

## REPORT ON MACHINERY.

No. 2414

Received at London Office

Date of writing Report Jan'y 1<sup>st</sup> 1919 When handed in at Local Office ✓ 19 Port of Kobe MON. 17 MAR. 1919  
 No. in Survey held at Kobe Date, First Survey 1<sup>st</sup> May 1918 Last Survey 8 Jan'y 1919  
 Reg. Book. on the Steel Single Screw Steamer "TOFUKU MARU." (Number of Visits 41)

Master T. WAKASAWA. Built at Kobe By whom built Kawasaki Dryd Co. Ltd. Tons { Gross 5857  
 Engines made at Kobe By whom made The Kawasaki Dryd Co. Ltd. Yard No 429 Net 4259  
 Boilers made at do By whom made do when built 1918  
 when made do

Registered Horse Power 436 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 3 No. of Cranks 3  
 Dia. of Cylinders 26.43 1/2; 72 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft 13.41 as per rule 13.36 Material of Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner as fitted 16 screw shaft  
 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' 5 1/4"  
 Dia. of Tunnel shaft 13.48 as per rule 13.54 Dia. of Crank shaft journals 14.15 as per rule 14.22 Dia. of Crank pin 14.3/4 Size of Crank webs 9 1/2 x 26 Dia. of thrust shaft under collars 14.3/8 Dia. of screw 7.6 Pitch of Screw 19" 0" 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 Weirs feed pump  
 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 x 11 x 12 dupl. No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 3 1/2" & one 3 1/2" Gen. Serv. 7 1/2" 5" 6" dupl. In Holds, &c. No. 1, 2, & 4 holds, two 3 1/2" to each  
No. 2 hold, two 4"  
 No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Cir. p. 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 Yes  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger 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 Eng. Rm. upper platform

BOILERS, &c.—(Letter for record S. 5) Manufacturers of Steel Yawata S. L. Wks. North Br. Amer. Spiral Pipe Wks. Carnegie  
4504 + 1132 ft.  
 Total Heating Surface of Boilers 5636 Is Forced Draft fitted Yes No. and Description of Boilers Two S. E. (41 Ans S. E.)  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 7<sup>th</sup> & 11<sup>th</sup> Oct. '18 No. of Certificate LLOYD'S TEST 400 LBS 7.10.18 & 11/10/18 ALJ  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60 1/2 No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 3 3/4 dia 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 12" Mean dia. of boilers 14" 6" Length 12" 0" Material of shell plates Steel  
 Thickness 1 3/8" Range of tensile strength 26783 to 32000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams mid. tank  
 long. seams Yrb. m. Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 1/8" & 4 9/16" Lap of plates or width of butt straps 20 1/8" x 1 3/8"  
 Per centages of strength of longitudinal joint 96.1 Working pressure of shell by rules 203 lbs Size of manhole in shell 12" x 16"  
 Size of compensating ring 1 1/2" flange No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 48 1/4"  
 Length of plain part top Thickness of plates bottom 21/32 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 8 5/8" x 8 1/2" Back 9" x 8 1/2" Top 9 3/8" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 203 lbs  
 Material of stays Steel Area at smallest part 2.1 Area supported by each stay 9 3/8" x 8 1/2" Working pressure by rules 230 End plates in steam space:  
 Material Steel Thickness 1 5/16" Pitch of stays 19 3/4" x 20 1/2" How are stays secured Drub. nuts Working pressure by rules 201 lbs Material of stays Steel  
 Area at smallest part 10 Area supported by each stay 19 3/4" x 20 1/2" Working pressure by rules 260 Material of Front plates at bottom Steel  
 Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" (clashed) Working pressure of plate by rules 200 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 5/16" x 4 7/16" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 8 3/4"  
 Pitch across wide water spaces 13 3/4" Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 3/4" x 13 5/8" (double at wide spaces) Length as per rule 34 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3 @ 8 1/2"  
 Working pressure by rules 235 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 ✓  
 Diameter of Safety Valve ✓ Pressure to which each is adjusted ✓ Is Easing Gear fitted ✓



IS A DONKEY BOILER FITTED? *Military Boat* 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 do do ✓	Set pin R one bolts + nuts ✓
Two crosshead do do ✓	One part crank shaft, Propeller shaft
Set Coupling do do ✓	Four propeller blades + two sets studs + nuts
Set feed + bilge pump valves ✓	Slide valve spindle each size ✓
Assorted bolts + nuts + iron ✓	Centrifugal impeller + shaft ✓
	Crosshead + cr. pin trusses A.P. rod + nut
	Three safety valve springs. Condenser tubes
	etc etc

The foregoing is a correct description,  
**Kawasaki Dockyard Co., Ltd.,**

Per: *[Signature]* Secretary

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1.13.14.18 May. 4.5.13.24 June 1.12 July 2.8.26.27 Aug. 7.9.11.19 Sept  
During erection on board vessel -- 7.9.11.14.21.24.25.29 Oct. 1.3.7.18.22.25.28.30 Nov.  
Total No. of visits 41 6.7.12.21.25.27 Dec. 1918. 8 Jan. 1919  
Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 12.7.18 etc. Slides 8.8.18 Covers 8.8.18 Pistons 11.9.18 Rods 13.6.18 etc  
Connecting rods 13.6.18 Crank shaft 5.6.18 Thrust shaft 5.6.18 Tunnel shafts 18.5.18 1/2 Screw shaft 24.10.18 Propeller 3/11/18  
Stern tube 22/11/18 Steam pipes tested 7/12/18 Engine and boiler seatings 12.12.18 Engines holding down bolts 21.12.18  
Completion of pumping arrangements 21.12.18 Boilers fixed 21/12/18 Engines tried under steam 7/1/19: 8/1/19  
Completion of fitting sea connections 7.12.18 Stern tube 30.11.18 Screw shaft and propeller 7.12.18  
Main boiler safety valves adjusted 27.12.18 Thickness of adjusting washers Locknut. Clearance Star B. A. 3/8 Port B. A. 3/8 4/8  
Material of Crank shaft Steel Identification Mark on Do. LLOYD'S 5.6.18 Material of Thrust shaft Steel Identification Mark on Do. LLOYD'S 5.6.18  
Material of Tunnel shafts Steel Identification Marks on Do. LLOYD'S 13.5.18; 18.5.18; 5.6.18 Material of Screw shafts Steel Identification Marks on Do. LLOYD'S 24.10.18  
Material of Steam Pipes Steel Test pressure 600 lb  
Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F. *Space* LLOYD'S 7.12.18  
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 Dawn War Prince etc*  
*Raisjuku Maru Seifuku Maru etc*

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

*The machinery has been made + fitted under Special Survey, the Rules have been complied with + materials + workmanship are good.*

*The vessel is eligible in my opinion for the record + L.M.C. 1.1819.*

*It is submitted that*  
*this vessel is eligible for*  
**THE LLOYD. + L.M.C. 1.19 F.D.**

*[Signature]*  
18/3/19

*[Signature]*

The amount of Entry Fee ... *Yes* 30 : When applied for,  
Special ... *Yes* 735 : 10 Jan. 1919  
Donkey Boiler Fee ... *Yes* : When received,  
Travelling Expenses (if any) *Yes* 15 : 15 Jan. 1919

*[Signature]*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 21 MAR. 1919

Assigned

*+ L.M.C. 1.19 F.D.*



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Foundation