

REPORT ON OIL ENGINE MACHINERY.

No. 9607

20 JUL 1936

Date of writing Report 15-6-1936 When handed in at Local Office 25-6-1936 Port of KOBE Received at London Office

No. in Survey held at TAMA Date, First Survey 6-7-35 Last Survey 30-5-1936 Reg. Book. Number of Visits 44

on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel MOTOR SHIP "CANBERRA MARU" Tons Gross 6,477 Net 3,858

Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 216 When built 1936

Engines made at TAMA By whom made MITSUI BUSSAN KAISHA Engine No. 107 When made 1936

Boiler made at TAMA By whom made MITSUI BUSSAN KAISHA Boiler No. 129 When made 1936

Horse Power 7,000 Owners OSAKA SHOSEN KABUSHIKI KAISHA Port belonging to OSAKA

Horse Power as per Rule 1,231 Is Refrigerating Machinery fitted for cargo purposes YES Is Electric Light fitted YES for which vessel is intended DRY & PERISHABLE CARGOES. 24 1/2" 55 1/8"

ENGINES, &c. Type of Engines BURMEISTER AND WAIN 2 or 4 stroke cycle 2 Single or double acting DOUBLE

Mean pressure in cylinders 45 Kg/cm² Diameter of cylinders 620 mm Length of stroke 1400 mm No. of cylinders 6 No. of cranks 6

Bearings, adjacent to the Crank, measured from inner edge to inner edge 946 mm Is there a bearing between each crank YES

Revolutions per minute 110 Flywheel dia. 1975 mm Weight 2,200 kg Means of ignition COMPRESSION Kind of fuel used HEAVY OIL.

Shaft, dia. of journals as per Rule 483 mm as fitted 485 mm Crank pin dia. 485 mm Crank Webs Mid. length breadth 860 mm Thickness parallel to axis 305 mm

Shaft, diameter as per Rule 260 mm Intermediate Shafts, diameter as per Rule 424 mm Thrust Shaft, diameter at collars as per Rule 445 mm

Shaft, diameter as fitted 260 mm Screw Shaft, diameter as fitted 460 mm Is the shaft fitted with a continuous liner YES

Liners, thickness in way of bushes as per Rule 21.44 mm as fitted 24 mm Thickness between bushes as per Rule 16 mm as fitted 23 mm

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

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 YES

If the liners are fitted, is the shaft lapped or protected between the liners YES Is an approved Oil Gland or other appliance fitted at the after end of the tube YES

Propeller, dia. 5330 mm Pitch 5058 mm No. of blades 4 Material MANGANESE BRONZE whether Moveable YES Total Developed Surface 9.5 sq. METERS

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

Thickness of cylinder liners 42 mm Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers lagged with insulating material YES

Exhausting Water Pumps, No. 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES

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 ONE INDEPENDENT BILGE & SANITARY PUMP-15 M³/H EACH (E. MOTOR DRIVEN), ONE BILGE & How driven BALLAST PUMP-110 M³/H (E. MOTOR DRIVEN) & ONE FIRE & G. S. PUMP-110 M³/H (E. MOTOR DRIVEN).

Other Pumps, No. and size ONE, 110 M³/Hour Lubricating Oil Pumps, including Spare Pump, No. and size 2, 250 TONS/HOUR EACH.

Independent means arranged for circulating water through the Oil Cooler YES Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Suctions, No. and size:—In Machinery Spaces 5-75 mm, ONE-75 mm (IN COFFERDUM) & 2-75 mm (IN SHAFT TUNNEL)

Other Suctions, &c. ONE-65 mm for NO.1 HOLD, COFFERDUM, 2-75 mm for Nos. 1, 3, 4, 5 & 6 HOLDS EACH & 2-90 mm for NO.2 HOLD.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size ONE-150 mm, 2-130 mm & 2-65 mm.

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

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 the pipes pass through the bunkers YES How are they protected YES

Are the pipes pass through the ^{WING} ~~DEEP~~ tanks 2 BILGE PIPES FOR NO. 6 HOLD. Have they been tested as per Rule YES

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 TOP PLATFORM

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

Air Compressors, No. NONE No. of stages Diameters Stroke Driven by

Primary Air Compressors, No. 2 No. of stages 2 Diameters H.P.-280 mm L.P.-320 mm Stroke 200 mm Driven by AUXILIARY DIESEL ENGS.

Auxiliary Air Compressors, No. ONE No. of stages 2 Diameters H.P.-38 mm L.P.-89 mm Stroke 60 mm Driven by OIL ENGINE (4 BHP)

Engining Air Pumps, No. ONE CAPACITY 640 M³/Min. @ Stroke 0.2 Kg/cm² air Pressure Driven by 2 SETS OF E. MOTORS. (400 BHP)

Auxiliary Engines crank shafts, diameter as per Rule 169 mm as fitted 180 mm

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

Are the internal surfaces of the receivers be examined YES What means are provided for cleaning their inner surfaces ACCESS BY MANHOLE

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

High Pressure Air Receivers, No. NONE Cubic capacity of each Internal diameter Thickness

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

Working Air Receivers, No. 2 Total cubic capacity 2 x 17 CUB. METERS Internal diameter 1994-2050 mm Thickness SNELL-28 mm ENDS-35 mm

Unless, lap welded or riveted longitudinal joint RIVETED Material STEEL Range of tensile strength 26-30 T/0.4 28-32 T/0.4 Working pressure by Rules 25.4 Kg/cm²

IS A DONKEY BOILER FITTED? **YES** ✓ If so, is a report now forwarded? **YES**
 PLANS. Are approved plans forwarded herewith for Shafting **YES** Receivers **16-3-35** Separate Tanks **30-12-35**
(If not, state date of approval)
 Donkey Boilers **15-8-35** General Pumping Arrangements **27-9-35** Oil Fuel Burning Arrangements **27-9-35**

SPARE GEAR **✓** IN ACCORDANCE WITH OR IN EXCESS OF THE RULE REQUIREMENTS AND THE FOLLOWING

PRINCIPAL ITEMS:-

- ONE SCAVANGE AIR BOX WITH STUDS & NUTS.
- ONE SET OF THROUGH STAY BOLTS WITH NUTS FOR ONE CYLINDER.
- ONE SET OF CROSSHEAD GUIDE SHOE.
- ONE TOP EXHAUST PISTON COMPLETE.
- ONE BOTTOM EXHAUST PISTON COMPLETE.
- 6 FUEL OIL PUMP COMPLETE & 6 PLUNGERS WITH BUSHES.
- ONE RING OF DOUBLE ROLLER CHAIN FOR CONNECTING MAIN AND SECONDARY CRANK SHAFTS.
- TWO BRONZE PROPELLER BLADES.

The foregoing is a correct description,
PER PRO MITSUI BUSSAN KAISHA, LTD.

U. Uaito Manufacturer.

Dates of Survey while building	During progress of work in shops--		During erection on board vessel--		Total No. of visits
	1935	1936	1936	1936	
	JULY 6, AUG. 23, SEPT. 3, 10, 28, OCT. 1, 4, 15, 24, 25, NOV. 6, 11, 21, DEC. 3, 17, 23, 27.	JAN. 11, 14, 20, 29, 31, FEB. 4, 10, 12, 14, 22, 27, 29, MAR. 7, 31, APR. 4, 27, 28, MAY. 7, 12.	APR. 10, 11, 25, MAY. 14, 22, 25, 26, 30.		44.

Dates of Examination of principal parts—Cylinders **11-1-36** Covers **11-1-36** Pistons **11-1-36** Rods **23-12-35** Connecting rods **4-12-35**
 Crank shaft **24-12-35** ^{SECONDARY CRANK} ~~Primary~~ shaft **10-1-36** Thrust shaft **27-12-35** Intermediate shafts **12-2-36** Tube shaft **✓**
 Screw shaft **13-2-36** Propeller **4-3-36** Stern tube **5-3-36** Engine seatings **10-4-36** Engines holding down bolts **25-3-36**
 Completion of fitting sea connections **8-3-36** Completion of pumping arrangements **21-5-36** Engines tried under working conditions **22-5-36**
 Crank shaft, Material **STEEL** Identification Mark **R.No. 4858** **24-12-35** ^{SECONDARY CRANK} ~~Primary~~ shaft, Material **STEEL** Identification Mark **R.No. 4911** **10-1-36**
 Thrust shaft, Material **STEEL** Identification Mark **R.No. 4876** **27-12-35** Intermediate shafts, Material **STEEL** Identification Marks **R.No. 4969** **12-2-36**
 Tube shaft, Material **✓** Identification Mark **✓** Screw shaft, Material **STEEL** Identification Mark **R.No. 4971** **13-2-36**

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** ✓
 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 **✓**

Is this machinery duplicate of a previous case **YES** If so, state name of vessel **"OTOWASAN MARU"**
 WITH EXCEPTION THAT THERE ARE NO PUMPS DRIVEN BY THE MAIN ENGINE

General Remarks (State quality of workmanship, opinions as to class, &c.)
*This machinery has been constructed under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are good. On completion, the machinery was installed in the vessel in accordance with the Rules and tested under full working condition, and is eligible in my opinion for classification with the record of **LMC 5,36** Oil Engine T.S. (CL) 5,36 + D.B. 100 lbs. per square inch.*

The amount of Entry Fee ... £ **6-0-0** When applied for, **29/5/1936**
 Special ... £ **163-8-1**
 Donkey Boiler Fee ... £ **15-0-0** When received, **25.8.1936**
 Travelling Expenses (if any) £ : : **25/8**

M. Kamakura
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FBI, 24 JUL 1936**
 Assigned *+ Lmc 5.36 DR. 1000*
rl. Inc. CL



Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)