

# AUXILIARY REPORT ON OIL ENGINE MACHINERY.

No. 7676.

Received at London Office 14 APR 1928

Date of writing Report 10<sup>th</sup> April 1928 When handed in at Local Office

Port of Copenhagen

No. in Survey held at Copenhagen Reg. Book.

Date, First Survey 28<sup>th</sup> July 1927 Last Survey 7<sup>th</sup> Jan. 1928 Number of Visits 23.

Single on the Twin Triple Quadruple } Screw vessel

Tons } Gross Net

Built at Tokio

By whom built Mitsui & Bussan Kaisha Yard No. 134 When built

Auxiliary engines made at Copenhagen

By whom made Art. Burmeister & Wain's Engine No. 1463 When made 1927-28.

Donkey Boilers made at

By whom made Designated MITSUBI 8. Boiler No. When made

Brake Horse Power 1 off - 50. 1 on - 100.

Owners Port belonging to

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

Trade for which vessel is intended

Auxiliary ENGINES, &c. Type of Engines Vertical Diesel Oil Engines (Frank type) 2 or 4 stroke cycle 4 Single or double acting Single Maximum pressure in cylinders 35 kg/cm<sup>2</sup> Diameter of cylinders 310 mm Length of stroke 350 mm No. of cylinders 2 No. of cranks 2

Mean of bearings, adjacent to the Crank, measured from inner edge to inner edge 362 mm Is there a bearing between each crank No. of cranks 2

Revolutions per minute 400 Flywheel dia. 1240 mm Weight 2710 kg Means of ignition Air compression Kind of fuel used No. 2 Diesel oil, flash point above 150° F.

Crank Shaft, dia. of journals as per Rule 161.6 mm as fitted 170.0 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 300 x 350 mm Thickness parallel to axis shrunk Thickness around eye-hole 95 mm

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

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 Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication

Thickness of cylinder liners Are the cylinders fitted with safety valves 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. 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 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

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 A, B, C. Stroke Driven by Auxiliary Air Compressors, No. One to each engine No. of stages 1-3 Diameters 313, 286, 78 Stroke 170 Driven by Auxiliary engines

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 161.6 mm as fitted 170.0 mm

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 Yes

Is there a drain arrangement fitted at the lowest part of each receiver Yes High Pressure Air Receivers, No. 2 off Cubic capacity of each 25 Litres Internal diameter 7 1/4 = 185 mm thickness 3/8 = 9.5 mm

Seamless, lap welded or riveted longitudinal joint Seamless Material S.M. Steel Range of tensile strength 51.9-51.7 kg/mm<sup>2</sup> Working pressure by Rules 108.7 kg/cm<sup>2</sup>

Starting Air Receivers, No. Total cubic capacity Internal diameter thickness Working pressure by Rules

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



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IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting *for crank shafts* Receivers

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR *As per accompanying list, - to be checked when placed onboard the vessel.*

The foregoing is a correct description,

**BURMEISTER & WAINSKIN- OG SKIBSBYGGERI**

Manufacturer.

Dates of Survey while building { During progress of work in shops - 23 July - 2, 30 Aug - 7, 20 Sept - 1, 14, 15, 19, 25, 26, 27, 28, 29 Oct - 1, 3, 5, 8, 10, 24 Nov - 3, 14 Dec 1927 - 7 Jan 1928  
During erection on board vessel - - -  
Total No. of visits 23.

Dates of Examination of principal parts - Cylinders *and* Covers <sup>2/20/19/20/27</sup> <sub>8, 9, 10, 11, 27</sub> Pistons <sup>2/2/20/27</sup> <sub>8, 9, 10, 27</sub> Rods  Connecting rods <sup>23/2/30/7</sup> <sub>7, 8, 9, 7</sub>

Crank shafts <sup>23/2/30/15/27</sup> <sub>7, 8, 9, 10, 27</sub> 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

Crank shaft, Material *S.M.I. Steel* Identification Mark *Q 15. 10. 27.* 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  If so, state name of vessel

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

*The 2 auxiliary Diesel oil engines as above described have been constructed under Special Survey, in accordance with the Rules, the approved plans and the Secretary's letter E. dated the 10<sup>th</sup> August 1927. The material used in the construction of the engines and the air receivers have been tested, as required by the Rules, either by us or as per certificates produced. - The engines have been tested under full power working condition on the test bed in shop and found to work satisfactorily. -*

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 Survey ... <i>£ 200.00</i>	:	:	<i>12. 4. 28.</i>
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	19.

Committee's Minute

Assigned

*A. O. Fuchs*  
Engineer Surveyor to Lloyd's Register of Shipping.  
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