

## REPORT ON MACHINERY.

Port of *Greenock*Received at London Office **FBI MAR 16 1900**

No. in Survey held at *Greenock & Port Glasgow* Date, first Survey *31<sup>st</sup> Aug 1898* Last Survey *14<sup>th</sup> March 1900*  
 Reg. Book. *Sup<sup>ts</sup>* (Number of Visits *87*)  
 100 on the *Screw Steamer "Sirius"* Tons { Gross *3335.85*  
 Master *Henri Ravol* Built at *Port Glasgow* By whom built *Russell & Co.* When built *1900*  
 Engines made at *Greenock* By whom made *John G. Kincaid & Co.* when made *1900*  
 Boilers made at *Glasgow* By whom made *Anderson & Lyall* when made *1900*  
 Registered Horse Power *291* Owners *Compagnie des vapeurs de Charge Français* Port belonging to *Marseille*  
 Nom. Horse Power as per Section 28 *291* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Inverted Direct Acting Triple Exp<sup>ts</sup>* No. of Cylinders *Three* No. of Cranks *Three*  
 Dia. of Cylinders *24" 40" 65"* Length of Stroke *42"* Revs. per minute *70* Dia. of Screw shaft *as per rule 12.39* Lgth. of stern bush *51"*  
 Dia. of Tunnel shaft *as per rule 11.22* Dia. of Crank shaft journals *as per rule 11.83* Dia. of Crank pin *12"* Size of Crank webs *15 1/2 x 8 1/2* Dia. of thrust shaft under collars *11 7/8* Dia. of screw *16" 0"* Pitch of screw *17" 0"* No. of blades *Four* State whether moveable *no* Total surface *81 1/2 sq. ft.*  
 No. of Feed pumps *Two* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *Two* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *yes*  
 No. of Donkey Engines *Two* Sizes of Pumps *10x10 & duplex 4x6* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *Four 3 1/2* In Holds, &c. *Six 3 1/2 in holds & one 2 1/2 in tunnel well*

No. of bilge injections *One* sizes *6"* Connected to condenser, or to circulating pump *circ pump* Is a separate donkey suction fitted in Engine room & size *yes 3 1/2*  
 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 *awash*  
 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 *Bilge pipes* How are they protected *Wood casing*  
 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 *on slip before launching* 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 *See Glasgow report no 17,706 attached* Is forced draft fitted  
 No. and Description of Boilers *See Glasgow report no 17,706 attached* Working Pressure *Tested by hydraulic pressure to*  
 Date of test *Can each boiler be worked separately* Area of fire grate in each boiler *No. and Description of safety valves to*  
 each boiler *Area of each valve* Pressure to which they are adjusted *Are they fitted with easing gear*  
 Smallest distance between boilers or uptakes and bunkers or woodwork *Mean dia. of boilers* Length *Material of shell plates*  
 Thickness *Range of tensile strength* Are they welded or flanged *Descrip. of riveting: cir. seams* long. seams  
 Diameter of rivet holes in long. seams *Pitch of rivets* Lap of plates or width of butt straps  
 Per centages of strength of longitudinal joint *Working pressure of shell by rules* Size of manhole in shell  
 Size of compensating ring *No. and Description of Furnaces in each boiler* Material *Outside diameter*  
 Length of plain part *Thickness of plates* Description of longitudinal joint *No. of strengthening rings*  
 Working pressure of furnace by the rules *Combustion chamber plates: Material* Thickness: Sides *Back* Top *Bottom*  
 Pitch of stays to ditto: Sides *Back* Top *If stays are fitted with nuts or riveted heads* Working pressure by rules  
 Material of stays *Diameter at smallest part* Area supported by each stay *Working pressure by rules* End plates in steam space:  
 Material *Thickness* Pitch of stays *How are stays secured* Working pressure by rules *Material of stays*  
 Diameter at smallest part *Area supported by each stay* Working pressure by rules *Material of Front plates at bottom*  
 Thickness *Material of Lower back plate* Thickness *Greatest pitch of stays* Working pressure of plate by rules  
 Diameter of tubes *Pitch of tubes* Material of tube plates *Thickness: Front* Back *Mean pitch of stays*  
 Pitch across wide water spaces *Working pressures by rules* Girders to Chamber tops: Material *Depth and*  
 thickness of girder at centre *Length as per rule* Distance apart *Number and pitch of Stays in each*  
 Working pressure by rules *Superheater or Steam chest; how connected to boiler* Can the superheater be shut off and the boiler worked  
 separately *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*  
 If 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. \_\_\_\_\_ Description *see Glasgow report No 17,719 attached.* When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can \_\_\_\_\_

enter the donkey boiler *no, see letter by Mr. J. G. Muirhead attached* Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile \_\_\_\_\_

strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_ Rivets \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Plates \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of \_\_\_\_\_

Dia. of stays \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

joint \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *1 propeller. 1 screw shaft, 3 crank shaft. 12 coupling bolts & nuts. 2 top & 2 bottom end do. 2 main bearing do. 6 holding down do. 6 do for valve covers. 6 do for cylinder covers. 6 junk ring pins. 2 feed & 2 bilge pump valves. 1 set of valves for air. Circulating, & Ballast pump. 1 feed escape valve & spring. 1 safety valve & spring.*

The foregoing is a correct description,

*John G. Muirhead & Co. Manufacturer.*

Dates of Survey while building	During progress of work in shops—	1898 Aug. 31. 1899 Feb. 8. 20 April 4. 6. 12. 14. May 31. June 22. Sep 12. 14. 16. 20. 22. 23. 27. 29. Oct 2. 4. 6. 11. 13. 17. 19. 23.
	During erection on board vessel—	27. 31. Nov 1. 3. 4. 8. 10. 14. 15. 16. 20. 22. 24. 28. Dec 1. 5. 7. 8. 11. 14. 18. 20. 23. 29. 1900 Jan 10. 12. 16. 17. 24. 25. 26. 29. 31. Feb 1. 2.
	Total No. of visits	9. 13. 14. 15. 16. 17. 18. 21. 23. 24. 26. 28. March 1. 2. 3. 5. 6. 7. 8. 9. 12. 14. 87.

Is the approved plan of main boiler forwarded herewith *yes.*

“ “ “ donkey “ “ “ “ *yes.*

**General Remarks**

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

*These engines have been specially surveyed during construction, workmanship good, Main steam pipes tested by hydraulic pressure to 420 lbs. tests satisfactory. The Engines & Boilers are satisfactorily fitted in vessel and have been tested in full steam. they are now in good order & safe working condition, and are in my opinion eligible to be noted in Register Book, L.M.C. 3. 1900.*

*Bedervall's patent lubricating box for screw shaft fitted in this vessel.*

*Spare gear continued.*

*3 Cylinder escape valves & springs. 1 eccentric strap. 1 set top & bottom end bushes. 12 Condenser tubes & 120 packing ferrules. 12 tubes for main boilers & 1 set fire bars. and a quantity of bolts nuts & iron assorted.*

*It is submitted that this vessel is eligible for THE RECORD. L.M.C. 3.00. See Light*

*19.3.00 19.3.00*

The amount of Entry Fee... £ 2 : " : "  
3 Special... £ 23 : 8 : "  
Donkey Boiler Fee... £ 11 : 10 : "  
Travelling Expenses (if any) £ :

When applied for, *14.3.00*  
When received, *11.10.00*

*C. A. B. Heron.*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping  
*Greenock District.*

Committee's Minute

*TUES. 20 MAR 1900*

MACHINERY CERTIFICATE WRITTEN.

*+ L.M.C. 3.00*

Assigned



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