

# REPORT ON OIL ENGINE MACHINERY.

No. 13338

21 JUN 1928

Received at London Office

Writing Report 15.6.28 When handed in at Local Office 15.6.28 Port of MIDDLESBROUGH.  
Survey held at MIDDLESBROUGH. Date, First Survey 25.5.27 Last Survey 15.6.1928.  
Number of Visits 82.

Sup on the Single Twin Triple Quadruple Screw vessel "GULFBIRD"  
at Haverton Hill on Tees. By whom built Furness S.B. Co. Ltd. Yard No. 122. When built 1928.  
Engines made at Sunderland By whom made W. Doxford & Sons Ltd. Engine No. 165 When made 1928.  
Boilers made at Middlesbrough By whom made Richardson, Welford & Co. Boiler No. 2574 When made 1928.  
Horse Power 3600 Owners Gulf Refining Co. Port belonging to Middlesbrough  
Horse Power as per Rule 485. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.  
for which vessel is intended

ENGINES, &c. Type of Engines DOXFORD OPPOSED PISTON. 2 or 4 stroke cycle 2. Single or double acting Single  
Mean pressure in cylinders 40 atm. Diameter of cylinders 640 mm. Length of stroke 2480 mm. No. of cylinders 4 No. of cranks 4-3 throw  
bearings, adjacent to the Crank, measured from inner edge to inner edge 1110 mm. Is there a bearing between each crank Yes.  
Revolutions per minute 86 Flywheel dia. 2750 mm. Weight 14.7 tons Means of ignition Compression Kind of fuel used Crude oil  
Shaft, dia. of journals as per Rule approved Crank pin dia. 500 mm. Crank Webs Mid. length breadth 700 mm. Thickness parallel to axis 300 mm.  
as fitted 460 mm. Mid. length thickness 300 mm. shrunk Thickness around eyehole 225 mm.  
Intermediate Shafts, diameter as per Rule 16.3" 17" Thrust Shaft, diameter at collars as per Rule 408 mm.  
as fitted 460 mm. as fitted 24 1/2" as fitted 460 mm.  
Screw Shaft, diameter as per Rule 16.8" Is the shaft fitted with a continuous liner Yes.  
as fitted 19 3/4" as fitted 13" Is the screw shaft fitted with a continuous liner Yes.  
Liners, thickness in way of bushes as per Rule 16 Thickness between bushes as per rule 8 Is the after end of the liner made watertight in the  
boss Yes. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes.

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.  
Liners are fitted, is the shaft lapped or protected between the liners Yes. Is an approved Oil Gland or other appliance fitted at the after  
end of the tube shaft No. Length of Bearing in Stern Bush next to and supporting propeller 7'0" Yes.  
Pitch 15'0" No. of blades 4. Material Bronze whether Moveable Yes. Total Developed Surface 107 sq. feet  
of reversing Engines Direct by Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication  
Thickens of cylinder liners 1" reinforced Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with  
insulating 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  
FRESH WATER COOLING.

Water Pumps, No. 2-6 DRYSDALE CENTREX. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.  
Pumps worked from the Main Engines, No. none Diameter Stroke Can one be overhauled while the other is at work Yes.  
connected to the Main Bilge Line No. and Size 1-3" DRYSDALE CENTREX; 1-6" x 6" LAMONT DUPLEX; 1-10" x 12" x 12" LAMONT DUPLEX, BALLAST  
How driven MOTOR. STEAM STEAM.  
Pumps, No. and size 1-10" x 12" x 12" LAMONT DUPLEX. Lubricating Oil Pumps, including Spare Pump, No. and size 2-6" x 6" WEIR MOTOR DRIVEN.  
Independent means arranged for circulating water through the Oil Cooler Yes. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
No. and size:—In Machinery Spaces 5-3 1/2" and 1-2" in Cofferdam.  
1-2 1/2" in cofferdam forward of E.R. to Transfer Pump; 1-3" in Fore hold, 1-2 1/2" in Pump Room, 1-2 1/2" in chain locker to Fore Pump.

Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-3 1/2" and 1-8" Yes.  
Bilge Suction pipes in Hold and Fore hold fitted with strainers Yes. Are the Bilge Suctions in the Machinery Spaces  
easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes.  
Connections fitted direct on the skin of the ship Yes. Are they fitted with Valves or Cocks Cost.  
Are 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 above.  
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.  
pass through the bunkers None. How are they protected Yes.  
pass through the deep tanks Yes. Have they been tested as per Rule Yes.

Engines, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes.  
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  
to another Yes. Is the Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes. worked from Yes.  
essel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes.  
Compressors, No. 1 No. of stages 3 Diameters 3 3/8" 7 1/4" 13" Stroke 7" Driven by 75 B.H.P. Motor  
Air Compressors, No. 1 No. of stages 3 Diameters 3 3/8" 7 1/4" 13" Stroke 7 1/2" Driven by STEAM ENGINE  
Auxiliary Air Compressors, No. 1 No. of stages 1 Diameters 1 1/2" Stroke 4" Driven by Main engine  
g Air Pumps, No. 1 Diameter 66" Stroke 44" Driven by Main engine

Engines crank shafts, diameter as per Rule as fitted See BREMEN Certificate No. 393.  
RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.  
Internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces Manhole  
Drain arrangement fitted at the lowest part of each receiver Yes.  
Pressure Air Receivers, No. 1 Cubic capacity of each 300 cuft. Internal diameter 4'1 1/2" thickness 1 1/2"  
welded or riveted longitudinal joint welded Material Steel Range of tensile strength 28/32 Working pressure by Rules 631 lbs. sq. in.  
Air Receivers, No. 2 Total cubic capacity 300 cuft. Internal diameter 4'1 1/2" thickness 1 1/2"  
welded or riveted longitudinal joint welded Material Steel Range of tensile strength 28/32 Working pressure by Rules 631 lbs. sq. in.



IS A DONKEY BOILER FITTED? *Yes - two* If so, is a report now forwarded? *Yes*  
PLANS. Are approved plans forwarded herewith for Shafting *17. 11. 27.* Receivers *8. 10. 27.* Separate Tanks *✓*  
Donkey Boilers *19. 2. 27.* General Pumping Arrangements *23. 4. 28.* Oil Fuel Burning Arrangements *23. 4. 28.*  
SPARE GEAR As per Sunderland Report No 29649 + 1 propeller shaft, 2 bronze

propeller blades and studs for one flange, 1 upper piston complete with skirt and rod, 1 fuel pump body complete, 1 pair bevel wheels for camshaft drive, 4 H.P. fuel pump rams complete with guides, bushings, and nuts, 2 sets fuel pump suction and discharge valves, 2 H.P. fuel oil bottles, 4 lengths fuel pipe with connections, spare lengths of fuel pipe, quantity of cone unions and dummy tails for fuel pipe, springs of various types, gaskets, cup leather washers and copper and whitmetal washers.

The foregoing is a correct description,  
For RICHARDSONS WESTGARTH & CO LIMITED

Manufacturer.

DIRECTOR & SECRETARY.

Dates of Survey while building { During progress of work in shops - *See Sunderland Report No 29649.*  
During erection on board vessel - *1927*  
Total No. of visits *32*

Dates of Examination of principal parts - Cylinders *See Sunderland Report* Connecting rods *25. 4. 28*  
Crank shaft *See Sunderland Report* Intermediate shaft *25. 4. 28* Tube shaft *✓*  
Screw shaft *20. 2. 28* Propeller *14. 3. 28* Stern tube *8. 3. 28* Engine seatings *1. 3. 28* Engines holding down bolts *28. 4*  
Completion of fitting sea connections *1. 3. 28* Completion of pumping arrangements *1. 6. 28* Engines tried under working conditions *11. 6*  
Crank shaft, Material *Steel* Identification Mark *6451* Flywheel shaft, Material *Steel* Identification Mark *6521*  
Thrust shaft, Material *Steel* Identification Mark *6521* Intermediate shaft, Material *Steel* Identification Marks *25. 4. 28*  
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *20. 2. 28*

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

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 main engines have been built by Messrs Doxford & Sons to the order of Messrs Richardson, Westgarth & Co (Sol No 2575) and have been installed by latter firm.*

*The materials and workmanship are good.*  
*This machinery has been fitted aboard under special survey and tested with satisfactory results and is, in my opinion, suitable for classification with record + L.M.C. 6.28. See also Sla. Rpt No 29649.*

*It is submitted that this vessel is eligible for THE RECORD.* + L.M.C. 6.28 *CL.*

OIL ENGINES *250 H.P.*  
*4 cy. 25 3/16 - 97 5/8* N.H.P.  
*200 150 H.P.*

The amount of Entry Fee ... £ : : When applied for, *20. 6. 1928*  
*1/2* Special ... £ *22-17-0*  
Donkey Boiler Fee ... £ *4:4:0* When received, *23. 6. 28*  
Travelling Expenses (if any) £ : :  
Committee's Minute *TUES. 26 JUN 1928*

Assigned

+ L.M.C. 6.28 *CL.*  
*Oil Engines - 200 150 H.P.*

Engine Surveyor to Lloyd's Register of Shipping

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