SCHOMBERG AND AURORA RAILWAY

C. H. RIFF

Railways, under the act granting aid for the construction of certain railways and bridges, for the erection of a bridge across the Saskatchewan river, to connect the line now terminating in Strathcona, with the city of Edmonton, Alta. The construction of this bridge has been going on for some time.

Laggan to Lake Louise, B.C.—The Board of Railway Commissioners has authorized the opening for traffic of the branch line from Laggan to Lake Louise.

Galloway to Waldo Branch.—The Board of Railway Commissioners has authorized the opening for traffic of the final section of this branch, from Caithness to Waldo, B.C. This branch starts from Galloway, on the Crowsnest pass line, and runs into the coal fields at Waldo, near Elko, B.C.

Calgary to Vancouver Second Track.—Press reports have been busy for some time with regard to the surveys being made for the building of a second track from Calgary to Vancouver. The latest is that the work will include the driving of a tunnel from Bear creek, east of the Selkirk summit, to a point east of Glacier station, a distance of eight miles, at a cost of $1,500,000 a mile, and that the tunnel will have a gradient of 1% except for a short distance in the centre where the gradient will be 2%. The same report also states that plans are being prepared for a duplicate of the spiral tunnel at the big hill between Laggan and Field. These are mere rumors, as before anything is decided upon, every possible plan will be investigated.

We are officially advised that a second track is to be built from Ruby creek to Hammond, B.C., 57 miles. The contract for this work is reported to have been let to Grant Smith & Co., Seattle, Wash.

We are officially advised that the first section of the second track work east of Vancouver covers from mileage 106.8 at Hammond pit to mileage 128.7 at the eastern end of Vancouver yards, through which there is already a second track. There are no particular engineering features on this piece of work. Along Burrard inlet, between mileage 110.0 and 128.7, the line originally followed the shore. In making the second track the line has been straightened as much as posible, and the engineers have succeeded in cutting out approximately 225 degrees of curvature in 10 miles. Excavations have been hard pan and cemented gravel, slopes of which have been left practically as rock cuts. A few old slides have been struck, but by draining the land back of the railway it has been possible to stop any movements. With the exception of the bridge across the Pitt river, the bridge work on the section has been of minor importance. Grading is practically complete, steel laying is being proceeded with, and the line

Motor Car Being Tested on Schomberg and Aurora Railway.

A Galt, Ont., dispatch to Toronto papers, Sept. 19, stated that a gasoline motor car, built in the United States and imported by the Preston Car and Coach Co., has been operated between Galt, Preston and Berlin on the Galt, Preston and Hespeler Electric Ry., and added that the car had been sold to the Canadian Northern Ry. We are officially advised that the C.N.R. has not bought the car, but that arrangements were made with the Toronto and York Radial Ry. to try it on that company's line between Schomberg and Aurora, which is operated by steam.

The entrances and exits of this car are of the side centre entrance type. The car is double-ended and operated from a cab located in the corner of each end. The propulsion and regulation of the car is extremely unique and simple. The first car of this type manufactured has an engine of the four cylinder, four cycle type, cylinder dimensions 5½ x 6½, develops, approximately, 36 h.p., under 600 r.p.m., and is direct connected to a 20 k.w. compound wound differential pole generator. This combined unit is mounted on a rigid frame work of rectangular form, which is brought up from underneath the truck and mounted on a saddle or spring suspension in such a manner that the movement of the truck imparts but little strain or jar to the power plant. This method of suspension appears to be practicable, and, from an operating point of view, is satisfactory as to change or repair of equipment. The motors of this car are of the compound wound type, having a heavy series winding and are of approximately 25 h.p. each and are geared to the axle in the usual manner. These motors are so connected to the generator that it makes a very flexible unit and entirely eliminates the resistance, controller and cable methods. The connection between the generator and motors is such that as soon as the gas engine is accelerated the shunt fields of the motors are pre-energized before the armature circuits of the motors are closed. This gives a cushioning effect upon the motors without resistance, which is unattainable under the ordinary methods, and also gives a combination of units which, to a great degree, protects itself from the misuse of the operator. The later cars built, including the one being tried on the Schomberg and Aurora Ry., have 6 cylinders, 54 h.p. engine, 30 k.w. generator and two 25 h.p. motors, the selling price in the U.S. being about $11,500.

October 1912

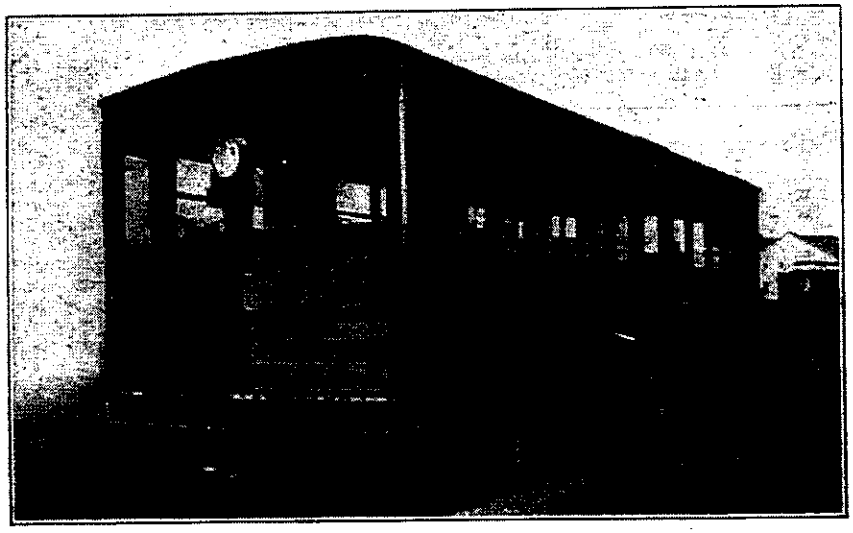
How to Analyse Railroad Reports.—A

Motor Car Under Test on Schomberg and Aurora Railway.

A short description of a motor car under test on the Schomberg and Aurora Ry., a division of the Toronto and York Radial Ry., operated by steam, appeared in Canadian Railway and Marine World for September. Since then, further information has been obtained.

The accompanying illustrations show the construction of the car. The truck is of a unique design, built up entirely of plate and structural shapes, a construction that is said to give the maximum strength for a given weight, lightening the construction materially. The wheel base is 120 ins., with 33 in. chilled cast wheels mounted on 4 in. axles. The journals operate in ball-bearing journal boxes, and are so arranged that the wheels and axles may readily be taken from the truck.

The motive power is a small gasoline engine, directly connected to a generator, the combined unit being supported from a frame supported from the truck on a spring suspension in such a manner that but little of the shock and impact of the truck is imparted to the motive power. The gasoline motor group contains a battery of four 4 cycle 5½ x 6½ in. cylinders, developing 36 h.p. at 600 r.p.m. This unit is directly connected to a 20 k.w. compound wound



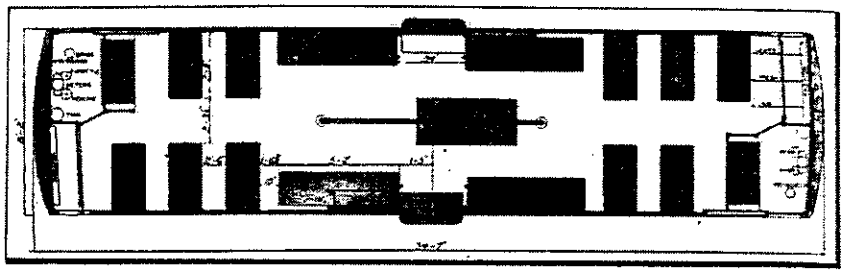
Gasoline Electric Car under Test on Schomberg and Aurora Ry.

differential pole generator. This comprises the power station of the car. To each axle there is geared in the usual manner a 25 h.p. compound wound motor, provided with a heavy series winding. These motors have a direct flexible connection from the generator, dispensing with the resistances and controllers. The connection between the generator and motors is such that as soon as the engine is accelerated, the shunt fields of the motors are pre-energized before the armature circuits of the motors are closed, giving a cushioning effect to the motors without the use of resistance and at the same time providing against the operator's misuse. The control of the car is entirely through the engine speeding up the latter to increase the car speed, and cutting off gasoline for coasting, eliminating standby losses.

The underframing of the car is also of steel of the same general construction as that of the car truck. It has a four point support on the frame. Nests of semi-elliptical springs at each end provide the main support for the car body, giving to the latcentre of each side frame steady the car and keep it level.

The general dimensions of the car body are 34 ft. 7 ins. over all length; 8 ft. 2 ins. and 7 ft. 9 ins., outside and inside widths; and total height above rail of 11 ft. 8 ins. The total weight is about 13 tons, with a seating capacity of 38, giving a small unit dead weight of car per passenger. Experience has demonstrated that it is possible to carry as many as 125.

The car is of the side entrance type, double ended with a symmetrical arrangement of the interior fittings. Inside the doors on each side are longitudinal seats, the balance being cross seats. The motorman's cabin is at the right hand side in the direction of operation. Here, the operation of the motors is controlled, cranking being performed electrically by means of storage batteries, which are also used for illumination. The interior of the car gives little evidence of the nature of the power utilized,



Interior Arrangement of Gasoline Electric Car.

wooden cage about 8 ins. high, arched by a longitudinal hand rail at a convenient height.

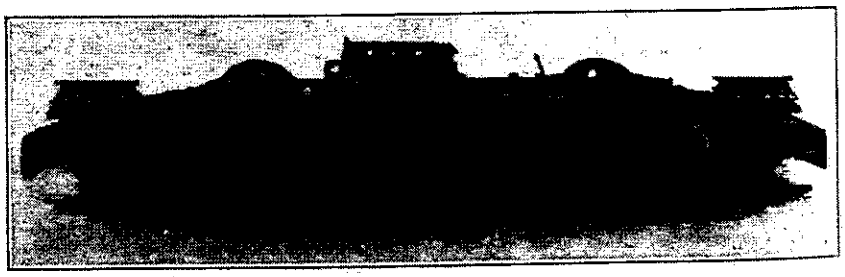
The heat of the hot jacket water from the engine is utilized for the heating of the car. Filling the balance of the car ends not occupied by the motorman's cabin, there is a radiator similar in construction to that found on automobiles, through which air from the outside is drawn in and heated. A sliding curtain in the end regulates the amount of air to be drawn in, as determined by the weather conditions. In hot weather, provisions are made for deflecting the current of hot air, and discharging it outside.

The braking consists of a rack and pinion, the rack operating a vertical plunger in an oil cylinder, the oil from the latter being forced into the brake cylinders, one of which is mounted on each side of the car frame, the plungers bearing directly on the wheel.

The consumption of gasoline is said to be a gallon for from four to six miles of operation under normal conditions.

The car was under test from Oct. 3 until on into November, making two round trips per day between Schomberg and Aurora, a distance of 15 miles, or a daily running of 60 miles. All the passenger traffic was handled by this one car. Daily observations have shown the economy of operation claimed for it, the fuel and oil averaging about 4 cents a mile. While giving satisfactory service, it was considered that better operation could be obtained on lines with less steep gradients. On this line, the maximum is 4½%. The conclusions drawn were that the most satisfactory service could be produced on branch lines with grades not exceeding 2%, and for that service the car is well adapted.

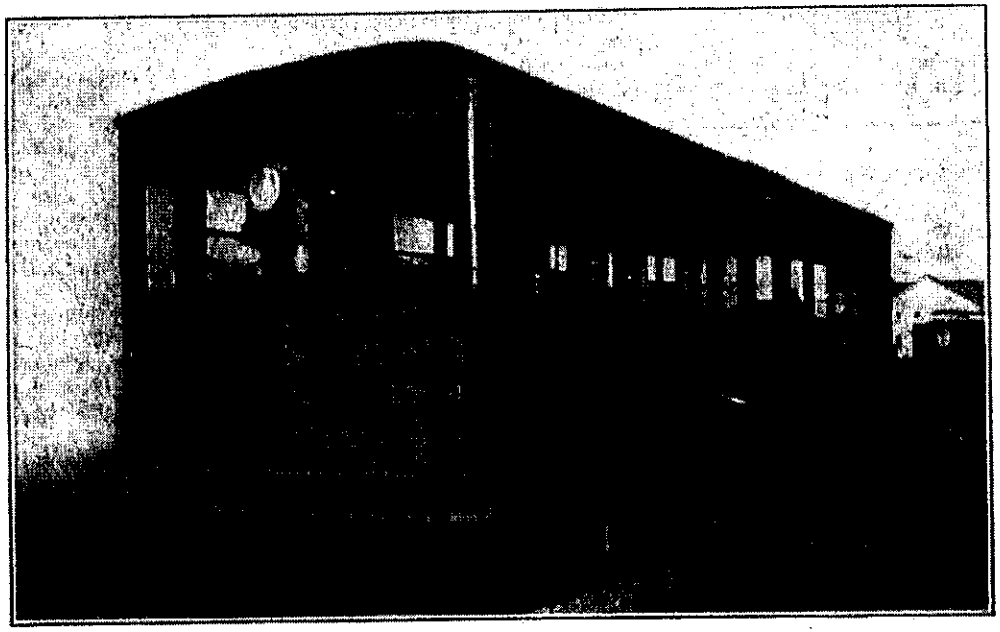
In addition to the tests on the Schomberg and Aurora Ry., a trial trip under more satisfactory conditions was made as far north as Gamebridge on the Canadian Northern Ontario Ry., on which it was learned that, on the level, the car could produce a speed of from 40 to 42 miles per hour, and could generate as much as 32 k.w. from the 20 k.w. generator. On the run from Galt to Toronto over the Grand Trunk Ry., when being delivered for the test, the trip was said to have been made in 2 hours, with the speed running up as high as 44



Truck of Gasoline Electric Car.

November 1912

connected to a 20 K.W. compound wound [illegible]



Gasoline Electric Car under Test on Schomberg and Aurora Ry.

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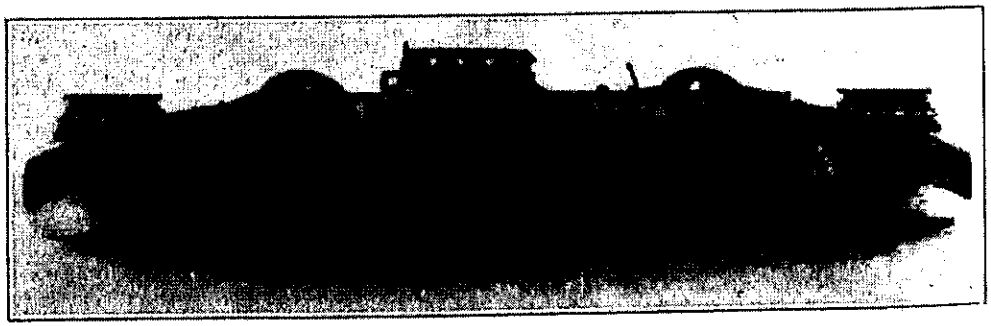

Truck of Gasoline Electric Car.

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(July, 1915, pg. 277.)

Schomberg and Aurora Ry.—We are officially advised that the electrification of this line has been completed, and it was expected to start operating it by electric power Jan. 1. The line runs from near Bond Lake, Ont., and the Toronto and York Radial Ry.'s Metropolitan division, to Schomberg, 14.40 miles, and has hitherto been operated by steam locomotives.

Toronto Civic Ry.—We are officially advised that there is under construction a double track line on Lansdowne Ave., from St. Clair Ave. to the C.P.R. tracks, 0.634 mile.

The question of the provision of car repair shops is under consideration, and a report respecting the same is being prepared by Works Commissioner Harris. The site of the proposed shops is on the extension of the St. Clair Ave. line to Avoca Ave (Nov., 1915, pg. 441.)

January
1916