

REPORT ON MACHINERY.

No. 1204.

MON. 5 NOV 1906

Port of *Bremerhaven*

Received at London Office

No. in Survey held at *Geestemünde*

Date, first Survey *30th Jan.*

Last Survey *3rd Novemb. 1906*

Reg. Book.

30 in Log. on the *Machinery & Boilers of the steel S.S. "Protensfels"*

(Number of Visits)

Gross *5584*

Net *3592*

Master *von Freden*

Built at *Geestemünde*

By whom built *Joh. C. Tecklenborg A. G.*

When built *1906*

Engines made at *Geestemünde*

By whom made *Joh. C. Tecklenborg A. G.*

when made *1906*

Boilers made at *Geestemünde*

By whom made *Joh. C. Tecklenborg A. G.*

when made *1906*

Registered Horse Power *504*

Owners *V. D. Ges. Hansa*

Port belonging to *Bremen*

Nom. Horse Power as per Section 28 *504*

Is Refrigerating Machinery fitted for cargo purposes *No*

Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Two quadruple comp. and condensing*

No. of Cylinders *4* No. of Cranks *4*
Dia. of Cylinders *24" 34 3/4" 50 3/8" 7 1/4"* Length of Stroke *53 1/16"* Revs. per minute *70* Dia. of Screw shaft as per rule *15 1/2"* Material of screw shaft *S.M. steel*
as fitted *15 3/4"*

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 *—* If two

liners are fitted, is the shaft lapped or protected between the liners *—* Length of stern bush *8' 9"*

Dia. of Tunnel shaft as per rule *13 3/16"* Dia. of Crank shaft journals as per rule *14 1/4"* Dia. of Crank pin *14 3/4"* Size of Crank webs *9 1/8" X 1 1/4"* Dia. of thrust shaft under

collars *14 3/4"* Dia. of screw *19 4 3/8"* Pitch of Screw *20"* No. of Blades *4* State whether moveable *Yes* Total surface *103.83 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 *2* Sizes of Pumps *13 3/4" X 15 3/4" X 9 7/8" X 6"* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *3 in Engine, 2 in Boiler room 3 1/2" diam.* In Holds, &c. *2 in every hold 3 1/2" diam.*

No. of Bilge Injections *1* sizes *7 1/16"* Connected to condenser, or to circulating pump *Condenser* Is a separate Donkey Suction fitted in Engine room & size *Yes 7 1/16"*

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 *4 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 *14th Sept.* of Stern Tube *14th Sept.* Screw shaft and Propeller *14th Sept. 1906.*

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

BOILERS, &c.—(Letter for record *A*) Manufacturers of Steel *Thyssen & Co at Mülheim.*

Total Heating Surface of Boilers *6456 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 *16. 8. 06* No. of Certificate *84/25/86*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *52 sq ft* No. and Description of Safety Valves to

each boiler *2 comp. spring valves* 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 *12"* Mean dia. of boilers *14' 0 3/8"* Length *11' 11 5/16"* Material of shell plates *S.M. steel*

Thickness *1 2 7/16"* Range of tensile strength *29.2 to 33 tons* 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 7/16"* Pitch of rivets *10 5/8"* Lap of plates or width of butt straps *26 7/16"*

Per centages of strength of longitudinal joint rivets *110%* Working pressure of shell by rules *221 lb* Size of manhole in shell *11 1/2" X 15 5/16"*

Size of compensating ring *11" X 1 7/16"* No. and Description of Furnaces in each boiler *3 Morrison* Material *S.M. steel* Outside diameter *40 3/4"*

Length of plain part top *3"* bottom *5"* Thickness of plates crown *1 1/16"* bottom *1 1/16"* Description of longitudinal joint *welded* No. of strengthening rings *none*

Working pressure of furnace by the rules *238 lb* Combustion chamber plates: Material *S.M. steel* Thickness: Sides *1 1/16"* Back *1 1/16"* Top *1 1/16"* Bottom *1 3/16"*

Pitch of stays to ditto: Sides *8 1/4"* Back *7 7/8"* Top *7 7/8"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *278 lb*

Material of stays *S.M. steel* Diameter at smallest part *1 9/16"* Area supported by each stay *58.4 sq ft* Working pressure by rules *295 lb* End plates in steam space:

Material *S.M. steel* Thickness *1 1/32"* Pitch of stays *14 5/16"* How are stays secured *nuts* Working pressure by rules *250 lb* Material of stays *S.M. steel*

Diameter at smallest part *2 5/8"* Area supported by each stay *206 sq ft* Working pressure by rules *261 lb* Material of Front plates at bottom *S.M. steel*

Thickness *3 3/8"* Material of Lower back plate *S.M. steel* Thickness *6 3/4"* Greatest pitch of stays *7 7/8"* Working pressure of plate by rules *318 lb*

Diameter of tubes *2 1/2"* Pitch of tubes *3 3/4"* Material of tube plates *steel* Thickness: Front *18 3/4"* Back *5 5/4"* Mean pitch of stays *7 1/2"*

Pitch across wide water spaces *13 3/8"* Working pressures by rules *217 lb* Girders to Chamber tops: Material *S.M. steel* Depth and

thickness of girder at centre *10 1/4" X 13 1/16"* Length as per rule *35 7/16"* Distance apart *7 5/16"* Number and pitch of stays in each *3 X 7 7/8"*

Working pressure by rules *263 lb* Superheater or Steam chest; how connected to boiler *Can the superheater be shut off and the boiler worked*

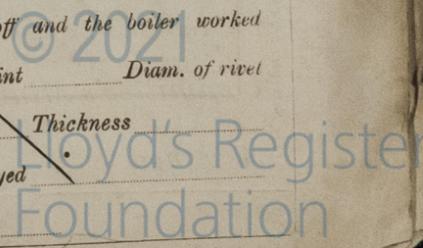
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

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

If not, state whether, and when, one will be sent



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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied: *4 crank shaft, 1 propeller shaft, 2 propeller blades, 1 crank pin brass, 1 cross head brass, 2 cross head bolts and nuts, 2 crank pin brass bolts and nuts, 2 main bearing bolts and nuts, 1 set of coupling bolts and nuts, 1 set of springs for each piston, 1 spring for each slide valve, 1 piston rod and one set of valves for air pump, 1 piston and rod for circulating pumps, 1 set of valves for feed and bilge pumps, 2 sets of link brasses, 1 eccentric sheave and strap complete, 1 set of safety valve springs, 10% of each sort of cylinder covers, slide valve casing and piston bolts, 1 set of piston rings for each cylinder, 2% of condenser tubes, 2% boiler tubes and stay tubes, 1 set of fire bars, 1 set of check valves, 6 set of Gage glasses, Bolts and nuts, iron bars and plates of various sizes, etc. etc.*

The foregoing is a correct description,

JOH. C. PEAKENBORG & CO.
Schiffswerft und Maschinenfabrik, Manufacturer.

By Duncan Selous Esq. Cape of Good Hope

Dates of Survey while building	During progress of work in shops - -	30/1, 24/4, 8/5, 18/5, 8/6, 20/6, 30/6, 6/7, 19/7, 2/8, 15/8, 16/8, 23/8, 1/9.
	During erection on board vessel - -	5/9, 12/9, 14/9, 18/9, 24/9, 1/10, 9/10, 9/10, 16/10, 17/10, 20/10, 25/10, 27/10, 29/10, 31/10, 1/11, 3/11, 1906
	Total No. of visits	31

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

Dates of Examination of principal parts—Cylinders	20/6, 30/6	Slides	6/7	Covers	6/7	Pistons	19/7	Rods	19/7
Connecting rods	2/8	Crank shaft	6/7	Thrust shaft	6/7	Tunnel shafts	6/7	Screw shaft	6/7
Stern tube	15/8	Steam pipes tested	23/8	Engine and boiler seatings	8/8 & 23/8	Engines holding down bolts	24/9		
Completion of pumping arrangements	9/10	Boilers fixed	24/9	Engines tried under steam	27/10				
Main boiler safety valves adjusted	27/10	Thickness of adjusting washers	<i>Std. P. steel valve 3 3/4, Std. P. part = 3 1/4, Std. P. steel valve 4 1/2, Std. P. part = 4 1/2, Std. P. steel valve 4 1/2, Std. P. part = 13/64.</i>						
Material of Crank shaft	<i>S.M. steel</i>	Identification Mark on Do.	<i>336.5.06.P.S.</i>	Material of Thrust shaft	<i>S.M. steel</i>	Identification Mark on Do.	<i>32.1.06.P.S.</i>		
Material of Tunnel shafts	<i>S.M. steel</i>	Identification Marks on Do.	<i>54.1.06.P.S.</i>	Material of Screw shafts	<i>S.M. steel</i>	Identification Marks on Do.	<i>3429.4.06.M.K.</i>		
Material of Steam Pipes	<i>Copper</i>								
				Test pressure	<i>426 lb</i>				

General Remarks (State quality of workmanship, opinions as to class, &c. *Please see letter from Secretary dated 9.12.05 int. C.*)

These Engines and Boilers have been built under special Survey of good material and good workmanship. All castings are sound and close grained and all cylinders, slide valve casings, condenser, pumps and all valve casings etc. have been tested by hydraulic and found quite tight.

All feed and steam pipes have been tested by double working pressure = 426 lb. by hydraulic and found quite tight.

All shafting is made of Siemens Martin steel manufactured at approved works and tested as per rule by the Surveyors at Dusseldorf.

The Boilers have been built of Siemens Martin steel according to approved trainings of good material, manufactured at approved works and tested as per rules. They have been tested in compliance with the owners request, according to German law by hydraulic up to 29.5 kg/cm² found quite tight showing no alteration of form. Under steam they are also quite tight and the Engines worked well.

These Engines and Boilers are fully eligible in my opinion to be entered in R.B. with L.M.C. 11.06.

The amount of Entry Fee..	£ 3 : - :	When applied for,
Special	£ 45 : 4 :	3.....11.....1906
Donkey Boiler Fee .. .	£ 2 : 2 :	When received,
Travelling Expenses (if any) £	3 : 11 :	3.....11.....1906

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

It is submitted that this vessel is eligible for THE RECORD L.M.C. 11.06 ED. ELEC

Committee's Minute

TUES. 6 NOV 1906
TUES. 9 NOV 1906

Assigned

+ L.M.C. 11.06

F. D. Elec. light

MACHINERY CERTIFICATE

WRIT

5.11.06

Certificate (if required) to be sent to Surveyor Bremerhaven

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