

Std No. 20752  
mab 52214

# REPORT ON MACHINERY.

Port of Sunderland

Received at London Office  
10  
30<sup>th</sup> Oct 19 01

No. in Survey held at Sunderland Date, first Survey 3<sup>rd</sup> May Last Survey 30<sup>th</sup> Oct 19 01  
eg. Book. on the Screw Steamer "Coranian" (Number of Visits 16) Tons <sup>Gross</sup> 1223 <sub>Net</sub> 770

Master Built at Middlesbrough By whom built Harker & Son (156) When built 1901  
Engines made at Sunderland By whom made Mac Coll & Pollock (167) when made 1901  
Boilers made at Sunderland By whom made Mac Coll & Pollock when made 1901  
Registered Horse Power Owners Steamship Co Ltd Port belonging to Cardiff  
Horse Power as per Section 28 131 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
Dia. of Cylinders 17"-28½"-46" Length of Stroke 33" Revs. per minute 70 Dia. of Screw shaft 9.74 as per rule 9.76 as fitted 9.76 Lgth. of stern bush 37¾"  
Dia. of Tunnel shaft 8.2 as per rule 8.2 as fitted 8.2 Dia. of Crank shaft journals 8.6 as per rule 8.6 as fitted 9" Dia. of Crank pin 9" Size of Crank webs 6½x12¾" Dia. of thrust shaft under  
Blades 9" Dia. of screw 12-1½" Pitch of screw 14-1½" No. of blades 4 State whether moceable no Total surface 57.6 sq ft  
No. of Feed pumps 2 Diameter of ditto 2½" Stroke 17½" Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 Diameter of ditto 2½" Stroke 17½" Can one be overhauled while the other is at work yes  
No. of Donkey Engines 2 Sizes of Pumps 6x8½x8 Ballast No. and size of Suctions connected to both Bilge and Donkey pumps 6x4x6 feed  
Engine Room 2 of 2½" Cyls 2 of 2½" Cyls 2 of 2½" Cyls In Holds, &c. 2 of 2½" each hold  
2½" aft hold 1 of 2" Bilge pump direct  
No. of bilge injections 1 sizes 3¾" Connected to condensers or to circulating pump CP Is a separate donkey suction fitted in Engine room & size yes 3"  
Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible yes  
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 cocks fitted with a spigot and brass covering plate yes  
How are they protected none  
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock now vessel Is the screw shaft tunnel watertight yes  
Is it fitted with a watertight door yes worked from top platform.

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 2025 sq ft Is forced draft fitted no  
No. and Description of Boilers one S.E. Cyl - Multitubular Working Pressure 180 lb Tested by hydraulic pressure to 360 lb  
Date of test 25.10.01 Can each boiler be worked separately yes Area of fire grate in each boiler 59 sq ft No. and Description of safety valves to  
each boiler two direct spring Area of each valve 5.93 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes  
Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean dia. of boilers 15'-0" Length 10'-6" Material of shell plates Steel  
Thickness 1/16" Range of tensile strength 29/33 Are they welded or flanged no Descrip. of riveting: cir. seams DR Lap long. seams in R. & B. S.  
Diameter of rivet holes in long. seams 1/16" Pitch of rivets 8¾" Lap of plates or width of butt straps 12½"  
Percentage of strength of longitudinal joint 86.4% Working pressure of shell by rules 184 lb Size of manhole in shell 16x12 in R. & B. S.  
Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Deighton Material Steel Outside diameter 48"  
Length of plain part top 9 Thickness of plates bottom 16 Description of longitudinal joint welded No. of strengthening rings none  
Working pressure of furnace by the rules 183 lb Combustion chamber plates: Material Steel Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 7/8  
Pitch of stays to ditto: Sides 9x7½ Back 8¾x7½ Top 6x7½ If stays are fitted with nuts or riveted heads nuts outside row Back Cud heads Nuts C.C. Working pressure by rules 180 lb  
Material of stays Steel Diameter at smallest part 1.5" Area supported by each stay 66.76 Working pressure by rules 180 lb End plates in steam space:  
Material Steel Thickness 6/16" Pitch of stays 15x15 How are stays secured DR x 26 Working pressure by rules 181 lb Material of stays Steel  
Area at smallest part 4.1 Area supported by each stay 225 Working pressure by rules 182 Material of Front plates at bottom Steel  
Thickness 3/4" Material of Lower back plate Steel Thickness 5/16" Greatest pitch of stays 14" Working pressure of plate by rules 180 lb  
Diameter of tubes 3¾" Pitch of tubes 4½" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 9x13½"  
Pitch across wide water spaces 14" Working pressures by rules 187 lb Girders to Chamber tops: Material Steel Depth and  
Thickness of girder at centre 6¾x21 13/16 Length as per rule 24¾ Distance apart 7½" Number and pitch of Stays in each two 6¾" pitch  
Working pressure by rules 181 lb Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
separately yes Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet  
holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
Stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

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**DONKEY BOILER**— No. *one* Description *Patent Vertical*  
 Made at *Annau* By whom made *Cochran & Co* When made *16.8.01* Where fixed *Stokehold*  
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *5776* Fire grate area *20 1/4 sq ft* Description of safety valves *direct Spring*  
 No. of safety valves *one* Area of each *7.0* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *6'-6"* Length *14'-0"* Material of shell plates *Steel* Thickness *1/2"* Range of tensile strength *27/32* Descrip. of riveting long. seams *double* Dia. of rivet holes *29/32* Whether punched or drilled *drilled* Pitch of rivets *2 3/4*  
 Lap of plating *4 1/2"* Per centage of strength of joint Rivets *69.1%* Thickness of shell crown plates *7/16* Radius of do. *3'-3"* No. of Stays to do. *Radius*  
 Dia. of stays. *1 1/2"* Diameter of furnace Top *2'-7 1/2"* Bottom *1'-9"* Length of furnace *14'-0"* Thickness of furnace plates *19/32* Description of joint *Riveted* Thickness of furnace crown plates *19/32* Stayed by *None* Working pressure of shell by rules *103 lbs*  
 Working pressure of furnace by rules *113 lbs* Diameter of *uptake* tubes *2 1/2"* Thickness of *uptake* plates *11/16 x 13/16* Thickness of *stay* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, two bottom end bolts and nuts, two main bearing bolts & nuts, set of coupling bolts & nuts, spare feed and bilge pump valves, Assorted iron bolts & nuts (spare propeller)*

The foregoing is a correct description,

*Maxwell & Bellamy* Manufacturer.

Dates of Survey while building  
 During progress of work in shops - *1901. - May 3. June 19. 28. Aug. 10. 20. 29. Sept. 5. 12. 18. Oct. 2. 16. 18. 24. 25. 26. 30.*  
 During erection on board vessel - *Nov. 28. Oct. 7.*  
 Total No. of visits *16. 18.*

Is the approved plan of main boiler forwarded herewith *yes*  
 retained for duplicate *no*  
 " " " donkey " " " *no*

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

Material of screw shaft  *wrought iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no*  
 Is the after end of the liner made water tight in the propeller boss *yes* If the liner is in more than one length are the joints burned *yes*  
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *yes* If two liners are fitted, is the shaft lapped or protected between the liners *pointed*

*Stern tube fitted with solidified oil lubricator.*

The machinery built under Special Survey, the material and workmanship found good and efficient

The main boilers and steam pipes tested under hydraulic pressure to 360 lbs per square inch and found sound and efficient in every respect at that pressure.

The Engines tried under steam at their working pressures and found satisfactory

In my opinion this vessel is worthy of the notification *L.C. 10.01.* to be made in the Register Book

It is submitted that this vessel is eligible for THE RECORD. *L.C. 10.01.*

The amount of Entry Fee .. £ 2 : : When applied for.  
 Special .. £ 19 : 13 : } *12.11.01*  
 Donkey Boiler Fee .. £ : : }  
 Travelling Expenses (if any) £ : : }  
 When received *14.11.01*

*C.M.*  
*14.11.01*  
*L.S.*  
 Leonard Shalleron  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. NOV 15 1901**

Assigned

*+ L.C. 10.01*



Certificate (if registered) to be sent to the Surveyors or registered not to write on or below the space for Committee's Minute.