

REPORT ON MACHINERY.

No. 1916.6.

Port of Hull

Received at London Office WED, 10 JUL 1907

No. in Survey held at Hull Date, first Survey Mar 21st Last Survey 24 July 1907
 Reg. Book. 560 on the Steel S. K. Celtic (Number of Visits 28)
 Master Built at Hull By whom built Messrs Earle's Co Ltd When built 1907
 Engines made at } Hull By whom made } Messrs Earle's Co Ltd when made 1907
 Boilers made at } Hull By whom made } Earle's Co Ltd when made 1907
 Registered Horse Power 80 Owners Grimby Steam Fishing Co Ltd Port belonging to Grimby
 Nom. Horse Power as per Section 28 80 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

Tons { Gross 264
 Net 111

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 12³/₄ - 22 - 36 Length of Stroke 24 Revs. per minute 110 Dia. of Screw shaft 7³/₄ 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 2'-10¹/₂'
 Dia. of Tunnel shaft 6⁵/₈ as per rule 6⁵/₈ Dia. of Crank shaft journals 4¹/₂ as per rule 4¹/₂ Dia. of Crank pin 4¹/₂ Size of Crank webs 14 x 4¹/₂ Dia. of thrust shaft under collars 7¹/₂ Dia. of screw 9'-0" Pitch of Screw 11'-0" + 12'-0" No. of Blades 4 State whether moveable No Total surface 27 sq
 No. of Feed pumps 1 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work —
 No. of Bilge pumps 1 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work —
 No. of Donkey Engines one Sizes of Pumps 6" x 3" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps —
 In Engine Room one 2" + one 3" In Holds, &c. one 2" from aft slush well, one 2" from forward slush well, one 2" from below fishroom floor, one 2" from fore Comp.
 No. of Bilge Injections 3 sizes 3" Connected to condenser, or to circulating 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 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 3.7.07 of Stern Tube 3.7.07 Screw shaft and Propeller 3.7.07
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel W. Beardmore Co
 Total Heating Surface of Boilers 1400 sq Is Forced Draft fitted No No. and Description of Boilers One Cyl. Multi
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 14.6.07 No. of Certificate 1568
 Can each boiler be worked separately — Area of fire grate in each boiler 37.2 sq No. and Description of Safety Valves to each boiler Two Spring Area of each valve 4.9 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 12" Int. Mean dia. of boilers 13'-0" Length 10'-6" Material of shell plates Steel
 Thickness 1³/₂" Range of tensile strength 28 - 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. D. long. seams D. B. S. J. R. Diameter of rivet holes in long. seams 1¹/₆" Pitch of rivets 7¹/₂" Lap of plates or width of butt straps 15¹/₂"
 Per centages of strength of longitudinal joint rivets 84.9 plate 85.0 Working pressure of shell by rules 185 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 31" x 28" x 1³/₂" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 3'-8¹/₂"
 Length of plain part top 5'-9" bottom 5'-9" Thickness of plates crown 4.9" bottom 6.4" Description of longitudinal joint Welded No. of strengthening rings Two
 Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 5" Back 5¹/₂" Top 5" Bottom 5"
 Pitch of stays to ditto: Sides 9" x 8" Back 9¹/₂" x 8¹/₂" Top 9" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 186 lbs
 Material of stays Steel Diameter at smallest part 1¹/₂" Area supported by each stay 76.2 sq Working pressure by rules 185 lbs End plates in steam space: Material Steel Thickness 1¹/₂" Pitch of stays 17" x 19" How are stays secured into end plates Working pressure by rules 185 lbs Material of stays Steel
 Diameter at smallest part 2¹/₆" Area supported by each stay 306 sq Working pressure by rules 211 lbs Material of Front plates at bottom Steel
 Thickness 1⁵/₁₆" Material of Lower back plate Steel Thickness 7¹/₈" Greatest pitch of stays 4¹/₂" x 8¹/₂" Working pressure of plate by rules 195 lbs
 Diameter of tubes 3¹/₂" Pitch of tubes 4¹/₂" x 5" Material of tube plates Steel Thickness: Front 14¹/₂" Back 13¹/₁₆" Mean pitch of stays 9¹/₈"
 Pitch across wide water spaces 14¹/₂" Working pressures by rules 181 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" x 1¹/₄" Length as per rule 3'-0" Distance apart 9" Number and pitch of stays in each 3 - 8"
 Working pressure by rules 239 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 —

See Report also sent on the title of this report.

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 each top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set coupling bolts and nuts, one set feed and bilge pump valves and a quantity of assorted bolts, nuts etc

The foregoing is a correct description,
FOR EARLE'S SHIPBUILDING & ENGINEERING CO. LIMITED.
F. J. Palethorpe Manufacturer.

Dates of Survey while building: During progress of work in shops - **SECRETARY 1907 - Mar 21, 27, Apr 6, 9, 12, 15, 23, May 2, 7, 9, 10, 13, 27, 28, 29, Jun 5, 7, 12, 14**
 During erection on board vessel - **Jan 17, 19, 22, 26, 29, Jul 1, 2, 3, 4**
 Total No. of visits **28** Is the approved plan of main boiler forwarded herewith **Yes**

Dates of Examination of principal parts—Cylinders **29.5.07** Slides **19.6.07** Covers **19.6.07** Pistons **7.6.07** Rods **7.6.07**
 Connecting rods **7.6.07** Crank shaft **13.5.07** Thrust shaft **28.6.07** Tunnel shafts — Screw shaft **27.5.07** Propeller **27.5.07**
 Stern tube **13.5.07** Steam pipes tested **29.6.07** Engine and boiler seatings **14.6.07** Engines holding down bolts **1.7.07**
 Completion of pumping arrangements **4.7.07** Boilers fixed **1.7.07** Engines tried under steam **4.7.07**
 Main boiler safety valves adjusted **1.7.07** Thickness of adjusting washers **1/8" 5/16"**

Material of Crank shaft **Steel** Identification Mark on Do. **1873.A.T.G.** Material of Thrust shaft **Steel** Identification Mark on Do. **1873.A.T.G.**
 Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts **Iron** Identification Marks on Do. **1873.A.T.G.**
 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 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 placed 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. 7.07 in the Register Books.**

These engines and boilers are very similar to those fitted on the Thrush, Crown, Gladys. Hull Rpts Nos 17571, 17558, 17708 respectively.
 The engines and pumping arrangement were examined at Grimsby as per letter attached.

It is submitted that this vessel is eligible for **THE RECORD L.M.C. 7.07**

The amount of Entry Fee... £ 1 : - : -
 Special Donkey Boiler Fee... £ 12 : - : -
 Travelling Expenses (if any) £ - : - : -

When applied for, 9/7/1907
 When received, 11.9.07
James Barclay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 12 JUL 1907**
 Assigned **L.M.C. 7.07**

MACHINERY CERTIFICATE WRITTEN.



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