

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 *24th April* Last Survey *11 Dec.* 18*93*
 Reg. Book. *Supplement* (Number *26*) Visits *26*
 17 on the *S.S. "Snowflake"* Tons { Gross *2709.87*
 Master *G. Rhynas* Built at *Newcastle* By whom built *Lieut. Armstrong Mitchell & Co.* When built *1893*
 Engines made at *Newcastle* By whom made *Rolls and Ripway & Son 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 per rule 10.39* Diameter of Crank shaft journals *11 1/4"* Diameter of Crank pin *11 1/4"* Size of Crank webs *7 1/2" 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 Comp 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 model* 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 single 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 1/2"* Description of riveting: circum. seams *Lap double long. seams* *AT 2. Straps*
 Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *7 1/8"* Lap of plates or width of butt straps *14 1/2"*
 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 1/2"* No. and Description of Furnaces in each boiler *3 Purvis* Material *Steel* Outside diameter *3.3 1/2"*
 Length of plain part *top 15"* Thickness of plates *bottom 3 1/2"* Description of longitudinal joint *—* No. of strengthening rings *—*
 Working pressure of furnace by the rules *162* Combustion chamber plates: Material *Steel* Thickness: Sides *5 1/8"* Back *5 1/2"* Top *5 1/8"* Bottom *3 1/4"*
 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 *into* Working pressure by rules *164*
 Material of stays *Steel* Diameter at smallest part *1 1/8"* 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 1/8"* Material of Lower back plate *Steel* Thickness *7 1/8"* 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 1/16"* Back *3 1/4"* Mean pitch of stays *15 ft. 6 in.*
 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 *—*

DONKEY BOILER— Description *Type 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 *Steel* Thickness *1 1/2"*
 Description of riveting long. seams *Lap double* Diameter of rivet holes *1 5/16"* 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 3/8"* Bottom *5.7"* Length of furnace *4.3"* Thickness of furnace plates *3 1/2"* Description of joint *Lap Single* Thickness of ~~furnace crown~~ 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 side spindles, air & circulating pump rods, feed & bilge pump valves, packing ring for each cylinder piston pump, eccentric sheave, straps bottom end trapes, nuts bolts & washers
 The foregoing is a correct description.
 FOR THE WILSON SLIPWAY & ENGINEERING CO. LTD. Manufacturer.
 Dec 2/93 *W. Noyd 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-

27/12/93 -

Certificate (if required) to be sent to the **MACHINERY CERTIFICATE WRITER.**

The amount of Entry Fee.. £ *2* : : : When applied for, *22.12.1893*
 Special £ *32* : : :
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : When received *28/12/93*

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

Committee's Minute
 Assigned

FRI 29 DEC 1893

+ Lmc 12.93



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