

## REPORT ON MACHINERY.

No. 2434

Received at London Office

MON. 24 MAR. 1919

Date of writing Report 30 Jan'y 1919 When handed in at Local Office 19 Port of Kobe  
 No. in Survey held at Kobe Date, First Survey 5 August 1918 Last Survey 18 Jan'y 1919  
 Reg. Book. on the Steel Single Screw Steamer "Ryufuku Maru" (Kawasaki S.S. Co. No. 432) Tons Gross 585.7 Net 425.9  
 Master H. Rato Built at Kobe By whom built The Kawasaki S.S. Co. Ltd. When built 1919  
 Engines made at Kobe By whom made The Kawasaki S.S. Co. Ltd. when made 1919  
 Boilers made at do By whom made do when made do  
 Registered Horse Power Owners do Port belonging to Kobe  
 Nom. Horse Power as per Section 28 436 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3  
 Dia. of Cylinders 26" 43½" 72" Length of Stroke 48" Revs. per minute 40 Dia. of Screw shaft as per rule 15.41 as fitted 16" Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight in the propeller boss If the liner is in more than one length are the joints burned 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 5' 5½"  
 Dia. of Tunnel shaft as per rule 13.48 as fitted 13¾" Dia. of Crank shaft journals as per rule 14.15 as fitted 14¾" Dia. of Crank pin 14¾" Size of Crank webs 9½" 20½" Dia. of thrust shaft under collars 14¾" Dia. of screw 17" 6" Pitch of Screw 19" 0" mean No. of Blades 4 State whether moveable Yes Total surface 100 sq. ft.  
 No. of Feed pumps One Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes (with Weir's feed)  
 No. of Bilge pumps Two Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Three Sizes of Pumps Bal. 10" 11" 12" Duplex No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three 3½" Gen. 10" 7½" 5" 6" Dup. In Holds, &c. Nos. 1, 3 & 4 holds, two 3½" each hold. No 2 hold, two 4"  
 No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3½"  
 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 Large valves: Smaller Cocks  
 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

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 upper platform in Eng. Rm.

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel North Bros. Illinois Steel Co. Yawata Steel Works  
 Total Heating Surface of Boilers 4504 + 1132 = 5636 Is Forced Draft fitted Yes No. and Description of Boilers Two S. E. & one Aux. S. E.  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 22/28/11/18 No. of Certificate 400 LBS  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60½ No. and Description of Safety Valves to each boiler Two. Spring loaded Area of each valve 3¾" 16" Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 14" 6" Length 12" 0" Material of shell plates Steel  
 Thickness 1¾" Range of tensile strength 26,783 to 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams mid. treb. long. seams Treble riv. Diameter of rivet holes in long. seams 17/16 Pitch of rivets 9½" 4½" Lap of plates or width of butt straps 20½" 1½"  
 Per centages of strength of longitudinal joint rivets 96.1 plate 84.24 Working pressure of shell by rules 203 lbs Size of manhole in shell 12" x 16"  
 Size of compensating ring 17½" 13" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 48½"  
 Length of plain part top bottom Thickness of plates crown 21 bottom 32 Description of longitudinal joint Weld No. of strengthening rings  
 Working pressure of furnace by the rules 221 Combustion chamber plates: Material Steel Thickness: Sides 11/16 Back 11/16 Top 11/16 Bottom 7/8  
 Pitch of stays to ditto: Sides 8½" x 8½" Back 9" x 8½" Top 9½" x 8½" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 208 lbs  
 Material of stays Steel Area at smallest part 2.1 Area supported by each stay 9½" x 8½" Working pressure by rules 230 End plates in steam space:  
 Material Steel Thickness 1½" Pitch of stays 19¼" x 20½" How are stays secured Nut. riv. Working pressure by rules 201 lbs Material of stays Steel  
 Area at smallest part 10" Area supported by each stay 19¼" x 20½" Working pressure by rules 260 Material of Front plates at bottom Steel  
 Thickness ¾" Material of Lower back plate Steel Thickness ¾" Greatest pitch of stays 13½" at wid. Working pressure of plate by rules 200 lbs  
 Diameter of tubes 3½" Pitch of tubes 4½" x 4½" Material of tube plates Steel Thickness: Front 13/16 Back 13/16 Mean pitch of stays 8¾"  
 Pitch across wide water spaces 13¾" doubled Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10¾" x ¾" (tw) Length as per rule 34½ Distance apart 9¾ Number and pitch of stays in each 3 @ 8½"  
 Working pressure by rules 217½ 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 None 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

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

609721-009724-0045



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

SPARE GEAR. State the articles supplied:—

*Four main bearing bolts & nuts. ✓ Set packing rings & springs each piston*  
*Two crank pin bolts & nuts & set brasses. ✓ Set junk ring bolts & nuts.*  
*Two crosshead bolts & nuts & brasses. ✓ Propeller shaft. Four prop. blades &*  
*Set coupling bolts & nuts. ✓ Two sets studs & nuts.*  
*Sets feed & bilge pump valves. ✓ Slide valve spindle each size.*  
*Assorted bolts & nuts & iron ✓ Centrif. impeller & shaft.*

The foregoing is a correct description,

KAWASAKI DOCKYARD COMPANY, LTD

*J. Otake*  
*Secretary.* Manufacturer.

Dates of Survey while building { During progress of work in shops -- 5.12.24 Aug. 6.9.16 Sept. 2.12.14.18.23.29 Oct. 1.3.5.9.13.19.22.28.30 Nov.  
During erection on board vessel -- 2.12.14.16.21.25.26.27 Dec. 1918. 10.12.14.16.18 Jan. 1919.  
Total No. of visits 34

Is the approved plan of main boiler forwarded herewith *Sent with Rpt. No. 2420 on the Sister*  
" " " donkey " *Kind "Chifuku Maru"*

Dates of Examination of principal parts—Cylinders *9/11/18 2/12/18* Slides *2/10/18* Covers *22/11/18* Pistons *22/11/18* Rods *5/8/18* etc  
Connecting rods *24/8/18* Crank shaft *9.9.18* Thrust shaft *9.9.18* Tunnel shafts *23.10.18* Screw shaft *30.11.18* Propeller *12.12.18*  
Stern tube *12.12.18* Steam pipes tested *26<sup>th</sup> 27/12/18* Engine and boiler seatings *25.12.18* Engines holding down bolts *12/1/19*  
Completion of pumping arrangements *10.1.19* Boilers fixed *10/1/19* Engines tried under steam *18.1.19*  
Completion of fitting sea connections *27/12/18* Stern tube *21/12/18* Screw shaft and propeller *27/12/18*  
Main boiler safety valves adjusted *16.1.19* Thickness of adjusting washers *Locknuts. Clearance Port Bld. F 5/8 Star B. A 9/16*  
Material of Crank shaft *Steel* Identification Mark on Do. *9.9.18 LLOYD'S ALJ R* Material of Thrust shaft *Steel* Identification Mark on Do. *9.9.18 LLOYD'S ALJ R*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *LLOYD'S 18.10.18 & 23.10.18* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYD'S 30.11.18 ALJ R*  
Material of Steam Pipes *Steel (S.D.)* Test pressure *600 lbs*

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *Spate. LLOYD'S 14.12.18 A.L.J. R*

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 *"War Queen" "War Prince" etc "East Cape" "Eastern" "Tofuku Maru" etc.*

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

*The machinery has been made & fitted under Special Survey in accordance with the Rules & approved plans & materials & workmanship are good.*

*Photoprints of midship section & profile & decks are forwarded under separate cover. Photoprints of main & aux. boilers were forwarded with Rpt No 2420 on the sister vessel "Chifuku Maru".*

*The vessel is eligible in my opinion for the record & L.M.C. 1.19 in the Register*

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 1.19. F.D.

The amount of Entry Fee ... *Yen 30* : When applied for,  
Special ... *Yen 735* : *17<sup>th</sup> Jan. 1919*  
Donkey Boiler Fee ... *£* : When received,  
Travelling Expenses (if any) *Yen 15* : *20<sup>th</sup> Jan. 1919*

*Arthur Jones*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 28 MAR. 1919

Assigned

MACHINE CERTIFICATE  
M.T.M.



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Foundation