

REPORT ON OIL ENGINE MACHINERY.

LONDON No. 1172

6 FEB 1953

Received at London Office

of writing Report 19 When handed in at Local Office 19 Port of Kobe

Survey held at Nagasaki Date, First Survey 8th June 1951 Last Survey 28th August 1952

Number of Visits 7

Single on the Twin Triple Quadruple Screw vessel motor

"AWATA MARU" Tons { Gross 7,601.48
Net 4,320.50

By whom built Nagasaki Works Mitsubishi Zosen K.K. Yard No. 1428 When built 1952.8 Mo.

By whom made Nagasaki Works Mitsubishi Zosen K.K. Engine No. 24246 When made 1952.5 Mo.

Boilers made at Nagasaki By whom made Nagasaki Works Mitsubishi Zosen K.K. Boiler No. 1368 When made 1952.5 Mo.

Horse Power 7 x 4,300 Owners Nippon Yusen Kaisha Port belonging to Tokyo

Power as per Rule 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 6 MS 72/125 2 or 4 stroke cycle 2 Single or double acting Single

Mean pressure in cylinders 45 Kgs/cm² Diameter of cylinders 720 mm Length of stroke 1,250 mm No. of cylinders 6 per eng. No. of cranks 2 per eng.

Indicated Pressure 5.77 Kgs/cm² Ahead Firing Order in Cylinders 6-2-4-3-5-1 Span of bearings, adjacent to the crank, measured inner edge to inner edge 960 mm Is there a bearing between each crank Yes Revolutions per minute 134

Crank pin dia 2,500 mm Weight 4,480 Kgs Moment of inertia of flywheel (lbs. in² or Kg. cm²) 17,000 Kg. m² Means of ignition Compression Kind of fuel used Heavy oil

Crank pin dia. of journals 500 mm as per Rule 445.9 mm as fitted 500 mm Crank pin dia. 500 mm Crank webs Mid. length breadth 830 mm Thickness parallel to axis 31.5 mm

Intermediate Shaft, diameter 338 mm as per Rule 328 mm as fitted 338 mm Thrust Shaft, diameter at collars 500 mm as per Rule 500 mm

Screw Shaft, diameter 370 mm as per Rule 358 mm as fitted 370 mm Is the shaft fitted with a continuous liner

Liner thickness in way of bushes 22 mm as per Rule 18.8 mm as fitted 22 mm Thickness between bushes 17 mm as per Rule 13.9 mm as fitted 17 mm 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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the shaft Yes

If so, state type Length of bearing in Stern Bush next to and supporting propeller 1470 mm

Propeller, dia. 4,400 mm Pitch 4,150 mm No. of blades 4 Material Manganese Bronze whether moveable Solid Total developed surface 71.4 sq. feet

Moment of inertia of propeller (lbs. in² or Kg. cm²) 96,400 Kg. cm² Kind of damper, if fitted None

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

Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled Yes

Are the exhaust pipes and silencers water cooled 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 Yes

Cooling Water Pumps, No. 2 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 Yes

Bilge Pumps connected to the Main Bilge Line { No. and size 2-@360 m³/hr 2-@110 m³/hr 1-30 m³/hr

How driven Electric motor drive

Is 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 None

Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2-@270 m³/hr

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 4-@90 mm dia 1-@130 mm dia 1-@240 mm dia In pump room None

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 4-@90 mm dia 1-@130 mm dia 1-240 mm dia

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 Below

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

Do all pipes pass through the bunkers None How are they protected None

Do all pipes pass through the deep tanks Heating coil Have they been tested as per Rule Yes

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 level

Are all openings in the hull of a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes

Auxiliary Air Compressors, No. 2 No. of stages 3 diameters 105 3/4 x 360 / 105 mm stroke 220 mm driven by Dynamo engine

Are all Auxiliary Air Compressors, No. None No. of stages None diameters None stroke None driven by None

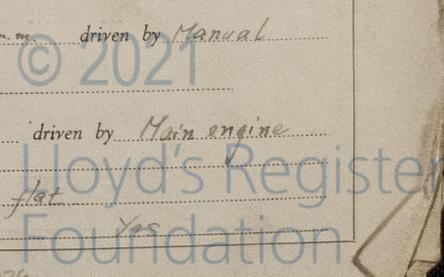
Are all Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 92/42 mm stroke 70 mm driven by Manual

Is provision made for first charging the air receivers Small compressor described above

Refrigerating Air Pumps, No. one for each working cylinder diameter 600 mm stroke 1,250 mm driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule 140 mm as fitted 150 mm No. 3 Position Engine room

Have the 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-240C AR-336A4

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. None Cubic capacity of each Internal diameter thickness

Seamless, welded or riveted longitudinal joint Material Range of tensile strength Working pressure

Starting Air Receivers, No. 3 Total cubic capacity 3 x 12 M³ Internal diameter 1,800 m.m. thickness Shell 3.1 m.m. End 4.4 m.m.

Seamless, welded or riveted longitudinal joint Riveted Material Rail quality steel Range of tensile strength End 26.30.70 Working pressure

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 And for fuel oil tank heating

PLANS. Are approved plans forwarded herewith for shafting Yes Receivers Kok 28 April 1952 Separate fuel tanks Yes

Donkey boilers Kok 28 April 1952 General pumping arrangements London 17 July 1952 Pumping arrangements in machinery space London 4 July 1952

Oil fuel burning arrangements London 4 July 1952

Have Torsional Vibration characteristics been approved Yes Date of approval London 26 August 1952

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied ;

- Four - Fuel oil needle valves
- Five set - Piston rings
- Five set - Rubber rings for liner joint
- Two - Main bearing belts and nuts

The foregoing is a correct description,

Manufacturer. **NAGASAKI WORKS
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.**

Dates of Survey while building } During progress of work in shops - - June 8, 15, 20, 25 July 4, 11, 25 Aug 30, 14, 21 Sep 5, 19, 26 Oct 2, 16, 19 Nov 9, 12, 19 Dec 19, 26, 28 Jan 9, 14, 21, 28 Feb 5, 11, 18, 21, 25, 28 March 2, 6, 14, 18, 20, 25, 27, 31 April 2, 8, 9, 12, 15, 24 May 1, 12, 13, 20, 23, 28

Total No. of visits 87

Dates of examination of principal parts - Cylinders 14-3-52 Covers 24-3-52 pistons 1-2-52 Rods Connecting rods 3-4-52

Crank shaft 14-3-52 Flywheel shaft 14-3-52 Thrust shaft 14-2-52 Intermediate shafts 23-5-52 Tube shaft 1-7-52

Screw shaft 14-5-52 16-5-52 Propeller 9-5-52 16-5-52 Stern tube 16-5-52 Engine seatings 4-6-52 Engine holding down bolts 21-7-52

Completion of fitting sea connections 25-5-52 Completion of pumping arrangements 1-8-52 Engines tried under working conditions 13-8-52

Crank shaft, material Forged steel Identification mark HACK-106A&F Flywheel shaft, material Forged steel Identification mark H5F-580

Thrust shaft, material Forged steel Identification mark H5F-580 Intermediate shafts, material Forged steel Identification marks Y2091, Y204

Tube shaft, material Identification mark Screw shaft, material Forged steel Identification mark Y2043-A7C

Identification marks on air receivers LLOYD'S TEST 45Kg. W.P. 30.Kg. AR-336A Y.H.R. 15-5-52. AR-336B H.O.R. 17-5-52 AR-240 Y.H.R. 15-5-52

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 Weather deck; total 27 x 70 mm. water, 2x 4.0 m. water, 10x portable bottles, 1x Rich System with detector; 77 x 26.5 lbs Capacity; 6x bottles, opened to ports, main hold's & Tween deck spaces. Engine room; 4x 70 mm. water; 6x portable bottles, each 2.5 steam pipes under fuel oil main engines and under donkey boiler.

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 ASOMARU, ARIMAHARU, TEMSUDIMAHARU

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

These machines have been constructed under Special Survey in accordance with the Rules.

Approved plans and Secretary's letter.

The material and workmanship are good.

On completion these machines were installed in the vessel in accordance with the Rules.

Appliances tested under full working condition and eligible in our opinion, for classification with the records of +LMC 8,52, DBS 8,52 7Kgs per sq. cm. and TS(CL) 8,52.

A notice board has been fitted and the tachometer marked warning against continuous operation of the engines below 30 R.P.M.

The amount of Entry Fee ... £ 1,151,200

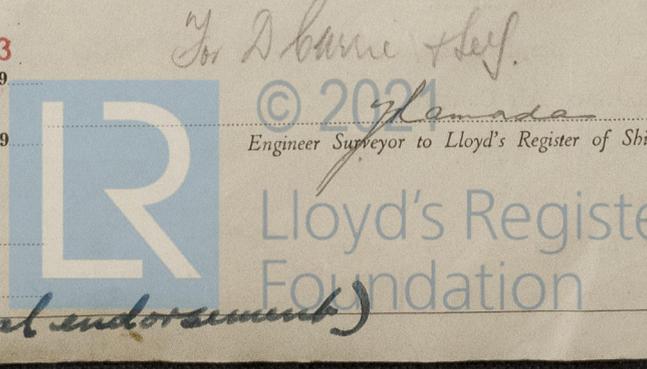
Special £ : : When applied for 27. JAN. 1953

Donkey Boiler Fee £ : : When received 19

Travelling Expenses (if any) £ : : TUES. 24 FEB 1953

Committee's Minute

Assigned + LMC 8,52 Oil Eng. CL DB 1001b (with torsional endorsement)



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.