

The Canada-Australia Mail Line s.s. Niagara.

Following is a condensed description of the s.s. Niagara, built for the Union Steamship Co., of New Zealand, for the mail route between Canada and Australasia, and which was recently launched at Glasgow, Scotland, by the Dominion Premier's wife, Mrs. Borden.

Length over all, 543 ft.; breadth, moulded, 66 ft.; depth to upper deck, 37½ ft.; depth to boat deck, 64 ft.; gross tonnage, 13,000 tons. Though chiefly designed for passengers, a considerable space will be devoted to cargo, which will be handled to and from the holds by hydraulic hoists, a large part of the hold space being insulated for the carrying of frozen meat, fruit and other perishable commodities. Accommodation will be provided for 281 first class passengers on the main, upper, shelter and promenade decks, amidships, where state rooms are arranged for from one to four passengers, and also in suites. The dining saloon will have accommodation for 190 passengers, arranged in small parties. A large lounge will be placed on the promenade deck, and there will be an electric elevator between the main and promenade decks. The second class accommodation will be for 210 passengers, and will be placed aft, with the dining room on the upper deck, and music and smoke rooms above. Third class passenger accommodation for 176 will be placed forward. Special care has been taken to adopt the best means for heating and ventilating the vessel, having regard to the varying climates she will pass through on her voyage between Australia and Canada. The thermo-tank system has been adopted which will insure an even temperature throughout the trip. These tanks are designed to change the air in any of the compartments to which they are connected, ten times an hour, and will supply a continuous supply of fresh air to all the living quarters in the vessel, which can also be heated to any temperature. The installation will consist of 19 thermo tanks. The lifeboat accommodation will be more than sufficient to provide for all the passengers and crew, and will be equipped with the latest improved davits, chocks and disengaging gear. A wireless

telegraph installation and the latest fire extinguishing appliances will also be included in the equipment.

The machinery will comprise a combination of reciprocating engines and low pressure turbines. Steam will be supplied by ten cylindrical boilers, each fitted with four furnaces and forced draught. The working steam pressure will be 220 lbs. The furnaces will be so arranged that either oil or coal may be used as fuel, the intention being to use oil, and there will be sufficient capacity to carry oil for the return trip, and also for a supply of coal should it be found necessary to use it. A complete electric lighting plant will be supplemented by an emergency plant placed on the boat deck, so that in case of accident, light may always be maintained.

Electric Propulsion for Ships.

Electric ship propulsion will shortly receive its first trial, for a naval fuel ship, Jupiter, equipped for such driving, was launched recently at the U.S. navy yard at Mare island. The new system is being given a good trial, for this ship is 572 ft. long, 65 ft. beam, draws 27½ ft. loaded and will carry 12,500 tons of coal and 375,000 gal. of fuel oil. Her object, aside from her duty as a fuel carrier, is to demonstrate that economies in fuel consumption on turbine ships can be obtained by using turbo generators furnishing current to motors on the propeller shafts, instead of connecting the turbines directly to the shafts. In the latter combination the efficient speed of the turbine and of the propeller are not the same, and a compromise has been made by raising the propeller speed and decreasing that of the turbine. The propeller is not so efficient as at lower speed, and the weight of the turbines has been greatly increased. By using an electric drive the turbine can be kept down to the dimensions and up to the speed of stationary practice; by using two motors on each shaft all the requirements for propeller efficiency at any speed, ahead or astern, can be readily met. The design of the motors for the Jupiter is not known in detail, but those interested in the general subject will find an important discussion of it in a paper by Mr. Emmet before the American Institute of Electrical Engineers

in February, 1911, in which he explained the details of a design developed by the General Electric Co. for a battleship. According to his figures the total efficiency in pounds of steam per horsepower on the shaft would be substantially constant at speeds ranging from 12 to 21 knots, and far better than ordinary turbine propulsion could show. The total weight of the mechanical equipment of the ship was not lowered by this system of propulsion. The trials of the new ship will be awaited with interest, because the trials of the alternative method of reducing speed between the turbine and the propeller, involving enormous gears, were not wholly successful owing to defective parts in the machinery, something particularly serious in such mechanism. It is doubtless true that the gear transmission will save a great deal of weight in comparison with the electric system, but if the claims made for the efficiency of the latter are borne out in the Jupiter's trials its advocates will be able to make some decidedly pretty arguments when the respective merits of the two systems come up for discussion again.—Engineering Record.

Vessels Removed From the Register.

The following vessels were removed from the register, during August, for the reasons assigned:—Steam—Edna, Vancouver, B.C., 12 tons, dismantled; Hazelton, Victoria, B.C., 236 tons, dismantled; Lara, New Westminster, B.C., 5 tons, dismantled; Rockland, Ottawa, Ont., 50 tons, dismantled; Sea Wolf, Vancouver, B.C., 20 tons, burned. Sailing—Annie Smith, Paspebiac, Que., 249 tons, abandoned; Arclight, Charlottetown, P.E.I., 103 tons, sunk; Dorothy Louise, Shelburne, N.S., 125 tons, missing; Energy, Lunenburg, N.S., 97 tons, stranded; Eva Stewart, Parrsboro, N.S., 98 tons, broken up; Jessie D., Parrsboro, N.S., 8 tons, broken up; Kalevala, Sydney, N.S., 10 tons, wrecked; Laura, Liverpool, N.S., 299 tons, transferred to Barbadoes; Lion, Magdalen Islands, Que., 42 tons, broken up; May Myree, Lunenburg, N.S., 89 tons, stranded; Rosa, Montreal, 140 tons, burned; Seth, Jr., Liverpool, N.S., 199 tons, sold to foreigners; Colon, Panama; Thurston, Parrsboro, N.S., 61 tons, broken up; Trader, Parrsboro, N.S., 73 tons, broken up.

List of Sailing Vessels and Barges Registered in Canada during August, 1912

| Name. | No. | Where and When Built. | Rig. | Length | Breadth | Depth | Reg. Tons | Port of Registry. | Owners. |
|-----------------------------------|--------|------------------------------|--------|--------|---------|-------|-----------|------------------------|---|
| A. Laffeur | 130934 | Yamaska, Que., 1912 | Sloop | 102.4 | 23.1 | 6.4 | 106 | Montreal | A. Laffeur, Notre Dame de Pierreville, Que. |
| Alleen Gladys | 130591 | Ship Harbor, N.S., 1912 | Schr. | 45.0 | 13.0 | 6.0 | 16 | Halifax, N.S. | G. E. Siteman, M.O., Ship Harbor, N.S. |
| Ashgamik | 130889 | Seattle, Wash., 1894 | " | 27.6 | 11.0 | 5.3 | 7 | Victoria, B.C. | A. J. Davidge, Victoria, B.C. |
| Auburn | 131181 | Peterboro, Ont., 1912 | Scow | 110.0 | 27.4 | 7.1 | 190 | Peterboro, Ont. | Minister of Railways and Canals, Ottawa. |
| Chippewa | 111967 | Marine City, Mich., 1890 | Schr. | 222.0 | 36.0 | 22.0 | 1105 | Pictou, Ont. | Ontario & Quebec Navigation Co., Pictou, Ont. |
| D. G. 3. | 131029 | Eburne, B.C., 1911 | Scow | 79.0 | 32.2 | 4.4 | 182 | Vancouver, B.C. | Dewdney Gravel Co., Vancouver, B.C. |
| Edna R. Hines | 130369 | Ingonish, N.S., 1912 | Schr. | 41.0 | 12.9 | 8.0 | 18 | Sydney, N.S. | A. J. Hines, Ingonish, N.S. |
| Fraser Mills No. 5 | 130495 | Fraser Mills, B.C., 1910 | Barge | 83.2 | 34.6 | 8.5 | 227 | New Westminster, B.C. | Canadian Western Lumber Co., Fraser Mills, B.C. |
| G. B. Zwicker | 116352 | Port Medway, N.S., 1912 | Schr. | 40.8 | 11.0 | 5.8 | 13 | Port Medway, N.S. | C. Zwicker, Port Medway, N.S. |
| Goderich | 122612 | Goderich, Ont., 1911 | Dredge | 82.0 | 30.0 | 7.0 | 259 | Goderich, Ont. | W. Marlton and W. L. Horton, J.O., Goderich, Ont. |
| Geo. Dansereau | 130926 | Grenville, Que., 1912 | Barge | 110.5 | 22.0 | 7.5 | 148 | Montreal | G. Dansereau, Grenville, Que. |
| Ida M. Cunningham | 126347 | East Pubnico, N.S., 1912 | Schr. | 41.3 | 12.9 | 6.2 | 16 | Barrington, N.S. | B. F. Cunningham, Cape Island, N.S. |
| Justice H. | 130593 | Fourchu, N.S., 1912 | " | 60.0 | 18.4 | 8.2 | 48 | Halifax, N.S. | A. B. Hooper, Fourchu, N.S. |
| Lola R. | 131078 | Lunenburg, N.S., 1907 | " | 42.6 | 11.2 | 5.6 | 13 | Lunenburg, N.S. | J. Reno, Herring Cove, N.S. |
| Old Glory | 130383 | Buffalo, N.Y., 1894 | Dredge | 84.0 | 31.6 | 7.5 | 199 | Amherstburg, Ont. | J. G. Mullen, Amherstburg, Ont. |
| P. S. B. 6 | 131157 | Vancouver, B.C., 1909 | Scow | 89.0 | 32.0 | 7.4 | 202 | Vancouver, B.C. | Progressive Steamboat Co., Vancouver, B.C. |
| P. S. B. & D. Co. Dredge No. 1 | 131038 | Seattle, Wash., (Unk.) | Dredge | 119.0 | 31.2 | 8.7 | 484 | " | West Coast Bridge and Dredging Co., Vancouver, B.C. |
| P. W. D. No. 109 | 131123 | Duluth, Minn., 1905 | " | 133.6 | 43.4 | 8.7 | 766 | Ottawa | Minister of Public Works, Ottawa. |
| R. M. & S. No. 1 | 130319 | Toronto, Ont., 1902 | Scow | 100.0 | 28.0 | 7.5 | 174 | Toronto | Roger Miller & Sons, Toronto. |
| R. M. & S. No. 4 | 130320 | " 1912 | " | 100.0 | 30.0 | 7.5 | 187 | " | " " " |
| R. M. & S. No. 5 | 131081 | " | " | 100.0 | 30.0 | 7.5 | 187 | " | " " " |
| R. M. & S. No. 6 | 131082 | " | " | 70.0 | 24.0 | 5.5 | 80 | " | " " " |
| R. M. & S. No. 7 | 131083 | " | " | 62.0 | 23.0 | 5.6 | 78 | " | " " " |
| R. M. & S. Dredge No. 2 | 130317 | Milwaukee, Wisc., 1895 | Dredge | 74.2 | 28.9 | 5.9 | 122 | " | " " " |
| R. M. & S. Scow No. 3 | 130316 | Morrisburg, Ont., 1912 | Scow | 70.0 | 20.2 | 4.3 | 44 | " | " " " |
| Romance | 130510 | Bath, Maine, 1872 | Schr. | 58.8 | 17.4 | 6.0 | 32 | Shelburne, N.S. | Lockport Cold Storage Co., Lockport, N.S. |
| Scow No. (8) Eight | 130384 | Sault Ste. Marie, Ont., 1892 | Scow | 111.6 | 26.6 | 7.0 | 208 | Amherstburg, Ont. | J. G. Mullen, Amherstburg, Ont. |
| Scow No. Seventeen | 130385 | Manitowoc, Wis., 1906 | " | 100.3 | 26.0 | 8.9 | 232 | " | " " " |
| Secret | 100471 | Lunenburg, N.S., 1892 | Schr. | 78.5 | 24.1 | 9.0 | 76 | Magdalen Islands, Que. | W. H. Starratt, Amherst Harbor, Que. |
| Unity | 103803 | Tatamagouche, N.S., 1904 | " | 117.8 | 31.7 | 11.7 | 248 | Pictou, N.S. | A. Weatherbie, M.O., Tatamagouche, N.S. |