

REPORT ON OIL ENGINE MACHINERY.

No. 1142

4b.

London office

Received at London Office 13 JAN 1953

of writing Report 22-11-1952 When handed in at Local Office 2 JAN 1953 Port of Kobe

Survey held at Tamano, Japan Date, First Survey 29th July, 1951 Last Survey 12th November, 1952 Number of Visits 76

on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel Motor Tanker "OTOWASAN MARU" Tons { Gross 12686.83 Net 7465.94

at Tamano, Japan By whom built Mitsui Shipbuilding & Engineering Co., Ltd Yard No. 569 When built Nov. 1952

es made at Tamano, Japan By whom made Mitsui Shipbuilding & Engineering Co., Ltd Engine No. 431 When made Nov. 1952

Boilers made at Tamano, Japan By whom made Mitsui Shipbuilding & Engineering Co., Ltd Boiler No. 355356 When made Nov. 1952

Horse Power 8,300 (Service 7400) Owners Mitsui Senpaku K. K. Port belonging to Tokyo

Power as per Rule 1660 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

for which vessel is intended Oil Tanker

ENGINES, &c. — Type of Engines B & W D E 974 VTF 160 2 or 4 stroke cycle 2 Single or double acting Single

mean pressure in cylinders 49.13/cm² Diameter of cylinders 740 mm Length of stroke 1600 mm No. of cylinders 9 No. of cranks 9

Indicated Pressure 6.5 kg/cm² Ahead Firing Order in Cylinders 1-8-3-6-5-4-7-2-9 Span of bearings, adjacent to the crank, measured

inner edge to inner edge 952.0 mm Is there a bearing between each crank Yes Revolutions per minute 115

Wheel dia 1903 mm Weight 2198 kg Moment of inertia of flywheel (lb-in² or Kg. cm²) 11000000 Means of ignition Compression Kind of fuel used Diesel oil

ank { Solid forged as per Rule 507.58 mm dia. of journals as fitted 550 mm Crank pin dia 550 mm Crank webs Mid. length breadth 1020 mm Thickness parallel to axis 335 mm

ft, { Semi built All built as fitted 550 mm Crank webs Mid. length thickness 280 mm shrunk Thickness around eye hole 225.1 mm

Wheel Shaft, diameter as per Rule Intermediate Shaft, diameter as per Rule 426.87 mm Thrust Shaft, diameter at collars as fitted 500 mm

e Shaft, diameter as per Rule as fitted 466.46 mm Is the { tube } shaft fitted with a continuous liner { Yes

Size Liners, thickness in way of bushes as per Rule 21,921 mm Thickness between bushes as per Rule 16,441 mm Is the after end of the liner made watertight in the

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

he 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-

sive — 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

of tube shaft No If so, state type Length of bearing in Stern Bush next to and supporting propeller 2000 mm

propeller, dia. 5800 mm Pitch 3945 mm No. of blades 4 Material Mn-BC whether moveable No Total developed surface 133.44 sq. feet

ment of inertia of propeller (lb-in² or Kg. cm²) 242187400 Kind of damper, if fitted

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

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

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

to the engine — Cooling Water Pumps, No. 4 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

ge Pumps worked from the Main Engines, No. 1 Diameter 170 mm Stroke 180 mm Can one be overhauled while the other is at work

ns connected to the Main Bilge Line { No. and size 1-Salt w. Cool. pump 350 M³/H, 1-Bilge pump 30 M³/H, 1-Butterworth pump 110 M³/H

he 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

ngements

last Pumps, No. and size 1-30 M³/H (in F. pump RM) Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1-350 M³/H, 1-310 M³/H (Driven by main shaft)

two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary

pumps, No. and size: — In machinery spaces Fore 1-4" SP 1-4" Mid 1-4" Aft center 3-4", 1-5 1/2", 1-11" In pump room Main 1-6" SP 1-6" Fore RM 1-3"

holds, &c. P 1-3" S 1-3" Eng. RM Cuff. F 1-3" A 1-3" DRYTANK 1-3"

ependent Power Pump Direct Suctions to the engine room bilges, No. and size 1-5 1/2" 2-4"

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

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

all Sea Connections fitted direct on the skin of the Ship Yes Are they fitted with valves or cocks Yes Are they fixed

ciently 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

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

at pipes pass through the bunkers How are they protected

at pipes pass through the deep tanks Have they been tested as per Rule

all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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

es, or from one compartment to another Yes Is the shaft tunnel watertight — Is it fitted with a watertight door — worked from —

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

in Air Compressors, No. — No. of stages — diameters — stroke — driven by —

Auxiliary Air Compressors, No. 2 No. of stages 2 diameters H.P. 280 mm L.P. 320 mm stroke 140 mm driven by Steam Reciproc E

all Auxiliary Air Compressors, No. — No. of stages — diameters — stroke — driven by —

at provision is made for first charging the air receivers Hand compressor

venting Air Pumps, No. 2 (Root's Blowers) diameter 820 mm Length 2200 mm driven by Main Engine

44. Auxiliary Engines crank shafts, diameter as per Rule 118.23 mm (Diesel) 95 mm (Steam) No. 2 Diesel 1- Steam Reciproc

the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

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AIR RECEIVERS:—Have they been made under survey yes ✓ State No. of report or certificate AR 11823

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 by Rules —

Starting Air Receivers, No. 2 ✓ Total cubic capacity 113M³ X 2 Internal diameter 1720 mm thickness 24 mm

Seamless, welded or riveted longitudinal joint Riveted ✓ Material O.H. steel Range of tensile strength Flange 265-30.0 T/A Working pressure by Rules 25.4 Actual 25.19

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 26-9-1952 Receivers 24-11-52 Separate fuel tanks —

Donkey boilers 18-7-1952 EXH.G.B. (If not, state date of approval) General pumping arrangements 18-7-1952 Pumping arrangements in machinery space 19-9-1952

Oil fuel burning arrangements 19-9-1952

Have Torsional Vibration characteristics been approved yes ✓ Date of approval 26-9-1952

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes ✓

State the principal additional spare gear supplied 8 Exhaust valves complete, 2 starting air valves, 11 Fuel valves, 3 - Safety valves, 18 sets piston rings for one cylinder, 1 set piston cooling pipe, 4 links Camshaft driving chain, 4 links & 1 set scavenging blower drive chain, 8 sets fuel pipes for one cylinder, 1 cylinder liner, 10 Indicator valves, 1 Cylinder jacket, 9 Exhaust valve spindles, 1 set main bearings, 1 Propeller

SHIPBUILDING & ENGINEERING WORKS

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops — 1951-JUL. 29, AUG. 7, 13, SEP. 10, 12, DEC. 27, 1952-JAN. 8, 11, 14, 19, 22, 26, 29, FEB. 1, 5, 6, 11, 16, 19, 22, 25, 26, 29, MAR. 3, 5, 8, 11, 12, 19, APR. 1, 8, 11, 12, 14, 15, 19, 29, MAY. 6, 9, 13, 17, 20, 21, 24, 25, JUN. 3, 6, 12, 14, 17, 20, 23, 27, JUL. 1, 3, 4, 7, 11, 21, 24, 26, AUG. 4, 8, 12, 13, 15, 19, 21, OCT. 4, 12, 18, 1952-OCT. 10, 17, 24, 31, NOV. 7, 12
Total No. of visits 76

Dates of examination of principal parts—Cylinders 12-4-52 Covers 24-5-52 pistons 17-6-52 Rods 19-3-52 Connecting rods 29-4-52

Crank shaft 20-5-52 Flywheel shaft — Thrust shaft 20-5-52 Intermediate shafts 25-5-52 Tube shaft —

Screw shaft 14-6-52 Propeller 4-7-52 Stern tube 4-8-52 Engine seatings 30-9-52 Engine holding down bolts 30-9-52

Completion of fitting sea connections 21-8-52 Completion of pumping arrangements 7-11-52 Engines tried under working conditions 12-11-52

Crank shaft, material F.S. & C.S. Identification mark K-CK 266 m8 R Flywheel shaft, material, — Identification mark —

Thrust shaft, material O.H. Steel Identification mark K-F 1083 m8 R Intermediate shafts, material O.H. Steel Identification marks Y-2679A.B.

Tube shaft, material — Identification mark — Screw shaft, material O.H. Steel Identification mark K-F 1114 m8 R

Identification marks on air receivers No. AR 405 LLOYD'S TEST W.P. 39.1 kg/cm² W.P. 25 kg/cm² m8 R 31-10-52

No. AR 406 LLOYD'S TEST W.P. 39.1 kg/cm² W.P. 25 kg/cm² m8 R 31-10-52

Welded receivers, state Makers' Name —

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 Steam piping in each hold, cargo oil tanks, pump room, boiler room & engine room. CO₂ piping in each cargo hold, engine room, boiler room, pump room & Fore'c from CO₂ bottles placed in Bridge space.

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 ✓

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 yes ✓ If so, state name of vessel "ANOBASAN MARU" "AKIBASAN MARU"

General Remarks (State quality of workmanship, opinions as to class, &c.

The machinery of this vessel has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letter. The workmanship and materials are sound and good.

The machinery has been examined under full working conditions during deck and comprehensive sea trials and found satisfactory.

In our opinion, the machinery of this vessel is eligible to have a record of + L.M.C. (C.S.) 11-52, T.S (C.L.) 11-52 & D.B.S W.P. 12.7 kg/cm² 11-52.

(Plans for Arrangement of Engine Room is enclosed)

The amount of Entry Fee ... 849,000 ... 852,000

Special ... £ : When applied for 2 JAN 1953

Donkey Boiler Fee... £ : When received 19

Travelling Expenses (if any) £ :

Committee's Minute TUES. 27 JAN 1953

Assigned + LMC. 11. 52

(2DB 180 lb. CL.

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