

## REPORT ON OIL ENGINE MACHINERY.

No. 799

Received at London Office

te of writing Report **1 March 1952** When handed in at Local Office **19** Port of **Kobe**  
in Survey held at **Aioi Japan** Date, First Survey **31st July 1951** Last Survey **13 Feb. 1952**  
Book. Number of Visits **96**  
Single on the Twin Triple Quadruple  
Screw vessel **M/V "TAIEI - MARU"** Tons {Gross **11867.82**  
Net **8891.61**  
Aioi Japan. THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD. Yard No. **467** When built **Feb. 1952.**  
Aioi Japan. THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD. Engine No. **107** When made **Oct. 1951.**  
Aioi Japan. THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD. Boiler No. **B 739** When made **Nov. 1951.**  
Boiler No. **B 740**  
ake Horse Power **7000** Service R.P.M. **6000** 119 Owners **KYOEI TANKER K. K.** Port belonging to **Kobe**  
N. Power as per Rule **1397.7** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **Yes**  
ade for which vessel is intended **Ocean going.**

**IL ENGINES, &c.** — Type of Engines **Solid injection Diesel** 2 or 4 stroke cycle **2** Single or double acting **Single**  
imum pressure in cylinders **56.5 kg/cm<sup>2</sup>** Diameter of cylinders **720 mm.** Length of stroke **1250 mm.** No. of cylinders **10** No. of cranks **10**  
an Indicated Pressure **5.94 kg/cm<sup>2</sup>** Ahead Firing Order in Cylinders **1-8-7-4-3-10-5-2-9-6** Span of bearings, adjacent to the crank, measured  
m inner edge to inner edge **930 mm.** Is there a bearing between each crank **Yes** Revolutions per minute **125**  
wheel dia **2424 mm.** Weight **1340 kgs** Moment of inertia of flywheel (lbs in<sup>2</sup> or Kg. cm<sup>2</sup>) **50000000** Means of ignition **Compression** Kind of fuel used **Diesel oil**  
ank shaft, {Solid forged dia. of journals as per Rule **480.1 mm.** Crank pin dia **490 mm.** Crank webs Mid. length breadth **845.8 mm.** Thickness parallel to axis **305 mm.**  
{Semi built as fitted **490 mm.** Mid. length thickness **305 mm.** Thickness around eyehole **243 mm.**  
{All built  
ywheel Shaft, diameter as per Rule **389.76 mm.** Thrust Shaft, diameter at collars as fitted **490 mm.**  
as fitted **450 mm.**  
be Shaft, diameter as per Rule **427.26 mm.** Is the {tube} shaft fitted with a continuous liner {**Yes**  
as fitted **490 mm.** {screw}  
ronze Liners, thickness in way of bushes as per Rule **20.6 mm.** Thickness between bushes as per Rule **15.45 mm.** Is the after end of the liner made watertight in the  
as fitted **23 mm.** as fitted **18 mm.**  
opeller boss **Yes** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **-**  
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-  
rrosive **-** 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  
d of tube shaft **-** If so, state type **-** Length of bearing in Stern Bush next to and supporting propeller **2200 mm.**  
ropeller, dia. **5400 mm.** Pitch **3753.6 mm.** No. of blades **4** Material **MnBC** whether moveable **Moveable** Total developed surface **101** sq. feet  
oment of inertia of propeller (lbs in<sup>2</sup> or Kg. cm<sup>2</sup>) **791840000** Kind of damper, if fitted **-**

ethod of reversing Engines **Direct** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes** Means of  
brication **Forced** Thickness of cylinder liners **45 mm.** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled  
lagged with non-conducting material **Lagged** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned  
ck to the engine **-** Cooling Water Pumps, No. **3** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes**  
ilge Pumps worked from the Main Engines, No. **1** Diameter **125 mm.** Stroke **150 mm.** Can one be overhauled while the other is at work **Driven by clutch**

umps connected to the Main Bilge Line {No. and size **1-Bilge Sanitary pump (15%)** **1-Bilge wash pump (80%)** **1-Ballast pump (180%)** **1-G.S. pump (60%)**  
{How driven **main engine** **steam** **steam** **motor**  
the cooling water led to the bilges **No.** If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
rangements **-**

allast Pumps, No. and size **1-230 x 280 x 280 = 80% (Eng. room)** **1-125 x 150 x 180 = 30% (Fore pump)** Power Driven Lubricating Oil Pumps, including spare pump, No. and size **2-270/1 gear type 11.0 H.P. motor driven**  
re two independent means arranged for circulating water through the Oil Cooler **Yes** Suctions, connected to both main bilge pumps and auxiliary  
ilge pumps, No. and size:— In machinery spaces **1-4" (P-Fore)** **1-4" (S-Fore)** **1-4" (P-Aft)** **1-4" (S-Aft)** In pump room **Fore pump room 1-2" Bilge-Ballast pump (aft)**  
a holds, &c. **1-1/2" (Echo rounder Racess)** **1-50 (store above fore peak tank)** **2-70 (Cargo hold)** **1-80 (Cofferdam F190-192)** **1-70 (Cofferdam F52-54)** **1-50 (Rope store)** **2-50 (skinning eng. room)**  
ndependent Power Pump Direct Suctions to the engine room bilges, No. and size **1-4" (G.S. pump)** **1-6" (Ballast pump)**  
re all the bilge suction pipes in holds and tunnel well fitted with strum-boxes **Yes** Are the bilge suction in the machinery spaces led from easily  
ccessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **Yes**  
re all Sea Connections fitted direct on the skin of the Ship **Yes** Are they fitted with valves or cocks **Both** Are they fixed  
fficiently 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**  
re 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 brasscovering plate **Yes**  
What pipes pass through the bunkers **-** How are they protected **-**  
What pipes pass through the deep tanks **-** Have they been tested as per Rule **-**

re all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times **Yes**  
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  
paces, or from one compartment to another **Yes** Is the shaft tunnel watertight **No** 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 **2** diameters **190, (190-170) mm.** stroke **150 mm.** driven by **D.C. Motor**  
Small Auxiliary Air Compressors, No. **1** No. of stages **2** diameters **80mm (80-70) mm** stroke **70 mm.** driven by **Diesel engine**

What provision is made for first charging the air receivers **Emergency air compressor manual driven**  
Scavenging Air Pumps, No. **10** diameter **950 mm.** stroke **520 mm.** driven by **Main engine**  
Auxiliary Engines crank shafts, diameter as per Rule **159.894 mm.** No. **2** Position **Fore Starboard 1**  
as fitted **200 mm.** Port **1 in engine room**

Have the auxiliary engines been constructed under special survey **Yes** Is a report sent herewith **Yes**



AIR RECEIVERS:—Have they been made under survey Yes State No. of report or certificate M 5383

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 and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes

Injection Air Receivers, No. - Cubic capacity of each - Internal diameter - thickness -  
Seamless, welded or riveted longitudinal joint - Material - Range of tensile strength 28.5-29.8 Working pressure by Rules -  
Starting Air Receivers, No. 2 Total cubic capacity 10.5M<sup>3</sup> x 2 Internal diameter 1850 mm. thickness 38 mm.  
Seamless, welded or riveted longitudinal joint Riveted Material O. H. Steel Range of tensile strength Working pressure by Rules 137.5  
Actual 126.6

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

Is the donkey boiler intended to be used for domestic purposes only No

PLANS. Are approved plans forwarded herewith for shafting 6-1-50, 15-10-51 Receivers 10-4-51 Separate fuel tanks 1-9

Donkey boilers 10-8-51 General pumping arrangements 16-10-51 Pumping arrangements in machinery space 16-10-51

Oil fuel burning arrangements 16-10-51

Have Torsional Vibration characteristics been approved Yes Date of approval 15-10-51

### SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied 13-Piston Rings (No.1, No.2), 6-Piston Rings (No.3-No.6), 8 set Fuel (complete), 1 set starting valve 1 set Indicator valves (complete), 9-Fuel delivery pipes with unions nipples. 9-Plungers with barrels for fuel pump. 18-Suction & delivery valves with seat for fuel pump 9-Push rods with bushes for fuel pump, 2 bolts with nuts for crank pin bearing, 2 bolts with nuts for crosshead bearings, 8 set-Valve plates of suction & delivery valve for scavenging air pump, 9-Outside spring for plunger for fuel pump, 9-Inside spring for fuel pump, 9-Spring for delivery valves for fuel pump. 9-Spring for suc. valve for fuel pump, 9-Spring for push rod for fuel pump.

The foregoing is a correct description,

THE HARIMA SHIPBUILDING AND  
ENGINEERING COMPANY, LTD.

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1950: JUL 31. AUG 9. OCT 30. NOV 18. DEC 1. 8. 1951: JAN 13. 17. 22. 25. FEB 5. 10. 15. 19. 26. MAR. 8. 14. 16. 22. 26. 29. APR. 2. 9. 12. 16. 26. MAY 2. 7. 9. 11. 15. 19. 26. 29. 31. JUN 2. 4. 5. 7. 12. 13. 14. 19. 25. 27. 30. JUL 3. 4. 7. 10. 12. 14. 19. 21. 24. 28. AUG 7. 9. 11. 14. 18. 21. 23. 28. 30. SEP 1. 4. 6. 11. 13. 15. 17. 20. 24. OCT 1. 4. 6. 9. 11. 18. 20. NOV 5. 13. 15. 17. 20. DEC 4. 6. 11.  
During erection on board vessel - 1952: Jan. 15, 26, 28, 30 Feb. 6, 13.  
Total No. of visits 96

Dates of examination of principal parts—Cylinders 14-7-51. Covers 24-7-51. pistons 9-5-51. Rods - Connecting rods 28-7-51.

Crank shaft 4-6-51. Flywheel shaft - Thrust shaft 4-6-51. Intermediate shafts 20-11-51. Tube shaft -

Screw shaft 20-10-51. Propeller 13-11-51. Stern tube 17-9-51. Engine seatings 15-1-52. Engine holding down bolts 15-1-52.

Completion of fitting sea connections 26 - 1 - 52. Completion of pumping arrangements 28 - 1 - 52. Engines tried under working conditions 6-2-52.

Crank shaft, material O. H. Steel Identification mark K-CK 190 Flywheel shaft, material, - Identification mark -

Thrust shaft, material O. H. Steel Identification mark K-F 826 Intermediate shafts, material O. H. Steel Identification marks No.1 K-F 951 K-F 951

Tube shaft, material - Identification mark - Screw shaft, material O. H. Steel Identification mark K-F 977

Identification marks on air receivers No. AR 213 LLOYD'S TEST W.T.P. 45Kg/cm<sup>2</sup> W.P. 30 Kg/cm<sup>2</sup> M.H. B 30-10-51.

No. AR 214 LLOYD'S TEST W.T.P. 45Kg/cm<sup>2</sup> W.P. 30 Kg/cm<sup>2</sup> M. H. B 30-10-51.

Welded receivers, state Makers' Name -

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 Yes

Description of fire extinguishing apparatus fitted Engine room: 1-steam smoother 5-portable extinguishers (9 litres) 1-150 litre foam extinguisher 5-70P sea water service & hose  
Boiler room: 1-steam smoother 2-portable extinguishers (9 litres) 2-70P sea water service & hose

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

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 Yes If so, state name of vessel M/V " NISSYO - MARU "

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

The machinery of this vessel has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.

The workmanship and materials are sound and good.

The machinery has been examined under full working condition under deck and comprehensive sea trials and found satisfactory .

In our opinion the machinery of this vessel is eligible to have a record of

L.M.C. 2-52 T.S. (C.L.) 2-52 D.B.W.P. 12 Kg/cm<sup>2</sup> 2-52

The amount of Entry Fee ... \$ 793;646:

Special ... £ : : When applied for 19

Donkey Boiler Fee... \$ 152;566: When received 19

Travelling Expenses (if any) £ TUES: 12 AUG 1952

Committee's Minute

Assigned

+ LMC 2.52 Oil Eng.  
C.L. 2003 17/16

Engine Surveyor Lloyd's Register of Shipping  
Lloyd's Register Foundation