

# REPORT ON MACHINERY.

6914

No. 6914.

No. in Survey held at Stockton & Sunderland Date, first Survey 25<sup>th</sup> Oct 1887 Last Survey 1<sup>st</sup> May 1888  
Reg. Book. on the Steel Screw Steamer "Leta" (Number of Visits 19)

Received at London Office 25 MAY 1888

Master Geo. Sutton Built at Sunderland By whom built men<sup>rs</sup> J. D. Thompson & Son When built 1888  
Engines made at Stockton By whom made men<sup>rs</sup> Blair & Co. Ltd when made 1888  
Boilers made at Stockton By whom made men<sup>rs</sup> Blair & Co. Ltd when made 1888  
Registered Horse Power 200 Owners men<sup>rs</sup> Turner, Brightman & Co Port belonging to London  
Tons 1499  
2334

## ENGINES, &c.—

Description of Engines Inverted, Triple Expansion, 3 Cylinders, & 3 Cranks.  
Diameter of Cylinders 22, 36, 59 Length of Stroke 39" No. of Rev. per minute 65 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 600 sq. ft.  
No. of Feed pumps 2 diameter of ditto 3" Stroke 28" Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 diameter of ditto 4" Stroke 28" Can one be overhauled while the other is at work yes  
Where do they pump from Fore hold, Engine room, after well, sea & all 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, all bilges & sea)  
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 no 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 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 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 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 new vessel

## OILERS, &c.—

Number of Boilers Two Description Cyl<sup>4</sup> Mult.: Single Ended Whether Steel or Iron Steel  
Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 8<sup>th</sup> February 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 on woodwork 11" 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<sup>d</sup> lap Thickness of shell plates 1 1/2"  
Diameter of rivet holes 1 1/4" whether punched or drilled drilled pitch of rivets 12 in 1/2", 2 in 3/4" 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 5  
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"  
Pitch of stays to ditto, sides 1/4" x 1/4" back 1/8" x 1/8" top 1/4" 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"  
Pitch of stays to ditto 16 1/2" x 15" how stays are secured double nuts & washers working pressure by rules 166 lbs. diameter of stays at smallest part 3 3/8"  
Greatest pitch of stays 12" working pressure by rules 177 lbs. Front plates at bottom, thickness 1" Back plates, thickness 1"  
plates, front 1" back 7/8" Diameter of tubes 3 1/4" pitch of tubes 4 5/8" x 4 1/2" thickness of tube —  
Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —  
pitch 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 —



**DONKEY BOILER**— Description *Vertical, multitubular, (Cochran's Patent) Steel*  
 Made at *Bakenhead* by whom made *Messrs Cochran & Co* when made *17. 2. 88* where fixed *In stokehole*  
 Working pressure *80 lb.* tested by hydraulic pressure to *160 lb.* No. of Certificate *668* fire grate area *23 sq ft* description of safety  
 valves *direct spring* No. of safety valves *2* area of each *7.07* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6.6* length *13.6* description of riveting *double riv. Lap joint.*  
 Thickness of shell plates *7/16* diameter of rivet holes *13/16* whether punched or drilled *drilled* pitch of rivets *2 3/4* lap of plating *4*  
 per centage of strength of joint *70* thickness of crown plates *13/32* stayed by *Hemispherical*  
 Diameter of furnace, top *5.4* bottom — length of furnace *2.8* thickness of plates *19/32 x 16/32* description of joint *single riv. lap*  
 Thickness of furnace crown plates *16/32* stayed by *Hemispherical* working pressure of shell by rules *84 lb.*  
 Working pressure of furnace by rules *93 lb.* diameter of uptake *24* thickness of plates — thickness of water tubes —

**SPARE GEAR.** State the articles supplied:— *One crank shaft, One screw shaft, One propeller, One set*  
*of bolts for the connecting rod, main bearing, and coupling. One set of valves*  
*for the air, circulating, feed, bilge, & donkey pumps. One set of L.P.*  
*piston springs, 120 bolts & nuts ass., 6 bars of iron ass., 10 Boiler tubes.*  
 The foregoing is a correct description,  
*Wm Blair & Co* Manufacturer. of machinery & main boilers.  
*Wm Blair*

**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 **L.M.C. 5. 88.***  
*entered in the Register of this Society when the following*  
*work has been completed to the satisfaction of a Surveyor*  
*of this Society.*  
*Bilge suction-pipe for the after well to be connected at the forward*  
*end of the screw tunnel. Screw tunnel to be fitted with a sluice*  
*door and made water-tight. Sluice valve and donkey boiler*  
*blow off cock on the port side of the stokehole to be made accessible,*  
*suction pipe, for the forward peak, to be connected and protected*  
*in the forward hold and the donkey boiler to be examined under*  
*steam. This vessel has proceeded to Sunderland for completion.*  
*The above mentioned work has now been satisfactorily finished.*  
*Wm Salmon*  
*Sunderland.*

The amount of Entry Fee . . . £ 2 : 0 : 0 *received by me,*  
 Special Certificate . . . £ 30 : 0 : 0  
 Donkey Boiler Fee . . . £ : :  
 Certificate (if required) . . . £ : : *26/5/88*  
 (To be sent as per margin.)  
 (Travelling Expenses, if any, £ . . .)

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

Committee's Minute  
 + *Wm Blair 5/88*  
 FRI 25 MAY 83

