

* Port of <i>Greenock</i>		Received at London Office		<i>WED. 19 MAY 1909</i>	
No. in	Survey held at	Date, first Survey	Last Survey		
	<i>Greenock</i>	<i>6th Nov. 1908.</i>	<i>11th May 1909</i>		
Reg. Book.		(Number of Visits	<i>68.</i> )		
Name of the Vessel <i>Steel S. S. "Bright wings" (Russell &amp; Co. No. 594)</i>				Gross	<i>3116.</i>
				Net	<i>1992.</i>
Master	<i>G. H. Moore</i>	Built at	<i>Port Glasgow</i>	By whom built	<i>Russell &amp; Co.</i>
Engines made at	<i>Greenock</i>	By whom made	<i>J. G. Kincaid &amp; Co. Ld.</i>	When built	<i>1909.</i>
Boilers made at	<i>Do.</i>	By whom made	<i>Do.</i>	when made	<i>1909.</i>
Registered Horse Power		Owners	<i>N. Hallet &amp; Co.</i>	Port belonging to	<i>London.</i>

MULTITUBULAR BOILERS MAIN, AUXILIARY OR DONKEY. —Manufacturers of Steel *Beardmore & Co. + Lanarkshire*

Letter for record *S.* ) Total Heating Surface of Boilers *1133 ft* Is forced draft fitted *No.* No. and Description of Boilers *One D.E. Multitubular* Working Pressure *100 lbs.* Tested by hydraulic pressure to *200 lbs.* Date of test *12/3/09.*

No. of Certificate *920.* Can each boiler be worked separately ☒ Area of fire grate in each boiler *35.75 ft* No. and Description of safety valves to each boiler *Two, spring-loaded.* Area of each valve *5.9 sq. in.* Pressure to which they are adjusted *105 lbs.*

Are they fitted with easing gear *Yes.* In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler *No.*

Smallest distance between boilers *on uptakes and bunkers on woodwork* *18"* Mean dia. of boilers *11 ft.* Length *10'-6"*

Material of shell plates *Steel* Thickness *19/32"* Range of tensile strength *28 to 32 tons* Are the shell plates welded or flanged *No.*

Descrip. of riveting: cir. seams *D.R.* long. seams *D.R., D.B. Staps* Diameter of rivet holes in long. seams *3/4"* Pitch of rivets *4 1/2"*

Top of plates or width of butt straps *8 3/4"* Per centages of strength of longitudinal joint rivets *86.82* Working pressure of shell by plates *81.94*

rules *102 lbs.* Size of manhole in shell *16"x12"* Size of compensating ring *30"x26"* No. and Description of Furnaces in each boiler *Two, plain* Material *Steel* Outside diameter *40 1/4"* Length of plain part *78"* Thickness of plates crown *19/32"* bottom *19/32"*

Description of longitudinal joint *Welded* No. of strengthening rings ☒ Working pressure of furnace by the rules *116 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *1/2"* Back *1/2"* Top *1/2"* Bottom *1/2"* Pitch of stays to ditto: Sides *9"x8 1/2"* Back *9 3/8"x8"*

Top *9"x8 1/4"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *100 lbs.* Material of stays *Steel* Diameter at smallest part *1.003 in.* Area supported by each stay *75 sq. in.* Working pressure by rules *107 lbs.* End plates in steam space: Material *Steel* Thickness *23/32"*

Pitch of stays *16"x15"* How are stays secured *D. nuts and washers.* Working pressure by rules *101 lbs.* Material of stays *Steel* Diameter at smallest part *3.03 in.*

Area supported by each stay *240 sq. in.* Working pressure by rules *131 lbs.* Material of Front plates at bottom *Steel* Thickness *23/32"* Material of Lower back plate *Steel* Thickness *19/32"* Greatest pitch of stays *13"* Working pressure of plate by rules *117 lbs.* Diameter of tubes *3 3/4" ext.*

Pitch of tubes *4 1/2"x4 1/2"* Material of tube plates *Steel* Thickness: Front *23/32"* Back *11/16"* Mean pitch of stays *11 1/4"* Pitch across wide water spaces *13 1/2"* Working pressures by rules *101 lbs.* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *6 1/2"x1 3/8"* Length as per rule *29 3/4"* Distance apart *8 1/4"* Number and pitch of Stays in each *2-9"*

Working pressure by rules *121 lbs.* Superheater or Steam chest; how connected to boiler ☒ 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 ☒

**VERTICAL DONKEY BOILER**— No. \_\_\_\_\_ Description \_\_\_\_\_ Manufacturers of steel \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_ Working pressure \_\_\_\_\_

tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can  
enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile  
strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_ Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint <sup>Rivets</sup> \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_  
<sub>Plates</sub>

Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_

Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_ Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown  
plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_

Thickness of water tubes \_\_\_\_\_

The foregoing is a correct description,  
\_\_\_\_\_  
Manufacturers

Dates of Survey while building	During progress of work in shops - -		Total No. of visits
	During erection on board vessel - - -		
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See accompanying report.

Is the approved plan of main boiler forwarded herewith

donkey 22

Lloyd's Register  
402 - 0003  
Foundation



GENERAL REMARKS (State quality of workmanship, opinions as to class, &c. *Workmanship and material*

*This boiler has been built under special survey; It has been efficiently fitted on board, and the safety valves adjusted under steam. The boiler is now in safe working condition.*

*Marks on Donkey H<sup>o</sup>.*

*Safety valve washers P<sup>3</sup>/<sub>8</sub>, S<sup>3</sup>/<sub>8</sub> bare.*

*N<sup>o</sup> 920  
Lloyd's Test.  
200 lbs.  
12-3-09 R.E.*

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee...	£	:	:	When applied for,
Special ...	£	:	:	19
Donkey Boiler Fee ...	£	:	:	When received,
Travelling Expenses (if any) £	£	:	:	19

Committee's Minute

GLASCOW 18 MAY, 1909

Assigned

*See minute on  
accompanying  
Report.*

*R. Elliott*

Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.



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Foundation