

REPORT ON OIL ENGINE MACHINERY.

No. 1411

- 9 JUL 1953

Received at London Office

Date of writing Report 30-4-1953 When handed in at Local Office 30 JUN 1953 Port of Kobe
No. in Survey held at Jamashima Japan Date, First Survey July 20 1952 Last Survey April 4 1953
Reg. Book. 4 Nagoya Number of Visits 73
Single on the Twin Screw vessel T. M. V. "New York Maru"
Triple
Quadruple
Built at Nagoya By whom built Nagoya shipbuilding Co. Ltd. Yard No. 104 When built April 1953
Engines made at Jamashima Japan By whom made Jamashima Diesel Works, Ltd. Engine No. 2337 When made Nov 1952
Donkey Boilers made at Yokosuka By whom made Uraga shipbuilding yard Boiler Nos. 10435 When made Dec 1952
Brake Horse Power 4200 x 2 = 8400 Owners TOHO KAIUN K.K. Port belonging to Tokyo
M.N. Power as per Rule 85.43 x 2 = 1711 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 Uraga-Sulzer 6SD72 (2 cyls) 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 52.7 kg/cm² Diameter of cylinders 720 mm Length of stroke 1250 mm No. of cylinders 6 No. of cranks 6
Mean Indicated Pressure 5.97 kg/cm² Ahead Firing Order in Cylinders { 1-6-2-4-3-5 } Span of bearings, adjacent to the crank, measured from inner edge to inner edge 930 mm Is there a bearing between each crank Yes Revolutions per minute 127
Flywheel dia. 2433.90 mm Weight 1700 kg Moment of inertia of flywheel (lbs. in² or Kg. cm²) 5000 kg cm² Means of ignition Compression Kind of fuel used Diesel oil
Crank Shaft Solid forged dia. of journals as per Rule 444 mm as fitted 490 mm Crank pin dia. 490 mm Crank webs Mid. length breadth 378 mm Thickness parallel to axis 305 mm
Semi built All built as fitted 490 mm Mid. length thickness 295 mm shrunk Thickness around eye-hole 103 mm
Flywheel Shaft, diameter as per Rule 333 mm as fitted 343 mm Thrust Shaft, diameter at collars as fitted 490 mm as per Rule 350 mm
Tube Shaft, diameter as per Rule 364 mm as fitted 380 mm Is the tube shaft fitted with a continuous liner Yes
Screw Shaft, diameter as per Rule 18.8 mm as fitted 24.23 mm Thickness between bushes as per Rule 14.1 mm as fitted 20.0 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 —
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 Yes 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 end of tube shaft — If so, state type — Length of bearing in Stern Bush next to and supporting propeller 1600 mm
Propeller, dia. 4450 mm Pitch 4320 mm No. of blades 4 Material manganese bronze whether moveable Yes Total developed surface 7134 sq. feet
Moment of inertia of propeller (lbs. in² or Kg. cm²) as approved Kind of damper, if fitted None
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication Forced Thickness of cylinder liners 45 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or 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 back to the engine, No Cooling Water Pumps, No. 2 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. — Diameter — Stroke — Can one be overhauled while the other is at work —
Pumps connected to the Main Bilge Line No. and size 1 set of 30 M³/H at 35 M water head 2 sets of 200 M³/H at 30 M water head each How driven E. motor
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 size 2 sets 2000 M³/H at 30 M each Power Driven Lubricating Oil Pumps, including spare pump, No. and size 3 sets 160 M³/H at 45 M.
Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size: — In machinery spaces 4-3" diam. 1-2" diam to E.R. Cofferdam 3-3" diam in Tunnel In pump room —
In holds, &c. 2-3" diam to Nos 1, 2, 3 + 5 Holds (P+S) each 2-2 1/2" diam to deep Tank (P+S) or cargo hold, 1-3 1/2" diam to No 4 Hold (center) 2-2" diam to Fore Cofferdam (center) 2-2" diam to after Cofferdam (P+S) 1-5 1/8" diam & 1-10 1/4" diam (Emergency)
Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2-4" diam 1-5 1/8" diam & 1-10 1/4" diam (Emergency)
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. None How are they protected —
What pipes pass through the deep tanks. None 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. Yes Is it fitted with a watertight door. Yes worked from Left Sk
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 sets No. of stages 2 diameters 1st - 340 mm 2nd - 340-310 mm stroke 180 mm driven by Aux. Eng.
Auxiliary Air Compressors, No. — No. of stages — diameters — stroke — driven by —
Small Auxiliary Air Compressors, No. 1 set No. of stages 2 diameters 1st - 3 3/4" 2nd - 3 3/4" - 1 1/4" stroke 3" driven by manual
What provision is made for first charging the air receivers —
Scavenging Air Pumps, No. 6 diameter 950 mm stroke 520 mm driven by main engine
Auxiliary Engines crank shafts, diameter as per Rule { 2 sets 1614 mm } { 1 set 127 mm } No. 3 sets Position in the engine room
as fitted { 2 sets 190 mm } { 1 set 145 mm }
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 yes
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. 2 Total cubic capacity 11.5 M³ x 2 Internal diameter 1800 mm thickness 33 mm
Seamless, welded or riveted longitudinal joint Riveted Material OH steel Range of tensile strength (43.4~50.4 kg/mm²) Working pressure (4.5~4.9 kg/cm²) Actual 30 kg/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 No

PLANS. Are approved plans forwarded herewith for shafting 11-2-52 Receivers 10-10-52 Separate fuel tanks 21-6-52
(If not, state date of approval)
Donkey boilers 12-11-52 General pumping arrangements 1-7-52 Pumping arrangements in machinery space 1-7-52
Oil fuel burning arrangements 1-7-52
Have Torsional Vibration characteristics been approved yes Date of approval 2-12-52, 20-12-52
15.9.52

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes
State the principal additional spare gear supplied 1 Piston crown, 1 set guide shoes, 1 set pistons for scavenging pump
1 Scavenging pump rod, 2 Scavenging guide pistons, 1 set driving lever for scavenging pump, 1 set
governor spring, 2 pilot valves, 1 mechanical lubricator for 2 cylinders, 6 Indicator valves,
1 pressure gauge of each kind, 2 spare propeller blades (bronz)

The foregoing is a correct description, M. Ochiu Manufacturer.

Dates of Survey while building
During progress of work in shops: 1952 Jul. 2, 4, 8, 14, 26 Aug. 5, 12, 23, 29 SEP. 6, 8, 18, 25 OCT. 3, 9, 14, 27, 31 NOV. 5, 10
1952 Aug. 5, 12, 23, 29 SEP. 6, 8, 18, 25 OCT. 3, 9, 14, 27, 31 NOV. 5, 10
During erection on board vessel: 1953 JAN. 8, 9, 13, 14, 22 FEB. 4, 5, 11, 13, 16, 23, 24 MAR. 2, 5, 9, 10, 11, 28, 31 APR. 2, 3, 4.
Total No. of visits 26 (Tama-shima) & 47 (Nagoya) Total 73

Dates of examination of principal parts—Cylinders 14-10-52 Covers 14-10-52 Pistons 10-11-52 Rods — Connecting rods 15-8-52
Crank shaft 4-9-52 Flywheel shaft — Thrust shaft 5-8-52 Intermediate shafts — Tube shaft —
Screw shaft 31-10-52 Propeller 13-1-53 Stern tube 5-12-52 Engine seatings 16-2-53 Engine holding down bolts 16-2-53
Completion of fitting sea connections — Completion of pumping arrangements 28-3-53 Engines tried under working conditions —

Crank shaft, material OH steel Identification mark K-CK267 Y2684 Flywheel shaft, material — Identification mark —
Thrust shaft, material OH steel Identification mark K-F134 Maf362 Intermediate shafts, material OH steel Identification marks —
Tube shaft, material — Identification mark — Screw shaft, material OH steel Identification mark S B No. MS F 800-15
Identification marks on air receivers main 400 L NO 10439 LLOYD'S TEST 4.5 KG WP 30 KG HT 9-12-52
Aux. 120 L NO 10440 LLOYD'S TEST 33.5 KG WP 20 KG HT 9-12-52

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 CO₂ Total flooding; 2 CO₂ hose reel; 5 water hose coupling; 6-9 portable foam extinguishers
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 —
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 T.M.V. "YOKOHAMA MARU"

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.)
The machinery of this vessel has been constructed under Special Survey in accordance
with the Rules, approved plans & Secretary's letters.
The material and workmanship are sound and good.
The machinery of this vessel has been examined during desk & comprehensive
sea trials and found satisfactory.
In our opinion the machinery of this vessel is eligible to have a record of
+ LMC 4.53 D.B.S. WP 10 kg/cm² 4.53 and T.S. (CL) 4.53

The amount of Entry Fee Construction ¥776,000 (YKa)
Installation ¥364,800
Special — Total ¥1140,800
Donkey Boiler Fee — When applied for 30 JUN. 1953
Travelling Expenses (if any) — When received —

Committee's Minute FRIDAY 29 AUG 1953
Assigned + LMC 4.53 Oil Eng.

CL 2DB 14216 (with torsional endorsement)

M. Kamakura
Engineer Surveyor to Lloyd's Register of Shipping.
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