4b.

REPORT ON OIL ENGINE MACHINERY.

No. 7150.

Received at London Office 29 DEC 1930

Writing Report 29-11-30 19 When handed in at Local Office 9-12-30 19 Port of Kobe

Survey held at Osaka Date, First Survey 24-10-29 Last Survey 28-11-30 19

Number of Visits 73

Book.

on the ~~Single~~ / Twin / ~~Triple~~ / ~~Quadruple~~ Screw vessel "HEIAN MARU" Tons Gross / Net

at Osaka By whom built Osaka Iron Works Yard No. 1128 When built 1930

nes made at Copenhagen By whom made Burmeister & Wain Engine No. 1628 / 1629 When made 1930

ey Boilers made at Osaka By whom made Osaka Iron Works Boiler No. 1128 When made 1930

e Horse Power 11,000 Owners Nippon Yusen Kaisha Port belonging to Tokio

Horse Power as per Rule 2190 ✓ Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

e for which vessel is intended Ocean Going

ENGINES, &c.—Type of Engines Vertical Diesel Crosshead type ~~2~~ or 4 stroke cycle 4 ~~Single or~~ double acting D.A

um pressure in cylinders 35 Kg/cm² Diameter of cylinders 680 m/m Length of stroke 1600 m/m No. of cylinders 2×8 No. of cranks 2×8

of bearings, adjacent to the Crank, measured from inner edge to inner edge — Is there a bearing between each crank —

utions per minute 110 Flywheel dia. — Weight — Means of ignition — Kind of fuel used Diesel Oil

k Shaft, dia. of journals as per Rule / as fitted — Crank pin dia. — Crank Webs Mid. length breadth — M.d. length thickness — shrunk Thickness parallel to axis — Thickness around eyehole —

heel Shaft, diameter as per Rule / as fitted ✓ **Intermediate Shafts,** diameter as per Rule 402 m/m / as fitted 420 m/m ✓ **Thrust Shaft,** diameter at collars as per Rule — as fitted —

Shaft, diameter as per Rule / as fitted ✓ **Screw Shaft,** diameter as per Rule 426 m/m / as fitted 460 m/m ✓ Is the ~~tube~~ / screw shaft fitted with a continuous liner — / yes ✓

ze Liners, thickness in way of bushes as per Rule / as fitted 25 m/m ✓ Thickness between bushes as per rule / as fitted 20 m/m Is the after end of the liner made watertight in the

ler boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner One length ✓

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 yes

o 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

No If so, state type — Length of Bearing in **Stern Bush** next to and supporting propeller 6'-10" ✓

eller, dia. 16'-6" ✓ Pitch 17'-5" No. of blades 4 Material Bronze whether Moveable yes Total Developed Surface 62 sq. feet

od of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes, Governor Means of lubrication

reed Thickness of cylinder liners — Are the cylinders fitted with safety valves yes ✓ Are the exhaust pipes and silencers water cooled or lagged with

onducting material Lagged-water cooled If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine —

ing Water Pumps, No. 4 Centrifugal ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes ✓

Pumps worked from the **Main Engines,** No. — Diameter — Stroke — Can one be overhauled while the other is at work —

ps connected to the **Main Bilge Line** { No. and Size 3 @ 6" One 3" / How driven Electric Motor ✓

ast Pumps, No. and size One 7" **Lubricating Oil Pumps,** including Spare Pump, No. and size 4 Rotary 9" 200 tons ✓

wo independent means arranged for circulating water through the **Oil Cooler** yes **Suctions,** connected to both Main Bilge Pumps and Auxiliary Bilge

os, No. and size:—In Machinery Spaces 4 3½"; 7-2½"; 2-2½" (aft) 2-6" direct One 4" direct ✓

olds, &c. Chain locker 1-3½"; N°1 Hold 2-3½" N°2 Hold 2-3½" N°3 Hold 2-3½" Sipe passage 1-2½" E Eff. 2-2½" F Eff. 2-2½" N°5 Hold 2-3" N°6 Hold 2-3" Tunnel well 1-3" ✓

pendent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-6" One 4" ✓

all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces

rom easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks Both

They fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line Below

They each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate yes

t pipes pass through the bunkers — How are they protected —

t pipes pass through the deep tanks Air pipes & D.B. sounding pipes Have they been tested as per Rule yes

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

e 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

partment to another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Upper deck by electric motor

wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork —

in Air Compressors, No. Two each engine No. of stages 3 Diameters — Stroke Driven by Main Engines

xiliary Air Compressors, No. 3 No. of stages 3 Diameters — Stroke Driven by Auxiliary Engines

all Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters — Stroke Driven by Electric Motor

ergency air compressor 1 " " " 3 Electric Motor

Sweeping Air Pumps, No. — Diameter — Stroke Driven by —

xiliary Engines crank shafts, diameter as per Rule 192 m/m / as fitted 204 m/m

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

the internal surfaces of the receivers be examined — What means are provided for cleaning their inner surfaces —

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

gh Pressure Air Receivers, No. 2 Spare / 2 Working / 3 Working for Gas Engs. Cubic capacity of each — Internal diameter — thickness —

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

arting Air Receivers, No. Four Total cubic capacity 2800 Cub. ft Internal diameter 6'-2" ✓ thickness 1 1/16" ✓

mless, lap welded or riveted longitudinal joint Riveted long. Material Steel Range of tensile strength 28-32 ✓ Working pressure by Rules 372 lbs. 350 lbs

009182 - 009191 - 0014

IS A DONKEY BOILER FITTED? yes If so, is a report now forwarded? yes

PLANS. Are approved plans forwarded herewith for Shafting 26-3-29, 6-6-29 (If not, state date of approval) Receivers 5-9-29 Separate Tanks 4-3-30

Donkey Boilers 9-5-29 General Pumping Arrangements 3-3-30 Oil Fuel Burning Arrangements 22-1-30

SPARE GEAR As required by the Rules, checked & found in order

✓

The foregoing is a correct description,

OSAKA IRON WORKS, LTD.

T. Kaneko Manufacturer.

Dates of Survey while building — During progress of work in shops: 1929 Oct. 24, 28. Nov. 7, 14, 20. Dec. 3, 9, 10, 11, 13, 14, 17, 18, 24, 26, 27, 1930 Jan. 7, 10, 13, 21, 22, 23, 29, 30 Feb. 3 March 3, 8, April 7, 11, 14, 17, 18, 23. May 1, 10, 23. June 5, 9, 11, 13 July 1, 4, 7, 17, 31. Aug. 1, 4, 7, 11, 14, 16, 20, 22, 28. Sept. 2, 11, 22, 30. Oct 7 During erection on board vessel: Nov. 5, 8, 18, 21, 28.

Total No. of visits

Dates of Examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓

Crank shaft ✓ Flywheel shaft ✓ Thrust shaft ✓ Intermediate shafts 31-10-29, 18-10-29, 9-11-29, 23-5-30 fitted Tube shaft ✓

Screw shaft 20-3-30, 4-4-30 fitted Propeller 9-4-30 Stern tube 8-3-30, 26-3-30 Engine seatings 9-4-30 Engines holding down bolts 17-7-30, 6

Completion of fitting sea connections 4-4-30 Completion of pumping arrangements 7-10-30 Engines tried under working conditions 7-10-30

Crank shaft, Material ✓ Identification Mark ✓ Flywheel shaft, Material ✓ Identification Mark ✓

Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material S.M. Steel Identification Marks LLOYDS N°2231 A.W.R. 31-10-29 LLOY N°22 A.W 9-11

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. Steel Identification Mark LLOYDS N°2216 A.W.R. 18-10-29

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

Spare T.S. LLOYDS N°2506 A.D.M.R. 21-5-30 LLOYDS N°22254 A.W.R. 12-11-29 LLOYDS N°22254 A.W.R. 12-11-29

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

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

Is this machinery duplicate of a previous case No If so, state name of vessel

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

The machinery has been installed under special survey in accordance with the Rules and approved plans. The materials and workmanship are good. The main and auxiliary machinery was tested under full working conditions and found to be efficient and eligible in my opinion to have record of ✠L.M.C. 11.30, oil engines, T.S. 11-30 C.L. and 2 O.B. 120 lbs.

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 ... £60:00 :
Installation of machinery
Special ... £464:00 :
Air Receivers
~~Donkey Boiler Fee~~ ... £252:00 :
Travelling Expenses (if any) £ : :
See Hull Rpt.

When applied for, 21st Nov. 1930

When received, 12th Dec. 1930

A. D. Morrison

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 13 JAN 1931

Assigned ✠ Lmc 11.30 Oil Engs., C.L., 2 O.B. 120 lbs