the magnetic circuit of the motor. When these windings are connected respectively to the appropriate generator, the synchronous speed due to each is 80 r.p.m. when at full speed.

"By changing the connections, the rotation is reversed, and by connecting the 40 pole winding to the 6 pole generator, the synchronous speed drops to 60 r.p.m., thus giving (the ship) about three-quarters speed. One generator may be stopped and the other left running at full speed under governor control, giving approximately its full economy, as the power required to drive at three-quarters speed is about half what is required to drive at full speed. If either of the generators be left attached to its own winding, the other being shut down intentionally or by accident, the vessel is propelled by either engine at a little over half speed, the speed of the vessel dropping with the rotation of the engine until an automatic adjustment of power and speed is reached, which occurs at about half speed.

"The control gear, which will not be operated from the bridge as a regular thing, but which is being so arranged that such operation can be carried out when desired, has five positions on the switch, similar to those of the ordinary engine room telegraph, each position being definitely fixed by cams and rollers so that a stoppage at an intermediate position is prevented. For half speed, no. 1 generator is coupled up to no. 2 winding of the motor, and no. 2 generator is running light or stopped; for full speed each generator is connected to its own winding in the motor. The controlling gear provides for the interruption of the excitation of the generators while the switch is being moved from one step to another. This method of operation renders the electric circuits dead while the switching over operations is being carried out and injurious sparking is avoided.

"Two steam boilers are provided for operating the deck equipment, steering gear, electric lighting and heating. Fuel oil is used for the boilers. It is estimated that the vessel will carry about 250 tons more than a similar vessel equipped with reciprocating engines..."

It is interesting to note that, on the same page as the article on TYNEMOUNT concluded, "Canadian Railway and Marine World" reported the completion by the Clyde Shipbuilding and Engineering Company Ltd., at Port Glasgow, Scotland, of the canaller FORDONIAN, built for the Canadian Interlake Line. In contrast to TYNEMOUNT, FORDONIAN was fitted with two-cycle oil engines of the Carels-Diesel type, which directly powered the ship and were reported to have performed very well on the vessel's trials, the ship having achieved a speed of ten knots.

The next mention of TYNEMOUNT appeared in the August 1913 issue of "Canadian Railway and Marine World". "The recent launching (we never have seen a launch date -Ed.) of the Montreal Transportation Co.'s electrically propelled vessel TYNEMOUNT, at Newcastle-on-Tyne, Eng., will to a great extent settle the question as to how far electricity can be utilized in the propulsion of heavy cargo vessels, and as to what economy can be effected, both in cargo space, and in operation on the Great Lakes. The propelling machinery of the TYNEMOUNT is a combination of a Diesel engine (in fact, two of them - Ed.) and electric motor, the latter being direct connected to the propeller, and this is the first time that the principle has been applied to, what may be termed, an ocean going vessel.

"Certain conditions of operation on the Great Lakes, and especially through the canals, make it necessary to have the largest coarse pitch propeller which can be driven by a normal triple expansion engine at about 80 revolutions a minute. Diesel engines run at about 400 revolutions a minute, but in the system in use on the TYNEMOUNT this speed can be reduced, as between the engine and the propeller, by means of the electric transmission. The whole system, especially for lake navigation, is yet in its very early stages, and any movement will be watched with considerable interest by those concerned. There are quite a number of experienced navigators on the Great Lakes who