

## REPORT ON MACHINERY.

No. 4710.6

Received at London Office

TUES. 20 DEC 1910

Date of writing Report 19 Decem. 1910 When handed in at Local Office

Port of Amsterdam

No. in Survey held at

Amsterdam

Date, First Survey 19 April

Last Survey 19 December 1910

Reg. Book.

(Number of Visits 40.)

Built on the Steel screw tank motor vessel Vulcanus.

Gross 1178.82

Net 707.18

When built 1910.

Master H. J. van 't Hal

Built at

Amsterdam

By whom built

Ned Scheepsbouw Maats

When built

1910.

Engines made at

Amsterdam

By whom made

Ned Fabriek van Werk &amp; Spoor Maat

when made

1910

Boilers made at

By whom made

when made

Registered Horse Power 600 IHP

Owners

Ned Indische Tank Stoomboot Maats

Port belonging to

Gravenhage

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Yes.

## ENGINES, &amp;c.—Description of Engines

Single acting 4 Cycle Diesel oil Engine

No. of Cylinders

6

No. of Cranks

6

Dia. of Cylinders

400 mm

Length of Stroke

600 mm

Revs. per minute

200

Dia. of Screw shaft

as per rule 8.97

Material of

screw shaft

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

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush

33.46

Dia. of Tunnel shaft

as per rule 8.26

as fitted 110 mm

Dia. of Crank shaft journals

as per rule 8.89

as fitted 110 mm

Dia. of Crank pin

226 mm

Size of Crank webs

14.96 x 4.56

Dia. of thrust shaft under

collars

31.6 mm

Dia. of screw

2800 mm

Pitch of Screw

1700 mm

No. of Blades

4

State whether moveable

No

Total surface

2.94 m<sup>2</sup>

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

two

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

two

SIZES OF PUMPS

Diam. 80 mm

Stroke 200 mm

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

In Holds, &amp;c.

7 - 2 1/8" Forehold 1 - 3"

6 - 4 1/2" Cofferdams 5 - 3"

No. of Bilge Injections

sizes

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room &amp; size

Yes

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

Valves

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

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

26 Oct

of Stern Tube

26 Oct

Screw shaft and Propeller

26 Oct

1910

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Yes

OILERS, &amp;c.—(Letter for record)

Manufacturers of Steel

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

Thickness of plates

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

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

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

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Lloyd's Register  
Foundation

W680-0119



# 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 propeller 1 screwshaft. 1/2 (three three) crankshaft, 24 springs. 4 1/2 top and 4 1/2 bottom end brasses, with two bolts & nuts for each. 1/2 mainbearing brasses with 2 bolts & nuts. Sea escape valves with bonnets & springs. Two admission valves. Two starting valves with bonnets & springs. Two solar oil pump plungers. Two sets of piston rings. One set of coupling bolts. One set of bilge pump valves, 12 cpl studs & nuts. 24 dozen bolts & nuts. Different small valves, etc. also gear for deaerating.

The foregoing is a correct description,

NEDERLANDSCHE FABRIEK  
VAN WERKTUIGEN EN SPOORWEG-MATERIEEL

Manufacturer.

Dates of Survey while building	During progress of work in shops—	April 19. May 12. 17 & 31. June 2. 7. 13. 17. 23. 24. 25. July 1. 6. 13. August 3. 19. 23 & 25. Sept 3. 6. 13. 15 & 28
	During erection on board vessel—	October 6. 11. 15. 19. 26. 27. 29 & 31. November 12. 25. 26 & 29. December 3. 8. 11. 13 and 17. 1910
	Total No. of visits	40

Dates of Examination of principal parts—Cylinders	19 April till 25 Sept	Covers	Pistons	13 Dec	Rods	2 June to 25 July	
Connecting rods	ditto	Crank shaft	31 May	Thrust shaft	18 June till 27 Oct	Tunnel shafts	ditto
Screw shaft	27 Oct	Propeller	6 Oct till 27 Oct				
Stern tube	23 Aug. 19 Oct	Steam pipes tested	Engine and boiler seatings	3 Sept. 19 Oct	Engines holding down bolts	26 November	
Completion of pumping arrangements	8 December	Boilers fixed	Engines tried under steam	8 & 8 & 13 December			
Main boiler safety valves adjusted		Thickness of adjusting washers					
Material of Crank shaft	S. Minger Identification Mark on Do. 3656-57 5746 SPARE	Material of Thrust shaft	S. Minger Identification Mark on Do. 2237.				
Material of Tunnel shafts	S. Minger Identification Marks on Do. 2238	Material of Screw shafts	S. Minger Identification Marks on Do. 2239 2240 SPARE				
Material of Steam Pipes		Test pressure					

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

This vessel's machinery has been fitted in an efficient manner. Material used in the construction of good quality and tested as required. Cylinders tested under hydraulic pressure to 70 atmospheres. Main & auxiliary motors attended whilst in working condition found working satisfactory. Approximate speed attained about 8 knots. Maximum revolutions 200. Minimum ditto 60. I am of opinion that this vessel should be recorded in the Society's Register Book

LMC-12.1910

The amount of Entry Fee	£ 2 : 0 :	When applied for,
Special	£ 25 : 0 : 0	Dec 1910
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ 1 : 5 :	Dec 1910

Committee's Minute

Assigned

FRI. 23 DEC 1910

+ L.M.C. 12.10

oil engine

MACHINERY CERTIFICATE

WRITTEN. 22/10/10

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