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REPORT ON OIL ENGINE MACHINERY.

No. 750

Received at London Office 17 NOV 1930

e of writing Report 16th Oct. 1930 When handed in at Local Office 16th Oct. 1930 Port of NAGASAKI.

. in Survey held at NAGASAKI. Date, First Survey 1st Nov. 1929. Last Survey 14th Oct. 1930.

. Book. Number of Visits 173.

429 on the ~~Single~~ Twin ~~Triple~~ ~~Quadruple~~ Sup. } Screw vessel "SANYO MARU". Tons { Gross 8,365.28 / Net 5,046.44

uilt at Nagasaki. By whom built Mitsubishi Zosen Kaisha,Ld. Yard No. 473 When built 1930

ngines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha.Ld. Engine No. 473 When made 1930

onkey Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha,Ld. Boiler No. 473 When made 1930

rake Horse Power 7,200. Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

. Horse Power as per Rule 1,495. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

e for which vessel is intended Japan - New York. 26¾ 47¼

ENGINES, &c.—Type of Engines Mitsubishi-Sulzer Diesel Engine 2 or 4 stroke cycle 2 Single or double acting Single

um pressure in cylinders 40 Kg/cm² Diameter of cylinders 680 m/m Length of stroke 1200 m/m No. of cylinders 12 No. of cranks 12

f bearings, adjacent to the Crank, measured from inner edge to inner edge 930 m/m Is there a bearing between each crank Yes

tions per minute 120 Flywheel dia. 2200 m/m Weight 7800 Kg. Means of ignition Temp.due to Compression Kind of fuel used Heavy fuel oil.

Shaft, dia. of journals as per Rule 457.3 m/m as fitted 470 " Crank pin dia. 470 m/m Crank Webs Mid. length breadth 620 m/m Mid. length thickness 260 " shrunk Thickness parallel to axis / Thickness around eyehole /

cel Shaft, diameter as per Rule 457.3 m/m as fitted 470 " **Intermediate Shafts,** diameter as per Rule 338.4 m/m as fitted 350 " **Thrust Shaft,** diameter at collars as per Rule 457.3 m/m as fitted 470 "

Shaft, diameter as per Rule / as fitted / **Screw Shaft,** diameter as per Rule 368.5 m/m as fitted 380 " Is the ~~Tube~~ screw shaft fitted with a continuous liner Yes

e Liners, thickness in way of bushes as per Rule 18.8 m/m as fitted 22 " Thickness between bushes as per rule 14.1 m/m as fitted 16 " Is the after end of the liner made watertight in the

er boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner / 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 / liners are fitted, is the shaft lapped or protected between the liners / Is an approved **Oil Gland** or other appliance fitted at the after the tube shaft / Length of Bearing in **Stern Bush** next to and supporting propeller 1520 m/m

eller, dia. 14'-0" Pitch 15'-2" No. of blades 4 Material Bronze whether Moveable Yes Total Developed Surface 54.9 sq. feet

od of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

ced Thickness of cylinder liners at top 53 m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with nducting 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 /

ng Water Pumps, No. 2 @ 300 M³/hr for Cylinders. 2 @ 65 " for Pistons. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Pumps worked from the **Main Engines,** No. / Diameter / Stroke / Can one be overhauled while the other is at work /

s connected to the **Main Bilge Line** { No. and Size 2 @ 110 M³/hr. 1 @ 30 M³/hr. / How driven Electric motor.

st Pumps, No. and size 1 @ 110 M³/hr. **Lubricating Oil Pumps,** including Spare Pump, No. and size 1 @ 52 M³/hr for Bearing. 1 @ 7 " for Crosshead One of each - Spare.

o independent means arranged for circulating water through the **Oil Cooler** Yes **Suctions,** connected to both Main Bilge Pumps and Auxiliary Bilge

s, No. and size:—In Machinery Spaces 4 @ 3½". 2 @ 2". Cofferdams 1 each @ 2".

lds, &c. No.1- 2 @ 3". No.2- 2 @ 3". No.3- 2 @ 3". No.4- 1 @ 3". No.5- 1 @ 3". No.6- 1 @ 3". Pipe passage 1 @ 2". No.1 Cofferdam 1 @ 2". Tunnel well 1 @ 2½".

pendent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 5½". 1 @ 2½". 1 @ 8" (Emergency).

l the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

m easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

l Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Both.

ey 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 Both

ey 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

pipes pass through the bunkers / How are they protected /

pipes pass through the deep tanks / Have they been tested as per Rule /

l Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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 rtment to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Deck

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

Air Compressors, No. 2 No. of stages 3 Diameters 570/480/150 m/m Stroke 600 m/m Driven by Main Engine.

iary Air Compressors, No. 2 No. of stages 3 Diameters 340/295/75 m/m Stroke 180 m/m Driven by Elec.Motor

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 110/35 m/m Stroke 120 m/m Driven by Oil Engine.

nging Air Pumps, No. Turbo Blower. 2 Diameter Capacity 1000 M³/min. (each). Stroke Driven by Elec.Motor.

iary Engines crank shafts, diameter as per Rule / as fitted /

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes

e internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Hand hole- H.P.Air Recr. Man " L.P.Air Recr.

e a drain arrangement fitted at the lowest part of each receiver Yes

Pressure Air Receivers, No. 2 5 Cubic capacity of each 150 litre. 2500 litre. Internal diameter 300 m/m 775 m/m thickness 16 m/m 32.5 m/m

ss, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-35 tons sq.in. Working pressure by Rules 103.7 Kg/cm² 91.7 "

ing Air Receivers, No. 2 Total cubic capacity 12 Cub.M. Internal diameter 1200 m/m thickness 22.5 m/m

ss, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 28-35 tons sq.in. Working pressure by Rules 484.9 lbs sq.in.

IS A DONKEY BOILER FITTED? Yes *If so, is a report now forwarded?* Yes

PLANS. *Are approved plans forwarded herewith for Shafting* Yes *(If not, state date of approval)* *Receivers* Yes *Separate Tanks* Yes

Donkey Boilers Yes *General Pumping Arrangements* Yes *Oil Fuel Burning Arrangements* /

SPARE GEAR As per the Rules and in addition. (See separate list).

The foregoing is a correct description,

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.
S. Kawai
GENERAL MANAGER,
Manufacturer.

Dates of Survey while building — *During progress of work in shops* / *During erection on board vessel*:
1929. Nov 1.2.12.16.29 Dec 5.9.10.12.14.17.18.19.20.23.24.28
1930. Jan 9.13.16.17.18.20.21.22.23.24.27.28.29.31 Feb 1.3.5.7.8.10.12.13.14.15.
18.21.24.25.27.28 Mar 1.3.4.5.6.7.8.10.11.12.13.15.18.19.22.24.26.27.28.29.31 A
1.4.7.8.9.10.11.14.15.16.17.19.21.22.23.24.25.26.28.30 May 1.2.3.6.7.8.9.10.12.
14.15.16.19.20.21.22.23.27.28.29.30.31 June 2.3.4.5.6.7.9.10.12.13.14.16.17.18.
21.23.24.25.26.27.28.30 July 1.10.11.19.23.31 Aug 4.6.8.9.13.14.18.20.21.22.26.
28.29.30 Sep 2.4.6.12.13.15.17.18.25.27.29.30 Oct 1.2.4.11.14.

Total No. of visits 173.

Dates of Examination of principal parts—Cylinders 30-4-30 to 4-6-30 *Covers* 9-4-30 to 21-4-30 *Pistons* 7-5-30 to 28-8-30 *Rods* 28-1-30 to 16-5-30 *Connecting rods* 5-12-29 to 19-5-30

Crank shaft 1-11-29 to 20-1-30. (Vienna & Prague) *Flywheel shaft* and *Thrust shaft* 7-12-29. (Hakodate). *Intermediate shafts* 21-2-30 to 26-6-30 *Tube shaft* /

Screw shaft 13-3-30 to 29-9-30 *Propeller* 2-10-30 *Stern tube* 28/30-4-30. *Engine seatings* 30-6-30. *Engines holding down bolts* 14-8-30

Completion of fitting sea connections 1-7-30. *Completion of pumping arrangements* 12-9-30 *Engines tried under working conditions* 18-9-30

Crank shaft, Material Ingot steel *Identification Mark* See below *Flywheel shaft, Material* Ingot steel *Identification Mark* See Thrust

Thrust shaft, Material Ingot steel *Identification Mark* P- LLOYD'S No.653 ZS 7-12-29 / S- " No.654 ZS 7-12-29. *Intermediate shafts, Material* Ingot steel *Identification Marks* See below

Tube shaft, Material / *Identification Mark* / *Screw shaft, Material* Ingot steel *Identification Mark* P- L. No.295 KK 19- / S- L. No.295 KK 26- / Spare. No.295 KK 29-

Is the flash point of the oil to be used over 150° F. Yes

Is this machinery duplicate of a previous case Yes *If so, state name of vessel* Kinai Maru. Nag.Rpt.No.1737. / Tokai Maru. Nag.Rpt.No.1743.

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

Identification Marks:- CRANK SHAFTS.

Port:- LLOYD'S No.3901 HK 10-1-30. 10173.
" No.8193 PK 20-1-30.

Star:- LLOYD'S No.3860 HK 5-12-29. 10085.
" No.3864 HK 18-12-29. 10100.

Identification Marks:- INTERMEDIATE SHAFTS.

Port:-	LLOYD'S No.275	KK 4-4-30.	1 off.	Star:-	LLOYD'S No.275	KK 4-4-30.	1 off.
	" "	KK 10-4-30.	1 "		" "	KK 7-4-30.	1 "
	" "	KK 7-5-30.	1 "		" "	KK 7-5-30.	2 off.
	" "	KK 10-5-30.	1 "		" "	KK 10-5-30.	2 "
	" "	KK 10-6-30.	2 "		" "	KK 26-6-30.	1 "
	" "	GA 25-6-30.	1 "				

The Machinery has been constructed under Special Survey and installed in the vessel in accordance with the Rules and Approved Plans.

The materials and workmanship are good and the machinery has been examined under working condition and found satisfactory.

The Machinery of this vessel is eligible in my opinion to have the record ✠LMC 10-30

Mean speed on trial 18.58 knots. at 14'-1 5/16" draught.

Certificates of Castings and Forgings herewith.

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

The amount of Entry Fee ...	¥ 60:00	When applied for, 20. 10. 1930
Special	¥ 2060:78	
Donkey Boiler Fee ...	¥ 63:00	When received, 22/12/1930
Air Receivers. Travelling Expenses (if any)	¥ 94.50	

George Anderson & K. Kishigami
Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 25 NOV 1930

Committee's Minute

Assigned +Lmc 10.30 Ch. oil Eng DB - 100 lb.

CERTIFICATE WRITTEN.