

REPORT ON OIL ENGINE MACHINERY.

No. 1138
30 DEC 1950

Received at London Office

Date of writing Report 19 When handed in at Local Office 18 DEC 1950 Port of Kobe
 Date, First Survey 11th May, 1951 Last Survey 15th May, 1952
 Number of Visits 120
 Survey held at Nagasaki
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 Number of Visits 120
 Single motor "TOMISHIMA - MARU"
 on the Twin Triple Screw vessel
 Quadruple
 Tons Gross 7,613.89
 Net 4,334.44
 Built at Nagasaki By whom built Nagasaki Works, Mitsubishi Zosen K.K. Yard No. 1426 When built 1952 5mo
 Engines made at Nagasaki By whom made Nagasaki Works, Mitsubishi Zosen K.K. Engine No. 241242 When made 1952 5mo
 Donkey Boilers made at Nagasaki By whom made Nagasaki Works, Mitsubishi Zosen K.K. Boiler No. 1363 When made 1952 5mo
 Brake Horse Power 2 x 4,300 Owners Iino Kaikan K.K. Port belonging to Tokyo
 I.N. Power as per Rule 1720 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 Trade for which vessel is intended Ocean trading

ENGINES, &c. — Type of Engines 6 M S 72/125 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 720 mm Length of stroke 1,250 mm No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 6.04 kg/cm² Ahead Firing Order in Cylinders 6-1-5-3-4-2 Span of bearings, adjacent to the crank, measured
 from inner edge to inner edge 960 mm Is there a bearing between each cranks Yes Revolutions per minute 128
 Flywheel dia. 2,500 mm Weight 4,480 kg Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 17,000 kg. cm.² Means of ignition Compression Kind of fuel used Heavy oil
 Crank pin dia. 500 mm Crank webs 315 mm Mid. length breadth 830 mm Thickness parallel to axis 315 mm
 Crank pin dia. 500 mm Crank webs 315 mm Mid. length thickness 315 mm Thickness around eye-hole 227.5 mm
 Thrust Shaft, diameter at collars 500 mm as fitted 500 mm as per Rule 349.5 mm
 Intermediate Shafts, diameter 332.7 mm as fitted 338 mm as per Rule 338 mm
 Wheel Shaft, diameter 500 mm as fitted 500 mm as per Rule 500 mm
 Screw Shaft, diameter 370 mm as fitted 370 mm as per Rule 350 mm
 Is the tube shaft fitted with a continuous liner Yes
 Thickness between bushes 14.2 mm as fitted 17 mm as per Rule 14.2 mm
 Is the after end of the liner made watertight in the
 propeller 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
 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 Yes 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 tube shaft Yes If so, state type Blade MnBr Length of bearing in Stern Bush next to and supporting propeller 1,470 mm
 Propeller, dia. 4,400 mm Pitch 4,350 mm No. of blades 4 Material Cast Iron whether moveable moveable Total developed surface 6,661 m²
 Moment of inertia of propeller (lbs. in² or Kg. cm.²) 96,400 Kg. cm.² Kind of damper, if fitted Hand operation
 Method of reversing Engines Hand operation Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of
 lubrication Forced Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled
 lagged with non-conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
 back to the engine Yes Cooling Water Pumps, No. 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
 Are the pumps worked from the Main Engines, No. None Diameter — Stroke — Can one be overhauled while the other is at work Yes
 Pumps connected to the Main Bilge Line No. and size 2-360 m³/hr. 2-100 m³/hr. 1-30 m³/hr.
 How driven Electric motor drive
 Is 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
 arrangements —
 Bilge Pumps, No. and size 1-160 m³/hr. 1-100 m³/hr. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2-270 m³/hr.
 Are there two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary
 bilge pumps, No. and size: In machinery spaces 4-90 mm dia. 1-130 mm dia. 1-240 mm dia. In pump room —
 Holds, &c. No. 1 Hold 2-80 mm dia. No. 2 Hold 2-80 mm dia. No. 3 Hold 2-80 mm dia. No. 4 Hold 4-80 mm dia. After hold 1-130 mm dia. Cofferdam 2x50 mm dia.
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size 4-90 mm dia. 1-130 mm dia. 1-240 mm dia.
 Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction pipes 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 Yes
 Are all Sea Connections fitted direct on the skin of the Ship Yes Are they fitted with valves or cocks Yes Are 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
 Are 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
 Are pipes pass through the bunkers — How are they protected —
 Are 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 Yes
 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 Yes Is the shaft tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper deck
 Is 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. 2 No. of stages 3 diameters 105 360 360 mm stroke 220 mm driven by dynamo engine
 Auxiliary Air Compressors, No. — No. of stages — diameters — stroke — driven by —
 All Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 9242 mm stroke 70 mm driven by Manual
 Is provision made for first charging the air receivers Small manual air compressor
 Revolving Air Pumps, No. 1 for each working cylinder diameter 600 mm stroke 1,250 mm driven by Main engine
 Auxiliary Engines crank shafts, diameter 173.61 mm No. 3 Position Engine room flat
 Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

012306-012314-0190

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AIR RECEIVERS:—Have they been made under survey..... Yes ✓ State No. of report or certificate. AR-240 A+B
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..... Working pressure.....
Starting Air Receivers, No. 2 ✓ Total cubic capacity. 24 m³ Internal diameter 6.800 m.m. thickness Shell 3.1" End 4.5" 5.2"
Seamless, welded or riveted longitudinal joint Riveted ✓ Material Boiler quality Range of tensile strength End 26-30 7/16" Working pressure by Rules 30 kg/cm² No. 1
Actual 32 kg/cm²

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 Yes ✓

PLANS. Are approved plans forwarded herewith for shafting. London 11. Mar. 1952 Receivers. Kob 27. Oct. 1951 Separate fuel tanks. 2 Apr 1952
(If not, state date of approval)
Donkey boilers. Kob 29. Jan. 1951 General pumping arrangements. London 2 Apr. 1952 Pumping arrangements in machinery space. London 2 Apr. 1952
Oil fuel burning arrangements. Kob 6. Nov. 1951
Have Torsional Vibration characteristics been approved Yes ✓ Date of approval. London 11. March 1952

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓
State the principal additional spare gear supplied. As per Rule and following in addition:
4-Fuel needle valves, 5-Set rubber rings for liner joint, 2-Main bearing bolts and nuts, 5-Set piston rings

The foregoing is a correct description,
Manufacturer. MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD. NAGASAKI WORKS

Dates of Survey while building
During progress of work in shops - 1951, Mar 11, July 9, 10, 13, 14, Aug 7, Sep 7, 12, 18, 26, 28, Oct 1, 2, 3, 5, 10, 15, 16, 24, 28, Nov 4, 5, 6, 11, 13, 15, 17, 18, 19, 20, 21, 25, 27, 29, 30, Dec 1, 2, 3, 4, 5, 6, 7, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27
During erection on board vessel - 1952 Feb 22, 23, 25, 26, Mar 2, 4, 5, 7, 10, 11, 12, 13, 14, 19, 23, 28, Apr 1, 2, 4, 10, 13, 14, 17, 18, 19, 21, 24, 26, 28, 30, May 1, 6, 8, 12, 15
Total No. of visits 120

Dates of examination of principal parts—Cylinders 6-1-51 Covers 4-2-52 Pistons 5-12-51 Rods Connecting rods 18-1-51
Crank shaft 13-8-51 Flywheel shaft Thrust shaft 21-12-51 Intermediate shafts 23-2-52 Tube shaft
Screw shaft 21-2-52 Propeller 6-2-52 Stern tube 7-1-52 Engine seatings 27-3-52 Engine holding down bolts 1-4-52
Completion of fitting sea connections 27-2-52 Completion of pumping arrangements 30-4-52 Engines tried under working conditions 7-5-52
Crank shaft, material Forged steel Identification mark MN-CK104 x 105 Flywheel shaft, material Identification mark
Thrust shaft, material Forged steel Identification mark MS-FSS 7 x 540 Intermediate shafts, material Forged steel Identification marks MSF-526
Tube shaft, material Identification mark Screw shaft, material Forged steel Identification mark MSF-526
Identification marks on air receivers AR240-A+B YH R

Welded receivers, state Makers' Name
Is the flash point of the oil to be used over 150°F Yes ✓
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes ✓
Description of fire extinguishing apparatus fitted 1 water hose couplings on upper deck bridge side poop deck (total 13-70mm dia. 14-40mm dia.) 15 portable extinguishers on mesane place
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 T.M.T. "ASO-MARU" & "PRIMA-MARU"

General Remarks (State quality of workmanship, opinions as to class, &c.)
These machines have been constructed under Special Survey in accordance with the Rules.
Approved plans and Secretary's letter.
The materials and workmanship are good.
On completion these machines were installed in the vessel in accordance with Rules.
Appliances tested under full working condition and eligible in our opinion for classification with the records of +LMC 5.52, DBS 5.52, 7kgs per sq. cm and T.S (CL) 5.52
A notice board has been fitted and the tachometer marked warning against continuous operation of the engines below 30 R.P.M.

The amount of Entry Fee ... £ 1,049.328
Special ... £ :
Donkey Boiler Fee... £ :
Travelling Expenses (if any) £ :
When applied for 22. DEC 1952
When received 19
Committee's Minute
Assigned +LMC 5.52 Oil Eng
CL DB 100 lb (with torsional endorsement)
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