

REPORT ON MACHINERY.

5556

No. 5556 (Received in London Office 11/12/01)
 No. in Survey held at Glasgow & Gouloch. Date, first Survey March 23. Last Survey Nov 23 1881
 Reg. Book. 365 on the S.S. Gladiator Tons 460
 Master Barron Built at Stockton When built 1860
 Engines made at Glasgow By whom made Dunsmuir & Walker when made 1881
 Boilers made at do By whom made do when made 1881
 Registered Horse Power 40 Owners McPothornie & Co Port belonging to Liverpool

ENGINES, &c.—

Description of Engines Inverted Compound Surface Condensing
 Diameter of Cylinders 25" & 42" Length of Stroke 30" No. of Rev. per minute 40 Point of Cut off, High Pressure 1/2 Low Pressure 1/2
 Diameter of Screw shaft 4" Diameter of Tunnel shaft 4 1/4" Diameter of Crank shaft journals 4 1/2" Diameter of Crank pin 4 1/2" size of Crank webs 9" & 4 3/4"
 Diameter of screw 11" 0 Pitch of screw 15" 0 No. of blades 4 state whether moveable yes total surface 2.4 sq. ft.
 No. of Feed pumps one diameter of ditto 3 3/4" Stroke 15" Can one be overhauled while the other is at work no
 No. of Bilge pumps one diameter of ditto 3 3/4" Stroke 15" Can one be overhauled while the other is at work no
 Where do they pump from Bilges of Engine Room. Fore and After Holds
 No. of Donkey Engines one Size of Pumps 4" x 9" Where do they pump from Sea. Bilges of Engine Room. Fore and After Holds. and Hotwell.
 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 2 1/2 dia Are they connected to condenser, or to circulating pump Circulating Pump.
 How are the pumps worked By Levers attached to Crosshead of After Engine
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Stop Valves & 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 yes
 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 no
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times except in Fore Hold.
 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 7th Oct. 1881
 Is the screw shaft tunnel watertight no and fitted with a sluice door yes worked from top platform.

BOILERS, &c.—

Number of Boilers one Description Cylindrical & Multitubular (Steel inside)
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 7th Oct. 1881
 Description of superheating apparatus or steam chest Horizontal none
 Can each boiler be worked separately one. Can the superheater be shut off and the boiler worked separately no Superheater
 No. of square feet of fire grate surface in each boiler 45 Description of safety valves Diach. Spring (Cochran)
 No. to each boiler two area of each valve 12.5 sq. in. Are they fitted with easing gear yes
 No. of safety valves to superheater no area of each valve no are they fitted with easing gear no
 Smallest distance between boilers and bunkers or woodwork 15" inches.
 Diameter of boilers 12" 6" Length of boilers 10" 0" description of riveting of shell long. seams Double Lap. circum. seams Double Lap.
 Thickness of shell plates 7/8" diameter of rivet holes 1 5/32" whether punched or drilled drilled pitch of rivets 4 1/2"
 Lap of plating 1/4" per centage of strength of longitudinal joint Plate 75% Riv 72% working pressure of shell by rules 80 lbs
 Size of manholes in shell 16" x 11" size of compensating rings Angle Iron 3" x 3 1/2" x 5/8"
 No. of Furnaces in each boiler 3 outside diameter 3' 1" length, top 6' 6" bottom 9' 3"
 Thickness of plates 15/32" & 1/2" description of joint Double butt if rings are fitted Angle greatest length between rings 6' 0"
 Working pressure of furnace by the rules 80 lbs
 Combustion chamber plating, thickness, sides 7/16" back 7/16" top 1/2"
 Pitch of stays to ditto sides 8" x 8" back 8" x 8" top Circular
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 84 lbs
 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 93 lbs
 End plates in steam space, thickness 3/4" pitch of stays to ditto 15" x 15" how stays are secured Nuts
 Working pressure by rules 89 lbs diameter of stays at smallest part 3/4" working pressure by rules 104 lbs
 Front plates at bottom, thickness 5/8" Back plates, thickness 9/16" greatest pitch of stays 10" working pressure by rules 81 lbs

Diameter of tubes $3\frac{1}{4}$ " pitch of tubes $4\frac{1}{2} \times 4\frac{1}{2}$ " thickness of tube plates, front $\frac{1}{16}$ " back $\frac{3}{8}$ "
 How stayed *Tube stays* pitch of stays $13\frac{1}{2} \times 9$ " width of water spaces $1\frac{1}{4}$ & 5 "
 Diameter of Superheater or Steam chest $2' \ 3"$ length $5' \ 0"$
 Thickness of plates $\frac{1}{16}$ " description of longitudinal joint *Lap d.r* diameter of rivet holes $\frac{7}{8}$ " pitch of rivets $2\frac{1}{4}$ "
 Working pressure of shell by rules 170 *lb* 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 $\frac{1}{2}$ " How stayed *one round through stay 2" dia*
~~Superheater~~ on steam chest; how connected to boiler *by a neck 14" dia 9/16" thick. Lap d.r.*

DONKEY BOILER— Description *Circular Vertical 2 Water Tubes in the box*
 Made at *Newcastle* By whom made *C. C. & Gurney* when made *Tested 5/10/81*
 Where fixed *on deck* working pressure *80 lb* Tested by hydraulic pressure to *160 lb* No. of Certificate *696*
 Fire grate area *11 sq. ft.* Description of safety valves *Ind. Spring* 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 $8' \ 6"$ description of riveting *Lap double. Cor single*
 thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled *punched*
 pitch of rivets 3 " lap of plating 4 " per centage of strength of joint 43
 thickness of crown plates $\frac{1}{2}$ " stayed by *4 crown stays* $\frac{13}{8}$ " dia effective
 Diameter of furnace, top $3' \ 8"$ bottom $3' \ 11"$ length of furnace $4' \ 3"$
 thickness of plates $\frac{1}{2}$ " description of joint *Lap single riveted*
 thickness of furnace crown plates $\frac{1}{2}$ " stayed by *4 crown stays* $\frac{13}{8}$ " dia effective
 Working pressure of shell by rules 90 *lb* working pressure of furnace by rules 118 *lb*
 diameter of uptake 12 " thickness of plates $\frac{1}{2}$ " thickness of water tubes $\frac{7}{16}$ "

The foregoing is a correct description,
Musmann & Jackson Manufacturer. 1

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

Material and workmanship of good description. Surveyed during construction, the Main Boilers of this vessel constructed to approved Tracing attached. Machinery and Boilers tried under steam and found to be in good order and safe working condition.

*This vessel not being classed
 more cord, same NE 10. 81 cm
 be made Jm 7/12/81*

The amount of Entry Fee .. £ 0 : 0 : 0 received by me,
 Special .. *J.M. 10:10:0*
 Certificate (if required) .. £ 0 : 0 : 0 *Nov 1881*
 To be sent as per margin.
 (Travelling Expenses, if any, £ *10/6*)

J.M. Cregar
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Friday, December, 9th, 1881.*
Certificates dated 25 Nov. 1881
approved
Robert Edmund Taylor & Son, Printers, 19, Old Street, Goswell Road, London, E.C.

