

ELECTRIC LOCOMOTIVES FOR THE BRITISH COLUMBIA ELECTRIC RAILWAY.

The British Columbia Electric Railway Company operate twenty miles of track in and around New Westminster, B.C., connecting this town with Vancouver, Stevest, Cloverdale, Huntingdon, Chilliwack, and several other Fraser Valley towns. They use a 4 ft. 8½ inch gauge and a 60 lb.

contactors. The resistances are placed in the sloping ends of the superstructure.

The motor equipment consists of four Dick-Kerr 12a motors. When operating on a 600 volt circuit each motor will give a tractive effort of 4,040 lb. on the periphery of the 42-inch wheels, and a speed of 15 miles per hour at the one-hour rating. Each motor is fitted with reduction gear having a ratio of 3.64 to 1. The armature bearings of the

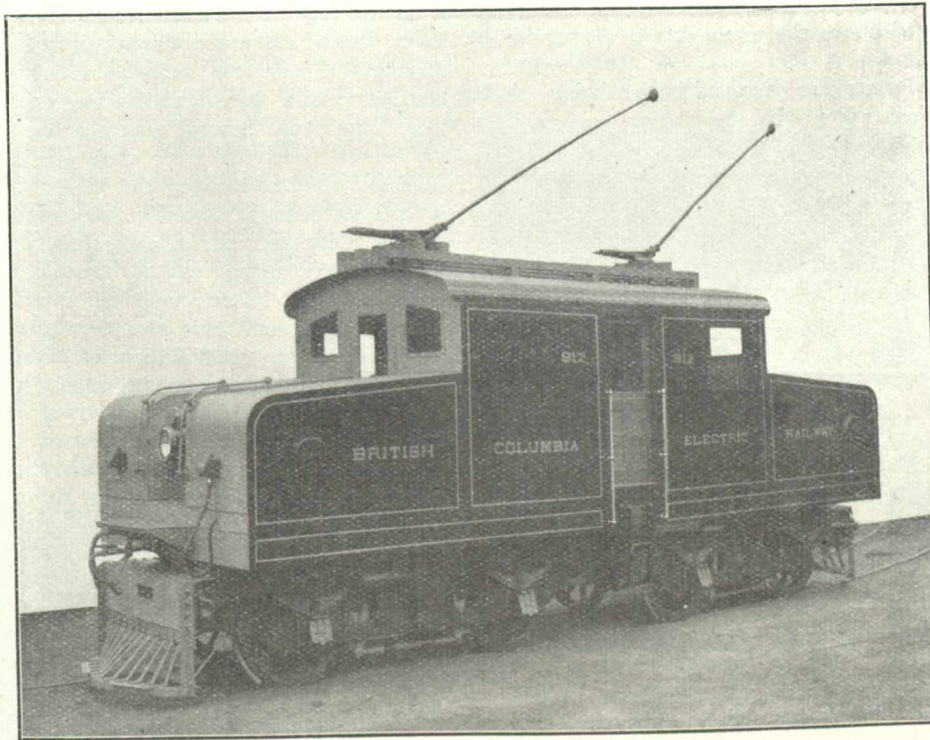


Fig. 1.—Electric Locomotive for the British Columbia Electric Railway.

T rail. Recently they have added to their equipment three electric locomotives.

These locomotives were built and supplied by Messrs. Dick, Kerr & Company, the electrical equipment being manufactured at their electrical works at Preston, and the trucks and mechanical portion at their general engineering works at Kilmarnock.

The locomotives are of the articulated truck four-axle type, with one motor mounted upon each axle. The maximum rated tractive effort is 16,000 lb. drawbar pull, and the maximum instantaneous effort is 25,000 lb. A feature of special interest in the truck arrangement is that the body of the locomotive rests upon two four-wheeled trucks coupled together by a massive hinge having lateral flexibility but vertical rigidity thereby enabling the rear trucks to resist any tendency to tilt under the action of the forward truck, and vice versa. The centre pins and cab platform framing are not subjected to any longitudinal stress, except that due to its own inertia when starting and stopping, the whole pull of the motors being transmitted direct from the motors through the trucks. Suitable arrangements are made to allow the trucks to radiate when passing round a curve. The spring suspension is of the locomotive type, the weight being carried by semi-elliptic springs resting on the journal box saddles.

Fig. 1 shows the general appearance of one of the locomotives, and Fig. 2 gives a view of the interior of the cab. Here can be seen the two master controllers one at each end of the cab, the contactor boxes, circuit-breakers, switches, etc. The control equipment is of the standard Dick-Kerr multiple-unit type, with series magnets operating the various

motor are lubricated by oil rings, which are specially designed to prevent flooding when running at high speeds. The axle bearings are lubricated by a system of wicks which are immersed in oil wells. No grease is used as an emergency lubricator. The whole of the gearing of the

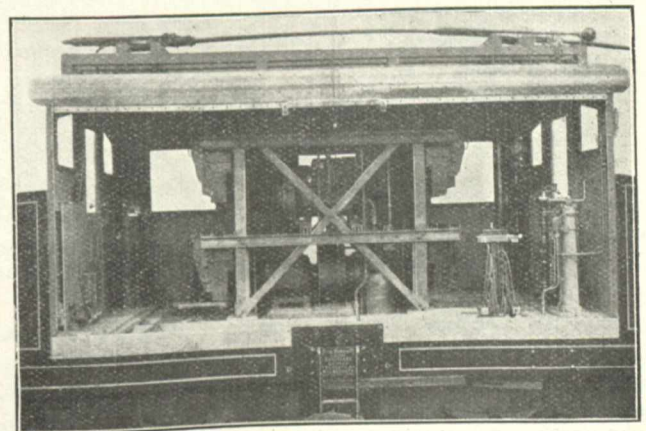


Fig. 2.—View Showing Interior of Cab of Locomotive

motor is contained in a malleable iron oil-tight gear box, which is provided with suitable stiffening ribs. It is supported by the axle bearing at one end and by the pinion bearing and motor shell at the other end. The motors are designed and arranged for forced ventilation, the air being blown into the motor shell at the end farthest from the commutator, and passing out at suitable openings provided at the commutator end.