

# REPORT ON MACHINERY.

No. 19590

SAT. 16 NOV 1907

Port of Hull

Received at London Office

No. in Survey held at Hull

Date, first Survey July 9<sup>th</sup>

Last Survey Nov 4<sup>th</sup> 1907

(Number of Visits 32)

Reg. Book. 31 Cuff. on the *Hawker BELLEROPHON*

Tons { Gross 184  
Net 88

Master Built at *Sully* By whom built *Bochane & Son*

When built 1907

Engines made at *Hull* By whom made *Chas. S. Holmes & Co.*

when made 1907

Boilers made at *H* By whom made *H*

when made *H*

Registered Horse Power *57* Owners *The Commodore M. F. King & Port belonging to *Guinly**

Nom. Horse Power as per Section 28 *57* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *No*

## ENGINES, &c.—Description of Engines

*Triple*

No. of Cylinders *3* No. of Cranks *3*

Dia. of Cylinders *11 1/2 x 14 1/2 x 32* Length of Stroke *23* Revs. per minute *112* Dia. of Screw shaft *as per rule 6.67* Material of screw shaft *Iron*

Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes* 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 Length of stern bush *31"*

Dia. of Tunnel shaft *as per rule 5.96* Dia. of Crank shaft journals *as per rule 6.25* Dia. of Crank pin *6 1/2* Size of Crank webs *14 x 12* Dia. of thrust shaft under

collars *6 1/2* Dia. of screw *8 1/2* Pitch of Screw *11 1/2* No. of Blades *4* State whether moveable *Yes* Total surface *24 1/2 sq ft*

No. of Feed pumps *1* Diameter of ditto *2* Stroke *23* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *1* Diameter of ditto *2* Stroke *23* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *1* Sizes of Pumps *2 1/2 x 5* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *2-2" (700 sq ft)* In Holds, &c. *2-2" (Shut well main hull)*

No. of Bilge Injections *1* sizes *2 1/2* Connected to condenser, or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine room & size *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 *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 *Water suction* How are they protected *W iron 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*

Dates of examination of completion of fitting of Sea Connections *19.8.07* of Stern Tube *19.8.07* Screw shaft and Propeller *19.8.07*

Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *H*

## BOILERS, &c.—(Letter for record *8*)

Manufacturers of Steel *Steel & Iron Works*

Total Heating Surface of Boilers *9304* Is Forced Draft fitted *No* No. and Description of Boilers *1 SF. Muntz*

Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *25.10.07* No. of Certificate *1605*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *294* No. and Description of Safety Valves to

each boiler *2 Spring loaded* Area of each valve *2.97* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *6"* Mean dia. of boilers *11 1/2* Length *9 1/2* Material of shell plates *Steel*

Thickness *3/32* Range of tensile strength *28-32* Are the shell plates welded or flanged *Yes* Descrip. of riveting: dir. seams *SR Lap*

long. seams *SR S. S. Lap* Diameter of rivet holes in long. seams *1 1/2* Pitch of rivets *7 1/2* Lap of plates or width of butt straps *15"*

Per centages of strength of longitudinal joint rivets *90* Working pressure of shell by rules *184* Size of manhole in shell *17 x 13"*

Size of compensating ring *7 1/2 x 3/4* No. and Description of Furnaces in each boiler *2 Plain* Material *Steel* Outside diameter *3 1/2*

Length of plain part *top 5 1/2* Thickness of plates *bottom 3/32* Description of longitudinal joint *Welded* No. of strengthening rings *—*

Working pressure of furnace by the rules *147* Combustion chamber plates, Material *Steel* Thickness: Sides *3/32* Back *1/2* Top *1/2* Bottom *3/32*

Pitch of stays to ditto: Sides *9 x 9* Back *9 1/2 x 9* Top *8 x 7 1/2* If stays are fitted with nuts or riveted heads *Yes* Working pressure by rules *194*

Material of stays *Steel* Diameter at smallest part *1 1/2* Area supported by each stay *84.3* Working pressure by rules *221* End plates in steam space:

Material *Steel* Thickness *1/2* Pitch of stays *15 x 15* How are stays secured *Sh Shackles* Working pressure by rules *185* Material of stays *Steel*

Diameter at smallest part *1 1/2* Area supported by each stay *225* Working pressure by rules *211* Material of Front plates at bottom *Steel*

Thickness *3/32* Material of Lower back plate *Steel* Thickness *7/8* Greatest pitch of stays *16"* Working pressure of plate by rules *180*

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

Pitch across wide water spaces *16 3/4* Working pressures by rules *180* Girders to Chamber tops: Material *Iron* Depth and

thickness of girder, at centre *8 x 1 1/2* Length as per rule *2-7* Distance apart *7 1/2* Number and pitch of stays in each *308*

Working pressure by rules *187* Superheater or Steam chest; how connected to boiler *Yes* 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

005675-005708-0015

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

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

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Values \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ 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 \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ 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 \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Two top & two bottom end connecting rods & nuts, two main bearing trees, one set of coupling trees & nuts, one set of feed & bilge pump valves, one main & one donkey feed check valve, various bolts & nuts etc.*

The foregoing is a correct description,

PER PRO CHARLES D. HOLMES & Co. Manufacturer.

*H. Allon*

Dates of Survey while building: During progress of work in shops - 1907: - July 9, 20, 24, 26, 30 Aug 9, 19, 20, 28 Sep 5, 9, 13, 14, 16, 17, 21, 25, 28 Oct 1, 5, 7, 9, 15, 18. During erection on board vessel - Oct 19, 23, 25, 27, 30 Nov 1, 2, 7.

Total No. of visits 32. Is the approved plan of main boiler forwarded herewith *Yes.*

Dates of Examination of principal parts: Cylinders 9.10.07 Slides 25.10.07 Covers 15.10.07 Pistons 18.10.07 Rods 18.10.07 Connecting rods 18.10.07 Crank shaft 19.10.07 Thrust shaft 19.10.07 Tunnel shafts ✓ Screw shaft 24.7.07 Propeller 24.7.07 Stern tube 24.7.07 Steam pipes tested 1.11.07 Engine and boiler seatings 19.8.07 Engines holding down bolts 1.11.07 Completion of pumping arrangements 7.11.07 Boilers fixed 1.11.07 Engines tried under steam 7.11.07 Main boiler safety valves adjusted 7.11.07 Thickness of adjusting washers *F 5/8" A 1/2"*

Material of Crank shaft *Iron* Identification Mark on Do. *385 548 14.10.07* Material of Thrust shaft *Iron* Identification Mark on Do. *385 548 14.10.07*

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. *385 548 24.7.07*

Material of Steam Pipes *Solid drawn copper* Test pressure *360 lb.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery & trim of this vessel have been constructed under Special Survey, and of good material & workmanship, & have been fitted & secured on board in accordance with the Rules. They are now in good working condition, & eligible in my opinion to have the Notation of L. M. C. 11.07 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. L. M. C. 11.07.

*J.W.G.* 16-11-07  
*J.W.G.* 16.11.07

The amount of Entry Fee... £ 1 : : : When applied for, 15/11/1907  
Special... £ 8 : 11 : :  
Donkey Boiler Fee... £ - : - : :  
Travelling Expenses (if any) £ - : 4 : : When received, 29/11/07

*John W. Gwynne*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUES. 19 NOV 1907  
Assigned + *L.M.C. 11.07*



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

MACHINE WRITTEN CERTIFICATE