary line near Carson, B.C., 14.40 miles, opened for operation on Aug. 17, 1902; a spur from the main line to Grand Forks, B.C., 1.89 miles, is under construction. The work of changing from narrow to standard the gauge of the Great Falls and Canada Ry. (now owned by the Montana and Great Northern Railway Company) from Great Falls to Sweet Grass, Mont., 134.37 miles, has been completed.

A short piece of line has been constructed connecting the lines of the G. N. Ry. at St. Vincent, Minn., with the Canadian Northern Ry. at Emerson, Man., and a traffic agreement has been entered into with the C. N. Ry. It is reported that connection will be made with the C. N. Ry. at other points on the Manitoba border. (Nov., 1902, pg. 353.)

See also Alberta Ry. and Coal Co.; Canadian Northern Ry.

January
1903

ther on. (Oct., 1912, pg. 502.)

Northern Pacific Ry.—J. M. Hannaford, Second Vice President, accompanied by a number of officials paid a visit to Vancouver recently. In an interview he is reported to have stated that the company will be running its trains into the city within a year, over the Great Northern Ry. tracks from Cloverdale. The section of the old New Westminster Southern Ry. from Sumas to Cloverdale will be rebuilt to make this connection, and the Great Northern Ry. passenger station will be used, but the N.P. Ry. will provide its own freight terminals.

It was reported recently that the company was negotiating for the purchase of the Kitsilano Indian Reserve, which adjoins the False Creek area, which is being laid out by the Great Northern Ry. and the Canadian Northern Ry. for their terminals. (April, pg. 169.)

Pacific and Peace River Ry—The Domin-

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August, 1913.]

CANADIAN RAILWAY AND MARINE WORLD.

Railway Finance, Meetings, Etc.

Canadian Pacific Ry.—As some misconception may have arisen as to an issue of stock by the company, it has been officially announced that application was made to the Government last August, for permission to issue \$75,000,000 stock, but consent has not yet been given, and that application is still before the Government. When consent is obtained, the directors may, or may not, issue that amount. Regarding the \$60,000,000 of stock now being taken up in lieu of the consolidated debenture stock, which was issued by the shareholders' authority, it is stated that three fifths is already paid up. The Government's consent to this issue was not necessary.

A London, Eng., cable, July 18, states that \$20,000,000 of the \$35,000,000 of C.P.R. mortgage bonds had been presented for redemption at that date.

Canadian Pacific Ry.—The company paid off in London, Eng., July 1, \$35,000,000 of outstanding 5% mortgage bonds, two years ahead of the time they were due for redemption. There are now no mortgage bonds outstanding on the C.P.R. lines, but there are some small amounts outstanding on lines acquired by the company and amalgamated with it. Sir Thomas Shaughnessy, President, is quoted as stating that the company's indebtedness, consists of about \$165,000,000 of debentures, and the common stock.

In connection with press reports that the C.P.R. contemplated the issuing of a further \$60,000,000 of common stock early in 1914, Sir Thomas Shaughnessy stated July 9: "No new issue of common stock is contemplated, because the proceeds of any such issue could not be utilized to advantage, ample provision having already been made for the company's money requirements for a long time to come."

Grand Trunk Pacific Ry.—At a special meeting of shareholders at Montreal, July 16, a bylaw was passed authorizing the issue of \$15,000,000 debentures under the provisions of the Grand Trunk Pacific

ing Directors are, E. J. Chamberlin, W. Wainwright and G. C. Jones.

Napierville Jct. Ry.—Following are the directors for the current year,—President, L. F. Loree; Vice Presidents, C. S. Sims and W. H. Williams; Secretary, L. J. Belque; other directors, G. T. Hartt, F. L. Belque, F. A. Belque, and R. Adair.

Quebec Oriental Ry.—Meetings of the holders of 5% first mortgage gold bonds and of 5% second mortgage bonds of the Matapedia section of the company's line will be held in London, Eng., Aug. 13, to increase the amount of the issue of 5% prior lien mortgage gold bonds on the section from £50,000 to £100,000.

Temiscouata Ry.—Net earnings, for April, \$9,710; for May, \$4,969; aggregate for 11 months ended May 31, \$61,889.

White Pass and Yukon Route.—Earnings from Jan. 1 to June 14, \$272,751, against \$223,074 for the same period 1912.

Great Northern Railway Lines in Canada.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—J. H. Kennedy, Chief Engineer, is reported to have stated, June 30, that satisfactory progress was being made with construction on the section of the line between Coalmount and Otter Summit. Four steam shovels and a large force of men were at work. This section will connect with the joint section to Hope, which is to be built by the Kettle Valley Lines.

Victoria and Sidney Ry.—F. Van Sant, Superintendent, is reported to have stated recently that the work of improving the roadbed will be put in hand at an early date. The line will be regraded in part, and rails will be laid, and additional ballast added at an a cost of \$100,000. New turntables are being built at Victoria and Sidney, to handle a gasoline electric car which will shortly be added to the rolling stock. (May, pg. 224.)

Enlargement of Angus Shops, Canadian Pacific Railway

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September, 1913.]

CANADA

Great Northern Railway Lines in Canada.

The Midland Ry. of Manitoba made application recently to the Winnipeg City Council for permission to lay tracks on a lane between Spruce and Clifton streets, which was granted on condition that another avenue be provided for the traffic. The question of building a spur line adjacent to Sherbrooke St., between Ross and Elgin Avenues, is before the Public Utilities Commissioner.

Projected Lines in Alberta.—A press report from Calgary, Alta., credits a construction superintendent of the Great Northern Ry., with stating Aug. 7, that the G.N. Ry. interests had a route surveyed for a line from Nelson, B.C., to Lethbridge, Alta., and that construction would be gone on with during 1914.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Construction is being gone on with on the uncompleted portion of the line westerly to the summit of the Hope Mountains, and it is expected to have the line finished to that point during 1914. From this point to Hope the company will use jointly with the Kettle Valley Lines, the section which is being built by the latter company down the Coquihalla River Valley the contract for which has been let to McArthur Bros., New York. From Hope the company runs over a portion of the Canadian Northern Pacific Ry., and its own lines into New Westminster, Vancouver and a connection with the G.N. Ry. lines in the U. S.

The details of the False Creek plans are being worked out by the engineers of the G. N. R., the Canadian Northern Pacific Ry. and the British Columbia Government, and the various portions of the work are being put in hand as rapidly as possible.

Victoria and Sidney Ry.—We are officially advised that the G.N.R., having settled all matters previously at issue with the city of Victoria and the British Columbia Government regarding the bond issue of the V. and S. Ry., is now engaged improving its physical condition, putting in a great many new ties, and tie plates and a large quantity of ballast. A steel gasoline-electric car has been purchased, and is working three round trips daily between Victoria and Sidney. An order has been placed for the building of a new barge with a capacity of nine cars, to supplement the 6-car barge now in service between the railway and Port Gairdner, on the Vancouver, Victoria and Eastern Ry. (Aug., pg. 379.)

September
1913

stated that a contract for the building of the line will be let shortly. (July, pg. 332.)

Northern Pacific Ry.—G. T. Reid, Assistant to the President, is reported to have stated in an interview Sept. 3, that the revision of the line between Seattle and Sumas, Wash., via Snohomish, will not be completed until the spring of 1914. Connection will be made with the Great Northern Ry. at Huntingdon near Sumas and the G.N. Ry. will be used into Vancouver. An agreement is being negotiated with the British Columbia Government for the use of the bridge over the Fraser River at New Westminster. The terminals which the G.N. Ry. is laying out at False Creek, Vancouver, into which the N.P. Ry. trains will run, are expected to be ready in the summer of 1914. (July, pg. 332.)

October 1913

The cylinder portion of the pump is novel, consisting of a solid steel forging, in which the three cylinder bores, as well as all the valve seats, have been machined from the

solid. It delivers at a 3,000 lb. pressure. The weight of the press is 90,000 lbs., and the installation complete, without the accumulator weighs, 200,000 lbs.

motor connections in the usual manner without stopping the engine, which always rotates in the same direction. This allows the car to be brought to a halt quickly, independently of the brakes in an emergency. All the levers are located within convenient reach of the operator. The radiators are placed on the roof and circulation for cooling the engine is maintained by the thermosiphon system.

The controller is also arranged for governing the motors by shunt field control. This auxiliary method of control assures greatly increased operating efficiency through uniform saving of power, economy effected by decrease in the weight of the equipment and an available increase in the service capacity. Two extra points are provided in the controller for final speed acceleration in parallel, whereby the motor field are shunted and weakened. The resulting higher armature speeds permits the use of smaller pistons, and full utilization of the power input is secured throughout the entire speed range, from start to full speed.

The trucks are of the heavy swing bolster type with elliptic bolster and coil equalizer springs. The bearings, treads and flanges of the wheels and axles conform to M.C.B. standards. The brake equipment includes hand brakes in addition to the combined straight and automatic air brakes. A high power incandescent headlamp and reflector, an air whistle and a pneumatic gong are provided; and a hot water heater, coal fired, is installed for heating the car. To prevent

Gas Electric Car on Victoria and Sidney Railway.

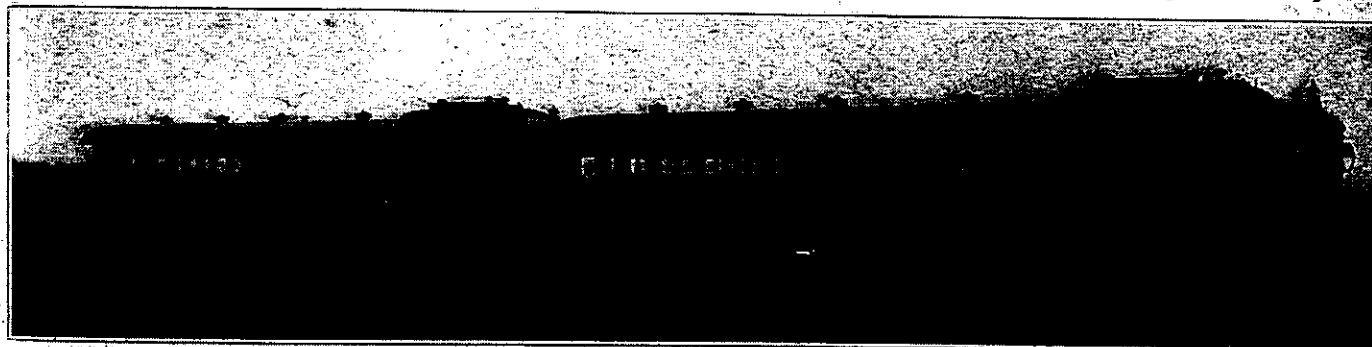
Canadian Railway and Marine World for September and November contained some brief particulars of a gas electric car which has been placed in operation on the Victoria and Sidney Ry. on Vancouver Island. This line, of 16.26 miles, runs from Victoria to Sidney, from which point there is a ferry service to the British Columbia mainland. It traverses the Saanich Peninsula, a particularly picturesque and fertile portion of the lower east end of the island, which is becoming closely settled and requires a more frequent service than was possible with steam operation. The car is said to be averaging 110 miles a day, and on two days a week a 30 ton trailer is handled.

The Great Northern Ry. ordered two of these gas electric cars, which are shown in the accompanying illustration. One of them is being operated on the Victoria and Sidney Ry., and the other on a G.N.R. branch line in the State of Washington. They made the journey from Chicago to the Pacific Coast with their own power.

Each car is of the combination passenger, smoking and baggage compartment type. It measures 71 ft. 8 ins. long over bumpers,

of the body is finished in green. The windows are fitted with plate glass; the seats are made long enough to accommodate three persons, are covered with friezette plush in the passenger compartment and with genuine Spanish leather in the smoking room, and the entire car is lighted with electric incandescent fixtures.

The generating unit is located above the floor line of the cab, free from dust and dirt and under immediate observation of the engineer. It consists of an 8 cylinder, 4 cycle gas engine of the V type, direct connected to a 600 volt, commutating pole electric generator, designed to meet the special conditions the service demands. Flexibility of control and economy of operation are assured through electrical transmission of the power. Starting the engine is effected by compressed air taken from the main reservoirs of the air brake system, which are built with surplus capacity for this purpose. The main air compressor is driven from the crank shaft of the main engine, and is fitted with an automatic governor which maintains a constant pressure. The engine can rotate at normal speed, irrespective of the



Gas Electric Cars Built for Great Northern Ry., One of Which is Operating on Victoria and Sidney Ry.

16 ft. 5 ins. wide, and is partitioned into four compartments: one 27 ft. 11 ins. long for passengers; a smoking section, 12 ft. 5 ins. long; a baggage room, 10 ft. 11 1/2 ins. long; and the engine cab, 11 ft. 11 ins. long, containing the power plant apparatus. The net weight of the car is approximately 51 1/2 tons, and it has a total seating capacity for 86 passengers. A centre vestibule with side entrances runs crosswise between the passenger and smoking compartments. There is also a rear platform entrance leading into the passenger compartment. The smoking section provides for 26, and the passenger compartment for 60 of the total seating capacity. The car is essentially a locomotive and car combined in one unit. The motive power centres in an internal combustion engine, generator and the motors. But one motorman and one conductor are required to operate the car.

All steel construction, except the interior finish, prevails throughout. The frame consists of steel I beams and channels, strongly cross braced, and steel plates form the outside sheathing. The underfloor is of wood, sheathed with sheet iron on the lower side. Between this and the floor proper a heavy felt lining is inserted, and the car sides are also interlined with felt. The interior trim is of mahogany, highly finished, and the ceiling is sheathed with three ply wooden veneer, painted straw yellow with green stenciling and gold striping. The exterior

speed of the car, and deliver its maximum power, a feature of great advantage on grades, in the case of snow storms, or in the event of emergency conditions. An auxiliary equipment is also provided, consisting of a 2 cylinder, 4 cycle gas engine, direct connected to a single cylinder air compressor and lighting generator. The function of this set is to supply an initial charge of air for starting the main engine and to deliver power for lighting the car. This set is started by hand.

The method of control is simple, substantial and similar to that of any standard electric trolley car. The car is equipped with motors of 200 h.p. capacity. Mounted on the axles of the forward truck are two GE 205, 600 volt, box frame, oil lubricated, commutating pole railway motors of 100 h.p. each. By means of a special controller they are placed progressively in series and parallel connection.

Energy is transmitted directly without the intervention of mechanical change speed gearing. The voltage is governed by varying the strength of the generator field, which is accomplished by the movement of a single handle on the controller, and the resultant speed changes of the motors produce a smooth and rapid acceleration without rheostatic power losses or gear changes. Separate handles are provided for throttling the engine and for reversing the car. The latter is accomplished instantly by changing the

freezing in cold weather when the car is lying idle, the heater circulation may be connected to the engine cooling system. A 150 gallon gasoline supply tank is suspended underneath the car. While the car is running, the gasoline is pumped automatically by the engine; and when first starting, by a hand pump.

Both the cars referred to were built by the General Electric Co. at Schenectady, N. Y. They are of the same type but larger than the gas electric car which has been operated on the Quebec and Lake St. John Ry. during the last two years. The dimensions of the last mentioned car, which will be interesting for comparison, are as follows:—Length, 58 1/2 ft., width, 10 ft. 5 ins. It has the same number of compartments, viz., general passenger, 25 1/2 ft. long; smoking, 10 ft. long; baggage, 6 ft. long, and engine cab, 12 ft. long. The net weight is 39 1/2 tons, and the seating capacity 76 people.

Union Stock Yards, St. Boniface, Man.—These yards, which are operated by the Canadian Pacific, Grand Trunk and Grand Trunk Pacific Railways were fully described in Canadian Railway and Marine World for September, when a ground plan of them was given. A photograph was not then available, but has since been secured, and two illustrations made therefrom are given on pages 568 and 569.

Great Northern Railway Lines in Canada.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Track laying is reported to be in progress beyond Coalmount to Brooks, B.C., where connection is made with the Kettle Valley Line, 27 miles, and it is expected to have the work completed early in October.

The new station building at New Westminster, for which plans have been submitted to the City Council, will be situated about 200 ft. from the present structure. It will be 72 by 32 ft., with an overhanging roof. The platform will be 200 by 12 ft. Work is reported to have been started.

Fraser River Bridge.—The British Columbia Government has for some time been carrying out considerable repair work on this bridge, over which the G.N.R. trains are run. The floor has been relaid and heavier steel is being laid in view of the increasing traffic. Repairs are also being made to the roadway, and the bridge is being repainted. (Aug., pg. 374.)

The Western Canada Railway Club has elected Louis Kon, Immigration Agent,

October 19/4

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will be started in May, and the new station opened within the year. (Jan., pg. 23.)

Great Northern Railway Lines in Canada.

Midland Ry. of Manitoba.—**Manitoba Great Northern Ry.**—The Winnipeg Board of Works has refused to allow the building of an elevated sidewalk on Ross St., alongside a fruit warehouse in course of erection on the terminals used by these companies in Winnipeg.

New Westminster to Blaine.—Press reports state that arrangements are being made for the building of a second track from New Westminster, B.C., to Blaine, Wash.

Vancouver Terminals.—Construction has been started on the viaducts over the Grandview cutting at Broadway and Victoria drives, Vancouver. The steel work is being erected by the Canadian Northwest Steel Co.

The company's new dock at the foot of Campbell Ave., Vancouver, has been completed, and was put into use, Feb. 5. There are two piers, each 450 by 127 ft., on which are warehouses, each 400 by 100 ft. Between the piers are three sets of tracks, and there is another set, along the water front of each warehouse. There is a driveway from the water front to each warehouse. The dock is constructed on wooden piers, concrete cylinders, with concrete and wood facings, while the buildings are of iron and wood, with a flat roof and skylights. The new dock gives accommodation for three steamers of the largest size, one at each side, and one across the end. (Feb., pg. 74.)

Steam Railway track laid in 1913.—We have received the final revised statement

MARCH 1914