

# REPORT ON MACHINERY.

No. 6475

Port of Delft

Received at London Office LULS 9 JUN 1908

No. in Survey held at Delft  
Reg. Book.

Date, first Survey 1<sup>st</sup> Feb 1907 Last Survey 3<sup>rd</sup> June 1908

(Number of Visits 98)

on the S.S. Rotterdam

Gross 23980

Master F. H. Bouwen Built at Delft By whom built Holland & Wolff

Net 15320

When built 1908

Engines made at Delft By whom made " when made "

Boilers made at " By whom made " when made "

Registered Horse Power

Owners Holland Amerika Lijn Port belonging to Rotterdam

Nom. Horse Power as per Section 28 2451

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Twin Screw, Quadruple Expansion No. of Cranks 8

Dia. of Cylinders 33"-47"-68"-94" Length of Stroke 60" Revs. per minute 83 Dia. of Screw shaft as per rule 18.5" Material of screw shaft Steel  
as fitted 19.0"

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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 6'-6"

Dia. of Tunnel shaft as per rule 14.25" Dia. of Crank shaft journals as per rule 18.15" Dia. of Crank pin 19.5" Size of Crank webs 38" x 133" of thrust shaft under collars 18.75" Dia. of screw 19'-2" Pitch of Screw 22'-9" No. of Blades 3 State whether moveable Yes Total surface 94 sq. ft.

No. of Feed pumps } Diameter of ditto Stroke Can one be overhauled while the other is at work  
No. of Bilge pumps } Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Donkey Engines See other sheet No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2-32" In Holds, &c. 14-32"  
12-22"  
2-4" 10-22"  
2-3"

No. of Bilge Injections 2 sizes 1 1/2" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 2-42"

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 None

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 Both

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 None All carried through Pipe Tunnel

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 13-1-08 of Stern Tube 7-1-08 Screw shaft and Propeller 27-1-08

Is the Screw Shaft Tunnel watertight Stated plus is it fitted with a watertight door Yes worked from Top platform Engine Room

**BOILERS, &c.**—(Letter for record 3) Manufacturers of Steel J. G. Muller & Sons L<sup>td</sup>

Total Heating Surface of Boilers 41980 sq. ft. Forced Draft fitted No No. and Description of Boilers 8-Double End. Cylind

Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 28-11-07 No. of Certificate 407

Can each boiler be worked separately Yes Area of fire grate in each boiler 124 sq. ft. No. and Description of Safety Valves to each boiler 4- Sweet Spring Area of each valve 10.32 sq. in. Pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 30" Mean dia. of boilers 15'-4" Length 19'-6" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 29-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap Rivet  
long. seams Butt Rivet Diameter of rivet holes in long. seams 1 3/32" Pitch of rivets 10" Lap of plates or width of butt straps 2 3/4"

Per centages of strength of longitudinal joint rivets 96.9 Working pressure of shell by rules 249 lbs Size of manhole in shell 16" x 12"  
plates 83.4

Size of compensating ring M. Keils No. and Description of Furnaces in each boiler 6- Mansions Material Steel Outside diameter 49 1/2"

Length of plain part top 2" bottom 7" Thickness of plates crown 2 1/2" bottom 3 1/2" Description of longitudinal joint Weld No. of strengthening rings 375

Working pressure of furnace by the rules 242 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1 1/2" x 1 1/2"

Pitch of stays to ditto: Sides 8 1/2" x 7 1/2" Back ✓ Top 8 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 216 lbs

Material of stays Steel Diameter at smallest part 1 1/2" x 1 1/8" Area supported by each stay 61 1/8" Working pressure by rules 256 lbs End plates in steam space: Material Steel Thickness 1 1/8" Pitch of stays 18" x 15" How are stays secured Nuts inside Working pressure by rules 218 lbs Material of stays Steel

Diameter at smallest part 2 1/2" Area supported by each stay 270 sq. in. Working pressure by rules 239 lbs Material of Front plates at bottom Steel

Thickness 5/8" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓

Diameter of tubes 2 1/2" Pitch of tubes 4" x 4" Material of tube plate Steel Thickness: Front 7/8" Back 1 1/8" Mean pitch of stays 8" x 8"

Pitch across wide water spaces 14" Working pressures by rules 337 lbs with 7/8" flange Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 8 1/2" x (5/8" x 2) Length as per rule 51" Distance apart 8 1/2" Number and pitch of stays in each 6-7 1/4"

Working pressure by rules 287 lbs 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

W213-0161

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:— *See other sheet*

The foregoing is a correct description,

*Harland & Wolff Ltd* Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1907, Feb'y 1, 4, 7, 14, 20 March 1, 5, 6, 12, 22, 26 April 5, 9, 18, 24, 26  
 During erection on board vessel— May 2, 7, 10, 15, 16, 21, 23, 29, June 1, 7, and up till 3 June 1908  
 Total No. of visits 98  
 Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 18 Slides 4-04 Covers \_\_\_\_\_ Pistons *To* Rods \_\_\_\_\_  
 Connecting rod 20-2-08 Crank shaft 1-1-04 Tunnel shafts 3-Screw shaft 8 Propeller 18-7-08  
 Stern tube 18-7-04 Steam pipes tested 24/12/04 10/2/08 Engine and boiler seatings 30-3-08 Engines holding down bolts 29-4-08  
 Completion of pumping arrangements 16-5-08 Boilers fixed 4-4-08 Engines tried under steam 12-5-08  
 Main boiler safety valves adjusted 12-5-08 Thickness of adjusting washers 8 1/2 / 32  
 Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S* Material of Thrust shaft *do* Identification Mark on Do. *do*  
 Material of Tunnel shafts *do* Identification Marks on Do. *do* Material of Screw shafts *do* Identification Marks on Do. *do*  
 Material of Steam Pipes *W. Iron* Test pressure 645 lbs

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

*The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The material and the workmanship are of good description throughout, and on trial under steam in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 6-08. with notation "Electric Light"*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 6.08. ELEC LIGHT.

T.H.S. = 46436 £.

JHC 9-6-08.

The amount of Entry Fee.. £ 3 : - : When applied for,  
 Special .. .. £ 142-11-0 4-6-08  
 Donkey Boiler Fee .. .. £ : : When received,  
 Travelling Expenses (if any) £ : : 11-6-08

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

Committee's Minute

WED. 10 JUN 1908

Assigned

*June 6 08*

Certificate (if required) to be sent to this office

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