

# REPORT ON MACHINERY.

No. 1781

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No. in Survey held at  
Reg. Book.

Date, first Survey May 11<sup>th</sup> Last Survey Decem. 2<sup>nd</sup> 1890  
(Number of Visits 5)

on the S. S. Schönburg

Tons

Master Built at Stensburg By whom built Stensburger-Schiffbau-Ges. When built 1890  
Engines made at Stensburg By whom made Stensburger-Schiffbau-Gesellschaft When made 1890.  
Boilers made at Stensburg By whom made Stensburger-Schiffbau-Gesellschaft When made 1890  
Registered Horse Power 300. Owners Deutsche Dampfsch. Ges. Hansa Port belonging to Bremen

## ENGINES, &c.—

Description of Engines Triple Compound on 3 cranks, Inverted, Direct Acting, Surface Condensing  
Diameter of Cylinders 22 $\frac{1}{2}$  35 60 Length of Stroke 42 No. of Rev. per minute 60 Point of Cut off, High Pressure .45 Low Pressure .4  
Diameter of Screw shaft 12 $\frac{1}{2}$  Diam. of Tunnel shaft 11 $\frac{1}{2}$  Diam. of Crank shaft journals 12 Diam. of Crank pin 12 $\frac{1}{2}$  size of Crank webs 9 $\frac{1}{2}$  x 15  
Diameter of screw 15 6 Pitch of screw 20 0 No. of blades 4 state whether moveable No total surface 54.99 sq. ft.  
No. of Feed pumps 2 diameter of ditto 3 $\frac{1}{2}$  Stroke 27 Can one be overhauled while the other is at work yes.  
No. of Bilge pumps 2 diameter of ditto 3 $\frac{1}{2}$  Stroke 27 Can one be overhauled while the other is at work yes.  
Where do they pump from Engine bilge (Starb. Port) all holds all tanks, deliver overboard & on deck  
No. of Donkey Engines 2 Size of Pumps 2 ddb. act. 10" dia. 10" stroke Where do they pump from A. from all holds, bilge, tanks, sea, delivers overboard & through Condenser. B. pumps from same places as A. & from holdwell delivers on deck over board, into Main & Double Bunkers.  
Are all the bilge suction pipes fitted with roses yes. Are the roses always accessible yes. Are the sluices on Engine room bulkheads always accessible sluices  
No. of bilge injections one and sizes 5 Are they connected to condenser, or to circulating pump to circulating pump.  
How are the pumps worked by levers from crosshead of L. S. Engine.  
Are all connections with the sea direct on the skin of the ship yes. Are they Valves or Cocks cocks and valves.  
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 above  
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 bilge suction to fore hold and tank suction. How are they protected by wooden box on ceiling  
Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes.  
Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes.  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock on the stocks.  
Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Main Deck.

## BOILERS, &c.—

Number of Boilers 2 Description Cylindrical multitubular Whether Steel or Iron Steel, Longitud. & Trans. Iron (C)  
Working Pressure 165 lbs. Tested by hydraulic pressure to 330 lbs. Date of test October 4<sup>th</sup> 1890.  
Description of superheating apparatus or steam chest None.  
Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately  
No. of square feet of fire grate surface in each boiler 39.3 Description of safety valves Spring No. to each boiler 2.  
Area of each valve 7 sq. Are they fitted with easing gear yes No. of safety valves to superheater area of each valve  
Are they fitted with easing gear Smallest distance between boilers and bunkers or woodwork 12 to bunkers Diameter of boilers 13 4 4  
Length of boilers 10 2 3 description of riveting of shell long. seams ddb. butt sh. trans. circum. seams lap treble riv. Thickness of shell plates 1 3 2  
Diameter of rivet holes 1 4 whether punched or drilled drilled pitch of rivets 4 5 6 Lap of plating 8 8  
Per centage of strength of longitudinal joint 85 2 % working pressure of shell by rules 165.5 size of manholes in shell 12" x 16"  
Size of compensating rings 8" x 1 3 8 No. of Furnaces in each boiler 2 ribbed  
Outside diameter 3 10 3 length, top 6 11 bottom 9 6 2 thickness of plates 5 8 description of joint rivetted if rings are fitted no.  
Greatest length between rings working pressure of furnace by the rules 173 lbs. combustion chamber plating, thickness, sides 19 3 2 back 19 3 2 top 5 8  
Pitch of stays to ditto, sides 7 7 x 7 7 back 7 2 x 7 2 top 7 7 x 7 2 If stays are fitted with nuts or riveted heads with nuts working pressure of plating by rules 173 lbs. Diameter of stays at smallest part 1 3 8 working pressure of ditto by rules 189 lbs. end plates in steam space, thickness 1  
Pitch of stays to ditto 15" x 15" how stays are secured ddb. nuts & washers working pressure by rules 182 lbs. diameter of stays at smallest part 2 3 4 working pressure by rules 198 lbs. Front plates at bottom, thickness 25 3 2 Back plates, thickness 27 3 2  
Greatest pitch of stays 12" working pressure by rules 168 lbs. Diameter of tubes 3 4 pitch of tubes 4 1 2 thickness of tube plates, front 15 16 back 7 8 how stayed by stay tubes pitch of stays 9" x 9" width of water spaces 6"  
Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes  
Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates It stiffened with rings  
Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed  
Superheater or steam chest; how connected to boiler



**DONKEY BOILER**— Description *Cylindrical multitubular Material Iron*  
 Made at *Flensburg* by whom made *Flensburger Schiffbau Gesellschaft* made *1890* where fixed on *Main Deck*  
 Working pressure *100 lbs.* tested by hydraulic pressure to *200 lbs.* No. of Certificate *4/10/90* fire grate area *11.5 sq. ft.* description of safety  
 valves *Spring* No. of safety valves *2* area of each *1-3/8* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *7 2 3/4* length *8 1/2* description of riveting *dbl. butt str. treble riv.*  
 Thickness of shell plates *6* diameter of rivet holes *1* whether punched or drilled *drilled* pitch of rivets *4 1/2* lap of plating *7 1/2*  
 per centage of strength of joint *78%* thickness of *end* plates *3/4* stayed by *Iron stays 2 3/4* thread *1 1/2* pitch *an small*  
 Diameter of furnace, top *33 1/2* bottom *33* length of furnace *5 5* thickness of plates *1/2* description of joint *single butt str. single riv.*  
 Thickness of furnace crown plates *1/2* stayed by *stays 1 3/8* thread *8 x 8* pitch with nuts working pressure of shell by rules *108 lbs*  
 Working pressure of furnace by rules *121 lbs.* diameter of *dome* *3 ft.* thickness of plates *9/16* diam. thickness of water tubes *3 1/4*

**SPARE GEAR.** State the articles supplied:— *1 Propeller, 1 tail end shaft compl. 3 crankshaft, 1 slide rod, 1 pair brasses for conn. rod top & bottom end, 2 bolts for each d., 2 bolts for main bearings, 2 brasses for d., 2 links for pump gear compl. 1 air pump, 1 licul. pump rod, 1 set valves for air, licul. & ballast pumps, 4 valves & seats for feed & bilge pumps, 2 for Donkey feed pump, 1 set coupling bolts, 2 springs for safety valves 8 1/2 for cylinder escape valves, 2 5 condenser tubes, 100 flanges for d. 20 boiler tubes, 16 stay tubes, 1 set fire bars, 12 bolts & nuts for pistons, 1 packing ring & spring for each piston, 6 valves & seats for feed check valves, bolts, shields, nuts, iron of various sizes & c. assorted.*  
 The foregoing is a correct description,  
*Flensburger-Schiffbau-Gesellschaft.*  
*Manufacturer.*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

*Materials and workmanship of these Engines and Boilers are of very best description, the outfit and spare gear is ample. I attended a satisfactory trial trip on the 2<sup>nd</sup> December 1890 when the Machinery gave good results.*

*The Safety valves of Main- & Donkey Boilers I found correctly adjusted to 165 lbs and 100 lbs. respectively.*

*The copies of the invoices of the Steel Boiler plates, signed by the testing officers are in my hands.*

*The forging certificate of the shafting is attached.*

*The total heating Surface is 3850 sq. ft. and the paying horsepower by rule 245.*

*I beg to recommend that this vessel be classed in the Register Book and that £ LMC 12.90 be entered.*

*This submitted that this vessel is eligible to have £ LMC 12.90 recorded J J M 8/14/90*

The amount of Entry Fee .. £ 3: 0: 0 received by me,  
 Special .. £ 32: 5: 0  
 Donkey Boiler Fee .. £ 2: 2: 0  
 Certificate (if required) .. £ : 5: 0 27/11 1890  
 (Travelling Expenses, if any, £ 6. 10. 0.)

Committee's Minute

*YES 9 DEC 1890 + LMC 12/90*

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

*Ch. Rick*