

REPORT ON MACHINERY.

1888

No. 10008

No. in Survey held at

Reg. Book.

on the

Port of *Glasgow*

Date, first Survey *11th Oct^r 1889*

Received at London Office *THURS 24 JULY 1890*

Last Survey *15th July 1890*

(Number of Visits *54*)

Tons { Gross *2,276.11*
Net *1,488.76*

When built *1890*

Master

Built at *Glasgow*

By whom built *Russell & Co*

Engines made at *Glasgow*

By whom made *Jas. Howden & Co*

when made *1890*

Boilers made at *Glasgow*

By whom made *Jas. Howden & Co*

when made *1890*

Registered Horse Power *220.*

Owners *Burrell & Son*

Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Triple Expansion*

No. of Cylinders *Three*

Diam. of Cylinders *22 $\frac{1}{2}$, 35 $\frac{1}{2}$ & 58 $\frac{1}{2}$* Length of Stroke *39* Rev. per minute *70* Point of Cut off, High Pressure *Var* Low Pressure *var.*

Diameter of Screw shaft *11 $\frac{1}{2}$* Diam. of Tunnel shaft *11* Diam. of Crank shaft journals *11 $\frac{1}{2}$* Diam. of Crank pin *11 $\frac{1}{2}$* size of Crank webs *built*

Diameter of screw *14'-6"* Pitch of screw *16 to 17 ft.* No. of blades *4* state whether moveable *sol* total surface *66 sq ft*

No. of Feed pumps *2.* diameter of ditto *3"* Stroke *19"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2.* diameter of ditto *4 $\frac{1}{2}$* Stroke *19"* Can one be overhauled while the other is at work *yes*

Where do they pump from *All compartments*

No. of Donkey Engines *Two* Size of Pumps *10" x 12" x 9"* Where do they pump from *Notre, Sea,*

tanks & bilges *Feed - 8" x 6" x 5"*

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 *-*

No. of bilge injections *One* and sizes *5 $\frac{1}{2}$ "* Are they connected to condenser or to circulating pump *yes*

How are the pumps worked *by levers off L.P. Crankhead*

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 *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

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 *See Greenock Report attached*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

BOILERS, &c.—

No. of Boilers *Two* Description *Horizontal Forced draught* Material *Steel* Letter (for record) *S.*

Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs.* Date of test *9th June 1890*

Description of superheating apparatus or steam chest *None*

Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *-*

No. of square feet of fire grate surface in each boiler *45* Description of safety valves *d. spring* No. to each boiler *two*

Area of each valve *-* Are they fitted with easing gear *yes* No. of safety valves to superheater *-* area of each valve *-*

Are they fitted with easing gear *-* Smallest distance between boilers and bunkers or *woodwork* *15"* Diameter of boilers *13'-0"*

Length of boilers *11'-6"* description of riveting of shell long. seams *d. butt str.* circum. seams *d. riv lap* Thickness of shell plates *1 $\frac{1}{2}$ " full*

Diameter of rivet holes *1 $\frac{1}{32}$ "* whether punched or drilled *drilled* pitch of rivets *7 $\frac{1}{16}$ "* Lap of plating *16 $\frac{1}{2}$ " butt str.*

Per centage of strength of longitudinal joint *85.2* working pressure of shell by rules *160 lbs* size of manholes in shell *12 $\frac{1}{2}$ x 16"*

Size of compensating rings *McKells.* No. of Furnaces in each boiler *3.* Description of Furnaces *plain flanged*

Outside diameter *39"* length *8'20"* thickness of plates *1 $\frac{1}{32}$ "* description of joint *welded* if rings are fitted *yes*

Greatest length between rings *23"* working pressure of furnace by the rules *160 lbs* combustion chamber plating, thickness, sides *9 $\frac{1}{16}$ "* back *9 $\frac{1}{16}$ "* top *9 $\frac{1}{16}$ "*

Pitch of stays to ditto, sides *8"* back *7 $\frac{1}{2}$ "* top *8"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by

rules *160 lbs* Diameter of stays at smallest part *1 $\frac{1}{2}$ x 1 $\frac{1}{8}$ "* working pressure of ditto by rules *160 lbs* and plates in steam space, thickness *1"*

Pitch of stays to ditto *15 $\frac{1}{4}$ x 15 $\frac{1}{4}$ "* how stays are secured *d. nuts* working pressure by rules *160 lbs* diameter of stays at

smallest part *2 $\frac{5}{8}$ " d. bar* working pressure by rules *160 lbs* Front plates at bottom, thickness *3 $\frac{1}{4}$ "* Back plates, thickness *3 $\frac{1}{4}$ "*

pitch of stays *-* working pressure by rules *-* Diameter of tubes *2 $\frac{1}{2}$ "* pitch of tubes *3 $\frac{1}{16}$ "* thickness of tube

3 $\frac{1}{4}$ " back *4 $\frac{1}{2}$ "* how stayed *stayed* pitch of stays *7 $\frac{1}{8}$ "* width of water spaces *6"*

Superheater or Steam chest *-* length *-* thickness of plates *-* description of longitudinal joint *-* diam. of rivet holes *-*

working pressure of shell by rules *-* diameter of flue *-* thickness of plates *-* If stiffened with rings *-*

working pressure by rules *-* end plates of superheater, or steam chest; thickness *-* how stayed *-*

Superheater or steam chest; how connected to boiler *-*

GRK 315 - 0015

DONKEY BOILER— Description *Multitubular Steel*
 Made at *Glasgow* by whom made *Jas. Howden & Co* when made *1890* where fixed *Stoke hold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2781* fire grate area *20 ft* description of valves *direct spring* No. of safety valves *one* area of each *8.29* if fitted with easing gear *yes* if steam from main boilers enter the donkey boiler *no* diameter of donkey boiler *8'-6"* length *8'-0"* description of riveting *single & double*
 Thickness of shell plates *17/32* diameter of rivet holes *15/16* whether punched or drilled *drill* pitch of rivets *3 1/2* lap of plating *4 1/2*
 per centage of strength of joint *73* thickness of ~~crown~~ ^{end} plates *9/16* stayed by *1 3/4" stay pitched 15 x 13*
 Diameter of furnace, top *31"* bottom *—* length of furnace *5-9* thickness of plates *7/16* description of joint *bute str.*
 Thickness of furnace crown plates *—* stayed by *—* working pressure of shell by rules *86*
 Working pressure of furnace by rules *90 lbs* diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *Propeller shaft complete - One length*
crank shaft. Top and bottom end brasses and bolts -
Main bearing & coupling bolts. Feed and bilge
pump valves seats - Bolts, nuts & iron etc -
 The foregoing is a correct description,
 Manufacturer. *Jas. Howden & Co*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above mentioned*
engines and boilers have been built under
Special Survey and are now completed
onboard the vessel in a satisfactory manner
The machinery is now in my opinion
eligible for the notation: + R.M. 6.7.90
in the Society's Register Book.

It is submitted that this
result is eligible to have
to L.M.C. 7.90 received
J. G. M.
24/7/90

The amount of Entry Fee .. £ *2* : .. received by me,
 Special .. £ *31* : ..
 Donkey Boiler Fee .. £ .. : ..
 Certificate (if required) .. £ .. : ..
 To be sent as per margin.

(Travelling Expenses, if any, £ ..)
 Committee's Minute *FRI 25 JULY 1890*

25
J. G. M.
24/7/90
Engineer Surveyor to Lloyd's Register of British & Foreign
Glasgow
Lloyd's Register
Foundation
TUES 29 JULY 1890
+ Lmb 7/90
 R. S. TAYLOR & SON, STEAM PRINTERS, 19 OLD STREET, GOSWELL ROAD, LONDON, E.C.2.