

## REPORT ON MACHINERY.

No. 41346

Port of Rotterdam

WED. 30 NOV 1904

Received at London Office 19

No. in Survey held at Rotterdam

Date, first Survey 9 March 1904 Last Survey 21 November 1904

Reg. Book.

(Number of Visits 16)

27. Supp. on the Steel S.S. "Perlak" (carrying Petroleum in bulk)

Master W. H. Nieland Built at Rotterdam

By whom built Maatschappij voor

Tons { Gross 1066.70  
Net 1066.58  
When built 1904

Engines made at Rotterdam

By whom made

Scheeps en Werktuigbouw

when made 1904

Boilers made at Rotterdam

By whom made

Flyenwood

when made 1904

Registered Horse Power 215

Owners van Petrol. bruiken in Ned. Indië

Port belonging to Pangkalan - Berendam

Nom. Horse Power as per Section 28 215

Is Refrigerating Machinery fitted no

Is Electric Light fitted yes.

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

Inverted Triple expansion No. of Cylinders three No. of Cranks 3.

Dia. of Cylinders 20 1/2, 33, 55 Length of Stroke 36 Revs. per minute 85 Dia. of Screw shaft as per rule 10 5/16 Material of 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 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 yes. If two liners are fitted, is the shaft lapped or protected between the liners

Dia. of Tunnel shaft as per rule 10 1/4 Dia. of Crank shaft journals as per rule 10 9/16 Dia. of Crank pin 11 Size of Crank webs 4 1/2 x 7 1/4 Dia. of thrust shaft under collars 11 Dia. of screw 12-4 Pitch of screw 14 feet No. of blades 4 State whether moveable no Total surface 59 sq ft

No. of Feed pumps 2 Diameter of ditto 3 Stroke 20 Can one be overhauled while the other is at work yes.

No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 20 Can one be overhauled while the other is at work yes.

No. of Donkey Engines two sets Sizes of Pumps 8 x 6 x 18; 6 x 5 1/4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one centre, one each wing 3 In Holds, &amp;c. one 3 forehold, one 3 each side in fore coffer dam, one 6 in each side of each oil hold and in after coffer dam

No. of bilge injections 1 sizes 5 1/2 Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room &amp; size yes. 3

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

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.

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launch Is the screw shaft tunnel watertight none

Is it fitted with a watertight door worked from

## BOILERS, &amp;c.—

(Letter for record 3)

Total Heating Surface of Boilers 3561 sq ft Is forced draft fitted no

No. and Description of Boilers two single ended Marine Working Pressure 180 lb Tested by hydraulic pressure to 360 lb

Date of test 11/10/04 Can each boiler be worked separately yes Area of fire grate in each boiler 49 sq ft No. and Description of safety valves to each boiler 2 Spring loaded Area of each valve 5.94 sq Pressure to which they are adjusted 180 lb Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork feet. Mean dia. of boilers 12-6 Length 11-11 1/4 Material of shell plates steel

Thickness 1 1/2 Range of tensile strength 27-32 Are they welded or flanged no Descrip. of riveting: cir. seams lap 2 x riv long. seams ddb butt 5 x riv

Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 7 1/2 Lap of plates or width of butt straps 16 1/4

Per centages of strength of longitudinal joint rivets 89 plate 85 Working pressure of shell by rules 184 lb Size of manhole in shell 12 x 16

Size of compensating ring M. Neil's No. and Description of Furnaces in each boiler 3 Horizons Material steel Outside diameter 39 1/4

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

Working pressure of furnace by the rules 192 lb Combustion chamber plates: Material steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 7/8

Pitch of stays to ditto: Sides 8 x 8 Back 8 x 7 1/4 Top 7 x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 210 lb

Material of stays steel Diameter at smallest part 1.41 Area supported by each stay 62 sq Working pressure by rules 181 lb End plates in steam space:

Material steel Thickness 7/8 5/4 Pitch of stays 16 x 15 1/2 How are stays secured nuts Working pressure by rules 278 Material of stays steel

Diameter at smallest part 4.46 Area supported by each stay 251 sq Working pressure by rules 180 Material of Front plates at bottom steel

Thickness 1 3/16 Material of Lower back plate steel Thickness 1 3/16 Greatest pitch of stays 14 Working pressure of plate by rules doubled

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 4 3/8 Material of tube plates steel Thickness: Front 1 3/16 Back 3/4 Mean pitch of stays 9 x 8 1/4

Pitch across wide water spaces 14 1/2 Working pressures by rules doubled Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 9 1/2 x 1 3/8 Length as per rule 2-9 1/2 Distance apart 7 Number and pitch of Stays in each 3-8

Working pressure by rules 184 lb 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

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

W625-0072



SPARE GEAR. State the articles supplied:— 2 bolts & nuts for main bearings, for top end & for bottom end frames, set of coupling bolts; 1 set of feed and bilge pump valves & seats; 2 main & 2 donkey check valves; 6 valves with springs & seats for donkeys; 1 set of air pump & circulating pump valves; 1 feed pump plunger & gland; 1 set of piston springs; 1 propeller, 1 stem shaft,  $\frac{1}{3}$  Crankshaft; 20 Condenser tubes, 100 ferrules; 100 rivets with straps. The foregoing is a correct description, complete; 1 valve spindle & link block; 1 set of crank pin & crank web braces, 1 air & 1 circul. p. bucket and rod. 2 safety valve springs for 5 lbs. pressure; 5 springs for relief valve, 20 boiler tubes, & full complement of studs, bolts; black bolts & nuts & iron of various sizes.

Maatschappij voor Scheep- & Werktuigbouw  
"FIJENOORD" G. P. O. Manufacturer. N.B.

per C. p. post

Is the approved plan of main boiler forwarded herewith *Yes*  
 Pumping & Astatic Arrangements *Yes*  
 " " " donkey " " " *Yes*

The steam pipes are of solid drawn copper 4" bore,  $\frac{1}{4}$ " thick, flanges riveted on, spigot joints, and have been tested to twice the working pressure with satisfactory result; two twelve ton evaporators fitted. Donkey feed pump, duplex  $5\frac{1}{4}$ " x  $3\frac{1}{4}$ " x 5" situated in engine room, workable from Donkey boiler space, can also be used on the main boiler.

The Machinery and boilers having been constructed in accordance with the approved plans, the materials duly tested, workmanship good, and all having worked satisfactory during a seven hours trial at sea I am of opinion that this vessel is eligible to be recorded in the Society's Register Book with

† I. M. C. 11.04 Machinery aft. Burning lignite fuel.

ILM.C. 11.04. ELEC: LIGHT.

FITTED FOR LIQUID FUEL

End

MS.  
1.12.04

W. F. D. Mayall  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI. 2 DEC 1904

+ Lpb 11. 04

Elec. light.  
 Filled for liquid fuel 11.074

MACHINERY CERTIFICATE  
WRITTEN.