

# 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 17th November, 1952 Number of Visits 76

on the Single Screw vessel "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. SCOTCH 355356 357 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 kg/cm<sup>2</sup> Diameter of cylinders 740 mm Length of stroke 1600 mm No. of cylinders 9 No. of cranks 9

Indicated Pressure 6.5 kg/cm<sup>2</sup> 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-in<sup>2</sup> or Kg. cm<sup>2</sup>) 11000000 Means of ignition Compression Kind of fuel used Diesel oil

Crank pin dia 550 mm Crank webs Mid. length breadth 1020 mm Thickness parallel to axis 335 mm  
Crank pin dia 550 mm Crank webs Mid. length thickness 280 mm Thickness around eyehole 225 mm

Intermediate Shaft, diameter as per Rule 426.187 mm Thrust Shaft, diameter at collars as fitted 500 mm

Screw Shaft, diameter as per Rule 466.465 mm Is the shaft fitted with a continuous liner Yes

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 stern tube Yes

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

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

Cooling Water Pumps, No. 4 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. 1 Diameter 170 mm Stroke 180 mm Can one be overhauled while the other is at work No

Pumps connected to the Main Bilge Line { No. and size 1-Salt w. Cool. pump 350 M<sup>3</sup>/H, 1-Bilge pump 30 M<sup>3</sup>/H, 1-Butterworth pump 110 M<sup>3</sup>/H How driven Steam Steam Steam

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

Oil Pumps, No. and size 1-30 M<sup>3</sup>/H (in F. pump RM) Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1-350 M<sup>3</sup>/H, 1-310 M<sup>3</sup>/H (Driven by main shaft)

Are 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" Mid 1-4" Aft center 3-4", 1-5 1/2", 1-11" In pump room Main 1-6" Fore RM 1-3" Eng. 1-8"

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

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

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

How are they protected — 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 — Is it fitted with a watertight door — worked from —

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

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

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

Is any provision made for first charging the air receivers Hand compressor

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

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

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



011895-011904-00291

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 —

Starting Air Receivers, No. 2 ✓ Total cubic capacity 113M<sup>3</sup>X2 Internal diameter 1720mm thickness 24mm

Seamless, welded or riveted longitudinal joint Riveted ✓ Material O.H. steel Range of tensile strength Flange 26.5-30.0 T.M. Shell 30.2-32.0 T.M. 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 chains, 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. 24. 25. 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.
	During erection on board vessel --	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 m&B Flywheel shaft, material, — Identification mark —

Thrust shaft, material O.H. Steel Identification mark K-F 1083 m&B 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 m&B

Identification marks on air receivers No. AR 405 LLOYD'S TEST W.P. 39.1 Kg/cm<sup>2</sup> W.P. 25 Kg/cm<sup>2</sup> m&B 31-10-52

No. AR 406 LLOYD'S TEST W.P. 39.1 Kg/cm<sup>2</sup> W.P. 25 Kg/cm<sup>2</sup> m&B 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. CO<sub>2</sub> piping in each cargo hold, engine room, boiler room, pump room & Forec. from CO<sub>2</sub> 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/cm<sup>2</sup> 11-52.

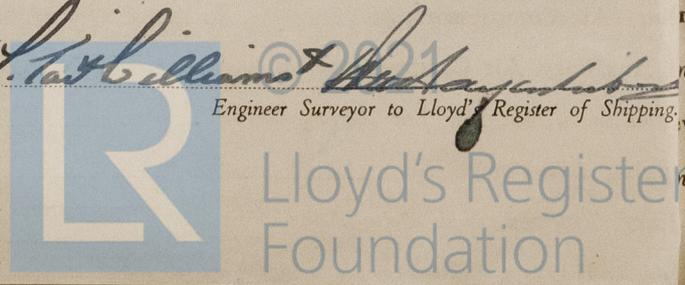
(Plans for Equipment of Engine Room is enclosed)

The amount of Entry Fee ...	£ 849.000	When applied for	2. JAN 1953
Special ...	£ :	When received	19
Donkey Boiler Fee...	£ :		
Travelling Expenses (if any) £	£ :		

Committee's Minute JAN 27 1953

Assigned + LMC. 11. 52

(2DB 180 lb. CL.



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