

# REPORT ON MACHINERY

15th MAY, 1882

(Received at London Office)

No. 5405

No. in Survey held at

Glasgow

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

Reg. Book.

203 on the

S. J. Aegean

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 *5/8* Low Pressure *5/8*  
 Diameter of Screw shaft *9* Diameter of Tunnel shaft *8.5* Diameter of Crank shaft journals *9.5* Diameter of Crank pin *9.5* size of Crank webs *6.2 x 11.5*  
 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 *5.5* 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's 5 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 bilge 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 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 *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 *36.5* 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 bunkers 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 *7/16* diameter of rivet holes *15/16* whether punched or drilled *punched* pitch of rivets *3.5 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 3.5*  
 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"* sides *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 *1.4 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.*

5705

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 stokehold* working pressure *50 lbs.* Tested by hydraulic pressure to *100 lbs.* 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 lbs.* working pressure of furnace by rules *64 lbs.*  
 diameter of uptake — thickness of plates — thickness of water tubes —

*This is a correct description of the boiler as shown in the drawings & is in accordance with the rules of the Register of British & Foreign Shipping.*

The foregoing is a correct description,  
 for *The London & Glasgow Engineers & Iron Shipbuilding Coy. Ltd.* Manufacturer.  
*W. H. Bell*

**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 & crosshead 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.

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. £ 0: 5: 0 11/5/1882  
 (Travelling Expenses, if any, £ ..)

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

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