

# REPORT ON MACHINERY.

No. 5196

(Received at London Office) Rec'd 10 JUNE, 1883

No. in Survey held at Stockton Date, first Survey 22 Feb Last Survey 25 May 1883  
 Reg. Book. S. S. "Cybele" (H/rocks) 1284  
 on the S. S. "Cybele" Tons 819  
 Master Jucker Built at Stockton When built 1883  
 Engines made at Stockton By whom made Blair & Co (Lim) when made 1883  
 Boilers made at Do By whom made Do when made Do  
 Registered Horse Power 110 Owners A. Cloake Port belonging to London  
 Engineers Nominal Horse Power 110

**ENGINES, &c.—**

Description of Engines Compound Inverted Surface Condensing  
 Diameter of Cylinders 28 1/2 - 53 Length of Stroke 33 No. of Rev. per min 65 Point of Cut off, High Pressure at 1/2 stroke Low Pressure at 1/2 stroke  
 Diameter of Screw shaft 10 Diameter of Tunnel shaft 9 3/8 Diameter of Crank shaft journals 9 3/4 Diameter of Crank pin 10 1/4 size of Crank web 13 1/2 x 7  
 Diameter of screw 13.0 Pitch of screw 16.0 No. of blades Four state whether moveable No total surface Not ascertained  
 No. of Feed pumps Two diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work Yes  
 Where do they pump from one pump from fore hold engine room, after well & tanks, after pump from after well & engine room  
 No. of Donkey Engines Two Size of Pumps 1/2 dia x 9 1/2 stroke Where do they pump from Large donkey from fore hold engine room, after well & ballast tanks, small donkey from sea, hotwell, & ballast tank  
 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 6 Are they connected to condenser, or to circulating pump Circulating pumps  
 How are the pumps worked By levers worked from cross head on low pressure piston rod  
 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 Below  
 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 Now  
 Is the screw shaft tunnel watertight Said to be and fitted with a sluice door Yes worked from top platform in engine room

**BOILERS, &c.—**

Number of Boilers One Description Cylindrical Multitubular  
 Working Pressure 80 Tested by hydraulic pressure to 160 lbs Date of test 20.4.83 Certificate No 926  
 Description of superheating apparatus or steam chest Vertical Skain dome constructed at angle  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No Superheater  
 No. of square feet of fire grate surface in each boiler 61.5 Description of safety valves Spring Made by Blair & Co. Lim  
 No. to each boiler Two area of each valve 19.6 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 11 top of dome - deck (iron)  
 Diameter of boilers 15.6 1/2 Length of boilers 11.10 description of riveting of shell long. seams all welded except seams from plate in inner casing of shell which are drilled & riveted with double butt straps Double  
 Thickness of shell plates 1 1/4 diameter of rivet holes 1 1/4 whether punched or drilled Drilled pitch of rivets 4 1/2  
 Lap of plating Straps 11 1/4 percentage of strength of longitudinal joint 68.6 working pressure of shell by rules 91.9  
 Size of manholes in shell 16 x 12 size of compensating rings Rectangular plate 28 x 24 x 1 1/8  
 No. of Furnaces in each boiler Three outside diameter 4.0 length, top 4.0 bottom 4.0  
 Thickness of plates 7/16 description of joint Welded if rings are fitted Corrugated greatest length between rings —  
 Working pressure of furnace by the rules 104 lbs  
 Combustion chamber plating, thickness, sides 1/2 back 1/2 top 1/2  
 Pitch of stays to ditto — sides 8 x 8 back 8 1/2 x 8 top Curved top  
 If stays are fitted with nuts or riveted heads Part cut - part riveted working pressure of plating by rules 88.5  
 Diameter of stays at smallest part 15/16 working pressure of ditto by rules 119.3 lbs  
 Thickness of stays in steam space, thickness 1/8 pitch of stays to ditto 16 x 15 how stays are secured Nuts & washers  
 Working pressure by rules 104.1 diameter of stays at smallest part 2 1/2 working pressure by rules 122.6  
 Thickness of bottom, thickness 1/8 Back plates, thickness 1/8 greatest pitch of stays 1 1/2 x 8 1/2 working pressure by rules 85 lbs  
 Smallest dia of stay 15/16

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Diameter of tubes  $3\frac{3}{4}$  pitch of tubes  $5 \times 5\frac{1}{8}$  thickness of tube plates, front  $\frac{1}{8}$  back  $\frac{1}{8}$   
 How stayed *Stay tubes* pitch of stays  $10\frac{1}{4} \times 10$  width of water spaces  $\frac{1}{4}$  between tubes  $4\frac{1}{2}$  between furnaces  
 Diameter of Superheater or Steam chest  $3-4$  length  $5-0$   
 Thickness of plates  $\frac{1}{2}$  description of longitudinal joint *Lap abbe riveted* diameter of rivet holes  $\frac{13}{16}$  pitch of rivets  $3\frac{1}{8}$   
 Working pressure of shell by rules  $118$  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  $4\frac{1}{2}$  *butt*  $\frac{1}{16}$  How stayed *Four Stays 2\frac{1}{4} dia effective  
 Superheater or steam chest; how connected to boiler *By flanged malleable iron neck pipe 1\frac{1}{2} dia  $\frac{1}{8}$  thick abbe riveted to dome - shell  $\frac{1}{16}$**

**DONKEY BOILER** - Description *Vertical water tubes in furnaces*  
 Made at *Stockton* By whom made *Riley Bros* when made *Tested 24. 2. 83*  
 Where fixed *to keel hole* working pressure  $60$  lbs Tested by hydraulic pressure to  $120$  lbs No. of Certificate  $895$   
 Fire grate area  $25$  sq ft Description of safety valves *Spring* No. of safety valves *Two* area of each  $1.0$  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  $13-6$  description of riveting *Single seam, lap, abbe riveted*  
 thickness of shell plates  $\frac{1}{16}$  diameter of rivet holes  $\frac{13}{16}$  whether punched or drilled *Punched*  
 pitch of rivets  $2\frac{3}{4}$  lap of plating  $4\frac{1}{4}$  per centage of strength of joint  $40-4$   
 thickness of crown plates  $\frac{1}{2}$  stayed by *Stay stays 1\frac{1}{2} dia  
 Diameter of furnace, top  $5-6$  bottom  $5-11$  length of furnace  $5-2$   
 thickness of plates  $\frac{1}{32}$  description of joint *Lap single riveted*  
 thickness of furnace crown plates  $\frac{1}{2}$  stayed by *Stay stays 1\frac{1}{2} dia  
 Working pressure of shell by rules  $61-2$  working pressure of furnace by rules  $62$  lbs  
 diameter of uptake  $15$  thickness of plates  $\frac{1}{16}$  thickness of water tubes  $\frac{1}{16}$**

The foregoing is a correct description,  
*Pro Blair & Co* Manufacturers of Engines - Main Boiler only.

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

Material - workmanship good  
 The furnace crown plates, back tube plates & combustion chamber plating of main boiler are of steel.  
 The furnaces are corrugated, made by the Leeds Forge Coy, & the remaining steel plates have been supplied by J. & W. Beardmore Glasgow  
 The Machinery & Boilers have been constructed under special survey & are in good order & safe working condition & in my opinion eligible for the certification  
 L.M.C. 5.83 in the Register Book

*This is submitted that this vessel is eligible to have the certificate issued L.M.C.*  
*Recorded M 4/6/83*

The amount of Entry Fee .. £ 2 : : : received by me,  
 Special .. £ 16 : 10 : :  
 Certificate (if required) .. £ : : : : 30-5-1883  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ )

*ASD*  
*James B. ...*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUESDAY 5 JUNE 1883 18

