

REPORT ON MACHINERY.

No. 19510.

THUR. 17 OCT 1907

Port of Hull

Received at London Office

19

No. in Survey held at Hull Date, first Survey May 29th Last Survey 3rd Oct 1907
 Reg. Book. 23 Suff on the Steel S. K. Yern (Number of Visits 29)
 Master Goole Built at Goole By whom built Goole S. B. L. Co. Ltd When built 1907
 Engines made at } By whom made } Charles G. Ltd when made 1907
 Boilers made at } Hull By whom made } Charles G. Ltd when made 1907
 Registered Horse Power 55 Owners Kelsall Brothers & 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

Gross 199
 Net 63
 Tons

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 7 3/4" Material of screw shaft Steel
 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 Two 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 5 7/8" Dia. of Crank shaft journals 6" Dia. of Crank pin 6 1/2" Size of Crank webs 12 1/4" x 4 1/2" Dia. of thrust shaft under collars 6 1/2" 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 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 1 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" injectors In Holds, &c. one 2" to hold, two 2" to tank.
 No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump Yes 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 None
 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 16.8.07 of Stern Tube 16.8.07 Screw shaft and Propeller 16.8.07
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Messrs Beardmore & Co. Ltd Eng. S. E. Multitubular
 Total Heating Surface of Boiler 900 sq ft Is Forced Draft fitted No No. and Description of Boilers Two plain
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 9.8.07 No. of Certificate 1581
 Can each boiler be worked separately Yes 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 162 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 11" Mean dia. of boilers 10'-6" Length 9'-6" Material of shell plates Steel
 Thickness 3/32" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap D.
 long. seams D. B. S. D. B. Diameter of rivet holes in long. seams 1 1/16" 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 Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"
 plate 80.2 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 2 1/2" Description of longitudinal joint Welded No. of strengthening rings 0
 bottom 3 1/2" Working pressure of furnace by the rules 176 lbs Combustion chamber plates: Material S Thickness: Sides 5/8" Back 3/16" Top 5/8" Bottom 5/8"
 Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 10" x 9" Top 8 1/2" x 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" x 15" How are stays secured D. Nuts Working pressure by rules 161 lbs Material of stays Steel
 Diameter at smallest part 2 5/16" Area supported by each stay 225 sq in Working pressure by rules 195 lbs Material of Front plates at bottom Steel
 Thickness 5/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 14" x 9" Working pressure of plate by rules 191 lbs
 Diameter of tubes 3" Pitch of tubes 4 5/8" x 4 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 1 1/16" 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 1/2" x 1 1/2" Length as per rule 2'-2" Distance apart 7 1/2" Number and pitch of stays in each Two 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 Diam. of rivet holes 1 1/16" Thickness of shell plates 5/8" Material Steel Description of longitudinal joint Welded
 Pitch of rivets 5 3/8" Working pressure of shell by rules 160 lbs Diameter of flue 14" Material of flue plates Steel Thickness 5/8"
 If stiffened with rings Distance between rings Working pressure by rules 160 lbs End plates: Thickness 5/8" How stayed Welded
 Working pressure of end plates 160 lbs Area of safety valves to superheater 164 lbs Are they fitted with easing gear Yes

16 Report also sent on the Hull & the engine

2021
 Lloyd's Register
 Foundation
 W1596 0097

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 + nuts, one set each 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,

Manufacturer. _____

Dates of Survey while building { During progress of work in shops - 1907 - May 29, Jun 5, 12, 17, 19, 22, 26, 29, Jul 4, 8, 17, 23, 24, 30, Aug 9, 16, 20, 24, 30, Sep 4.
 { During erection on board vessel - Sep 11, 12, 16, 17, 18, 23, 26, Oct 1, 3.
 Total No. of visits 29.

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *5.9.07* Slides *5.9.07* Covers *4.9.07* Pistons *4.9.07* Rods *5.9.07*
 Connecting rods *5.9.07* Crank shaft *23.7.07* Thrust shaft *30.7.07* Tunnel shafts _____ Screw shaft *16.8.07* Propeller *16.8.07*
 Stern tube *16.8.07* Steam pipes tested *16.9.07* Engine and boiler seatings *9.9.07* Engines holding down bolts *18.9.07*
 Completion of pumping arrangements *3.10.07* Boilers fixed *18.9.07* Engines tried under steam *3.10.07*
 Main boiler safety valves adjusted *18.9.07* Thickness of adjusting washers $\frac{1}{4}$ " $\frac{5}{16}$ "
 Material of Crank shaft *Steel* Identification Mark on Do. *1916* Material of Thrust shaft *Steel* Identification Mark on Do. *96*
 Material of Tunnel shafts _____ Identification Marks on Do. _____ Material of Screw shafts *Steel* Identification Marks on Do. *96*
 Material of Steam Pipes *Solid drawn Copper* Test pressure *400 lbs per inch*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are good. The boiler tested by hydraulic pressure, and with the engines, fitted & fastened on board, & tried 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 $\frac{1}{2}$ L.M.C. 10.07 in the Register Book.*

It is submitted that this vessel is eligible for **THE RECORD.** *L.M.C. 10.07.*

J.C. 17.10.07

The amount of Entry Fee. £ 1 : : : When applied for. *16/10 1907*
 Special £ 8 : 5 : : :
 Donkey Boiler Fee £ : : : : When received. *27/10 1907*
 Travelling Expenses (if any) £ : : 12 : 8 : : :
 Committee's Minute **FRI, 18 OCT 1907**

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

Assigned *+ L.M.C. 10.07*



Certificate (if required) to be sent to _____

The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINELY WRITTEN CERTIFICATE