

REPORT ON OIL ENGINE MACHINERY.

No. 1882
26 APR 1933

Received at London Office

Date of writing Report 28th Mar 33 When handed in at Local Office 28th Mar 33 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 22nd March 1932 Last Survey 17th March 1933
Reg. Book. Number of Visits 170.

on the Single Screw vessel "KOSEI MARU". Tons ^{Gross} 6665.81
~~Double~~ ~~Triple~~ ~~Quadruple~~ _{Net} 4765.62

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 522 When built 1933-3.
Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 522 When made 1933-3.
Donkey Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 522 When made 1933-3.
Brake Horse Power 3,600. Owners Hiroumi Shoji Kabushiki Kaisha. Port belonging to Kobe.
Nom. Horse Power as per Rule 839. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
Trade for which vessel is intended Japan- North America. 28 1/2 4 1/4

OIL ENGINES, &c.—Type of Engines Mitsubishi Airless Injection. 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 45 Kg/cm² Diameter of cylinders 720 m/m Length of stroke 1250 m/m No. of cylinders 6 No. of cranks 6
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 960 m/m Is there a bearing between each crank Yes
Revolutions per minute 120 Flywheel dia. 2200 m/m Weight 10000 Kgs Means of ignition Compression Kind of fuel used Diesel oil
Crank Shaft, dia. of journals ^{as per Rule} 438 m/m ^{as fitted} 500 m/m Crank pin dia. 500 m/m Crank Webs ^{Mid. length breadth} 803.5 m/m ^{Mid. length thickness} 315 m/m Thickness parallel to axis 315 m/m
Flywheel Shaft, diameter ^{as per Rule} 438 m/m ^{as fitted} 500 m/m Intermediate Shafts, diameter ^{as per Rule} 364.36 m/m ^{as fitted} 375 m/m Thrust Shaft, diameter at collars ^{as per Rule} 336.4 m/m ^{as fitted} 500 m/m
Tube Shaft, diameter ^{as per Rule} / ^{as fitted} / Screw Shaft, diameter ^{as per Rule} 398.58 m/m ^{as fitted} 415 m/m Is the ^{tube} shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes ^{as per Rule} 20.12 m/m ^{as fitted} 23 m/m Thickness between bushes ^{as per rule} 15.09 m/m ^{as fitted} 17 m/m 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 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 the tube /
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 /
shaft No If so, state type. / Length of Bearing in Stern Bush next to and supporting propeller 1670 m/m

Propeller, dia. 15.5 ft Pitch 11.4 ft No. of blades 4 Material Bronze whether Moveable Moveable Total Developed Surface 76.3 sq. feet
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes Means of lubrication Forced
Thickness of cylinder liners 56 m/m at top. 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 /
Cooling Water Pumps, No. 2 Jacket & piston pumps 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 3 Reciprocating- 1 off 50 tons/hr. 1 off 200 tons/hr. 1 off 110 tons/hr.
How driven Electric Motor.
Ballast Pumps, No. and size Two. 1 off 200 tons/hr. 1 off 110 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 3 Rotary, 30 Cub.M/hr.
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 Side bilge 4 @ 3 1/2". Coff. 2 @ 2". Bilge hat 2 @ 2". In Pump Room /
In Holds, &c. No. 1 hold 2 @ 3", No. 2 hold 2 @ 4". No. 4 hold 2 @ 3". No. 5 hold 2 @ 3". Tunnel well 1 @ 2 1/2".
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8". 2 @ 5".

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions 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 Both.
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 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 /
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 dk.
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. (Kobe Cert. No. 3354 & 5) No. of stages 3 Diameters 310/270/70 m/m Stroke 180 m/m Driven by Aux. Generators.
Auxiliary Air Compressors, No. / No. of stages / Diameters / Stroke / Driven by /
Small Auxiliary Air Compressors, No. 1 (Kobe Cert No. 3320) No. of stages 2 Diameters 88/30 m/m Stroke 90 m/m Driven by Hot Bubb. Eng.
Scavenging Air Pumps, No. 6. Diameter 600 m/m Stroke 1250 m/m Driven by Main Engine.

Auxiliary Engines crank shafts, diameter ^{as per Rule} See Kobe Report No. 8065. ^{as fitted} 155 m/m Position On engine room floor.
AIR RECEIVERS:—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
High Pressure Air Receivers, No. 1 Cubic capacity of each / Internal diameter / thickness /
Seamless, lap welded or riveted longitudinal joint / Material / Range of tensile strength / Working pressure by Rules / Actual /
Starting Air Receivers, No. 2. Total cubic capacity 8 Cub.M. each. Internal diameter 1600 m/m thickness 40 m/m
Seamless, lap welded or riveted longitudinal joint T.R.D.B.S. Material Steel. Range of tensile strength Shell: -28-32 tons Working pressure by Rules 46.97 Kg/cm²
Ends: -26-30 tons Actual 45 Kg/cm²

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Lloyd's Register

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 1-3-32; 29-6-32 Receivers 10-3-32 Separate Tanks O.F. 12-7-32.
Donkey Boilers 4-5-32. General Pumping Arrangements 2-6-32. 12-6-32. Oil Fuel Burning Arrangements /

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes. (See separate list).

State the principal additional spare gear supplied 1- Cylinder liner complete with oil scraper rings. 1- crank pin bearing complete. 1- crosshead bearing comple. 1/2 set of fuel oil pump bodies complete with valves, valve seat plungers, plunger bushes springs &c for one engine. 1- propeller blade. 1- starting air valve complete with 3 springs, 6 safety valves complete. 1- piston with rings & cooling water pipe. 3 sets piston rings, 3 sets cooling water tubes. 1/2 set thrust bearing metal pads.

The foregoing is a correct description, NAGASAKI WORKS, MITSUBISHI ZEN KAISHA, LTD. Manufacturer.

1932:- Mar 22.28.31 Apr 1.6.20.25 May 3.6.7.9.11.14.16.17.18.19.20.21.23.24.25.27.28.31
Dates of Survey while building During progress of work in shops-- June 1.2.3.7.8.10.14.15.16.17.22.23.25.27.29 Jul 2.5.6.7.8.9.11.12.13.18.19.20.22.26.27.30 Aug 3.4.5.8.11.12.13.15.16.17.19.20.22.23.24.25.26.27.29.30.31 Sep.1.2.3.5
During erection on board vessel-- 6.7.8.9.10.13.16.19.23.27.28.30 Oct 1.2.4.5.10.14.15.18.19.22.24.25.27.29.31 Nov 1.2.3.4.5.7.8.11.12.14.19.21.22.24.25.26.30 Dec 5.6.7.8.9.10.12.14.15.16.17.19.20.21.23.27. 1933:- Jan 6.9.12.21.24.27.29 Feb 1.2.3.7.8.10.15.16.17.20.21.23.24.27. Mar 1.8.10.11.1

Dates of Examination of principal parts--Cylinders 12-8-32 to 15-10-32 Covers 22-8-32 to 18-10-32 Rods 31-5-32 to 25-10-32 Connecting rods 25-8-32
Crank shaft 9-9-32 Flywheel shaft and Thrust shaft 9-9-32 Intermediate shafts 7-12-32 to 25-12-32 Tube shaft /

Screw shaft 7-12-32 Propeller 26-11-32 Stern tube 24-10-32 Engine seatings 1-11-32 Engines holding down bolts 21-2-33
Completion of fitting sea connections 12-1-33 Completion of pumping arrangements 21-2-33 Engines tried under working conditions 1-3-33.

Crank shaft, Material Ingot steel Identification Mark LLOYD'S No. 623 & 623-A Flywheel shaft, Material Ingot steel Identification Mark LLOYD'S No. 624 T.K.
Thrust shaft, Material Ingot steel Identification Mark See Flywheel shaft. Intermediate shafts, Material Ingot steel Identification Marks LLOYD'S No. 642A-B (5 off) 649A & B (2 ") HDB
Tube shaft, Material / Identification Mark / Screw shaft, Material Ingot steel Identification Mark LLOYD'S No. 641 H.D.B.

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

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 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 terms of the Rules and Approved plans.

The materials have been tested found efficient and the workmanship throughout is good.

This machinery has been efficiently installed on board, tested under full load, overload & manoeuvring conditions with satisfactory results, afterwards opened up examined and found in good condition.

This case is eligible in our opinion to have the record of LMC, 3-33 in the Register Book.

Mean speed on trial 15.76 knots at 129.9 r.p.m. Mean draught about 12'-5" at trial

Overload speed on trial 16.35 knots at 134 r.p.m. Slow speed 35 R.P.M.

Certificates of forgings and castings herewith.

The amount of Entry Fee .. £ 99:00 : When applied for,
Special £ 2904:00 : 20. 3. 19 33
Donkey Boiler Fee £ 104:00 : When received,
Air Receivers, " 156:00 : 29. 3. 19 33
Travelling Expenses (if any) £ SEE HULL RPT.

Committee's Minute

Assigned

FRI. 28 APR 1933

+ LMC 3.33 Ch. D.B. 120/15

For T. Kunishi & self. H.D. Buchanan. Engineer Surveyor to Lloyd's Register of Shipping.



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