

# REPORT ON OIL ENGINE MACHINERY.

No. 1358.

27 APR 1931

Received at London Office

Date of writing Report 16. 4. 1931 When handed in at Local Office 17. 4. 1931 Port of Bremen  
Date, First Survey 27<sup>th</sup> August 30 Last Survey 16<sup>th</sup> April 1931  
Number of Visits 4

No. in Survey held at Augsburg *Fujian*  
Reg. Book. **FUJUIS MARU**  
Single on the *Double* Screw vessel  
Triple  
Quadruple

Built at *Oh-Madri* By whom built *Harima Zensho Dock Co* Yard No. 179 When built 1930/31  
Engines made at *Augsburg* By whom made *Maschinenfabrik Augsburg-Nürnberg* Engine No. 330590 When made 1930/31  
Donkey Boilers made at By whom made Boiler No. When made  
Owners *Yusei Shoji Trading Co.* Port belonging to  
Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended 27/9/16 4/14  
Type of Engines *D7 Zu 70/120* 2 or 4 stroke cycle 2 Single or double acting *double*  
Maximum pressure in cylinders 45 atm Diameter of cylinders 700mm Length of stroke 1200mm No. of cylinders 7 No. of cranks 7

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1090mm  
Revolutions per minute 113 Flywheel dia. 2100mm Weight 3120kg  
Means of ignition *Diesel principle, airless* Kind of fuel used *Barrow oil (test bed)*  
Is there a bearing between each crank *yes*

Crank Shaft, dia. of journals as per Rule 500mm Crank pin dia. 500mm Crank Webs Mid. length breadth shrunk  
Flywheel Shaft, diameter as per Rule 500mm Intermediate Shafts, diameter as per Rule 1618mm Thrust Shaft, diameter at collars as per Rule  
Tube Shaft, diameter as per Rule 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 as fitted 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 If so, state type 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 45mm 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 gear water rotary fresh water* 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, 65mm each*  
Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Are two independent means arranged for circulating water through the Oil Cooler In Pump Room  
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 No. of stages 3 Diameters 105/305/360mm Stroke 125mm Driven by *aux. engines*

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by  
Scavenging Air Pumps, No. 1 *blower of 930/950 m<sup>3</sup>/min* Diameter Stroke Driven by *electro motor*

Auxiliary Engines crank shafts, diameter as per Rule as fitted Position —  
AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver  
High Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness  
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure Actual

Starting Air Receivers, No. 1 Total cubic capacity 400 m<sup>3</sup> Internal diameter 405mm thickness 17.5mm  
Seamless, lap welded or riveted longitudinal joint *seamless* Material *S.M. steel* Range of tensile strength 42-50 kg/cm<sup>2</sup> Working pressure Actual 30 atm

W1343-0039



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for Shafting *London letter E 8.7.30* Receivers *8.7.30* Separate Tanks

(If not, state date of approval)

*21.2.31, 30.3.31*

Donkey Boilers General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied *as per Rules*

State the principal additional spare gear supplied

**Maschinenfabrik Augsburg-Nürnberg A.G.**

The foregoing is a correct description of

*M. Hermann*

*W. Hermann*

Manufacturer.

Dates of Survey while building  
 During progress of work in shops - - *27 August; 3.6.13, 20.27 Sept; 4.25, 27, 28 Oct; 8.10.11, 19, Nov; 1.3.8, 9, 10, 16, 17, 18, 23, 31. Dec 1930; 5.14.15, 16, 17, 19, 20, 21, 22, 30, 31. Jan; 2, 3, 4, 5, 9, 10, 16, 17, 18, 19, 23, 24, 25, 26, 27, 28 Feb. 7, 9, 10, 16, 17, 18, 21, 23, 24, 30, 31. March; 1, 2, 4, 10, 11, 13, 14, 15, 16, 16th April 1931*  
 During erection on board vessel - -  
 Total No. of visits

Dates of Examination of principal parts—Cylinders *30.1.31 and 15.4.31* Covers *9/26.2.31 and 14.4.31* Pistons *20.1.31 and 14.4.31* Rods *4/5.2.31 and 14.4.31* Connecting rods *4/5.2.31*  
 Crank shaft *9.2.31 and 15.4.31* Flywheel shaft *9.3.31* 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 *April 1/2/10/11 on test bed*  
 Crank shaft, Material *S. M. Steel* Identification Mark *LLOYD'S 8842/43 31.8.12.30* Flywheel shaft, Material *S. M. Steel* Identification Mark *LLOYD'S 9.2.31/6 11.11.30*  
 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  
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have 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 have 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 construction are good and the workmanship is satisfactory. The engine has been tested under running conditions on the makers test bed 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. A copy of this report has been sent to the Surveyors at Kobe*

The amount of Entry Fee .. £ 4 : 16 :  
 Special ... M ... £ 117 : 3 :  
 Test bed trials Donkey Boiler Fee ... £ 4 : 4 :  
 Travelling Expenses (if any) £ 5 : 1 :  
 When applied for, *13.4.1931*  
 When received, *13.5.1931*

Committee's Minute *2 OCT 1931*

Assigned *See 7.6. Rpt*

*L. Strawson*  
 Engineer Surveyor to Lloyd's Register of Shipping.



Certificate (if required) to be sent to the Surveyors at Kobe