

REPORT ON MACHINERY.

Port of London

Received at London Office 23 10 1894

No. in Survey held at London Date, first Survey May 18th Last Survey Oct 10th 1894

Reg. Book. 1158 on the New Boilers of the S.S. "SWAN." (Number of Visits 27) Tons } Gross 1231. Net 778.

Master Howlett. Built at Port Glasgow By whom built Blackwood & Gordon When built 1880

Engines made at Port Glasgow. By whom made Blackwood & Gordon. when made 1880.

Boilers made at Blackwall. By whom made J. Stewart Sons Limited when made 1894

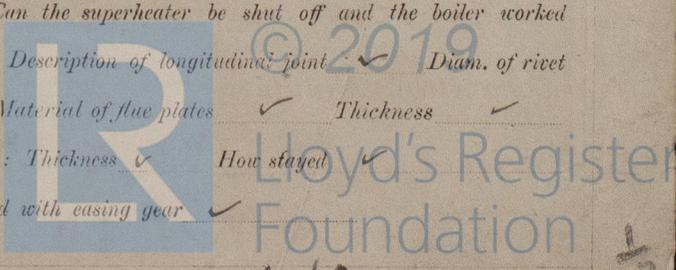
Registered Horse Power 110 HP. Owners General Steam Nav. Co. Port belonging to London.

Nom. Horse Power as per Section 28

ENGINES, &c.—		Description of Engines	No. of Cylinders	
Diameter of Cylinders		Length of Stroke	Revolutions per minute	Diameter of Screw shaft as per rule as fitted.
Diameter of Tunnel shaft as per rule as fitted.		Diameter of Crank shaft journals	Diameter of Crank pin	Size of Crank webs
Diameter of screw	Pitch of screw	No. of blades	State whether moveable	Total surface
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work	
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps		
In Engine Room		In Holds, &c.		
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size	
Are all the bilge suction pipes fitted with roses		Are the roses in Engine room always accessible	Are the sluices on Engine room bulkheads always accessible	
Are all connections with the sea direct on the skin of the ship		Are they Valves or Cocks		
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates		Are the discharge pipes above or below the deep water line		
Are they each fitted with a discharge valve always accessible on the plating of the vessel		Are the blow off cocks fitted with a spigot and brass covering plate		
What pipes are carried through the bunkers		How are they protected		
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times				
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges				
When were stern tube, propeller, screw shaft, and all connections examined in dry dock		Is the screw shaft tunnel watertight		
Is it fitted with a watertight door		worked from		

BOILERS, &c.—		(Letter for record <u>S.</u>)	Total Heating Surface of Boilers <u>2052 Sq. feet.</u>
No. and Description of Boilers	<u>One Single ended Multitubular.</u> Working Pressure <u>130 lbs</u> Tested by hydraulic pressure to <u>260 lbs</u>		
Date of test	<u>21.9.94</u>	Can each boiler be worked separately	<input checked="" type="checkbox"/>
Area of fire grate in each boiler	<u>81 Sq. ft.</u>	No. and Description of safety valves to each boiler	<u>Two, spring loaded</u>
Area of each valve	<u>15.9 sq"</u>	Pressure to which they are adjusted	<u>120 lbs.</u>
Are they fitted with casing gear	<u>Yes</u>	Smallest distance between boilers or uptakes and bunkers or woodwork	<u>1 ft 6 ins.</u>
Mean diameter of boilers	<u>14.9"</u>	Length	<u>10.9"</u>
Material of shell plates	<u>Steel</u>	Thickness	<u>1/8"</u>
Description of riveting: circum. seams	<u>Double</u>	long. seams	<u>Steele</u>
Diameter of rivet holes in long. seams	<u>1 1/4"</u>	Pitch of rivets	<u>7 3/4"</u>
Lap of plates or width of butt straps	<u>19 1/2"</u>		
Per centages of strength of longitudinal joint	rivets <u>69.7</u>	plate <u>83.0</u>	Working pressure of shell by rules <u>131.6 lbs.</u>
Size of compensating ring	<u>7" x 1 1/8"</u>	No. and Description of Furnaces in each boiler	<u>4 Plain</u>
Material	<u>Steel</u>	Outside diameter	<u>3 feet</u>
Length of plain part	top <u>6.9"</u>	bottom <u>6.9"</u>	Thickness of plates crown <u>5/8"</u> bottom <u>15/8"</u>
Description of longitudinal joint	<u>Welded</u>		
No. of strengthening rings	<u>None</u>		
Working pressure of furnace by the rules	<u>144 lbs</u>	Combustion chamber plates: Material	<u>Steel</u>
Thickness: Sides	<u>9/16"</u>	Back	<u>7/32"</u>
Top	<u>7/32"</u>	Bottom	<u>9/16"</u>
Pitch of stays to ditto: Sides	<u>8 1/2" x 8 1/2"</u>	Back	<u>8 1/2" x 7 1/4"</u>
Top	If stays are fitted with nuts or riveted heads <u>Nuts</u>		
Working pressure by rules	<u>165 lbs</u>		
Material of stays	<u>Steel</u>	Diameter at smallest part	<u>1 1/2"</u>
Area supported by each stay	<u>66 sq"</u>		
Working pressure by rules	<u>144 lbs</u>		
End plates in steam space: Material	<u>Steel</u>	Thickness	<u>15/16"</u>
Pitch of stays	<u>7.5" x 5.5"</u>		
How are stays secured	<u>Nuts.</u>		
Working pressure by rules	<u>136 lbs</u>		
Material of stays	<u>Steel</u>		
Diameter at smallest part	<u>2 1/4"</u>		
Area supported by each stay	<u>271 sq"</u>		
Working pressure by rules	<u>135 lbs</u>		
Material of Front plates at bottom	<u>Steel</u>		
Thickness	<u>1/16"</u>		
Material of Lower back plate	<u>Steel</u>		
Thickness	<u>1/16"</u>		
Greatest pitch of stays	<u>8 1/8"</u>		
Working pressure of plate by rules	<u>147 lbs</u>		
Diameter of tubes	<u>3 1/4"</u>		
Pitch of tubes	<u>4 1/2"</u>		
Material of tube plates	<u>Steel</u>		
Thickness: Front	<u>3/4"</u>		
Back	<u>3/4"</u>		
Mean pitch of stays	<u>9"</u>		
Pitch across wide water spaces	<u>13"</u>		
Working pressures by rules	<u>130 lbs</u>		
Girders to Chamber tops: Material	<u>Steel</u>		
Depth and thickness of girder at centre	<u>1/2" Jessel's Pat.</u>		
Length as per rule	<input checked="" type="checkbox"/>		
Distance apart	<u>13"</u>		
Number and pitch of Stays in each	<u>None</u>		
Working pressure by rules	<input checked="" type="checkbox"/>		
Superheater or Steam chest; how connected to boiler	<input checked="" type="checkbox"/>		
Can the superheater be shut off and the boiler worked separately	<input checked="" type="checkbox"/>		
Diameter	<input checked="" type="checkbox"/>		
Length	<input checked="" type="checkbox"/>		
Thickness of shell plates	<input checked="" type="checkbox"/>		
Material	<input checked="" type="checkbox"/>		
Description of longitudinal joint	<input checked="" type="checkbox"/>		
Diam. of rivet holes	<input checked="" type="checkbox"/>		
Pitch of rivets	<input checked="" type="checkbox"/>		
Working pressure of shell by rules	<input checked="" type="checkbox"/>		
Diameter of flue	<input checked="" type="checkbox"/>		
Material of flue plates	<input checked="" type="checkbox"/>		
Thickness	<input checked="" type="checkbox"/>		
If stiffened with rings	<input checked="" type="checkbox"/>		
Distance between rings	<input checked="" type="checkbox"/>		
Working pressure by rules	<input checked="" type="checkbox"/>		
End plates: Thickness	<input checked="" type="checkbox"/>		
How stayed	<input checked="" type="checkbox"/>		
Working pressure of end plates	<input checked="" type="checkbox"/>		
Area of safety valves to superheater	<input checked="" type="checkbox"/>		
Are they fitted with casing gear	<input checked="" type="checkbox"/>		

Lloyd's Register of Shipping, 1900. Form No. 8. (200)



Lon 703 - 0305

55933 Lon

DONKEY BOILER— Description *Vertical Cross Tubed*
 Made at *Deptford* By whom made *General Steam Navigation Co.* When made *1894* Where fixed *Main Deck*
 Working pressure *80lbs* tested by hydraulic pressure to *160lbs* No. of Certificate *278* Fire grate area *20.80* Description of safety valves *Spring loaded*
 No. of safety valves *2* Area of each *8.290* Pressure to which they are adjusted *80lbs*. If fitted with casing gear *Yes*. If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6 feet* Length *13 feet* Material of shell plates *Steel* Thickness *7/16"*
 Description of riveting long. seams *Double* Diameter of rivet holes *13/16"* Whether punched or drilled *Drilled* Pitch of rivets *2 3/4"*
 Lap of plating *4"* Per centage of strength of joint Rivets *62.3* Thickness of shell crown plates *3/4"* Radius of do. *Flat* No. of Stays to do. *7*
 Dia. of stays *2 1/2"* Diameter of furnace Top *4ft* Bottom *5ft 3in* Length of furnace *7ft 3in* Thickness of furnace plates *19/32"* Description of joint *Single Riveted* Thickness of furnace crown plates *19/32"* Stayed by *7 Stays 2 1/2" dia* Working pressure of shell by rules *80.2*
 Working pressure of furnace by rules *155lbs* Diameter of uptake *13"* Thickness of uptake plates *19/32"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:—

JOHN STEWART & SON LIMITED.

John Stewart & Son Limited

J. P. Salmon

The foregoing is a correct description,

Manufacturer.

Managing Director.

General Remarks (State quality of workmanship, opinions as to class, &c. *The New Main & Donkey Boilers*)
 have been constructed under special survey in accordance with the approved plans. The material has been tested as required by the Society's rules. The workmanship is good. The Boilers have been tested with water to twice the working pressure and the Safety valves adjusted under steam.

The cylinders, Pistons, Slide Valves, Pumps & Condenser, Sea & Bilge connections, shafting & propeller have been examined. A cast iron liner has been fitted in the H.P. cylinder reducing the diameter to 23 inches & a new piston has been fitted. The propeller shaft was found to be considerably wasted between the liners; a new shaft has now been fitted & the stern bush has been rewooded and the condenser has been retubed.

On account of the diameter (9 3/4") of the shafting the safety valves of the Main Boiler were adjusted to lift at 120 lbs per sq. pressure altho' the Boiler was made for a higher pressure.

In my opinion the vessel is now eligible for record \boxtimes N.B. 10.94 and \boxtimes L.M.C. 10.94.

On acct of ten survey, New Main and donkey boilers & propeller shafts have now been fitted and a few moderate repairs were effected to the Machinery. As an alteration the dia. of the H.P. cyl. was reduced to 23"

Pressure of main boiler to be entered in the Report *120 lbs - 4 ps*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10.94 + N.B. 10.94. NDB. 94. 80 lbs. *W.A. records name to be removed in the next list 24-10-94*

Certificate (if required) to be sent to *Main Boiler*

The amount of Entry Fee..	£ 4 : 4 :	When applied for,
Special Survey ..	£ 2 : 0 :	23.10.1894
Donkey Boiler Fee ..	£ 2 : 2 :	When received,
Travelling Expenses (if any) £	8 : 6 :	3/11/94

P. M. Salmon
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned *+ L.M.C. 10.94*
+ N.B. 10.94 *N.B. 94*

FRIDAY 26 OCT 1894



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 Foundation

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

Shetis

One Bower anchor supplied. Weight ex Stock
 12-1-12. Stock 2-1-4 Tested to 14-4-0-0
 at Chester 17th Sept 1878. No of certificate 4955
 maker, H. Wood. Andrew Jack Sup^o
 Weight of anchor required by Table 22 12 Cwt

Forty four $5\frac{1}{2}$ fathoms of $1\frac{1}{2}$ inch stud link chain
 cable supplied, Tested to $42\frac{1}{2}$ & $28\frac{1}{2}$ tons
 at Sipton 5th Nov 1880. No of certificate 4904
 H. Wood makers Erastus R. Pitt Sup^o
 Diam^r of stud cable required by Table 22 $1\frac{3}{16}$ "

Edward Jno. Tierney.