

REPORT ON MACHINERY.

Port of Kobe

Received at London Office

No. in Survey held at Kobe Date, first Survey 21st Aug. 1912 Last Survey 22nd October 1913
 Reg. Book. 6 Sup. on the Steel Twin Screw Steamer "Kashima Maru"
 Master M. Yagi Built at Kobe By whom built The Kawasaki Dockyard Co. Ltd. When built 1913
 Engines made at Kobe By whom made The Kawasaki Dockyard Co. Ltd. when made 1913
 Boilers made at do By whom made do when made do
 Registered Horse Power 1152 Owners Nippon Yusen Kaisha Kaisha Port belonging to Tokio
 Nom. Horse Power as per Section 28 1152 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion Twin Screws No. of Cylinders Six No. of Cranks Six
 Dia. of Cylinders 24:45 1/4:76 Length of Stroke 54 Revs. per minute 40 Dia. of Screw shaft as per rule 15.6 Material of Steel as fitted 16 screw shaft
 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 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 6"8"
 Dia. of Tunnel shaft as per rule 14.48 Dia. of Crank shaft journals as per rule 15.2 Dia. of Crank pin 16" Size of Crank webs 9 3/4 x 10 1/4 Dia. of thrust shaft under collars 15 1/2 Dia. of screw 18"0 Pitch of Screw 20"0 to 22"0 No. of Blades 4 State whether moveable Yes Total surface 90" each propeller
 No. of Feed pumps 4 Diameter of ditto 5 1/4 Stroke 24 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 4 Diameter of ditto 5 1/4 Stroke 27 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Five Sizes of Pumps Fed. 8 1/2 x 6 x 9 duplex Ballast 10 1/2 x 13 1/2 x 10 1/2 duplex No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three 3 1/2" & thrust recess for 3 1/2" General 8 x 9 x 9 In Holds, &c. Two 3 1/2" in each of the six holds, 4 each in No. 4 which has four 3 1/2". Each tunnel on 3 1/2" & one 3" Tunnel well 3" APT top 3" FPT top two 3" Bales from two 3 1/2" Cr. hoppers two 3 1/2"
 No. of Bilge Injections 2 sizes 12" Connected to condenser, or to circulating pump Cir. p. Is a separate Donkey Suction fitted in Engine room & size Yes 8"
 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 Now
 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 stowage 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
 Dates of examination of completion of fitting of Sea Connections 7. 6. 13 of Stern Tube 31. 5. 13 Screw shaft and Propeller 6. 6. 13
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper E.R. platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel W. Colville & Son. Leeds Forge for flues.
 Total Heating Surface of Boilers 16075 Is Forced Draft fitted Yes No. and Description of Boilers Seven. Single Ended.
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Dates of test 12. 21 x 21 Apr. 5. 11. 20 x 31 May 1913 No. of Certificate 33
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60 3/4 No. and Description of Safety Valves to each boiler Two. Direct Spring Area of each valve 8. 29 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 11. 9" Material of shell plates Steel
 Thickness 1 1/32 Range of tensile strength 28/32 tons Are the shell plates welded or flanged 8" at ends Descrip. of riveting: cir. seams Doub. riv. long. seams Doub. straps Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/4 x 4 3/8 Lap-of-plates-or width of butt straps 19 3/4 x 1 3/16
 Per centages of strength of longitudinal joint rivets 93.6 Circumferential 87.2 Working pressure of shell by rules 200 lbs Size of manhole in shell 16" x 12" 47 3/4"
 Size of compensating ring 3'1" x 2'0" x 1 1/32 No. and Description of Furnaces in each boiler 3 Morrison built. Material Steel Outside diameter 43 1/2"
 Length of plain part top bottom Thickness of plates crown 5/8 bottom 5/8 Description of longitudinal joint Weld. No. of strengthening rings 11 bulks
 Working pressure of furnace by the rules 232 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16 Back 11/16 Top 11/16 Bottom 15/16
 Pitch of stays to ditto: Sides Hor. 8 1/2 x 9 Back 8 1/2 x 8 1/2 Top 8 x 9 3/8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 215 lbs
 Material of stays Steel Section Diameter at smallest part 2. 08 Area supported by each stay 75" Working pressure by rules 249 lbs End plates in steam space: Diameter at smallest part 9. 62 Area supported by each stay 20 1/2 x 17 1/2 Working pressure by rules 278 lbs Material of Front plates at bottom Steel
 Thickness 3/4 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 8 1/2 for single Working pressure of plate by rules 200 lbs
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/4 x 4 1/8 Material of tube plates Steel Thickness: Front 13/16 Back 3/4 Mean pitch of stays 8 3/8
 Pitch across wide water spaces 13 1/2 double Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2 x 13 (2 1/2) Length as per rule 33 9/16 Distance apart 9 3/8 x 6 3/8 Number and pitch of stays in each 3 @ 8"
 Working pressure by rules 236 lbs Superheater or Steam chest; how connected to boiler Now Can the superheater be shut off and the boiler worked separately
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

009505-009513-0203

If not, state whether, and when, one will be sent. Is a Report also sent on the Hull of the ship? Im. 48-T



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 4 Bolts & nuts for crossheads. 2 Bolts & nuts for crank pin branes. 2 main bearing bolts & nuts. Set shaft coupling bolts. Set feed & bilge pump valves. Set packing ring for each piston each engine. Assorted bolts & nuts & iron various sizes. Propeller shaft. 4 blades. Stern bush. 1 crank shaft (interchangeable) Cr. pin & crank branes. Piston rod. Slide valve rod. Pair ecc rods & straps. Air pump rod. Piston valve packing etc. Manufacturer. 2 Crank head guide shoes. 100 Condenser tubes & ferrules. etc.

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

Per *J. P. Stewart* Business Manager

Dates of Survey while building: During progress of work in shops— 2nd Aug 1912 to 8 June 1913; During erection on board vessel— 8 June to 22nd Oct 1913

Total No. of visits: Continuous attendance

Is the approved plan of main boiler forwarded herewith: Yes ✓

Is the approved plan of donkey boiler forwarded herewith: None

Dates of Examination of principal parts—Cylinders 16.4.13 etc Slides 21.4.13 etc Covers 19.4.13 etc Pistons 6.2.13 etc Rods 2.12.12 etc

Connecting rods 14.4.13 etc Crank shaft 12.4.13 etc Thrust shaft 13.1.13 etc Tunnel shafts 22.2.13 etc Screw shaft 31.5.13 etc Propeller 7.6.13 etc

Stern tube 16.5.13 etc Steam pipes tested 5.9.13 Engine and boiler seatings 7.6.13 etc Engines holding down bolts 4.8.13 etc

Completion of pumping arrangements 10.9.13 Boilers fixed 20.6.13 Engines tried under steam 22.9.13

Main boiler safety valves adjusted 13.9.13 Thickness of adjusting washers No. 1. 3/8, No. 2. 13/32, No. 3. 3/8, No. 4. 11/32, No. 5. 13/32, No. 6. 3/8, No. 7. 3/8

Material of Crank shafts Steel Identification Mark on Do. G.H. 5.2.13 } Material of Thrust shafts Steel Identification Mark on Do. G.H. 25.11 }
G.H. 1.3.13 }
G.H. 25.10.12 }
G.H. 25.11.12 }
G.H. 20.12.12 }
G.H. 26.12.12 }
G.H. 20.1.13 }

Material of Tunnel shafts Steel Identification Marks on Do. G.H. 25.10.12 } Material of Screw shafts Steel Identification Marks on Do. G.H. 3.13 21 }
G.H. 3.13 21 }

Material of Steam Pipes Steel 3/8" 10" dia. Test pressure 400 lbs. Span G.H. 14.7.13

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery has been made & fitted under Special Survey in accordance with the requirements of the Rules & the workman has been found good throughout.

All the shafting was made & machined at the Imperial Steel Works at Murooran

The forging certificates are enclosed.

A report on the electric lighting is forwarded.

It is submitted that the machinery is eligible for the notation + L.M.C. 10.13

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.13. F.D.

J.P.S.
J.W.
17/11/13

Arthur L. Jones
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee..	£	30 ⁰⁰	When applied for,
Special	£	1107 ⁰⁰	29. 10. 1913
Donkey Boiler Fee	£	:	When received,
Travelling Expenses (if any)	£	20 ⁰⁰	29. 10. 1913

Committee's Minute NOV. 18. 1913

Assigned + L.M.C. 10.13



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