

REPORT ON OIL ENGINE MACHINERY.

No. 3007.

(Supplement 2504)

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No. in Survey held at Sickla, Skm. Distr. Date, First Survey 31.3.1927 Last Survey 7.8. 1928.

Reg. Book. 91334 on the Single Twin Triple Quadruple Screw vessel "NAGARA" Tons Gross 6525 Net 3980

Built at Göteborg By whom built Aktieb. Götaverken Yard No. 416 When built 1928.

Aux. Engines made at Stockholm By whom made Aktieb. Atlas-Diesel Engine No. 40548 When made 1928

Donkey Boilers made at Loughborough By whom made Walter W. Coltman & Co. Boiler No. 5062 When made 1927

Brake Horse Power 100 Owners Aktieb. Svenska Ostasiatiska Komp. Port belonging to Göteborg

Nom. Horse Power as per Rule 25 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended General

OIL ENGINES, &c. Type of Engines Stationary Diesel Oil Eng. 2 4 stroke cycle Single acting

Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 290 mm. Length of stroke 430 mm No. of cylinders 2 No. of cranks 2

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 360 mm. Is there a bearing between each crank yes

Revolutions per minute 300 Flywheel dia. 1600 mm Weight 4115 Kg. Means of ignition Diesel Kind of fuel used Crude Oil

Crank Shaft, dia. of journals as per Rule 163.4 mm Crank pin dia. 165 mm Crank Webs Mid. length breadth see plan Thickness parallel to axis as fitted 165.0 mm Thickness around eye hole as fitted 95 mm.

The flywheel is fitted on the crank shaft

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as fitted Thrust Shaft, diameter at collars as per Rule

Tube Shaft, diameter as fitted Screw Shaft, diameter as fitted Is the { tube screw } shaft fitted with a continuous liner { }

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes 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 Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication pumps

Thickness of cylinder liners 28 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. none fitted Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. Diameter Stroke 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

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. 1 No. of stages 2 Diameters 155/45 mm Stroke 180 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. Diameter Stroke Driven by

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 mudhole 120 mm.

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

High Pressure Air Receivers, No. 1 Cubic capacity of each 25 litres Internal diameter 240 mm. thickness 15.5 mm.

Seamless, lap welded or riveted longitudinal joint lapwelded Material S.M. Steel Range of tensile strength 38 kg/mm (Working pressure by Rules 72 kg/cm²)

Starting Air Receivers, No. 1 Total cubic capacity 100 litres Internal diameter 306 mm thickness 18.5 mm

Seamless, lap welded or riveted longitudinal joint seamless Material S.M. Steel Range of tensile strength 41 kg/mm (Working pressure by Rules 112 kg/cm²)

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting See Secr. letter Receivers 3/1, 23. 20/4 27. Separate Tanks
(If not, state date of approval) E. 22.9.27.

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR as per list, approved on the 12th Febr. 1923, will be inspected when machinery is fitted in ship.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 31/3, 27/5, 24/11 1927. 10/4, 24/7, 7/8 1928.
During erection on board vessel - - -
Total No. of visits in shop 6

Dates of Examination of principal parts—Cylinders 10/4, 24/7 28. Covers 10/4, 24/7 28. Pistons 24/7 28. Rods Connecting rods 3/5, 27/5, 27/7, 24/2

Crank shaft 24/7, 27/7 28 Flywheel shaft ✓ Thrust shaft Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions in shop 10/4

Crank shaft, Material S.M. Steel Identification Mark LLOYD'S No. 4512 GA 24/11. 27A Flywheel shaft, Material Identification Mark

Thrust shaft, Material Identification Mark Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

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

Is this machinery duplicate of a previous case yes If so, state name of vessel See Skm. Report no. 2884.

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 be approved as auxiliary to a classed main engine.

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

The amount of Entry Fee ... £ : : When applied for,
Special ... Kr. 218:40 : : 19
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) 28:67 : : Sep 22 1928
Total 247:07
Committee's Minute
Assigned

L. J. Andersson
Acting Engineer Supervisor to Lloyd's Register of Shipping.



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Foundation