

# REPORT ON MACHINERY.

No. 365  
 No. in Survey held at Stockton-on-Tees Date, first Survey 26<sup>th</sup> Nov<sup>r</sup> 1890 Last Survey 27<sup>th</sup> Feb<sup>y</sup> 1891  
 Reg. Book. (Number of Visits 24)  
 on the Screw Steamer "Sophia Couppa."  
 Master A. Condurris Built at Stockton By whom built Craig Taylor & Co<sup>y</sup>  
 Engines made at Stockton-on-Tees By whom made Blair & Co<sup>y</sup> Limited when made 1891  
 Pilers made at Stockton-on-Tees By whom made Blair & Co<sup>y</sup> Limited when made 1891  
 Registered Horse Power 160 Owners Nicholas Couppa Port belonging to Cephalonia  
 Rule HP 201  
 Tons { Gross 2043.8  
 Net 1350.4  
 When built 1891  
 Description of Engines Inverted, Direct Acting, Triple Expansion No. of Cylinders Three  
 diam. of Cylinders 21"-33"-54" Length of Stroke 39" Rev. per minute 60 Point of Cut off, High Pressure .5 Low Pressure .5  
 diameter of Screw shaft 11 1/2" Diam. of Tunnel shaft 11" Diam. of Crank shaft journals 11 1/2" Diam. of Crank pin 12" size of Crank webs 19" x 7 3/8"  
 diameter of screw 15'0" Pitch of screw 16'0" No. of blades 4 state whether moveable No total surface 61 Sq. feet  
 No. of Feed pumps 2 diameter of ditto 2 1/4" Stroke 28" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 diameter of ditto 4" Stroke 28" Can one be overhauled while the other is at work Yes  
 Where do they pump from Fore, Main & After Hold, Engine room, Tunnel well, After peak, Sea & Tanks.  
 No. of Donkey Engines Two Size of Pumps 1 1/2" x 1 1/2" x 1 1/2" Where do they pump from Feed - Sea, Hotwell & Tanks.  
Ballast - Sea, Ballast tanks, Fore, Main & After Hold, Engine room, Tunnel and After peak  
 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 6" Are they connected to condenser, or to circulating pump Circulating pump.  
 How are the pumps worked By levers from the cross head of the after engine.  
 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 Above  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off docks 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 New vessel, before launching.  
 Is the screw shaft tunnel watertight ✓ and fitted with a sluice door Yes worked from Top platform in Engine room.  
 Boilers, &c. —  
 No. of Boilers Two Description by 2<sup>nd</sup>, Multi: Single End = Material Steel Letter (for record) S  
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 6<sup>th</sup> January 1891. (S. 176.)  
 Description of superheating apparatus or steam chest None Heating surface 2990 Sq. feet.  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately ✓  
 Area of square feet of fire grate surface in each boiler 34 Description of safety valves Direct Spring No. to each boiler Two  
 Area of each valve 4.9 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 15" Diameter of boilers 12' 9 3/4"  
 Length of boilers 10' 0" description of riveting of shell long. seams 273 Shape Treble circum. seams Lap Double Thickness of shell plates 1 3/16"  
 diameter of rivet holes 1 1/8" whether punched or drilled Drilled pitch of rivets 4 1/4" 4 1/2" Lap of plating 16 3/8" and 6"  
 Percentage of strength of longitudinal joint 83.6 working pressure of shell by rules 167.8 lbs size of manholes in shell 16" x 12"  
 No. of compensating rings 28" x 24" x 1 3/4" No. of Furnaces in each boiler Two Description of Furnaces Corrugated  
 Inside diameter 3' 10" length 6' 3" thickness of plates 1 3/8" description of joint Welded if rings are fitted ✓  
 Greatest length between rings ✓ working pressure of furnace by the rules 163 lbs combustion chamber plating, thickness, sides 9/16" back 9/16" top 9/16"  
 Pitch of stays to ditto, sides 1/2" x 1/4" back 1/2" x 1/4" top 1/2" x 1/4" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 172 lbs  
 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 148 lbs end plates in steam space, thickness 1 5/8"  
 Pitch of stays to ditto 1 1/4" x 1 1/4" how stays are secured Double Nuts working pressure by rules 161 lbs diameter of stays at smallest part 2 5/8"  
 working pressure by rules 166 lbs Front plates at bottom, thickness 1" Back plates, thickness 1"  
 Greatest pitch of stays 12 1/2" working pressure by rules 163.8 lbs Diameter of tubes 3 1/4" pitch of tubes 4 5/8" x 4 5/8" thickness of tube plates, front 1" back 5/8"  
 how stayed Stay tubes pitch of stays 14 1/2" x 9 1/4" width of water spaces 1 3/8" & 5"  
 diameter of Superheater or Steam chest ✓ length ✓ thickness of plates ✓ description of longitudinal joint ✓ diam. 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 ✓



*Steel*  
**DONKEY BOILER—**

Description *Vertical Meredith Patent.*

Made at *Stockton* by whom made *Riley Bros.* when made *28.1.91* where fixed *on level of Deck*  
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *185* fire grate area *20 sq. feet* description of safe  
valves *Direct Spring* No. of safety valves *one* area of each *12.56* if fitted with easing gear *Yes* if steam from main boilers can  
enter the donkey boiler *No* diameter of donkey boiler *6' 0"* length *12' 0"* description of riveting *Long Lap Double*  
Thickness of shell plates *1 3/8"* diameter of rivet holes *1 1/16"* whether punched or drilled *Machine* pitch of rivets *2 1/16"* lap of plating *4 1/2"*  
percentage of strength of joint *7/1* thickness of crown plates *3/32"* stayed by *Hemispherical*  
Diameter of furnace, top *4' 2"* bottom *3' 2"* length of furnace *2' 3"* thickness of plates *9/16"* description of joint *Lap Single*  
Thickness of furnace crown plates *1/2"* stayed by *Hemispherical* working pressure of shell by rules *86 lbs*  
Working pressure of furnace by rules *80 lbs* diameter of uptake *✓* thickness of plates *9/16"* thickness of water tubes *2"* *Stamp 8 1/2*

**SPARE GEAR.** State the articles supplied:— *1 Propeller, 2 Main Bearing Bolts & nuts, 2 Crank  
Pin Bolts & nuts, 2 Crosshead Bolts & nuts, 1 Set Coupling Bolt & nut, 1 Set  
Piston Springs, 1 Set Feed & Bilge pump valves, Bolts & nuts & Iron ass'ts.*

The foregoing is a correct description,

*Robt Blair & Co. Ltd* Manufacturers of main engines & boilers.  
*R. M. Blair*

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

*The materials and workmanship are of the best description.  
The Engines and Boilers have been constructed under special  
survey; when fitted on the vessel they were examined under  
steam and worked satisfactorily. The machinery throughout is  
now in good and efficient condition and eligible in my  
opinion to have the notation **⊕ L.M.C. 2, 91.** marked in the  
Society's Register Book.*

*Large blue ink signature/initials.*

*It is submitted that this  
vessel is eligible to have  
+LMC 2-91 recorded*

*M.D.  
9.3.91*

The amount of Entry Fee .. £ 2 : : : received by me,

Special .. .. £ 30 : : :

Donkey Boiler Fee .. .. £ : : :

Certificate (if required) .. £ : : :

To be sent at per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

**APR 10 1891**

*+L.M.C. 2/91*

*Wm R Austin*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

MOB 744 A 194