

REPORT ON MACHINERY.

No. 199

Received at London Office SAT. DEC. 28. 1912

Date of writing Report 22nd Dec 1912 When handed in at Local Office 19 Port of Bremen.

No. in Survey held at Geestmünde Date, First Survey 22nd August Last Survey 19th December 1912
Reg. Book Sup 51 on the Steel & Iron LÜNEBURG (Number of Visits 13)

Master Schmitt Built at Geestmünde By whom built Joh. G. Tecklenborg A.G. When built 1912
Engines made at Geestmünde By whom made Joh. G. Tecklenborg A.G. when made 1912
Boilers made at Geestmünde By whom made Joh. G. Tecklenborg A.G. when made 1912

Registered Horse Power 734 Owners Deutscher Australischer Dampfer-Ges. Port belonging to Hamburg
Nom. Horse Power as per Section 28 734 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Compound Surface Condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27 1/2, 46 1/2, 78 3/4 Length of Stroke 53 1/2 Revs. per minute 75 Dia. of Screw shaft 16.57 as per rule 16.62 as fitted Material of S.M. steel screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight in the propeller boss yes 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 If two liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 79 1/8

Dia. of Tunnel shaft 14.96 as per rule 14.96 as fitted Dia. of Crank shaft journals 15.76 as per rule 15.76 as fitted Dia. of Crank pin 16 1/8 Size of Crank webs 10 1/2 Dia. of thrust shaft under collars 15 3/4 Dia. of screw 19-10 3/8 Pitch of Screw 19-10 3/8 No. of Blades 4 State whether moveable no Total surface 122.66 sq ft

No. of Feed pumps 2 Diameter of ditto 3 3/4 Stroke 27 1/2 Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 4 5/8 Stroke 27 1/2 Can one be overhauled while the other is at work yes
No. of Donkey Engines 4 Sizes of Pumps given on other side No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 Stoke hold 5-4 dia In Holds, &c. 2 in each hold 4 dia, 1 in tunnel 4 dia

No. of Bilge Injections 1 sizes 1 1/2 Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 4 dia
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 bilge suction pipes How are they protected wooden casings
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
Dates of examination of completion of fitting of Sea Connections 11th Nov 1912 of Stern Tube 11th Nov 1912 Screw shaft and Propeller 11th Nov 1912
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Engine platform above deck

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Fried. Krupp A.G. Gussstahlwerk Witten, Rheinische Stahlwerke, Aachen & Gutehoffnungshütte

Total Heating Surface of Boilers 11192 Is Forced Draft fitted yes No. and Description of Boilers 4 cylindrical multitubular
Working Pressure 206 lbs Tested by hydraulic pressure to 412 lbs Date of test 6/9 & 15/10.12 No. of Certificate 32, 33, 34, 35
Can each boiler be worked separately yes Area of fire grate in each boiler 64.5 sq ft No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve 12.18 sq in Pressure to which they are adjusted 206 lbs Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 12 in Mean dia. of boilers 15.2 2/4 Length 11-12 7/8 Material of shell plates S.M. steel
Thickness 1 1/2 Range of tensile strength 27.9-32.4 Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams double long. seams quadruple Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 19 1/16 Lap of plates or width of butt straps 30 in
Per centages of strength of longitudinal joint rivets 93.5 Working pressure of shell by rules 213 lbs Size of manhole in shell 11 1/2 x 15 5/16 plate 92.4
Size of compensating ring 32 3/16 x 1 1/4 32 No. and Description of Furnaces in each boiler 3 Morrison Material S.M. steel Outside diameter 49 3/16
Length of plain part top 4 in bottom 4 3/4 Thickness of plates crown 11/16 bottom 11/16 Description of longitudinal joint welded No. of strengthening rings 1
Working pressure of furnace by the rules 241 lbs Combustion chamber plates: Material S.M. steel Thickness: Sides 11/16 Back 21/32 Top 11/16 Bottom 61/64
Pitch of stays to ditto: Sides 8/8 x 6 1/16 Back 7/4 x 6 1/16 Top 7/8 x 7 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 287 lbs
Material of stays S.M. steel Diameter at smallest part 1 9/16 Area supported by each stay 48.8 sq in Working pressure by rules 238 lbs End plates in steam space: Material S.M. steel Thickness 11/16 Pitch of stays 4 x 15 1/32 How are stays secured double nut Working pressure by rules 275 lbs Material of stays S.M. steel
Diameter at smallest part 2 3/16 Area supported by each stay 215 sq in Working pressure by rules 285 lbs Material of Front plates at bottom S.M. steel
Thickness 1 3/32 Material of Lower back plate S.M. steel Thickness 63/64 Greatest pitch of stays 7/4 13/8 Working pressure of plate by rules 242 lbs
Diameter of tubes 2 3/4 Pitch of tubes 3 15/16 x 32 9/32 Material of tube plates S.M. steel Thickness: Front 13/32 Back 61/64 Mean pitch of stays 9 13/16
Pitch across wide water spaces 13 3/4 Working pressures by rules 216 lbs Girders to Chamber tops: Material S.M. steel Depth and thickness of girder at centre 10 1/4 x 11/16 Length as per rule 35 2/16 Distance apart 7 1/16 Number and pitch of stays in each 3-7 7/8
Working pressure by rules 224 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately yes Diam. of rivet holes 1 1/2 Pitch of rivets 1 1/2 Working pressure of shell by rules 213 lbs Diameter of flue 11 1/2 Material of flue plates S.M. steel Thickness 11/16
If stiffened with rings Distance between rings 11 1/2 Working pressure by rules 213 lbs End plates: Thickness 11/16 How stayed double nut
Working pressure of end plates 213 lbs Area of safety valves to superheater 12.18 sq in Are they fitted with easing gear yes

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description			Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety		
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment			
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	Plates	
Working pressure of shell by rules	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			
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by				
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey				

SPARE GEAR. State the articles supplied:—1 crank shaft, 1 propeller shaft, 1 propeller, 1 cross head brass, 1 crank pin brass, 2 crank pin and cross head brass bolts & nuts, 1 set of coupling bolts, 2 slide valve spindles, 1 piston rod for air pump, 1 set of valves for air pump, 1 dist. for feed and bilge pumps, 2 complete set of links, 2% of condenser tubes & flanges, 2% of boiler tubes, 3 safety valve springs, 6 sets of gauge glasses, 10% of bolts for cylinder & slide valve cover, 10% piston bolts, 1 complete eccentric strap, 2 main bearing bolts & nuts, various iron of various sizes.

The foregoing is a correct description,

W. H. W. W. Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1912. Aug 22, Sep 6, 30, Oct. 7, 9, 17, Nov. 8, 11
 During erection on board vessel --- 1912. Nov 29, Dec 4, 9, 14, 19
 Total No. of visits 13.

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 22/8, 30/9. Slides 22/8, 9/10. Covers 22/8, 9/10. Pistons 30/9. Rods 30/9, 9/10
 Connecting rods 30/9. Crank shaft 30/9. Thrust shaft 30/9. Tunnel shafts 30/9. Screw shaft 30/9, 11/11. Propeller 22/8, 9/10
 Stern tube 22/8, 11/11. Steam pipes tested 9/12. Engine and boiler seatings 30/9, 11/11. Engines holding down bolts 30/9, 9/10
 Completion of pumping arrangements 14/12. Boilers fixed 29th Nov. Engines tried under steam 19/12
 Main boiler safety valves adjusted 19/12. Thickness of adjusting washers: Port Boiler .53, Centre Boiler .57, Star Boiler .49, Forward Boiler .51
 Material of Crank shaft: M. steel Identification Mark on Do. No 7543, K.H. 5.12. Material of Thrust shaft: M. steel Identification Mark on Do. No 7244, K.H. 2.12
 Material of Tunnel shafts: M. steel Identification Marks on Do. No 7242, No 7345, 6-7, No 7261-2, K.H. 2.12, K.H. 3.12, K.H. 2.12. Material of Screw shafts: M. steel Identification Marks on Do. No 7363, No 7354, K.H. 3.12, K.H. 3.12
 Material of Steam Pipes: Steel. Test pressure 615 lbs.

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

Size of Pumps:— $\frac{7\frac{1}{8} \times 10\frac{1}{4}}{9\frac{7}{8}}$, $\frac{9\frac{1}{16} \times 6\frac{5}{16}}{11\frac{13}{16}}$, $\frac{4\frac{5}{16} \times 5\frac{1}{2}}{4\frac{15}{16}}$, $\frac{7\frac{1}{16} \times 4\frac{3}{4}}{5\frac{7}{8}}$.

These Engines and Boilers have been manufactured in accordance with the approved plans, the Secretary's letters and otherwise in conformity with the Rules. The material and workmanship are good. They are eligible in my opinion to be classed in the Society's Register Book with the notation of **LMC 12.12.**

It is submitted that this vessel is eligible for **THE RECORD + LMC 12.12.**

F.D.

J.W.D.
 31/12/12
J.M.

G.H.C. P. amp.

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

The amount of Entry Fee . . . £ MK 62.-
 Special . . . £ 1163.-
 Donkey Boiler Fee . . . £ : :
 Travelling Expenses (if any) £ 30.-

When applied for, 24.12.12
 When received, 3/31.13

Committee's Minute FRI. JAN. 3. 1913

Assigned

+ LMC 12.12

MACHINERY CERTIFICATE WRITTEN



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

Certificate (if required) to be sent to the Registrar.