

# REPORT ON MACHINERY.

No. 176

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Date of writing Report 10th Nov 1912 When handed in at Local Office 10 Port of Bremen  
 No. in Survey held at Geestmünde Date, First Survey March 8th Last Survey Nov. 4th 1912  
 Reg. Book. Sup 53 on the Steu Lc 52 "STURMFELS" (Number of Visits 22) Tons { Gross 5660  
 Net 3554  
 Master L. Schmidt Built at Geestmünde By whom built Joh. G. Tecklenborg A.G. when made 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 510 Owners Deutsche Dampfschiffahrts-Ges. Hartha Port belonging to Bremen  
 Nom. Horse Power as per Section 28 510 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines quad. compound surface condensing No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 24 1/2, 34 1/2, 50 3/8, 74 Length of Stroke 53 1/2 Revs. per minute 75 Dia. of Screw shaft 16 3/16 Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight  
 in the propeller boss — If the liner is in more than one length are the joints burned — 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 — If two  
 liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 121 3/2  
 Dia. of Tunnel shaft 13 1/2 Dia. of Crank shaft journals 14 3/16 Dia. of Crank pin 14 3/4 Size of Crank webs 9 27/32 Dia. of thrust shaft under  
 collars 14 3/4 Dia. of screw 22 8/8 Pitch of Screw 240 3/16 No. of Blades 4 State whether moveable yes Total surface 103.940  
 No. of Feed pumps 2 Diameter of ditto 3 3/4 Stroke 27 1/16 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 27 1/16 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 11 1/32 x 7 7/8, 13 25/32 x 15 3/4, 7 3/32 x 4 23/32 and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 4 - 3 1/2 dia In Holds, &c. 2 in each hold 3 1/2 dia 1 in tunnel 3 1/2 dia  
 No. of Bilge Injections 1 sizes 8" Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2 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 valves and 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 bilge 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 23rd Sep of Stern Tube 23rd Sep Screw shaft and Propeller 23rd Sep  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from engine room platform above deck

**BOILERS, &c.**—(Letter for record no) Manufacturers of Steel Friedr. Krupp, Essen, Rheinische Stahlwerke  
 Total Heating Surface of Boilers 6780 sq ft Is Forced Draft fitted yes No. and Description of Boilers 3 cylindrical multitubular  
 Working Pressure 213 lb Tested by hydraulic pressure to 285 lb Date of test 26.7.12 No. of Certificate 25, 26, 27  
 Can each boiler be worked separately yes Area of fire grate in each boiler 53.8 sq ft No. and Description of Safety Valves to  
 each boiler 2 spring loaded Area of each valve 12.18 sq ft Pressure to which they are adjusted 213 lb Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 14' 4 1/8" Length 12' 3 1/16" Material of shell plates steel  
 Thickness 1 5/32 Range of tensile strength 27.9-31.7 tons Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams double  
 long. seams double Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/32" Lap of plates or width of butt straps 2 1/4"  
 Per centages of strength of longitudinal joint plate 84.6% Working pressure of shell by rules 225 lb Size of manhole in shell 11 13/16 x 15 3/4"  
 Size of compensating ring 4 1/8" No. and Description of Furnaces in each boiler 3 moirion Material steel Outside diameter 43 5/16"  
 Length of plain part 7 7/8" Thickness of plates 4 1/4" Description of longitudinal joint welded No. of strengthening rings —  
 Working pressure of furnace by the rules 257 lb Combustion chamber plates: Material steel Thickness: Sides 4 3/4" Back 4 3/4" Top 4 3/4" Bottom 6 3/4"  
 Pitch of stays to ditto: Sides 8 1/2" Back 6 1/2" Top 7 7/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 206 lb  
 Material of stays Iron Diameter at smallest part 1 9/16" Area supported by each stay 48.80 sq ft Working pressure by rules 238 lb End plates in steam space:  
 Material steel Thickness 1 3/4" Pitch of stays 4 1/4" How are stays secured double nuts Working pressure by rules 219 lb Material of stays steel  
 Diameter at smallest part 3" Area supported by each stay 29 sq ft Working pressure by rules 289 lb Material of Front plates at bottom steel  
 Thickness 1 3/32 Material of Lower back plate steel Thickness 6 3/4" Greatest pitch of stays 13 x 7 9/32" Working pressure of plate by rules 240 lb  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates steel Thickness: Front 1 3/32" Back 5 9/16" Mean pitch of stays 7 1/2"  
 Pitch across wide water spaces 13 3/8" Working pressures by rules 231 lb Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 10 1/4 x 4 1/2" Length as per rule 37" Distance apart 6 7/8" Number and pitch of stays in each 3 x 7 7/8"  
 Working pressure by rules — 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 —

**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 Say \_\_\_\_\_  
 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 \_\_\_\_\_ Rivets \_\_\_\_\_  
 Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ 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 crank pin bar, 1 crosshead bar, 2 connecting rod bolts with nuts, 2 connecting rod bottom end bolts with nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of piston rings, 2 propeller blades, 1 eccentric strap complete, 1 piston rod for cylinder, 1 ditto for air & circulating pump, 1 valve spindle, 2% condenser tubes, 1 set of safety valve springs, & quantities of assorted bolts & nuts. Iron of various sizes.

The foregoing is a correct description,  
 J. H. G. [Signature] Manufacturer.

Dates of Survey while building: During progress of work in shops -- 19/2. March 8, 20. April 10, 30. May 10, 21, 24, 29. July 17, 26, 30. Aug 22, Sep 4, 23.  
 During erection on board vessel --- Sept 4, 23, 30. Oct 7, 9, 17, 23, 24, 31. Nov. 5.  
 Total No. of visits 22.  
 Is the approved plan of main boiler forwarded herewith *Yn*  
 " " " donkey " " " *Yn*

Dates of Examination of principal parts—Cylinders *20/4, 23/4, 24/8* Slides *8/3, 21/5* Covers *8/3, 24/8* Pistons *8/3, 24/8* Rods *20/3*  
 Connecting rods *30/4* Crank shaft *30/4* Thrust shaft *29/5* Tunnel shafts *17/7* Screw shaft *26/7, 23/9* Propeller *30/7, 23/4*  
 Stern tube *24/5, 4/9, 24/8* Steam pipes tested *23/10* Engine and boiler seatings *4/9* Engines holding down bolts *22/8, 30/4*  
 Completion of pumping arrangements *23/10* Boilers fixed *7/10* Engines tried under steam *31/10*  
 Main boiler safety valves adjusted *31/10* Thickness of adjusting washers *5/5, 5/5, 5/5, 5/5*  
 Material of Crank shaft *J.M. Steel* Identification Mark on *K.H. 4.12 / P.A. 2.12* Material of Thrust shaft *J.M. Steel* Identification Mark on *Do. 877*  
 Material of Tunnel shafts *J.M. Steel* Identification Marks on *Do. 874-5, 901-2, 3337-8* Material of Screw shafts *J.M. Steel* Identification Marks on *Do. 464, 347*  
 Material of Steam Pipes *Steel* Test pressure *640 lb.*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 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 notations of **LMC 11, 12.**

Newman Office

Certificates (if required) to be sent to Committee's Minute.

It is submitted that this vessel is eligible for THE RECORD, + LMC 11.12.  
 F.D.

*J.H.G.*  
 19/11/12

The amount of Entry Fee	Mk 62.-	When applied for,	6.11.12
Special	935.-	When received,	12.11.12
Donkey Boiler Fee	43.-		
Travelling Expenses (if any)	30.-		

Committee's Minute  
 Assigned

10 NOV. 19. 1912  
 + L.M.C. 11.12  
 F.D.

*J.H.G.*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

