

# REPORT ON MACHINERY.

Port of Newcastle-on-Tyne

THURS. 17 JAN 1895

Received at London Office 18

No. in Survey held at Newcastle-on-Tyne Date, first Survey 4 June Last Survey 10 Jan 1895  
 Reg. Book. 5 on the Screw Steamer "Johannesburg" (Number of Visits 30) Tons { Gross 4444.29  
 Net 2818.97  
 Master F. H. Wyse Built at Newcastle By whom built J. W. G. Armstrong Mitchell & Co When built 1895  
 Engines made at Newcastle By whom made R. W. Hawthorn, Leslie & Co. Lim<sup>d</sup> when made 1895  
 Boilers made at Newcastle By whom made R. W. Hawthorn, Leslie & Co. Lim<sup>d</sup> when made 1895  
 Registered Horse Power 500 Owners British & Colonial Steam Navigation Co. Lim<sup>d</sup> Port belonging to London  
 Nom. Horse Power as per Section 28 497 Beckenall Bros, Managers

**ENGINES, &c.** — Description of Engines Inverted Triple Expansion No. of Cylinders 3  
 Diameter of Cylinders 30" 50" 80" Length of Stroke 54" Revolutions per minute 75 Diameter of Screw shaft as per rule 14.92  
 as fitted 15.2"  
 Diameter of Tunnel shaft as per rule 14.17 Diameter of Crank shaft journals 15.2" Diameter of Crank pin 15.2" Size of Crank webs 23.2" x 10"  
 as fitted 15"  
 Diameter of screw 17.0" Pitch of screw 19.0" No. of blades 4 State whether moveable yes Total surface 98.09 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 10" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3.2" Stroke 27" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps (10.2 x 10) (6 x 10) (6 x 10) No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three, One 4" dia, Two 3.2" dia In Holds, &c. Two, Two Foremost hold 3.2" dia, Two aft hold 3.2" dia, Two main hold 3.2" dia, Two after hold 3.2" dia, One Aftermost hold 4" dia, One Tunnel well 4" dia.  
 No. of bilge injections one size 8" dia Connected to condenser, or to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes, 3.2" dia  
 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 no  
 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 bilge suction to fore holds How are they protected By wood casing  
 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 23.10.94 Is the screw shaft tunnel watertight yes  
 Is it fitted with a watertight door yes worked from Top platform of engine room.

**BOILERS, &c.** — (Letter for record S) Total Heating Surface of Boilers 7875.09 sq. ft.  
 No. and Description of Boilers Three, Cyl. mult. Single Ended. Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb.  
 Date of test 16.8.94 Can each boiler be worked separately yes Area of fire grate in each boiler 63.09 sq. ft. No. and Description of safety valves to  
 each boiler Two, Spring Area of each valve 19.24 sq. in. Pressure to which they are adjusted 180 lb. Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers on woodwork 14" Mean diameter of boilers 15.6"  
 Length 12.0" Material of shell plates Steel Thickness 1.2" Description of riveting: circum. seams Dable's lap long seams dable butt strap  
 Diameter of rivet holes in long. seams 1.5" x 1.2" Pitch of rivets 1.0" or 9/16" or 1.0" or 6/8" Lap of plates or width of butt straps inside 2.25" outside 1.5"  
 Per centages of strength of longitudinal joint rivets 107 Working pressure of shell by rules 196 lb. Size of manhole in shell 16" x 12"  
 plate 85  
 Size of compensating ring 4" x 1.76" No. and Description of Furnaces in each boiler 3, horizontal Material steel Outside diameter 4.174"  
 Length of plain part top 5" bottom 4" Thickness of plates crown 5/8" bottom 5/8" Description of longitudinal joint welded No. of strengthening rings none  
 Working pressure of furnace by the rules 202 lb. Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 5/8" Top 1/16" Bottom 1/8"  
 Pitch of stays to ditto: Sides 9.2" x 8" Back 9.2" x 8" Top 9.2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 lb.  
 Material of stays Steel Area Diameter at smallest part 1.73 Area supported by each stay 70.9 Working pressure by rules 195 lb. End plates in steam space:  
 Material Steel Thickness 1.32" Pitch of stays 18.2" x 15.2" How are stays secured Dable's wash Working pressure by rules 201 lb. Material of stays Steel  
 Area Diameter at smallest part 6.179 Area supported by each stay 295.31 Working pressure by rules 188 lb. Material of Front plates at bottom Steel  
 Thickness 1.76" Material of Lower back plate Steel Thickness 1.76" Greatest pitch of stays 14.3/8" Working pressure of plate by rules 188 lb.  
 Diameter of tubes 2.2" Pitch of tubes 3.2" x 3.2" Material of tube plates Steel Thickness: Front 1" Back 27/32" Mean pitch of stays 9.8"  
 Pitch across wide water spaces 15.2" Working pressures by rules 181 lb. Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10.2" x 1.8" Length as per rule 2.9" Distance apart 9.3/8" Number and pitch of Stays in each 3, 8"  
 Working pressure by rules 193 lb. Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
 separately no 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**— Description *Vertical, Cylindrical, 4 Cross tubes*  
 Made at *Stockton* By whom made *S. Ludron & Co.* When made *8.8.94* Where fixed *In Stokholm*  
 Working pressure *90 lb.* tested by hydraulic pressure to *180 lb.* No. of Certificate *905* Fire grate area *24.9 sq. ft.* Description of safety valves *Spring*  
 No. of safety valves *2* Area of each *4.9* Pressure to which they are adjusted *90 lb.* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *6.6"* Length *13.2"* Material of shell plates *Steel* Thickness *5/8"*  
 Description of riveting long. seams *lap double riv.* Diameter of rivet holes *27/32"* Whether punched or drilled *Drilled* Pitch of rivets *2"*  
 Lap of plating *4 3/8"* Per centage of strength of joint Rivets *72* Plates *69.9* Thickness of shell crown plates *5/8"* Radius of do. *5.9"* No. of Stays to do. *7*  
 Dia. of stays. *1 1/8"* Diameter of furnace Top *4.10"* Bottom *5.10"* Length of furnace *5.6"* Thickness of furnace plates *21/32"* Description of joint *Lap riv. lap* Thickness of furnace crown plates *5/8"* Stayed by *7 stays 1 1/8" dia.* Working pressure of shell by rules *91 lb.*  
 Working pressure of furnace by rules *90 lb.* Diameter of uptake *14"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied: *2 Propeller blades, 1 Crank shaft, 1 Screw shaft, a set of bolts & nuts for a connecting rod, main bearing, and shaft coupling, a set of valves for the air, feed, & bilge pumps, a set of springs for the I & A. P. pistons, Bolts, nuts, & Iron assorted, 50 Condenser tubes, 30 Boiler tubes, Fan & shaft for Cent. pump*  
 The foregoing is a correct description,  
**R. & W. HAWTHORN, LESLIE & CO., LIMITED** Manufacturer of Engines & Main boilers.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*Main steam pipes tested by hydraulic pressure to 360 lb. per square inch. The engines and boilers of this vessel have been constructed under Special Survey and of a good quality of workmanship, they have been tried under steam, the safety valves adjusted and found to work well and are now in safe and efficient working condition and, in my opinion, eligible to have L.M.C. 1.95 recorded in the Register Book. Howden's system of Forced Draught is fitted to the main boilers. An Electric Sighting Installation has been fitted on the vessel and the Report is forwarded herewith.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 195

A.R.R.  
18.1.95

*[Large handwritten signature]*

Newcastle Office.

Certificate (if required) to be sent to  
 The amount of Entry Fee. £ 3 : 0 :  
 Special .. .. £ 44 : 17 :  
 Donkey Boiler Fee .. .. £ 4 : 1 :  
 Travelling Expenses (if any) £ . : . :  
 When applied for, 16.1.95  
 When received, 22/1.95

*[Signature]*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute  
 Assigned  
 FRIDAY 18 JAN 1895  
 + L.M.C. 1.95

VESSEL	
* * These particulars	
Signal Letters (if any)	
Official Number.	
104,829	
No., Date, and Port	
Whether British or Foreign Built.	
British	
Number of Decks	
Number of Masts	
Rigged	
Stern	
Build	
Galleries	
Head	
Framework and deck vessel	
Number of Bulkheads	
Number of water tanks and their capacity	
Total to quarter the vessel at side amidships	
No. of engines	Description
	Engine Triple expansion
	Boilers
Number	
Iron or Steel	
Pressure when laid down	
GROSS TONNAGE	
Under Tonnage Deck	
Closed-in spaces above	
Space or spaces between	
Poop	
Forecastle	
Round House	
Other closed-in spaces	
Side Chart	
Excess	
Gross Tonnage	
Deductions, as per Certificate	
Registered	
Name of Master	
No. of Owners One	
Name, Residence, and Occupation	
The Butcher	
23 Leazes	
Edward	
Dated 28th Dec 1894	
B & L (439w) - 41262 - 1000	

