

# REPORT ON MACHINERY.

Port of Glasgow.

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No. in Survey held at Glasgow

Date, first Survey 16<sup>th</sup> March 1896 Last Survey 16<sup>th</sup> April 1897

Reg. Book.

(Number of Visits.....)

on the Screw Steamer Kawachi Maru

Tons } Gross 5229  
Net 3688

Master Thompson Built at Glasgow By whom built Kapier, Shanks & Bell When built 1894

Engines made at Glasgow By whom made Dunsmuir & Jackson when made 1894

Boilers made at Glasgow By whom made Dunsmuir & Jackson when made 1894

Registered Horse Power Owners Hippon Yusen Kabushiki Kaisha Port belonging to Tokio

Nom. Horse Power as per Section 28 514 544 Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Twin screw, Triple Expansion No. of Cylinders Three No. of Cranks Three  
 Diameter of Cylinders 20"-33 1/2"-56" Length of Stroke 48" Revolutions per minute 48 Diameter of Screw shaft 11 1/2"  
 Diameter of Tunnel shaft 10 1/2" Diameter of Crank shaft journals 12 1/2" Diameter of Crank pin 12 1/2" Size of Crank webs 18 1/2" x 8 1/4"  
 Diameter of screw 15' 0" Pitch of screw 14' 0" No. of blades 4 State whether moveable Yes Total surface 61591 feet  
 No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 21" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 3/4" Stroke 21" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Four Sizes of Pump (7 1/2 x 5 x 6) (9 x 12 x 10) (12 x 8 x 24) (5 1/4 x 3 1/2 x 5) and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three:—3 1/2" dia. In Holds, &c. No. 1 Hold: 1 1/2" dia. No. 2 Hold: 2 1/2" dia. No. 3 Hold: 2 1/2" dia. No. 4 Hold: 2 3/4" dia. No. 5 Hold: 2 3/2" dia. Tunnel well One—3 1/2" dia.  
 No. of bilge injections 2 sizes 6 3/4" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size Yes: 3 1/2" dia.  
 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  
 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 Below  
 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.  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel. Are the screw shaft tunnels watertight Yes.  
 Are they fitted with watertight doors Yes. worked from Engine room platforms.

**BOILERS, &c.**— (Letter for record \$) Total Heating Surface of Boilers 9002 sq ft Is forced draft fitted No  
 No. and Description of Boilers Multi Cyl<sup>r</sup> 2 Double ended & 2 Single ended Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs  
 Date of test 27/11/96 Can each boiler be worked separately Yes. Area of fire grate in each boiler 102 sq ft No. and Description of safety valves to each boiler Two: Direct Spring. Area of each valve 9.62 sq in. 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 About 4 feet. Mean diameter of boilers 13.5"  
 Length 14' 0". Material of shell plates Steel. Thickness 1 1/16" Description of riveting: circum. seams Double. Long. seams Butt Straps.  
 Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 1/2" 4 3/4". Lap of plates or width of butt straps 21"  
 Per centages of strength of longitudinal joint 88 Working pressure of shell by rules 223 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 4 inches dia No. and Description of Furnaces in each boiler 6: Corrugated. Material Steel Outside diameter 41"  
 Length 36 feet. Thickness of plates 9 1/16" Description of longitudinal joint Welded. No. of strengthening rings ✓  
 Working pressure of furnace by the rules 216 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5 1/8" Back ✓ Top 5 1/8" Bottom 1 1/16"  
 Pitch of stays to ditto: Sides 8 1/2" x 8 3/16" Back ✓ Top 8 1/2" x 8 3/16" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 202 lbs.  
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 66 1/2 sq in Working pressure by rules 208 lbs End plates in steam space: Material Steel Thickness 1 1/16" Pitch of stays 18 1/2" x 18" How are stays secured Double nuts & washers Working pressure by rules 203 lbs Material of stays Steel.  
 Diameter at smallest part 3 3/32" Area supported by each stay 333 sq in Working pressure by rules 203 lbs Material of Front plates at bottom Steel.  
 Thickness 1 1/16" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓  
 Diameter of tubes 3 1/4" Pitch of tubes 4 5/16" x 4 7/16" Material of tube plates Steel Thickness: Front 1 1/16" Back 3/4" Mean pitch of stays 9.85"  
 Pitch across wide water spaces 14 1/4" Working pressures by rules 263 lbs 208 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 2" Length as per rule 28" Distance apart 8 3/16" Number and pitch of Stays in each 3: 8 1/8"  
 Working pressure by rules 355 lbs Superheater or Steam chest: None 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

If not state attached, and as Report also see in the Report of the ship.



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