

## REPORT ON MACHINERY.

MON. 6 MAR 1893

Port of *Leith*

Received at London Office

No. in Survey held at *Leith*  
Reg. Book.Date, first Survey *20<sup>th</sup> April '92* Last Survey *2<sup>nd</sup> March 1893*(Number of Vessels *49*)

Built up on the

*S.S. "Horseman"*Tons { Gross *1117.25*  
Net *444.32*Master *J. H. Lacy*Built at *Leith*By whom built *Ramage & Ferguson Ltd.*When built *1892*Engines made at *Leith*By whom made *Ramage & Ferguson Ltd.*when made *1893*Boilers made at *do*By whom made *do*when made *1893*Registered Horse Power *287*Owners *The Western & Brazilian Telegraph Co.*Port belonging to *London*Nom. Horse Power as per Section 28 *287*

## ENGINES, &amp;c.—

Description of Engines *Triple expansion*No. of Cylinders *3*

Diameter of Cylinders *25" x 40" x 62"* Length of Stroke *39"* Revolutions per minute *120* Diameter of Screw shaft *as per rule 11"*  
 Diameter of Tunnel shaft *as per rule 10"* Diameter of Crank shaft journals *11 1/2"* Diameter of Crank pin *11 1/2"* Size of Crank webs *Patent built*  
 Diameter of screw *14'-0"* Pitch of screw *15'-3"* No. of blades *4* State whether moveable *yes* Total surface *58 ft<sup>2</sup>*  
 No. of Feed pumps *two* Diameter of ditto *3 3/4"* Stroke *20"* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *two* Diameter of ditto *3 3/4"* Stroke *20"* Can one be overhauled while the other is at work *yes*  
 No. of Donkey Engines *2* Sizes of Pumps *9" x 7" x 16" twin* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *5" x 2 1/2"* In Holds, &c. *2" x 2 1/2"*

No. of bilge injections *1* sizes *6"* Connected to condenser, or to circulating pump *CR* Is a separate donkey suction fitted in Engine room & size *yes 2 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 *just under*  
 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 *ballast bilge from fore hold* How are they protected *by wood Box casing*  
 Are all pipes, cocks, valves, and pumps in accordance 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 *while building* Is the screw shaft tunnel watertight *Watertight flat*  
 Is it fitted with a watertight door *yes* worked from *Top platform*

## BOILERS, &amp;c.—

(Letter for record *S*)Total Heating Surface of Boilers *5011 ft<sup>2</sup>*

No. and Description of Boilers *two, double ended, cyl. multi.* Working Pressure *150* Tested by hydraulic pressure to *300*  
 Dates of tests *6/7/12/92* Can each boiler be worked separately *yes* Area of fire grate in each boiler *991* No. and Description of safety valves to  
 each boiler *2 direct spring* Area of each valve *12.56* Pressure to which they are adjusted *153 lbs* Are they fitted  
 with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean diameter of boilers *12'-6"*  
 Length *16'-0"* Material of shell plates *steel* Thickness *1 1/2"* Description of riveting: circum. seams *L.D.R.* long. seams *D.B.S. T.R.*  
 Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *7 3/4" & 3 7/8"* Lap of plates or width of butt straps *16 1/2" straps*  
 Per centages of strength of longitudinal joint *92.2* Working pressure of shell by rules *152* Size of manhole in shell *16" x 12"*  
 Size of compensating ring *Two rivets* No. and Description of Furnaces in each boiler *Side. For.* Material *steel* Outside diameter *3'-4 7/8"*  
 Length of plain part *top 6"* Thickness of plates *crown 7/16* Description of longitudinal joint *welded* No. of strengthening rings *none*  
 bottom *8"* bottom *7/16*  
 Working pressure of furnace by the rules *154* Combustion chamber plates: Material *steel* Thickness: Sides *9/16* Back *9/16* Top *9/16* Bottom *9/16 & 5/8"*  
 Pitch of stays to ditto: Sides *7 1/2"* Back *8 1/2"* Top *7 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *151*  
 Material of stays *steel* Diameter at smallest part *1 1/4"* Area supported by each stay *60"* Working pressure by rules *164* End plates in steam space:  
 Material *steel* Thickness *1 5/16"* Pitch of stays *16 1/2" x 16"* How are stays secured *DR. RW* Working pressure by rules *154* Material of stays *steel*  
 Diameter at smallest part *2 1/2"* Area supported by each stay *264"* Working pressure by rules *167* Material of Front plates at bottom *steel*  
 Thickness *7/16"* Material of Lower back plate *steel* Thickness *7/16"* Greatest pitch of stays *7 3/4"* Working pressure of plate by rules  
 Diameter of tubes *2 3/4"* Pitch of tubes *3 7/8"* Material of tube plates *steel* Thickness: Front *7/16"* Back *7/16"* Mean pitch of stays *7 3/4"*  
 Pitch across wide water spaces *14 3/4"* Working pressures by rules *150* Girders to Chamber tops: Material *steel* Depth and  
 thickness of girder at centre *5 1/2" x 1 1/4"* Length as per rule *21 1/2"* Distance apart *7 1/2"* Number and pitch of Stays in each *2 x 7 1/2"*  
 Working pressure by rules *166* 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  
 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—** Description *Cyl. multi. steel.*  
 Made at *Leith* By whom made *Ramage & Ferguson, Lim.* When made *7/12/92* Where fired *Main deck.*  
 Working pressure *100* tested by hydraulic pressure to *200* No. of Certificate *291* Fire grate area *18 1/2* Description of safety valves *direct spring*  
 No. of safety valves *two* Area of each *3.74* Pressure to which they are adjusted *100 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *6'-0"* Length *8'-6"* Material of shell plates *steel* Thickness *7/16*  
 Description of riveting long. seams *D.B.S., D.R.,* Diameter of rivet holes *3/4"* Whether punched or drilled *D.* Pitch of rivets *5 3/8*  
 Lap of plating *7 3/4* Per centage of strength of joint *89* Thickness of *end* plates *7/8* Thickness of *end* plates *1 1/16* Thickness of *end* plates *1 1/16* Thickness of *end* plates *1 1/16*  
 Dia. of stays. *1 1/4"* Diameter of furnace *Top 5'-7" Bottom 5'-7"* Length of furnace *6'-0"* Thickness of furnace plates *7/8* Description of joint *welded & riveted* Thickness of furnace *end* plates *1 1/16* Stayed by *1 1/4" stays 4 1/2 pitch* Working pressure of *sh* *100*  
 Working pressure of furnace by rules *120* Diameter of *uptake* *3"* Thickness of *uptake* plates *7/16* Thickness of *uptake* plates *7/16*

**SPARE GEAR.** State the articles supplied:— *As required by the Rules.*

The foregoing is a correct description

**RAMAGE & FERGUSON Limited**

Manufacturers,

*John*

*aff.*

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

*The machinery of this vessel has been built and Special Survey, fitted on board, tried under steam and found satisfactory, and is now in good working order and strong in our opinion. To be classed and marked + L.M.C. 3 in the Reg. Book.*

*These boilers are fitted with forced draught on the ~~end~~ ash pit system designed by the builders.*

*The approved tracing & forging report are sent herewith.*

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

*M.P. 6-3-93*

Certificate (if required) to be sent to *Leith Office*

The amount of Entry Fee..	£ 2	When applied for.
Special .. .. .	£ 34	2
Donkey Boiler Fee .. .. .	£ -	
Travelling Expenses (if any) £ -		

*W. Darling & Thomas Field*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 7 MAR 1893

MACHINE CERTIFICATE WRITTEN

Assigned

*+ L.M.C. 3, 93*



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