

# REPORT ON MACHINERY

No. 5405

No. in Survey held at  
Reg. Book.

203 on the

Glasgow.  
S. S. Aegean.

Date, first Survey Sep: 1<sup>st</sup> 1881 Last Survey May 8<sup>th</sup> 1882

Tons 1120  
450

Master Thomas Built at Glasgow When built 1870

Engines made at Glasgow By whom made The London & Glasgow when made 1870

Boilers made at do By whom made do when made 1882

Registered Horse Power 150 Owners F. F. Reid Esq<sup>r</sup> Port belonging to Leith

## ENGINES, &c.—

Description of Engines *Direct acting compound surface condensing.*  
Diameter of Cylinders *31.54* Length of Stroke *33* No. of Rev. per minute *60* Point of Cut off, High Pressure *3/8* Low Pressure *3/8*  
Diameter of Screw shaft *9* Diameter of Tunnel shaft *8 1/2* Diameter of Crank shaft journals *9 1/4* Diameter of Crank pin *9 1/4* size of Crank webs *6 1/2 x 11 1/2*  
Diameter of screw *13-0* Pitch of screw *16-0* No. of blades *4* state whether moveable *fast* total surface *46 sq ft*  
No. of Feed pumps *Two* diameter of ditto *4* Stroke *10* Can one be overhauled while the other is at work *yes*  
No. of Bilge pumps *Two* diameter of ditto *5 1/2* Stroke *9* Can one be overhauled while the other is at work *yes*  
Where do they pump from *Engine room & holds.*  
No. of Donkey Engines *One & one hand pump* Size of Pumps *Gay 3 pump* Where do they pump from *Bunks, bilges in engine room & sea*  
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 one - yes Forward one - no.*  
No. of bilge injections *One* and sizes *5* Are they connected to condenser, or to circulating pump *Circulating pump.*  
How are the pumps worked *By levers from H.P. engine, except bilge pumps from end of shaft.*  
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 except large dis.*  
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 bunks *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 *April 18<sup>th</sup> 1882.*  
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine room, level with boardwalk.*

## BOILERS, &c.—

Number of Boilers *Two* Description *Flat sided multitubular*  
Working Pressure *65 lbs.* Tested by hydraulic pressure to *130 lbs.* Date of test *Feb 17<sup>th</sup> 1882.*  
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 *36 1/2* Description of safety valves *Direct spring*  
No. to each boiler *Two* area of each valve *16 sq ins* 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 bunks or woodwork *9"*  
Diameter of boilers *14-3 x 9-0* Length of boilers *10-0* description of riveting of shell long. seams *Welded* circum. seams *Double riveted*  
Thickness of shell plates *1/16* diameter of rivet holes *15/16* whether punched or drilled *punched* pitch of rivets *3 1/2 circum. seam.*  
Lap of plating *—* per centage of strength of longitudinal joint *70 for weld.* working pressure of shell by rules *77 lbs.*  
Size of manholes in shell *16 x 12"* size of compensating rings *L 3 x 3 1/2*  
No. of Furnaces in each boiler *Two* outside diameter *3-5* length, top *6-0* bottom *9-0*  
Thickness of plates *7/16* description of joint *Butt & chap* if rings are fitted *yes* greatest length between rings *—*  
Working pressure of furnace by the rules *65 lbs.*  
Combustion chamber plating, thickness, sides *7/16* back *7/16* top *7/16*  
Pitch of stays to ditto *8"* back *8"* top *8"*  
If stays are fitted with nuts or riveted heads *Nuts.* working pressure of plating by rules *69 lbs.*  
Diameter of stays at smallest part *1 1/4 screw* working pressure of ditto by rules *90 lbs.*  
End plates in steam space, thickness *5/8"* pitch of stays to ditto *14"* how stays are secured *Nuts.*  
Working pressure by rules *70 lbs.* diameter of stays at smallest part *2"* working pressure by rules *90 lbs.*  
Front plates at bottom, thickness *9/16* Back plates, thickness *9/16* greatest pitch of stays *11"* working pressure by rules *70 lbs.*

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Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes 5" thickness of tube plates, front  $\frac{5}{8}$ " back  $\frac{5}{8}$ "  
 How stayed *Tubes* pitch of stays  $16 \times 9\frac{1}{2}$ " width of water spaces 6"  
 Diameter of Superheater or Steam chest *None* length —  
 Thickness of plates — description of longitudinal joint — diameter of rivet holes — pitch of rivets —  
 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 — How stayed —  
 Superheater or steam chest; how connected to boiler —

**DONKEY BOILER—** Description *Flat sided - multitubular*  
 Made at *Glasgow* By whom made *The London & Glasgow Co.* when made *1881-2*  
 Where fixed *In workshop* working pressure *50 lb.* Tested by hydraulic pressure to *100 lb.* No. of Certificate *742*  
 Fire grate area *13 sq ft* Description of safety valves *Direct 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 *8-6 & 4-0* length *7-9* description of riveting *Single*  
 thickness of shell plates *7/16* diameter of rivet holes *7/8* whether punched or drilled *Punched*  
 pitch of rivets *2 1/8* lap of plating *3"* per centage of strength of joint *60*  
 thickness of crown plates — stayed by —  
 Diameter of furnace, top *3-1* bottom — length of furnace *5-3*  
 thickness of plates *3/8* description of joint *Butt & chap.*  
 thickness of furnace crown plates *3/8* stayed by *Cylindrical*  
 Working pressure of shell by rules *80 lb.* working pressure of furnace by rules *64 lb.*  
 diameter of uptake — thickness of plates — thickness of water tubes —

*This boiler is to be used for the purpose of raising steam for the engine only. It is not to be used for any other purpose. The boiler is to be kept in good order and in working condition at all times. The boiler is to be inspected by the Surveyor at least once a month. The boiler is to be painted with red lead paint at least once a year. The boiler is to be kept in good order and in working condition at all times.*

The foregoing is a correct description,  
*for the London & Glasgow Engineering & Iron Shipbuilding Co. Ltd.* Manufacturer.

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

The boilers of this vessel have been constructed under special survey the material & workmanship are good, they have been satisfactorily fitted on board & were in order when tested under steam. The engines have been all disconnected & excepting the bed plate were taken to the shop for thorough repair where the following work was done - High pressure cylinder bored & new piston fitted complete. New piston springs for Low pressure - New crank pin & cross head branes & crank shaft lined up - New Propeller shaft & Propeller, and the outer bearing of shaft lined up - Nearly all copper pipes renewed - new bilge & discharge pipes - New condenser tube plate & tubes re-packed - Piston rods turned up & one new nut fitted - All sea cocks altered to meet the requirements of the rules - Main & donkey boiler bearings all new - The engines have now been satisfactorily connected & are now in good working condition, I am therefore of opinion that the notification **Lloyds M.C. & N.B.** should be recorded in the register book.

5-82.

The amount of Entry Fee £ 3: 0: 0 received by me,  
 Special .. £ 3: 3: 0  
 Certificate (if required) .. £ 8: 8: 0  
 To be sent as per margin. £ 14: 16: 0  
 (Travelling Expenses, if any, £ )

*Walter E. Robson*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Tuesday, 10th May, 1882.*  
*Lloyd's Reg. 5, 82*  
*+ 208*