

## REPORT ON MACHINERY.

No. 10518

Port of Leith

Received at London Office

MON. 7 SEP 1903

No. in Survey held at

LeithDate, first Survey April 9<sup>th</sup>Last Survey Sept 3<sup>rd</sup> 1903

Book.

(Number of Visits 17)on the Motors 250 S.S. "Woodland"Gross 243.61  
Tons Net 108.45Built at Glasgow By whom built Glasgow & Co. Ltd. When built 1903Lines made at Leith By whom made Mr. S. & H. Morton & Co. when made 1903Engines made at Leith By whom made Mr. S. & H. Morton & Co. when made 1903Registered Horse Power 38.45 Owners Thos. Loates Port belonging to NewcastleHorse Power as per Section 28 38.45 Is Refrigerating Machinery fitted No Is Electric Light fitted NoMACHINERY, &c.—Description of Engines Comp. Surface Condensing No. of Cylinders 2 No. of Cranks 2Diameter of Cylinders 14" + 29" Length of Stroke 21 Revs. per minute 120 Dia. of Screw shaft 6 1/4" as per rule 6 1/4" Material of screw shaft SteelIs the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tightIf the propeller boss Yes If the liner is in more than one length are the joints burned No If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If twoare fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 30"Dia. of Tunnel shaft 6 1/4" as per rule 6 1/4" Dia. of Crank shaft journals 6 1/4" as per rule 6 1/4" Dia. of Crank pin 6 1/4" Size of Crank webs 22 1/2 x 12 Dia. of thrust shaft underPitch of screw 9'-0" 5/8 10'-0" No. of blades 4 State whether moveable No Total surface 19 sq ftDiameter of ditto 2 1/2" Stroke 10 1/2" Can one be overhauled while the other is at work YesDiameter of ditto 2 1/2" Stroke 10 1/2" Can one be overhauled while the other is at work YesSizes of Pumps 5 1/2 x 3 1/2 x 6" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Holds, &c. 1 of 2"Bilge injections 1 sizes 3" Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 2 1/4"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 YesAre the connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks bothAre 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 YesAre 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 YesHow are they protected NoneAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWere stern tube, propeller, screw shaft, and all connections examined in dry dock Yes Is the screw shaft tunnel watertight YesIs it fitted with a watertight door Yes worked from YesTotal Heating Surface of Boilers 6524 sq ft Is forced draft fitted NoDescription of Boilers 1 Multitubular Single ended Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbsCan each boiler be worked separately Yes Area of fire grate in each boiler 32 sq ft No. and Description of safety valves toboiler 2 - Spring Area of each valve 49 sq in Pressure to which they are adjusted 133 lbs Are they fitted with easing gear YesLeast distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 9'-6 3/4" Length 9'-3 1/2" Material of shell plates SteelRange of tensile strength 27/32 Are they welded or flanged No Descrip. of riveting: cir. seams 5 Riv Lap long. seams DBT rivetedPitch of rivets 4 3/4" Lap of plates or width of butt straps 1'-0 1/2"Percentage of strength of longitudinal joint 77.6% Working pressure of shell by rules 145 lbs Size of manhole in shell 15" x 11"No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 3'-0"Thickness of plates 1 1/2" Description of longitudinal joint welded No. of strengthening rings —Working pressure of furnace by the rules 130 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1 1/2"If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 150 lbsArea supported by each stay 56.25 sq in Working pressure by rules 181 lbs End plates in steam space:Pitch of stays 15" x 15" How are stays secured DBDNW Working pressure by rules 138 lbs Material of stays SteelArea supported by each stay 22.5 sq in Working pressure by rules 170 lbs Material of Front plates at bottom SteelGreatest pitch of stays 7 1/2" Working pressure of plate by rules 165 lbsPitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1 3/16" Back 2 3/32" Mean pitch of stays 8 1/2"Working pressures by rules 163 lbs Girders to Chamber tops: Material Steel Depth andDistance apart 7 1/2" Number and pitch of Stays in each 2 - 7 1/2"Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler workedDiameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivetWorking pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —Area of safety valves to superheater — Are they fitted with easing gear —

002320-002329-0144



**DONKEY BOILER—** No. \_\_\_\_\_ Description \_\_\_\_\_

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 \_\_\_\_\_

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 \_\_\_\_\_ 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 piston rod bolts & nuts & connecting rods & bolts & nuts  
2 main bearing bolts & nuts & 2 eccentric strap bolts & nuts 6 shaft coupling bolts  
1 set of feed & bilge pump valves 1 set of air & live pump valves 1 main  
check valve 1 donkey check valve 1 set of valves for donkey pump & escape valves

The foregoing is a correct description,

**P. S. & H. MORTON & CO.**

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1903 April 9 June 10 11 12 13 17 22 29 July 6 11 29 31 Aug 7 8  
During erection on board vessel - - 13 14 Sept 3  
Total No. of s 17

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " 1

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The engine & boiler of this vessel have been constructed under special survey & the materials & workmanship are sound & good. The engines have been tried under steam & the safety valves of the boiler adjusted to its working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of + L.M.C. 9.03

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.03

RS 16.9.03  
16.9.03

Leith

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee, £ 1 : - - When applied for, 5/9/1903  
Special . . . . £ 8 : - -  
Donkey Boiler Fee . . . £ : : When received, 13.9.03  
Travelling Expenses (if any) £ : : 14.9.03

Thos. L. Thonston  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. 18 SEP 1903

Assigned + L.M.C. 9.03

MINISTRY CERTIFICATE  
WRITTEN.