

# REPORT ON OIL ENGINE MACHINERY.

No. 264

Received at London Office 7 MAY 1951

Writing Report 30th January 1951 When handed in at Local Office 19 Port of KOBE  
Survey held at Tamano Japan Date, First Survey 23rd October, 1949 Last Survey 11th December 1950  
Number of Visits 70

Single on the Tamano Triple Screw vessel M.V. "AZUMASAN MARU"  
Tons Gross 6,993.45 Net 5,047.67  
By whom built Mitsui Shipbuilding & Engineering Co., Ltd. Yard No. 556 When built Dec. 1950  
By whom made Mitsui Shipbuilding & Engineering Co., Ltd. Engine No. 367 When made Sep. 1950  
Boilers made at Tamano By whom made Mitsui Shipbuilding & Engineering Co., Ltd. Boiler No. 335 When made Oct. 1950  
Horse Power 4,050 Owners Mitsui Senpaku K.K. Port belonging to TOKYO  
Power as per Rule 903 (898) NHP = 830 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
For which vessel is intended Ocean Going

**ENGINES, &c.** Type of Engines Diesel 7" 14 1/2" 2 or 4 stroke cycle 2 Single or double acting Single  
Mean pressure in cylinders 4.9 kg/cm<sup>2</sup> Diameter of cylinders 620 mm. Length of stroke 1,150 mm. No. of cylinders 8 No. of cranks 8  
Indicated Pressure 6.5 kg/cm<sup>2</sup> Ahead Firing Order in Cylinders 1-8-3-4-7-2-5-6 Span of bearings, adjacent to the crank, measured inner edge to inner edge 813.6 mm. Is there a bearing between each crank Yes Revolutions per minute 124.5  
Flywheel dia 2,136 mm. Weight 2,097 kg. Moment of inertia of flywheel (lb-in<sup>2</sup> or Kg. cm<sup>2</sup>) 10,500,000 Means of ignition Compression Kind of fuel used Diesel Oil  
Solid forged dia. of journals as per Rule 399.43 mm. Crank pin dia 435 mm. Crank webs Mid. length breadth 1,020 mm. Thickness parallel to axis 270 mm.  
Semi built as fitted 435 mm. Mid. length thickness 230 mm. Thickness around eye hole 203 mm.  
All built as per Rule Intermediate Shaft, diameter as per Rule 327.56 mm. Thrust Shaft, diameter at collars as fitted 400 mm.  
as fitted 332 mm. as per Rule 343.94 mm.  
Shaft, diameter as per Rule 300.89 mm. Is the tube shaft fitted with a continuous liner Yes  
as fitted 370 mm. as per Rule 13,967 mm.  
as fitted 190 mm. Is the after end of the liner made watertight in the boss Yes  
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner  
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-  
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  
tube shaft NO If so, state type Length of bearing in Stern Bush next to and supporting propeller 1,600 mm.  
Blades Mn-Bronze  
Propeller, dia. 4,800 mm Pitch 3,386 mm. No. of blades 4 Material Boss Cast-Iron whether moveable Yes Total developed surface 80.5 sq. feet  
of inertia of propeller (lb-in<sup>2</sup> or Kg. cm<sup>2</sup>) 81,800,000 Kind of damper, if fitted

**of reversing Engines** Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of  
in Forced Thickness of cylinder liners 42 mm. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled  
with non-conducting material Lapped If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned  
the engine Cooling Water Pumps, No. 3 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
Pumps worked from the Main Engines, No. 2 Diameter 150 mm. Stroke 200 mm. Can one be overhauled while the other is at work Yes  
connected to the Main Bilge Line No. and size 1-Ballast pump (180 M<sup>3</sup>/hour) 1-General service pump (100 M<sup>3</sup>/hour)  
How driven By Electric motor By Electric motor also 2 ME @ 20%  
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  
ents

**Pumps, No. and size** 1-180 M<sup>3</sup>/hour **Power Driven Lubricating Oil Pumps**, including spare pump, No. and size 2-180 M<sup>3</sup>/hour  
independent means arranged for circulating water through the Oil Cooler Yes **Suctions**, connected to both main bilge pumps and auxiliary  
In pump room

**ident Power Pump Direct Suctions** to the engine room bilges, No. and size 2-5" 1-6"  
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  
mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes  
**Sea Connections** fitted direct on the skin of the Ship Yes Are they fitted with valves or cocks values 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  
to be in the pass through the bunkers How are they protected  
Waters pass through the deep tanks Have they been tested as per Rule

169 pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
15 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  
258 from one compartment to another Yes Is the shaft tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck  
10 vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
10/10 **Air Compressors**, No. No. of stages diameters stroke driven by  
7.28 **Air Compressors**, No. 2 No. of stages 2 diameters 115 x 130 mm. stroke 120 mm. driven by D.C. motor  
**Auxiliary Air Compressors**, No. 1 No. of stages 2 diameters 35 x 95 mm. stroke 130 mm. driven by manual handling  
vision is made for first charging the air receivers By hand compressor  
ing Air Pumps, No. 2 diameter 700 mm. length stroke 1,400 mm. driven by main engine  
y **Engines** crank shafts, diameter as per Rule 149.23 mm. No. 3  
as fitted 170 mm. Position All in Port Engine Room Platform  
auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes



AIR RECEIVERS:—Have they been made under survey yes ✓ State No. of report or certificate AR-124, AR-125

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 6 M<sup>3</sup> X 2 Internal diameter 1,550 mm. thickness 24 mm.

Seamless, welded or riveted longitudinal joint Riveted Material O.H. Steel Range of tensile strength 27.6 T<sub>6</sub>" Working pressure by Rules 28

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 10th July, 1950 Receivers 15th Nov. 1950 Separate fuel tanks —

Donkey boilers 29th Oct. 1950 General pumping arrangements 19th Sep. 1950 Pumping arrangements in machinery space 19th Sep. 1950

Oil fuel burning arrangements —

Have Torsional Vibration characteristics been approved yes ✓ Date of approval 6th Sep. 1950

### SPARE GEAR.

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

State the principal additional spare gear supplied 1 Cylinder jacket, 12 Fuel valves complete, 1 piston rod complete, 1 cyl. Scraper ring for stuffing

1 pair, bearing shell of main bearing for each bearing, 4 chain links for cam shaft, 1 blower chain complete, 4 chain links for blower

1 fuel pump complete, 8 plungers with pump housing, 1 roller with roller bearing & pin for fuel pump, 2 plungers with liner complete

& 1 set valve for fuel primary pump, 1 set (4 off) bearing for blower, 6 exhaust valves complete, 8 spindles with collar r.

8 cylinders spring of each size for exhaust valve, 7 sets of piston rings and scraper rings for one piston.

1 screw shaft.

The foregoing is a correct description,

Manufacturer.

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

K. Sakamaki

Dates of Survey while building  
During progress of work in shops -- 1949 - Oct. - 23, 31. Nov. - 6, 17, 24, 29. Dec. - 5, 9, 16, 23, 29.  
1950 - Jan. - 6, 12, 17, 18, 23, 27, 30. Feb. - 1, 8, 14, 17. MAR. - 6, 13, APR. - 13, 18, 28. MAY - 1, 4, 8, 12, 17, 23, 24, 25, 28.  
Jun. - 6, 13, 27. JUL - 4, 15, 20, 21, 27. AUG - 1, 4, 11 - 24, 25, 28, 30. Sep - 2, 4, 8, 15, 18. Oct. - 4, 7, 12, 23  
During erection on board vessel -- 1950 - Dec. - 5, 7, 9, 10, 11.  
Total No. of visits 70

Dates of examination of principal parts — Cylinders 21<sup>st</sup> July 1950 Covers 21<sup>st</sup> July, 1950 pistons 27<sup>th</sup> June 1950 Rods 18<sup>th</sup> Jan. 1950 Connecting rods 1<sup>st</sup> Mar

Crank shaft 4<sup>th</sup> May 1950 Flywheel shaft — Thrust shaft 28<sup>th</sup> Mar. 1950 Intermediate shafts 4<sup>th</sup> Oct. 1950 Tube shaft —

Screw shaft 11<sup>th</sup> Aug. 1950 Propeller 8<sup>th</sup> July 1950 Stern tube 24<sup>th</sup> Aug 1950 Engine seatings 27<sup>th</sup> Oct. 1950 Engine holding down bolts 27<sup>th</sup> Oct

Completion of fitting sea connections 31<sup>st</sup> Aug. 1950 Completion of pumping arrangements 7<sup>th</sup> Dec 1950 Engines tried under working conditions 9<sup>th</sup> Dec

Crank shaft, material F.S. & C.S. Identification mark K-CK 111 Flywheel shaft, material, — Identification mark —

Thrust shaft, material F.S. Identification mark K-F 468 Intermediate shafts, material F.S. Identification marks M-F 349

Tube shaft, material — Identification mark — Screw shaft, material F.S. Identification mark K-F 533

Identification marks on air receivers LLOYD'S NO. AR 124 W.P. 25 K<sub>g</sub>/cm<sup>2</sup> W.T.P. 39.1 K<sub>g</sub>/cm<sup>2</sup> M.H. & 18-9-50

LLOYD'S NO. AR 125 W.P. 25 K<sub>g</sub>/cm<sup>2</sup> W.T.P. 39.1 K<sub>g</sub>/cm<sup>2</sup> M.H. & 18-9-50

Welded receivers, state Makers' Name —

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with yes ✓

Description of fire extinguishing apparatus fitted CO<sub>2</sub> Lux-Rich system

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 No If so, state name of vessel —

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 letters.

The workmanship and materials are sound and good.

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

In our opinion the machinery of this vessel is eligible to have a record of ✱ LMC 12-50 T.S. (C.L.) 12-50 D.B. W.P. 7 K<sub>g</sub>/cm<sup>2</sup>

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

Committee's Minute 1003.22 MAY 1951

Assigned ✱ LMC 12.50 Lib Eng.

C.L. DB 100th.



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