

## REPORT ON MACHINERY.

Port of *Greenock*

Received at London Office

105. 11 SEP 1900

No. in Survey held at *Greenock*Date, first Survey *20<sup>th</sup> Sept 1899* Last Survey *1<sup>st</sup> Sept. 1900*

Reg. Book.

(Number of Visits *112*)350. on the *Screw Steamer "Emilia"*Tons { Gross *3604*Master *Pio Francich* Built at *Port Glasgow* By whom built *Russell & Co.*Net *2347*When built *1900.*Engines made at *Greenock* By whom made *Rankin & Blackmore.*when made *1900.*Boilers made at *G* By whom made *G*when made *1900.*Registered Horse Power Owners *Fratelli Bosulich.*Port belonging to *Trieste*Nom. Horse Power as per Section 28 *300*Is Refrigerating Machinery fitted *no*Is Electric Light fitted *no.*ENGINES, &c.—Description of Engines *Inverted Direct acting Triple exp<sup>r</sup>* No. of Cylinders *Three* No. of Cranks *Three*Dia. of Cylinders *24. 39 65* Length of Stroke *45* Revs. per minute *40* Dia. of Screw shaft *12.6* Lgth. of stern bush *5.2*Dia. of Tunnel shaft *11.4* Dia. of Crank shaft journals *12* Dia. of Crank pins *12 1/4* Size of Crank webs *16 x 8 1/2* Dia. of thrust shaft under collars *12 1/4* Dia. of screw *17.0* Pitch of screw *16.9* No. of blades *Four* State whether moveable *no* Total surface *88 sq.*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 *4 1/2* Stroke *24* Can one be overhauled while the other is at work *yes.*No. of Donkey Engines *Two* Sizes of Pumps *12 x 10 duplex 4 1/4 x 6* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *Four 3 1/2* In Holds, &c. *Eight 3 1/2 in holds & one 2 1/2 in tunnel well.*No. of bilge injections *one* sizes *6" valve 5 1/2" pipe* connected to condenser, or to circulating pump *is a separate donkey suction fitted in Engine room & size 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 *—*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*What pipes are carried through the bunkers *Bilge* 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 *before launching* Is the screw shaft tunnel watertight *yes*Is it fitted with a watertight door *yes* worked from *top platform*OILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *4,550 sq* Is forced draft fitted *no*No. and Description of Boilers *Two cylindrical multitubular* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs.*Date of test *11.8.1900* Can each boiler be worked separately *yes* Area of fire grate in each boiler *66 sq* No. and Description of safety valves toeach boiler *Two direct spring* Area of each valve *8.3 sq.* Pressure to which they are adjusted *184 lbs* Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork *12* Mean dia. of boilers *15.5* Length *10.6* Material of shell plates *Steel*Thickness *1 1/32* Range of tensile strength *29,632* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap double long. seams 2 1/2 treble.*Diameter of rivet holes in long. seams *1 1/4* Pitch of rivets *9 1/4* Lap of plates or width of butt straps *19 1/2 straps.*Per centages of strength of longitudinal joint rivets *91* Working pressure of shell by rules *181 lbs* Size of manhole in shell *16 x 12*Size of compensating ring *30 x 26 1/2 x 1 1/2* No. and Description of Furnaces in each boiler *Three Deightons* Material *Steel* Outside diameter *50.*Length of plain part *top 19 1/2 bottom 19 1/2* Thickness of plates *3 1/32* Description of longitudinal joint *welded* No. of strengthening rings *—*Working pressure of furnace by the rules *188 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/8* Back *3/8* Top *19 1/32* Bottom *3/4*Pitch of stays to ditto: Sides *7 3/4 x 7 1/2* Back *7 3/4 x 7 1/2* Top *8 x 8*. If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *182 to 190.*Material of stays *Steel* Diameter at smallest part *1 1/2 x 1 1/2* Area supported by each stay *60 to 84 sq* Working pressure by rules *180 to 193* End plates in steam space:Material *Steel* Thickness *1 1/2* Pitch of stays *16 1/4 x 16* How are stays secured *double nuts* Working pressure by rules *183 lbs* Material of stays *Steel*Diameter at smallest part *2 3/4* Area supported by each stay *260 sq.* Working pressure by rules *180 lbs* Material of Front plates at bottom *Steel*Thickness *3/8* Material of Lower back plate *Steel* Thickness *3/8 x 1 1/2* Greatest pitch of stays *12 1/2 to 14 1/4* Working pressure of plate by rules *297 lbs*Diameter of tubes *3 1/2* Pitch of tubes *4 3/8 x 4 3/8* Material of tube plates *Steel* Thickness: Front *3/8 x 1/2* Back *3/8* Mean pitch of stays *16 to 18 1/2*Pitch across wide water spaces *14 1/4* Working pressures by rules *231 lbs* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *9 3/8 x 7 1/4* Length as per rule *32 1/2* Distance apart *8* Number and pitch of Stays in each *Three 5.*Working pressure by rules *207 lbs* Superheater or Steam chest; how connected to boiler *—* Can the superheater be shut off and the boiler workedseparately *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivetholes *—* 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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GRK 352-0208



**DONKEY BOILER—** No. \_\_\_\_\_ Description *Cylindrical multitubular see Glasgow report No 18238.*

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

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* Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_ Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

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

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *a propeller & screw shaft. 12 shaft coupling bolts. 2 top & 2 bottom end bolts & nuts. 2 main bearing do. 6 holding down do. 6 junk ring pins. 6 studs & nuts for cylinder covers. 6 do for valve chest covers. 2 feed & 2 bilge pump valves. 1 feed escape valve & spring. 3 cylinder escape valves & springs. 12 condenser tubes. 1 set safety valve springs. 12 main boiler tubes. 1/2 set fire bars. bolts nuts & iron mounted.*

The foregoing is a correct description,

*Ranston Macdonald* Manufacturer.

Dates of Survey while building \_\_\_\_\_

During progress of work in shops— *1899. Apr 20. 22. 25. 27. 29. Oct 2. 4. 6. 11. 16. Nov 4. 8. 11. 14. 18. 24. 29. Dec 1. 4. 6. 8. 12. 13. 15. 19. 21. 25. 29. 1900.*

During erection on board vessel— *Jan. 9. 11. 15. 17. 19. 22. 25. 30. Feb. 1. 3. 6. 9. 12. 14. 15. 17. 20. 22. 24. 26. Mar. 2. 6. 8. 13. 16. 21. 23. 26. 30. April 4. 6. 11. 14. 18. 20. 24. 25. 30. May 2. 4. 8. 10. 11. 14. 17. 21. 23. 26. 29. 31. June 29. July 2. 3. 16. 17. 18. 19. 20. 23. 24. 25. 26. 28. 31. Aug. 2. 6. 8. 9. 11. 13. 16. 17. 18. 20. 30.*

Total No. of visits *22. 24. 27. 28. 29. 30. 31. Sep 1. — 112 —*

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 & Boilers, have been specially surveyed during construction, workmanship good. Shafts examined when being turned, & found apparently sound. Main steam pipes tested by hydraulic pressure to 400 lbs. tests satisfactory. The Engines & Boilers, are satisfactorily fitted in vessel, and have been tested under steam, they are now in good order & safe working condition, and are in our opinion, eligible to be noted in Register Book. L.M.C. 9.00.*

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 9.00.**

*C.D.*  
*11.9.00.*  
*11.9.00*

The amount of Entry Fee. £ *3* : : : When applied for, *5.9.1900.*

Special . . . . . £ *35* : : : When received, *6.9.1900.*

Donkey Boiler Fee . . . . . £ : : :

Travelling Expenses (if any) £ : : :

Committee's Minute *Glasgow. 10 SEP. 1900*

Assigned

*L.M.C. 9.00.*

MACHINERY CERTIFICATE  
WRITTEN. 17/9/00

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



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