

REPORT ON OIL ENGINE MACHINERY.

No. 1693-C

Received at London Office.

6 JUL 1955

Writing Report 20TH JUNE 1955

When handed in at Local Office JUL 1 1955

Port of YOKOHAMA

Survey held at YOKOHAMA

Date, First Survey 31ST JULY 1954 Last Survey 15TH JUNE 1955
Number of Visits 92

Single
on the Twin
Triple
Quadruple

Screw vessel M.V. "VIRGINIA MARU"

YOKOHAMA SHIPYARD & ENGINE WORKS

By whom built MITSUBISHI NIPPON HEAVY INDUSTRIES LTD.

Yard No. 802 When built 6 1955

made at DITTO By whom made DITTO

Engine No. 3701 When made 4 1955

Boilers made at DITTO By whom made DITTO

Boiler No. 41308 When made 6 1955

orse Power 4,700 Owners MITSUBISHI KAIUN K.K.

Port belonging to TOKYO

er as per Rule 940

Is Refrigerating Machinery fitted for cargo purposes. No

Is Electric Light fitted. YES

which vessel is intended. -

GINES, &c. - Type of Engines 2 S.C.S.A YOKOHAMA-M.A.N. 2 or 4 stroke cycle 2 Single or double acting Single

pressure in cylinders 60 kg/cm² Diameter of cylinders 700 mm Length of stroke 1,200 mm No. of cylinders 6 No. of cranks 6

icated Pressure 7.2 kg/cm² Ahead Firing Order in Cylinders 1-5-3-4-2-6 Span of bearings, adjacent to the crank, measured

er edge to inner edge 894 mm Is there a bearing between each crank YES Revolutions per minute 128

dia 2044 mm Weight 3070 kg Moment of inertia of flywheel (lbs. in² or Kg. cm²) 8400 Means of ignition COMPRESSION Kind of fuel used DIESEL OIL OR FURNACE OIL

Solid forged dia. of journals 458.3 mm as per Rule 458.3 mm Crank pin dia 465 mm Crank webs Mid. length breadth 870 mm Thickness parallel to axis -

411 built as fitted 465 mm Mid. length thickness 285 mm shrunk Thickness around eye-hole -

Shaft, diameter as per Rule 325.9 mm as fitted 325.9 mm Thrust Shaft, diameter at collars as fitted 450 mm as per Rule 358.5 mm

ft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule 376.2 mm as fitted 376.2 mm Is the shaft fitted with a continuous liner YES

iners, thickness in way of bushes as per Rule 19.1 mm as fitted 22 mm Thickness between bushes as per Rule 14.4 mm as fitted 17 mm Is the after end of the liner made watertight in the

boss YES If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner. -

er 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-

- 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

shaft. - If so, state type. - Length of bearing in Stern Bush next to and supporting propeller 1600 mm

, dia 4900 mm Pitch 338 mm No. of blades 4 Material MANGANESE BRONZE whether moveable No Total developed surface 7.769 sq. feet

f inertia of propeller (lbs. in² or Kg. cm²) 187690 Kg. cm² Kind of damper, if fitted. -

f reversing Engines DIRECT Is a governor or other arrangement fitted to prevent racing of the engine when declutched. YES Means of

FORCED Thickness of cylinder liners 40-45 mm Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water cooled

with non-conducting material LAGGED If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned

the engine. - Cooling Water Pumps, No. 3 Is the sea suction provided with an efficient strainer which can be cleared within the vessel. YES

ps worked from the Main Engines, No. - Diameter - Stroke - Can one be overhauled while the other is at work. -

nnected to the Main Bilge Line No. and size 2 - 95/150 H x 65/35 (G.S. & FIRE PUMP - CENTRI. BILGE & BALLAST PUMP - DUPLEX) 1 - 2x10 H x 35 (BILGE & SANITARY - PLUNGER)

How driven G.S. & FIRE PUMP BILGE SANITARY PUMP - MOTOR DRIVEN BILGE & BALLAST PUMP - STEAM DRIVEN

ling 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

ents. -

pumps, No. and size 1 - STEAM DUPLEX 95/150 H Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 - MOTOR DRIVEN GEAR 40 H x 40 mm

dependent means arranged for circulating water through the Oil Cooler YES Suctions, connected to both main bilge pumps and auxiliary

ps, No. and size: - In machinery spaces 1 x 80 mm (TUNNEL WELL) 6 x 80 mm 2 x 160 mm In pump room. -

6 x 2 x 75 mm 2 x 80 mm 2 x 70 mm 1 x 50 mm 2 x 80 mm 2 x 50 mm 3 x 80 mm

ent Power Pump Direct Suctions to the engine room bilges, No. and size 1 x 160 mm

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

mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. YES

a Connections fitted direct on the skin of the Ship. YES Are they fitted with valves or cocks. BOTH Are they fixed

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

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

es pass through the bunkers. - How are they protected. -

es pass through the deep tanks. - Have they been tested as per Rule. YES

oes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times. YES

ngement 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

from one compartment to another. YES Is the shaft tunnel watertight. YES Is it fitted with a watertight door. YES worked from UPPER DECK

4 vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork. -

r Compressors, No. - No. of stages - diameter - stroke - driven by -

y Air Compressors, No. 2 No. of stages 2 diameters 1ST 250-225 mm stroke 150 mm driven by DIESEL GENERATOR ENGINE

4 Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 1ST 28 mm stroke 55 mm driven by KEROSENE ENGINE

vision is made for first charging the air receivers. 1 - TANDEM DOUBLE ACTING SINGLE CYLINDER

ng Air Pumps, No. 6 - MAIN ENGINE PISTON UNDERSIDE diameter 930 mm stroke 900 mm driven by MAIN ENGINE

Engines crank shafts, diameter as per Rule 131.5 mm as fitted 140 mm No. 2 Position PORT SIDE OUTBOARD No. 1 MANOEUVERING PLAT FORM IN ENG. ROOM

5 Auxiliary engines been constructed under special survey. YES Is a report sent herewith. YES

011368-011377-0145

AIR RECEIVERS:—Have they been made under survey. YES

State No. of report or certificate NO.1 YAR-50 NO.2 YAR-51

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 2 X 60 cub. m.

Internal diameter. 1380 mm

thickness. 2.8 mm

Seamless, welded or riveted longitudinal joint. BUTT WELD

Material. STEEL

Range of tensile strength. —

Working pressure. —

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. 27-11-54

CRANK INTERMEDIATE SCREW

Receivers. 26-1-55

Separate fuel tank. —

Donkey boilers. 15-3-55

General pumping arrangements. 12-2-55

Pumping arrangements in machinery space. 5-5-55

Oil fuel burning arrangements. 11-5-55

Have Torsional Vibration characteristics been approved. YES

Date of approval. 2-5-1955

SPARE GEAR.

Has the spare gear required by the Rules been supplied. YES

State the principal additional spare gear supplied. STARTING VALVE (COMPLETE) - 1. SAFETY VALVE (COMPLETE) - 1. FUEL INJECTION (COMPLETE) - 3 SETS. PISTON (COMPLETE) - 1. PISTON PACKING RING EACH SIZE - 2 SETS. PISTON COOLING PIPE - 2 SETS.

CRANK PIN BEARING - 1 SET. CROSS HEAD BEARING - 2 SETS. TIMING GEAR FOR CAM SHAFT DRIVE - 1 SET.

PIN LINK - 6 SETS. FUEL PUMP - 1 SET. SCAVENGING VALVE - 10 SETS. COUPLING BOLT FOR CRANK SHAFT - 1 SET.

THRUST PAD - ONE SIDE - 1 SET. FUEL INJECTION PIPE - 12.

The foregoing is a correct description,

S. Meda.

Manufacturer.

Dates of Survey while building. During progress of work in shops. 1954: JULY-31. AUG-7, 12, 17, 19, 21, 28. SEP-7, 9, 11, 18, 25. OCT-2, 9, 12, 14, 16, 19, 23, 26, 28, 30. NOV-4, 9. DEC-2, 7, 9, 14, 17, 18, 23, 27, 28. 1955: JAN-6, 8, 11, 18, 20, 22, 25, 27, 29. FEB-1, 3, 5, 8, 10, 12, 15, 19. MAR-1, 5, 8, 12, 17, 22, 24, 26, 31. APR-5, 11, 12, 13, 14, 16, 18, 19, 21, 26, 30. MAY-12, 14, 26. JUNE-4, 7, 9, 11.

Total No. of visits. 90

Dates of examination of principal parts—Cylinders. 5-2-55. Covers. 24-2-55. Pistons. 12-2-55. Rods. 26-2-55. Connecting rods. 27-12-54.

Crank shaft. 27-12-54. Flywheel shaft. 18-3-55. Thrust shaft. 27-12-54. Intermediate shafts. 18-3-55. Tube shaft. —.

Screw shaft. 18-3-55. Propeller. 14-4-55. Stern tube. 13-4-55. Engine seatings. 30-4-55. Engine holding down bolts. 21-1-55.

Completion of fitting sea connections. 21-4-55. Completion of pumping arrangements. 7-6-55. Engines tried under working conditions. 9-2-55.

Crank shaft, material. OPEN HEARTH STEEL. Identification mark. KKK-422 M.S. Flywheel shaft, material. STEEL. Identification mark. NGA-1.

Thrust shaft, material. SAME CRANK SHAFT. Identification mark. SAME CRANK SHAFT. Intermediate shafts, material. STEEL. Identification mark. NGA-354.

Tube shaft, material. —. Identification mark. —. Screw shaft, material. OPEN HEARTH STEEL. Identification mark. KF-17.

Identification marks on air receivers. 6,000 L No.1 YAR-50 KM No.2 YAR-51 KM 200 L YAR-52 KM

Welded receivers, state Makers' Name. YOKOHAMA SHIPYARD AND ENGINE WORKS, MITSUBISHI NIPPON HEAVY INDUSTRIES, LTD.

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. FROTH PORTABLE 21 + 2 (42 L). STEAM SMOTHERING, HYDRANT.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. NO. 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 Engine has been constructed under the supervision of the Society's Surveyors in accordance with the Rules and Approved plans. The quality of workmanship and materials have been found satisfactory. This engine was examined under full load working conditions in the shop and found satisfactory. The machinery of the vessel has been satisfactorily installed in the vessel, tried under full working conditions. It is submitted that the Machinery of this vessel is eligible to be classed with this Society with notation of LMC 6.55.

The crank case explosion relief device fitted as per plan in accordance with No. 2045.

The amount of Entry Fee. DURING CONSTRUCTION £ 408,000-

DURING INSTALLATION £ 234,000-

Special O.F. HEATER & ETC. £ 45,000-

Donkey Boiler Fee. £ PLEASE SEE RPT. 32

Travelling Expenses (if any) £ 15,000-

When applied for JUL. 1, 1955

When received 19

Committee's Minute

Assigned + LMC 6.55 (with Tors. Ent.)

2DB 145 lb.

CL.



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