

REPORT ON OIL ENGINE MACHINERY.

No. 1770

9 DEC 1953

Received at London Office

18 DEC 1953

Writing Report 19 When handed in at Local Office 19 Port of Kobe
Survey held at Kobe Date, First Survey 30th January, 1953 Last Survey 24th October 1953
Number of Visits 78
Type of vessel M.V. "HIYEHARU MARU"
By whom built Mitsubishi H.I. Reorganized Ltd., Kobe Shipyard & Engine Wks. Yard No. 855
By whom made - ditto - Engine No. 1375
By whom made - ditto - Boiler No. 325
Horse Power { Maximum 7500 ✓ Service 5625 Owners Shinnihon K.K. Boiler No. 326
Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
Port belonging to Nishinomiya Japan

ENGINES, &c. — Type of Engines Sulzer 10SD72
Cylinder pressure in cylinders 53 kg/cm² ✓ Diameter of cylinders 720mm ✓ Length of stroke 1250mm ✓ No. of cylinders 10 ✓ No. of cranks 10
Indicated Pressure 6.14kgs/cm² ✓ Span of bearings (i.e., distance between inner edges of bearings in a crank) 934mm ✓ Is there a bearing between each crank Yes
Revolutions per minute { Maximum 130 ✓ Service 118
Flywheel dia. 2397.9mm Weight 1428kgs Moment of inertia of flywheel (lbs. in² or Kg. cm²) 5x10⁷ Means of ignition Compression Kind of fuel used Diesel oil
" " " " balance wts. (" " " ") 0.164x10⁷

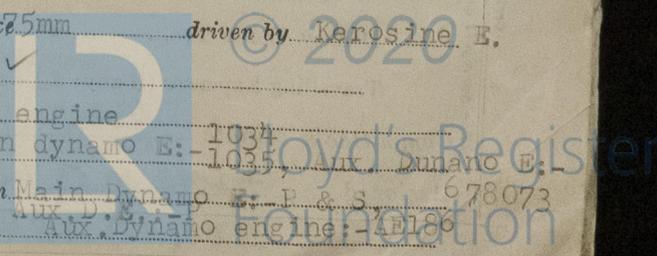
Journal dia. 470.66mm as per Rule 470.66mm as fitted 490mm ✓ Crank pin dia. 490mm ✓ Crank webs Mid. length breadth 846mm Thickness parallel to axis 295mm
Flywheel Mid. length thickness 295mm shrunk Thickness around eyehole 243mm
Shaft, diameter as per Rule 470.66mm as fitted 490mm Intermediate Shafts, diameter as per Rule 372.94mm as fitted 400mm ✓ Thrust Shaft, diameter at collars as per Rule 391.587mm as fitted 490mm ✓
Screw Shaft, diameter as per Rule 470.66mm as fitted 490mm Is the (tube/screw) shaft fitted with a continuous liner { Yes ✓
Liners, thickness in way of bushes as per Rule 20.752mm as fitted 24mm Thickness between bushes as per Rule 15.564mm as fitted 20mm Is the after end of the liner made watertight in the stern tube Yes ✓
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -
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 the stern tube No ✓
If so, state type - Length of bearing in Stern Bush next to and supporting propeller 1800mm ✓
Pitch 3850mm No. of blades 4 Material Bronze whether moveable Movable Total developed surface 10,190 sq. feet
Moment of inertia of propeller including entrained water (lbs. in² or Kg. cm²) 6.96 x 10⁸ Kind of damper, if fitted Not fitted

Reversing Engines Self direct Is a governor or other arrangement fitted to prevent racing of the engine Yes
Means of operation forced Thickness of cylinder liners 45mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled
Are the exhaust pipes and silencers water cooled lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
Cooling Water Pumps, No. and how driven 4 motor Working F.W. 2x4HP 10T/h
Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
Can one be overhauled while the other is at work -
No. and capacity of each Bilge & Ballast P. 1x150T/h, Bilge & Sanitary P. 1x20T/h, Fire & G.S.P. 1x150T/h ✓
How driven Electric Motor ✓
If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements -

Pumps, No. and capacity 1 x150T/h ✓ Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x130HP x 290T/h
Independent means arranged for circulating water through the Oil Cooler Yes ✓ Branch Bilge Suctions as follows:-
In machinery spaces 6 x2", 2x1/22", 2 x 3" ✓ In pump room
No. 1H No. 2H No. 3H No. 4H No. 5H No. 6H F.C.D. E.C.D. A.C.D. DP.T Stern Cant No. 4 T.D. Cargo
& 1x3" ✓ 2x3" ✓ 2x3" ✓ 2x2 1/2" 2x2" 2x3" 1x2" ✓ 4x2" ✓ 1x2" ✓ 2x2 1/2" ✓ 2 x 2" ✓ 2 x 2 1/2" ✓ 2-2" ✓
Bilge Suctions to the engine room bilges, No. and size 2 x 3" 2 x 5" ✓
Are 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.
Are they fitted with valves or cocks Yes ✓ 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 ✓

How are they protected -
Have they been tested as per Rule Yes
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 from one compartment to another Yes ✓ Is the shaft tunnel watertight Yes ✓ Is it fitted with a watertight door Yes ✓ worked from Up Deck
Means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -
Air Compressors, No. 2 ✓ No. of stages 2 diameters 305mm, stroke 180mm driven by main dynamo E.
Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 340mm stroke - driven by -
Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 30mm, 80mm stroke 75mm driven by Kerosine E.
Provision is made for first charging the air receivers hand starting / by above Kerosine Engine ✓
Air Pumps or Blowers, No. 10 ✓ How driven by main diesel engine
Have they been made under survey Yes ✓ Engine Nos. main dynamo E: 1034, 1035, Aux. dynamo E: 678073
Makers name Mitsubishi, Kobe, and Daihatsu Position of each in engine room Main dynamo E: P. & S. 678073, Aux. dynamo E: 10186
In Engine room, Kogyo K.K. Report No. 008765 - 008772 - 0147

7/1/54



AIR RECEIVERS:—Have they been made under survey Yes No State No. of report or certificate No. 496

State full details of safety devices high lift spring loaded safety valve 30mm dia., 2mm lift

Can the internal surfaces of the receivers be examined and cleaned Yes No Is a drain fitted at the lowest part of each receiver Yes No

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 20.4M³ Internal diameter 1.780mm thickness - Shell 35mm

Seamless, welded or riveted longitudinal joint Welded Material boiler plate Range of tensile strength 46-48 Working pressure 30kgs/cm²

IS A DONKEY BOILER FITTED Yes No If so, is a report now forwarded Yes No

Is the donkey boiler intended to be used for domestic purposes only Yes No

PLANS. Are approved plans forwarded herewith for shafting Yes No App. date tank shaft 6-4-53 shafting 3-4-53 Receivers App. date 4-6-53 Separate fuel tank 23-4-53

Donkey boilers 28-5-53 General pumping arrangements 23-4-53 Pumping arrangements in machinery space 23-4-53

Oil fuel burning arrangements 21-11-52

Have Torsional Vibration characteristics been approved Yes No Date and particulars of approval 23-5-53

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes No State if for "short voyages" only

State the principal additional spare gear supplied 1 cylinder liner, 1 cylinder cover, 3 sets of piston packing 4 O.F. valves, 1 set of main bearing bolts and nuts, 2 propeller blades.

The foregoing is a correct description, *R. Ashima* Manufacturer.

for *Murakami*, Director & General Manager

Dates of Survey while building

During progress of work in shops - - 1953:- Jan. 30, Feb. 10, 12, 17, 24, 26 Mar. 3, 5, 7, 10, 12, 14, 16, 17, 19, 24, 26, 31, Apr. 8, 9, 14, 16, 18, 21, 23, 25, 28, 30 May 4, 6, 7, 9, 12, 14, 16, 19, 21, 23, 26, 28, 30 June 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30

During erection on board vessel - - 1953:- July 21, 27 Sept. 1 Oct. 1, 10, 12, 14, 16, 22, 24

Total No. of visits 78

Dates of examination of principal parts—Cylinders 13-6-53 Covers 4-7-53 Pistons 4-6-53 Rods - Connecting rods 21-7-53

Crank shaft 4-6-53 Flywheel shaft and Thrust shaft 8-4-53 Intermediate shafts 16-7-53 Tube shaft -

Screw shaft 4-7-53 Propeller 16-7-53 Stern tube 20-7-53 Engine seatings 1-9-53 Engine holding down bolts 1-7-53

Completion of fitting sea connections 27-7-53 Completion of pumping arrangements 10-10-53 Engines tried under working conditions 20-7-53

Crank shaft, material forged steel Identification mark MM-CK106 AB Flywheel shaft, material forged steel Identification mark K-F1

Thrust shaft, material - Identification mark - Intermediate shafts, material forged steel Identification marks F-1

Tube shaft, material - Identification mark - Screw shaft, material forged steel Identification mark F-SF7

Identification marks on air receivers AR496 LLOYD'S TEST KOB WTP 48.5kg/cm², WP 30kgs/cm² LR AM 4-8-53

AR497 LLOYD'S TEST KOB WTP 48.5kg/cm², WP 30kgs/cm² LR AM 4-8-53

Welded receivers, state Makers' Name Mitsubishi Heavy Industries, reorganized Ltd., Kobe Shipyard & Engine

Is the flash point of the oil to be used over 150°F Yes No

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes No

Full description of fire extinguishing apparatus fitted in machinery spaces 21 CO₂ Extinguisher nozzles, 6x9 l. portable foaming, 1x150 movable foaming, 0.3 l. sand box, 2x3" fire extinguisher

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Yes No If so, have the requirements of the Rules been complied with Yes No

What is the special notation desired 7

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

Is this machinery duplicate of a previous case Yes No If so, state name of vessel M.V. "ASCHARU 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 Sectional drawings. Materials were found to be sound and free from defects and the workmanship is good. The machinery were examined under working condition during shop trial and comprehensive sea trial and found satisfactory. In our opinion the Machinery of this vessel is worthy of record of +LMC 10,53 oil engine, 10,53 W.P. 9kgs per sq.cm. and T.S.(CL) 10,53.

The amount of Entry Fee ... £ 810.000

Special ... £

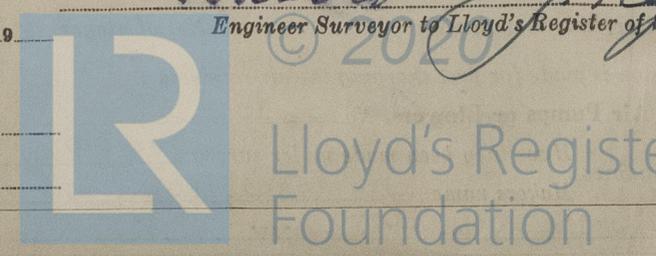
Donkey Boiler Fee... £

Travelling Expenses (if any) £ Subject 1.

When applied for DEC. 1st 1953

When received 19

Ashima
Engineer Surveyor to Lloyd's Register of Shipping



Assigned +LMC 10.53 (oil Eng (Torsional End))
2 DB(WT) 128 lb.
CL.

The Surveyors are requested to write on or below the space for Committee's Minute.