

REPORT ON MACHINERY.

Received at London Office FRI. MAY. 10. 1918

Date of writing Report 23rd March 1918 When handed in at Local Office 23rd March 1918 Port of

NAGASAKI.

No. in Survey held at **NAGASAKI.**

Date, First Survey 10th April 1917 Last Survey 18th March 1918

Reg. Book. on the s.s. "Jama Maru"

(Number of Visits) 38.

Master *Y. Yano* Built at *Nagasaki* By whom built *Matsuo Iron Works & Dockyard* When built 1918

Engines made at *Nagasaki* By whom made *Matsuo Iron Works & Dockyard* when made 1918

Boilers made at *Nagasaki* By whom made *Matsuo Iron Works & Dockyard* when made 1918

Registered Horse Power Owners *Tokio Kaifu Kabushiki Kaisha* Port belonging to *Amagasaki*

Nom. Horse Power as per Section 28 262 ✓ 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 22" 37" 61" ✓ Length of Stroke 42" Revs. per minute 77 Dia. of Screw shaft as per rule 12.76" Material of screw shaft *Steel* ✓
 as fitted 13.3" Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes ✓ 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4' 7"

Dia. of Tunnel shaft as per rule 11.3" ✓ Dia. of Crank shaft journals as per rule 11.86" ✓ Dia. of Crank pin 12.24" Size of Crank webs 8.5" x 23.5" Dia. of thrust shaft under collars 12.4" Dia. of screw 15.9" Pitch of Screw 16.9" ✓ No. of Blades 4 ✓ State whether moveable Yes ✓ Total surface 77.2 sq. ft.

No. of Feed pumps 2 ✓ Diameter of ditto 4.5" ✓ Stroke 21" ✓ Can one be overhauled while the other is at work Yes ✓

No. of Bilge pumps 2 ✓ Diameter of ditto 4.5" ✓ Stroke 21" ✓ Can one be overhauled while the other is at work Yes ✓

No. of Donkey Engines 3 ✓ Sizes of Pumps 1 *1 1/2" x 3 1/2" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 @ 3 1/2" In Holds, &c. No. 1 Hold 2 @ 3 1/2" No. 2 Hold 2 @ 3 1/2" No. 3 Hold 2 @ 3 1/2" Tunnel well 1 @ 2 1/2" ✓

No. of Bilge Injections 1 sizes 7 1/2" Connected to condenser or to circulating pump. Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2" ✓

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 *Bilge pipes* How are they protected *with iron plates* ✓

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 *John Spencer Sons Carnegie Steel Co. Imperial Steel Works.*

Total Heating Surface of Boilers *4033.7* ✓ Is Forced Draft fitted No. No. and Description of Boilers *2 Cylindrical, Single ended.*

Working Pressure 180 lbs. ✓ Tested by hydraulic pressure to 360 lbs. ✓ Date of test *26th Dec. 1917* No. of Certificate *80* ✓

Can each boiler be worked separately Yes ✓ Area of fire grate in each boiler *56.87* sq. ft. No. and Description of Safety Valves to each boiler *2 Spring loaded* ✓ Area of each valve *8.61* sq. ins Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 16" Mean dia. of boilers 14.3" Length 11.0" Material of shell plates *Steel*

Thickness *1 5/16"* Range of tensile strength *28 to 32 tons* Are the shell plates welded or flanged No. ✓ Descrip. of riveting: cir. seams *Double lap*
 long. seams *Double lap* ✓ Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9" x 2 1/2" Lap of plates or width of butt straps 18 1/2"

Per centages of strength of longitudinal joint rivets 85.25% plate 84.72% Working pressure of shell by rules 207 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring *36 1/2" x 32 1/2" x 1 5/16"* No. and Description of Furnaces in each boiler *3 Morrison's* ✓ Material *Steel* ✓ Outside diameter *3' 8 3/4"*

Length of plain part top *5"* bottom *5"* Thickness of plates crown *5/8"* bottom *5/8"* Description of longitudinal joint *welded* ✓ No. of strengthening rings ✓

Working pressure of furnace by the rules 225 lbs. Combustion chamber plates: Material *Steel* ✓ Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *3/4"*

Pitch of stays to ditto: Sides *7 1/2" x 8 1/2"* Back *7 1/2" x 8 1/2"* Top *7 1/2" x 8 1/2"* If stays are fitted with nuts or riveted heads *Nuts* ✓ Working pressure by rules 217 lbs.

Material of stays *Steel* ✓ Area at smallest part *1.79* sq. ins Area supported by each stay *59.8* sq. ins Working pressure by rules 260 lbs. End plates in steam space: Material *Steel* ✓ Thickness *1 1/8"* Pitch of stays *16 1/2" x 15 1/2"* How are stays secured *Double nuts* ✓ Working pressure by rules 237 lbs. Material of stays *Steel* ✓

Area at smallest part *5.73* sq. ins Area supported by each stay *260* sq. ins Working pressure by rules 230 lbs. Material of Front plates at bottom *Steel* ✓

Thickness *7/8"* Material of Lower back plate *Steel* ✓ Thickness *3/4"* Greatest pitch of stays *13 3/4"* ✓ Working pressure of plate by rules 207 lbs.

Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2" x 4 1/2"* ✓ Material of tube plates *Steel* ✓ Thickness: Front *7/8"* Back *7/8"* Mean pitch of stays *9 1/2"*

Pitch across wide water spaces *13 3/4"* ✓ Working pressures by rules 267 lbs. Girders to Chamber tops: Material *Steel* ✓ Depth and thickness of girder at centre *9" x 7 1/2" double* ✓ Length as per rule *34* ✓ Distance apart *8 1/2"* ✓ Number and pitch of stays in each *3 @ 7 1/2"*

Working pressure by rules 197 lbs. Steam dome: description of joint to shell ✓ % of strength of joint ✓

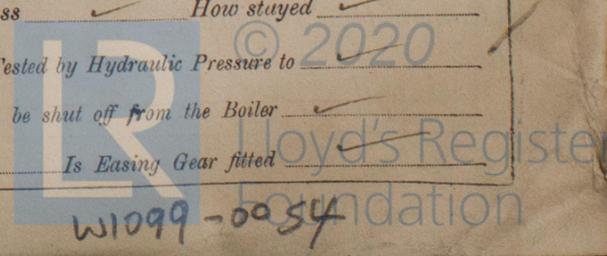
Diameter ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓

Pitch of rivets ✓ Working pressure of shell by rules ✓ Crown plates ✓ Thickness ✓ How stayed ✓

SUPERHEATER. Type ✓ Date of Approval of Plan ✓ Tested by Hydraulic Pressure to ✓

Date of Test ✓ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler ✓

iameter of Safety Valve ✓ Pressure to which each is adjusted ✓ Is Easing Gear fitted ✓



W1099-0054

IS A DONKEY BOILER FITTED? *Yes* ✓

If so, is a report now forwarded? *Yes* ✓

SPARE GEAR. State the articles supplied:— *As per Rule, and in addition one set of packing rings, junk ring bolts nuts for each piston, 1 valve spindle, 2 eccentric rods, 1 set each of top & bottom brasses for connecting rod, 4 2 condenser tubes, 1 set air pump valves rod, 1 impeller spindle for circulating pump, 2 safety valve springs, 3 escape valve springs, 1 propeller blade*

The foregoing is a correct description,

Matsuo Iron works & Dock yard. Manufacturer.

Dates of Survey while building	During progress of work in shops --	<i>1917</i> April 10, May 2, 23, 25, 28, June 6, 14, 20, July 4, 21, 24, 28, Aug. 7, 24.	
		During erection on board vessel ---	<i>Sept. 14, 20, 28, Oct. 5, 16, 26, 29, Nov. 7, 21, 30, Dec. 21, 24, 26.</i>
			<i>1918</i> Jan. 15, 16, 20, Feb. 4, 5, 14, 21, March 6, 11, 17, 18.
Total No. of visits		<i>38</i>	Is the approved plan of main boiler forwarded herewith <i>Yes</i> ✓

" " " donkey " " " *Yes* ✓

Dates of Examination of principal parts—Cylinders *24.12.17* Slides *21.11.17* Covers *21.11.17* Pistons *30.11.17* Rods *21.11.17*
 Connecting rods *4.2.18* Crank shaft *21.12.17* Thrust shaft *21.11.17* Tunnel shafts *30.11.17* Screw shaft *16.1.18* Propeller *4.2.18*
 Stern tube *16.2.18* Steam pipes tested *5.2.18* Engine and boiler seatings *16.1.18* Engines holding down bolts *4.2.18*
 Completion of pumping arrangements *14.2.18* Boilers fixed *4.2.18* Engines tried under steam *11.3.18*
 Completion of fitting sea connections *20.1.18* Stern tube *20.1.18* Screw shaft and propeller *14.2.18*
 Main boiler safety valves adjusted *6.3.18* Thickness of adjusting washers *Jamb nuts*

Material of Crank shaft <i>Steel</i>	Identification Mark on Do. <i>2.S.</i>	Material of Thrust shaft <i>Steel</i>	Identification Mark on Do. <i>6450</i>
Material of Tunnel shafts <i>Steel</i>	Identification Marks on Do. <i>6450 & 6453</i>	Material of Screw shafts	Identification Marks on Do. <i>6433</i>

Material of Steam Pipes *Copper* ✓ Test pressure *360 lbs.* ✓

Is an installation fitted for burning oil fuel ✓ Is the flash point of the oil to be used over 150°F. ✓

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

Is this machinery duplicate of a previous case *Yes* ✓ If so, state name of vessel *"Joy's Man No. 2"* ✓

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

The 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 3.18** in the Register Book.*

Mean speed of 6 runs on trial when $\frac{1}{2}$ loaded = 11.58 knots.

It is submitted that this vessel is eligible for THE RECORD. + LMC 3.18.

W.D. 13/5/18

W.D. Williamson
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £	<i>2.0.0</i>	When applied for,
Special ... £	<i>49.13.0</i>	
Donkey Boiler Fee ... £	<i>4.4.0</i>	When received,
Travelling Expenses (if any) £	<i>:</i>	

Committee's Minute *TUE. MAY 14 1918*
Assigned *+ LMC 3.18*

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

