

REPORT ON MACHINERY.

Port of Rotterdam

Received at London Office

No. in Survey held at Rotterdam

Date, first Survey 25th March Last Survey 28 August 1897

Reg. Book.

(Number of Visits 22)

Suppl. on the Steel S.S. "Kalaban"

Ton. { Gross 556.40
Net 338.81
When built 1897

Master E. Sukkiew Built at Rotterdam By whom built Ryke & Co

Engines made at Rotterdam By whom made Maatschappij de Maas when made 1897

Boilers made at Rotterdam By whom made Maatschappij de Maas when made 1897

Registered Horse Power 62 Owners Petroleum Bronnen in Noord. Indie Port belonging to Gravenhage

Nom. Horse Power as per Section 28 65.24 64

ENGINES, &c.— Description of Engines Inverted triple expansion surface condensing No. of Cylinders three
Diameter of Cylinders 12 1/2", 20" & 33 3/4" Length of Stroke 21" Revolutions per minute 140 Diameter of Screw shaft as per rule 6"
Diameter of Tunnel shaft as per rule 5 1/2" Diameter of Crank shaft journals 6 3/4" Diameter of Crank pin 6 3/4" Size of Crank webs 8 3/4" x 4 1/4"
Diameter of screw 4" 6" Pitch of screw mean 8" 6" No. of blades 4 State whether moveable yes Total surface 18.5 sq. ft.
No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 9 1/2" Can one be overhauled while the other is at work yes.
No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 9 1/2" Can one be overhauled while the other is at work no.
No. of Donkey Engines 3 Duplex Sizes of Pumps 2- 3 1/2" x 5" & 1- 4 1/4" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room one 2 1/4" from which 3 Duplex p. can draw In Holds, &c. 1- 2 1/4" & separate hand pump - 3" in forepeak
see approved plans - Pumps for oil tanks Duplex 10 1/4" diameter x 10" stroke.
No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size 4 1/2", 2 1/4"
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 valves & cocks.
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, non return valve.
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, &c.— (Letter for record 3) Total Heating Surface of Boilers 1115 sq. ft.
No. and Description of Boilers Cylindrical, horizontal, seg end. Working Pressure 175 lb Tested by hydraulic pressure to 350 lb
Date of test 17 July Can each boiler be worked separately ✓ Area of fire grate in each boiler 28 ft No. and Description of safety valves to
each boiler 2, direct spring loaded Area of each valve 5.1 sq" Pressure to which they are adjusted 175 lbs Are they fitted
with easing gear yes. Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean diameter of boilers 11 ft.
Length 10 ft Material of shell plates steel Thickness 1" Description of riveting: circum. seams double long. seams 5 x riv dble butt
Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 6 2/3" Lap of plates or width of butt straps 15"
Per centages of strength of longitudinal joint 91.5 Working pressure of shell by rules 179 lbs. Size of manhole in shell 12" x 16"
Size of compensating ring M. S. Bell's No. and Description of Furnaces in each boiler 2 Morrison Material steel Outside diameter 40 1/4"
Length of plain part top 6" 6" Thickness of plates bottom 1/2" Description of longitudinal joint welded No. of strengthening rings ✓
Working pressure of furnace by the rules 188 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 9/16"
Pitch of stays to ditto: Sides 7 3/4" Back 7 3/4" Top 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lb
Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 60.06 Working pressure by rules 197 lb End plates in steam space:
Material Steel Thickness 5/8" 7/8" Pitch of stays 15" How are stays secured welded, nut Working pressure by rules 145 lb Material of stays steel
Diameter at smallest part 4 1/4" Area supported by each stay 225" Working pressure by rules 178 Material of Front plates at bottom steel
Thickness 5/8" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 11" Working pressure of plate by rules 182 lb
Diameter of tubes 3 1/4" Pitch of tubes 4 1/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10 1/2"
Pitch across wide water spaces double Working pressures by rules 183 lb Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 8 1/2", 4 1/4" Length as per rule 31 1/2" Distance apart 7 3/4" Number and pitch of Stays in each 3 - 7 3/4"
Working pressure by rules 185 lb Superheater or Steam chest; how connected to boiler flange Can the superheater be shut off and the boiler worked
separately ✓ Diameter 36" Length 36" Thickness of shell plates 1/2" Material steel Description of longitudinal joint lap Diam. of rivet
holes 1 1/2" Pitch of rivets 3 1/2" Working pressure of shell by rules 204" Diameter of flue ✓ Material of flue plates - Thickness -
If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness 5/8" How stayed 4 - 2" stays
Working pressure of end plates 185 lb Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

DONKEY BOILER— Description *None.*

Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can
 enter the donkey boiler _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long. seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
 Lap of plating _____ Per centage of strength of joint _____ Rivets _____ 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 _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
 Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— 2 bolts for top & bottom end; 2 main bearing bolts; a set of coupling bolts
 2 sets of feed & bilge pump valves; 2 sets piston rings & springs; 200 assorted bolts & studs; 4 lub. & fitted iron; a set of crank
 and crosshead bearings; propeller shaft, propeller & nut; 1 link block; 1 interchangeable slide spindle; 1 piston rod &
 1 air & 1 circ. pump rod; 3 eccentric straps; 60 condenser tubes & 120 nuts; 2 safety valves & springs; 1 set pumping for
 The foregoing is a correct description, 6 cylinder cover studs; 6 do for valve chests; 24 boiler tubes, 6 st
 tubes; and a good supply of spare gear for duplex pump
 Manufacturer.

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

Main steam pipes and feed pipes are of drawn copper with flange riveted on and have
 been tested in my presence to 550 lbs per square inch, proved sound and tight.
 The materials used and the workmanship are satisfactory, and the machinery and
 boiler proved in good working order during repeated trials under steam.
 The vessel is supplied with a Morrison's evaporator.

The process of burning liquid fuel is as follows: A small duplex pump draws it from
 the residue tank, on its way to this pump it is led through a heater where the tempera
 ture is increased by means of the exhaust steam from steering engine and other
 auxiliary engines. From the pump it is led through a second heater, receiving life
 steam and forced through two nozzles in each furnace.

These nozzles are fitted inside with a gauze strainer, and have a small pointed spindle
 in the centre which is made to revolve through forcing the liquid against a portion of four
 screw windings on spindle, at the pointed end there is a small aperture of about 1/32" diam:
 in nozzle through which the fuel is forced like fine spray into the furnace.
 The nozzles are accessible at all times and easily taken adrift for cleaning.

The machinery and boiler having worked very satisfactory under full steam pressure during
 repeated trials I am of opinion that this vessel is eligible to be recorded in the
 Society's Register Book with

L.M.C 8.97 burning liquid fuel experimental.

It is submitted that
 this vessel is eligible for
 THE RECORD.

Certificate (if required) to be sent to *H. F. D. van Ollefen. Rotterdam.*

The amount of Entry Fee... £ *1* : : When applied for, _____
 Special ... £ *9* : *12* : : _____
 Donkey Boiler Fee ... £ : : When received, _____
 Travelling Expenses (if any) £ *15* : : _____

Committee's Minute

MACHINERY CERTIFICATE
 TUES 31 AUG 1897

Assigned

+ L.M.C 8.97 burning liq. fuel - Expt.

Recd. Light



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Foundation