

BRITISH
COLUMBIA
ELECTRIC
TWO CAR
TRAINS.

Two Car Trains, British Columbia Electric Railway.

Canadian Railway and Marine World for February announced that the British Columbia Electric Ry. had ordered 6 motor cars and 6 motorized trailers, to be operated in 2-car trains, from Canadian Car and Foundry Co., Montreal, and a preliminary description of them was given. In our July issue it was stated that they had been shipped from Montreal on May 30, via Canadian Pacific Ry. Following is a more complete description:

	Leading Car	Trailer
Length of car body	36 ft. 3 in.	36 ft. 8 in.
Length of front platform	4 ft. 3 in.	7 ft. 0 in.
Length of rear platform	7 ft. 0 in.	None
Length over anti-climbers	48 ft. 8 in.	48 ft. 8 in.
Width over side sills and posts	8 ft. 4 in.	8 ft. 4 in.
Width inside wainscoting	8 ft. 1 1/2 in.	8 ft. 1 1/2 in.
Width of aisle	2 ft. 2 in.	2 ft. 2 in.
Spacing of side posts	2 ft. 6 in.	2 ft. 6 in.
Height from rail to step	15 1/2 in.	15 1/2 in.
Height from step to platform	13 in.	13 in.
Height from rail to car floor	3 ft. 1 1/2 in.	3 ft. 1 1/2 in.
Height over roof from rail	11 ft. 4 1/2 in.	11 ft. 4 1/2 in.
Height inside trucks	25 ft. 0 in.	25 ft. 0 in.
Center to center of trucks	25 ft. 0 in.	25 ft. 0 in.
Seating capacity	48	56
Weight, complete	46,400 lb.	45,800 lb.

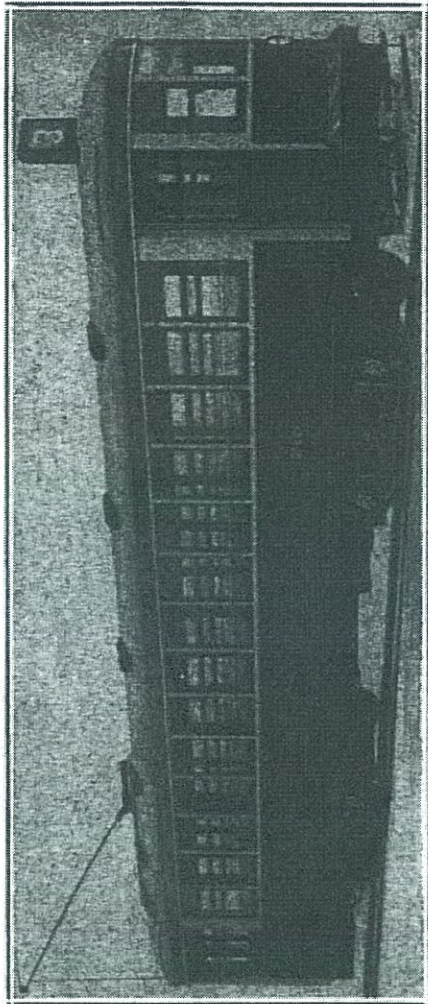
The cars are a pay-as-you-enter type, equipped with the latest modern safety devices for the convenience and comfort of passengers, which has been the main consideration throughout. They are rear-entrance front and rear exit cars, with air operated double folding doors and steps at the rear, and air operated single folding door and step at the front. Unless the front and rear doors on the car are closed, the starting signal cannot be given. The doors are National Pneumatic safety car type and are interlocked with the power controller, therefore it is impossible for the motorman to turn on the power until all doors are closed, which obviates all possible chance of accident to passengers in boarding or alighting. A signal light, in the front vestibule window, is

operated automatically by the doors, and serves a double purpose of indicating to the traffic policemen and motorman if the car is ready to start.

One of the most interesting features of these cars is the control, which is of the camshaft type, with automatic acceleration. The first camshaft control installed in Canada was on an electric locomotive, built by the Niagara, St. Catharines and Toronto Ry. This was fol-

lowed by the motors receiving more than the pre-determined amount of power, and this gives rapid acceleration automatically. In starting, all the motorman has to do is to throw his handle to full speed and the camshaft does the rest.

Both the motor and trailer cars are equipped with English made, type DK-83-B, 60 h.p. 600 volts traction motors with type 13-B automatic cam-



Leading Car of Two-Car Train, British Columbia Electric Railway.

shaft controller. Four motors are fitted to each car. The master controller and the cut-out switch are mounted in the customary place in the motorman's vestibule. Another feature is the control cut-out switch, which provides for multiple unit operation. This enables the operator to isolate the control on either the motor or trailer car, should either one of the cars stall owing to defective motors. This will not interfere with the operation of the train because the motorman could still operate the motors on the trailer car from the leading car.

The underframe is built up of structural steel shapes and plates.

The interiors of the cars are very comfortable, the seats being arranged similarly to the Montreal Tramways Co's cars, with cross seats from the front entrance to the center and longitudinal

seats in the remainder of the car. The trailer car has a semi-circular seat at its rear end. The seats and backs are upholstered in rattan. The seats are hinged, which allows the floor of the car to be rapidly and thoroughly cleaned. The window sashes are of a plain type, there being no ledges to carry dust. The interior woodwork is birch throughout, except the doors and sashes which are cherry, all stained a light mahogany finish.

The ceiling is a plain arch design, painted in cream enamel, which tends to make the car more spacious, and at the same time, lights up the interior. For standing passengers a wooden rail is hung over the side seats at a convenient height, so that if the car should come to a sudden halt, the possibility of standing passengers colliding with each other is practically eliminated. This rail also provides a hold for more passengers than straps do.

The interior fittings, such as the sash locks and aisle seat corner grabs, etc., are finished in brushed bronze. The stanchions and conductor's railing are hard drawn aluminum tubing, giving the rich appearance of gold and silver fittings. Brush brass bronze finish guard

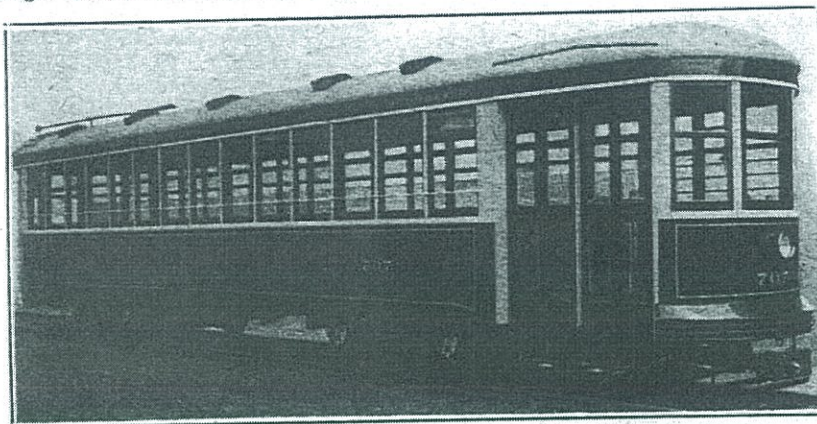
single guard rail of $\frac{1}{4}$ in. iron pipe is applied the full length of the car body.

The trucks are C. C. & F. Co's special design, equipped with its patented ball joint damper instead of friction wear plates between bolster and transom, preventing excessive side sway and horizontal movement of the car body. The truck springs are a combination of semi-elliptic and helical type. The cast steel bolster rests on 8 small coil springs, which transmit the load to 2 eight-leaved semi-elliptic springs suspended from the side frames and also a double coil helical spring between the side frame and each journal box. All resilience is thus taken care of. The wheels are of rolled steel, 30 in. diam., and the axles are A.E.R.E.A. standard, type E-4. Journals are $3\frac{3}{4}$ x 7 in.

Both cars of the train are equipped with Westinghouse type S.M.E.-D air brake equipment for single end operation, complete with motor driven air compressor and emergency valve. Both cars are also equipped, at each end, with Hedley 4-ribbed rolled section anti-climbers. The rear ends of the leading cars and front ends of the trailers are fitted with Tomlinson form 10 couplers, air connecting, with 14 point electric coupler

the front center window, and one at the rear step side window. There is also a car full sign, not illuminated, at the front vestibule step side window. On the trailers there is a route number sign at the rear vestibule step side window, a destination sign at the front step side window, and a car full sign, not illuminated, at the front vestibule step side window. Both cars are equipped with Faraday high voltage buzzers and single bell signal equipment; C. C. & F. Co. lead and antimony step treads; Union standard no. 11 trolley base; Earl no. 4A trolley catcher; 10 in. steel foot operated gongs at each end; Peacock staffless hand brake with 20 in. diam. hand wheel; Panelyte 5/16 in. headlining, applied in car bodies only; Golden Glow RM no. 96 head and tail lights; Edwards sash locks, and Panelyte wainscoting, 5/16 in. thick.

These trains are for operation on Vancouver city lines, four in Kerrisdale and two on the Grandview-Fourth Ave. line, and were shipped on 18 flat cars in condition to be placed in service immediately on arrival. A press report says that the cars, which left Montreal via Canadian Pacific Ry., had to be routed over the Kettle Valley Ry. for a portion of the way, as there was not sufficient clearance in some of the tunnels on the C.P.R. main line in the British Columbia mountains.



Trailer of Two-Car Train, British Columbia Electric Railway.

rails are placed throughout the interior of the car where necessary.

Heating is provided by portable electric heaters at the motorman's and conductor's positions, the winters in Vancouver not being so cold as they are in Montreal. The amount of heat circulated by the 2 heaters will be sufficient to keep the atmosphere inside the car at an even and comfortable temperature on cold days. Ventilation is controlled by 10 Nichols-Lintern ventilators to each car, located in the ceiling, and intake ventilators are located in the floor, which assures a continuous supply of fresh air without draught. The lighting consists of 5 automatic compensating series of lighting fixtures, type K, with 94 watt 115 volt lamps, placed down the center of the ceiling. The exterior color scheme is similar to the Toronto street cars, viz., carmine red below the window sashes and cream above.

The window guards on the devil strip side, or the side facing towards the opposite track, are C. C. & F. Co's special street railway anti-rattler type, made of electric welded fabric 2 in. mesh galvanized wire, surrounded by $\frac{1}{2}$ in. pipe frame 18 in. high, and supported by malleable iron top and bottom brackets. The screens are arranged so that they fold down to allow easy cleaning of windows. On the step side of the car a

for control and signal train lines and 5 point electric coupler for trolley bus line. The front ends of the leading cars and rear ends of the trailers are equipped with emergency bars. The doors and steps are operated by type G.O.F. 4 $\frac{1}{2}$ M. folding door engines. The car floors are in two courses, the lower of $\frac{3}{4}$ in. and the upper of $\frac{1}{2}$ in. wood, with white lead between. Hardwood mats are provided in the aisles, between the cross seats and on the front and rear platforms. Life guards, on front end only of both cars, are of the H. B. type. On the trailer, the gate is removed when the car is running in a train, and the connecting rods are arranged so as to make the fender inoperative. Each car has 2 air-operated sanders, those on the leading car being in front of the leading truck, and those on the trailer at the front of the rear truck. The railway standard sand boxes are of 6 in. pipe with cast iron covers and traps. The roofs of both leading and trailer cars are of plain arch design, supported by o.h. steel angle carlines, and sheathed with 7/16 in. t. and g. wood, covered with no. 8 white canvas duck embedded in white lead. The signs are Hunter illuminated. On the leading cars, one route number sign is on the roof at the front end, and one at the rear vestibule step side window; one destination sign is at

New Transfer Form.—Toronto Transportation Commission intends placing in operation a new form of transfer. The one now in use, of the usual type, was developed for, and meets the needs of, pay-as-you-enter operation, but is not as suitable for pay-as-you-leave operation, and as the Commission's rolling stock is now nearly, and soon will be completely, of the pay-as-you-pass or pay-as-you-leave type, it is felt that a form of transfer more suited to this type of operation is desirable. In addition, the Commission's revenues are believed to have suffered somewhat from abuse of the transfer privilege, through passengers who have paid their fare and received a transfer handing the latter on to someone who had not paid a fare. The transfer to be adopted will, it is believed, protect the Commission's revenues in this connection. Some Toronto papers stated incorrectly that the new transfer would be placed in use on July 20. We are advised officially that it will not be introduced until Sept. 27. Details as to its form are not yet available for publication.

Toronto Transportation Commission's Work Appreciated.—Toronto City Council passed the following resolution recently: "That the Council receive the Toronto Transportation Commission's 1924 report with great satisfaction, especially in view of the fact that the Commission has operated the several lines on the one-fare basis throughout a general depression, showing a substantial surplus, and we are pleased to know that no reduction in wages has taken place; therefore, the Council desires to congratulate all their employees on results obtained by their services and co-operation, and also the car users and taxpayers upon the success of this great public ownership enterprise."

Hydro Electric Power Development.—The New Brunswick Government passed an order in council, July 2, authorizing the N.B. Electric Power Commission to proceed with its power development plans at Grand Falls. Tenders for the work will be received to Aug. 3. S. R. Weston is Chief Engineer, and H. G. Acres, Niagara Falls, Ont., is Consulting Engineer.