

878 N. of report on vessel.

878

REPORT ON MACHINERY.

No. 144
No. in Survey held at *Amsterdam* Date, first Survey *24 June 84* Last Survey *14 March 1888*
Reg. Book. on the *Iron S.S. "Prins Frederik Hendrik"*.
Built at *Amsterdam* By whom built *Koninklyke* When built *1884/88*
Engines made at *Amsterdam* By whom made *Stabrick van Stoom* when made *1888*
Boilers made at *N.* By whom made *Landere werktuigen* when made *1888*
Registered Horse Power *204* Owners *Koninklyke West Indische Mail dienst* Port belonging to *Amsterdam*

Engines, &c.—
Description of Engines *Inverted triple expansion, surface condensing*
Diameter of Cylinders *22, 34 & 56"* Length of Stroke *40"* No. of Rev. per minute *68* Point of Cut off, High Pressure *7/10* maximum Low Pressure *7/10*
Diameter of Screw shaft *12 1/4"* Diam. of Tunnel shaft *11"* Diam. of Crank shaft journals *11"* Diam. of Crank pin *11"* size of Crank webs *13 1/2" x 4 3/4"*
Diameter of screw *14 1/2"* Pitch of screw *19 1/2"* 6" No. of blades *4* state whether moveable *yes* total surface
No. of Feed pumps *two* diameter of ditto *6"* Stroke *18"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *two* diameter of ditto *3 1/2"* Stroke *20"* Can one be overhauled while the other is at work *yes*
Where do they pump from *Engine room 3 roses; main hold 3 roses; fore hold; fore peak.*
No. of Donkey Engines *one* Size of Pumps *3 1/2" x 5"* 2 off. Where do they pump from *sea, bilges as above, and butwell*
Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible
No. of bilge injections *two* and sizes *4" x 6"* Are they connected to condenser, or to circulating pump *to jet injection pipe & circ. pump*
How are the pumps worked *by levers from intermediate crosshead*
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 accessible at all times *yes*
Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *10 March 88*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Main deck height*

Boilers, &c.—
Number of Boilers *two* Description *Cylindrical Horizontal* Whether Steel or Iron *Through out, no iron used*
Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs.* Date of test *23.1.88 8.42; 28.1.88 8.43*
Description of superheating apparatus or steam chest *none*
Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately
Area of square feet of fire grate surface in each boiler *92.5* Description of safety valves *Adam's* No. to each boiler *two*
Area of each valve *14.63 sq"* Are they fitted with easing gear *yes* No. of safety valves to superheater *—* area of each valve *—*
Are they fitted with easing gear *—* Smallest distance between boilers and bunkers or woodwork *feet* Diameter of boilers *13'-6"*
Length of boilers *9'-6 1/2"* description of riveting of shell long. seams *dbl, but, quadruple* circum. seams *dbl, but, dbl.* Thickness of shell plates *1 3/8"*
Diameter of rivet holes *1 1/2"* whether punched or drilled in place pitch of rivets *9"* Lap of plating *18"*
Percentage of strength of longitudinal joint *83 1/2%* working pressure of shell by rules *183 lbs* size of manholes in shell *12 x 16"*
No. of compensating rings *one* No. of Furnaces in each boiler *three*
Side diameter *3'-3 3/8"* length, top *6'* bottom *8'-8 3/4"* thickness of plates *9/16"* description of joint *welded* if rings are fitted *consolidated*
Smallest length between rings *14'* working pressure of furnace by the rules *144* combustion chamber plating, thickness, sides *9/16"* back *9/16"* top *9/16"*
Thickness of stays to ditto, sides *4"* back *4"* top *4"* If stays are fitted with nuts or riveted heads *riv heads* working pressure of plating by rules *165* Diameter of stays at smallest part *1 3/16"* working pressure of ditto by rules *184* end plates in steam space, thickness *1 5/16"*
Thickness of stays to ditto *13 1/2"* how stays are secured *dbl nuts, riv heads* working pressure by rules *160 lbs* diameter of stays at smallest part *2 1/8"* working pressure by rules *145 lbs* Front plates at bottom, thickness *1 5/16"* Back plates, thickness *1"*
Smallest pitch of stays *13 1/2"* working pressure by rules *145 lbs* Diameter of tubes *3 1/4"* outs. pitch of tubes *4 1/2"* thickness of tube plates, front *13 1/2"* back *3 1/4"* iron how stayed *rec. tube* pitch of stays *9"* width of water spaces *1 1/4"*
Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes
Working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings
Working pressure by rules end plates of superheater, or steam chest; thickness how stayed
Superheater or steam chest; how connected to boiler

DONKEY BOILER—

Description

Horizontal Cylindrical

Made at Amsterdam by whom made Kon: Fabr. v. Stm & and: Werkt, when made 1888 where fixed on deck

Working pressure 80 lbs tested by hydraulic pressure to 160 lbs No. of Certificate 1. 17.12.87 fire grate area 9.6 sq ft description of safety

valves ~~non return valve~~ ^{away's} No. of safety valves two area of each 3.14 sq ft if fitted with easing gear yes if steam from main boilers can

enter the donkey boiler ~~non return valve~~ diameter of donkey boiler 6'-11" length 4' description of riveting ~~dbl. rivets~~ ^{butt}

Thickness of shell plates 5/8" diameter of rivet holes 1" whether punched or drilled ~~p.~~ pitch of rivets 3" lap of plating 9/16" ^{but}

per centage of strength of joint 66 1/2 % ^{comb ch.} thickness of crown plates 9/16" stayed by screw stays riveted in comb ch, nuts on end pl.

Diameter of furnace, top 2'-10" bottom — length of furnace 4'-6" thickness of plates 1/2" description of joint ~~lap, sgl, riv~~

Thickness of furnace ~~crown~~ ^{steam space end} plates 1 1/2" stayed by 1 7/8 stays, ~~dbl nuts and riv work~~, working pressure of shell by rules 89.

Working pressure of furnace by rules 140 lbs diameter of uptake — thickness of plates — thickness of scater tubes —

SPARE GEAR.

State the articles supplied:— One crankshaft; one tailend shaft complete; set of piston springs

for each piston; one piston rod and crosshead complete; one HP & one Intermediate slide; three

slide valve rods; one eccentric and rod complete; one air pump rod; one set of air pump valves;

36 Condenser tubes; 48 plugs for same; one link for air pump motion complete; one set of connec-

ting rod top and bottom end brasses and bolts; four

The foregoing is a correct description, ^{Manufacturers} ~~Donkloofse Fabriek van Stoom- en~~ ^{segments for thrust block; eight coupling bolts; one propeller}

~~andere - Werkhuizen~~ ^{of 4 blades; one spare of each moveable part of circulating donkey,}

^{one set of springs for main & donkey b. safety valve springs; 50 tubes}

General Remarks (State quality of workmanship, opinions as to class, &c. 6 stay tubes; feed & bilge pump valves and)

^{ample provision of iron, bolts, nuts, and appliances.}

Diameter of steam pipes 6" main, 4 1/2" x 0.236 = 8 1/2" thick reef. Tested to dbl pressure

" " feed pipes 2 1/2" x 0.157 = 4 1/2" " " "

The materials used and the workmanship for the construction of the machinery

is very good. The boilers have been built, drilled and riveted with the

greatest care.

Maximum Indicated Horse power during trial at sea 447, 372 & 412 with

68 revolutions. Mean pressures 79.3, 29.9 & 14.

The machinery and boilers working very satisfactory during a six hour's

full steam trial at sea, renders this vessel eligible, in my opinion to be

recorded in the Society's Register Book with

L. M. C. 3. 88.

It is submitted that this vessel is eligible to have the notification + Lmb 3.88 recorded.

W.P. 23/3/88

[Large blue ink signature]

The amount of Entry Fee £ 2 : : received by me, }
 Special £ 30 : 4 :
 Donkey Boilers £ 2 : 2 :
 Certificate (if required) £ : 5 : 18
 To be sent as per margin.
 (Travelling Expenses, if any, £ : :)

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

Committee's Minute TUE 15 JUN 88
 + Lmb 3/88