

## REPORT ON MACHINERY.

No. 19775

Port of Hull

Received at London Office FRI. 31 JAN 1908

No. in Survey held at Hull &amp; Goole

Date, first Survey June 5/07 Last Survey 24<sup>th</sup> Jan 1908

Reg. Book.

28 luff on the Steel S. K. Willet

(Number of Visits 52)

Master Built at Goole

By whom built Goole S. &amp; R. Co. Ltd

Gross 199  
Tons Net 63  
When built 1908

Engines made at } By whom made } Messrs when made 1908

Boilers made at } Hull By whom made } Charles C. Ltd when made 1908

Registered Horse Power Owners Kelkall, Brothers &amp; Beeching Co. Ltd Port belonging to Hull

Nom. Horse Power as per Section 28 55 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 12" ~ 21" ~ 33" Length of Stroke 21" Revs. per minute 105 Dia. of Screw shaft as per rule 6 7/8" Material of Steel as fitted 7 1/4" screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 2 separate liners 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 If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 35 1/2"

Dia. of Tunnel shaft as per rule 5 7/8" Dia. of Crank shaft journals as per rule 6 1/2" Dia. of Crank pin 6 1/2" Size of Crank webs 12 1/2" x 4 1/2" Dia. of thrust shaft under collars 6 1/2" Dia. of screw 8" ~ 9" Pitch of Screw 9" ~ 10" x 10" ~ 6" No. of Blades 4 State whether moveable No Total surface 26 sq ft

No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work —

No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work —

No. of Donkey Engines One Sizes of Pumps 4 1/2" x 2 3/4" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room One 2", One 2 1/2" In Holds, &c. One 2" to hold, two 2" to tanks and ejector suction from all parts.

No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump pump 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 0

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 Tank hold suction 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

Dates of examination of completion of fitting of Sea Connections 20.1.08 of Stern Tube 20.1.08 Screw shaft and Propeller 20.1.08

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door worked from

**BOILERS, &c.**—(Letter for record 8.) Manufacturers of Steel Messrs Beardmore Sons

Total Heating Surface of Boilers 900 sq ft Is Forced Draft fitted No No. and Description of Boilers One Cyl. Multi

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 13.12.07 No. of Certificate 1618

Can each boiler be worked separately Area of fire grate in each boiler 24 1/2 sq ft No. and Description of Safety Valves to each boiler Two Spring Area of each valve 3.14 sq in Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 11 1/2" Mean dia. of boilers 10" ~ 6" Length 9' ~ 6" Material of shell plates Steel

Thickness 27/32" Range of tensile strength 28.32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D. long. seams D.B.S.D.R. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 5 3/8" Lap of plates or width of butt straps 1 1/2"

Per centages of strength of longitudinal joint rivets 86.7 plate 80.2 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 30" x 28" x 37/32" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 2' ~ 10"

Length of plain part top 6" ~ 4 1/2" Thickness of plates crown 31/32" Description of longitudinal joint Welded No. of strengthening rings 0 bottom 31/32"

Working pressure of furnace by the rules 176 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 3/4" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 8 1/2" ~ 8 1/2" Back 10" ~ 9" Top 8 1/2" ~ 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 164 lbs

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 72.25 sq in Working pressure by rules 195 lbs End plates in steam space:

Material Steel Thickness 7/8" Pitch of stays 15" ~ 15" How are stays secured D. Nuts Working pressure by rules 161 lbs Material of stays Steel

Diameter at smallest part 2 5/8" Area supported by each stay 225 sq in Working pressure by rules 195 lbs Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 14" ~ 9" Working pressure of plate by rules 191 lbs

Diameter of tubes 3" Pitch of tubes 4 5/8" ~ 4 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 1 1/8" Mean pitch of stays 9"

Pitch across wide water spaces 14" Working pressures by rules 160 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 1/4" x 1 1/2" Length as per rule 2' ~ 2" Distance apart 7 1/2" Number and pitch of stays in each 2 ~ 8 1/2"

Working pressure by rules 246 lbs Superheater or Steam chest; how connected to boiler 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

Noles 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



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 | Rivets<br>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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each air circulating feed and bilge pump valves, and a quantity of assorted bolts nuts etc

The foregoing is a correct description.

*F. J. Palethorpe* Manufacturer.

|                                |                                   |  |
|--------------------------------|-----------------------------------|--|
| Dates of Survey while building | During progress of work in shops— | 1907: Jan 5. 12. 17. 19. 22. 26. 29 July 4. 8. 17. 23. 30 Aug 20. 23. 30 Sep 4. 9. 12. 19. 24  |
|                                | During erection on board vessel—  | Oct 10. 18. 28. Nov 1. 8. 18. 21. 22. 26. 27 Dec 2. 3. 4. 6. 7. 12. 13. 16. 18. 19. 20. 1908: Jan 1. 2. 3. 6. 7. 10. 15. 17. 20 Jan 23. 24 |
|                                | Total No. of visits               | 52   |

Is the approved plan of main boiler forwarded herewith *Not forwarded*

“ “ “ donkey “ “ “ *Not forwarded*

Dates of Examination of principal parts—Cylinders 13. 12. 07 Slides 6. 1. 08 Covers 19. 9. 07 Pistons 12. 9. 07 Rods 19. 9. 07

Connecting rods 19. 9. 07 Crank shaft 27. 11. 07 Thrust shaft 3. 1. 08 Tunnel shafts — Screw shaft 31. 12. 07 Propeller 31. 12. 07

Stern tube 31. 12. 07 Steam pipes tested 3. 1. 08 Engine and boiler seatings 1. 1. 08 Engines holding down bolts 7. 1. 08

Completion of pumping arrangements 24. 1. 08 Boilers fixed 7. 1. 08 Engines tried under steam 24. 1. 08

Main boiler safety valves adjusted 7. 1. 08 Thickness of adjusting washers 1/4" 1/4"

Material of Crank shaft *Steel* Identification Mark on Do. 1974 ATG Material of Thrust shaft *Steel* Identification Mark on Do. 107 9AH

Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts *Steel* Identification Marks on Do. 107 9AH

Material of Steam Pipes *Solid drawn Copper* Test pressure 400 lbs □

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boiler of this vessel have been built under special survey in accordance with the Rules, the materials and workmanship are good, the boiler tested by hydraulic pressure, and with the engines secure on board, and tested under steam, they are now in good order, and safe working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of L.M.C. 1.08 in the Register Book*

*These engines and boiler are similar to those fitted on the S. K. Fern. Hull Report No. 19510.*

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 1.08.

|                                |             |                             |
|--------------------------------|-------------|-----------------------------|
| The amount of Entry Fee..      | £ 1 : . . . | When applied for, 30/1 1908 |
| Special .. .. .                | £ 8 : 5 : . |                             |
| Donkey Boiler Fee .. .         | £ . : . . . | When received, 18/3/08      |
| Travelling Expenses (if any) £ | . : 12 : 8  |                             |

Committee's Minute TUES. 4 FEB 1908

Assigned + L.M.C. 1.08

*James Barclay*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



These pages are to be filled in by the Surveyor.

Signal Letter

Official Number

124800

No., Date, and

Whether British or Foreign Built

British

Number of Decks

Number of Masts

Rigged

Stern

Build

Galleries

Head

Framework and

vessel

Number of Buoy

Number of water

and their capacity

Total to quarter

at side amidships

No. of Engines.

Recd. by

One

set

Number of Iron or Pressure

Under Tonnage

Closed-in spaces

Space or space

Poop

Forecastle

Round House

Other closed-in

Spaces for machinery

Section 78 (2)

1894, if required

Gross Tonnage

Deductions, as per

Register

Name of Vessel

No. of Owners

Name, Residence

*George Barclay*

*John Barclay*

Dated 1/2/08

W B & L (£30)