

# REPORT ON MACHINERY.

No. *646*

(Received at London Office) *MONDAY 14 JAN. 1884*

No. in Survey held at *Hamburg*

Date, first Survey *13<sup>th</sup> July*

Last Survey *9<sup>th</sup> Jan<sup>r</sup> 1884*

Reg. Book.

(Number of Visits)

on the *S. S. "Vapoli"*

Tons *1386*

Master *Bennett*

Built at *Reichstieg Schiffswerfte*

When built *finished 1884*

Engines made at *Hamburg*

By whom made *dt*

when made *1884*

Boilers made at *dt*

By whom made *dt*

when made *1884*

Registered Horse Power *130*

Owners *C. I. Eichmann*

Port belonging to *Hamburg*

## ENGINES, &c.—

Description of Engines *Compound inverted direct acting*

Diameter of Cylinders *30" & 56"* Length of Stroke *36"* No. of Rev. per minute *42* Point of Cut off, High Pressure *1/2* Low Pressure *1/2*

Diameter of Screw shaft *10"* Diameter of Tunnel shaft *9 3/4"* Diameter of Crank shaft journals *10"* Diameter of Crank pin *10"* size of Crank webs *11 3/4" x 7 1/2"*

Diameter of screw *13" - 9"* Pitch of screw *middle 13" - 6"* No. of blades *4* state whether moveable total surface

No. of Feed pumps *2* diameter of ditto *4 3/4"* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* diameter of ditto *4 3/4"* Stroke *18"* Can one be overhauled while the other is at work *yes*

Where do they pump from *the back-tank, Engine-room bilge and Well in Boiler-room, also Well in*

No. of Donkey Engines *1 & 1 Injector* Size of Pumps *4" & 9" stroke* Where do they pump from *Bilge connection, pipes to fore*

*Tank-connection and Sea-Injector only through the tank, Engine-tank and both foretanks*

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 *2* and sizes *3 1/4" - 5"* Are they connected to condenser, or to circulating pump *3 1/4" of condenser, 5" of circulating*

How are the pumps worked *Condenser, from back-tank, back-Well, Well in boiler-room, circulating of Engine-room*

Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *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 *Injector and fore-tank* How are they protected *Flanges on the upper bulkheads*

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *Yes* *Wood-casing over the pipes*

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *by the return-valves*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine-room*

## OILERS, &c.—

Number of Boilers *2* Description *Tubular boilers with separated back-combustion-chamber made of steel*

Working Pressure *80 lbs. sq. in.* Tested by hydraulic pressure to *14.62 Atmos* Date of test *22<sup>nd</sup> October 1883*

Description of superheating apparatus or steam chest *dome*

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 *40 sq. ft.* Description of safety valves

No. to each boiler *2* area of each valve *13.5 sq. in. - 4"* 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 *18"*

Diameter of boilers *12" - 4 1/2"* Length of boilers *10' 0"* description of riveting of shell long. seams *double* circum. seams *double*

Thickness of shell plates *1/16"* diameter of rivet holes *1 1/8"* whether punched or drilled pitch of rivets *3 5/8"*

Lap of plating *11 1/2" & 5 1/2"* per centage of strength of longitudinal joint *6" - 68.94 B - 71.4* working pressure of shell by rules *80.09 lbs*

Size of manholes in shell *16"* size of compensating rings *26" - 3 1/4"*

No. of Furnaces in each boiler *2* outside diameter *3' - 5 1/16"* length, top *7' - 0 5/8"* bottom

Thickness of plates *17/32"* description of joint *single* if rings are fitted greatest length between rings

Working pressure of furnace by the rules *88 lbs*

Combustion chamber plating, thickness, sides *7/16"* back *7/16"* top *7/16"*

Pitch of stays to ditto, sides *7 1/2"* back *7" x 8"* top

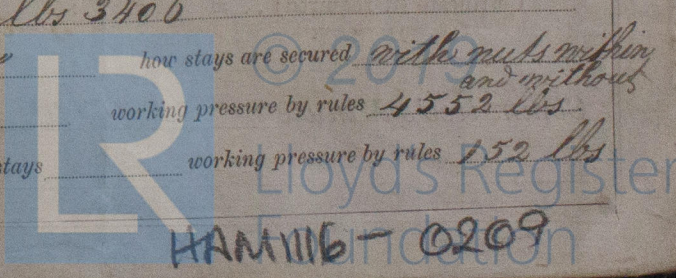
If stays are fitted with nuts or riveted heads *with nuts* working pressure of plating by rules *84 lbs*

Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *lbs 3400*

End plates in steam space, thickness *1/16" - 5/8"* pitch of stays to ditto *15" x 13 1/2"* how stays are secured *with nuts with*

Working pressure by rules *82 lbs* diameter of stays at smallest part *2 1/8" x 2 1/2"* working pressure by rules *455.2 lbs*

Front plates at bottom, thickness *5/8"* Back plates, thickness *5/8"* greatest pitch of stays working pressure by rules *152 lbs*





Diameter of tubes  $3\frac{1}{4}"$  pitch of tubes  $4\frac{1}{2} \times 4\frac{1}{16}"$  thickness of tube plates, front  $\frac{1}{16}"$  back  $\frac{1}{16}"$   
 How stayed pitch of stays  $13\frac{1}{2}" \times 13\frac{5}{16}"$  width of water spaces  
 Diameter of Superheater or Steam chest length  
 Thickness of plates description of longitudinal joint diameter of rivet holes pitch of rivets  
 Working pressure of shell by rules Diameter of flue thickness of plates  
 If 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 *Tabular boiler made of steel*  
 Made at *Hamburg* By whom made *Reichardt Schiffbauwerkshaus* made *1883*  
 Where fixed *Boiler-room* working pressure *70 lbs* Tested by hydraulic pressure to *9 $\frac{1}{3}$  Mms* No. of Certificate  
 Fire grate area *12 sq* Description of safety valves *lever-weighed* No. of safety valves *1* area of each *4 sq*  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes*  
 Diameter of donkey boiler *6' x 6 $\frac{1}{2}"$*  length *6' 0"* description of riveting *double*  
 thickness of shell plates  *$\frac{7}{16}"$*  diameter of rivet holes  *$\frac{7}{8}"$*  whether punched or drilled *drilled*  
 pitch of rivets lap of plating  *$\frac{7}{8}"$*  per centage of strength of joint  
 thickness of crown plates  *$\frac{5}{8}"$*  stayed by *Staytubes 16 $\frac{1}{2}" \times 10\frac{1}{16}"$  Stays 2 $\frac{1}{8}" \times 14"$*   
 Diameter of furnace, top *34"* bottom length of furnace *6' 0"*  
 thickness of plates  *$\frac{7}{16}"$*  description of joint *riveted*  
 thickness of furnace crown plates stayed by  
 Working pressure of shell by rules working pressure of furnace by rules  
 diameter of uptake thickness of plates thickness of water tubes

The foregoing is a correct description,

Manufacturer.

*A. Stahl*

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

The Engine and Boilers of this vessel are of the  
 very best workmanship and of very good material and  
 made according to Lloyds Rules. The Boilers  
 have been tested with the hydraulic pressure,  
 and the safety-valves were adjusted under  
 steam, and in my opinion the vessel ought  
 to be marked with **+ L. M. C. 184**  
 in the Register-book.

This submitted that the  
 vessel is eligible to  
 have the notation  
 + L. M. C. 184 recorded.

The amount of Entry Fee .. £ *2/11* received by me,

Special .. £ *19:10:0.*

Certificate (if required) .. £ : : 18

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute TUESDAY 22 JAN 1884 18

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

*J. A. Libbey*



Lloyd's Register  
Foundation