

# REPORT ON MACHINERY.

(Received at London Office 22nd. MAY, 1882.)

No. 5409 Date, first Survey Aug 1<sup>st</sup> 1881 Last Survey May 17<sup>th</sup> 1882  
 No. in Survey held at Glasgow Reg. Book. 26664 Tons 1443.3  
 on the S. S. Engineer  
 Master J. Jeffrey Built at Glasgow When built 1882  
 Engines made at Glasgow By whom made J. & J. Thompson when made 1882  
 Boilers made at do By whom made do when made 1882  
 Registered Horse Power 375 Owners J. & J. Harrison Port belonging to Liverpool

## ENGINES, &c.—

Description of Engines Compound Inverted Surface Condensing  
 Diameter of Cylinders 38" x 45" Length of Stroke 54" No. of Rev. per minute 60 Point of Cut off, High Pressure 1/2" Low Pressure 1/2"  
 Diameter of Screw shaft 1 3/4" Diameter of Tunnel shaft 1 3/4" Diameter of Crank shaft journals 1 3/2" Diameter of Crank pin 14" size of Crank webs 16 x 9 1/2"  
 Diameter of screw 1 7/8" Pitch of screw 20" x 6" No. of blades 4 state whether moveable not total surface 80.5 sq ft  
 No. of Feed pumps 2 diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 diameter of ditto 5" Stroke 27" Can one be overhauled while the other is at work Yes  
 Where do they pump from Bilges of Engine Room and all Compartments of Vessel  
 No. of Donkey Engines 2 Size of Pumps 7 x 9 1/2" x 5 x 9 1/2" Where do they pump from Sea. Bilge of Engine Room & all Compartments of Vessel. Condenser & 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 4" Are they connected to condenser, or to circulating pump Circulating  
 How are the pumps worked By Levers from Crossheads 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 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 Yes  
 What pipes are carried through the bunkers Fore & Main hold Suct. How are they protected Wood casing  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes except in holds  
 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 Not seen in dry dock  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Top platform

## BOILERS, &c.—

Number of Boilers Two Description Cylindrical & Multitubular. Double ended  
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test March 22<sup>nd</sup> 1882  
 Description of ~~superheating apparatus~~ steam chest None, out at some.  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes  
 No. of square feet of fire grate surface in each boiler 104.5 Description of safety valves Wet steam (Cockburns)  
 No. to each boiler 2 area of each valve 26.9" sq Are they fitted with easing gear Yes  
 No. of safety valves to superheater None area of each valve None are they fitted with easing gear None  
 Smallest distance between boilers and bunkers or woodwork 15" inches to side trunks  
 Diameter of boilers 15' 0" Length of boilers 17' 3" description of riveting of shell long. seams Double Butt circum. seams Double Lap.  
 Thickness of shell plates 3/4" diameter of rivet holes 1" whether punched or drilled drill pitch of rivets 3 3/4"  
 Lap of plating 11" straps per centage of strength of longitudinal joint 71 1/2 working pressure of shell by rules 85 lbs  
 Size of manholes in shell 16" x 11" size of compensating rings 3" x 3" x 1/2"  
 No. of Furnaces in each boiler 6 outside diameter 29" length, top 4' 0" bottom through.  
 Thickness of plates 1/2" description of joint Double Butt if rings are fitted bottom greatest length between rings None  
 Working pressure of furnace by the rules 82 lbs  
 Combustion chamber plating, thickness, sides 7/16" back None top 1/2"  
 Pitch of stays to ditto sides 8 1/4" x 7 1/2" back None top 9" x 8"  
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 80 lbs  
 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 92 lbs  
 End plates in steam space, thickness 3/4" pitch of stays to ditto 14 1/2" how stays are secured Nuts & Washers  
 Working pressure by rules 80 lbs diameter of stays at smallest part 2 5/8" working pressure by rules 134 lbs  
 Front plates at bottom, thickness 1/16" Back plates, thickness None greatest pitch of stays None working pressure by rules None

Lloyd's Register of Shipping



5708 ggs

Diameter of tubes  $3\frac{1}{4}$ " pitch of tubes  $4\frac{1}{2} \times 4\frac{1}{4}$ " thickness of tube plates, front  $3\frac{1}{4}$ " back  $5\frac{1}{8}$ "  
 How stayed *Subs* pitch of stays  $9" \times 9\frac{1}{2}"$  width of water spaces  $6"$   
 Diameter of Superheater or Steam chest  $148"$  length  $14' 3"$   
 Thickness of plates  $1\frac{1}{2}"$  description of longitudinal joint *Lap d r* diameter of rivet holes  $7\frac{1}{8}"$  pitch of rivets  $3\frac{1}{4}"$   
 Working pressure of shell by rules  $153\text{th}$  Diameter of flue  $\text{---}$  thickness of plates  $\text{---}$   
 If stiffened with rings  $\text{---}$  distance between rings  $\text{---}$  Working pressure by rules  $\text{---}$   
 End plates of ~~superheater~~, or steam chest; thickness  $5\frac{1}{8}"$  How stayed *3 Quad. stays*  
 Superheater or steam chest; how connected to boiler *by neck*

**DONKEY BOILER**— Description *Multitubular. Flat sides. Circular Top. Flat bottom*  
 Made at *Glasgow* By whom made *J & J Thomson* when made *1882*  
 Where fixed *on deck* working pressure  $60\text{th}$  Tested by hydraulic pressure to  $120\text{th}$  No. of Certificate *724*  
 Fire grate area  $25.8'$  Description of safety valves *direct spring* No. of safety valves  $2$  area of each  $7\text{sq in}$   
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler  $6' 6"$  length  $8' 0" 41.9-6$  description of riveting *Double Lap*  
 thickness of shell plates  $1\frac{1}{2}"$  diameter of rivet holes  $1\frac{3}{16}"$  whether punched or drilled *punched*  
 pitch of rivets  $3'$  lap of plating  $4"$  per centage of strength of joint  $68\%$   
 thickness of ~~end~~ *end* plates  $1\frac{19}{32}"$  stayed by *Rod Stays*  $16" \times 11\frac{1}{2}"$  with nuts  
 Diameter of furnace, top  $30"$  bottom  $\text{---}$  length of furnace  $5' 6" \times 4' 6"$   
 thickness of plates  $7\frac{1}{16} \times 1\frac{1}{2}"$  description of joint *Double Butt straps*  
 thickness of ~~furnace crown~~ *furnace crown* plates  $7\frac{1}{16}"$  stayed by *sewed stays*  $10" \times 10"$  with nuts  
 Working pressure of shell by rules  $64\text{th}$  working pressure of furnace by rules  $100\text{th}$   
 diameter of uptake  $\text{---}$  thickness of plates  $\text{---}$  thickness of water tubes  $\text{---}$

The foregoing is a correct description,  
 Manufacturer. *John James Thomson*

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

*Material and Workmanship of good quality  
 Surveyed during construction and when tested  
 under steam found to be good and efficient  
 and eligible in my opinion for the Registration  
 of Lloyd's M.C. 5. 82. in the Society's Register  
 Book.*

*This submitted that this  
 vessel is eligible to have the  
 registration of Lloyd's M.C. 5. 82. as per  
 J.M. 2/5/82*

*J.M. Thomson*

The amount of Entry Fee .. £ 3 : 0 : 0 received by me,  
 Special .. £ 38 : 15 : 0  
 Certificate (if required) .. £ 0 : 0 : 0 20/5/1882  
 To be sent as per margin. *£ 11 : 15 : 0*  
 (Travelling Expenses, if any, £ ..)

Committee's Minute

Tuesday, 23rd May, 1882.

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

*Clyde District.*

Lloyd's Register  
 Foundation