

# REPORT ON MACHINERY.

No. 8040

(Received in London Office 6/10/81)

No. in Survey held at Greenock & P. Glasgow Date, first Survey April 7<sup>th</sup> 81 Last Survey Boths 1<sup>st</sup> 18

Reg. Book.

on the Iron Screw Steamer "Lamington"

Tons 1958  
1276

Master J. L. Burhill Built at Port Glasgow When built 1881

Engines made at Greenock By whom made Rankin & Blacklock when made 1881

Boilers made at Greenock By whom made Rankin & Blacklock when made 1881

Registered Horse Power 200 Owners Jessie, Renton & Co. Port belonging to Glasgow

## ENGINES, &c.—

Description of Engines Compound, Inverted, Direct-acting, Surface-condensing

Diameter of Cylinders 33" & 66" Length of Stroke 42" No. of Rev. per minute 74 Point of Cut off, High Pressure 7/8 stroke Low Pressure 7/8 stroke

Diameter of Screw shaft 1 1/2" Diameter of Tunnel shaft 1 1/2" Diameter of Crank shaft journals 1 1/2" Diameter of Crank pin 1 1/2" size of Crank webs 15 1/2" x 1 1/4"

Diameter of screw 16" 0" Pitch of screw 16" 0" No. of blades 4 state whether moveable Yes total surface not ascertained

No. of Feed pumps 2 diameter of ditto 4" Stroke 25" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 diameter of ditto 4" Stroke 25" Can one be overhauled while the other is at work Yes

Where do they pump from All compartments

No. of Donkey Engines Two Size of Pumps One 8" x 9", One 3 1/2" x 8" Where do they pump from Ballast pump from double bottom and bilges, feed water from sea & bilges

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 Yes

No. of bilge injections One and sizes 3" Are they connected to condenser, or to circulating pump Circulating pump

How are the pumps worked By levers from L. P. crosshead

Are all connections with the sea direct on the skin of the ship Yes except cock for water to bearings Are they Valves or Cocks Valves and 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 None

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 new vessel, before being launched

Is the screw shaft tunnel watertight Fitted with gland & stuffing box and fitted with a sluice door Yes worked from top platform of E. Room

## BOILERS, &c.—

Number of Boilers One Description Round, horizontal, double-ended.

Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 19/8/81

Description of superheating apparatus or steam chest No superheater nor steam chest

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes

No. of square feet of fire grate surface in each boiler 104 Description of safety valves Direct spring, own make

No. to each boiler Two area of each valve 28.2 sq. inches Are they fitted with easing gear Yes

No. of safety valves to superheater None area of each valve None are they fitted with easing gear None

Smallest distance between boilers and bunkers on woodwork About 10"

Diameter of boilers 13' 6" Length of boilers 16' 0" description of riveting of shell long. seams Double lap circum. seams Double lap

Thickness of shell plates 1" full diameter of rivet holes 1 5/16" whether punched or drilled Punched pitch of rivets 4 1/8"

Lap of plating 8 1/2" per centage of strength of longitudinal joint 73 working pressure of shell by rules 47 lbs

Size of manholes in shell 16" x 11 1/2" size of compensating rings 6" x 1"

No. of Furnaces in each boiler Six outside diameter 3' 3" length, top 6' 6" bottom Whole length of boiler

Thickness of plates 1/2" steel & 1/2" iron description of joint Double straps rings are fitted Double straps greatest length between rings 6' 6"

Working pressure of furnace by the rules 92 lbs

Combustion chamber plating, thickness, sides 1/2 full (steel) back None top 1/2 full (steel)

Pitch of stays to ditto None sides 8 3/4" x 8 1/2" back None top guiders 10" pitch (greatest)

If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 77 1/2 lbs

Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 120 lbs

End plates in steam space, thickness 1 3/16" pitch of stays to ditto 18" x 18" how stays are secured riveted washers and double nuts

Working pressure by rules 83 lbs diameter of stays at smallest part 2 3/8" working pressure by rules 87 lbs

Front plates at bottom, thickness 3/4 base (steel) back plates, thickness 3/4 base (steel) steepest pitch of stays None working pressure by rules None



2000-3/10/80

Diameter of tubes  $3\frac{1}{2}$ " *each* pitch of tubes  $4\frac{3}{4} \times 4\frac{3}{8}$ " thickness of tube plates, front  $\frac{11}{16}$ " (iron) back  $\frac{11}{16}$ " (steel)  
 How stayed *tubes* pitch of stays  $14 \times 14$ " *applied* width of water spaces  $6$ "  
 Diameter of Superheater or Steam chest *no superheater nor steam chest*  
 Thickness of plates description of longitudinal joint diameter of rivet holes pitch of rivets  
 Working pressure of shell by rules Diameter of flue thickness of plates  
 If stiffened with rings distance between 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 *Round, vertical, cross tubes*  
 Made at *Greenock* By whom made *William Watson* when made *1881*  
 Where fixed *at Stokholm* working pressure *50 lbs* Tested by hydraulic pressure to *100 lbs* No. of Certificate *70*  
 Fire grate area *19 sq ft* Description of safety valves *Direct spring* No. of safety valves *One* area of each *10.3 sq inches*  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*  
 Diameter of donkey boiler *16" 0"* length *11" 8"* description of riveting *Double lap (long)*  
 thickness of shell plates  *$\frac{3}{8}$ "* diameter of rivet holes  *$\frac{13}{16}$ "* whether punched or drilled *Punched*  
 pitch of rivets *3"* lap of plating  *$3\frac{3}{4}$ "* per centage of strength of joint *43*  
 thickness of crown plates  *$\frac{7}{16}$ "* stayed by  *$4\frac{1}{2}$ " -  $1\frac{1}{2}$ " stays, by uptake & dished*  
 Diameter of furnace, top *14" 10"* bottom *5" 8"* length of furnace *5" 0"* stayed by  *$12\frac{1}{2}$ " -  $1\frac{1}{2}$ " st*  
 thickness of plates  *$\frac{7}{16}$ "* description of joint *Single lap*  
 thickness of furnace crown plates  *$\frac{7}{16}$ "* stayed by  *$4\frac{1}{2}$ " -  $1\frac{1}{2}$ " stays, by uptake and dished*  
 Working pressure of shell by rules *58* working pressure of furnace by rules  
 diameter of uptake *15"* thickness of plates  *$\frac{1}{2}$ "* thickness of water tubes  *$\frac{3}{8}$ "*

The foregoing is a correct description,  
*Rankin & Blackmore* Manufacturers

**General Remarks** (State quality of workmanship, opinions as to class, &c. *Workmanship and materials good.*)  
 The engines and boilers have been inspected by me during construction, and in my opinion the vessel is eligible to be classed  
 \* **LLOYD'S M.C.**, and to be noted **"10.81."**

*It is submitted that the vessel is eligible to have the notification of Lloyd's M.C. recorded J.M. 7/10/81*

The amount of Entry Fee *£ 3 : 0 : 0* received by me, *[Signature]*  
 Special *£ 30 : 0 : 0* to  
 Certificate (if required) *£ 0 : 0 : 0* *Sept 1881*  
 To be sent as per margin. *£ 33 : 0 : 0*

*Alfred H. Alchin*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Greenock.*

Committee's Minute *Friday, October 7th 1881*  
 + *Lloyd's Reg*