

# REPORT ON MACHINERY

MON, JUL 29 1901

Port of *Middlesbro' on Tws*

Received at London Office

No. in Survey held at *Stockton* Date, first Survey *Sept 13<sup>th</sup> 1900* Last Survey *16<sup>th</sup> July 1901*  
Reg. Book. *S. S. Tartary* (Number of Visits *57*)

Sup 2 on the *S. S. Tartary* Tons {Gross *4781*  
Net *2724.9*  
Master *J. Emery* Built at *Thornaby* By whom built *Richardson, Ingham & Co* When built *1901*

Engines made at *Stockton* By whom made *Blair & Co Ltd* when made *1901*

Boilers made at *Stockton* By whom made *Blair & Co Ltd* when made *1901*

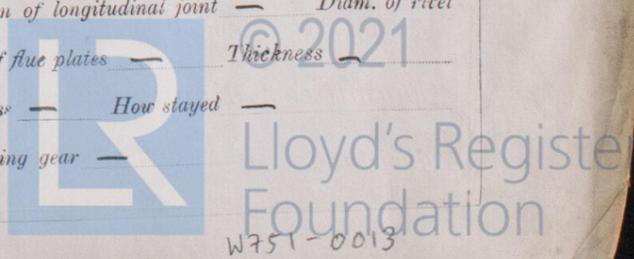
Registered Horse Power *447* Owners *D. McIvor & Co* Port belonging to *Liverpool*

Horse Power as per Section 28 *447* 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*  
 of Cylinders *24, 44 1/2 & 73* Length of Stroke *54* Revs. per minute *about 58* Dia. of Screw shaft *as per rule 14.6*  
 of Tunnel shaft *as per rule 13.2* Dia. of Crank shaft journals *as per rule 13.9* Dia. of Crank pin *15 3/4* Size of Crank web *25 1/2 x 10 1/2* Lgh. of stern bush *58 1/2*  
 of Thrust shaft *as fitted 14 3/4* Dia. of screw *19-0* Pitch of screw *19-6* No. of blades *4* State whether moveable *Yes* Total surface *103 3/4 sq. ft.*  
 of Feed pumps *2* Diameter of ditto *3 1/2* Stroke *36* Can one be overhauled while the other is at work *yes*  
 of Bilge pumps *2* Diameter of ditto *5* Stroke *36* Can one be overhauled while the other is at work *yes*  
 of Donkey Engines *2* Sizes of Pumps *B 10 x 10 F 4 x 8* No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room *Three 3 1/2 diameter* In Holds, &c. *Fore, main, aft and*  
 of bilge injections *1* sizes *7* Connected to condenser, or to circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes 4*  
 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 *from*  
 all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both*  
 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*  
 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*  
 at pipes are carried through the bunkers *none* How are they protected *—*  
 all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*  
 the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*  
 were stern tube, propeller, screw shaft, and all connections examined in dry dock *on stocks* Is the screw shaft tunnel watertight *see ship Rep<sup>t</sup>*  
 fitted with a watertight door *yes* worked from *upper platform* —

**BOILERS, &c.**— (Letter for record (a) Total Heating Surface of Boilers *7200 sq. ft.* Is forced draft fitted *No*  
 and Description of Boilers *3. S. & M. Multitubular* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*  
 of test *10.6.01* Can each boiler be worked separately *yes* Area of fire grate in each boiler *68 sq. ft.* No. and Description of safety valves to  
 boiler *2 d. act. Spring* Area of each valve *8.29* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes*  
 least distance between boilers or uptakes and bunkers *24 ft* Mean dia. of boilers *16-0* Length *11-0* Material of shell plates *S.*  
 thickness *1 3/8* Range of tensile strength *24-32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *d.r.l.* long. seams *d. butt st*  
 diameter of rivet holes in long. seams *1 3/8* Pitch of rivets *9 1/4 & 4 5/8* Lap of plates *—* width of butt straps *6 5/8 & 20 1/8*  
 percentages of strength of longitudinal joint *86.7* Working pressure of shell by rules *187.5 lbs* Size of manhole in shell *17 x 13*  
 of compensating rings *31 x 27 x 1 3/8* No. and Description of Furnaces in each boiler *3 corrugated* Material *S* Outside diameter *48*  
 thickness of plain part *top 4-0* Thickness of plates *19/32* Description of longitudinal joint *weld* No. of strengthening rings *—*  
 working pressure of furnace by the rules *196 lbs* Combustion chamber plates: Material *S.* Thickness: Sides *1/16* Back *1/16* Top *1/16* Bottom *1*  
 of stays to ditto: Sides *9 x 4 3/4* Back *8 1/2 x 8 7/8* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *209 lbs*  
 material of stays *top S.* Diameter at smallest part *1 9/16* Area supported by each stay *78.2* Working pressure by rules *184 lbs* and plates in steam space:  
 material *S.* Thickness *1/16* Pitch of stays *15 1/2 x 15 1/2* How are stays secured *d. nuts* Working pressure by rules *222 lbs* Material of stays *iron*  
 Diameter at smallest part *2 3/4* Area supported by each stay *240.2* Working pressure by rules *185.4 lbs* Material of Front plates at bottom *S.*  
 Thickness *1 1/16* Material of Lower back plate *S.* Thickness *1 1/8* Greatest pitch of stays *12 1/2* Working pressure of plate by rules *323 lbs*  
 Diameter of tubes *3 1/2* Pitch of tubes *4 3/4 x 4 7/8* Material of tube plates *S.* Thickness: Front *1 3/32* Back *1 3/16* Mean pitch of stays *9 7/8*  
 Pitch across wide water spaces *14 1/2* Working pressures by rules *194 lbs* Girders to Chamber tops: Material *S.* Depth and  
 thickness of girder at centre *7 1/2 x 1 7/8* Length as per rule *30* Distance apart *7 3/4* Number and pitch of Stays in each *3. 7 3/4*  
 Working pressure by rules *201 lbs* 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 *—*

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W751-0013

*Auxiliary Connected direct to main steam pipes Heating Surface 1085 sq'*  
 \*DONKEY BOILER— No. 1. Description *Cyl. Multitubular 2 Corrugated furnaces*  
 Made at *Stockton* By whom made *Blair & Co L<sup>d</sup>* When made *10.6.07* Where fixed *Household*  
 Working pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* No. of Certificate *2494* Fire grate area *28 sq'* Description of safety valves *d. spring*  
 No. of safety valves *2*. Area of each *3.97* Pressure to which they are adjusted *185 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes* Dia. of donkey boiler *11'-0"* Length *10'-0"* Material of shell plates *S.* Thickness *1"* Range of tensile strength *27-32* Descrip. of riveting long. seams *d. but strap* Dia. of rivet holes *1 1/16* Whether punched or drilled *dr.* Pitch of rivets *7/8 x 3/8*  
 Lap of plating *15 3/4* Per centage of strength of joint Rivets *90.4* Thickness of shell plates *1"* Radius of do. *15 1/2* Pitch of Stays to do. *15 1/2*  
 Dia. of stays *2 3/4 Iron* Diameter of furnace Top *36"* Bottom *—* Length of furnace *6'-3"* Thickness of furnace plates *1/2"* Description of joint *Corrugated* Thickness of furnace plates *9/16* Stayed by *17 off 2 stays 7/8 x 3/4 p. nuts* Working pressure of shell by rules *191 lbs*  
 Working pressure of furnace by rules *210 lbs* Diameter of uptake tubes *3 1/2"* Thickness of uptake plates *5/16 B 1/16* Thickness of water tubes *1/4"*

SPARE GEAR. State the articles supplied:— *Propeller and one piece Crank shaft - Top and bottom end bolts and nuts. Main bearing and coupling bolts & nuts. Feed, bilge and donkey pump valves. Bolts, nuts iron. —*

FOR BLAIR & CO., LIMITED  
 The foregoing is a correct description,

*Walter Bonie* Manufacturer

SECRETARY		Dates	
During progress of work in shops -	1900	Sept 13, 18, 25	Oct 3, 10, 18, 30
		Nov 12, 19, 28, 28	Dec 4, 11, 18, 21
		1901	Jan 5, 9, 22, 26, 31
During erection on board vessel -		Feb 4, 8, 15, 21, 27	
		Mar 5, 11, 18	Apr 2, 11, 18, 29
Total No. of visits		May 7, 13, 20, 30, 31	June 3, 4, 5, 10, 12, 13, 17, 18, 19, 21, 24, 27, 28
		July 1, 2, 3	

Is the approved plan of main boiler forwarded herewith *Blair's plans*  
 " " " donkey " " " *yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 Material of screw shaft *Scrap iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no*  
 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 *no*  
 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 *—* If two liners are fitted, is the shaft lapped or protected between the liners *yes*

*These engines and boilers have been built and tested as required by the Society's Rules for Special Survey and are of good workmanship and materials. They have been well fitted and secured on board the vessel and on completion tried under steam at moorings with satisfactory results. —*  
*The vessel's machinery is now in my opinion in a good and efficient working condition and eligible to the notation of L.M.C. 7.01. —*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7.01

*W.H.*  
 29/7/07

*J.S.*  
 29.7.01

	£	s	d	When applied for,
The amount of Entry Fee	3	0	0	25.7.1901
Special	42	4	0	24.7.1901
Donkey Boiler Fee	2	2	0	When received,
Travelling Expenses (if any)				25.7.1901
				1.8.01

*Wm Sanderson*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Committee's Minute  
 Assigned  
 TUES. JUL 30 1901  
 + L.M.C. 7.01

MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to

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