

# REPORT ON MACHINERY.

Port of *Hamburg*

WED 11 FEB 91

No. *1842*

No. in Survey held at *Stensburg*

Date, first Survey *July 9 1890* Last Survey *February 1891*

Reg. Book.

(Number of Visits *1*)

on the *S. S. Loebenburg*

Tons { Gross  
Net

Master *Hamberg* Built at *Stensburg* By whom built *Stensburger-Schiffbau-Ges.* When built *1891*

Engines made at *Stensburg* By whom made *Stensburger-Schiffbau-Gesellschaft* when made *1891*

Boilers made at *Stensburg* By whom made *Stensburger-Schiffbau-Gesellschaft* when made *1891*

Registered Horse Power *300* Owners *Deutsche Dampfsch. Ges. Hansa* Port belonging to *Bremen*

## GINES, &c.—

Description of Engines *Triple compound on 3 cranks, Inverted, Direct acting, Surface Cond.* No. of Cylinders *3*  
 diam. of Cylinders *22 1/2 35 60* Length of Stroke *42* Rev. per minute *70* Point of Cut off, High Pressure *.45* Low Pressure *.4*  
 diameter of Screw shaft *12 1/4* Diam. of Tunnel shaft *11 1/2* Diam. of Crank shaft journals *12* Diam. of Crank pin *12 1/2* size of Crank webs *9 1/2 x 15*  
 diameter of screw *15 1/6* Pitch of screw *20 1/8* No. of blades *4* state whether moveable *No* total surface *54.49 ft.*  
 No. of Feed pumps *2* diameter of ditto *3 1/2* Stroke *27* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *2* diameter of ditto *3 1/2* Stroke *27* Can one be overhauled while the other is at work *yes*  
 Where do they pump from *Engine bilge (Starb. & P.) all holds all tanks deliver overboard on deck*  
 No. of Donkey Engines *2* Size of Pumps *a. 10" dia. 10" stroke b. 6" dia. 10" stroke* Where do they pump from *a. from all holds, bilges, tanks sea delivers over board through condenser. b. pumps from same places as a. from hotwell deliver on deck over board into main and donkey boilers.*  
 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 *yes*  
 No. of bilge injections *on* 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. P. 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.—

No. of Boilers *2* Description *Cylindrical multibubular* Material *Steel, Engt. Days Iron* Letter (for record) *(C)*  
 Working Pressure *165 lbs.* Tested by hydraulic pressure to *330 lbs.* Date of test *November 13<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 *—*  
 Area 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 *7.29* 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 1/4 4 1/2*  
 Length of boilers *10 2 3/4* description of riveting of shell long. seams *dbl. buttish. tied* circum. seams *lap buttish riv.* Thickness of shell plates *1 1/2*  
 diameter of rivet holes *1 1/4* whether punched or drilled *drilled* pitch of rivets *4 5/16* Lap of plating *8 3/8*  
 Percentage of strength of longitudinal joint *85 1/2%* working pressure of shell by rules *165.5* size of manholes in shell *12" x 16"*  
 No. of compensating rings *8" x 1 3/16* No. of Furnaces in each boiler *2* Description of Furnaces *ribbed*  
 Inside diameter *3 10 8* length *6 11* thickness of plates *5/8* description of joint *rivetted* if rings are fitted *no*  
 Shortest length between rings *—* working pressure of furnace by the rules *173 lbs.* combustion chamber plating, thickness, sides *19/32* back *19/32* top *5/8*  
 No. of stays to ditto, sides *7 1/2 x 7 1/2* back *7 1/2 x 7 1/2* top *7 1/2 x 7 1/2* 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"*  
 No. of stays to ditto *15" x 15"* how stays are secured *dbl. nut 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 *25/32* Back plates, thickness *27/32*  
 Pitch of stays *12"* working pressure by rules *168 lbs.* Diameter of tubes *3 1/4* 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"*  
 No. of Superheater or Steam chest *—* length *—* thickness of plates *—* description of longitudinal joint *—* diam. of rivet holes *—*  
 rivets *—* working pressure of shell by rules *—* diameter of flue *—* thickness of plates *—* If stiffened with rings *—*  
 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*, when made *1891*, where fixed *on main deck*  
Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* <sup>date of test</sup> No. of Certificate *13.11.90* 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 *4' 2 3/4"* length *8' 2"* description of riveting *dbl butt sh. double 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 *48%* thickness of ~~end~~ <sup>end</sup> plates *3/4"* stayed by *iron stays 2 3/4" thread 1 1/4" brackets on small*  
Diameter of furnace, <sup>top</sup> *3 3/2"* ~~bottom~~ <sup>comb. chamber</sup> *2"* length of furnace *5' 5"* thickness of plates *2"* description of joint *single butt sh. single riv.*  
Thickness of furnace ~~cover~~ <sup>plates</sup> *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 <sup>donk</sup> ~~uptake~~ *3 ft.* thickness of plates *9/16"* thickness of water tubes *3 1/4"*

SPARE GEAR. State the articles supplied:— *1 Propeller, 1 tail end shaft compl. 3 crankshaft, 1 sliderod, 1 pair brasses for conn. rod top & bottom end 2 bolts for each 8", 2 bolts for main bearings, 2 brasses for 8", 2 links for pump gear compl. 1 air pump, 1 circul. pump rod, 1 set valves for air, circul. & ballast pumps, 4 valves & seats for feed & bilge pumps 2" for donkey feed pump, 1 set coupling bolts, 2 springs for safety valves 8" for cylinder escape valves, 25 condenser tubes 100 ft. for 3" 20 ft. for 2" for each piston 1 set fire bar 13 bolts & nuts for pistons 1 packing ring & spring for each piston 6 valves & seats for feed check valves, bolts & nuts, nuts of various sizes i.e. 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 quality, the outfit and the number of spare gear is ample.*

*I attended a satisfactory engine trial on the 7<sup>th</sup> February 1891. when the machinery worked satisfactory.*

*The safety valves are correctly adjusted to 85 and 100 lbs respectively on the Main & Donkey Boilers.*

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

*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 T. M. C. 2.91 be entered.*

*It is submitted that this vessel is eligible to have T. M. C. 2.91 renewed*  
*N. A.*  
*12-2-91*

The amount of Entry Fee .. £ 3: 0: 0 received by me,

Special .. £ 32: 5: 0

Donkey Boiler Fee .. £ 2: 2: 0

Certificate (if required) .. £ 4: 0: 0 10/2 1891

To be sent as per margin.

(Travelling Expenses, if any, £ 5: 7: 0)

Committee's Minute

FRI. 13 FEB 1891

*+ L. M. C. 2.91*

*M. J. Burrows*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*Ch. Dick*  
Lloyd's Register  
Foundation