

builders as Swan, Hunter & Wigham Richardson Ltd., Newcastle-on-Tyne, AND Smith's Dock Company Ltd., Middlesbrough. Such a collaboration would be most unusual, but not unheard of. The generally accepted Hull Number for TYNE-MOUNT is 922, which fits the Swan Hunter series (per TOILER and CALGARY) but does not fit the Smith's Dock yard numbering sequence of that period.

The unusual nature of TYNEMOUNT's propulsion machinery was first mentioned by "Canadian Railway and Marine World", the foremost Canadian marine publication of the time, in its issue of September, 1912. "The Montreal Transportation Co. has ordered (sic) in England, a vessel for lake and canal trade, which is to be a departure from the customary means of propulsion, in that electricity will be utilized for the purpose, for the first time in a vessel of such size. The machinery will consist of two 300 h.p. high-speed Diesel engines, each connected with an alternating current generator and exciter, and on the propeller shaft, just ahead of the thrust block, there will be fitted the armature of a large induction motor running at about 80 r.p.m. The whole of the mechanism will be controlled from the bridge. The vessel will be of the usual Canadian canal size, with a deadweight capacity of 2,400 tons on a 14-ft. draught.

"The vessel has been designed by John Reid and Co., Montreal and Glasgow, the electrical system to be adopted being invented by H. (Henry) A. Mavor, Glasgow. J. Reid stated in Montreal recently that the peculiar conditions encountered in Canada in the canal traffic had caused the country to lead the world in experimenting in such matters. The absolute limit of hull capacity had been reached at above 2,200 tons, and as a result the only way to add somewhat to the capacity was to reduce the weight of the engines. Canal boats require very coarse pitch propellers, working at about 80 r.p.m. With the Diesel engines on the vessel TOILER, the propellers run at about 250 r.p.m., and as a result, the vessel is not so well adapted for the Canadian canal traffic as she might have been. With the electric motor, the proper speed will be easily obtained."

This was an interesting first introduction to most of the magazine's readers of the diesel-electric concept of propulsion. We would, however, dispute the article's statement that the M.T.Co. had "ordered" the vessel. We suspect that M.T.Co. was collaborating with the builders in the venture, but in such a manner that M.T.Co. had an easy "out" if the vessel proved not to be satisfactory. We believe, still, that it would be proper to say that the ship was built "on speculation" and not "to order". Had Montreal Transportation ordered the ship, we are certain that she would have been given a more typically Canadian "mount" name, rather than one referring to the area of her construction.

In the issue of November, 1913, "Canadian Railway and Marine World" gave more details concerning the vessel that was to be TYNEMOUNT. "The engine (as the accompanying drawings will show, there actually were two of them, not just one of these engines -Ed.), which is of the Diesel four cycle principle, has six cylinders (to each engine) 12 in. diameter, and a stroke of 13½ ins., giving 400 revolutions a minute. The cylinder cranks are so arranged that the firing occurs at equal intervals. The engine is entirely enclosed, and the forced lubrication is arranged for by a valveless pump driven from an eccentric on the crank shaft at the compressor end.

"The second motion shaft is driven by a worm wheel on the crank shaft midway between the centre cylinders through a vertical shaft, which carries the governor at the upper end. This second motion shaft, which is at the front of the (each) engine, and carries the cams for working the valves, also carries the eccentrics driving the two fuel pumps. This enables the power to be evenly divided between the cylinders.

"The compressor is driven from the main crank shaft and is mounted on the bed plate extended for the purpose. The engine is started by compressed air stored in receivers placed near the engine, supplied by the compressor on