

# REPORT ON MACHINERY

THUR. FEB 7 1901

Port of WEST HARTLEPOOL

Received at London Office

No. in Survey held at West Hartlepool Date, first Survey 21<sup>st</sup> Sept. 1900 Last Survey 25<sup>th</sup> Jan. 1901  
 (Number of Visits 48)  
 Reg. Book 1177 on the S.S. "Armanistan" Tons Gross 2298  
 Net 1466  
 Master H.A. Bradford Built at W. Hartlepool By whom built R. Gray & Co. L<sup>td</sup> When built 1901  
 Engines made at W. Hartlepool By whom made Central Marine Engine Works L<sup>td</sup> when made 1901  
 Boilers made at do By whom made do when made 1901  
 Registered Horse Power 220 Owners L.C. Strick & Co. L<sup>td</sup> Port belonging to Swansea  
 Nom. Horse Power as per Section 28 222 Is Refrigerating Machinery fitted no Is Electric Light fitted no

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 22.35.59 Length of Stroke 39 Revs. per minute 65 Dia. of Screw shaft as per rule 10.88 Lgth. of stern bush 4.5 1/2  
 Dia. of Tunnel shaft as per rule 9.84 Dia. of Crank shaft journals as per rule 10.36 Dia. of Crank pin 10.75 Size of Crank webs 15.6 3/8 Dia. of thrust shaft under  
 collars 11" Dia. of screw 14.6 Pitch of screw 14.9 No. of blades 4 State whether moveable no Total surface 63.5  
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 26" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 26" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 3 1/2 x 5 & 10 x 9 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Spin, two 3 1/2 & two 3" In Holds, &c. Seven, two 3" in each hold & one 2 1/2"  
 No. of bilge injections 1 sizes 5" Connected to condenser, or to circulating pump 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 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 none How are they protected -  
 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 22.1.01 Is the screw shaft tunnel watertight yes  
 Is it fitted with a watertight door yes worked from Upper platform

**BOILERS, &c.**—(Letter for record (S)) Total Heating Surface of Boilers 3383 Is forced draft fitted no  
 No. and Description of Boilers Two Single ended Steel Working Pressure 160 Tested by hydraulic pressure to 320  
 Date of test 7.12.00 Can each boiler be worked separately yes Area of fire grate in each boiler 42 No. and Description of safety valves to  
 each boiler Two Spring Area of each valve 7.07 Pressure to which they are adjusted 165 Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 13.9 Length 10.0 Material of shell plates Steel  
 Thickness 1 1/16 Range of tensile strength 24-30 Are they welded or flanged Both Descrip. of riveting: cir. seams Cap &affle long. seams Welded  
 Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 7 3/8 Lap of plates or width of butt straps 16 1/4  
 Per centages of strength of longitudinal joint  
 rivets 84 Working pressure of shell by rules 162 Size of manhole in shell 16 x 12  
 plate 85  
 Size of compensating ring Stamped No. and Description of Furnaces in each boiler 3 Plain Material Steel Outside diameter 3.3  
 Length of plain part top 6.1 1/2 Thickness of plates bottom 1 1/16 crown 1 1/16 Description of longitudinal joint W.B. Straps No. of strengthening rings 4 1/2  
 bottom 6.6 Working pressure of furnace by the rules 166 Combustion chamber plates: Material Steel Thickness: Sides 1 3/16 Back 1 3/16 Top 1 3/16 Bottom 1 1/16  
 Pitch of stays to ditto: Sides 8 3/4 Back 8 3/4 Top 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 163.7  
 Material of stays Steel Diameter at smallest part 1.38 Area supported by each stay 74 Working pressure by rules 161 End plates in steam space:  
 Material Steel Thickness 1 3/16 Pitch of stays 19 1/2. 20 How are stays secured Angled Working pressure by rules 161.9 Material of stays Steel  
 Diameter at smallest part 2.91 Area supported by each stay 390 Working pressure by rules 170 Material of Front plates at bottom Steel  
 Thickness 1 5/16 Material of Lower back plate Steel Thickness 1 5/16 Greatest pitch of stays 15" Working pressure of plate by rules 204  
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 Material of tube plates Steel Thickness: Front 1 5/16 Back 5/8 Mean pitch of stays 9"  
 Pitch across wide water spaces 14 1/4 Working pressures by rules 166 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8 1/2 x 1 1/4 Length as per rule 2.4 Distance apart 9" Number and pitch of Stays in each Two 8 3/4 pitch  
 Working pressure by rules 177 Superheater or Steam chest; how connected to boiler None 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 -

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

[2000-4/22/01-Copyrighted Ink.]

W403-0187



**DONKEY BOILER**— No. 1 Description Blakes patent  
 Made at Middlesbrough By whom made Richardson & Beardmore When made 1900 Where fixed Stockholm  
 Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 2361 Fire grate area 186 Description of safety valves Spring  
 No. of safety valves 2 Area of each 7.07 Pressure to which they are adjusted 82 If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 4.0 Length 14.0 Material of shell plates Steel Thickness 1 1/2 Range of tensile strength 27-32 Descrip. of riveting long. seams Lap double Dia. of rivet holes 1 1/8 Whether punched or drilled Drilled Pitch of rivets 3"  
 Lap of plating 1/8 Per centage of strength of joint 68.4 Rivets 83 Thickness of shell crown plates 1 1/2 Radius of do. Hemis No. of Stays to do. -  
 Dia. of stays - Diameter of furnace Top 2.6 Bottom 5.3 Length of furnace 5.8 Thickness of furnace plates 19/32 Description of joint Lap Single Thickness of furnace crown plates 1 1/2 Stayed by 1 1/2" Lap 9 1/2" pitch Working pressure of shell by rules 87.8  
 Working pressure of furnace by rules 86.5 Diameter of uptake 2 1/2 Thickness of uptake plates 7/8" Thickness of water tubes 5/16

SPARE GEAR. State the articles supplied:— Propeller, 2 main bearing bolts, 2 top end bolts, 2 bottom end bolts, 1 set of shaft coupling bolts all fitted with nuts, 1 set of feed pump valves, 1 set of bilge pump valves, Springs for H.P. piston, nuts, bolts & iron.

The foregoing is a correct description,  
 Manufacturer. J. B. Richardson

Dates of Survey while building  
 During progress of work in shops: 1900. Sept. 21, 25, 26. Oct. 4, 5, 8, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 30. Nov. 2, 5, 6, 7, 8, 12, 14, 15, 19, 20, 21, 23.  
 During erection on board vessel: 28, 29 Dec. 3, 4, 7, 12, 14, 18, 21, 22, 28, 29. 1901. Jan. 4, 8, 10, 22, 25.  
 Total No. of visits 48 Is the approved plan of main boiler forwarded herewith yes  
 " " " donkey " " " no

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery has been specially surveyed during construction the material and workmanship good and renders the vessel eligible in my opinion to have the Record + L.M.C. 1.01 in the Register Book of the Society.

It is submitted that this vessel is eligible for THE RECORD. ✦ L.M.C. 1.01.

R.S.  
7.2.01

The amount of Entry Fee. £ 2 : : When applied for, 6.2.01  
 Special . . . . . £ 31 : : : : :  
 Donkey Boiler Fee . . . . . £ : : : : :  
 Travelling Expenses (if any) £ : : : : :  
 When received, 8/2/01

Richard Hirst  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned

FRI. 8 FEB 1901

+ L.M.C. 1.01



Certificate (if required) to be sent to W. Huxley pool.

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

MACHINERY CERTIFICATE