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# REPORT ON OIL ENGINE MACHINERY.

No. 70230

JAN 1945

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Date of writing Report **7th July 45** When handed in at Local Office **15.12.45** Port of **GLASGOW.**  
Date, First Survey **22-5-45** Last Survey **27th Nov., 1945.**

No. in Survey held at **GLASGOW.** Number of Visits **24**

Reg. Book. **Single** on the **Triple** Screw vessel **"EMPIRE GROSVENOR"** Tons <sup>Gross</sup> **890** <sub>Net</sub> **370**

Built at **GLASGOW.** By whom built **A. & J. INGLIS LTD.** Yard No. **1302** When built **1945.**

Engines made at **GLASGOW.** By whom made **BRITISH POLAR ENGINES, LTD.** Engine No. **574** When made **1945.**

Donkey Boilers made at **CARFIN** By whom made **ALEX. ANDERSON & SONS LTD.** Boiler No. **3873/4** When made **1945.**

Brake Horse Power **640** Owners **MINISTRY OF WAR TRANSPORT.** Port belonging to **GLASGOW.**

Nom. Horse Power as per Rule **125** Is Refrigerating Machinery fitted for cargo purposes **NO** Is Electric Light fitted **YES**

Trade for which vessel is intended **INTERNATIONAL.**

**CL ENGINES, &c.**—Type of Engines **Heavy Oil M.44M** 2 or 4 stroke cycle **2** Single or double acting **Single**

Maximum pressure in cylinders **782 lbs/sq.in.** Diameter of cylinders **340 m/m** Length of stroke **570 m/m** No. of cylinders **4** No. of cranks **4**

Mean Indicated Pressure **96 lbs/sq.in.** Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **484 m/m** Is there a bearing between each crank **Yes**

Revolutions per minute **250** Flywheel dia. **1550 m/m** Weight **4400 lbs.** Means of ignition **Compression** Kind of fuel used **Diesel**

Crank Shaft, <sup>Solid forged</sup> dia. of journals **211 m/m** Crank pin dia. **220 m/m** Webs Mid. length breadth **308 m/m** Thickness parallel to axis **-**

Flywheel Shaft, diameter as per Rule **-** Intermediate Shafts, diameter as per Rule **137.7m/m** Thrust Shaft, diameter at collars as per Rule **144 m/m**

Tube Shaft, diameter as per Rule **-** Screw Shaft, diameter as per Rule **8 3/4"** Is the tube shaft fitted with a continuous liner **No.**

Bronze Liners, thickness in way of bushes as per Rule **-** Thickness between bushes as per Rule **-** Is the after end of the liner made watertight in the

propeller boss **-** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **-**

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **-**

If two liners are fitted, is the shaft lapped or protected between the liners **-** Is an approved Oil Gland or other appliance fitted at the after end of the tube **-**

Shaft **Yes** If so, state type **Newark.** Length of Bearing in Stern Bush next to and supporting propeller **2'9"**

Propeller, dia. **7'6"** Pitch **4'4 3/4"** No. of blades **4** Material **Br.** whether Moveable **No** Total Developed Surface **20.2** sq. feet

Method of reversing Engines **Direct** Is a governor or other arrangement fitted to prevent racing of the engine **when-technique** **Yes** Means of lubrication **forced**

Thickness of cylinder liners **25.5 m/m** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes end-silencers water-cooled or lagged with non-conducting material **Yes**

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **-**

Cooling Water Pumps, No. **One-90 m/m x 140 m/m** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes.**

Bilge Pumps worked from the Main Engines, No. **One** Diameter **90 m/m** Stroke **140 m/m** Can one be overhauled while the other is at work **-**

Pumps connected to the Main Bilge Line <sup>No. and Size</sup> **1 M.E. 90 m/m & 140 m/m. 1 G.S. 20 tons/hr. 1-Ballast 40tons/hr.** <sub>How driven</sub> **M.E. St. Ford. Aux. Vert. Cent. Elect.**

Is the cooling water led to the bilges **No** If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements **See pp. 10 21/1/45**

Ballast Pumps, No. and size **1-40T/hr. 1-20T/hr** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **1 off 3100 gallons per hour.**

Are two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces **3-2 1/2"** In Pump Room **1-3"**

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1-3" 1-2 1/2"**

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **Yes** Are the Bilge Suctions in the Machinery Spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **Yes**

Are all Sea Connections fitted direct on the skin of the ship **Yes** Are they fitted with Valves or Cocks **Valves.**

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates **Yes** Are the Overboard Discharges above or below the deep water line **Below.**

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel **Yes** Are the Blow Off Cocks fitted with a spigot and brass covering plate **Yes.**

What pipes pass through the bunkers **None** How are they protected **-**

What pipes pass through the deep tanks **-** Have they been tested as per Rule **Yes.**

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes.**

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another **Yes** Is the Shaft Tunnel watertight **-** Is it fitted with a watertight door **-** worked from **-**

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **70 m/m**

Main Air Compressors, No. **One** No. of stages **2** Diameters **175 m/m & 350 m/m** Stroke **350 m/m** Driven by **Main Engines**

Auxiliary Air Compressors, No. **-** No. of stages **-** Diameters **-** Stroke **-** Driven by **-**

Small Auxiliary Air Compressors, No. **One** No. of stages **26cu.ft./min @ 350lbs/sq.in.** Diameters **-** Stroke **V** Driven by **P. Aux. Engine.**

What provision is made for first Charging the Air Receivers **Small aux. compressor above.**

Scavenging Air Pumps, No. **One** Diameter **770 m/m** Stroke **350 m/m** Driven by **Main Engine.**

Auxiliary Engines crank shafts, diameter as per Rule **2 1/2 & 3 1/2"** No. **1-18 Kw.** Position **Port** **1-25Kw. St. Aft.** **1-6 1/2 Kw. St. Ford.**

Have the Auxiliary Engines been constructed under special survey **Yes.** Is a report sent herewith **Yes**



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