

REPORT ON MACHINERY.

No. 1138

Received at London Office

FRI. 19 OCT. 1917

Date of writing Report 12th July 1917 When handed in at Local Office 12th July 1917 Port of NAGASAKI.
No. in Survey held at NAGASAKI. Date, First Survey 14th Sept 1916 Last Survey 9th July 1917
Reg. Book. on the S.S. "Calcutta Maru" (Number of Volls. 103)
Master O. Sakamoto Built at Nagasaki By whom built Mitsubishi S. & E. Works When built 1917
Engines made at Nagasaki By whom made Mitsubishi Dockyard & Engine Works when made 1917
Boilers made at Nagasaki By whom made Do. when made 1917
Registered Horse Power 490 Owners Nippon Yusen Kaisha Port belonging to Tokio
Nom. Horse Power as per Section 28 490 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 26¹/₂" 44¹/₂" 75" Length of Stroke 48 Revs. per minute 81 Dia. of Screw shaft as per rule 15.78 Material of Steel
Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner fitted Is the after end of the liner made water tight
in the propeller boss Yes If the liner is in more than one length are the joints burned Yes 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 Yes Length of stern bush 5.6¹/₈"
Dia. of Tunnel shaft as per rule 13.74 Dia. of Crank shaft journals as per rule 14.42.7 Dia. of Crank pin 15 Size of Crank webs 22¹/₂" x 9¹/₂" Dia. of thrust shaft under
collars 14.75 Dia. of screw 18.0 Pitch of Screw 20.0 No. of Blades 4 State whether moveable Yes Total surface 91.6 sq. ft.
No. of Feed pumps 2 Diameter of ditto 5 Stroke 24 Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 5 Stroke 24 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 4 Sizes of Pumps 1 Ballast 9¹/₂" x 10" 2 Feed Pumps 7¹/₂" x 7" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 @ 3¹/₂" In Holds, &c. No. 1 Hold 2 @ 3¹/₂" No. 2 Hold 2 @ 3¹/₂" Spare
Bunker 2 @ 3¹/₂" Cross Bunker 2 @ 3¹/₂" No. 3 Hold 2 @ 3¹/₂" No. 4 Hold 2 @ 3¹/₂" Tunnel well 1 @ 2¹/₂"
No. of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size Yes 3¹/₂"
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None
Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes 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 are carried through the bunkers None How are they protected Yes
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Bridge deck

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel David Colville & Sons & Imperial Steel Works, Japan
Total Heating Surface of Boilers 6498.9 Is Forced Draft fitted Yes No. and Description of Boilers 3 Cylindrical, Single ended
Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 18th May 1917 No. of Certificate 72
Can each boiler be worked separately Yes Area of fire grate in each boiler 54.32 sq. ft. No. and Description of Safety Valves to
each boiler 2 Spring loaded Area of each valve 9.62 sq. in. Pressure to which they are adjusted 203 lbs. Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 9.5" Mean dia. of boilers 14.0" Length 11.6 Material of shell plates Steel
Thickness 1⁵/₁₆" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Single lap
long. seams 2 straps Diameter of rivet holes in long. seams 1³/₈" Pitch of rivets 9¹/₂" x 4¹/₂" Lap of plates or width of butt straps 20¹/₂"
Per centages of strength of longitudinal joint 85.6 Working pressure of shell by rules 212 lbs. Size of manhole in shell 16" x 12"
Size of compensating ring 37" x 33" x 1⁵/₁₆" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 3' 9¹/₂"
Length of plain part top 9¹/₁₆" bottom 9¹/₁₆" Thickness of plates crown 9¹/₁₆" bottom 9¹/₁₆" Description of longitudinal joint Welded No. of strengthening rings 15
Working pressure of furnace by the rules 217 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3¹/₄" Back 3¹/₄" Top 3¹/₄" Bottom 1⁵/₁₆"
Pitch of stays to ditto: Sides 11¹/₄" x 7¹/₂" Back 9" x 10¹/₈" Top 7" x 11¹/₂" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 212 lbs.
Material of stays Steel Area at smallest part 2.02 sq. in. Area supported by each stay 81.6 sq. in. Working pressure by rules 223 lbs. End plates in steam space:
Material Steel Thickness 1³/₃₂" Pitch of stays 18" x 20" How are stays secured Double nuts Working pressure by rules 214 lbs. Material of stays Steel
Area at smallest part 7.67 sq. in. Area supported by each stay 360 sq. in. Working pressure by rules 221 lbs. Material of Front plates at bottom Steel
Thickness 3¹/₄" Material of Lower back plate Steel Thickness 3¹/₄" Greatest pitch of stays 13³/₄" Working pressure of plate by rules 211 lbs.
Diameter of tubes 3¹/₄" Pitch of tubes 4³/₈" x 4¹/₂" Material of tube plates Steel Thickness: Front 3¹/₄" Back 3¹/₄" Mean pitch of stays 11¹/₄"
Pitch across wide water spaces 13³/₄" Working pressures by rules 216 lbs. Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 10¹/₄" x 7¹/₈" Length as per rule 31.9 Distance apart 11¹/₂" Number and pitch of stays in each 3 @ 7"
Working pressure by rules 214 lbs. Steam dome: description of joint to shell Yes % of strength of joint Yes
Diameter Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes
Pitch of rivets Yes Working pressure of shell by rules Yes Crown plates Yes Thickness Yes How stayed Yes
SUPERHEATER. Type Yes Date of Approval of Plan Yes Tested by Hydraulic Pressure to Yes
Date of Test Yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes
Diameter of Safety Valve Yes Pressure to which each is adjusted Yes Is Easing Gear fitted Yes

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— As per Rule, and in addition 1 H.P. valve spindle, 1 L.P. valve spindle, 2 eccentric rods, 1 air pump rod, 1 set each of H.P. I.P. & L.P. packing rings, 1 set each of top & bottom brasses for one connecting rod, 13 junk ring bolts, 1 set of air pump valves, 1 impeller & spindle for circulating pump, 53 condenser tubes & 160 ferrules, 1 complete set of valves & seats for main & donkey feed checks, 3 cylinder escape valves & springs, 1 safety valve spring.

The foregoing is a correct description,

Mitsubishi Dockyard & Engine Works,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1916 Sept. 14, 30, Oct. 5, 14, 20, 25, Nov. 4, 10, 11, 14, 17, 30, Dec. 16, 18, 23, 27, 29, 1917 Jan. 6, 10, 16, 20, 22, 23, 24, 31, Feb. 3, 6, 14, 17, 19, 20, 22, 28, Mar. 2, 3, 5, 6, 7, 8, 9, 10, 15, 17, 19, 21, 22, 26, 27, 29, Apr. 2, 4, 5, 6, 9, 10, 11, 12, 13, 14, 16, 18, 20, 21, 23, 25, 26, 27, 28, May 1, 2, 4, 8, 9, 10, 11, 14, 15, 17, 18, 19, 21, 23, 24, 26, 28, 30, June 1, 2, 4, 5, 7, 8, 9, During erection on board vessel -- 14, 15, 16, 18, 20, 25, 26, 30, July 6, 9, Total No. of visits 103.

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " " Yes.

Dates of Examination of principal parts—Cylinders 14.5.17 Slides 19.5.17 Covers 14.5.17 Pistons 9.6.17 Rods 14.6.17 Connecting rods 19.5.17 Crank shaft 1.5.17 Thrust shaft 14.5.17 Tunnel shafts 5.6.17 Screw shaft 14.5.17 Propeller 24.5.17 Stern tube 21.5.17 Steam pipes tested 18.6.17 Engine and boiler seatings 7.6.17 Engines holding down bolts 16.6.17 Completion of pumping arrangements 25.6.17 Boilers fixed 20.6.17 Engines tried under steam 30.6.17 Completion of fitting sea connections 5.6.17 Stern tube 23.5.17 Screw shaft and propeller 30.5.17 Main boiler safety valves adjusted 26.6.17 Thickness of adjusting washers Jamb nuts No. 135 A.S.W. Material of Crank shaft Steel Identification Mark on Do. No. 135 A.S.W. Material of Thrust shaft Steel Identification Mark on Do. No. 135 A.S.W. Material of Tunnel shafts Steel Identification Marks on Do. No. 135 A.S.W. Material of Screw shafts Steel Identification Marks on Do. No. 135 A.S.W. Material of Steam Pipes Steel solid drawn Test pressure 600 lbs. per sq. in. Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes

Have the requirements of Section 49 of the Rules been complied with Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel "Somedono Maru"

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

These Engines and Boilers have been constructed under Special Survey, in accordance with the Rules, and of good materials and workmanship. They have been securely fitted on board, and have been satisfactorily tried under steam.

The Machinery of this vessel is eligible, in my opinion, for the record of LMC 7.17 in the Register Book.

Mean speed of 6 runs on Trial when 1/2 Loaded = 14.609 knots.

It is submitted that this vessel is eligible for THE RECORD. + LMC 7.17. F.D.

The amount of Entry Fee 3.0.0. When applied for, 12th July 1917. Special 66.15.9. When received, 13th July 1917. Donkey Boiler Fee £ 1. Travelling Expenses (if any) £ 1.

Committee's Minute

Assigned

TUE OCT 23 1917

+ LMC 7.17

F.D.

MACHINERY CERTIFICATE

UNITED.

J.M. J.W.D.

22/10/17

A.S. Williamson

Engineer Surveyor to Lloyd's Register of Shipping.



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