

REPORT ON MACHINERY.

Port of Bremerhaven

Received at London Office **FRI. 20 MAR 1906**

No. in Survey held at Bremen Date, first Survey 25th July 1905 Last Survey 27th March 1906

Reg. Book. on the Machinery & Boilers of the steel S. S. Lotheringen (Number of Visits 24) Tons } Gross 5008.49
Net 3198.29

Master Built at Bremen By whom built Stet. Ges. Weser When built

Engines made at Bremen By whom made Stet. Ges. Weser when made 1906

Boilers made at Bremen By whom made Stet. Ges. Weser when made 1906

Registered Horse Power Owners Nordd. Lloyd Port belonging to Bremen

Nom. Horse Power as per Section 28 530 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Inv. Quadr. Comp. Surf. Condens. No. of Cylinders 4 No. of Cranks 4
 Dia. of Cylinders 24 3/4 Length of Stroke 53 5/8 Revs. per minute 70 Dia. of Screw shaft as per rule 14 3/8 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 12' 8 3/4"
 Dia. of Tunnel shaft as per rule 13 1/2 Dia. of Crank shaft journals as per rule 14 3/8 Dia. of Crank pin 14 9/16 Size of Crank webs 29 1/2 x 9 1/2 Dia. of thrust shaft under
 collars 14 3/8 Dia. of screw 17 8 1/2 Pitch of screw 18' 8 1/2 No. of blades 4 State whether moveable Yes Total surface 101.4
 No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 23 5/8 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 23 5/8 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 simple Sizes of Pumps 7 1/2 x 5 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 a 3 9/16, two in stokehold In Holds, &c. Two a 3 9/16 in each hold, one a 3 8/16 in
tunnel aft.
 No. of bilge injections 1 sizes 7 7/8 Connected to condenser, or to circulating pumps Yes Is a separate donkey suction fitted in Engine room & size 1 a 3 9/16
 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 Tank & 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Engine room platform above Upper deck

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 71047 1/2 Is forced draft fitted Yes
 No. and Description of Boilers 3 multibubular cylindrical Working Pressure 220 Tested by hydraulic pressure to 292
 Date of test 15.1.06 Can each boiler be worked separately Yes Area of fire grate in each boiler 56 1/4 No. and Description of safety valves to
 each boiler Three spring valves Area of each valve 8 1/2 Pressure to which they are adjusted 220 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 14' 3 5/8 Length 11' 7 1/2 Material of shell plates S. M. steel
 Thickness 4 5/16 Range of tensile strength 26,742-29,800 Are they welded or flanged flanged Descrip. of riveting: cir. seams overlapped long. seams double butt straps
 Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 20 5/16 Lap of plates or width of butt straps 2' 5 1/16"
 Per centages of strength of longitudinal joint rivets 96 Working pressure of shell by rules 227 Size of manhole in shell 15 3/4 x 11 1/16
 plate 92.3 Description of longitudinal joint welded No. of strengthening rings corrugated
 Size of compensating ring 4 5/8 x 4 1/2 No. and Description of Furnaces in each boiler 3 Morrison's Material S. M. steel Outside diameter 47 1/4
 Length of plain part top 4" Thickness of plates crown 4 9/16 Description of longitudinal joint welded No. of strengthening rings corrugated
 bottom 6" bottom 4 9/16 Working pressure of furnace by the rules 259 Combustion chamber plates: Material S. M. steel Thickness: Sides 4 5/16 Back 4 3/16 Top 4 5/16 Bottom 1 1/8
 Pitch of stays to ditto: Sides 7 1/8 Back 7 1/8 Top 7 1/16 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 290
 Material of stays S. M. steel Diameter at smallest part 1 5/8 Area supported by each stay 50 3/4 Working pressure by rules 395 End plates in steam space:
 Material S. M. steel Thickness 1 3/16 Pitch of stays 14 3 3/4 How are stays secured Nuts-washers Working pressure by rules 231 Material of stays S. M. steel
 Diameter at smallest part 2 2/32 Area supported by each stay 212 1/2 Working pressure by rules 273 Material of Front plates at bottom S. M. steel
 Thickness 1 3/16 Material of Lower back plate S. M. steel Thickness 1 5/16 Greatest pitch of stays 7 1/8 Working pressure of plate by rules 598
 Diameter of tubes 2 3/4 Pitch of tubes 3 2 5/8 Material of tube plates S. M. steel Thickness: Front 1 3/16 Back 1 5/16 Mean pitch of stays 7 9/16
 Pitch across wide water spaces 13 3/4 Working pressures by rules 232 Girders to Chamber tops: Material S. M. steel Depth and
 thickness of girder at centre 9 7/8 x 29 1/2 Length as per rule 29 1/2 Distance apart 7 1/16 Number and pitch of Stays in each 3 x 7 1/16
 Working pressure by rules 245 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 used, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

[2000-5-03-Copyable Ink.]

Lloyd's Register Foundation
W1070-0682

DONKEY BOILER— No. 66 Description *Please see separate Report No. 1140*

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:— *1/4 crankshaft, Propellershaft & nut, Propeller boss, two Propeller blades, One crankpin brass with bolts and nuts, One crosshead brass with bolts and nuts, Two main bearing bolts and nuts, One set of couplings bolts, One set of piston rings for each cylinder, One slide valve spindle, One Eccentric strap complete, One eccentric sheave, One air pump piston rod, One set of valves for air pumps, feed pumps, and bilge pumps, Two complete link straps for pumps, covers, One spring for each safety valve, 10% of all top bolts for cylinder valve covers, pistons and air pump, 2% condenser tubes, For circulating pumps: Piston rod & slide valve spindle, 2% Boiler tubes 1/2 set of fire bars, 1 set of chain valves, 6 set of gauge glasses, assorted bolts nuts and iron of different sizes*

The foregoing is a correct description,

ACTIEN-GESELLSCHAFT "WESER" Manufacturer.

Dates of Survey while building

During progress of work in shops - -	25/7, 3/8, 8/8, 15/8, 25/8, 8/9, 16/9, 29/9, 19/10, 27/10, 2/11, 29/11, 12/12, 28/12, 1905.9/1, 15/23
	8/2, 15/2, 22/2, 9/3, 16/3, 23/3, 29/3, 1906
	Total No. of visits 24,

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

" " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c. *Letter from Secretary: 15/2, 2/3, 4/9, 13/9, 05 unit C.*)

These Engines and Boilers have been built under special Survey of good material, manufactured by approved works and tested as per rule. The workmanship is very good.

All castings have been carefully examined, found of good close grained quality and found quite tight when tested by hydraulic pressure. All steam and feed pipes have been tested by hydraulic double working pressure of 440 lb. sq. in.

In the pumping arrangement, there is, at the special request of the owners as expressed in their letter dated 8.9.05, a deviation from the rules approved by the Committee, in so far as the fore Peak is drained through Ballast tank No. 1 as shown on the enclosed sketch.

The Boilers have been built in accordance with the rules and approved tracings, for a working pressure of 220 lb., but it is a rule in all steamers of the Norddeutscher Lloyd to carry 7 lb. less so as to avoid the frequent lifting of the valves and save the fresh water.

The Boilers have been tested in accordance with the German law by hydraulic pressure of 292 lb. and found quite tight.

*Under steam they are also tight, the safety valves lift freely at 220 lb. and the Engines work well so that they are fully eligible in my opinion to be classed in the Register Book with notation of *** L.M.C. 3.06***

It is submitted that this vessel is eligible for THE RECORD

H.L.M.C 3.06. F.D. ELEC. LIGHT.

The amount of Entry Fee..	£ 3 : - :	When applied for,
Special ..	£ 46 : 10 :	27.3.1906
Donkey Boiler Fee ..	£ 2 : 2 :	When received, F. Th.
Travelling Expenses (if any)	£ 4 : 10 :	28.3.1906

F. Thomsen
30.3.06

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

Committee's Minute

TUES. 3 APL 1906

Assigned

+ L.M.C 3.06

MACHINERY CERTIFICATE WRITTEN.



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Lloyd's Register Foundation

Rpt. 5.

No. in Reg. Book.

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Certificate (if required) to be sent to Surveyor Copenhagen

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