

## REPORT ON MACHINERY.

No. 233.

Port of

Hettlin

Received at London Office

19

No. in Survey held at Hettlin Grabow Date, first Survey 14<sup>th</sup> June 1904 Last Survey 13<sup>th</sup> April 1905  
 Reg. Book. 3 suppl. on the Steel Screw Steamer, Olive Kopper (Number of Visits 16) Tons { Gross 2086  
 Master P. Peemüller Built at Hettlin By whom built Hettlin Oderwerke When built 1905  
 Engines made at Hettlin By whom made Hettlin Oderwerke when made 1905  
 Boilers made at " By whom made Hettlin when made 1905  
 Registered Horse Power 158 NHP Owners Robert Kopper Port belonging to Hettlin  
 Nom. Horse Power as per Section 28 158 NHP Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

GINES, &c.—Description of Engines one triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 18 x 29 x 42" Length of Stroke 36 Revs. per minute 82 Dia. of Screw shaft 10 1/2" Material of screw shaft steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight  
 in the propeller boss no If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part  
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes (in oil) If two  
 liners are fitted, is the shaft lapped or protected between the liners protected (bedding in plates) Length of stern bush 5' 7"  
 Dia. of Tunnel shaft 9 1/2" Dia. of Crank shaft journals 9 1/2" Dia. of Crank pin 9 1/2" Size of Crank webs 6 1/2 x 10 1/2" Dia. of thrust shaft under  
 collars 10 1/2" Dia. of screw 10 1/2" Pitch of screw 14.32 No. of blades 4 State whether moveable no Total surface 79 1/2 sq ft  
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 17 3/4" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 2 3/4" Stroke 17 3/4" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 1 Sizes of Pumps centrifugal pump 100 Tons per hour No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 of 2 3/8" inches diam In Holds, &c. 5 of 2 3/8" diam

No. of bilge injections 1 sizes 4 1/2" Connected to condenser, or to circulating pump circulates Is a separate donkey suction fitted in Engine room & size yes 2 3/8"  
 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 yes Are they Valves or Cocks both  
 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 now Is the screw shaft tunnel watertight yes  
 Is it fitted with a watertight door yes worked from upper engine room

BOILERS, &c.— (Letter for record A) Total Heating Surface of Boilers 2669 sq ft Is forced draft fitted no  
 No. and Description of Boilers two scotch boilers Working Pressure 170 lbs Tested by hydraulic pressure to 340 lbs  
 Date of test 2 1/2.04 Can each boiler be worked separately yes Area of fire grate in each boiler 41 sq ft No. and Description of safety valves to  
 each boiler 2 spring loaded Area of each valve 7 1/2 sq in 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 9 7/8" Mean dia. of boilers 11 feet Length 10' 2 1/2" Material of shell plates steel  
 Thickness 1" Range of tensile strength 27-31 Are they welded or flanged flanged Descrip. of riveting: cir. seams double long. seams 2 x 3 rows  
 Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 7 9/16" Lap of plates or width of butt straps 15 3/4"  
 Per centages of strength of longitudinal joint rivets 110 Working pressure of shell by rules 170 lbs Size of manhole in shell 15 3/4 x 11 3/4"  
 Size of compensating ring 15" x 1" No. and Description of Furnaces in each boiler 2 corrugated Material steel Outside diameter 44 5/16"  
 Length of plain part top 110 bottom 84 Thickness of plates top 9 1/16" bottom 9 1/16" Description of longitudinal joint welded No. of strengthening rings —  
 Working pressure of furnace by the rules 213 Combustion chamber plates: Material steel Thickness: Sides 19 3/32" Back 19 3/32" Top 23 3/32" Bottom 19 3/32"  
 Pitch of stays to ditto: Sides 8 1/4" Back 6 1/16" Top 7 7/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 270 lbs  
 Material of stays steel Diameter at smallest part 1 3/8 x 1 1/2" Area supported by each stay 68 x 47 sq in Working pressure by rules 6100 lbs End plates in steam space:  
 Material steel Thickness 7/8" Pitch of stays 15" How are stays secured screwed with nuts Working pressure by rules 194 lbs Material of stays steel  
 Diameter at smallest part 2 3/8" Area supported by each stay 208 sq in Working pressure by rules 8000 Material of Front plates at bottom steel  
 Thickness 7/8" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 7 1/8" Working pressure of plate by rules 530 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/4" Material of tube plates steel Thickness: Front 7/8" Back 7/8" Mean pitch of stays 8 1/2"  
 Pitch across wide water spaces 13 7/8" Working pressures by rules 380 lbs Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 24 5/16" x 20 3/32" Length as per rule 26 1/2" Distance apart 7 1/8-7 7/8" Number and pitch of Stays in each two 9 1/16"  
 Working pressure by rules 177 lbs 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 easing gear —



**DONKEY BOILER—** No. \_\_\_\_\_ Description *see, please, separate Report No. 233a.*

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 \_\_\_\_\_

Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_

Descrip. of riveting long. seams \_\_\_\_\_ Dia. 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:— *1 propeller, 1 propellershaft, 1/2 crankshaft, 1/2 set of packing rings for pistons, 1 slide valve rod, 1 rod for airpump, one diff. for circulating pump, 1/2 crank pin brasses, 1/2 crosshead brasses, 2 bolts for main bearings, 2 diff. for crank pin, 2 diff. for crosshead, 1 set coupling bolts, 2 valves for every pump, springs for main & donkey boilers, 10 boiler tubes, 25 condenser tubes, 2 pump links, bolts & materials in sufficient quality.*

*The foregoing is a correct description,*

*für Schiff- und Maschinenbau*

Manufacturer.

Dates of Survey while building

During progress of work in shops—

During erection on board vessel—

Total No. of visits

*1/6, 5/7, 26/7, 30/8, 12/9, 12/10, 25/11, 22/12, 24/12, 04, 31, 26/1, 05.*

*4/2, 13/2, 2/2, 1/4, 13/4, 05.*

*16*

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

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

*The workmanship of the machinery and of the Boilers is of good description and the materials of approved works and tested by Surveyors of the Society and therefore it is recommended that the Machinery and the Boilers may be classed and have notation in the Register-Book: **± LMC 4.05***

*It is submitted that this vessel is eligible for THE RECORD*

*± L.M.C. 4.05 ELEC-LIGHT*

*msd 15-5-05*

The amount of Entry Fee. . . £ 2 : 0 : \_\_\_\_\_ When applied for, \_\_\_\_\_

Special . . . . . £ 23 : 14 : \_\_\_\_\_ 18<sup>th</sup> April 1905

Donkey Boiler Fee . . . . £ 2 : 2 : \_\_\_\_\_ When received, \_\_\_\_\_

Travelling Expenses (if any) £ — : — : \_\_\_\_\_ 18<sup>th</sup> April 1905

Committee's Minute

TUES. 16 MAY 1905

Assigned

*+ LMC 4.05*

MACHINERY CERTIFICATE  
WRITTEN.



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Lloyd's Register  
Foundation

No. in Reg. Book. *13 suppl. on*

Master *Po*

Engines made

Boilers made

Registered

Nom. Horse

**ENGINES**

Dia. of Cylinders

Is the screw in the proper position between the liners are fitted

Dia. of Tunnel

collars

No. of Feed pipes

No. of Bilge pipes

No. of Donkey Engines

In Engine Room

No. of bilge injectors

Are all the bilge injectors

Are all connections

Are they fixed solid

Are they each fitted

What pipes are

Are all pipes, or

Are the bilge screws

When were stern

Is it fitted with **Donkey BOILERS**, &

No. and Description

Date of test *24/4*

each boiler *2 spr*

Smallest distance between

Thickness *1/32" R*

Diameter of rivet

Per centages of strength

Size of compensating

Length of plain pipes

Working pressure of

Pitch of stays to diameter

Material of stays &

Material *steel*

Diameter at small end

Thickness *1/32" Ma*

Diameter of tubes &

Pitch across width

thickness of girder

Working pressure separately

holes Pitch

If stiffened with rings

Working pressure of