

REPORT ON OIL ENGINE MACHINERY.

No. 291

20 APR 1954

Received at London Office

Date of writing Report 12, Dec 1953 When handed in at Local Office 19 Port of Kobe Shimonoseki

No. in Survey held at Nagasaki Date, First Survey 30th July 1951 Last Survey 14th Nov 1953
Reg. Book. Number of Visits 76

Single on the Twin Triple Quadruple motor Screw vessel "Victoria Maru" Tons Gross 7620.32 Net 4362.11

Built at Nagasaki By whom built Nagasaki Zosen Sho Mitsubishi Zosen K.K. Yard No. 1437 When built 1953 11 mo.

Engines made at Nagasaki By whom made Nagasaki Zosen Sho Mitsubishi Zosen K.K. Engine No. 25/260 When made 1953 8 mo.

Donkey Boilers made at Nagasaki By whom made Nagasaki Zosen Sho Mitsubishi Zosen K.K. Boiler No. 1383 When made 1953 11 mo.

Brake Horse Power Maximum 2x4300 Service Owners Mitsubishi Kaisha K.K. Port belonging to Tokyo

M.N. as per Rule 1720 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Ocean going

OIL ENGINES, &c. - Type of Engines 6 MS 72/125 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 45 Kgs/cm² Diameter of cylinders 720 mm Length of stroke 1250 mm No. of cylinders 6 per eng No. of cranks 6 per eng

Mean Indicated Pressure 6.04 Kgs/cm² Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 960 mm Is there a bearing between each crank Yes Revolutions per minute Maximum 128 Service

Flywheel dia. 2500 mm Weight 4480 Kgs Moment of inertia of flywheel (lbs-in² or Kg.cm²) 17000 Means of ignition Compression Kind of fuel used Heavy oil

Crank Shaft Solid forged Semi built All built as per Rule 440.3 mm as fitted 480 mm Crank pin dia 480 mm Crank webs Mid. length breadth 800 mm Mid. length thickness 305 mm Thickness parallel to axis 305 mm Thickness around eyehole 275 mm

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule 317 mm as fitted 338 mm Thrust Shaft, diameter at collars as per Rule 440 mm as fitted 470 mm 375 mm at coupling

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 363 mm as fitted 370 mm Is the (tube screw) shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 19 mm as fitted 22 mm Thickness between bushes as per Rule 4 mm as fitted 7 mm Is the after end of the liner made watertight in the propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner one length

If the 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-corrosive 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 stern tube If so, state type Length of bearing in Stern Bush next to and supporting propeller 1480 mm

Propeller, dia 4400 mm Pitch 4350 mm No. of blades 4 Material Mn Bronze whether moveable Movable Total developed surface 6661 sq. feet

Moment of inertia of propeller including entrained water (lbs-in² or Kg.cm²) 96400 Kind of damper, if fitted

Method of reversing Engines Hand operation Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication Forced Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Cooling Water Pumps, No. and how driven Total 3 Electric motor driven Working F.W. -

S.W. 2-360³/hr. Spare F.W. - S.W. 1-160³/hr. 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. and capacity None Jacket cooling Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line No. and capacity of each 2-360³/hr. 2-160³/hr. 1-30³/hr. How driven Electric motor drive

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

Ballast Pumps, No. and capacity 2-160³/hr. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2-270³/hr.

Are two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions

No. and size: - In machinery spaces 3-90 mm dia 2-130 mm dia 3-50 mm dia 1-240 mm dia In pump room

In holds, &c. Nos. 2 & 3 Holds; 2-80 mm dia each No. 5 Hold; 1-80 mm dia No. 6 Hold; 2-80 mm dia No. 1 Hold (off); 1-50 mm dia Eng room (off); 1-50 mm dia Eng room (off); 2-50 mm dia Shaft tunnel; 1-90 mm dia

Direct Bilge Suctions to the engine room bilges, No. and size 2-90 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 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

What pipes pass through the bunkers How are they protected

What 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 ?

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 lower

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

Main Air Compressors, No. 2 No. of stages 3 diameters 105 360/305 360/105 stroke 220 mm driven by Dynamo Engines

Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 28 28 stroke 55 mm driven by Kerosene Engine

Small Auxiliary Air Compressors, No. - No. of stages - diameters - stroke - driven by

What provision is made for first charging the air receivers Auxiliary Air Compressor described above

Scavenging Air Pumps or Blowers, No. one for each working cylinder How driven driven by Main Engine

Auxiliary Engines Have they been made under survey Yes Engine Nos. 264 265 266

Makers name Nagasaki Zosen Sho Mitsubishi Zosen K.K. Position of each in engine room 5th (No. 264) 6th (No. 265) 7th (No. 266) on Eng room flat

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AIR RECEIVERS:—Have they been made under survey... *Yes* ✓ State No. of report or certificate *AR-10541 AR-10542*
 State full details of safety devices... *Spring loaded relief valve mounted on shell*
 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 *2x 12 M³* Internal diameter *1,800 mm* ✓ thickness *Shell 3/16" End 4.4 x 5.2"* ✓
 Seamless, welded or riveted longitudinal joint *Riveted* Material *Boiler quality steel* Range of tensile strength *End: 26-30% of Working pressure 30 Kgs/cm²* ✓

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 tank heating*
PLANS. Are approved plans forwarded herewith for shafting *Kob. 3 June 1953 15 Oct. 1953* Receivers *Kob. 15 July 1953* Separate fuel tanks *3 Aug*
 (If not, state date of approval)
 Donkey boilers *Kob. 15 July 1953* General pumping arrangements *Kob. 22 June 1953* Pumping arrangements in machinery space *Kob. 7 Oct. 1953*
 Oil fuel burning arrangements *Kob. 27 July 1953*
 Have Torsional Vibration characteristics been approved... *Yes* ✓ Date and particulars of approval *London, 14 July, 1953* ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied... *Yes* State if for "short voyages" only...
 State the principal additional spare gear supplied...
2- Propeller loose blades, 1- Starting Air Valve on cylinder, 5- Fuel valves of each size and type used
10- Cylinder relief valves, 5 Sets- Piston rings, 2 sets- Telescopic cooling pipes, 1- Fuel pump complete.

The foregoing is a correct description,

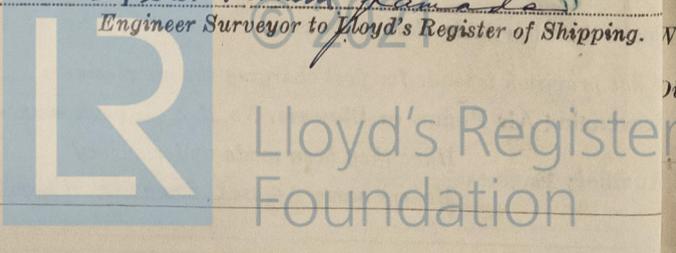
DATES OF SURVEY WHILE BUILDING
 During progress of work in shops - *1951 July 30, Aug 7, 14, 21, 28, Oct 5, 12, 19, 26, Nov 2, 9, 16, 23, Dec 1, 8, 15, 22, 29, 1952 Jan 5, 12, 19, 26, Feb 2, 9, 16, 23, Mar 1, 8, 15, 22, Apr 5, 12, 19, 26, May 3, 10, 17, 24, Jun 7, 14, 21, 28, 1953*
 During erection on board vessel - *1953 Sep 7, 14, 21, 28, Oct 5, 12, 19, 26, Nov 2, 9, 16, 23, 1954*
 Total No. of visits... *76*

DATES OF EXAMINATION OF PRINCIPAL PARTS
 Cylinders *8.5.53 6.6.53* Covers *22.5.53 2.4.53* Pistons *16.5.53 11.7.53* Rods... Connecting rods *27.5.53 14.7.53*
 Crank shafts *23.5.53 3.4.53* Flywheel shaft... Thrust shafts *25.5.53 3.9.53* Intermediate shafts *14.5.53 24.8.53* Tube shaft...
 Screw shafts *2.8.53 22.8.53* Propellers *12.5.53 3.8.53* Stern tubes *19.5.53 18.8.53* Engine seatings... *1.9.53* Engine holding down bolts... *16.7.53*
 Completion of fitting sea connections... *27.8.53* Completion of pumping arrangements... *4.11.53* Engines tried under working conditions... *9.11.53*
 Crank shafts material *Forged steel* Identification mark *110520F 23.5.53 40* Flywheel shaft, material... Identification mark...
 Thrust shafts material *Forged steel* Identification mark *Y2035 23.5.53 45* Intermediate shafts, material *Forged steel* Identification mark *M-10461 Y.H.R.*
 Tube shaft, material... Identification mark... Screw shafts material *Forged steel* Identification mark *M-10462 B 23.5.53 Y.H.*
 Identification marks on air receivers *No. 52 No. AR-10541 LLOYD'S TEST 45 Kgs W.P. 30 Kgs Y.H.R. 6.8.53 No. 53 No. AR-10542 LLOYD'S TEST 45 Kgs W.P. 30 Kgs Y.H.R. 12.8.53*
No. 21 No. AR-10543 LLOYD'S TEST 45 Kgs W.P. 30 Kgs Y.H.R. 22.8.53

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* ✓
 Full description of fire extinguishing apparatus fitted in machinery spaces *2- 360 M.H. 2- 600 M.H. 1- 10 M.H. 7- 70mm dia. water hose couplings 11- 9 Litre portable fire bottles 2- CO₂ extinguisher with detector, opened. Each 2 lengths Steam smothering pipes under main engines and 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* ✓
 What is the special notation desired... *Carrying vegetable oil in deep tanks in No. 4 hold. Fitted for oil fuel F.P. above 150°F*
 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 *ASHARI ARHAMARI TASHIMANARI BAWARHARI ARITHARAI*

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &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 11.53 DBS 11.53 7Kgs per sq. cm and TS (CL) 11.53. A notice board has been fitted and the tachometer marked warning against continuous operation of the engines below 31 R.P.M.

The amount of Entry Fee... *1,151.200*
 Special... £ :
 Donkey Boiler Fee... £ :
 Travelling Expenses (if any) *See p. 1*
 When applied for **APR - 7 1954**
LOCALLY
 When received... *19*
 Engineer Surveyor to Lloyd's Register of Shipping. *Peter Manson Hamal*
FRIDAY 21 MAY 1954
 Assigned... *+ LMC 11.53 Oil Eng. (With Torsional End!) DB (WT) 100 ch. CL.*



The Subscribers are requested not to write on or below the space for Committee's Minute.