

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office

SAT. 16 SEP 1905

No. in Survey held at Stockton
Reg. Book.Date, first Survey 4th May 1905 Last Survey 4th Sept 1905(Number of Visits 3.0)on the Steel S.S. "Arvonian"Tons { Gross 2714.47
Net 1783.67
When built 1905Master M. Evans Built at Stockton By whom built Richardson Duck & CoEngines made at Stockton By whom made Blain & Co. Ltd when made 1905Boilers made at Stockton By whom made Blain & Co. Ltd when made 1905Registered Horse Power 276 Owners O. W. Williams Port belonging to CardiffNom. Horse Power as per Section 28 276 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Direct acting Trip expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 23½ - 39 - 64 Length of Stroke 42 Revs. per minute 57 Dia. of Screw shaft as per rule 13.18 Material of W. Iron
 as fitted 14 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 — 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 — Length of stern bush —
 Dia. of Tunnel shaft as per rule 11.2 Dia. of Crank shaft journals as per rule 11.76 Dia. of Crank pin 13 Size of Crank webs 20½ x 8½ Dia. of thrust shaft under
 as fitted 12 as fitted 12 1/2 collars 13 Dia. of screw 14 - 0 Pitch of screw 16 1/2 No. of blades 4 State whether moveable No Total surface 78 ft
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 30 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4½ Stroke 30 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two Sizes of Pumps Two 4 x 8 Ball 9 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three. Two 3" diam. One 3½" diam. In Holds, &c.
Two in each hold 3" diameter
 No. of bilge injections 1 sizes 6 1/4 Connected to condenser, or to circulating pump — Is a separate donkey suction fitted in Engine room & size Yes 4"
 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 —
 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 New vessel Is the screw shaft tunnel watertight See ship
report
 Is it fitted with a watertight door Yes worked from Top platform.

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4300 ft Is forced draft fitted No

No. and Description of Boilers Two Cyl Multitubular Working Pressure 160 lb Tested by hydraulic pressure to 320 lb
 Date of test 27-7-05 Can each boiler be worked separately Yes Area of fire grate in each boiler 61 ft No. and Description of safety valves to
 each boiler Two spring Area of each valve 8.29 sq Pressure to which they are adjusted 165 lb Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Dia. of boilers 15-9 Length 10-0 Material of shell plates Steel
 Thickness 1 3/16 Range of tensile strength 28/32 Are they welded or flanged No Descrip. of riveting: cir. seams 2 D riv long. seams 2 Butt ship
 Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets One row 8 1/2 Two 4 1/4 Lap of plates or width of butt straps 1 - 6 1/2
 Per centages of strength of longitudinal joint rivets 90.3 Working pressure of shell by rules 162 lb Size of manhole in shell 17 x 13
 plate 85.2
 Size of compensating ring 31-27 - 1 3/16 No. and Description of Furnaces in each boiler 3 Broom Impression Material Steel Outside diameter 3-7 1/2
 Length of plain part top 6-4 bottom 6-4 Thickness of plates crown 1/2 1/32 bottom 1/2 1/32 Description of longitudinal joint Welded No. of strengthening rings —
 Working pressure of furnace by the rules 173 lb Combustion chamber plates: Material Steel Thickness: Sides 1 1/16 Back 1 1/16 Top 1 1/16 Bottom 3/4
 Pitch of stays to ditto: Sides 9 1/4 x 9 1/4 Back 9 1/4 x 9 1/4 Top 9 x 9 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 178 lb
 Material of stays Steel Diameter at smallest part 1 9/16 Area supported by each stay 91.4 sq Working pressure by rules 180 lb End plates in steam space:
 Material Steel Thickness 1 1/4 Pitch of stays 21 x 21 1/2 How are stays secured Nuts Working pressure by rules 163.8 lb Material of stays Steel
 Diameter at smallest part 3 3/8 Area supported by each stay 451 1/2 sq Working pressure by rules 169.8 lb Material of Front plates at bottom Steel
 Thickness 1 Material of Lower back plate Steel Thickness 1 1/16 Greatest pitch of stays 18 x 9 3/8 Working pressure of plate by rules 187.3 lb
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 7/8 Material of tube plates Steel Thickness: Front 1 Back 1 3/16 Mean pitch of stays 9 1/8
 Pitch across wide water spaces 14 1/2 Working pressures by rules 182 lb Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 7 x 1 3/8 Length as per rule 26 1/4 Distance apart 9 Number and pitch of Stays in each Two 9 1/2
 Working pressure by rules 168 lb 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 —

DONKEY BOILER— No. Description

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 easing gear _____ If steam from main boilers can enter the donkey boiler _____
 Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tension _____
 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 _____ 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 plate _____ 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:— *Set of top & bottom end connecting rods bolts & nuts, set of coupling bolts, two main bearing bolts set of feed & bridge pump valves & Mr. P. J. Wilson rings of 2" piston rings*
 FOR BLAIR & CO., LIMITED

The foregoing is a correct description,

W. Borrie Manufacturer of main engines & boilers. **SECRETARY.**

Dates of Survey while building { During progress of work in shops - 1905 May 4 June 2 7 9 14 15 17 23 26 29 30 July 14 18 19 20 21 24 26 27 28 31 Aug 2 3 8 9 }
 { During erection on board vessel - 15 29 Sept 1 4 }
 Total No. of visits *thirty* Is the approved plan of main boiler forwarded herewith *No. 10*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The engine and boilers of this vessel have been constructed under special survey, the materials and workmanship are good and efficient and when tested under steam were found satisfactory and in my opinion now eligible for the notification + L.M.C. 9.05 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 9.05

J.M. P.M. 16-9-05

The amount of Entry Fee.. £ 2 : 0 : 0 When applied for, _____
 Special .. £ 33 : 16 : 0 14 9 1905
 Donkey Boiler Fee .. £ : : : When received, _____
 Travelling Expenses (if any) £ : : : 14 9 1905

Committee's Minute

TUES. 19 SEP 1905

Assigned

Lmb 9.05

MACHINERY CERTIFICATE WRITTEN.

Geo. A. Milner
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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