

# REPORT ON MACHINERY.

15428

Port of Sunderland

Received at London Office 24 MARCH 1890

No. 15428

Survey held at S'land

Date, first Survey August 12/89 Last Survey March 3<sup>rd</sup> 1890

Book.

(Number of Visits 28)

3764.25

Tons 3443.47

on the S.S. "Mary Bevis"

Master E. A. Hamlyn Built at S'land

By whom built W. Dwyford & Sons

When built 1890

Engines made at S'land

By whom made W. Dwyford & Sons

when made 1890

Boilers made at "

By whom made "

when made 1890

Registered Horse Power 450

Owners The Bombay London S.S. Co. Ltd Port belonging to London

## ENGINES, &c.

(Triple expansion)

Description of Engines The compound 3 cranks

Diameter of Cylinders 27.44" 42" Length of Stroke 48" No. of Rev. per minute 70 Point of Cut off, High Pressure 6 M.P. 6 Low Pressure 6

Diameter of Screw shaft 13.5" Diam. of Tunnel shaft 12.5" Diam. of Crank shaft journals 13.5" Diam. of Crank pin 13.5" size of Crank webs 9.5" x 18"

Diameter of screw 17" 9" Pitch of screw 18" 9" No. of blades 4 state whether moreable loose total surface 85 sq

No. of Feed pumps 2 diameter of ditto 4" Stroke 22" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 4" Stroke 22" Can one be overhauled while the other is at work yes

Where do they pump from Bilges of all compartments, tanks, holds, aft well

No. of Donkey Engines 2 Size of Pumps 6" x 4" 6" x 9" x 10" Where do they pump from Tanks, bilges of all comp<sup>ts</sup>

sea. Hotwell, tanks, 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 1 and sizes 5" dia Are they connected to condenser, or to circulating pump C. P.

How are the pumps worked by levers from L. D. engine

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 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 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 while building

Is the screw shaft tunnel watertight ✓ and fitted with a sluice door yes worked from top platform

## BOILERS, &c.

Number of Boilers 2 Description Cyl. double ended Whether Steel or Iron steel

Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 14-1-90

Description of superheating apparatus or steam chest none

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately ✓

No. of square feet of fire grate surface in each boiler 103 sq Description of safety valves spring No. to each boiler 2

Area of each valve 14-19 sq Are they fitted with easing gear yes No. of safety valves to superheater ✓ area of each valve ✓

Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 15" Diameter of boilers 14' 0"

Length of boilers 16' 0" description of riveting of shell long. seams t. r. butt. circum. seams d. t. r. lap. Thickness of shell plates 1 1/2"

Diameter of rivet holes 1 1/4" whether punched or drilled d. pitch of rivets 8 1/4" 4 1/2" Lap of plating 18" 5 1/2" laps

Percentage of strength of longitudinal joint 85.04% working pressure of shell by rules 160 lbs. size of manholes in shell 16" x 12"

Size of compensating rings 6" x 1 1/2" No. of Furnaces in each boiler 63

Outside diameter 3' 5 1/2" length, top 6' 4" bottom 6' 8" thickness of plates 7/8" description of joint corrugated if rings are fitted ✓

Greatest length between rings ✓ working pressure of furnace by the rules 160 lbs. combustion chamber plating, thickness, sides 7/8" back ✓ top 7/8"

Pitch of stays to ditto, sides 7 1/4" x 7 1/2" back top 7 1/4" x 7 1/2" If stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 160 lbs. Diameter of stays at smallest part 1.22" dia working pressure of ditto by rules 160 lbs. end plates in steam space, thickness 1"

Pitch of stays to ditto 16" x 15 1/2" how stays are secured d. nuts & washers working pressure by rules 160 lbs. diameter of stays at

smallest part 2 1/2" working pressure by rules 175 lbs. Front plates at bottom, thickness 3/4" Back plates, thickness 3/4"

Greatest pitch of stays 9 1/2" working pressure by rules 160 lbs. Diameter of tubes 3 1/2" pitch of tubes 9 1/2" thickness of tube

plates, front 3/4" back 5/8" how stayed 3/4" tubes pitch of stays 9 1/2" width of water spaces 1 1/2"

Diameter of Superheater or Steam chest ✓ length ✓ thickness of plates ✓ description of longitudinal joint ✓ diam. 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 ✓

total heating surface in sq ft 308

SLD 968-0187

Description of furnaces for use

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**DONKEY BOILER—** Description *Circular Vertical Cochran & Patent.*  
Made at *Birkenhead* by whom made *Cochran & Co* when made *1889* where fixed *stoke hole.*  
Working pressure *80 Ws.* tested by hydraulic pressure to *160 Ws.* No. of Certificate *784.* fire grate area *35.5 sq.* description of safety  
valves *spring* No. of safety valves *2* area of each *7.07* if fitted with easing gear *yes* if steam from main boilers can  
enter the donkey boiler *no* diameter of donkey boiler *4' 0"* length *14' 0"* description of riveting *lap joints d. r. King. r.*  
Thickness of shell plates *15/32"* diameter of rivet holes *7/8"* whether punched or drilled *d.* pitch of rivets *3"* lap of plating *4"*  
per centage of strength of joint *70.8* thickness of crown plates *3/32"* stayed by *Hemispherical*  
Diameter of furnace, top *8' 1" red* bottom *6' 2"* length of furnace *—* thickness of plates *17/32"* description of joint *Sing. r. d. lap.*  
Thickness of furnace crown plates *1/32"* stayed by *Hemispherical* working pressure of shell by rules *84 Ws.*  
Working pressure of furnace by rules *80 Ws.* diameter of uptake *2' 4"* thickness of plates *—* thickness of water tubes *—*

**SPARE GEAR.** State the articles supplied:— *1 set of propeller blades. 12 boiler tubes. 1 set of  
connecting rod top & bottom end bolts & nuts. 2 main bearing bolts  
1 set of coupling bolts. 1 set of feed and bilge pump valves. nuts.  
bolts & iron assorted.*

The foregoing is a correct description,

*William Dwyer & Son* Manufacturer. Main engines & boilers

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The machinery and boilers  
of this vessel have been constructed of good materials and  
workmanship under special survey. The safety valves on  
main boilers were adjusted to 165 Ws & the main steam pipes  
tested by hydraulic to twice the working pressure; when tried  
under steam the machinery worked in a satisfactory  
manner. In my opinion this vessel is eligible to have a  
notification in the Register Book of L.M.C. 3.90.*

*It is submitted that this vessel is eligible  
to have + L.M.C. 3.90 recorded.*

*W.A.*

*24-3-90*

The amount of Entry Fee .. £ *3 : 0 : 0* received by me, *J.H.W.*

Special .. £ *42 : 10 : 0*

Donkey Boiler Fee .. £ *- : - : -*

Certificate (if required) .. £ *- : - : - 21 March 1890.*

To be sent as per margin.

(Travelling Expenses, if any, £ *—*)

Committee's Minute

*Machinery Certificate  
11.11.1890.*

*J. Y. Hindley*  
Engineer/Surveyor to Lloyd's Register of British & Foreign Shipping.

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