

REPORT ON OIL ENGINE MACHINERY.

No. 16615.

Received at London Office 24 APR 1928

Date of writing Report 19. When handed in at Local Office 23.4.18 Port of **WEST HARTLEPOOL**
 No. in Survey held at **Hartlepool** Date, First Survey **26 May/18** Last Survey **4 April 1928**
 Reg. Book. **40020** on the **Single** Screw vessels **"BRITISH RENOWN"** Number of Visits **212**
 Built at **Sunderland** By whom built **Sir Jas Laing & Sons** Yard No. **700** When built **1928**
 Engines made at **Hartlepool** By whom made **Richardsons Westgarth & Co** Engine No. **2659** When made **1928**
 Donkey Boilers made at **Ditto** By whom made **ditto** Boiler No. **2659** When made **1928**
 Brake Horse Power **654** Owners **Is Refrigerating Machinery fitted for cargo purposes** **no** Is Electric Light fitted **yes**

L ENGINES, &c.—Type of Engines **Doxford opposed piston 2 or 4 stroke cycle 2** Single or double acting **single**
 Maximum pressure in cylinders **570 lb** No. of cylinders **4** Diameter of cylinders **580 mm 22 13/16"** No. of cranks **4, 3 throw** Length of stroke **1160 mm 45 5/8"**
 Mean of bearings, adjacent to the Crank, measured from inner edge to inner edge **1050 mm** Is there a bearing between each crank **yes**
 revolutions per minute **80** Flywheel dia. **8'-0"** Weight **13 tons** Means of ignition **Compression** Kind of fuel used **Diesel oil**
 Crank Shaft, dia. of journals as per Rule **422 mm** as fitted **430 mm** Crank pin dia. **460 mm** Crank Webs Mid. length breadth **650 mm** Thickness parallel to axis **260 mm**
 Flywheel Shafts, diameter as per Rule **422 mm** as fitted **430 mm** Intermediate Shafts, diameter as per Rule **14 1/2"** as fitted **15"** Thrust Shaft, diameter at collars as per Rule **400 mm** as fitted **430 mm**
 Tube Shafts, diameter as per Rule **15.66"** as fitted **16 1/4"** Is the tube screw shaft fitted with a continuous liner **yes**
 Bronze Liners, thickness in way of bushes as per Rule **.78"** as fitted **.78"** Thickness between bushes as per rule **.585"** as fitted **.13"** 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 **yes**
 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**
 If two 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**
 Propeller, dia. **17'-0"** Pitch **15'-9"** No. of blades **4** Material **Bronze** whether Movable **no** Total Developed Surface **94** sq. feet
 Method of reversing Engines **Is a governor or other arrangement fitted to prevent racing of the engine when declutched** **yes** Means of lubrication **forced**
 Thickness of cylinder liners **25 mm 1"** Are the cylinders fitted with safety valves **yes** Are the exhaust pipes and silencers water cooled or lagged with conducting material **lagged**
 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. **2** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **yes**
 Bilge Pumps fitted to the Main Engines, No. **1** Diameter **7 1/8 x 8 duplex** Stroke **160 tons** Can one be overhauled while the other is at work **yes**
 Pumps connected to the Main Bilge Line { No. and Size **1. 7 1/8 x 8 duplex** **1 60 tons** **1 10 1/2 x 12 duplex**
 How driven **Steam** **Electric** **Steam**
 Ballast Pumps, No. and size **1. 10 1/2 x 12 duplex** Lubricating Oil Pumps, including Spare Pump, No. and size **1 6 x 6 elec. 1 7 1/8 x 18 Stm**
 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 Engine and Boiler Room **1 of 3 1/2** **2 of 3" to transfer pump from oil bilges**
 Holds, &c. **1 of 8" Ballast P. 1 of 5" Stm bilge P. 1 of 3 1/2" elec. b. p.**
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **yes** Are the Bilge Suctions in the Machinery Space 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 **yes**
 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 **above**
 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**
 Do pipes pass through the bunkers **none** How are they protected **yes**
 Do pipes pass through the deep tanks **none** 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 **none** Is it fitted with a watertight door **yes** worked from **yes**
 In 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. **1** No. of stages **3** Diameters **11 1/2"** Stroke **7** Driven by **Steam**
 Auxiliary Air Compressors, No. **1** No. of stages **2** Diameters **3 1/2 x 8 1/2"** Stroke **6** Driven by **Electric**
 All Auxiliary Air Compressors, No. **1** No. of stages **1** Diameters **1580 mm** Stroke **1040 mm 41"** Driven by **main engine**
 Evacuating Air Pumps, No. **1** Diameter **1580 mm** Stroke **1040 mm 41"** Driven by **main engine**
 Auxiliary Engines crank shafts, diameter as per Rule **yes** as fitted **yes**

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **Relief valves on compressors**
 Are the internal surfaces of the receivers be examined **yes** What means are provided for cleaning their inner surfaces **access thro. manhole**
 Is there a drain arrangement fitted at the lowest part of each receiver **yes**
 High Pressure Air Receivers, No. **1** Cubic capacity of each **220 cuft.** Internal diameter **3'-6"** thickness **1 1/2"**
 Is the joint, lap welded or riveted longitudinal joint **yes** Material **Steel** Range of tensile strength **28/32** Working pressure by Rules **600 lb**
 Working Air Receivers, No. **2** Total cubic capacity **220 cuft.** Internal diameter **3'-6"** thickness **1 1/2"** Working pressure by Rules **600 lb**
 Is the joint, lap welded or riveted longitudinal joint **yes** Material **Steel** Range of tensile strength **28/32** Working pressure by Rules **600 lb**

IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes*

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	Plain cylindrical form, soundness ascertained by inspection				
COVERS	none				
JACKETS	5.13/9.27. 24.29/10.27	5 lbs	30 lbs.	R.D.S. or A.D. pressure & date.	
PISTON WATER PASSAGES	7.18/11.27	30 lbs.	100 lbs.	R.D.S. or A.D. do.	
MAIN COMPRESSORS—1st STAGE					
2nd					
3rd					
AIR RECEIVERS—STARTING	7/9/27	600 lbs	800 lbs	No. R.D.S.	do
INJECTION					
AIR PIPES	11.10.27 — 2.3.28	600 lbs	900 lbs	R.D.S. or A.D.	do
FUEL PIPES	20.3.28	8000 lbs	12000 lbs	A.D.	Tested in place.
FUEL PUMPS	20.3.28	8000 lbs	12000 lbs	A.D.	do
SILENCER	Lagged with asbestos. open to atmosphere. no test				
WATER JACKET	none				
SEPARATE FUEL TANKS			10 lbs.		At Sunderland.

PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *yes* Separate Tanks *No. Made at Sunderland*

SPARE GEAR 1 Cylinder liner. 1 piston complete with skirt & rings. 6 piston rings. 2 top end and 2 bottom end bolts & nuts for centre connec. rods. 2 ditto & 2 ditto for side connec. rods. 2 bolts & nuts for side rods. 1 set coupling bolts & nuts for crank shaft 1 ditto for inter. shaft. 2 spur wheels & 1 bevel wheel for cam shaft drive. 4 fuel valves & springs. 1 air starting valve. 1 relief valve complete. 2 scavenge pump valves complete. 1 fuel pump body. 1 shaft for crank shaft. 1 propeller shaft. 1 cast iron solid propeller. Assorted bolts, nuts & a set of springs for all parts.

The foregoing is a correct description.

RICHARDSONS, WESTGARTH & CO. LIMITED

For Compressors. 1 set bearing brasses. 1 set valve. 1 set air piston springs. For oil burning units. various spare parts. For bilge & transverse pumps. 1 set of valves for each. Manufacturer. Pipes, couplings &c for H.P. fuel system.

Dates of Survey while building	During progress of work in shops — 26.29.30.31. Apr. 1. 4. 6. 7. 8. 11. 12. 14. 19. 20. 22. 25. 27. 29. May. 2. 4. 5. 6. 9. 12. 13. 16. 19. 20. 21. 24. 27. 30. 31. June 1. 2. 3. 7. 8. 9. 10. 13. 14. 15. 17. 20. 22. 23. 24. 27. 29. 30. July 1. 4. 5. 6. 7. 8. 11. 12. 14. 19. 20. 21. 22. 25. 27. 29. Aug. 8. 9. 15. 17. 19. 24. 26. 27. 29. 30. 31. Sep. 1. 2. 5. 8. 9. 12. 13. 14. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. Oct. 1. 5. 6. 7. 11. 14. 15. 16. 17. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. Nov. 1. 3. 5. 7. 8. 9. 11. 12. 15. 16. 18. 21. 22. 23. 24. 25. 26. 28. 29. Dec. 2. 5. 14. 20. 28. Jan. 5. 6. 9. 11. 12. 15. 23. 24. 27. 30. 31. Feb. 4. 13. 23. 29. 10. 15. 16. 17. 22. 23. 24. 25. 26. 27. 28. 29. 30. Mar. 2. 6. 7. 9. 15. 16. 20. 21. Apr. 4.
Dates of Examination of principal parts—Cylinders	10.3.29
Covers	—
Pistons	4.4.28
Rods	15.3.28
Connecting rods	10.3.28

Crank shaft	15.6.27.	Flywheel shaft	7.4.27-2.2.28	Thrust shaft	7.4.27-2.2.28	Intermediate shafts	28.8.27-6.1.28	Tube shaft	—
Screw shaft	10.3.27-5.1.28	Propeller	9.11.27-2.12.28	Stern tube	4.7.27-8.7.27	Engine seatings	5.1.28	Engines holding down bolts	15.24.2.28
Completion of fitting sea connections	Sunderland	Completion of pumping arrangements	9.3.28.	Engines tried under working conditions	4.28.				
Crank shaft, Material	S.M. Ing. Stl.	Identification Mark	5239D	Flywheel shaft, Material	S.M. Ing. Stl.	Identification Mark	5239D		
Thrust shaft, Material	S.M. Ing. Stl.	Identification Mark	5239D	Intermediate shafts, Material	S.M. Ing. Stl.	Identification Marks	5239D.		
Tube shaft, Material	✓	Identification Mark	✓	Screw shaft, Material	S.M. Ing. Stl.	Identification Mark	5239D.		

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

Is this machinery duplicate of a previous case? *✓* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *This vessel's machinery has been built and installed under Special Survey. The materials and workmanship are good and efficient. It was tried under full working conditions at sea and is now eligible in our opinion to have the notation L.M.C. 4.28.*

The amount of Entry Fee	£ 6 : 0	When applied for,	23.4.19
Special	£ 107 : 14	When received,	27.4.28
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute TUES. 1 MAY 1928
Assigned *L.M.C. 4.28*
At Engines 50 lbs.

R.D. Shilston & A. Daintith.
Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation