

REPORT ON MACHINERY.

No. 1666

SAT. 25 OCT 1915

Port of Kobe

Received at London Office

No. in Survey held at Kobe Date, first Survey 16 June 1914 Last Survey 14 August 1915
 Reg. Book. on the Steel Twin Screw Steamer "Hawaii Maru" (Number of Plates) Gross 9482 Tons Net 5980
 Master T. Saito Built at Kobe By whom built The Kawasaki Dry Dock Co Ltd When built 1915-8
 Engines made at Kobe By whom made The Kawasaki Dry Dock Co Ltd when made 1915
 Boilers made at Kobe By whom made The Kawasaki Dry Dock Co Ltd when made 1915
 Registered Horse Power 895 Owners The Osaka Shosen Kaisha Port belonging to Osaka
 Nom. Horse Power as per Section 28 895 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion Two sets No. of Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 26" : 43 1/2" : 73" Length of Stroke 48" Revs. per minute 75 Dia. of Screw shaft 15.57" 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 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" 5/4"
 Dia. of Tunnel shaft 13.55" as per rule 13.55" Dia. of Crank shaft journals 14.23" as per rule 14.23" Dia. of Crank pin 14 3/4" Size of Crank webs 9 1/2" x 20 1/2" Dia. of thrust shaft under collars 14 3/8" Dia. of screw 17.6" Pitch of Screws 20.6" to 25.6" No. of Blades 4 State whether moveable Yes Total surface 95" each propeller Shaped
 No. of Feed pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes (One each engine)
 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 Four Sizes of Pumps 2 Weirs fed 14" x 10 1/2" = 24" No. and size of Suctions connected to both Bilge and Donkey pumps Worthington Dup. 6" x 5" x 9"
 In Engine Room Two 3 1/2" Boiler Run Two 3 1/2" Ballast " 10" x 12" x 12" Holds, &c. Two 3 1/2" in each of the six holds.
1 Tunnel well one 3 1/2" Two 1 1/2" to hats on FPT top & two 1 1/2" to hats on APT top.
 No. of Bilge Injections 2 sizes 9 1/2" 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 None
 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 X
 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 Inward by suction How are they protected Strong wooden casings
 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 15/5/15 of Stern Tube 8/5/15 Screw shaft and Propeller 15/5/15
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Engine platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Wm Beardmore & Co Ltd & Colville & Sons Ltd
 Total Heating Surface of Boilers 11524 Is Forced Draft fitted Yes No. and Description of Boilers Five Single Ended.
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 27/8/16 24/13/15 No. of Certificate 78, 79, 80, 81, 82
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60.5 sq. ft. 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 18" Mean dia. of boilers 14.6" Length 12.0" Material of shell plates Steel
 Thickness 1 5/16" Range of tensile strength 29.32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Drab. riv.
 long. seams Incl. riv. Slip Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/4" Imp. of plates or width of butt straps 19 5/8" x 1 1/4"
 Per centages of strength of longitudinal joint rivets 95.84 Cou. 87.7 Working pressure of shell by rules 202 lbs Size of manhole in shell 16" x 12"
 plate 84.28 Strap 87.0 Size of compensating ring 1 3/8" x 7 1/2" No. and Description of Furnaces in each boiler 3 Morrison (Susp.) Material Steel Outside diameter 48 1/4"
 Length of plain part all round Thickness of plates 5/8" Description of longitudinal joint Weld No. of strengthening rings Yes
 Working pressure of furnace by the rules 208 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 3/4" 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 204
 Material of stays Steel Area at smallest part 2.1 243 Area supported by each stay 79.7 Working pressure by rules 236 End plates in steam space: 3.17" margin at
 Material Steel Thickness 1 5/16" Pitch of stays 20 1/2" x 19 3/4" How are stays secured Drab. nuts Working pressure by rules 200 lbs Material of stays Steel
 Diameter at smallest part 10.12" Area supported by each stay 20 1/2" x 19 3/4" Working pressure by rules 259 Material of Front plates at bottom Steel
 Thickness 13/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" Ser. ship Working pressure of plate by rules 200
 Diameter of tubes 3 1/2" Pitch of tubes 4 7/16" x 4 5/16" 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 1/2" = 13 (4 in) 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 22 1/2" Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes
 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description None ✓

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 _____ Descripti _____

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 _____ Riv _____ Pla _____

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:— 2 Crosshead bolts + nuts. 2 crank pin bolts + nuts. 4 main bearing bolts + nuts. Set coupling bolts + nuts. Set feed + bilge pump 1 set packing rings + springs for all pistons. Assorted bolts + nuts + iron. One part crank shaft. One propeller shaft. + 4 blades with 2 sets studs + nuts. Piston rod. Pair ecc. rods. Etc etc.

The foregoing is a correct description, KAWASAKI DOCKYARD COMPANY, LTD Manufacturer. J. Hatley Secretary

Dates of Survey while building { During progress of work in shops - - 16th June 1914 to 18th May 1915 }
 { During erection on board vessel - - 18th May 1915 to 14th Aug. 1915 }
 Total No. of visits Continuous attendance Is the approved plan of main boiler forwarded herewith " " " donkey " " "

Dates of Examination of principal parts—Cylinders 22/12/14 to 30/4/15 Slides 14/4/15 etc Covers 14/4/15 etc Pistons 12/3/15 etc Rods 3/3/15 etc
 Connecting rods 26/3/15 etc Crank shaft 3/5/15 etc Thrust shaft 26/3/15 etc Tunnel shafts 16/6/15 etc Screw shaft 24/4/15 etc Propeller 16/6/15 etc
 Stern tube 21/4/15 to 15/5/15 Steam pipes tested 14/15 to 22-26/6/15 Engine and boiler seatings 13/5/15 etc Engines holding down bolts 16/6/15 etc
 Completion of pumping arrangements 26/6/15 Boilers fixed 31/5/15 Engines tried under steam 6/7/15
 Main boiler safety valves adjusted 26/6/15 Thickness of adjusting washers For cen. F 7/16 For Stat F 3/32 For F.P. F 3/16 A.S. F A 7/32 A
 Material of Crank shaft Steel Identification Mark on Do. LLOYD S. ALJ 18/3/15 to 23/3/15 Material of Thrust shaft Steel Identification Mark on Do
 Material of Tunnel shafts Steel Identification Marks on Do. R. 8/1 4/3 1/3 Material of Screw shafts Steel Identification Marks on Do
 Material of Steam Pipes Steel 18/3 to 23/3/15 Test pressure 600 lbs A.L.J.

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

The shafting ordered from Messrs Carl A Walter of Hamburg & Messrs Georgs Marien Hütte in July 1914 never reached this country & the fitted has been made at The Kobe Steel Works. The certificates for both shafting are enclosed.

A report on the Electric Lighting is enclosed.
 The vessel is fitted with a small installation for refrigeration & a report is being forwarded shortly.

The machinery in my opinion renders the vessel eligible for notation + L.M.C. 8.15
 It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.15 F.D.

The amount of Entry Fee. . . £ 30 : : When applied for, 2nd Aug. 1915
 Special £ 970.00 : :
 Donkey Boiler Fee £ : : When received, 12 Aug. 1915
 Travelling Expenses (if any) £ : :

Committee's Minute Assigned

TUE. JAN. 18. 1916

A. L. Jones
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
 FRI. - 4 FEB. 1916
 Lloyd's Register Foundation

Certificates (if required) to be sent to the Registrar of Shipping (The Surveyors are requested not to write on or below the space for Committee's Minute.)