

Rpt. 470

REPORT ON OIL ENGINE MACHINERY.

No. 3331

10 FEB 1931

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Port of Stockholm

No. in Survey held at Sickla, Skm. Distr. Reg. Book.

Date, First Survey 5.8.29.

Last Survey 20.10. 1930.

Number of Visits 8

on the ^{Single} Twin ^{Triple} Screw vessel **Aquila**

Tons ^{Gross} _{Net}

Built at **Leith** By whom built **Henry Robb, Ltd.** Yard No. **181** When built

Engines made at **Stockholm** By whom made **A.-B. Atlas Diesel** Engine No. **85190** When made **1930**

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power **400** Owners **Forestal Land, Timber & Railway** Port belonging to **London**

Nom. Horse Power as per Rule **125** Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended **x2 = 750 for 8 Cyls.**

OIL ENGINES, &c.—Type of Engines **Polar Diesel Oil Engine type M34M** ~~2 or 4 stroke cycle~~ ~~Single or double acting~~

Maximum pressure in cylinders **35 kg/cm²** Diameter of cylinders **340 mm** Length of stroke **570 mm** No. of cylinders **4** No. of cranks **4**

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **440 mm** Is there a bearing between each crank **yes**

Revolutions per minute **200** Flywheel dia. **1.550 mm** Weight **2.900 kg** Means of ignition **Diesel** Kind of fuel used **Crude Oil**

Crank Shaft, dia. of journals as per Rule **190 mm** as fitted **220** Crank pin dia. **220 mm** Crank Webs Mid. length breadth **308 mm** Mid. length thickness **122** Thickness parallel to axis shrunk Thickness around eyehole

The flywheel is fitted on the thrust shaft. Flywheel Shaft, diameter as per Rule **138.2** as fitted Intermediate Shafts, diameter as per Rule **138** as fitted Thrust Shaft, diameter at collars as per Rule **138 mm** as fitted **220**

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 Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines by compress-^{ed air.} Is a governor ~~of the~~ fitted to prevent racing of the engine when declutched **yes** Means of lubrication

pumps Thickness of cylinder liners **27,5 mm** 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. **1** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **(Double acting)**

Bilge Pumps worked from the Main Engines, No. **1** Diameter **190 mm.** Stroke **140 mm** Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size How driven

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size

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 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

ed 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. **(for starting air) 1/2** No. of stages **2** Diameters **175/70 mm** Stroke **350 mm** Driven by **engine**

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

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

Scavenging Air Pumps, No. **1** Diameter **770 mm** Stroke **350 mm** Driven by **engine**

Auxiliary Engines crank shafts, diameter as per Rule as fitted

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **yes**

Can the internal surfaces of the receivers be examined **yes** What means are provided for cleaning their inner surfaces **Manhole 400x300 mm.**

Is there a drain arrangement fitted at the lowest part of each receiver **yes**

High Pressure Air Receivers, **None fitted, solid injection** Cubic capacity of each Internal diameter thickness

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

Starting Air Receivers, No. **2** Total cubic capacity **1.600 litres** Internal diameter **650 mm** thickness **14 mm**

Seamless, lap welded or riveted longitudinal joint **riveted** Material **S.M. Steel** Range of tensile strength **44 kg/mm²** Working pressure by Rules **25,5 kg/cm²**

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting 5. 12. 28. Receivers 19/7 30 Separate Tanks

Donkey Boilers General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR To be supplied and inspected when machinery is being fitted in ship.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 5/8-29, 5 & 18/2, 3/7, 29/8, 1, 13 & 20/10-30.
 { During erection on board vessel - - }
 Total No. of visits in shop 8.

Dates of Examination of principal parts—Cylinders 1 & 13 30 Covers 1 & 13 30 Pistons 13/10-30 Rods - Connecting rods 5/8-29, 29/8, 13/10-30
 Crank shaft 18/2, 13/10-30 Thrust shaft 5/2, 13/10-30 Intermediate shafts 3/7, 13/10-30 Tube shaft
 Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts
 Completion of filling sea connections Completion of pumping arrangements Engines tried under working conditions in shop 1.1

Crank shaft, Material S.M. Steel Identification Mark LLOYD'S N:o 5860 13.10.30 Intermediate shafts, Material S.M. Steel Identification Mark LLOYD'S N:o 5946 13.10.30
 Thrust shaft, Material Identification Mark Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

Is this machinery duplicate of a previous case yes If so, state name of vessel See Skm. report No. 3137.

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

I am of opinion that this engine is of superior material and workmanship, and as it has been designed and constructed under special survey, I have respectfully to submit, that it will be eligible to be classed **ALMC**, as soon as it has been fitted in a classed ship to satisfaction of the Society's surveyors.

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

The amount of Entry Fee ... £ : : When applied for, Special ... £ 568.75 : : 22.10. 1930.
 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 26-11 1930

H. J. Anderson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 17 FEB 1931

Assigned

See Lth JE 17948



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