

# REPORT ON MACHINERY.

No. 1501

Port of Bremerhaven

Received at London Office

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No. in Survey held at Geestemünde

Date, first Survey 17<sup>th</sup> June

Last Survey 5<sup>th</sup> October 1909

Reg. Book.

(Number of Visits 26)

8 in Log on the Engines & Boilers of the S. S. Sagenturm

Master A. Fischbeck Built at Geestemünde By whom built Joh. C. Tecklenborg A. G.

Tons } Gross 5000.49  
Net 3159.65

Engines made at Geestemünde By whom made Joh. C. Tecklenborg A. G. when made 1909

Boilers made at Geestemünde By whom made Joh. C. Tecklenborg A. G. when made 1909

Registered Horse Power 474 Owners D. D. Ges. Hansa

Port belonging to Bremen

Nom. Horse Power as per Section 28 599 Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Two, quadr. comp. surf. condensing No. of Cylinders 4 No. of Cranks 4

Dia. of Cylinders 22 3/16 / 31 1/2 / 48 / 70 7/8 Length of Stroke 51 3/16 Revs. per minute 75 Dia. of Screw shaft 14 3/16 Material of S.M. steel

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 — 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 — Length of stern bush 8' 4 3/8"

Dia. of Tunnel shaft 12 3/16 Dia. of Crank shaft journals 12 3/16 Dia. of Crank pin 14 3/16 Size of Crank webs 9 1/16 Dia. of thrust shaft under

collars 14 3/16 Dia. of screw 18 8/16 Pitch of Screw 19 4 5/16 No. of Blades 4 State whether moveable Yes Total surface 77 3/4

No. of Feed pumps 2 Diameter of ditto 3 3/4 Stroke 26 3/8 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 5/16 Stroke 26 3/8 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 13 3/4 x 5 3/4 / 9 3/4 x 5 3/4 / 5 3/4 x 4 3/4 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3 1/2 in Engines & boiler room In Holds, &c. 2 in each hold @ 3 1/2 and 1 @ 3 1/2 in tunnel

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"

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 suction pipes How are they protected Wooden boxes

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 30.8 of Stern Tube 30.8 Screw shaft and Propeller 24.8

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from above deck in Engine room

MANUFACTURERS, &c.—(Letter for record —) Manufacturers of Steel F. Krupp in Essen, Germania Stahl & Eisenw.

Total Heating Surface of Boilers 6,324 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 16.8 & 30.8 No. of Certificate 105/106/107

Can each boiler be worked separately Yes Area of fire grate in each boiler 50 sq ft No. and Description of Safety Valves to

each boiler 1 double spring valve Area of each valve 12.18 sq in 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 12" Mean dia. of boilers 13 9 3/8" Length 11 9 3/8" Material of shell plates S.M. steel

Thickness 1 3/8" Range of tensile strength 27.9-33 tons Are the shell plates welded or flanged flanged Descrip. of riveting: cir. seams double

g. seams double Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 2 3/8" Lap of plates or width of butt straps 2 1 1/4"

Percentages of strength of longitudinal joint rivets 22.5% plate 24.8% Working pressure of shell by rules 251 lb Size of manhole in shell 11 1/2" x 15 5/16"

Size of compensating ring 9 3/8" x 1 3/8" No. and Description of Furnaces in each boiler 3 Morrison Material S.M. steel Outside diameter 38 1/4"

Length of plain part top 8 3/8" bottom 8 3/8" Thickness of plates crown 4 1/8" bottom 4 1/8" Description of longitudinal joint welded No. of strengthening rings arranged

Working pressure of furnace by the rules 269 lb Combustion chamber plates: Material S.M. steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 5 9/16"

Pitch of stays to ditto: Sides 8 1/4" x 6 1/16" Back 7 1/4" x 6 1/16" Top 7 7/8" x 6 1/16" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 264 lb

Material of stays Iron Diameter at smallest part 1 9/16" Area supported by each stay 56.8 sq in Working pressure by rules 298 lb End plates in steam space:

Material S.M. steel Thickness 1 3/8" Pitch of stays 13 3/4" x 16 1/4" How are stays secured nuts Working pressure by rules 235 lb Material of stays S.M. steel

Diameter at smallest part 2 3/16" Area supported by each stay 224 sq in Working pressure by rules 296 lb Material of Front plates at bottom S.M. steel

Thickness 1 3/8" Material of Lower back plate S.M. steel Thickness 3 1/2" Greatest pitch of stays 7 1/4" 16 1/2" Working pressure of plate by rules 302 lb

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates S.M. steel Thickness: Front 1 3/8" Back 5 9/16" Mean pitch of stays 7 1/2"

Pitch across wide water spaces 13 3/8" Working pressures by rules 220 lb Girders to Chamber tops: Material S.M. steel Depth and

Thickness of girder at centre 2 x 10 1/4" x 1 1/16" Length as per rule 35 1/4" Distance apart 6 7/8" Number and pitch of stays in each 3 @ 7 7/8"

Working pressure by rules 226 lb 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

seams — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

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 —



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**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
	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
	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		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 Head, 1 crank pin brass, 1 crosshead brass, 2 crosshead bolts & nuts, 2 crank pin brass bolts & nuts, 1 set of coupling bolts, 2 slide valve spindle keys, 1 piston rod for air pump, 1 set of valves for air pump, 1 fan with shaft, 1 brass with nuts for each screw, 2 slide valve spindles for centrifugal pump, 1 set of lead pump valves, 1 set of belt pump valves, 2 set of links complete, 2% condenser tubes with stuffing boxes, 2% boiler tubes for all boilers, 1 safety valve spring for each boiler, 6 set of gauge glasses, 10% cylinder cover bolts, 10% slide valve cover bolts, 10% piston bolts, 1 complete eccentric strap, 1 set of piston rings for each piston, 1 set of fire bars and nuts bolts washers and iron of different sizes.

The foregoing is a correct description,  
**JOH. C. TECKLENBORG A.-G.**  
 Schiffswerft und Maschinenfabrik  
 Manufacturer.

Dates of Survey while building	During progress of work in shops - -	3.6/17.6/23.6/29.6/9.7/20.7/29.7/2.8/4.8/6.8/10.8/16.8/24.8/30.8
	During erection on board vessel - -	3.9/4.9/7.9/9.9/10.9/18.9/22.9/25.9/27.9/2.10/4.10/5.10. 1909
	Total No. of visits	26

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

" " " donkey " " " **Yes**

Dates of Examination of principal parts—Cylinders 30.7 Slides 30.7 Covers 30.7 Pistons 30.7 Rods 30.7

Connecting rods 4.8 Crank shaft 4.8 Thrust shaft 6.8 Tunnel shafts 10.8 Screw shaft 10.8 Propeller 16.8

Stern tube 24.8 Steam pipes tested 30.9 Engine and boiler seatings 24.8 Engines holding down bolts 3.9

Completion of pumping arrangements 22.9 Boilers fixed 18.9 Engines tried under steam 5.10

Main boiler safety valves adjusted 5.10 Thickness of adjusting washers 2. boiler 1 1/2, 4. boiler 1 1/2, 5. boiler 1 1/2, 6. boiler 1 1/2, 7. boiler 1 1/2, 8. boiler 1 1/2, 9. boiler 1 1/2, 10. boiler 1 1/2

Material of Crank shaft L.H. steel Identification Mark on Do. 44197.74 Material of Thrust shaft L.H. steel Identification Mark on Do. 43877.74

Material of Tunnel shafts L.H. steel Identification Marks on Do. 3106-7 P. 5, 4943-44 P. 2 Material of Screw shafts L.H. steel Identification Marks on Do. 63687.74

Material of Steam Pipes Steel Test pressure 42.65 psi

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These Engines and Boilers have been*)

*built under special Survey in accordance with the rules and approved tracings.*

*The workmanship is good and the material of best quality, manufactured at approved works and tested as per rule.*

*The cylinders, slide valve casing and all other cast iron vessels have been tested by hydraulic up to one and half working pressure and all steam and delivery pipes, which work under pressure have been tested by double the working pressure and found quite tight.*

*The boilers have been built of best material, manufactured at approved works and tested as per rule, the workmanship is good.*

*The boilers have been tested by hydraulic pressure up to 285 lb in compliance with German law and found quite tight showing no alteration of form.*

*Under steam the boilers are tight and the engines work well.*

*In my opinion these Engines and Boilers are eligible to be classed in this Society with notation of **L.M.C. 10.09.***

It is submitted that this vessel is eligible for **THE RECORD, + L.M.C. 10.09**

The amount of Entry Fee	£ 3	When applied for,	
Special	£ 49	13	9.10.09
Donkey Boiler Fee	£ 2	2	
Travelling Expenses (if any)	£		9.10.09

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

Committee's Minute **TUES. 19 OCT 1909**

Assigned **+ Lmb 1009**

MACHINERY CERTIFICATE WRITTEN.



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FLAT PL... GARBOAR... State and thickness way of Do Bottom... DOUBLIN... POOP ST BRIDGE FORECAST... Ma... manufac... Plates, E... GEWERKE... LEISSNER... WAGNER... Has the... FRAMES REVERS... LOWER... Bowsprit... Topmast... RIGGING... SAILS... EQUI... Number of Certificate... 1224... 1224... 12244... 11565... 35399... Number of Certificate... 9226... 9227... Chain... 36797... Boats... Pumps... Windla... Engine... What a... Coal B... Number... Ceiling... Cargo... State si... Number... Bulwa... The abo... Builder...

Rpt. No. Reg. B... 18 in... Master... Engin... Boilers... Register... MUL... (Letter... Boiler... No. of safety... Are the... Smalle... Materi... Descri... Lap of... rules... boiler... Descri... plates... Top... smalles... Pitch... Area... Lower... Pitch... water... girder... Workin... separat... holes... If stiffe... Workin... VER... Made a... tested b... No. of... enter th... strength... Lap of... Radius... Thickne... plates... Thickne... Dates of Surve while building...