

REPORT ON MACHINERY.

No. 19967

Port of Hull

Received at London Office

WED. 15 APR 1908

No. in Survey held at Hull & Goole Date, first Survey June 5th 1907 Last Survey 6th April 1908
 Reg. Book. Goole on the Steel S. Co. Mastwing (Number of Visits 50) Tons { Gross 199 Net 63
 Master Goole Built at Goole By whom built Goole S. B. & Co. Ld When built 1908
 Engines made at } By whom made } when made }
 Boilers made at } Hull By whom made } Messrs Earle's Ld when made } 1908
 Registered Horse Power 55 Owners Kelsall Bros & Buchinghams (H. A. Kelsall mfr) Port belonging to Hull
 Nom. Horse Power as per Section 28 55 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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" Material of screw shaft Steel
 as fitted 7.4"
 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 Yes If two
 liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 35.2"
 Dia. of Tunnel shaft as per rule 5.74" Dia. of Crank shaft journals as per rule 6" Dia. of Crank pin 6.2" Size of Crank webs 12.4" x 4.2" Dia. of thrust shaft under
 collars 6.2" Dia. of screw 8.9" Pitch of Screw 9.6" to 10.6" No. of Blades 4 State whether moveable No Total surface 26 sq ft
 No. of Feed pumps 1 Diameter of ditto 2.2" Stroke 10" Can one be overhauled while the other is at work
 No. of Bilge pumps 1 Diameter of ditto 2.2" Stroke 10" Can one be overhauled while the other is at work
 No. of Donkey Engines One Sizes of Pumps 4.2" x 2.74" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room One 2", One 2.2" In Holds, &c. One 2" to hold, two 2" to tank
and ejector suction from all parts
 No. of Bilge Injections 1 sizes 3.2" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 2.2"
 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 hold tank suction How are they protected wood & 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 14.3.08 of Stern Tube 14.3.08 Screw shaft and Propeller 14.3.08
 Is the Screw Shaft Tunnel watertight No Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel 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 31.1.08 No. of Certificate 1629
 Can each boiler be worked separately Yes Area of fire grate in each boiler 24.2 sq ft No. and Description of Safety Valves to
 each boiler Two spring Area of each valve 3.14 sq ft 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 12" Mean dia. of boilers 10.6" Length 9.6" Material of shell plates Steel
 Thickness 27" Range of tensile strength 28 - 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. O.
 long. seams D. B. S. D. R. Diameter of rivet holes in long. seams 1.76" Pitch of rivets 5.3" Lap of plates or width of butt straps 11.2"
 Per centages of strength of longitudinal joint rivets 86.7 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"
 plate 80.2
 Size of compensating ring 30" x 28" x 32" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 2'-10"
 Length of plain part top 6" - 4.2" Thickness of plates crown 21" Description of longitudinal joint Welded No. of strengthening rings 0
 bottom 32" bottom 32" Working pressure of furnace by the rules 176 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 3/8" Top 5/8" Bottom 5/8"
 Pitch of stays to ditto: Sides 8.2" x 8.2" Back 10" x 9" Top 8.2" x 7.2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 164 lbs
 Material of stays Steel Diameter at smallest part 1.2" 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" x 15" How are stays secured D. Nuts Working pressure by rules 161 lbs Material of stays Steel
 Diameter at smallest part 2.56" 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" x 9" Working pressure of plate by rules 191 lbs
 Diameter of tubes 3" Pitch of tubes 4.5" x 4.3/8" Material of tube plates Steel Thickness: Front 7/8" Back 13/16" 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 7.4" x 1.2" Length as per rule 26" Distance apart 7.2" Number and pitch of stays in each 2 - 8.2"
 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
 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

If not, state whether, and when, one will be sent

To a Report also sent on the Hull of the Ship

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 _____ 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, 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 - - SECRETARY 1907 - Jun 5, 12, 17, 19, 22, 26, 29, Jul 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, 21, 26, 27, Dec 4, 13, 16, 20, 1908 - Jan 6, 14, 21, 27, 30, 31, Feb 6, 10, 20, Mar 2, 9, 14, 17, 19, 20, 26, 30
 Total No. of visits 50

Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts—Cylinders 14.1.08 Slides 6.2.08 Covers 6.2.08 Pistons 14.1.08 Rods 14.1.08
 Connecting rods 14.1.08 Crank shaft 6.2.08 Thrust shaft 19.2.08 Tunnel shafts _____ Screw shaft 19.2.08 Propeller 19.2.08
 Stern tube 6.1.08 Steam pipes tested 17.2.08 Engine and boiler seatings 14.3.08 Engines holding down bolts 20.3.08
 Completion of pumping arrangements 6.4.08 Boilers fixed 20.3.08 Engines tried under steam 6.4.08
 Main boiler safety valves adjusted 20.3.08 Thickness of adjusting washers $\frac{5}{16}$ " $\frac{5}{16}$ "
 Material of Crank shaft *Steel* Identification Mark on Do. *1109AH* Material of Thrust shaft *Steel* Identification Mark on Do. *1109AH*
 Material of Tunnel shafts _____ Identification Marks on Do. _____ Material of Screw shafts *Steel* Identification Marks on Do. *1109AH*
 Material of Steam Pipes *Solid drawn Copper* Test pressure *400 lbs per sq inch*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boiler of this vessel have been constructed under special survey the materials and workmanship are good. The boiler tested by hydraulic pressure, and with the engines fitted and secured on board, they are now in good order & safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of $\frac{1}{2}$ L.M. 6.4.08 in the Register Book.*

These engines and boilers are similar to those fitted on the Willet, Hull Report 2° 19775

It is submitted that this vessel is eligible for THE RECORD. $\frac{1}{2}$ L.M.C. 4.08. ELEC. LIGHT.

The amount of Entry Fee..	£ 1 : . : .	When applied for.
Special	£ 8 . 5 : .	14.4.1908
Donkey Boiler Fee .. .	£ : : .	When received,
Travelling Expenses (if any) £	: 6 4	7.7.08

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

Committee's Minute

THUR. 16 APR 1908

Assigned

+ L.M.C. 4.08

MACHINERY CERTIFICATE WRITTEN.



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Hull

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