

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 232

Comm. 684665.

Received at London Office APR - 2 1938

Date of writing Report 25.3. 1938 When handed in at Local Office 28.3. 1938 Port of Düsseldorf  
No. in Survey held at Cologne Date, First Survey 11.9.37 Last Survey 23.3. 1938  
Reg. Book. Number of Visits 14

on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel Tons <sup>Gross</sup> ~~Net~~  
Built at Hongkong By whom built W.S. Bailey & Co., Yard No. 291 When built 1938  
Engines made at Cologne By whom made Humboldt-Deutzmotoren A.G. Engine No. 448550/55 When made 1938  
Donkey Boilers made at By whom made Boiler No. When made  
Brake Horse Power 575 Owners Port belonging to  
Nom. Horse Power as per Rule 123 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which vessel is intended 14 9/16 22 13/16

OIL ENGINES, &c. Type of Engines Heavy oil engine RVMS 258 2 or 4 stroke cycle 4 Single or double acting single  
Maximum pressure in cylinders 45 kg/cm<sup>2</sup> Diameter of cylinders 370 mm Length of stroke 580 mm No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure 6,6 kg/cm<sup>2</sup> 491,5 mm Is there a bearing between each crank yes  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge  
Revolutions per minute 250 Flywheel dia. 1400mm Weight 3390 kg Means of ignition sol. injection of fuel used on test bed gas oil  
Crank Shaft, { Solid forged as per Rule 219.4 Crank pin dia. 220mm Crank Webs Mid. length breadth 340 mm Thickness parallel to axis  
Semi built dia. of journals as fitted 220 mm Mid. length thickness 115 mm shrunk Thickness around eyehole  
All built as per Rule 140 Thrust Shaft, diameter at collars as per Rule 147  
Flywheel Shaft, diameter as fitted Intermediate Shafts, diameter as fitted 180 mm

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the { tube screw } shaft fitted with a continuous liner {  
Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted 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 If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch directly by hand No. of blades Material whether Moveable Total Developed Surface 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 31mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with  
non-conducting material 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 Is the sea suction provided with an efficient strainer which can be cleared within the vessel  
Bilge Pumps worked from the Main Engines, No. one Diameter 130mm Stroke 120mm Can be overhauled while the vessel is at work yes  
Pumps connected to the Main Bilge Line { No. and Size How driven

Is the cooling water led to the bilges If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
arrangements Main engine capacity 57 lts/min. at 375 r.p.m.  
Ballast Pumps, No. and size XXXXX Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 tooth wheel pump  
Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size:—In Machinery Spaces In Pump Room

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 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  
Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate  
What pipes pass through the bunkers How are they protected  
What pipes pass through the deep tanks Have they been tested as per Rule

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

Main Air Compressors, No. No. of stages Diameters Stroke Driven by  
Auxiliary Air Compressors, No. one No. of stages two Diameters 65/180mm Stroke 120 mm Driven by main engine  
Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

What provision is made for first Charging the Air Receivers  
Scavenging Air Pumps, No. Diameter Stroke Driven by  
Auxiliary Engines crank shafts, diameter as per Rule as fitted Position  
Have the Auxiliary Engines been constructed under special survey Is a report sent herewith



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AIR RECEIVERS:—Have they been made under survey yes Are reports or certificates now forwarded attached to the of this report sent to Hongkong yes

Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes Is a drain fitted at the lowest part of each receiver yes

Can the internal surfaces of the receivers be examined and cleaned yes Internal diameter 450 mm thickness 12mm

Injection Air Receivers, No. four Cubic capacity of each 4x500 lts. Range of tensile strength 38-44 kg/mm<sup>2</sup> Working pressure 30 kg/cm<sup>2</sup>

Seamless, lap welded or riveted longitudinal joint lapwelded Material S.M. Steel Internal diameter 450 mm thickness 12mm

Starting Air Receivers, No. four Total cubic capacity 4x500 lts. Range of tensile strength 38-44 kg/mm<sup>2</sup> Working pressure 30 kg/cm<sup>2</sup>

Seamless, lap welded or riveted longitudinal joint lapwelded Material S.M. Steel Range of tensile strength 38-44 kg/mm<sup>2</sup> Working pressure 30 kg/cm<sup>2</sup>

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 yes Separate Fuel Tanks yes

PLANS. Are approved plans forwarded herewith for Shafting 187015 3.12.37. Receivers G.O. 244 21.7.32.

Donkey Boilers General Pumping Arrangements Pumping Arrangements in Machinery Space SPARE GEAR.

Oil Fuel Burning Arrangements SPARE GEAR.

Has the spare gear required by the Rules been supplied yes

State the principal additional spare gear supplied SPARE GEAR.

The foregoing is a correct description, Humboldt-Deutzmotoren Manufacturer.

Dates of Survey while building 11.9.-20.9.-23.9.-29.12.37.- 20.1.-1.2.-2.2.-9.2.-11.2.-15.2.-15.3.-18.3.-22.3.38.

Dates of Examination of principal parts—Cylinders 20.1.9.2. Covers 1.2.-2.2. Pistons 18.3. Rods 11.9.-23.9. Connecting rods 18.3.

Crank shaft 29.12.-9.2. Flywheel shaft 20.9.-22.3. Thrust shaft 20.9.-22.3. Intermediate shafts 15.3. on test Tube shaft 15.3. on test

Screw shaft 22.3. Propeller 22.3. Stern tube 22.3. Engine seatings 22.3. Engines holding down bolts 22.3.

Completion of fitting sea connections 22.3. Completion of pumping arrangements 22.3. Engines tried under working conditions 22.3.

Crank shaft, Material S.M. Steel Identification Mark LLOYD'S 117 W.P. 29. Flywheel shaft, Material S.M. Steel Identification Mark LLOYD'S 12.37.

Thrust shaft, Material S.M. Steel Identification Mark LLOYD'S 12554 J.L. Intermediate shafts, Material S.M. Steel Identification Mark LLOYD'S 20.9.37.

Tube shaft, Material S.M. Steel Identification Mark LLOYD'S 20.9.37. Screw shaft, Material S.M. Steel Identification Mark LLOYD'S 20.9.37.

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

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo yes If so, have the requirements of the Rules been complied with yes

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with yes

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

General Remarks (State quality of workmanship, opinions as to class, &c.)

This heavy oil engine has been constructed under special survey in accordance with the Society's Rules and Regulations as well in accordance with the approved plans and instructions thereto. The material used in the constructions is good and the workmanship is satisfactory. The engine has been tested on the maker's test bed in the presence of the undersigned during 10 hours consecutive running under full load and 10% overload and was found to be in safe working condition during the trials. After the trials all working parts of the engine have been opened out for inspection and were found in good condition. In my opinion the vessel for which this engine is intended will be eligible for the notation + L.M.C. (with date) when the whole machinery has been fitted satisfactorily on board and tried under full working conditions.

A copy of this report has been sent to Hongkong Office.

The amount of Entry Fee RM 60.- When applied for, 1.4.1938

Special RM 615.- When received, 15.3.1938

Donkey Boiler Fee RM 60.- Travelling Expenses (if any) RM 60.-

Committee's Minute See Mr. J.C. Rph 8342

Assigned See Mr. J.C. Rph 8342

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