

REPORT ON OIL ENGINE MACHINERY.

No. 32378

MAY 14 1938

Received at London Office

Sunderland.

Date of writing Report 19 Sunderland When handed in at Local Office 11 May 1938 Port of Sunderland Date, First Survey 4 Nov. 37 Last Survey 9 May 1938 Number of Visits 59

No. in Survey held at Reg. Book. Single on the Twin Triple Quadruple Screw vessel "LADY GLANELY" Tons Gross 5494 Net 3232

Built at Sunderland By whom built Wm. Beard & Sons Ltd Yard No. 640 When built 1938

Engines made at Sunderland By whom made Wm. Beard & Sons Ltd Engine No. 640 When made 1938

Donkey Boilers made at Stockton By whom made Stockton Chem. Eng. & Ship. Rep. Co. Ltd Boiler No. 13832 When made 1938

Brake Horse Power 2500 Owners The Rt. Hon. Lord Stanbury Port belonging to Sunderland

Nom. Horse Power as per Rule 516 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended 93% 91%

OIL ENGINES, &c. Type of Engines Opposed piston, airless injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 540 lbs/sq. in. Diameter of cylinders 600 mm. Length of stroke Upper 980 mm. Lower 1340 mm. No. of cylinders 3 No. of cranks 3 (3 throw)

Mean Indicated Pressure 88 lbs/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge FOR 2300 mm. Weight 5 1/2 tons. Means of ignition Compression Kind of fuel used Is there a bearing between each crank 3 throw.

Revolutions per minute 108 Flywheel dia. 418 mm. Crank pin dia. 450 mm. Crank Webs 308 mm. Thrust Shaft, diameter at collars as per Rule 418 mm. as fitted 450 mm.

Tube Shaft, diameter as per Rule 18 mm. as fitted 2 1/2 mm. Intermediate Shafts, diameter as fitted 365 mm. Screw Shaft, diameter as fitted 341 mm. as per Rule 392 mm. Is the shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 18 mm. as fitted 2 1/2 mm. Thickness between bushes as per Rule 13 1/2 mm. as fitted 16 3/4 mm. Is the after end of the liner made watertight in the propeller boss Yes. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner one length.

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 Yes. Is an approved Oil Gland or other appliance fitted at the after end of the tube 5" x 5"

If two liners are fitted, is the shaft lapped or protected between the liners No. Length of Bearing in Stern Bush next to and supporting propeller 90 sq. feet

Propeller, dia. 15-9" Pitch 11-9" No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 90 sq. feet

Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes. Means of lubrication Hand forced

Thickness of cylinder liners 25 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and 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 Yes.

Cooling Water Pumps, No. one engine driven 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. none Diameter two 5 1/2" x 6" x 15" Simplex Stroke Stroke Can one be overhauled while the other is at work Yes.

Pumps connected to the Main Bilge Line How driven Steam. 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 one engine driven 8 1/2" x 6 1/2" x 15"

Ballast Pumps, No. and size 1 @ 10 1/2" x 12" x 24" Simplex Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one Simplex 5 1/2" x 6" x 15"

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 4 @ 3" in E.R. 1 @ 3" in tunnel well. In Pump Room 1 @ 3 1/2" deep tank. 3 1/2" pps. N°1. 3" pps. N°2. 3 1/2" pps. N°3. 3" pps. N°4. 1 @ 8" (Ballast pump) 1 @ 5" (Gen. Serv. pump)

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Yes. Are the Bilge Suctions in the Machinery Spaces Yes.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes. Are they fitted with Valves or Cocks Both.

Are all Sea Connections fitted direct on the skin of the ship Yes. Are the Overboard Discharges above or below the deep water line Above.

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plate Yes. Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes.

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes. How are they protected Yes.

What pipes pass through the bunkers For bilge suction Have they been tested as per Rule Yes.

What pipes pass through the deep tanks 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 Yes. Is it fitted with a watertight door Yes. worked from E.R. top plating.

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes. Main Air Compressors, No. Two No. of stages 3 Diameters 11 1/2" - 9 1/4" - 2 3/4" Stroke 6 1/2" Driven by Steam 11 1/2" dia x 6 1/2"

Auxiliary Air Compressors, No. None No. of stages None Driven by Levers from main engine

Small Auxiliary Air Compressors, No. One Diameter 1 1/2" Stroke 610 mm. Driven by Levers from main engine

Scavenging Air Pumps, No. None Position None

Auxiliary Engines crank shafts, diameter as per Rule



AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes. On discharge from Compressor* Rpt. 5a.

Can the internal surfaces of the receivers be examined and cleared *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*

High Pressure Air Receivers, No. *✓* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *by Rules* *✓* Actual *✓*

Starting Air Receivers, No. *Two* Total cubic capacity *220 cuft.* Internal diameter *3'-6"* thickness *1" 603.*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *M. Steel* Range of tensile strength *28/32* Working pressure *by Rules* *600 lbs/* Actual *600 lbs/*

IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes.*

Is the donkey boiler intended to be used for domestic purposes only *no.*

PLANS. Are approved plans forwarded herewith for Shafting *Yes.* Receivers *Yes.* Separate Fuel Tanks *Yes.*

Donkey Boilers *Yes.* General Pumping Arrangements *Yes.* Pumping Arrangements in Machinery Space *Yes.*

Oil Fuel Burning Arrangements *Yes.*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes (Do latest requirements).*

State the principal additional spare gear supplied *One C. I. Propeller, one Screw Shaft, one Cylinder Liner & Jacket Complete, 1 main piston head, 5 main piston rings, 4 Dual valves Complete, 8 Spray Plugs, 2 (each) top & bottom end bolts for Central & side Cam. rods, 1 Central & side Cam. rod & pinion bearings, 2 Central & side Cam. rod top end bearings, 1 Starting air valve Complete, 1 cyl. relief valve Complete, 4 Scavenge pump valve discs, 4 Dual pump bodies Complete, 1 set each size of valves for Eng. & main & side pumps, 1 set of pads & michell block, 1 roller chain for Camshaft drive.*

The foregoing is a correct description, *WILLIAM DOXFORD & SONS, Limited.*

W. H. H. H. Manufacturer. Director.

Dates of Survey while building { During progress of work in shops - - 1937. Nov. 4, 9, 12, 15, 16, 18, 19, 22, 23, 24, 29, 30. Dec. 1, 7, 15, 21, 23, 29, 31. 1938. Jan. 4, 7, 10, 11, 13, 14, 17, 18, 19, 24. During erection on board vessel - - 24, 25, 26, 27, 28, 31. Feb. 1, 2, 3, 4, 7, 8, 9, 22, 23, 24, 28. March 1, 2, 7, 8, 10, 11, 16, 17, 21. May 4, 5, 9. Total No. of visits *59*

Dates of Examination of principal parts—Cylinders *4/11/37, 9/11/37* Covers *12/11/37* Pistons *23/12/37* Rods *23/12/37* Connecting rods *11/1/38.*

Crank shaft *8/12/37 (G.L.S.)* Flywheel shaft *as crank.* Thrust shaft *as crank.* Intermediate shafts *3/1/38.* Tube shaft *✓*

Screw shaft *1/2/38, 9/2/38* Propeller *1/2/38* Stern tube *3/2/38.* Engine seatings *(Bank top)* Engines holding down bolts *8/3/38.*

Completion of fitting sea connections *28/1/38.* Completion of pumping arrangements *11/3/38.* Engines tried under working conditions *9/5/38.*

Crank shaft, Material *Ingot Steel* Identification Mark *640 50, 4411 8/12/37 G.O.C.* Flywheel shaft, Material *as crank* Identification Mark *as crank.*

Thrust shaft, Material *as crank* Identification Mark *as crank.* Intermediate shafts, Material *Ingot Steel* Identification Marks *Nos 3904, 3905, 3906*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Ingot Steel* Identification Mark *3907, 3908, 3909 3910, 3914 WHF 3/1/38.*

Is the flash point of the oil to be used over 150° F. *Yes.*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes.* *No 3900 WHF 9/2/38.*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *no.* If so, have the requirements of the Rules been complied with *✓*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *not desired.*

Is this machinery duplicate of a previous case *no* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been*

built under Special Survey in accordance with the approved Plans & the

Rules of the Society & the Secretary's letter E 25/4/34. The materials & workmanship

are good. The machinery has been securely fitted on board the vessel

tried under full working conditions at sea, including rule requirements for

starting, with satisfactory results. The two donkey boilers have also been

securely fixed on board, fitted to burn oil fuel (F.P. above 150° F) Section

20 of the Rules has been complied with, Safety valves of boilers adjusted

under steam to rule requirements.

The machinery is eligible in my opinion to have notation

150 L.M.C. 5.38 Oil Eng. T.S. (C.L) 2 DB 120 lbs/

sq. ft.

2 DB 120 lb

The amount of Entry Fee .. £ 6 : - : When applied for, *13 MAY 1938*
Special ... £ 100 : 16 :
Donkey Boiler Fee ... £ 12 : 12 : When received,
Travelling Expenses (if any) £ : : *21.5 19.38 40.88*

Committee's Minute

Assigned + Linc 5.38 Oil Eng C.L

2 DB 120 lb

J. Fraser. Engineer Surveyor to Lloyd's Register of Shipping.



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Certificate (if required) to be sent to SUNDERLAND. (The Surveyors are requested not to write on or below the space for Committee's Minute.)