

# REPORT ON MACHINERY.

No. 7671

Received at London Office

WED. MAR. 13. 1912

Date of writing Report 18 March 1912 When handed in at Local Office

Port of Rotterdam

No. in Survey held at Rotterdam Reg. Book.

Date, First Survey 26 April 1911 Last Survey 4 March 1912

(Number of Visits 26)

Gross 3052.55

Net 1894.47

When built 1911-1912

on the Steel Screw Steamer "Cordayk"

Master J. Stephan Built at Rotterdam

By whom built Prof. Dr. J. van der Meer

Engines made at Rotterdam

By whom made Prof. Dr. J. van der Meer

when made

1911-1912

Boilers made at

By whom made

when made

Registered Horse Power 2

Owners Holland. Maats. F. H. van Hattum

Port belonging to Rotterdam

Nom. Horse Power as per Section 28 266

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

## ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 12 1/2 x 34 1/2 x 42 Length of Stroke 42 Revs. per minute 60 Dia. of Screw shaft as per rule 12.8 as fitted 13.7/16 Material of screw shaft 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 One length 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 4' 6 1/2"

Dia. of Tunnel shaft as per rule 10.9 as fitted 11 3/16 Dia. of Crank shaft journals as per rule 11.45 as fitted 11 3/4 Dia. of Crank pin 12 Size of Crank webs 5 x 4 1/2 Dia. of thrust shaft under

collars 11 3/16 Dia. of screw 16 1/8 Pitch of Screw 16 1/8 No. of Blades 4 State whether moveable No. Total surface 82 sq ft

No. of Feed pumps 2 Diameter of ditto 3 9/16 Stroke 21 3/4 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 9/16 Stroke 21 3/4 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 Sizes of Pumps 9 x 12 x 10, 4 1/2 x 5 x 6, 4 1/2 x 4 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 1 of 3" Port and 2 of 3" Starboard; one direct 3 1/2" In Holds, &c. 2 of 3" Starboard 2 of 3" Starboard 2 of 3" Starboard

No. of Bilge Injections 1 sizes 5" Connected to circulating pump Is a separate Donkey Suction fitted in Engine room & size 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 No

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 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 for stokehold each side 2 bilge suction 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 2 February 1912 of Stern Tube 2/2 1912 Screw shaft and Propeller 2/2 1912

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper platform in engine room

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Rheinische Stahlwerke, A.G. Duisburg, Essen u. Stahlwerke.

Total Heating Surface of Boilers 4168 Is Forced Draft fitted No No. and Description of Boilers 1 triple ended marine boiler

Working Pressure 160 lbs. Tested by hydraulic pressure to 240 lbs. Date of test 14-2-12 No. of Certificate 318

Can each boiler be worked separately Yes Area of fire grate in each boiler 1044 feet No. and Description of Safety Valves to

each boiler 1 spring loaded Area of each valve 7.06 sq in Pressure to which they are adjusted 160 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork over 12" Mean dia. of boilers 15" Length 10'6" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 28-52 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap or riv

long. seams double butt 5 x 10 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 18"

Per centages of strength of longitudinal joint rivets 100% plate 84.8% Working pressure of shell by rules 160 lbs. Size of manhole in shell 12" x 16" in end

Size of compensating ring 4 No. and Description of Furnaces in each boiler 3 Marine furnaces Material Steel Outside diameter 3 9/16"

Length of plain part top Thickness of plates crown 1/2 Description of longitudinal joint welded No. of strengthening rings 2

bottom Thickness of plates bottom 1/2 Working pressure of furnace by the rules 160 lbs. Combustion chamber plates: Material Steel Thickness: Sides 2 1/2" Back 5/8" Top 2 1/2" Bottom 7/8"

Pitch of stays to ditto: Sides 2 x 8" Back 7/4 x 8" Top 8 x 8 1/2" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 160 lbs

Material of stays Steel Diameter at smallest part 1.22" Area supported by each stay 62 sq in Working pressure by rules 160 lbs. End plates in steam space:

Material Steel Thickness 5/16" Pitch of stays 14 x 19" How are stays secured Stay nuts Working pressure by rules 160 lbs. Material of stays Steel

Diameter at smallest part 5.4" Area supported by each stay 325 sq in Working pressure by rules 160 lbs. Material of Front plates at bottom Steel

Thickness 2 1/2" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 14 x 8 1/4" Working pressure of plate by rules 205 lbs.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates Steel Thickness: Front 2 3/16" Back 2 3/16" Mean pitch of stays 8 1/4 x 8 1/2"

Pitch across wide water spaces 15 1/4 x 8 1/4" Working pressures by rules 160 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 1/4 x 1 1/2" Length as per rule 37 x 29 1/2" Distance apart 8 1/2" Number and pitch of stays in each 2 of 8"

Working pressure by rules 160 lbs. Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

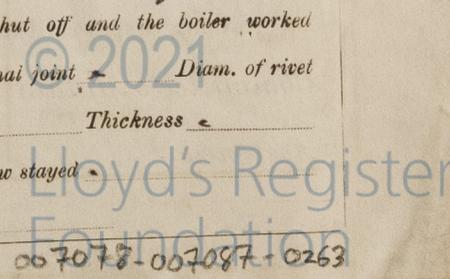
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

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

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the ship?



007078-007087-0263

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Date of adjustment \_\_\_\_\_

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 \_\_\_\_\_ 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:— 2 piston rod bolts, nuts; 2 connecting rod bolts, nuts; 2 main bearing bolts; 6 crank pin bolts; 1 set of foot, belt, pump valves; 50 bolts, studs, nuts; 1 propeller, 1 spare stem shaft; 6 studs for cylinder covers; 11 coach springs; 4 P. junk ring, 6 bolts; 1 set safety valve springs; 51 fire bars; 6 plain tubes; main, donkey boilers; 6 condenser tubes, 20 ferrules.

The foregoing is a correct description,

Manufacturer. ROYAL DONKEY ENGINE WORKS LTD. (INCORPORATED IN ENGLAND)

Dates of Survey while building: During progress of work in shops - April 26, June 2, 6, 29, Aug 2, Sept 2, 10, 22, 26; Oct 19; Nov 13, Dec 10, 21, Jan 3, 8, 9, 17, 22, Feb 1, 2, 7, 16, 21, 27, 28, 29, March 1, 4.

During erection on board vessel - 14, 21, 27, February 1912, and March 1, 4.

Total No. of visits 26

Is the approved plan of main boiler forwarded herewith Yes  
 " " " pumping plan " " Yes  
 " " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 19/10 - 22/10 Slides 19/10 - 22/10 Covers 14/10 - 22/10 Pistons 14/10 - 22/10 Rods 2/8 - 15/12

Connecting rods 2/8 - 17/12 Crank shaft 19/10 - 3/11 Thrust shaft 1/10 - 3/11 Tunnel shafts 17/11 - 22/11 Screw shaft 17/11 - 22/11 Propeller 22/12

Stern tube 9/1 - 2/2 Steam pipes tested 2/12 Engine and boiler seatings 16/12 Engines holding down bolts 19/2 - 2/2

Completion of pumping arrangements 24/12 Boilers fixed 19/12 Engines tried under steam 4/13

Main boiler safety valves adjusted 24/12 Thickness of adjusting washers Port valves 1.0, 1.2, 1.0, 1.0; 1.0, 1.0, 1.0, 1.0; 1.0, 1.0, 1.0, 1.0; 1.0, 1.0, 1.0, 1.0

Material of Crank shaft Steel Identification Mark on Do. Steel Material of Thrust shaft Steel Identification Mark on Do. Steel

Material of Tunnel shafts Steel Identification Marks on Do. Steel Material of Screw shafts Steel Identification Marks on Do. Steel

Material of Steam Pipes Solid drawn copper Test pressure 320 lbs.

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The machinery and boiler have been built in accordance with the approved plans and the Secretary's letter, material tested as required; workmanship good and the machinery has run satisfactorily during a full speed trial. We are of opinion that this vessel is eligible to be recorded in the Society's Register book with + L.M.C. 3.12.

It is submitted that this vessel is eligible for **THE RECORD. + L.M.C. 3.12.**

J.W.D. 13/3/12

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

The amount of Entry Fee .. £ 14. - : When applied for, 12/3/12

Special .. £ 399.60 : When received, 29-3-12

Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ 15. - : :  
 Committee's Minute FRI. MAR. 15. 1912

Assigned + L.M.C. 3.12

Certificate (if required) to be sent to Surveyor (The Surveyors are requested not to write on or below the space for Committee's Minute.)

