

REPORT ON MACHINERY.

No. 5201

(Received at London Office Rec'd 25 May 1883)

No. in Reg. Book. Survey held at *Whitby & Stockton* Date, first Survey *31st Jan* Last Survey *23 May 1883*
 on the *S. S. Southgate* Tons *114 1/2*
 Master *H. Nicholson* Built at *Whitby* When built *1883*
 Engines made at *Stockton* By whom made *Blair. Co. (Lim)* when made *1883*
 Boilers made at *Do* By whom made *Do* when made *Do*
 Registered Horse Power *150* Owners *Turnbull, Scott. Co* Port belonging to *Whitby*
Originals & Ammal Horn Power 140

ENGINES, &c.—

Description of Engines *Compound. Inverted. Surface Condensing*
 Diameter of Cylinders *32 & 60* Length of Stroke *39* No. of Rev. per min. *65* Point of Cut off, High Pressure *at 1/2 stroke* Low Pressure *at 1/2 stroke*
 Diameter of Screw shaft *12 1/2* Diameter of Tunnel shaft *10 3/8* Diameter of Crank shaft journals *11 1/4* Diameter of Crank pin *11 3/4* size of Crank webs *15 3/4 x 8 1/8*
 Diameter of screw *14.6* Pitch of screw *at 16.0* No. of blades *four* state whether moveable *No* total surface *Not ascertained*
 No. of Feed pumps *Two* diameter of ditto *4* Stroke *28* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *Two* diameter of ditto *4* Stroke *28* Can one be overhauled while the other is at work *Yes*
 Where do they pump from *Forward pump draws from fore hold, engine room, after with-tanks, after pump from engine room, after with-tanks*
 No. of Donkey Engines *Two* Size of Pumps *1/2 x 9 & 1/2 x 18* Where do they pump from *Large donkey from fore hold engine room, after with-tanks. Small donkey from sea, hot water - ballast tanks*
 Are all the bilge suction pipes fitted with roses *Yes* Are the roses always accessible *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*
 No. of bilge injections *one* and sizes *6* Are they connected to condenser, or to circulating pump *Circulating pump*
 How are the pumps worked *By levers worked from crosshead on low pressure piston rod*
 Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Stop valves - cocks*
 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 *at level*
 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 accessible at all times *Yes*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *Yes*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Now*
 Is the screw shaft tunnel watertight *Said to be* and fitted with a sluice door *Yes* worked from *Top platform in engine room*

OILERS, &c.—

Number of Boilers *Two* Description *Cylindrical. Multitubular.*
 Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *16.4.83. Certificate R. 924*
 Description of superheating apparatus or steam chest *Vertical Steam dome constructed at once*
 Can each boiler be worked separately *Yes* Can the superheater be shut off and the boiler worked separately *No Superheater*
 No. of square feet of fire grate surface in each boiler *33.5 sq ft* Description of safety valves *Spring made by Blair Co. Lim*
 No. to each boiler *Two* area of each valve *11.04* Are they fitted with easing gear *Yes*
 No. of safety valves to superheater *✓* area of each valve *✓* are they fitted with easing gear *✓*
 Smallest distance between boilers and bunkers or woodwork *9' between dome & bunker casing*
 Diameter of boilers *12-5"* Length of boiler *9.10* description of riveting of shell long. seams *all welded except top of one plate in engine room. seams are double punched with 1/4" full strokes* Double
 Thickness of shell plates *1"* diameter of rivet holes *1 1/8* whether punched or drilled *Drilled* pitch of rivets *4 1/4*
 Lap of plating *Staps 10 1/2 broad* per centage of strength of longitudinal joint *43.5* working pressure of shell by rules *98.6 lbs*
 Size of manholes in shell *16 x 12* size of compensating rings *Rectangular plate 28 x 24 x 1 1/8*
 No. of Furnaces in each boiler *Two* outside diameter *3.9* length, top *5.11* bottom *8.6*
 Thickness of plates *Top 9/16 bottom 5/8* description of joint *Double straps* if rings are fitted *No* greatest length between rings *✓*
 Working pressure of furnace by the rules *100 lbs*
 Combustion chamber plating, thickness, sides *1/2* back *1/2* top *1/2*
 Pitch of stays to ditto sides *8 x 8* back *8 1/2 x 8 1/2* top *Curved top*
 If stays are fitted with nuts or riveted heads *Part nuts - Part riveted* working pressure of plating by rules *88.5 lbs*
 Diameter of stays at smallest part *1 5/16* working pressure of ditto by rules *112.3 lbs*
 End plates in steam space, thickness *13/16* pitch of stays to ditto *16 x 15* how stays are secured *Nuts & washers*
 Working pressure by rules *92.4* diameter of stays at smallest part *23/8* working pressure by rules *110.7*
 Front plates at bottom, thickness *13/16* Back plates, thickness *13/16* greatest pitch of stays *11 3/4 x 8 1/2* working pressure by rules *81.5*
 Smallest dia of stay *1 5/16* of stays

STK 007-0248

Diameter of tubes $3\frac{1}{2}$ pitch of tubes $4\frac{3}{4} \times 4\frac{3}{4}$ thickness of tube plates, front $\frac{13}{16}$ back $\frac{13}{16}$
 How stayed *Stay tubes* pitch of stays $14\frac{1}{4} \times 9\frac{1}{2}$ width of water spaces $1\frac{1}{4}$ between tubes $4\frac{1}{2}$ between furnaces
 Diameter of Superheater or Steam chest $3\frac{1}{4}$ length $5\frac{1}{2}$
 Thickness of plates $\frac{1}{2}$ description of longitudinal joint *Lap double* diameter of rivet holes $\frac{3}{16}$ pitch of rivets $3\frac{1}{8}$
 Working pressure of shell by rules 126 lbs Diameter of flue thickness of plates
 If stiffened with rings distance between rings Working pressure by rules
 End plates of superheater, or steam chest; thickness $\frac{1}{2}$ How stayed *Four stays $2\frac{1}{4}$ dia*
 Superheater or steam chest; how connected to boiler *By flanged neck over 16 dia $\times \frac{1}{8}$ thick double riveted to dome boiler*

DONKEY BOILER— Description *Vertical 6 Water tubes in furnace*
 Made at *Stockton* By whom made *Reilly Bros* when made *Tested 5.5.83*
 Where fixed *Stockholm* working pressure 40 lbs Tested by hydraulic pressure to 140 lbs No. of Certificate *934*
 Fire grate area 20.57 sq ft Description of safety valves *Spring* No. of safety valves *Two* area of each 4.07
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Diameter of donkey boiler 6.0 length 13.0 description of riveting *Long seams, Lap double riveted*
 thickness of shell plates $\frac{15}{32}$ diameter of rivet holes $\frac{13}{16}$ whether punched or drilled *Punched*
 pitch of rivets $2\frac{3}{4}$ lap of plating $4\frac{1}{4}$ per centage of strength of joint 40.4
 thickness of crown plates $\frac{1}{2}$ stayed by *Six stays $1\frac{1}{2}$ dia*
 Diameter of furnace, top 5.0 bottom 5.5 length of furnace 4.9
 thickness of plates $\frac{9}{16}$ description of joint *Lap single riveted*
 thickness of furnace crown plates $\frac{1}{2}$ stayed by *Six stays $1\frac{1}{2}$ dia*
 Working pressure of shell by rules 40 lbs working pressure of furnace by rules 42 lbs
 diameter of uptake 14 thickness of plates $\frac{7}{16}$ thickness of water tubes $\frac{3}{8}$

The foregoing is a correct description,

Robt Blair & Co Manufacturers of Engines & Main Boilers only
54 Blair

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

Material & workmanship good
 The furnace crown plates, back tube plates, & Combustion chamber plating of main boilers are of Steel manufactured by the Steel Coy of Scotland
 The Machinery & Boilers have been built under Special Survey & are in good order & safe working condition & in my opinion eligible for the Notification ** L.M.C.*
5.83 in the Register Book

This is submitted that this vessel is eligible to have the Notification entered in the Register Book
Mc 7/6/83

The amount of Entry Fee ... £ 3 : : : received by me,

Special ... £ 22 : 10 : :

Certificate (if required) ... £ : : : 1883

To be sent as per margin.

(Travelling Expenses, if any, £ : : :)

Committee's Minute

FRIDAY 13 JUNE 1883

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James L. Blair
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register Foundation