

REPORT ON OIL ENGINE MACHINERY.

No. 1324.

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Date of writing Report *2nd Feb 31* When handed in at Local Office *4th Feb. 1931* Port of *Bremen*
 No. in Survey held at *Augsburg* Date, First Survey *4th April 1930* Last Survey *31st January 1931*
 Reg. Book. Number of Visits *66*

on the *Single* } Screw vessel
 Twin }
 Triple }
 Quadruple }

Built at *Kobe* By whom built *Kawasaki Dockyard Co. Ltd.* Yard No. *563* When built *1930/31*
 Engines made at *Augsburg* By whom made *Masch. fabrik Augsburg-Nürnberg* Engine No. *330570* When made *1930/31*
 Donkey Boilers made at _____ By whom made _____ Boiler No. _____ When made _____
 Brake Horse Power *6000* Owners *Kokusai Kisen Kaisha.* Port belonging to *Tokio*
 Nom. Horse Power as per Rule *1857* Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____
 Trade for which vessel is intended _____

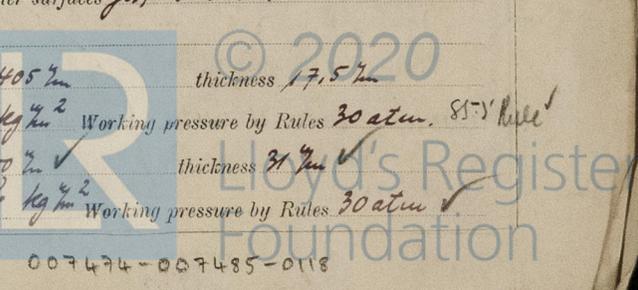
OIL ENGINES, &c. Type of Engines *D7 2u 70/120* 279/16 2 or 4 stroke cycle *2* Single or double acting *double*
 Maximum pressure in cylinders *45 atm* Diameter of cylinders *700 mm* Length of stroke *1200 mm* No. of cylinders *7* No. of cranks *7*
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *1090 mm* Is there a bearing between each crank *yes*
 Revolutions per minute *95* Flywheel dia. *2100 mm* Weight *3120 kg* Means of ignition *Diesel principle, solid inject.* Kind of fuel used *Bonaso oil on hot bed.*
 Crank Shaft, dia. of journals _____ as per Rule _____ Crank pin dia. *500 mm* Crank Webs _____ Mid. length breadth _____ Thickness parallel to axis *320 mm*
 Flywheel Shaft, diameter _____ as per Rule _____ Intermediate Shafts, diameter _____ as per Rule _____ Thrust Shaft, diameter at collars _____ as per Rule _____
 Tube Shaft, diameter _____ as per Rule _____ Screw Shaft, diameter _____ as per Rule _____ Is the { tube } shaft fitted with a continuous liner { _____ }
 Bronze Liners, thickness in way of bushes _____ as per Rule _____ Thickness between bushes _____ as per Rule _____ 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 *direct, comp. air* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *yes* Means of lubrication *forced*
 Thickness of cylinder liners *45 mm* Are the cylinders fitted with safety valves *yes* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *air space* 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. 3, independent rotary, 400 m³/h each 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 *2, independent rotary, 55 m³/h each*
 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. _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____
Auxiliary Air Compressors, No. 2 x 325 m³/h No. of stages *3* Diameters *350/295/100 mm* Stroke *220 mm* Driven by *aux. engines.*
Small Auxiliary Air Compressors, No. _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____
Scavenging Air Pumps, No. 1 x 775 m³/min blower Diameter _____ Stroke _____ Driven by _____
Auxiliary Engines crank shafts, diameter _____ as per Rule _____ as fitted *170 mm* *45 atm. by 275 dia. 450 stroke.*

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, manholes*
 Is there a drain arrangement fitted at the lowest part of each receiver *yes*
High Pressure Air Receivers, No. 1 Cubic capacity of each *400 lt* Internal diameter *405 mm* thickness *7.5 mm*
 Seamless, lap welded or riveted longitudinal joint *seamless* Material *S. M. Steel* Range of tensile strength *44-50 kg/cm²* Working pressure by Rules *30 atm. 85% Rule*
Starting Air Receivers, No. 2 Total cubic capacity *2 x 1200 lt* Internal diameter *1800 mm* thickness *31 mm*
 Seamless, lap welded or riveted longitudinal joint *riveted* Material *S. M. Steel* Range of tensile strength *44-50 kg/cm²* Working pressure by Rules *30 atm*



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting *E. 14.1.30; 27.3.30; 5.5.30*
 London letters *H. 6.30; 22.7.30* Receivers *8.8.30*
(If not, state date of approval)

Separate Tanks

Donkey Boilers..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

SPARE GEAR as per Rules.

Maschinenfabrik Augsburg-Nürnberg A.G.

The foregoing is a correct description,

Pro feiluer ip. Albrant

Manufacturer.

Dates of Survey while building
 During progress of work in shops-- *4.5.15, 28. April; 2.20. May; 21. July; 6. 19. 21. August; 1. 3. 8. 13. 16. 27. 30. September; 4. 6. 13. 14. 20. 21. 22. 25. 27. 28. 29. 30. October; 8. 10. 11. 19. 20. 22. 28. 29. November; 1. 2. 3. 8. 9. 10. 16. 17. 18. 23. 24. 27. 29. 30. 31. December 1930; 2. 3. 5. 6. 14. 15. 16. 17. 19. 20. 21. 22. 30. 31. Jan. 31.*
 During erection on board vessel--
 Total No. of visits

Dates of Examination of principal parts—Cylinders *1. 12. 30.* Covers *10/19, 11/30* Pistons *19. 11. 30* Rods *24/27. 12. 30* Connecting rods *18. 12. 30*
 Crank shaft *10. 11. 30.* Flywheel shaft *17. 1. 31* 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 *21/22. 1. 31 (test bed)*
 Crank shaft, Material *S.M. Steel* Identification Mark *LLOYD'S 38757 & 20.10.30.* Flywheel shaft, Material *S.M. Steel* Identification Mark *LLOYD'S F.5. 900. 30.8.30.*
 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. *This heavy oil engine and its accessories has been constructed under Special Survey in accordance with the Soc. Rules and Regulations as well as with the approved plans and instructions thereto. The materials used in the constructions are good and the workmanship is satisfactory. The engine has been tried on the makers test bench under running condition and was found working satisfactorily.*

In my opinion the vessel for which this engine and its accessories are intended will be eligible for the notation of LMC [with date] when the machinery has been fitted satisfactorily on board and tried under full working conditions

*The working pressure in the cylinder of the main engine and of the auxiliaries not to exceed 45 atm
 A copy of this Report has been sent to the Kobe surveyors.*

The amount $\frac{1}{2}$ Entry Fee ... £ 4 : 16 :
 $\frac{1}{2}$ Special ... £ 117 : 3 :
 Donkey Boiler Fee ... £ 8 : 8 :
 Travelling Expenses (if any) ... £ 4 : 0 :
 When applied for, *9. 2. 1931.*
 When received, *3/3/31*

L. J. Hancock
 Engineer Surveyor to Lloyd's Register of Shipping.



Committee's Minute

Assigned

Sec. F. G. Rpt.

TUE. 18 AUG 1931

To avoid Kobe Report
 Copy to be sent to Kobe