

REPORT ON MACHINERY.

No. 6660

No. in Survey held at Glasgow

Date, first Survey 1883 Nov. 23rd Last Survey 14th Sept. 1884

Reg. Book.

Received at London Office Monday 23rd Sept. 1884
 (Number of Visits 43) 1354.25
 Tons 838.32

on the Screw Steamer "Higo Maru"

Master J. Adair Built at Glasgow By whom built The London & Glasgow Co. Ltd. When built 1884

Engines made at Glasgow By whom made The London & Glasgow Co. Ltd. when made 1884

Boilers made at Do By whom made Do when made 1884

Registered Horse Power 150 Owners Kiudo Unyu Kaisha Port belonging to Tokio

ENGINES, &c.—

Description of Engines Inverted direct acting - Compound - Surface Condensing.
 Diameter of Cylinders 30" & 56" Length of Stroke 39" No. of Rev. per minute 70 Point of Cut off, High Pressure 25" Low Pressure 23"
 Diameter of Screw shaft 10 9/16 Diam. of Tunnel shaft 10 1/16 Diam. of Crank shaft journals 10 9/16 Diam. of Crank pin 10 9/16 size of Crank webs 7" x 19"
 Diameter of screw 12-6 Pitch of screw 16-6 No. of blades Four state whether moveable yes total surface 48 sq ft.
 No. of Feed pumps Two diameter of ditto 3 3/8 Stroke 22" Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two diameter of ditto 3 3/8 Stroke 22" Can one be overhauled while the other is at work yes
 Where do they pump from Bilges & Holds - One pump connected to aft well.
 No. of Donkey Engines One & hand Size of Pumps 8" cyl. 4 pumps & 8" stroke Where do they pump from Bilges, sea, hotwell & tank - Also one Pulverizer No. 6. Connected to tanks, bilges & condenser.
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 No. of bilge injections One and sizes 4 1/2" Are they connected to condenser, or to circulating pump Circulating.
 How are the pumps worked By levers from crosshead
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves
 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 accessible at all times yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launching.
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Engine room platform.

BOILERS, &c.—

Number of Boilers Two Description Cylindrical. Mult. Whether Steel or Iron Steel
 Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs Date of test June 3rd 1884
 Description of superheating apparatus or steam chest Horizontal. Connected by copper pipes to boiler.
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately No.
 No. of square feet of fire grate surface in each boiler 54 Description of safety valves Direct spring No. to each boiler Two
 Area of each valve 14.16 sq ins Are they fitted with easing gear yes No. of safety valves to superheater One area of each valve 7 sq ins
 Are they fitted with easing gear yes Smallest distance between boilers and bunkers or woodwork No bunkers at side Diameter of boilers 13'-3"
 Length of boilers 10'-6" description of riveting of shell long. seams Lap. treble circum. seams Lap-double Thickness of shell plates 13/76
 Diameter of rivet holes 1 1/4" whether punched or drilled Drilled pitch of rivets 6.2 + 3.1 Lap of plating 9 7/8"
 Percentage of strength of longitudinal joint 80 working pressure of shell by rules 98 lbs size of manholes in shell 12' x 16"
 Size of compensating rings Double riveted ring. No. of Furnaces in each boiler Three
 Outside diameter 40" length, top 6-6 bottom 9-4 thickness of plates 17/32 description of joint Butt if rings are fitted yes
 Greatest length between rings 6-6 working pressure of furnace by the rules 97 lbs combustion chamber plating, thickness, sides 7/16 back 7/16 top 7/16
 Pitch of stays to ditto, sides 7 3/4" back 7 3/4" top 7 3/4" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 90 lbs Diameter of stays at smallest part 1 3/4" working pressure of ditto by rules 120 lbs end plates in steam space, thickness 3/4"
 Pitch of stays to ditto 1-2 1/2" how stays are secured Nuts working pressure by rules 96 lbs diameter of stays at smallest part 2 1/4 screws working pressure by rules 105 lbs Front plates at bottom, thickness 7/16 Back plates, thickness 5/8"
 Greatest pitch of stays 11 1/2" working pressure by rules 90 lbs Diameter of tubes 3 1/2" pitch of tubes 4 3/4" thickness of tube plates, front 5/8 back 5/8 how stayed Tubes pitch of stays 14 1/2" x 9 1/2" width of water spaces 5"
 Diameter of Superheater or Steam chest 5-0" length 10-1 thickness of plates 3/8 description of longitudinal joint Double-Lap diam. of rivet holes 15/76
 Pitch of rivets 3-9" working pressure of shell by rules 95 lbs diameter of flue — thickness of plates — If stiffened with rings —
 Distance between rings — working pressure by rules — end plates of superheater, or steam chest; thickness 9/16 how stayed Dished and angle iron strap Superheater or steam chest; how connected to boiler By copper pipes.

[Form No. 8-2000-22/5/83.] (State if Report is also sent on the Hull of the Ship)



GLS149-0342

6600 g/s

DONKEY BOILER— Description *Vertical - Steel Two cross tubes*
 Made at *Glasgow* by whom made *London & Glasgow Co.* when made *1884* where fixed *In stock hold*
 Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *1377* fire grate area *10 sq ft* description of safety
 valves *Direct springs* No. of safety valves *One* area of each *7 sq in* if fitted with easing gear *Yes* if steam from main boilers can
 enter the donkey boiler *No* diameter of donkey boiler *4-6* length *9-0* description of rivetting *Double-lap*
 Thickness of shell plates *7/16* diameter of rivet holes *13/16* whether punched or drilled *punched* pitch of rivets *3 1/8* lap of plating *3 3/4*
 per centage of strength of joint *64.6* thickness of crown plates *1/2* stayed by *Four stays 1 3/4 dia.*
 Diameter of furnace, top *3-2 1/2* bottom *3-11* length of furnace *4-9* thickness of plates *1/2* description of joint *Lap - single*
 Thickness of furnace crown plates *1/2* stayed by *Four stays 1 3/4 dia. Top 4-0 radius* working pressure of shell by rules *104 lbs*
 Working pressure of furnace by rules *83 lbs* diameter of uptake *10* thickness of plates *9/16 iron* thickness of water tubes *7/16 iron*.

SPARE GEAR. State the articles supplied:— *Two top & bottom end connecting rod bolts & nuts*
Two main bearing bolts - One set of coupling bolts - Feed & bilge pump
valves - Also one propeller shaft - one valve spindle - Air pump bucket
& rod - Four steel propeller blades & nuts.
 The foregoing is a correct description,
J. Kelly, Secy for Manufacturers

General Remarks (State quality of workmanship, opinions as to class, &c.)
These Engines & Boilers have been constructed
under special survey - They are of good material &
workmanship - They have been well fitted on board
satisfactorily tested under steam & I am of opinion they
are eligible to be classed "LLOYD'S M.C." 9-84 in the
Register Book.
Appended hereto are the reports on Steel tests & Gearing
also the approved plan of main boilers.

It is submitted that this vessel is eligible to have the notification of Lloyd's Register recorded
M 22/9/84

Walter R. Polson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Glasgow

The amount of Entry Fee £ 2 : 0 : 0 received by me,
 Special £ 22 : 10 : 0
 Donkey Boiler Fee £ 0 : 0 : 0
 Certificate (if required) £ 0 : 0 : 0 19/9/84
 To be sent as per margin.
 (Travelling Expenses, if any, £ - 8/-)

Committee's Minute TUESDAY 23 SEPT 1884

