

# REPORT ON OIL ENGINE MACHINERY.

No. 32275

Received at London Office

Sunderland

Date of writing Report

When handed in at Local Office 6 Jan 1938 Port of Sunderland

Date, First Survey 14 June 37 Last Survey 5 Jan 1938

No. in Survey held at Reg. Book

"POZARICA"

Tons Gross 1893 Net 838

on the Single Screw vessel

Built at Sunderland By whom built Wm. Dwyford & Sons Ld. Yard No. 634 When built 1934

Engines made at Sunderland By whom made Wm. Dwyford & Sons Ld. Engine No. 634 When made 1934

Donkey Boilers made at Stockton By whom made Stockton Chem. Eng. & Riley Bros. Boiler No. 6240 When made 1934

Brake Horse Power 3400 Owners MacAndrews & Co. Ld. Port belonging to London

Nom. Horse Power as per Rule 434 75 Is Refrigerating Machinery fitted for cargo purposes Yes. Is Electric Light fitted Yes.

Trade for which vessel is intended

OIL ENGINES, &c. Type of Engines Approved 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 560 in. Length of stroke Upper 700 in. Lower 980 in. No. of cylinders 5 No. of cranks 5 (3 throws)

Mean Indicated Pressure 88 lbs/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 130 in. Is there a bearing between each crank 3 throws

Revolutions per minute 138 Flywheel dia. 1805 in. Weight 2 1/2 tons. Means of ignition Compression Kind of fuel used

Crank Shaft, dia. of journals as per Rule 394 in. Crank pin dia. 420 in. Crank Webs Mid. length breadth 610 in. Thickness parallel to axis 240 in.

Flywheel Shaft, diameter as fitted 400 in. Intermediate Shafts, diameter as fitted 318 in. Thrust Shaft, diameter at collars as fitted 420 in.

Tube Shaft, diameter as per Rule 334 in. Screw Shaft, diameter as fitted 350 in. Is the shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 18 in. Thickness between bushes as fitted 16 in. Is the after end of the liner made watertight in the propeller boss Yes.

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

Propeller, dia. 13'-6" Pitch 10-3 to 12-1/2 No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 45 sq. feet

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

Thickness of cylinder liners 23 in. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material 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 Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 2 @ 10" x 9" x 24" Simplex 2 @ 6" x 5 1/2" x 15" Simplex. 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

Ballast Pumps, No. and size 2 @ 10" x 9" x 24" Power Driven Lubricating Oil Pumps, including Spare Pump No. and size one engine driven 120 in. x 340 in. Bilge one Simplex 8" x 4" x 18"

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 4 @ 3" in E.R. 1 @ 2 1/2" in Summit well. In Pump Room

In Holds, &c. No. 1. 2 1/2" φ RS. No. 2. 2 1/2" φ RS. No. 3. 3" φ RS. 1 @ 3" aft.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 4" (Ballast pumps) 1 @ 5"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes.

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 Batt.

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 (no dup tank) How are they protected

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 Grating.

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork 1 1/2" - 9 1/4" - 2 3/4" Stroke 6 1/2" Driven by Steam

Main Air Compressors, No. two. No. of stages three Diameters 11 1/2" - 9 1/4" - 2 3/4" Stroke 6 1/2" Driven by

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

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by main cranks

Scavenging Air Pumps, No. one Diameter 14 10 in. Stroke 1040 in. Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. Position

Im. 3. 35.



**AIR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes. On discharge from compression*  
 Can the internal surfaces of the receivers be examined and cleaned *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*  
**High Pressure Air Receivers, No.** *1* Cubic capacity of each *1* Internal diameter *1* thickness *1*  
 Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure by Rules *✓*  
**Starting Air Receivers, No.** *Two.* Total cubic capacity *220 cuft.* Internal diameter *3'-6"* thickness *1"* Actual *✓*  
 Seamless, lap welded or riveted longitudinal joint *Riveted* Material *M. Steel* Range of tensile strength *28/32.* Working pressure by Rules *603* Actual *600.*

**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 *✓* Separate Fuel Tanks *Retained for oil ship*  
 Donkey Boilers *(two)* General Pumping Arrangements *✓* Pumping Arrangements in Machinery Space *Yes.*  
 Oil Fuel Burning Arrangements *Yes.*

**SPARE GEAR.**  
 Has the spare gear required by the Rules been supplied *Yes (to latest requirements).*  
 State the principal additional spare gear supplied *1 Brass iron propeller, 1 Tail end shaft, 1 Cylinder lens & jacket complete, 3 main piston heads complete, 1 upper & lower piston rod & skirt, 12 piston rings, 2 (each) top & bottom end bolts for Centre & side conn. rods, 1 Centre & 1 side conn. rod spherical bearings, 2 Centre & side conn. rod top end bearings, 4 Dual valves complete, 8 spray plugs, 1 Starting air valve complete, 1 Cyl. relief valve complete, 4 Dual pump bodies, delivery Chambers, rams & guides, Suct. Valve & chamber, 1 set each size valves for Eng. driven & incl. pumps, 1 set pads, Mitchell Block, 1 roller chain for Camshaft drive.*  
 The foregoing is a correct description, *WILLIAM DOXFORD & SONS, Limited.*

*W. Miller* Director. Manufacturer.

Dates of Survey while building  
 During progress of work in shops-- *27/ June 14, July 16, 26, 27, 28, 29, 30. Aug. 4, 10, 11, 12, 16, 17, 19, 20, 23, 25, 26, 27, 30, 31. Sep. 1, 2, 3, 6, 7, 8, 10, 14, 15.*  
 During erection on board vessel-- *17, 20, 21, 22, 23, 24, 27, 29. Oct. 1, 3, 5, 6, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 25, 26, 27, 28, 29. Nov. 1, 2, 3, 4, 5, 8, 9, 10, 12, 17, 18, 19, 22, 26, 29, 30. Dec. 2, 3, 6, 8, 13, 14, 15, 16, 21, 23, 24, 29. 1938. Jan. 5.*  
 Total No. of visits *88*

Dates of Examination of principal parts—Cylinders *26/9/37, 27/8/37* Covers *✓* Pistons *3/10/37, 14/10/37* Rods *3/10/37* Connecting rods *14/10/37*  
 Crank shaft *16/9/37 (two)* Flywheel shaft *as crank.* Thrust shaft *as crank.* Intermediate shafts *4/9/37* Tube shaft *✓*  
 Screw shaft *20/9/37* Propeller *1/9/37* Stern tube *16/9/37, 24/9/37* Engine seatings *Tank top.* Engines holding down bolts *3/12/37*  
 Completion of fitting sea connections *2/9/37* Completion of pumping arrangements *21/12/37* Engines tried under working conditions *5/1/38.*  
 Crank shaft, Material *Ingot Steel* Identification Mark *Nos 13553, 13554* Flywheel shaft, Material *as crank.* Identification Mark *as crank.*  
 Thrust shaft, Material *as crank.* Identification Mark *16/9/37* Intermediate shafts, Material *Ingot Steel* Identification Marks *Nos 3402, 3404, 3405, 3406, 3407*  
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Ingot Steel* Identification Mark *W.H.F. 4/9/37*

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 3408 W.H.F. 20/9/37.*  
 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 Rules of the Society & the Secretary's letter E 20/4/34. 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. about 150° F) section 20 of the Rules has been complied with, Safety valves of boilers adjusted to working pressure & accumulation test carried out satisfactorily. The machinery is reliable in my opinion to have notation of L.M.C. 1.38 oil Eng. T.S. (CL) 2 DB 120 lbs/s.*

The amount of Entry Fee *£ 6 :* Special *£ 118 : 14 :* When applied for, *10 JAN. 1938*  
 Donkey Boiler Fee *£ 12 : 12 :* When received, *13/11/1938*  
 Travelling Expenses (if any) *£ :*  
 Committee's Minute *TUE 18 JAN 1938*  
 Assigned *+ L.M.C. 1.38 2 DB 120 lbs oil Eng. Ch*  
*J. St. Fraser*  
 Engineer Surveyor to Lloyd's Register of Shipping.

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

