

# REPORT ON MACHINERY.

10543

No. 10543

Port of *Glasgow*

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No. in Survey held at *Glasgow*

Date, first Survey *6<sup>th</sup> Nov 1890* Last Survey *25<sup>th</sup> February 1891*

Reg. Book *83.* on the *S. S. Paradox*

(Number of Visits *15*) *11 March* *26<sup>th</sup> May*

Tons *Gross 358* *Net 226*

Master *not fixed* Built at *Glasgow* By whom built *H. Simons & Co* When built *1854*

Engines made at *Hull* By whom made *Gilbert Cooper* when made *1874*

Boilers made at *Glasgow* By whom made *L. Burnet & Co* when made *1891*

Registered Horse Power *65* Owners *A. H. Taylor* Port belonging to  *Aberdeen*

## ENGINES, &c.—

Description of Engines \_\_\_\_\_ No. of Cylinders \_\_\_\_\_  
 I am. of Cylinders \_\_\_\_\_ Length of Stroke \_\_\_\_\_ Rev. per minute \_\_\_\_\_ Point of Cut off, High Pressure \_\_\_\_\_ Low Pressure \_\_\_\_\_  
 Diameter of Screw shaft \_\_\_\_\_ Diam. of Tunnel shaft \_\_\_\_\_ Diam. of Crank shaft journals \_\_\_\_\_ Diam. of Crank pin \_\_\_\_\_ size of Crank webs \_\_\_\_\_  
 Diameter of screw \_\_\_\_\_ Pitch of screw \_\_\_\_\_ No. of blades \_\_\_\_\_ state whether moveable \_\_\_\_\_ total surface \_\_\_\_\_  
 No. of Feed pumps \_\_\_\_\_ diameter of ditto \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work \_\_\_\_\_  
 No. of Bilge pumps \_\_\_\_\_ diameter of ditto \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work \_\_\_\_\_  
 Where do they pump from \_\_\_\_\_  
 No. of Donkey Engines \_\_\_\_\_ Size of Pumps \_\_\_\_\_ Where do they pump from \_\_\_\_\_  
 all the bilge suction pipes fitted with roses \_\_\_\_\_ Are the roses always accessible \_\_\_\_\_ Are the sluices on Engine room bulkheads always accessible \_\_\_\_\_  
 No. of bilge injections \_\_\_\_\_ and sizes \_\_\_\_\_ Are they connected to condenser, or to circulating pump \_\_\_\_\_  
 How are the pumps worked \_\_\_\_\_  
 Are all connections with the sea direct on the skin of the ship \_\_\_\_\_ Are they Valves or Cocks \_\_\_\_\_  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates \_\_\_\_\_ Are the discharge pipes above or below the deep water line \_\_\_\_\_  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel \_\_\_\_\_ Are the blow off cocks fitted with a spigot and brass covering plate \_\_\_\_\_  
 Are the pipes carried through the bunkers \_\_\_\_\_ How are they protected \_\_\_\_\_  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times \_\_\_\_\_  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges \_\_\_\_\_  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock \_\_\_\_\_  
 Is the screw shaft tunnel watertight \_\_\_\_\_ and fitted with a sluice door \_\_\_\_\_ worked from \_\_\_\_\_

## BOILERS, &c.—

No. of Boilers *One* Description *Multitubular* Material *Steel* Letter (for record) *S.*  
 Working Pressure *40 lbs* Tested by hydraulic pressure to *140 lbs* Date of test *21<sup>st</sup> February 1891.*  
 Position of superheating apparatus or steam chest *Vertical dome*  
 Can the boiler be worked separately \_\_\_\_\_ Can the superheater be shut off and the boiler worked separately \_\_\_\_\_  
 Square feet of fire grate surface in each boiler *29.25* Description of safety valves *Spring* No. to each boiler *two*  
 Diameter of each valve *7.59"* 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 *8"* Diameter of boilers *10'-0"*  
 Length of boilers *10'-0"* description of riveting of shell long. seams *treb. riv. lap* circum. seams *dr. riv. lap* Thickness of shell plates *17/32*  
 Diameter of rivet holes *7/8"* whether punched or drilled *drilled* pitch of rivets *3 3/4"* Lap of plating *6 1/4"*  
 Percentage of strength of longitudinal joint *76%* working pressure of shell by rules *76 lbs.* size of manholes in shell *12" x 16"*  
 Diameter of compensating rings *17/32" x 6"* No. of Furnaces in each boiler *two* Description of Furnaces *plain*  
 Inside diameter *36"* length *6'-6"* thickness of plates *7/16"* description of joint *welded* if rings are fitted \_\_\_\_\_  
 Working length between rings \_\_\_\_\_ working pressure of furnace by the rules *97 lbs* combustion chamber plating, thickness, sides *7/16"* back *7/16"* top *7/16"*  
 Diameter of stays to ditto, sides *8 1/2" x 8"* back *8 1/2"* top *8"* If stays are fitted with nuts or riveted heads *nuts inside* working pressure of plating by rules \_\_\_\_\_  
 Diameter of stays at smallest part *1 1/8"* working pressure of ditto by rules *45 lbs* end plates in steam space, thickness *5/8" x wash*  
 Diameter of stays to ditto *14"* how stays are secured *nuts* working pressure by rules *40 lbs* diameter of stays at smallest part *2" bars* working pressure by rules *70 lbs* Front plates at bottom, thickness *5/8"* Back plates, thickness *5/8"*  
 Smallest pitch of stays \_\_\_\_\_ working pressure by rules \_\_\_\_\_ Diameter of tubes *3 1/2"* pitch of tubes *4 5/8"* thickness of tube \_\_\_\_\_  
 Diameter of tubes, front *5/8"* back *5/8"* how stayed *stubs* pitch of stays *9 1/2"* width of water spaces *5 1/2"*  
 Diameter of Superheater or Steam chest *36"* length *36"* thickness of plates *7/8"* description of longitudinal joint *lap* diam. of rivet holes *7/8"*  
 Diameter of rivets *3/4"* working pressure of shell by rules \_\_\_\_\_ 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 *7/16"* how stayed *drilled stay*  
 Superheater or steam chest; how connected to boiler *d. riv. flange*

161-0399

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**DONKEY BOILER—** Description .....

Made at ..... by whom made ..... when made ..... where fixed .....

Working pressure ..... tested by hydraulic pressure to ..... No. of Certificate ..... fire grate area ..... description of safety valves .....

No. of safety valves ..... area of each ..... if fitted with easing gear ..... if steam from main boilers can enter the donkey boiler .....

diameter of donkey boiler ..... length ..... description of riveting .....

Thickness of shell plates ..... diameter of rivet holes ..... whether punched or drilled ..... pitch of rivets ..... lap of plating .....

per centage of strength of joint ..... thickness of crown plates ..... stayed by .....

Diameter of furnace, top ..... bottom ..... length of furnace ..... thickness of plates ..... description of joint .....

Thickness of furnace crown plates ..... stayed by ..... working pressure of shell by rules .....

Working pressure of furnace by rules ..... diameter of uptake ..... thickness of plates ..... thickness of water tubes .....

**SPARE GEAR.** State the articles supplied:—

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The foregoing is a correct description,  
 Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. ....) The above mentioned boiler has been built & tested as required by the Society's Rules and has now been forwarded to Aberdeen where it is intended to have it fitted onboard the *Semb.* — This report forwarded to Aberdeen Surveyor for Completion. —  
 J. M. Sanderson  
 Glasgow 4/3/91. —

The new main boiler has been fitted on board and the blow off cock removed to the upper turn of ledge. The vessel has been placed in the Aberdeen dry dock and the propeller, sternpost, sea-cocks, and fastenings examined. The cylinders, pistons, slide valves, pumps, condenser and shafting examined and placed in good condition. Donkey boiler opened up and examined. Shell plating somewhat pitted. drilled test hole in same and found to be  $\frac{3}{8}$ " in thickness.

Safety valves tested and adjusted to the working pressure. The engines and boilers of this vessel are now in good working condition and eligible in my opinion to receive the notification of L. No. 65691 + N 1391 in the Register Book.

The amount of Entry Fee .. £ : : received by me,  
 Special .. £ 3 : 3 :  
 Donkey Boiler Fee .. £ 3 : 10 :  
 Certificate (if required) .. £ : :  
 To be sent to per margin.  
 (Travelling Expenses, if any, £ .. ..)

48/3/1891  
 Recd. 30/5/91  
 48/11/91

G. S. Hindmarsh  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 FRI 5 JUN 1891  
 + N 1391 L. No. 65691

It is submitted that this vessel is eligible for the records + 21/10/91  
 L.M.C. 591  
 A.S.P. 28591

