

REPORT ON MACHINERY.

Port of London

Received at London Office 23 10 1894

No. in Survey held at London
Reg. Book.Date, first Survey May 18th Last Survey Oct 10th 1894(Number of Visits 27)1158 on the New Boilers of the S.S. "SWAN."Tons { Gross 1231.
Net 778.Master Howlett. Built at Port Glasgow By whom built Blackwood & Gordon When built 1880. 9.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 1894Registered 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 S.) Total Heating Surface of Boilers 2052 Sq. feet.

No. and Description of Boilers One Single ended Multitubular. Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs

Date of test 21.9.94 Can each boiler be worked separately ☒ Area of fire grate in each boiler 81 Sq. ft. No. and Description of safety valves to each boiler Two, spring loaded Area of each valve 15.9 sq. in. Pressure to which they are adjusted 120 lbs. Are they fitted with casing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 1 ft 6 ins. Mean diameter of boilers 14.9"

Length 10.9" Material of shell plates Steel Thickness 1/8" Description of riveting: circum. seams Double long. seams Stitch

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 7 3/4" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 69.7 plate 83.0 Working pressure of shell by rules 131.6 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 7" x 1 1/8" No. and Description of Furnaces in each boiler 4 Plain Material Steel Outside diameter 3 feet

Length of plain part top 6.9" bottom 6.9" 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 144 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 7/32" Top 7/32" Bottom 9/16"

Pitch of stays to ditto: Sides 8 1/8" x 8 1/8" Back 8 1/8" x 7/4" Top 8 1/8" x 7/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 165 lbs

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 66 sq. in. Working pressure by rules 144 lbs End plates in steam space: Material Steel Thickness 5/16" Pitch of stays 7.5" x 5.5" How are stays secured Nuts. Working pressure by rules 136 lbs Material of stays Steel

Diameter at smallest part 2 1/4" Area supported by each stay 271 sq. in. Working pressure by rules 135 lbs Material of Front plates at bottom Steel

Thickness 1/16" Material of Lower back plate Steel Thickness 1/16" Greatest pitch of stays 8 1/8" Working pressure of plate by rules 147 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9"

Pitch across wide water spaces 13" Working pressures by rules 130 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 1/2" Jessel's Rule Length as per rule ☒ Distance apart 13" Number and pitch of Stays in each None

Working pressure by rules ☒ 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 casing gear ☒

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 *8.29* Pressure to which they are adjusted *80lbs*. If fitted with easing 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 *150lbs* 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

The foregoing is a correct description,

Manufacturer.

J. P. Salmon

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 tear & wear, 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. H.P. Cyl. = 23 inches. W.A. vessels name to be removed from the 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 :	23.10.94	
Donkey Boiler Fee ..	£ 2 : 2 :	When received,	
Travelling Expenses (if any) £	8 : 6 :	3/11/94	

PCT

P. M. Salmon

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

Committee's Minute

FRIDAY 26 OCT 1894

Assigned

+ L.M.C. 10.94
+ N.B. 10.94



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(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^r 1878. No of certificate 4955
maker, H. Wood. Andrew Jack Sup^r

Weight of anchor required by Table 22 12 Cwt

Forty four $1\frac{1}{2}$ fathoms of $1\frac{1}{4}$ inch stud link chain
cable supplied, Tested to $42\frac{1}{2}$ & $28\frac{1}{2}$ tons
at Sipton 5th Nov^r 1880. No of certificate 4904
H. Wood makers Erastus R. Sutt Sup^r

Diam^r of stud cable required by Table 22 $1\frac{3}{16}$ "

Edward Fred. Tierney.