

# REPORT ON MACHINERY.

Port of *Helsing*

MON. 9 APL 1900

Received at London Office

No. in Survey held at *Grabow No* Date, first Survey *20<sup>th</sup> April* Last Survey *16<sup>th</sup> Novbr 1899*  
Reg. Book. (Number of Visits *17*)

AS in Suppl on the *Steel Screw Steamer Emil Berenz* Tons { Gross *734*  
Net *380*  
Master *A. Becker* Built at *Grabow No* By whom built *Oderwerke* When built *1899*  
Engines made at *Grabow No* By whom made *Oderwerke* when made *1899*  
Boilers made at *Grabow No* By whom made *Oderwerke* when made *1899*  
Registered Horse Power *72* Owners *Jh. Rodenacker* Port belonging to *Danzig*  
Nom. Horse Power as per Section 28 *72 (104)* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *triple expansion* No. of Cylinders *3* No. of Cranks *3*  
Diameter of Cylinders *14.52, 23.8, 38.19* Length of Stroke *27.56* Revolutions per minute *110* Diameter of Screw shaft *as per rule 7.55"*  
Diameter of Tunnel shaft *as per rule 1.85"* Diameter of Crank shaft journals *7.2"* Diameter of Crank pin *7.78* Size of Crank webs *5.34 inch.*  
Diameter of screw *10'10"* Pitch of screw *10'2"* No. of blades *4* State whether moveable *no* Total surface *33.36 sq feet*  
No. of Feed pumps *2* Diameter of ditto *2 3/8* Stroke *14 9/16* Can one be overhauled while the other is at work *yes*  
No. of Bilge pumps *2* Diameter of ditto *2 3/8* Stroke *14 9/16* Can one be overhauled while the other is at work *yes*  
No. of Donkey Engines *2* Sizes of Pumps *5 1/4, 3 3/16 and 5 1/2 x 4* No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room *three, 2" & 3 3/16"* In Holds, &c. *two, 2"*

No. of bilge injections *1* sizes *—* Connected to condenser, or to circulating pump *circul.?* Is a separate donkey suction fitted in Engine room & size *yes, 2"*  
Are all the bilge suction pipes fitted with roses *yes* Are the roses in Engine room always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*  
Are all connections with the sea direct on the skin of the ship *direct on a box* Are they Valves or Cocks *valves & cocks*  
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 *none* How are they protected *—*  
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *when new* Is the screw shaft tunnel watertight, *no tunnel fitted*  
Is it fitted with a watertight door *no* worked from *— engine is aft.*

BOILERS, &c.—*Approved plan.* (Letter for record *31.12.99*) Total Heating Surface of Boilers *1985.58* sq feet Is forced draft fitted *no*  
No. and Description of Boilers *two cylindrical boilers* Working Pressure *170 lbs* Tested by hydraulic pressure to *340 lbs*  
Date of test *29.8.99* Can each boiler be worked separately *yes* Area of fire grate in each boiler *33.25* sq feet No. and Description of safety valves to each boiler *one double valve of 2 5/16" & each* Area of each valve *4.09* sq inch Pressure to which they are adjusted *170 lbs* Are they fitted with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *5 15/16"* Mean diameter of boilers *10'6"*  
Length *9'8 3/4"* Material of shell plates *steel* Thickness *1"* Description of riveting: circum. seams *lap joint 4 1/2" rounded long. seams all butt strap joints*  
Diameter of rivet holes in long. seams *1 3/16"* Pitch of rivets *7 1/16"* Lap of plates or width of butt straps *5 1/2" & 15 3/4"*  
Per centages of strength of longitudinal joint *ribs 123, plate 85.5* Working pressure of shell by rules *193* Size of manhole in shell *11 3/16" x 15 3/4"*  
Size of compensating ring *1 3/8" x 5 15/16"* No. and Description of Furnaces in each boiler *two plain* Material *steel* Outside diameter *37 1/4"*  
Length of plain part *top 27 9/16", bottom 27 9/16"* Thickness of plates *top 5/8", bottom 5/8"* Description of longitudinal joint *welded* No. of strengthening rings *two Adams*  
Working pressure of furnace by the rules *120* Combustion chamber plates: Material *steel* Thickness: Sides *5/8"* Back *5/8"* Top *1/16"* Bottom *5/8"*  
Pitch of stays to ditto: Sides *11" x 11 1/16"* Back *6 1/2"* Top *7 3/8" x 9 7/16"* If stays are fitted with nuts or riveted heads *with nuts* Working pressure by rules *190*  
Material of stays *iron* Diameter at smallest part *1 1/8"* Area supported by each stay *272* Working pressure by rules *260* End plates in steam space: Material *steel* Thickness *1 5/16"* Pitch of stays *14 3/16" x 15"* How are stays secured *nuts* Working pressure by rules *170* Material of stays *iron*  
Diameter at smallest part *2 1/4"* Area supported by each stay *175* Working pressure by rules *225* Material of Front plates at bottom *steel*  
Thickness *1 5/16"* Material of Lower back plate *steel* Thickness *1 1/16"* Greatest pitch of stays *6 1/2"* Working pressure of plate by rules *170*  
Diameter of tubes *3 1/4"* Pitch of tubes *4 9/16"* Material of tube plates *steel* Thickness: Front *1 5/16"* Back *3/4"* Mean pitch of stays *8 15/16"*  
Pitch across wide water spaces *1 1/2"* Working pressures by rules *294* Girders to Chamber tops: Material *iron* Depth and thickness of girder at centre *6 5/16", 1 9/16"* Length as per rule *25.6* Distance apart *7 7/8"* Number and pitch of Stays in each *two 9 7/16"*  
Working pressure by rules *183* Superheater or Steam chest; how connected to boiler *none* 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 easing gear *—*

DONKEY BOILER— Description *not on board.*

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

Dia. of stays. \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Contracted but not yet on board.*

*2 Valve-spiracles, 2 crank-pin, 2 crosshead-plates, 1 set of bolts for crosshead-crank-pin and main bearings, 1 piston rod for air and circulation-pumps, 1 compl. set of coupling-bolts, 2 compl. pump-lever-links, 1 compl. set of valves for air-circulation-feed and bilges pumps, 10% studs for cylinder & slide valve chest and junk ring bolts, 2% tubes of condenser and boiler, 1 set junk-ring springs, 1 spring for safety valves.*

The foregoing is a correct description,

*signed: Odenwerke*

Manufacturer.

Dates of Survey while building

During progress of work in shops - *once a fortnight, 12 times*

During erection on board vessel - *once a week 10 times*

Total No. of visits *22*

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

*The workmanship on boilers and machinery has been carried out very carefully as well in shops as on board the vessel to my complete satisfaction.*

*In my opinion the vessels boilers and the machinery are eligible to be classed in the Lloyds Register Book: **LMC 11.99.***

It is submitted that this vessel is eligible for THE RECORD **LMC. 11.99.**

*60/100  
17/4/00.*

*J.S.  
18.4.00*

The amount of Entry Fee. . . £ 1 : 0 : \_\_\_\_\_ When applied for,

Special . . . . . £ 10 : 10 : \_\_\_\_\_ *15<sup>th</sup> Dec. 1899*

Donkey Boiler Fee . . . . . £ - : - : \_\_\_\_\_ When received,

Travelling Expenses (if any) £ - : - : \_\_\_\_\_ *15<sup>th</sup> Dec. 1899*

Committee's Minute

Assigned

FRI. 27 APR 1900

*+ L.M.C. 11.99.*

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

FRI. 3 AUG 1900



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MACHINERY CERTIFICATE

*Markin.*

Write "Sheer Strake" opposite its corresponding letter.

Certificate (if required) to be sent to the owner. Parry

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