

REPORT ON OIL ENGINE MACHINERY.

No. 2369

13 DEC 1954

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Port of K O B E

of writing Report 19 When handed in at Local Office

Date, First Survey 22nd Oct., 1953 Last Survey 6th July, 1954

Survey held at Tamano, Japan

Number of Visits 82

Single ✓ ~~with Twin~~ ~~Triple~~ ~~Quad~~ ~~Triple~~
Screw vessel m.v. "HOEISAN MARU"

Tons Gross 6952.52
Net 3854.60

built at Tamano, Japan By whom built Mitsui Shipbldg. & Engr. Co., Ltd. Yard No. 581 When built July 1954

Engines made at Tamano, Japan By whom made Mitsui Shipbldg. & Engr. Co., Ltd. Engine No. 513 When made July 1954

Boilers made at Tamano, Japan By whom made Mitsui Shipbldg. & Engr. Co., Ltd. Boiler No. 370 When made July 1954

Indicated Horse Power { Maximum 11250 ✓
Service 9600 ✓ Owners Mitsui Steamship Co., Ltd. Port belonging to Tokyo

N. as per Rule 2250 ✓ Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended _____

ENGINES, &c. — Type of Engines Mitsui-B&W DE 974-VTBF-160 2 or 4 stroke cycle 2 ✓ Single or double acting Single ✓

Maximum pressure in cylinders 55 kg/cm² ✓ Diameter of cylinders 740 mm ✓ Length of stroke 1600 mm ✓ No. of cylinders 9 ✓ No. of cranks 9

Mean Indicated Pressure 8 kg/cm² ✓ Span of bearings (i.e., distance between inner edges of bearings in _____)

Length of a crank 984.6 mm ✓ Is there a bearing between each crank Yes Revolutions per minute { Maximum 115 ✓
Service 109 ✓

Meaning of flywheel 1903 Weight 2180 kg Moment of inertia of flywheel 123,000,000 Kg.cm.² Means of ignition Diesel Kind of fuel used oil

Balance wts. (" " " ") _____

Crank Shaft, Solid forged ~~Cast~~ ~~Wrought~~ ~~Steel~~ ~~Iron~~ ~~Aluminum~~ ~~Brass~~ ~~Other~~ dia. of journals as per Rule 537.78 mm ✓ as fitted 590 mm ✓ Crank pin dia. 590 mm ✓ Crank webs Mid. length breadth 1240 mm ✓ Thickness parallel to axis 340 mm ✓

Intermediate Shafts, diameter as per Rule 444.729 mm ✓ as fitted _____ Thrust Shaft, diameter at collars as per Rule 489.20 mm ✓ as fitted _____

Screw Shaft, diameter as per Rule 507.938 mm ✓ as fitted 515 mm ✓ Is the screw shaft fitted with a continuous liner { Yes ✓

Bronze Liners, thickness in way of bushes as per Rule 23.241 mm ✓ as fitted 27 mm ✓ Thickness between bushes as per Rule 17.431 mm ✓ as fitted 24.5 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 _____

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 _____ If two liners are fitted, is the shaft lapped or protected between the liners _____ Is an approved Oil Gland fitted at the after _____

end of stern tube No ✓ If so, state type _____ Length of bearing in Stern Bush next to and supporting propeller 2300 mm ✓

Propeller, dia. 5900 mm ✓ Pitch 5131 mm ✓ No. of blades 4 Material Mn Bronze Blade: Mn Bronze Boss: Cast Iron whether moveable Moveable Total developed surface 126,589 sq. feet

Moment of inertia of propeller including entrained water 279,300,000 Kg.cm.² Kind of damper, if fitted _____

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine Yes ✓ Means of _____

Lubrication Forced Thickness of cylinder liners 52 mm Are the cylinders fitted with safety valves Yes ✓ Are the exhaust pipes and silencers water cooled _____

or 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 back to the engine _____

S.W. 1 Spare F.W. & S.W. 1 S.W. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes ✓

Bilge Pumps worked from the Main Engines, No. and capacity 2: 20 m³/h ✓ Can one be overhauled while the other is at work No

Pumps connected to the Main Bilge Line (No. and capacity of each 1-ballast pump 180m³/h, 1-general service pump 180 m³/h ✓
How driven 1-bilge pump 20 m³/h (all driven by electric motor) ✓
2-bilge sanitary pumps 2x20m³/h (driven by main engine) ✓

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 _____

Ballast Pumps, No. and capacity 1: 180 m³/h ✓ Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2: 310 m³/h ✓

Are two independent means arranged for circulating water through the Oil Cooler Yes ✓ Branch Bilge Suctions _____

No. and size: — In machinery spaces Fore P 1-3" Aft P 2-3" Aft S 1-3 1/2" ✓ In pump room ENGINE ROOM 1-2" ENGINE ROOM COFF 1-3" ✓

In holds, &c. P 1-3 1/2" S 1-3 1/2" DEEP TANK PC 1-2" DEEP TANK PW 1-3" DEEP TANK SW 1-3" ✓ TUNNEL WELL 1-3 1/2" ✓ TUNNEL BILGE HAT 1-2" ✓ DRY TANK 1-2" ✓

Direct Bilge Suctions to the engine room bilges, No. and size 1-9" main cooling S.W. pump, 1-3 1/2" G.S. pump, 1-5 1/2" ballast pump ✓

Are 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 _____

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 Valves & Cocks ✓ 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 ✓

What pipes pass through the bunkers None How are they protected _____

What pipes pass through the deep tanks None 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

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 L.P. 130mm stroke _____ driven by _____

Auxiliary Air Compressors, No. 2 ✓ No. of stages 2 diameters H.P. 115mm stroke 120mm driven by Electric motor

Small Auxiliary Air Compressors, No. 1 ✓ No. of stages 2 diameters H.P. 1 1/2" stroke 3" driven by Electric motor

What provision is made for first charging the air receivers by hand compressor (1, 2-stage H.P. 95mm Stroke 95mm, driven by hand)

Scavenging Air Pumps ~~or~~ Blowers, No. Turbo blowers 3 ✓ How driven Main engine exhaust gas Engine Nos. 521, 522, 523

Auxiliary Engines Have they been made under survey Yes Makers name Mitsui Shipbldg. & Engr. Co., Ltd. Position of each in engine room Port side built seat on tanktop

Report No. _____

95
3/1/55

011449-011460-0027

AIR RECEIVERS:—Have they been made under survey... Yes ✓ State No. of report or certificate... AR-19495
 State full details of safety devices... 1; 10 mm fusible plug ✓
 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 25.2 m³ ✓ Internal diameter 1720 mm ✓ thickness Shell 24 mm ✓ End plate 31 mm ✓
 Seamless, welded or riveted longitudinal joint Welded Material O.H. Steel Range of tensile strength Shell 51.9-54 kg/mm² Working pressure 25 kg/cm² ✓
 Flange 48.3-51.3 kg/mm²

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 26th Nov., 1953 Kobe Receivers 6th Dec., 1953 Separate fuel tanks 8-10-53
 (If not, state date of approval)
 Donkey boilers 16-12-53 Kobe General pumping arrangements — Pumping arrangements in machinery space 28-10-53 Kobe
 Oil fuel burning arrangements 23-12-53 Kobe
 Have Torsional Vibration characteristics been approved Yes ✓ Date and particulars of approval 1st April, 1954 ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes State if for "short voyages" only No
 State the principal additional spare gear supplied 3 - exhaust valves, 2 - starting air valves, 11 - fuel valves,
 3 - relief valves, 8 sets - piston rings, 1 set - piston cooling pipe, 8 sets - fuel pipes,
 1 - cylinder liner, 1 - cylinder cover, 10 - indicator valves, 1 - propeller blade, 7 - propeller studs.

MITSUI SHIPBUILDING & ENGINEERING CO., LTD., YAMANO WORKS

S. Sanaka
 Senior Managing Director

The foregoing is a correct description,

Dates of Survey while building
 During progress of work in shops - 1953 Oct. 22, Nov. 5, 10, 13, 17, 20, 27, 30, Dec. 3, 4, 8, 11, 15, 18, 22, 25, 26,
 1954 Jan. 6, 8, 12, 16, 19, 22, 23, 26, Feb. 2, 5, 9, 12, 16, 19, 23, 26, Mar. 2, 5, 8, 9, 12, 13, 16,
 19, 23, 26, 30, 31, Apr. 2, 6, 9, 13, 16, 20, 26, 27, 30, May 4, 7, 11, 14, 18, 21, 25, 28,
 Jun. 1, 4, 8, 11, 14, 16, 22, 25, 26, 29, 30.
 During erection on board vessel - 1954 Mar. 23, Apr. 16, 20, Jun. 7, 22, 25, 29, July 3, 6.
 Total No. of visits 82

Dates of examination of principal parts—Cylinders 20-3-54 Covers 20-4-54 Pistons 2-4-54 Rods 9-3-54 Connecting rods 28-12-53
 Crank shaft 28-1-54 Flywheel shaft — Thrust shaft 29-1-54 Intermediate shafts 9-6-54 Tube shaft —
 Screw shaft 31-3-54 Propeller 13-4-54 Stern tube 19-3-54 Engine seatings 1-6-54 Engine holding down bolts 7-6-54
 Completion of fitting sea connections 20-4-54 Completion of pumping arrangements 25-6-54 Engines tried under working conditions 3-7-54

Crank shaft, material F.S. & C.S. Identification mark K-CK 7375 Flywheel shaft, material — Identification mark —
 Thrust shaft, material O.H. Steel Identification mark HI LR Intermediate shafts, material O.H. Steel Identification marks Y3688, 3684, 51
 Tube shaft, material — Identification mark — Screw shaft, material O.H. Steel Identification mark K-F1542
 MS LR

Identification marks on air receivers No. AR559 Lloyd's test KOB W.T.P. 41 kg/cm² W.P. 25 kg/cm² JNR 16-4-54
 No. AR560 Lloyd's test KOB W.T.P. 41 kg/cm² W.P. 25 kg/cm² JNR 16-4-54

Welded receivers, state Makers' Name Mitsui Shipbuilding & Engineering Co., 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 ✓

Full description of fire extinguishing apparatus fitted in machinery spaces Steam pipe & CO₂ gas pipe from CO₂ gas bottle room

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 ✓

What is the special notation desired ?

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with No

Is this machinery duplicate of a previous case Yes If so, state name of vessel m.v. "HAKONESAN MARU"

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.)
 The machinery of this vessel has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.
 The material and workmanship are sound and good.
 The machinery of this vessel has been examined under full working condition during deck and comprehensive sea trial and found satisfactory.
 In our opinion, the machinery of this vessel is eligible to have a record of +LMC 7,54 T.S. (CL) 7,54 and D.B.S. W.P. 7 kg/cm² 7,54.

The amount of Entry Fee ... ¥ 939,000
 Special ... £ : : When applied for OCT. 27, 1954 19
 Donkey Boiler Fee... £ : : When received 19
 Travelling Expenses (if any) Supt. 1. :

S. Sanaka
 Engineer Surveyor to Lloyd's Register of Shipping.



Committee's Minute
 Assigned +LMC 7.54
 DB 100 cl,
 CL

Certificate (if required) to be sent to
 The Surveyors are requested not to write on or below the space for Committee's Minute.
 17.12.54