

## REPORT ON MACHINERY.

Port of *Hull*Survey held at *Hull*  
Book.Date, first Survey *Jan. 6<sup>th</sup>*Last Survey *April 18<sup>th</sup> 1903.*(Number of Visits *16*)on the *Screw Steamer "Africa"*Tons { Gross *1032*  
Net *435*Built at *Hull*By whom built *Carlisle & Co. L<sup>td</sup>*When built *1903*Engines made at *Hull*By whom made *Carlisle & Co. L<sup>td</sup>*when made *1903*Boilers made at *do*By whom made *do*when made *1903*

Registered Horse Power

Owners *Bennett & Co. L<sup>td</sup>*Port belonging to *Goole*Horse Power as per Section 28 *233*Is Refrigerating Machinery fitted *No*Is Electric Light fitted *No*ENGINES, &c.—Description of Engines *Triple*No. of Cylinders *3*No. of Cranks *3*

of Cylinders *20, 34, 56* Length of Stroke *39"* Revs. per minute *95* Dia. of Screw shaft *as per rule 11.55*  
 as per rule *10.29* as fitted *11.2* Lgth. of stern bush *4'-0"*  
 of Tunnel shaft *10 7/8"* Dia. of Crank shaft journals *as per rule 10.8* as fitted *10 7/8"* Dia. of Crank pin *11"* Size of Crank webs *15 x 7 1/2"* Dia. of thrust shaft under  
 as fitted *10 7/8"* Dia. of screw *12'-6"* Pitch of screw *16'-0"* No. of blades *4* State whether moveable *No* Total surface *56 sq. ft.*

of Feed pumps *2* Diameter of ditto *3 1/4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

of Bilge pumps *2* Diameter of ditto *3 1/4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

of Donkey Engines *Two* Sizes of Pumps *7x7x8 7x5x8* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Three 2 1/2" dia.* In Holds, &c. *Fore hold one 2 1/2" dia. Main*

*hold two 2 1/2" dia. After hold one 2 1/2" dia. Tunnel one 2 1/2" dia.*

of bilge injections *1* sizes *6"* Connected to condenser, or to circulating pump *pumps a separate donkey suction fitted in Engine room & size Yes 4"*

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 *None*

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*

Are the pipes carried through the bunkers *Fore & main hold suction* How are they protected *Wood casing*

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*

Were stern tube, propeller, screw shaft, and all connections examined in dry dock *Before launching* Is the screw shaft tunnel watertight *Yes*

Is the tunnel fitted with a watertight door *Yes* worked from *Main deck*

BOILERS, &c.—(Letter for record *(S)*) Total Heating Surface of Boilers *3890 sq. ft.* Is forced draft fitted *No*

and Description of Boilers *Two S. C. Cyl<sup>dr</sup> hull* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*

of test *20/3/03* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *57 sq. ft.* No. and Description of safety valves to

boiler *Safety valve (Cockburn's make)* Area of each valve *5.94* Pressure to which they are adjusted *184 lbs* Are they fitted with easing gear *Yes*

Least distance between boilers or uptakes and bunkers or woodwork *11"* Mean dia. of boilers *14'-0"* Length *11'-6"* Material of shell plates *Steel*

Thickness *1/4"* Range of tensile strength *29-32* Are they welded or flanged *✓* Descrip. of riveting: cir. seams *S. R. Lap* long. seams *S. R. S. 5 Rivets*

Number of rivet holes in long. seams *1 1/2"* Pitch of rivets *8 1/2"* Lap of plates or width of butt straps *18 3/4"*

Percentages of strength of longitudinal joint *90* Working pressure of shell by rules *205 lbs* Size of manhole in shell *16 x 12"*

Compensating ring *2'-9" x 2'-6" x 1/4"* No. and Description of Furnaces in each boiler *3 Purvis* Material *Steel* Outside diameter *39 1/4"*

of plain part *top* Thickness of plates *bottom* *17/32"* Description of longitudinal joint *Welded* No. of strengthening rings *✓*

Working pressure of furnace by the rules *192 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *5/8"*

of stays to ditto: Sides *8 1/2" x 8 1/2"* Back *9 1/2" x 7 1/2"* Top *8 1/2" x 8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *182 lbs*

of stays *Steel* Diameter at smallest part *1 1/2"* Area supported by each stay *72.6* Working pressure by rules *194 lbs* End plates in steam space:

Material *Steel* Thickness *1 1/2"* Pitch of stays *16" x 15"* How are stays secured *Nuts* Working pressure by rules *250 lbs* Material of stays *Steel*

at smallest part *2 1/2"* Area supported by each stay *240* Working pressure by rules *216 lbs* Material of Front plates at bottom *Steel*

Thickness *29* Material of Lower back plate *Steel* Thickness *7/8"* Greatest pitch of stays *14 1/4" x 7 1/4"* Working pressure of plate by rules *202 lbs*

of tubes *3 1/2"* Pitch of tubes *4 3/4" x 4 3/4"* Material of tube plates *Steel* Thickness: Front *29/32"* Back *7/8"* Mean pitch of stays *9 1/2"*

across wide water spaces *14"* Working pressures by rules *183 lbs* Girders to Chamber tops: Material *Steel* Depth and

of girder at centre *10" x 15" x 2* Length as per rule *3'-3"* Distance apart *8"* Number and pitch of Stays in each *30 8 1/2"*

Working pressure by rules *195 lbs* Superheater or Steam chest; how connected to boiler *✓* Can the superheater be shut off and the boiler worked

by *✓* Diameter *✓* Length *✓* Thickness of shell plates *✓* Material *✓* Description of longitudinal joint *✓* Diam. of rivet

Pitch of rivets *✓* Working pressure of shell by rules *✓* Diameter of flue *✓* Material of flue plates *✓* Thickness *✓*

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 *Light hull.*  
 Made at *Cull* By whom made *Charles J. B. & Co. Ld.* When made *1903* Where fixed *Stoke Newington*  
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *1256* Fire grate area *15 sq. ft.* Description of safety valves *Direct spring*  
 No. of safety valves *Two* Area of each *3.14* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *8'-0"* Length *6'-0"* Material of shell plates *Steel* Thickness *1/2"* Range of tensile strength *27-32* Descrip. of riveting long. seams *J. R. Lap* Dia. of rivet holes *15/16"* Whether punched or drilled *Drilled* Pitch of rivets *3 1/4"*  
 Lap of plating *6 1/2"* Per centage of strength of joint *71* Thickness of shell crown plates *1/2"* Radius of do. *✓* No. of Stays to do. *✓*  
 Dia. of stays *✓* Diameter of furnace *Top 3'-5" Bottom* Length of furnace *6'-1 1/2"* Thickness of furnace plates *1/2"* Description of joint *Welded* Thickness of furnace crown plates *✓* Stayed by *✓* Working pressure of shell by rules *86 1/2 lbs*  
 Working pressure of furnace by rules *89 lbs* Diameter of *Tube 3"* Thickness of *Plate 11/16"* Thickness of water tubes *✓*

**SPARE GEAR.** State the articles supplied:— *Two top-end and two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Bolts & nuts assorted etc.*  
 The foregoing is a correct description,

*F. J. Saltmarsh & Co.* Manufacturer.  
 SECRETARY.

Dates During progress of work in shops— *1903 Jan. 6, 15, 24, 31, Feb. 11, 19, Mar. 2, 10, 13, 20, 25, 27*  
 of Survey During erection on board vessel— *Apr. 3, 6, 8, 18*  
 while building Total Nos of visits *16*

Is the approved plan of main boiler forwarded herewith *yes*  
 " " " donkey " " " *yes*

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

*The Engines and Boilers of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Society's Rules. They are now in safe working condition and in my opinion eligible to have the notation of +LMC 4, 03, in the Register Book.*

It is submitted that  
 this vessel is eligible for  
 THE RECORD — +LMC 4:03

*R.S.*

*28.4.03.*

*P.P.A.*  
*27.4.03*

The amount of Entry Fee.. £ *2* : - : - When applied for, *22/4/1903*  
 Special .. .. £ *31* : *13* : -  
 Donkey Boiler Fee .. .. £ - : - : - When received, *29.5.03*  
 Travelling Expenses (if any) £ - : - : - *28/5/1903*

*J. Kerr*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 28 APR 1903

Assigned

*+LMC 4 03*

MINISTRY CERTIFICATE  
 WRITTEN.



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 Foundation