

REPORT ON MACHINERY.

No. 4635.6

Received at London Office

1028. 11 OCT 1910

Date of writing Report 9 October 1910 When handed in at Local Office

Port of Amsterdam

No. in Survey held at Amsterdam

Date, First Survey 26 July 1909 Last Survey 28 September 1910

Reg. Book.

1019 on the Steel Twin Screw Steamer Prinses Juliana

(Number of Visits 62)

Gross 8055

Net 4973

Master J. Vanbort

Built at Amsterdam

By whom built Ned. Scheepbouw Maats. When built 1910

Engines made at Amsterdam

By whom made Ned. Fab. & Werk. & Spoor Maats.

when made 1910

Boilers made at Amsterdam

By whom made Ned. Fab. & Werk. & Spoor Maats.

when made 1910

Registered Horse Power 1094

Owners Stoom Maats. Nederland

Port belonging to Amsterdam

Nom. Horse Power as per Section 28 1094

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines quadruple expansion (two sets)

No. of Cylinders four

No. of Cranks four

Dia. of Cylinders 24 7/8" 34 5/8" 47 1/4" 70 3/8"

Length of Stroke 47 1/4" Revs. per minute 80

Dia. of Screw shaft as per rule 15 1/2"

Material of screw shaft as fitted 15 1/2" (S. 4)

Material of Nickel steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner

Is the after end of the liner made water tight

in the propeller boss 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 64"

Dia. of Tunnel shaft as per rule 12 1/2"

as fitted 14 1/2"

Dia. of Crank shaft journals as per rule 13 1/2"

as fitted 15"

Dia. of Crank pin 15"

Size of Crank webs 9 1/2"

Dia. of thrust shaft under

collars 15 1/2"

Dia. of screw 16 1/2"

Pitch of Screw 20 1/2"

No. of Blades 3

State whether moveable Yes

Total surface 72 1/2 sq ft

No. of Feed pumps two

Diameter of ditto 6 1/2"

Stroke 18 1/2"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps two

Diameter of ditto 6 1/2"

Stroke 18 1/2"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines two ballast pumps

Sizes of Pumps 9 1/2" x 14"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 diam 3 1/2"

In Holds, &c. 14 diam 3 1/2"

No. of Bilge Injections one

sizes 13"

Connected to condenser, on 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 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 None

How are they protected

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 12.9.17 May of Stern Tube 15 April 12.9.17 May Screw shaft and Propeller 12.17 and 21 May 1910

Is the Screw Shafts Tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Long Room and Commanding Bridge

BOILERS, &c.—(Letter for record B)

Manufacturers of Steel David Colvill & Co. Leds. Jansen

Total Heating Surface of Boilers 16336.47

Is Forced Draft fitted Yes

No. and Description of Boilers 2 double and 2 single End

Working Pressure 210 lbs

Tested by hydraulic pressure to 420 lbs

Date of test 12 May 1910

No. of Certificate 12/31 and 13/33

Can each boiler be worked separately Yes

Area of fire grate in each boiler 96.54 sq ft

No. and Description of Safety Valves to

each boiler two direct spring

Area of each valve 14.25 x 5.95 sq in

Pressure to which they are adjusted 210 lbs

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18 1/2"

Mean dia. of boilers 13-9"

Thickness 1 1/2"

Range of tensile strength 24.1 x 21.9 tons

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams triple

long. seams triple in double thickness

Diameter of rivet holes in long. seams 1 1/2"

Pitch of rivets 10"

Lap of plates or width of butt straps 21 1/2"

Per centages of strength of longitudinal joint plate 85, 85

Size of compensating ring 32 x 26

No. and Description of Furnaces in each boiler 2 single

Material 146 steel

Outside diameter 45 1/2"

Length of plain part top 11"

Thickness of plates bottom 11"

Description of longitudinal joint welded

No. of strengthening rings

Working pressure of furnace by the rules 247.237 lbs

Pitch of stays to ditto: Sides 6 1/4" x 8 1/2"

Back 6 1/8" x 8 1/2"

Top 7 1/8" x 8 1/2"

If stays are fitted with nuts or riveted heads riveted heads

Working pressure by rules 244.252 lbs

Material of stays steel

Diameter at smallest part 1 1/2"

Area supported by each stay 58 1/2"

Working pressure by rules 244.252 lbs

Material steel

Thickness 1 1/2"

Pitch of stays 16 1/2" x 19"

How are stays secured flange nuts

Working pressure by rules 234.218 lbs

Material of Front plates at bottom steel

Diameter at smallest part 3 1/2"

Area supported by each stay 304

Working pressure by rules 251.244 lbs

Thickness 1 1/2"

Material of Lower back plate steel

Thickness 1 1/2"

Greatest pitch of stays 6 1/8" x 8 1/2"

Working pressure of plate by rules 390 lbs

Diameter of tubes 2 1/4"

Pitch of tubes 3 1/2"

Material of tube plates steel

Thickness: Front 1 1/2"

Pitch across wide water spaces 13 1/4"

Working pressures by rules 336.457.230.210

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 8" x 13 1/4"

Length as per rule 30"

Distance apart 8"

Number and pitch of stays in each three 8"

Working pressure by rules 222 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

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

marked in black double ended in red single ended boilers.

W21-0247

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:— 1 Screw shaft, 1 Crank shaft, 6 propeller blades, 2 piston rods, 16 & 2 Piston
1 Crossheads, 4 Valve Spindles, 4 linkblades, 2 Eccentrics Coupled, 3 Crankpins & 4 set bearing, frames, 9 thrust shaft
8 bearing, 4 Crosshead, 12 Coupling bolts, 1 Airpump bucket & Rod. NEDERLANDSCHE FABRIEK with Valves Complete, 2 feed
1 bilge pump plungers with Seats & Valves, Spare gear for auxiliary machinery, 150 Condenser
100 boiler tubes, 14 staybolts & mandrels, 4 bolts with nuts & washers.
The foregoing is a correct description,
Manufacturer.

Dates of Survey
During progress of work in shops— July 26, August 26, Sept 13 & 18, October 2, 9, 18, Nov 25, Dec 3, 11, 21—1909, January 3, 11, 20
During erection on board vessel— Feb 2, 11, 15, 21, 22, 23, March 2, 4, 9, 17, 25, April 1, 5, 15, May 12, 17, 31, June 4, 10, 17, 23, 24
building— 25, July 1, 6, 12, 22, August 9, 16, 19, 20, 23, 25, 27, 31, Sept 1, 3, 6, 7, 9, 12, 15, 20, 21, 23, 25, 28, 29—1910
Total No. of visits— Sixty two.
Is the approved plan of main boiler forwarded herewith Yes ✓

Dates of Examination of principal parts—Cylinders 2 Aug till Aug, Slides 26 Sept, 2 Oct, 2, 10, Covers 2 Oct, 9, Sept 3, 10, Pistons 26 Sept, 9, 26, 10, Rods 26 Sept, 9, Aug
Connecting rods 26 Sept, 9, 4, Crank shaft April 15, 25, Thrust shaft March 17, 25, Tunnel shafts March 17, May, Screw shaft 17 March, 31 May, Propeller Feb 22, 20, 4
Stern tube March 25, May 31, Steam pipes tested 15 Sept, Engine and boiler seatings April 2, 31 May, Engines holding down bolts 6 Sept, 2, 20 Sept
Completion of pumping arrangements 28 Sept, Boilers fixed 28 August, Engines tried under steam 20 Sept
Main boiler safety valves adjusted 20 Sept, Thickness of adjusting washers P¹⁴/₁₃ M¹⁵/₁₄ SB¹⁵/₁₅ P¹⁵/₁₄ SB¹⁵/₁₅ ^{1/4}/₁₆
Material of Crank shaft SM Michie Identification Mark on Do. 5154 KH Material of Thrust shaft SM Michie Identification Mark on Do. 5342 KH 4-10
Material of Tunnel shafts SM Michie Identification Marks on Do. 5533, 36/41, 54 PAJ-10 Material of Screw shafts SM Michie Identification Marks on Do. 5532, Y3553
Material of Steam Pipes Steel Solid drawn ✓ Test pressure 600 lbs per square inch ✓ PAJ-10 5448 KH 5-10

General Remarks (State quality of workmanship, opinions as to class, &c.)
This vessel's machinery and boilers have been constructed according to the Society's rules and approved plans which are herewith returned to London Office.
All material duly tested as required found of good quality and workmanship throughout good. Cylinders, Valve casings, Columns, Sterntubes, Condensers and body of pump tested under hydraulic pressure with satisfactory results.
Mainboilers 5 in number tested under hydraulic pressure to 420 lbs per sq inch found perfectly tight and no leaking whatever. Boilers seen under full pressure, "prior to lagging being put on," found perfectly tight.
Examined Engines & boilers under steam whilst vessel being moored and during trial trip. Same working successfully without hitches or heating. Auxiliary machinery ditto, pumps working from all compartments. Forged draft gear.
I am of opinion that this vessel is eligible to be classed in the Society's Register Book and to be recorded.

LMC-9.1910
It is submitted that this vessel is eligible for THE RECORD+LMC

The amount of Entry Fee .. £ 3 : - :
Special .. £ 72.7 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ 1.15.8 :
When applied for, Oct 1910
When received, Oct 1910

Committee's Minute
Assigned
+ Lmb 9.10
F. D.

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

Lloyd's Register Foundation