

# REPORT ON MACHINERY.

21742

No. 217027

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No. in Survey held at Stockton & Newcastle Date, first Survey 5<sup>th</sup> Jan 4 Last Survey 26<sup>th</sup> June 1888

eg. Book. on the Screw Steamer "Walton" (Number of Plates 12) 1353.55 Tons 2083.43

Master Built at Newcastle By whom built Messrs. Swan & Hunter When built 1888

Engines made at Stockton By whom made Messrs. Blair & Co. Ltd when made 1888

Boilers made at Stockton By whom made Messrs. Blair & Co. Ltd when made 1888

Registered Horse Power 870 Owners English & American Shipping Co. Ltd Port belonging to London

Engines, &c. — Description of Engines Inverted, Simple Expansion, 3 Cylinders & 3 Cranks.

Diameter of Cylinders 22, 36, 59 Length of Stroke 39 No. of Rev. per minute 64 Point of Cut off, High Pressure 1/2 stroke Low Pressure 1/2 stroke

Diameter of Screw shaft 11 1/2 Diam. of Tunnel shaft 11 Diam. of Crank shaft journals 11 1/2 Diam. of Crank pin 12 size of Crank webs 16 1/4 x 7 3/8

Diameter of screw 15.6 Pitch of screw 17.0 No. of blades 4 state whether moveable no total surface 63 sq. ft

No. of Feed pumps 2 diameter of ditto 3 Stroke 38 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 4 Stroke 38 Can one be overhauled while the other is at work yes

Where do they pump from Sea & after holds, Engine room & ballast tanks.

No. of Donkey Engines 2 Size of Pumps (4 1/2 x 9) (4 x 8) Where do they pump from (Ballast tanks, sea, & all bilges) (Sea, hotwell, & 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

No. of bilge injections one and sizes 6 dia Are they connected to condenser, or to circulating pump Circulating pump.

How are the pumps worked By levers from the after piston rod crosshead.

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 below

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

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

Is the screw shaft tunnel watertight and fitted with a sluice door worked from

Boilers, &c. — Number of Boilers Two Description Cyl. Mult. Single Ended Whether Steel or Iron Steel

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs. Date of test 5<sup>th</sup> April 1888.

Description of superheating apparatus or steam chest none

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 42.5 Description of safety valves Spring No. to each boiler 2

Area of each valve 7.07 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 12 Diameter of boilers 13.6 1/2

Length of boilers 10.0 description of riveting of shell long. seams double butt strap circum. seams double riv lap Thickness of shell plates 1 1/2

Diameter of rivet holes 1 1/4 whether punched or drilled drilled pitch of rivets 1 1/2 2 rows 3 1/2 Lap of plating 8 3/4

Percentage of strength of longitudinal joint 83.3 working pressure of shell by rules 162 lbs. size of manholes in shell 16 x 12

Size of compensating rings 28 x 24 x 1 1/2 No. of Furnaces in each boiler 3

Outside diameter 3.4 length, top 6.3 bottom 6.3 thickness of plates 9/16 description of joint welded if rings are fitted no

Greatest length between rings working pressure of furnace by the rules 175 lbs. combustion chamber plating, thickness, sides 9/16 back 9/16 top 9/16

Thickness of stays to ditto, sides 7/8 x 1/4 back 7/8 x 7/8 top 7/8 x 1/4 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 162 lbs.

Diameter of stays at smallest part 1 5/8 working pressure of ditto by rules 192 lbs. end plates in steam space, thickness 1 1/8

Thickness of stays to ditto 16 1/2 x 15 how stays are secured double nuts & working pressure by rules 166 lbs. diameter of stays at smallest part 2 3/8

working pressure by rules 161 lbs. Front plates at bottom, thickness 1 Back plates, thickness 1

Greatest pitch of stays 12 working pressure by rules 177 lbs. Diameter of tubes 3 1/4 pitch of tubes 4 5/8 x 4 1/2 thickness of tube plates, front 1 back 7/8

how stayed stay like pitch of stays 9 1/4 x 9 width of water spaces 1 1/4

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Thickness of rivets working pressure of shell by rules 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 how stayed

Superheater or steam chest; how connected to boiler

NW 801-0300



**DONKEY BOILER**— Description *Vertical, Cylindrical, 4 Cross tubes.*  
 Made at *Stockton* by whom made *Riley Bros.* when made *8.6.88* where fixed  
 Working pressure *80 lbs.* tested by hydraulic pressure to *160 lbs.* No. of Certificate *1588* fire grate area *21.64 sq. ft.* description of safety valves *Spring* No. of safety valves *1* area of each *9.62* if fitted with easing gear *9.28* if steam from main boilers can enter the donkey boiler *✓* diameter of donkey boiler *6.0"* length *13.6"* description of riveting *Double riv. lap.*  
 Thickness of shell plates *17/32"* diameter of rivet holes *13/16"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *4 1/4"*  
 per centage of strength of joint *70* thickness of crown plates *17/32"* stayed by *uptake x 6 stays 1 1/2" dia.*  
 Diameter of furnace, top *4.10"* bottom *5.5"* length of furnace *5.2"* thickness of plates *5/8"* description of joint *single riv. lap.*  
 Thickness of furnace crown plates *17/32"* stayed by *uptake x 6 stays 1 1/2" dia.* working pressure of shell by rules *85 lbs.*  
 Working pressure of furnace by rules *81 lbs.* diameter of uptake *15"* thickness of plates *1/16"* thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *One propeller, one set of bolts for the connecting rod, main bearing, and couplings,*

The foregoing is a correct description,  
*J. Blair & Co. Ltd.*  
*J. Blair* Manufacturer. of Engines & main boilers.

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

*Tested the main steam pipes by hydraulic pressure to 320 lbs. per square inch and found them tight.*

*The machinery and boilers of this vessel have been constructed under Special Survey, and of a good quality of workmanship. The machinery and main boilers have been examined under steam, the safety valves adjusted, and found to work well, and will, in my opinion, be eligible to have the certification L.M.C. 6.8.8. when the following work has been done to the satisfaction of a Surveyor of this Society.*

*Ridge section pipes from the forward and after holds to be connected to the engine room bulkheads. Sluice valves in stowhole to be made accessible at all times. Donkey boiler to be made secure, fitted with mountings, and examined under steam. Screw tunnel to be fitted with sluice door and made watertight. Spare gear to be fitted in accordance with the Rules. The vessel has proceeded to Newcastle for completion.*

*The above mentioned fittings & Spare gear have been completed in accordance with the Rules of the Society.*  
*Richard Frost*

*Inspected and found that the machinery is in accordance with the Rules of the Society. L.M.C. 6.8.8. recorded.*

The amount of Entry Fee .. £ 2: : *was* received by me,  
 Special .. £ 25: 10: *J. S. Stoddart*  
 Donkey Boiler Fee .. £ - : - :  
 Certificate (if required) .. £ *grahs* : *4/8* 1888  
 To be sent as per margin.

*J. S. Stoddart*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
*+ dmlb 6/88*

