

REPORT ON MACHINERY.

No. 19590

SAT. 16 NOV 1907

Port of Hull

Received at London Office

Date, first Survey July 9thLast Survey Nov 7th 1907

No. in Survey held at Hull

Reg. Book.

31 Supp. on the

Hawker BELLEROPHON

(Number of Visits 32)

Gross 184

Net 88

Master

Built at Selby

By whom built Lockhart & Son

When built 1907

Engines made at Hull

By whom made Chas. S. Holmes & Co.

when made 1907

Boilers made at Hull

By whom made

when made

Registered Horse Power

Owners The Cornhill & Co. Ltd. Port belonging to Grimsby

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

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders $11\frac{1}{2} \times 14\frac{1}{2} \times 32$ 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 6.5 Size of Crank webs 11.5 Dia. of thrust shaft under

collars 6.5 Dia. of screw 8.5 Pitch of Screw 11.5 No. of Blades 4 State whether moveable No Total surface 24.4

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 22.5 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2-2 (700, 400) In Holds, &c. 2-2 (Shut water main line)

No. of Bilge Injections 1 sizes 2.5 Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2.5

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. or C. 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

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 S.F. 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 3.97 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 11.6 Length 9.6 Material of shell plates Steel

Thickness 3/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: dir. seams 5/8 Lap

long. seams 5/8 S. S. Rivet Diameter of rivet holes in long. seams 1/32 Pitch of rivets 7/8 Lap of plates or width of butt straps 15

Per centages of strength of longitudinal joint rivets 90 plate 85 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 5.7 bottom 5.2 Thickness of plates crown 3/4 Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 147 Combustion chamber plates Material Steel Thickness: Sides 3/8 Back 1/2 Top 1/2 Bottom 3/8

Pitch of stays to ditto: Sides 9 x 9 Back 9 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 84.5 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 5/8 Shack 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 3/8 Greatest pitch of stays 16 Working pressure of plate by rules 180

Diameter of tubes 3 1/2 Pitch of tubes 15 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 Steel 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

005715-005708-0015

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
 Valves 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
 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 tools & nuts etc.

The foregoing is a correct description,

PER PRO CHARLES D. HOLMES & Co.

Manufacturer.

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. 29. 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 $F\frac{5}{8} \times A\frac{1}{2}$
 Material of Crank shaft Iron Identification Mark on Do. 355 S.H.G. 19.10.07 Material of Thrust shaft Iron Identification Mark on Do. 355 S.H.G. 19.10.07
 Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts Iron Identification Marks on Do. 355 S.H.G. 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, are of good materials & 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.H.C. 16-11-07

J.C. 16.11.07

The amount of Entry Fee. £ 1 : : : When applied for, 15/11/1907
 Special £ 8 : 11 : : When received, 29/11/07
 Donkey Boiler Fee £ - : - : :
 Travelling Expenses (if any) £ - : 4 : : : 30/11/07

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

MACHINE WRITTEN