

REPORT ON MACHINERY.

No. 22659

MUN. 27 JUN 1910

Port of Hull

Received at London Office

19

No. in Survey held at Hull Date, first Survey Sep. 1/09 Last Survey June 10th 1910
 Reg. Book. 35 Supp. on the Steel Se. Sr. Dewsbury (Number of Visits 82)
 Master Hull Built at Hull By whom built Messrs Earles & Co. Ltd Tons { Gross 1631
 Engines made at } Hull By whom made } Messrs when made 1910
 Boilers made at } Hull By whom made } Earles & Co. Ltd when made 1910
 Registered Horse Power 309 Owners Great Central Railway Port belonging to Grimstby
 Nom. Horse Power as per Section 28 309 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 22" - 35" - 60" Length of Stroke 42" Revs. per minute 90 Dia. of Screw shaft 12 1/2" 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 One length 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 — Length of stern bush 5'-0"

Dia. of Tunnel shaft 11.1" Dia. of Crank shaft journals 11.65" Dia. of Crank pin 12.5" Size of Crank webs 18 1/2" x 6" Dia. of thrust shaft under collars 12.125" Dia. of screw 14'-0" Pitch of Screw 16'-9" No. of Blades 4 State whether moveable No Total surface 62 sq

No. of Feed pumps 2 Diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Four Sizes of Pumps 2 1/2" x 7" + 2 1/2" x 7" + 2 1/2" x 7" + 2 1/2" x 7" No. and size of Suctions connected to both Bilge and Donkey pumps 2 1/2" x 7"

In Engine Room Three 2 1/2" x 7" + One 3" x 7" In Holds, &c. One 2 1/2" in fore peak, One 5 1/2" in 2nd tank, Two 2 1/2" in 1st tank, Two 4 1/2" in 2nd tank, Two 2 1/2" in 2nd tank, Two 2 1/2" in 2nd tank, Three 2 1/2" in 2nd tank, One 2 1/2" in aft peak tank

No. of Bilge Injections 1 sizes 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3"

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 10.6.10 of Stern Tube 10.6.10 Screw shaft and Propeller 10.6.10

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record (a))

Manufacturers of Steel Messrs W. Beardmore & Co.

Total Heating Surface of Boilers 5540 sq Is Forced Draft fitted No No. and Description of Boilers Two 6 ft. Mult. Single Ended

Working Pressure 180 lbs Tested by hydraulic pressure to 260 lbs Date of test 14.3.1910 No. of Certificate 1735

Can each boiler be worked separately Yes Area of fire grate in each boiler 72 sq No. and Description of Safety Valves to each boiler Two Spring

Area of each valve 14.19 sq Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 16'-0" Length 11'-8 1/2" Material of shell plates Steel

Thickness 1 1/4" Range of tensile strength 29.32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2.0

long. seams 0.0.5.1.6 Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 2 1/2"

Per centages of strength of longitudinal joint rivets 92.5 Working pressure of shell by rules 211 lbs Size of manhole in shell 20" x 15 1/2"

Size of compensating ring 7" x 1 1/2" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 4'-4"

Length of plain part top — bottom — Thickness of plates crown 2 1/2" bottom 2 1/2" Description of longitudinal joint Welded No. of strengthening rings —

Working pressure of furnace by the rules 205 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/2" Back 1 1/2" Top 1 1/2" Bottom 1 1/2"

Pitch of stays to ditto: Sides 8" x 8" Back 7" x 8 1/2" Top 7 1/2" x 8" If stays are fitted with nuts or riveted heads 7 nuts Working pressure by rules 255 lbs

Material of stays Iron Diameter at smallest part 1 1/2" Area supported by each stay 78.75 sq Working pressure by rules 197 lbs End plates in steam space:

Material Steel Thickness 1 1/2" Pitch of stays 15" x 15" How are stays secured 0.7 nuts Working pressure by rules 267 lbs Material of stays Iron

Diameter at smallest part 2 1/2" Area supported by each stay 225 sq Working pressure by rules 207 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 15" x 12" Working pressure of plate by rules 186 lbs

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

Pitch across wide water spaces 14 1/2" Working pressures by rules 201 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2" x 1 3/4" Length as per rule 2'-11" Distance apart 7 1/2" Number and pitch of stays in each Three 8"

Working pressure by rules 290 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 —

002630-002638-0113

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. *See Separate report for the donkey boiler.*
 Description *See Separate report for the donkey boiler.*
 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
 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 nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set each air, feed, bilge pump valves, a quantity of assorted bolts nuts etc. one single crank shaft, one screw shaft, one pair of end brasses, one pair bottom end brasses, etc etc.*
FOR EARLE'S SHIPBUILDING & ENGINEERING CO. LIMITED.
 The foregoing is a correct description, *one pair*
J. J. Salethorpe Manufacturer.
 SECRETARY

Dates of Survey while building { During progress of work in shops - *1909: Sep. 1, 9, 14, 15, 16, 22, 29, Oct. 7, 9, 16, 21, 22, 28, 30, Nov. 2, 5, 12, 15, 17, 19, 23, 25, Dec. 1, 4, 7, 11, 14, 16, 22, 24, 30, 1910: Jan. 5, 8, 14, 18, 20, 25, 27, Feb. 3, 7, 8, 10, 14, 16, 17, 22, 23, 28, Mar. 2, 7, 9, 14, 16, 21, Apr. 4, 7, 8, 13, 14, 18, 20, 21, 22, 25, 27, Apr. 27, 28, 29, May 4, 6, 9, 10, 11, 12, 25, 26, 30, Jun. 2, 4, 6, 9, 10.*
 During erection on board vessel -
 Total No. of visits *82*
 Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders *15 11 09* Slides *28 10 09* Covers *30 10 09* Pistons *15 11 09* Rods *22 10 09*
 Connecting rods *12 11 09* Crank shaft *25 11 09* Thrust shaft *4 4 10* Tunnel shafts *21 4 10* Screw shaft *16 3 10* Propeller *4 4 10*
 Stern tube *4 4 10* Steam pipes tested *4 5 10* Engine and boiler seatings *18 4 10* Engines holding down bolts *12 5 10*
 Completion of pumping arrangements *10 6 10* Boilers fixed *12 5 10* Engines tried under steam *10 6 10*
 Main boiler safety valves adjusted *12 5 10* Thickness of adjusting washers *3/8" - 13/32" - 10/32" - 10/32"*
 Material of Crank shaft *Steel* Identification Mark on Do. *53D.F.C.* Material of Thrust shaft *Steel* Identification Mark on Do. *163D.F.C.*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *53D.F.C.* Material of Screw shafts *Steel* Identification Marks on Do. *163D.F.C.*
 Material of Steam Pipes *Steel* Test pressure *360 lbs per sq. inch*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines and boilers of this vessel have been constructed under special survey in accordance with the Rules, the materials and workmanship are good. The boilers tested by hydraulic pressure, and with the engines secured 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. 6.10 in the Register Book*

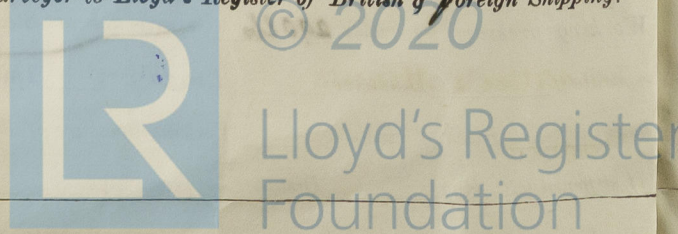
It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.10.

The amount of Entry Fee. £ 3 : - : - When applied for, Special £ 35 : 9 : - 15-6-1910
 Donkey Boiler Fee £ - : - : - When received, 2-7-10
 Travelling Expenses (if any) £ - : - : -

Committee's Minute *10th. 28 JUN 1910*

Assigned *+ L.M.C. 6.10*

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



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