

# REPORT ON MACHINERY.

Port of Belfast

Received at London Office **THUR. 26 MAR 1908**

No. in Survey held at Belfast

Date, first Survey 19 June 1907 Last Survey 23 March 1908

Reg. Book.

(Number of Visits 5)

on the

S.S. Marouffe

Master J. W. Duffen

Built at Belfast

By whom built Waukman Clark & Co.

Tons } Gross 3191  
Net 2027  
When built 1908

Engines made at Belfast

By whom made

when made 1908

Boilers made at

By whom made

when made

Registered Horse Power

Owners Stoomvaart Maatschappij Marouffe belonging to Paramaribo

Surinam

Nom. Horse Power as per Section 28 486

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

## ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 20" - 41" - 69" Length of Stroke 48" Revs. per minute 80 Dia. of Screw shaft as per rule 13.9" Material of screw shaft 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 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4'-9"

Dia. of Tunnel shaft as per rule 12.92" Dia. of Crank shaft journals as per rule 13.56" Dia. of Crank pin 13 1/2" Size of Crank web 25 1/2" x 9" Dia. of thrust shaft under collars 13 3/4" Dia. of screw 16" - 1 1/2" Pitch of Screw 18" - 3" No. of Blades 4 State whether moveable Yes Total surface 76 1/2 sq. ft.

No. of Feed pumps Two Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 1 Sizes of Pumps 10 1/2" x 8" x 21" No. and size of Suctions connected to both Bilge and Donkey pumps 5 - 3 1/2" + 1 - 2 1/2"

In Engine Room 8 - 3" + 2 - 3 1/2" In Holds, &c. 5 - 3 1/2" + 1 - 2 1/2"

No. of Bilge Injections one sizes 8" Connected to condenser, or to circulating pump Yes Are 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

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 Both

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, Five lock suction How are they protected Wood casings

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 13-1-08 of Stern Tube 13-1-08 Screw shaft and Propeller 25-1-08

Is the Screw Shaft Tunnel watertight Stated to be Is it fitted with a watertight door Yes worked from Upper deck

## BOILERS, &c.—(Letter for record S)

Manufacturers of Steel Sweet's Patent & Mather & Platt L.

Total Heating Surface of Boilers 7419 sq. ft. Forced Draft fitted Yes No. and Description of Boilers 3 - Cylindrical Single End

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 28-1-08 No. of Certificate 411

Can each boiler be worked separately Yes Area of fire grate in each boiler 59 sq. ft. No. and Description of Safety Valves to each boiler Two - Conical Spring Area of each valve 11" x 4 1/2" Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork About 2 ft Mean dia. of boilers 15'-0" Length 11'-6" Material of shell plates Steel

Thickness 1/32" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Riv.

long. seams Butt Lap Riv. Diameter of rivet holes in long. seams 1/32" Pitch of rivets 8 1/2" Length of plates or width of butt straps 18 1/2"

Per centages of strength of longitudinal joint plate 85-3 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"

Size of compensating ring McNeill's No. and Description of Furnaces in each boiler 3 - Rectangular Material Steel Outside diameter 47 1/4"

Length of plain part top 3" bottom 9" Thickness of plates crown 3/32" bottom 1/16" Description of longitudinal joint Butt No. of strengthening rings 4

Working pressure of furnace by the rules 193 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/32" Back 20-21" Top 1/32" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 9 1/4" x 8" Top 8 1/2" x 7 1/2" Are stays fitted with nuts or riveted heads Nuts made Working pressure by rules 184 lbs

Material of stay Steel Diameter at smallest part 1 1/2" Area supported by each stay 87 sq. in. Working pressure by rules 219 lbs End plates in steam space: Material Steel Thickness 1/32" Pitch of stays 22" x 18 1/2" How are stays secured Nuts made Working pressure by rules 180 lbs Material of stays Steel

Diameter at smallest part 2 7/16" Area supported by each stay 385 sq. in. Working pressure by rules 180 lbs Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 184 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 5/8" Material of tube plates Steel Thickness: Front 1/16" Back 3/4" Mean pitch of stays 11 1/4" x 7 1/2"

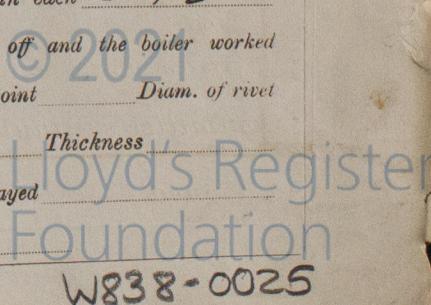
Pitch across wide water spaces 13 1/2" Working pressures by rules 186 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 3/4" x (3" x 2") Length as per rule 32 5/8" Distance apart 8 1/2" Number and pitch of stays in each 3 - 7 1/2"

Working pressure by rules 181 lbs 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 holes 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



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 casing 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:— *Set piston rings & pumps each cyl; 1 eccentric & handle and strap; 1 eccentric rod, air pump bucket rod, piston rod, 2 cross head guide shoes, 2 slide valve spindles, pair crank pin bushes, 2 pair cross head bushes, 1 pair main bearing bushes, fan spindle for centrifugal pump, 2 Pump links complete. etc. & all gear to Lloyd's Rules Extra.*

The foregoing is a correct description,  
FOR WORKMAN, CLARK & CO., LIMITED  
*M. H. Bell* Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *7907 - June 19, 24, July 9, 24, 31, Sept. 4, 9, 12, 26, Oct. 4, 8, 14, 18, 21, 25,*  
{ During erection on board vessel - - } *31 Nov. 4, 8, 15, 18, 20, Dec. 2, 3, 5, 10, 12, 17, 23 up till 23 March 1908*  
Total No. of visits *51*

Is the approved plan of main boiler forwarded *with Report on S.S. Coppename*  
(with Report on S.S. *Coppename*)  
" donkey " " " " "

Dates of Examination of principal parts—Cylinders *19<sup>th</sup> - 20<sup>th</sup> / 07* Covers \_\_\_\_\_ Pistons *To* Rods \_\_\_\_\_

Connecting rods *29-1-08* Crank shaft *9-1-08* Thrust shaft \_\_\_\_\_ Tunnel shafts \_\_\_\_\_ Screw shaft *6-1-08* Propeller *9-1-08*

Stern tube *9-1-08* Steam pipes tested *5-2-08* Engine and boiler seatings *6-3-08* Engines holding down bolts *6-3-08*

Completion of pumping arrangements *16-3-08* Boilers fixed *6-3-08* Engines tried under steam *12-3-08*

Main boiler safety valves adjusted *12-3-08* Thickness of adjusting washers *11-16 / 32*

Material of Crank shaft *I. Steel* Identification Mark on Do. *LL0108* Material of Thrust shaft *do* Identification Mark on Do. *do*

Material of Tunnel shafts *do* Identification Marks on Do. *do* Material of Screw shafts *do* Identification Marks on Do. *do*

Material of Steam Pipes *M. Iron* Test pressure *600 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel, has been constructed under Special License, and in accordance with the Rules. The workmanship and the materials are of good description, and in fact in perfect Lugh. The machinery worked extra perfectly. In my opinion, it is eligible for record + L.M.C. 3-08, with notation Forced Draft Electric Light & Refrigerating Machinery*

*The machinery of this vessel is a duplicate of that fitted in the sister vessel S.S. "Coppename"*

It is submitted that this vessel is eligible for THE RECORD  L.M.C. 3.08.

ELEC. LIGHT. - REF. MCHY. - F.D. *JWD 26/3/08.*

The amount of Entry Fee. . . £ *3 : 0* :  
Special . . . . . £ *44 . 6* :  
Donkey Boiler Fee . . . . . £ : :  
Travelling Expenses (if any) £ : :  
When applied for. . . . . *24-3-08*  
When received. . . . . *24/3/08*

*P. L. Bennett*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 27 MAR 1908**

Assigned *+ L.M.C. 3.08*  
*F. D. Ref. Mch. & Elec. Light*



Certificate (if required) to be sent to the office of the Committee's Minute.