

# REPORT ON MACHINERY.

No. 29527

Port of NEWCASTLE-ON-TYNE.

WED. 27 DEC 1893

Received at London Office

No. in Survey held at Newcastle Date, first Survey 24<sup>th</sup> April Last Survey 1<sup>st</sup> Dec. 1893  
 Reg. Book. Supplement (Number of Visits 26)  
 174 on the S.S. "Snowflake" Tons { Gross 2709.87  
 Net 1725.45  
 Master G. Rhynas Built at Newcastle By whom built Lieut. Armstrong & Mitchell When built 1893  
 Engines made at Newcastle By whom made Rolland Shipway & Coy. Co. when made 1893  
 Boilers made at do By whom made do when made 1893  
 Registered Horse Power 450 Owners C. J. Bowering & Co Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 247

ENGINES, &c.— Description of Engines Triple expansion Surface condensing No. of Cylinders 3  
 Diameter of Cylinders 23.37.60 Length of Stroke 42 Revolutions per minute 68 Diameter of Screw shaft as per rule 10.94  
 Diameter of Tunnel shaft as fitted 10.39 Diameter of Crank shaft journals 11 1/4" Diameter of Crank pin 11 1/4" Size of Crank webs 4 3/4" x 1 1/4"  
 Diameter of screw 16.0" Pitch of screw 16.6" No. of blades 4 State whether moveable no Total surface 70 sq. ft.  
 No. of Feed pumps none Diameter of ditto - Stroke - Can one be overhauled while the other is at work -  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps main feed 8 1/2 x 5 1/2 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 bilge 3" - 2 Centre 3" - 1 aft. Centre 3" In Holds, &c. 1 - 5" in fore hold, 1 - 4" in fore hold.  
 No. of bilge injections 1 sizes 5 Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size 3 1/2"  
 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 -  
 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 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 and all boiler mountings accessible at all times yes  
 Are 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 how held Is the screw shaft tunnel watertight none  
 Is it fitted with a watertight door - worked from -

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 3920 sq. ft.  
 No. and Description of Boilers Two cylindrical simple ended Working Pressure 160 Tested by hydraulic pressure to 320  
 Date of test 21.9.93 Can each boiler be worked separately yes Area of fire grate in each boiler 52 sq. ft. No. and Description of safety valves to  
 each boiler 2 Spring Area of each valve 7.07 Pressure to which they are adjusted 165 lbs Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork Ship's Side Mean diameter of boilers 14.6  
 Length 10.0" Material of shell plates Steel Thickness 1 5/8" Description of riveting: circum. seams Lap double long. seams AT 2. Straps  
 Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 7 3/8" Lap of plates or width of butt straps 14 1/4"  
 Per centages of strength of longitudinal joint 83.7 Working pressure of shell by rules 161 Size of manhole in shell 16 x 12  
 Size of compensating ring 8 x 1 5/8" No. and Description of Furnaces in each boiler 3 Purves Material Steel Outside diameter 3.3 1/4"  
 Length of plain part top - bottom Thickness of plates top - bottom Description of longitudinal joint - No. of strengthening rings -  
 Working pressure of furnace by the rules 162 Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 3/4"  
 Pitch of stays to ditto: Sides 9 1/8" Back 9 1/8" Top 9 1/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 164  
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 83.2 Working pressure by rules 190 End plates in steam space:  
 Material Steel Thickness 1 1/8" Pitch of stays 21 x 20 1/2" How are stays secured Drawn Working pressure by rules 176 Material of stays Steel  
 Diameter at smallest part 3 1/8" Area supported by each stay 20 sq. ft. Working pressure by rules 160 Material of Front plates at bottom Steel  
 Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 12 1/2" Working pressure of plate by rules 169  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 15/16" Back 3/4" Mean pitch of stays 15 ft.  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 160 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 7 1/2" x 1 1/2" Length as per rule 2.5 Distance apart 9 1/8" Number and pitch of Stays in each 2 - 9" pitch  
 Working pressure by rules 160 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 -

112. L.R.P.H. Form No. 8. 12/92. Copyable in ink.



**DONKEY BOILER**— Description *Open Patent*  
 Made at *Gateshead* By whom made *Clarke Chapman & Co* When made *31.8.93* Where fixed *On deck*  
 Working pressure *100* tested by hydraulic pressure to *200* No. of Certificate *4162* Fire grate area *19.63* Description of safety valves *Spring*  
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *100 lbs* fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*  
 Diameter of donkey boiler *6.6"* Length *14.6"* Material of shell plates *Sub* Thickness *14*  
 Description of riveting long. seams *Lap double* Diameter of rivet holes *15/16"* Whether punched or drilled *Drilled* Pitch of rivets *3 1/2"*  
 Lap of plating *4 1/2"* Per centage of strength of joint *70* Rivets *70* Thickness of shell crown plates *5"* Radius of do. *4.0"* No. of Stays to do. *2*  
 Dia. of stays *2"* Diameter of furnace Top *2.7 1/8"* Bottom *5.7"* Length of furnace *4.3"* Thickness of furnace plates *7 1/2"* Description of joint *Lap Single* Thickness of ~~plates~~ plates *2 3/4"* Stayed by *Screwed Stay* Working pressure of shell by rules *107*  
 Working pressure of furnace by rules *106* Diameter of uptake *18"* Thickness of uptake plates *1/2"* Thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *3rd part crank shaft, propeller & propeller shaft*  
*2 main bearing bolts & nuts. 2 top end bolts & nuts. 2 bottom end bolts & nuts.*  
*1 set of shaft coupling bolts & nuts. 2 Slide Spindles, Air & Circulating*  
*Pump Rams, feed & bilge pump valves, packing ring for each cylinder*  
*piston pump, eccentric shears, straps*  
*bottom end trapes, nuts bolts & nuts*  
 The foregoing is a correct description,  
 FOR THE WALLSEND SHIPWAY & ENGINEERING CO. LTD  
 Manufacturer.  
 Dec 21/93 *W. Boyd Smith*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery has been*  
*Specially Surveyed during construction the material and*  
*workmanship good and renders the result eligible in my*  
*opinion to have the Record + LMC 12.93 in the Register*  
*Book of the Society.*  
*The report on the Electric lighting will be forwarded when*  
*completed.*

It is submitted that  
 this vessel is eligible for  
 THE RECORD + LMC 12.93—  
*Edw*  
 27/12/93—

*Richard Sims*  
 Engineer, Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to the Registrar  
 MACHINERY CERTIFICATE WRITTEN.  
 The amount of Entry Fee.. £ 7 : : : When applied for,  
 Special .. .. £ 32 : : : 22.12.1893  
 Donkey Boiler Fee .. .. £ : : :  
 Travelling Expenses (if any) £ : : :  
 When received 28/12/93

Committee's Minute  
 Assigned  
 FRI 29 DEC 1893  
 + LMC 12, 93

