

# REPORT ON OIL ENGINE MACHINERY.

No. 2076

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Survey held at Tamashima, Japan Date, First Survey 27-4-53 Last Survey 17-10-1953

g. Book. 9 MAIZURU Number of Visits 22 7-2-1954

Single on the Twin Triple Quadruple Screw vessel M. V. "NAGASHIMA MARU" Tons Gross 3902.72 Net 2105.92

MAIZURU DOCK YARD. Yard No. 5 When built 1954 2 Mo

By whom built LIND SHIPBUILDING & ENGINEERING Co., LTD.

Engines made at Tamashima, Japan By whom made Uraga-Tamashima Diesel Kogyo K.K. Engine No. 246 When made Oct. 53

Boilers made at MAIZURU By whom made " " Boiler No. B-121 When made 1954 2 Mo

Maximum 3000 Service 2550 Owners LIND KAIUN K. K. Port belonging to TOKYO

N. as per Rule 600 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES

rade for which vessel is intended OCEAN GOING

L ENGINES, &c. —Type of Engines Sulzer 6SD60 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 52 kg/cm<sup>2</sup> Diameter of cylinders 600 mm Length of stroke 1040 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 6.17 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in

ay of a crank) 770 mm Is there a bearing between each crank yes Revolutions per minute { Maximum 150 Service 142

lywheel dia. 2100 mm Weight 3300 kg Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 1.0000 kg. m<sup>2</sup> Means of ignition Compression Kind of fuel used Diesel oil

rank shaft, { Solid forged dia. of journals 37.3 mm as per Rule 37.3 mm Crank pin dia. 400 mm Crank webs Mid. length breadth 670 mm Thickness parallel to axis 25.0 mm Semi built as fitted 400 mm Mid. length thickness 240 mm shrunk Thickness around eyehole 18.8 mm All built

lywheel Shaft, diameter as per Rule 293 mm as fitted 293 mm Intermediate Shafts, diameter as per Rule 293 mm as fitted 293 mm Thrust Shaft, diameter at collars as per Rule 293 mm as fitted 400 mm

ube Shaft, diameter as per Rule 3.26 mm as fitted 3.15 mm Is the { tube screw } shaft fitted with a continuous liner { YES } Screw Shaft, diameter as per Rule 16.92 as fitted 16.92 Is the after end of the liner made watertight in the

ronze Liners, thickness in way of bushes as per Rule 2.2 as fitted 2.2 Thickness between bushes as per Rule 16.92 as fitted 16.92

ropeller boss YES If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -

f 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-

orrosive - If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved Oil Gland fitted at the after

nd of stern tube NO If so, state type - Length of bearing in Stern Bush next to and supporting propeller 1450 mm

ropeller, dia. 3900 mm Pitch 3000 mm No. of blades 4 Material BRONZE whether moveable NO Total developed surface 52.6 sq. feet

oment of inertia of propeller including entrained water (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 12.700 kg. m<sup>2</sup> Kind of damper, if fitted NONE FITTED

ethod of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine yes Means of

lubrication Forced Thickness of cylinder liners 38 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled

r 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

ack to the engine 2 SETS TANDEM TYPE FW & S.W.P. Cooling Water Pumps, No. and how driven 2 F.W.P. MOTOR DRIVEN EACH Working F.W. 2

W 1 Spare F.W. 2 S.W. 1 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 - Can one be overhauled while the other is at work YES

Pumps connected to the Main Bilge Line { No. and capacity of each 1 x 45 HP x 150 M<sup>3</sup>/H x 35 M, 1 x 30 HP x 50 M<sup>3</sup>/H x 35 M, 1 x 25 HP x 15 M<sup>3</sup>/H x 35 M How driven EACH MOTOR DRIVEN

s 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

rrangements -

Ballast Pumps, No. and capacity 1 x 150 M<sup>3</sup>/H x 35 M Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x 135 M<sup>3</sup>/H x 60 M

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

To. and size:—In machinery spaces 3 x 70 mm 4 x 130 mm 2 x 130 mm In pump room COFFER DUM

n holds, &c. 2 x 80 mm 2 x 80 mm 2 x 80 mm 2 x 80 mm Fr 134~135: 50 mm x 1 Fr 20~21: 50 mm x 1

Direct Bilge Suctions to the engine room bilges, No. and size 1 x 160 mm 2 @ 130 mm

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

ccessible 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

ufficiently 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

What pipes pass through the bunkers - How are they protected -

What pipes pass through the deep tanks - 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

s 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 U.P. DECK

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. 1 No. of stages 3 diameters HP 95 mm, MP 310~260 mm stroke 200 mm driven by DYNAMO ENGINE

Auxiliary Air Compressors, No. 1 No. of stages 2 diameters HP 85 mm stroke 100 mm driven by MOTOR

Small Auxiliary Air Compressors, No. 1 No. of stages 2 diameters HP 40 mm stroke 70 mm driven by HAND

What provision is made for first charging the air receivers BY HAND COMPRESSOR

Scavenging Air Pumps or Blowers, No. 6 How driven By Main Engine Engine Nos. 4115 4116 3H-2317

Auxiliary Engines Have they been made under survey YES Position of each in engine room STARBOARD IN F.R. Makers name ITO TEKKO K. K. SHIMIZU (2 x 450 BHP) HANSHIN DIESEL W. KOBÉ (1 x 90 BHP) Report No. M-1251 AE192



AIR RECEIVERS:—Have they been made under survey. YES State No. of report or certificate. AR-17298, AR-17299  
State full details of safety devices. MAIN: 1x40mm DIA. 10mm LIFT. AUX: 1x7mm DIA. 3mm LIFT. WHISTLE: 1x15mm DIA. 4mm LIFT.  
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. CLASS 2A WELDED Material. SAE 1010 Range of tensile strengths. 47.3 Working pressure. 2.75 kg/cm<sup>2</sup>  
Starting Air Receivers, No. 2 Total cubic capacity. 2 x 6 M<sup>3</sup> Internal diameter. 1350 mm thickness. 25 mm  
Seamless, welded or riveted longitudinal joint. CLASS 2A WELDED Material. BOILER PLATE Range of tensile strength. 47.3 Working pressure. 2.75 kg/cm<sup>2</sup>

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. 15-6-53 Receivers. 12-6-53 Separate fuel tanks. 12-6-53  
Donkey boilers. 15-9-53 General pumping arrangements. 20-7-53 Pumping arrangements in machinery space. 13-11-53, 21-12-53  
Oil fuel burning arrangements. 10-9-53  
Have Torsional Vibration characteristics been approved. YES Date and particulars of approval. 13-8-53

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. 1 Piston head, 1/2 set of guide shoes for one cylinder, 1 Scavenge gear piston with cotter, 1 Scavenge piston & piston rod, 1 Scavenge driving lever complete, 1 Governor spring, 2 Pilot valves complete, 1 set mechanical cylinder lubricator complete per two cylinders, 6 Indicator valves, 1 pressure gauge of each kind.

The foregoing is a correct description,

Manufacturer.

J. Kameko

Dates of Survey while building. During progress of work in shops. APR. 27, MAY. 11, 18, 25, JUN. 3, 15, 23, 29, JUL. 10, 11, 31, AUG. 1, 3, 8, 12, 15, 19, 27, 1953-SEP. 3, 9, OCT. 13, 17.  
During erection on board vessel. 1953 NOV. 2, 29, DEC. 15, 16, 18, 21, 22, 25, 1954 JAN. 9, 19, 20, 26, 28, 29, 30, 31, FEB. 2, 4, 6, 7.  
TOTAL 20 VISITS.  
Total No. of visits. 22 GRAND TOTAL 42 VISITS.

Dates of examination of principal parts—Cylinders. 9-9-53 Covers. 11-8-53 Pistons. 31-7-53 Rods.                      Connecting rods. 21-7-53  
Crank shaft. 1-8-53 Flywheel shaft.                      Thrust shaft. 23-6-53 Intermediate shafts. 8-10-53 Tube shaft.                       
Screw shaft. 15-10-53 Propeller. 23-10-53 Stern tube. 22-10-53 Engine seatings.                      Engine holding down bolts. 18-12-53  
Completion of fitting sea connections. 2-11-53 Completion of pumping arrangements. 28-1-54 Engines tried under working conditions. 29, 31-1-54  
Crank shaft, material. O. H. Steel Identification mark. MMB 1-8-53 Flywheel shaft, material.                      Identification mark.                       
Thrust shaft, material. O. H. Steel Identification mark. NO. MDF 421 Intermediate shafts, material. E. FORGED ST. Identification marks. KT 8-10-53  
Tube shaft, material.                      Identification mark.                      Screw shaft, material. E. FORGED STEEL Identification mark. KT 15-10-53  
Identification marks on air receivers. AR 528, AR 529 W.T.P. 44 kg/cm<sup>2</sup> KT 17-11-53, AR 530 W.T.P. 44 kg/cm<sup>2</sup> KT 17-11-53, AR 531 W.T.P. 18.5 kg/cm<sup>2</sup> KT 17-11-53

Welded receivers, state Makers' Name. MAIZUKU DOCKYARD, 1180 SHIPBUILDING & ENGINEERING CO., LTD.  
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. KIDDE TYPE CO2 FIRE EXT. SYSTEM: 10 NOZZLES ON E.R. FLOOR, 4 " UNDER " " " 3x 70mm DIA WATER SERVICE PIPES, 2 " ON " 2ND DECK, PORTABLE FOAMING TYPE X2, 1x 20L SAND BOX  
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. NO If so, have the requirements of the Rules been complied with.                     

What is the special notation desired.                       
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, Speed restrictions, &c.) This Main Engine has now 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 main engine has been examined under full working condition in the shop and found satisfactory. This main engine has now been satisfactory installed on board the ship and examined under working condition during comprehensive sea trials and found satisfactory. In our opinion the machinery of this vessel is worthy of a record of +LMC 2.54, DBS 2.54 and TS (CL) 2.54.

The amount of Entry Fee ... £210,000 Construction  
Special ... £5180,000 Installation  
Donkey Boiler Fee...                       
Travelling Expenses (if any) See Rpt. 1  
Committee's Minute TUESDAY 29 JUN 1954  
Assigned +LMC 2.54 Oil Eng. (with Torsional End<sup>t</sup>)  
DB 100 lb.  
CL.

Shunichi Kameko  
Engineer Surveyor to Lloyd's Register of Shipping.  
Lloyd's Register Foundation

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