

# REPORT ON MACHINERY.

No. 5360

(Received in London Office 28/4/81)

No. in Survey held at Glasgow Date, first Survey Sept 10 80 Last Survey April 27 1881  
 Reg. Book. " Tons 2198.48  
 on the S. S. Catania Tons 1429.43  
 Master M. C. Petersen - Built at Glasgow When built 1881  
 Engines made at Glasgow By whom made A. Stephen & Sons when made "  
 Boilers made at do By whom made do when made "  
 Registered Horse Power 2000 Owners Robt. A. Sloman & Co., Hamburg. Port belonging to Hamburg

**ENGINES, &c.—**

Description of Engines Inverted Compound Surface Condensing  
 Diameter of Cylinders 35" & 65" Length of Stroke 42 No. of Rev. per minute 60 Point of Cut off, High Pressure 1/2 Low Pressure 1/2  
 Diameter of Screw shaft 11 1/2" Diameter of Tunnel shaft 11" Diameter of Crank shaft journals 11 1/2" Diameter of Crank pin 11 3/4" size of Crank webs 13/4" x 7 3/4"  
 Diameter of screw 14" 0' Pitch of screw 20" 0' No. of blades 4 state whether moveable Yes total surface 68 sq. ft.  
 of Feed pumps 2 diameter of ditto 4 1/2" Stroke 23" Can one be overhauled while the other is at work Yes  
 of Bilge pumps 3 diameter of ditto 4 1/2" Stroke 23" Can one be overhauled while the other is at work Yes  
 Where do they pump from Sea, Tanks & Bilges of all Compartments of Vessel  
 No. of Donkey Engines 2 1 Ind. & 1 Centrifugal Size of Pump 5' x 10" Where do they pump from Feed & Sewage from Sea, Tanks & Bilges, Condenser & Hotwell. Centrifugal pump from Sea, Tanks, Bilges & Condenser  
 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 1 and sizes 5" Are they connected to condenser, or to circulating pump Circulating  
 How are the pumps worked By Levers attached to both Engines  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Stop Valves & Cocks  
 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 Steam & Hot Water pipes How are they protected by wooden casing  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes except in holds when loaded  
 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 been in dry dock  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Main Deck

**BOILERS, &c.—**

Number of Boilers 2 Description Cylindrical & Multitubular  
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 9.2.81  
 Description of superheating apparatus or steam chest Horizontal none  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No Superheater  
 square feet of fire grate surface in each boiler 46 sq. ft. Description of safety valves Lead Spring by A. Stephen & Sons  
 each boiler 2 area of each valve 15.9 sq. in Are they fitted with easing gear Yes  
 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 12 inches filled with felt & shut down  
 diameter of boilers 13' 0" Length of boilers 11' 0" description of riveting of shell long. seams Double Butt circum. seams Double Lap  
 thickness of shell plates 1" diameter of rivet holes 1" whether punched or drilled drilled pitch of rivets 3 3/4"  
 Lap of plating Straps 10 1/2 per centage of strength of longitudinal joint 41 working pressure of shell by rules 90 lbs  
 Size of manholes in shell 15" x 16" size of compensating rings Some Rings  
 No. of Furnaces in each boiler 3 outside diameter 3' 4" & 3' 0" length, top 4' 6" bottom 4' 6"  
 Thickness of plates 1 1/32 description of joint Double Butt if rings are fitted none greatest length between rings none  
 Working pressure of furnace by the rules 84 lbs  
 Combustion chamber plating, thickness, sides 3/16" back 3/16" top 3/16"  
 Pitch of stays to ditto sides 4 3/4" x 4 3/4" back 4 1/4" x 4 1/4" top Circular 21" radius  
 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 90 lbs per sq. in  
 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 103 " " "  
 End plates in steam space, thickness 13/16" pitch of stays to ditto 15 1/4" x 15 1/4" how stays are secured Double Nuts  
 Working pressure by rules 100 lbs diameter of stays at smallest part 2 3/16" working pressure by rules 96 lbs  
 Front plates at bottom, thickness 13/16" Back plates, thickness 13/16" greatest pitch of stays 16" x 4 1/4" working pressure by rules 95 lbs



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Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $4\frac{3}{8}" \times 4\frac{3}{4}"$  thickness of tube plates, front  $\frac{13}{16}"$  back  $\frac{11}{16}"$   
 How stayed *Tube Stay* pitch of stays  $15\frac{1}{8}" \times 9\frac{1}{2}"$  width of water spaces  $1\frac{1}{4}" + 1\frac{1}{8}" + 6"$   
 Diameter of ~~Superheater~~ or Steam chest  $3' - 0"$  length  $8' - 2"$   
 Thickness of plates  $\frac{7}{16}"$  description of longitudinal joint *double Lap* diameter of rivet holes  $\frac{3}{4}"$  pitch of rivets  $2\frac{1}{2}"$   
 Working pressure of shell by rules  $120$  lbs 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  $\frac{1}{2}"$  How stayed *1 through stay, 1/2 dia effective*  
~~Superheater~~ or steam chest; how connected to boiler *by two pieces*

**DONKEY BOILER—** Description *Circular Vertical 3 Water Tubes in Furnace*  
 Made at *Glasgow* By whom made *A. Stephen & Sons* when made *Listed 9-2-01*  
 Where fixed *In Blonhead* working pressure  $50$  lbs Tested by hydraulic pressure to  $100$  lbs No. of Certificate  $46$   
 Fire grate area  $9$  sq. ft. Description of safety valves *dead spring* No. of safety valves  $2$  area of each  $4$  sq. ft.  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler  $5' - 6"$  length  $12' - 6"$  description of riveting *Lap double*  
 thickness of shell plates  $\frac{7}{16}"$  diameter of rivet holes  $\frac{3}{4}"$  whether punched or drilled *punched*  
 pitch of rivets  $2\frac{3}{4}"$  lap of plating  $4"$  per centage of strength of joint  $72$   
 thickness of crown plates  $\frac{7}{16}"$  stayed by *6 stays, 1/2 dia effective*  
 Diameter of furnace, top  $4' - 4"$  bottom  $4' - 9"$  length of furnace  $6' - 6"$   
 thickness of plates  $\frac{7}{16}"$  description of joint *Lap single riveted*  
 thickness of furnace crown plates  $\frac{7}{16}"$  stayed by *6 stays 1/2 dia effective*  
 Working pressure of shell by rules  $69$  lbs working pressure of furnace by rules  $60$  lbs  
 diameter of uptake  $15"$  thickness of plates  $\frac{7}{16}"$  thickness of water tubes  $\frac{3}{8}"$

The foregoing is a correct description,  
*A. Stephen & Sons* Manufacturer.

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

Material and workmanship of good description. Constructed in  
 special survey and main rules in accordance with approved  
 Rules. Machinery tried under steam and found satisfactory  
 and is in our opinion eligible for the Notification of Lloyd's Register  
 in the Society's Register Book

*It is submitted that this vessel  
 is eligible to have the notification  
 of Lloyd's Register Book  
 J.M. 28/4/87*

The amount of Entry Fee .. £ 3 : : : received by me,  
 Special *J.M.* .. £ 30 : : :  
 Certificate (if required) .. £ : : : 23/4/1887  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ ..)

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

Committee's Minute Friday, April, 29th 1887