

# REPORT ON MACHINERY

26 SEP 1898

Port of *Barrow in Furness*

Received at London Office

No. in Survey held at *Barrow* Date, first Survey *1894. October 24<sup>th</sup>* Last Survey *September 23<sup>rd</sup> 1898*  
 Reg. Book. *Twin SS Anglia* (Number of Visits *11*)  
 on the *Twin SS Anglia* Tons { Gross *6513.89*  
 Master *W.R. Gato* Built at *Barrow* By whom built *Vickers Sons & Maxcimin Ltd* When built *1898*  
 Engines made at *Barrow* By whom made *Vickers Sons & Maxcimin Ltd* when made *1898*  
 Boilers made at *No* By whom made *No* when made *1898*  
 Registered Horse Power \_\_\_\_\_ Owners *Telegraph Construction & Maintenance Port belonging to London*  
 Is Electric Light fitted *Yes*  
 Nom. Horse Power as per Section 28 *649*

ENGINES, &c.—Description of Engines *Triple Expansion (Twin Screw)* No. of Cylinders *Size* No. of Cranks *Size*  
 Diameter of Cylinders *22" - 35 1/2" - 61"* Length of Stroke *48"* Revolutions per minute *73* Diameter of Screw shaft *as per rule 12.04"*  
 Diameter of Tunnel shaft *as per rule 11.2"* Diameter of Crank shaft journals *12 1/2"* Diameter of Crank pin *2 1/2"* Size of Crank webs *25 x 8"*  
 Diameter of screw *16-0* Pitch of screw *19-6* No. of blades *4* State whether moveable *Yes* Total surface *73.57*  
 No. of Feed pumps *Two (Twin)* Diameter of ditto *8"* Stroke *24"* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *four* Diameter of ditto *3 1/2"* Stroke *27"* Can one be overhauled while the other is at work *Yes*  
 No. of Donkey Engines *Two* Sizes of Pumps *10" x 14" x 12" & 8" x 5 1/2" x 8"* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *four 3 1/2"* In Holds, &c. *No 1 Hold two 3 1/2", No 2 two 3 1/2", No 3*  
 No. of bilge injections *2* sizes *9"* Connected to condenser, or to circulating pump *of Pump* Is a separate donkey suction fitted in Engine room & size *Yes 3 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 *Yes*  
 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 *None* How are they protected *Yes*  
 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*  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *before launch* Is the screw shaft tunnel watertight *Yes*  
 Is it fitted with a watertight door *Yes* worked from *upper deck*

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *10853 sq* Is forced draft fitted *No*  
 No. and Description of Boilers *Four Single Ended* Working Pressure *195 lbs* Tested by hydraulic pressure to *390 lbs*  
 Date of test *23/6/98* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *80 sq* No. and Description of safety valves to  
 each boiler *Two Spring loaded* Area of each valve *9.62 sq* Pressure to which they are adjusted *195 lbs* Are they fitted  
 with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *11"* Mean diameter of boilers *16-4"*  
 Length *10-10"* Material of shell plates *Steel* Thickness *1 1/2"* Description of riveting: circum. seams *Lap 10 x 4* long. seams *10 Butts straps*  
 Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *10" & 4 3/4"* Lap of plates or width of butt straps *13.5 2 3/4"*  
 Per centages of strength of longitudinal joint *83.4* Working pressure of shell by rules *208* Size of manhole in shell *16 x 12*  
 Size of compensating ring *3-6 x 2-7 x 1 1/2"* No. and Description of Furnaces in each boiler *4 Purvis* Material *Steel* Outside diameter *3-7 1/2"*  
 Length of plain part *9"* Thickness of plates *9/32"* Description of longitudinal joint *welded* No. of strengthening rings *4*  
 Working pressure of furnace by the rules *211* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *5/8"* Top *7/8"* Bottom *1"*  
 Pitch of stays to ditto: Sides *8 1/2 x 8 1/2"* Back *8 1/2 x 8 1/2"* Top *8 1/2 x 8"* If stays are fitted with nuts or riveted heads *2 nuts* Working pressure by rules *200*  
 Material of stays *Steel* Diameter at smallest part *1-4 1/8"* Area supported by each stay *67.4"* Working pressure by rules *206* End plates in steam space:  
 Material *Steel* Thickness *1 3/16"* Pitch of stays *16 x 17 1/2"* How are stays secured *10 nuts with washers* Working pressure by rules *200* Material of stays *Steel*  
 Diameter at smallest part *3 1/2"* Area supported by each stay *280* Working pressure by rules *200* Material of Front plates at bottom *Steel*  
 Thickness *7/16"* Material of Lower back plate *Steel* Thickness *1"* Greatest pitch of stays *13 1/4"* Working pressure of plate by rules  
 Diameter of tubes *3 1/4"* Pitch of tubes *4 3/8" 4 1/4"* Material of tube plates *Steel* Thickness: Front *1 1/2" 1 1/4"* Back *2 1/2"* Mean pitch of stays *10"*  
 Pitch across wide water spaces *13 3/4"* Working pressures by rules *207* Girders to Chamber tops: Material *Steel* Depth and  
 thickness of girder at centre *8 1/2 x 1 1/2"* Length as per rule *30"* Distance apart *8"* Number and pitch of Stays in each *3. 8 1/4"*  
 Working pressure by rules *203* Superheater or Steam chest; how connected to boiler *—* Can the superheater be shut off and the boiler worked  
 separately *Yes* 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 *—*

[1076-5000-24/2/88-Copyable Ink.]



**DONKEY BOILER**— Description *non fitted*  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with rising gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_  
 Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_  
 Description of riveting long seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
 Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *1 Crank shaft, 1 Propeller shaft, 2 Propeller blades, 1 Pair connecting Rod, 1 Pair Crosshead Branes, 1 air Pump head Valve, 1 set of foot-Valves and guards and a number of other articles in addition.*  
*The foregoing is a correct description, to those required by Rule*

*W. C. Adams*  
**VICKERS, SON & MAXIM, LIMITED.**  
*W. C. Adams* Manufacturer.

**DIRECTOR.**

Dates of Survey while building  
 During progress of work in shops -  
 During erection on board vessel -  
 Total No. of visits  
 1894 - Oct. 25-26-27-28 - Nov. 1-8-9-10-11-15-14-19-23-24-26-30 - Dec. 2-6-8-9-11-13-14-15-16-21-22-1895  
 Jan. 10-11-12-14-14-19-24-26-28-30 - Feb. 7-9-10-12-14-15-14-21-23-28 - Mar. 1-3-22-24-28-29-30 - April 1-7-14-19-21-26-27-29-30 - May 3-10-12-13-17-18-  
 June 7-10-13-14-16-21-23-26-29 - July 6-7-8-10-12-13-15-19-20-21-22-25-26-27-29 - August 9-10-15-18-22-23-24-30 - Sept. 6-9-12-14-14-19-20-21-22-23

**General Remarks** (State quality of workmanship, opinions as to class, &c. *total No. of visits 111*)

**ENGINES**—Length of stern bush *4-6 3/4* Diameter of crank shaft journals *12 1/2* as per rule *12 1/2* as fitted Diameter of thrust shaft under collars *12 1/2*

**BOILERS**—Range of tensile strength *28 30* Are they welded or flanged *flanged* **DONKEY BOILERS**—No.  Range of tensile strength

Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith

*The Engines and Boilers of this Vessel have been constructed under special survey in accordance with the Rules, the material and workmanship employed are of the best description and when fitted into the Vessel the Engines were tried and found to work satisfactorily*

*The Machinery and Boilers of this Vessel are now in good order and safe working condition eligible in my opinion to have the notation **L.M.C. 9.98** in the Register Book.*

It is submitted that this vessel is eligible for **THE RECORD.**

*+ L.M.C. 9.98 the light*

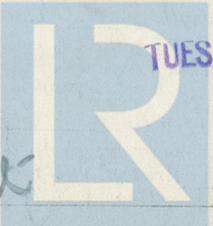
The amount of Entry Fee. . . £ *3* : 0 :  
 Special . . . £ *52* : 9 :  
 Donkey Boiler Fee . . . £ : :  
 Travelling Expenses (if any) £ : :

When applied for, *25/4/98*  
 When received, *29/9/98*

*Jas Cartledge*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned

**TUES, 27 SEP 1898**



**TUES, 1 NOV 1898**

Lloyd's Register Foundation

*+ L.M.C. 9.98 the light*

Certificate (if required) to be sent to the Registrar of Shipping to be on or below the space for Committee's Minute.