

REPORT ON OIL ENGINE MACHINERY.

No. 2369

Received at London Office

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of writing Report

19

When handed in at Local Office

NOV. 26 1954

Port of

K O B E

in Survey held at

Tamano, Japan

Date, First Survey 22nd Oct., 1953

Last Survey

6th July, 1954

Number of Visits 82

Book.

2185
Single
Screw vessel
M.V. "HOEISAN MARU"

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

Main Boilers made at

Tamano, Japan

By whom made

Mitsui Shipbldg. & Engr. Co., Ltd. Boiler No. 370

When made July 1954

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

Grade for which vessel is intended

L 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

Way of a crank)

984.6 mm

Is there a bearing between each crank

Yes

Revolutions per minute

Maximum 115

Service 109

11,000,000

Compression

Diesel

Flywheel dia.

1903

Weight 2180 kg

Moment of inertia of flywheel

123,000,000

balance wts. (" " " ")

Crank

Solid forged

Shaft

Semi-built

dia. of journals

as per Rule

537.78 mm

Crank pin dia.

590 mm

Crank webs

Mid. length breadth

1240 mm

shrink

Thickness parallel to axis

340 mm

Flywheel Shaft, diameter

as per Rule

as fitted

Intermediate Shafts, diameter

as per Rule

as fitted

Thrust Shaft, diameter at collars

as per Rule

as fitted

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

515 mm

Is the shaft fitted with a continuous liner

Yes

Bronze Liners, thickness in way of bushes

as per Rule

as fitted

Thickness between bushes

as per Rule

as fitted

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.

590 mm

Pitch

513.1 mm

No. of blades

4

Material

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

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

—

Cooling Water Pumps, No. and how driven

3: electric motor

Working F.W.

1

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 180 m³/h1-general service pump 180 m³/h

How driven

1-bilge pump 20 m³/h (all driven by electric motor)2-bilge sanitary pumps 2x20 m³/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"

centre 1-3 1/2"

In pump room

ENGINE ROOM

1-2"

ENGINE ROOM

1-3"

TUNNEL WELL

1-3 1/2"

TUNNEL BILGE HAT

1-2"

TANK

COFF

In holds, &c.

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 1/2"

S. 1-3 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 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

Valves & Cocks

Are they fixed

Are all Sea Connections fitted direct on the skin of the Ship

Yes

Are they fitted with valves or cocks

Yes

Are the overboard discharges above or below the deep water line

Below

Are they sufficiently high on the ship's side to be seen without lifting the platform plates

Yes

Are the blow off cocks fitted with a spigot and brass covering plate

Yes

Are they each fitted with a discharge valve always accessible on the plating of the vessel

Yes

How are they protected

—

What pipes pass through the bunkers

None

Have they been tested as per Rule

—

What pipes pass through the deep tanks

None

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. 130 mm

stroke

—

driven by

—

Auxiliary Air Compressors, No.

2

No. of stages

2

diameters

L.P. 115 mm

stroke

120 mm

driven by

Electric motor

Small Auxiliary Air Compressors, No.

1

No. of stages

2

diameters

H.P. 1 1/2"

What provision is made for first charging the air receivers

by hand compressor

(1, 2-stage

H.P. 95 mm

Stroke 95 mm,

driven by hand)

Scavenging Air Pumps & Blowers, No.

Turbo blowers 3

How driven

Main engine exhaust gas

Engine Nos.

521, 522, 523

Have they been made under survey

Yes

Auxiliary Engines

Mitsui Shipbldg. & Engr. Co., Ltd.

Position of each in engine room

Port side built seat on tanktop

Report No.

—

—

—

—

—

—

—

—

—

Makers name

Mitsui Shipbldg. & Engr. Co., Ltd.

Position of each in engine room

Port side built seat on tanktop

Report No.

—

—

—

—

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 24 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

The foregoing is a correct description,

Manufacturer Senior Managing Director

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 7&11-1-54 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 Y3688, 3684, 51
Thrust shaft, material O.H. Steel Identification mark K-F1540 Intermediate shafts, material O.H. Steel Identification marks 5132, 5133, 51
Tube shaft, material — Identification mark — Screw shaft, material O.H. Steel Identification mark K-F1542
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 ... £ :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) ... £ :
When applied for OCT. 27, 1954 19
When received 19

Committee's Minute

Assigned +LMC 7.54

DB 100 cl,

CL

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation