

REPORT ON MACHINERY.

30 AUG 97

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. Suppl. on the Steel S.S. "Kalaban" (Number of Plates 22)

Master E. Sukkien Built at Rotterdam By whom built Rykees & Co Tonnage { Gross 556.40 Net 338.81 When built 1897.

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 Beerland. Indie Port belonging to 's Gravenhage

Nom. Horse Power as per Section 28 65.24 say 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"
as fitted 6 1/2"

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"
as fitted 6 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 sized 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, sq end. Working Pressure 175 lbs Tested by hydraulic pressure to 350 lbs

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 5x riv dbl butt

Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 6 2/32" Top of plates or width of butt straps 15"

Per centages of strength of longitudinal joint rivets 91.5 Working pressure of shell by rules 179 lbs. Size of manhole in shell 12" x 16"
plate 84.6

Size of compensating ring M. 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 crowns 1/2" Description of longitudinal joint welded No. of strengthening rings ✓
bottom 6'-6" bottom 1/2"

Working pressure of furnace by the rules 188 lbs 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 lbs

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 60.06 Working pressure by rules 197 lbs 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 lbs Material of stays steel

Diameter at smallest part 4.46 Area supported by each stay 2.25 Working pressure by rules 178 Material of Front plates at bottom steel
Thickness 5/8" Material of Lower back plate steel Thickness 7/8" & 1" Greatest pitch of stays 11" Working pressure of plate by rules 182 lbs
area doubles between

Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" 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 lbs 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 lbs 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 25 riv Diam. of rivet holes 1 1/16" 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 lbs 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 limb 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 plumbing for 6 cylinders cover studs; 6 do for valve chests; 24 boiler tubes, 6 st tubes; and a good supply of spare gear for duplex pump*

The foregoing is a correct description, _____ 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 temperature 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 live 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. *+ L.M.C 8.97 burning liquid fuel, experimental*

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 :	18
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ 15 :	18

H. F. D. van Ollefen
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES 31 AUG 1897**

Assigned *+ L.M.C 8.97 burning liq. fuel - expt.*

rec. light

Port of _____
No. in Reg. Book *6. Jussell*
Owners _____
Yard No. _____

DESCRIP

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incl
Capacity of _____
Where is _____
Position of _____
Positions of _____

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Are all cu _____
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Total num _____
A _____
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DESCRIP _____
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