

# REPORT ON MACHINERY.

No. 19526

Port of Hull

Received at London Office **WED. 23 OCT 1907**

No. in Survey held at Hull Date, first Survey May 29<sup>th</sup> Last Survey 9<sup>th</sup> Oct 1907  
 Reg. Book. 18 Supp. on the Steel Se. Sr. Lark (Number of Visits 28)  
 Master Hull Built at Hull By whom built Earles & Co. Ltd Tons { Gross 280 Net 123 When built 1907  
 Engines made at } Hull By whom made } Earles & Co. Ltd when made 1907  
 Boilers made at } Hull By whom made } Earles & Co. Ltd when made 1907  
 Registered Horse Power 88 Owners Pioneer Steam Fishing Co. Ltd Port belonging to Grimsby  
 Nom. Horse Power as per Section 28 88 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 3/4 - 22 - 36 Length of Stroke 27 Revs. per minute 105 Dia. of Screw shaft 7 1/4 Material of Steel  
 as per rule 7 1/4 as fitted 7 1/4 screw shaft }  
 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 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 Yes Length of stern bush 35 1/2  
 Dia. of plain shaft as per rule 6.78 Dia. of Crank shaft journals as per rule 7.12 Dia. of Crank pin 7 3/4 Size of Crank webs 14 1/2 x 4 1/2 Dia. of thrust shaft under  
 collars 7 3/4 as fitted 7 1/2 as fitted 7 3/4 Dia. of screw 9-6 Pitch of Screw 11-9 No. of Blades 4 State whether moveable No Total surface 29  
 No. of Feed pumps 2 Diameter of ditto 2 1/2 Stroke 14 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/2 Stroke 14 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps one 5" Centrifugal No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two - 2" In Holds, &c. One 2" from flushwell, one 2" from  
fore craft. Ejector suction from all parts of ship.  
 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 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 8.10.07 of Stern Tube 8.10.07 Screw shaft and Propeller 8.10.07  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

**BOILERS, &c.**—(Letter for record 5) Manufacturers of Steel W. Beardmore & Co.  
 Total Heating Surface of Boilers 1560 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 9.9.07 No. of Certificate 1593  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 36 No. and Description of Safety Valves to  
 each boiler Two Spring Area of each valve 4.9 sq. ins. 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 10' Mean dia. of boilers 13'-6" Length 10'-9" Material of shell plates Steel  
 Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D.  
 long. seams O.S.S.F.C. Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 7 1/2 Lap of plates or width of butt straps 16 3/4  
 Per centages of strength of longitudinal joint rivets 85-8 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"  
 plate 85-7 Size of compensating ring 28 x 31 x 1 1/2 No. and Description of Furnaces in each boiler Two Deighlons Material Steel Outside diameter 4'-2 1/2"  
 Length of plain part 5' Thickness of plates 5' Description of longitudinal joint Welded No. of strengthening rings 0  
 Working pressure of furnace by the rules 199 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 9 1/2" x 8" Back 9 1/2" x 8" Top 9" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180 lbs  
 Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 76 sq. in. Working pressure by rules 186 lbs End plates in steam space:  
 Material Steel Thickness 1 1/2 Pitch of stays 18" x 17 1/2" How are stays secured O. N. Working pressure by rules 181 lbs Material of stays Steel  
 Diameter at smallest part 2 3/16 Area supported by each stay 312.75 sq. in. Working pressure by rules 206 lbs Material of Front plates at bottom Steel  
 Thickness 5/16 Material of Lower back plate Steel Thickness 3/8 Greatest pitch of stays 14 1/2" x 8" Working pressure of plate by rules 193 lbs  
 Diameter of tubes 3 1/2 Pitch of tubes 4 3/4" x 5 1/2" Material of tube plates Steel Thickness: Front 15/16 Back 13/16 Mean pitch of stays 9 3/8  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 182 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9 1/2" x 13 1/4 Length as per rule 3'-0" Distance apart 9" Number and pitch of stays in each 3 - 8"  
 Working pressure by rules 216 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked  
 separately Yes Diameter 18" Length 10' Thickness of shell plates 3/8 Material Steel Description of longitudinal joint Welded Diam. of rivet  
 holes 1 1/8 Pitch of rivets 7 1/2 Working pressure of shell by rules 180 lbs Diameter of flue 18" Material of flue plates Steel Thickness 3/8  
 If stiffened with rings Yes Distance between rings 12" Working pressure by rules 180 lbs End plates: Thickness 3/8 How stayed Yes  
 Working pressure of end plates 180 lbs Area of safety valves to superheater 180 lbs Are they fitted with easing gear Yes

**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, feed & bilge pump valves, and a quantity of assorted bolts & nuts etc.*

The foregoing is a correct description,

Manufacturer. *Howarth & Co. Ltd.*

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, 30, Aug 20, 23, 30, Sep 4, 9, 12, 19, 24 }  
 { During erection on board vessel - Sep 28, Oct 1, 3, 5, 7, 8, 9 }  
 Total No. of visits *28* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *4.9.07* Slides *24.9.07* Covers *24.9.07* Pistons *18.9.07* Rods *24.9.07*  
 Connecting rods *18.9.07* Crank shaft *24.9.07* Thrust shaft *18.9.07* Tunnel shafts \_\_\_\_\_ Screw shaft *4.9.07* Propeller *4.9.07*  
 Stern tube *30.8.07* Steam pipes tested *27.9.07* Engine and boiler seatings *18.9.07* Engines holding down bolts *1.10.07*  
 Completion of pumping arrangements *8.10.07* Boilers fixed *1.10.07* Engines tried under steam *3.10.07*  
 Main boiler safety valves adjusted *3.10.07* Thickness of adjusting washers *3/8" + 13/32"*  
 Material of Crank shaft *Steel* Identification Mark on Do. *1918* Material of Thrust shaft *103* Identification Mark on Do. *103*  
 Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of Screw shafts *103 Steel* Identification Marks on Do. *103*  
 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 constructed under special survey in accordance with the Rules. The materials and workmanship are good. The boiler tested by hydraulic pressure, found satisfactory, and with the engines fitted fastened on board tried under steam and found good. 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.  $\frac{1}{2}$  L.M.C. 10.07*

*J.S. 23.10.07*  
*23.10.07*

The amount of Entry Fee. . . £ *1* : . . . : When applied for, *22/10/1907*  
 Special . . . . . £ *13.4* : . . . :  
 Donkey Boiler Fee . . . . . £ . . . : : When received, *17/11/07*  
 Travelling Expenses (if any) £ . . . : : \_\_\_\_\_

*James Barclay*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*16.10.07*

Committee's Minute **FRI. 25 OCT 1907**  
 Assigned *+ Lmb 1007*



Certificate (if required) to be sent to Hull

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

MACHINER. CERTIFICATE WRITTEN.