

# REPORT ON MACHINERY.

7037

Port of Hull

FRIDAY 11 OCT 1889

Survey held at Hull

Date, first Survey May 30<sup>th</sup>

Last Survey 7<sup>th</sup> Oct

1889

on the Iron screw Steamer Lusó

(Number of Visits 19)

331

Tons 236

at Hamange

Built at London

By whom built London Dry Dock Co

When built 1885

Names made at Hull

By whom made Charles D Holmes & Co

when made 1889

Names made at Hull

By whom made Charles D Holmes & Co

when made 1889

Registered Horse Power 50

Owners Via Portuguesa to Lisbon Line

Port belonging to Lisbon

## ENGINES, &c.—

(Triple expansion)

Description of Engines Triple Compound Inverted Direct Acting.

Diameter of Cylinders 12 1/2 19 1/2 31 1/2 Length of Stroke 22 1/2 No. of Rev. per minute 120 Point of Cut off, High Pressure .62 Low Pressure .62

Diameter of Screw shaft 6 1/4 Diam. of Tunnel shaft 6 Diam. of Crank shaft journals 6 1/4 Diam. of Crank pin 6 1/4 size of Crank webs 7 1/2 x 4 3/8

Diameter of screw 8.9 Pitch of screw 10.0 No. of blades 14 state whether moveable No total surface 24.9 sq ft

No. of Feed pumps One diameter of ditto 1 3/4 Stroke 22 1/2 Can one be overhauled while the other is at work Yes

No. of Bilge pumps One diameter of ditto 2 1/8 Stroke 22 1/2 Can one be overhauled while the other is at work Yes

Where do they pump from Engine room bilge Tunnel & Hold

No. of Donkey Engines Two Size of Pumps 2 1/4 x 4" & 3" x 8" Where do they pump from Sea & Hotwell. No. 2

Charge on deck Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes

No. of bilge injections One and sizes 2 1/2 Are they connected to condenser, or to circulating pump Circulating Pump

Are the pumps worked Direct from Piston Rod Crossheads.

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 Away

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

Are the pipes carried through the bunkers Suction to Forward How are they protected Wood casing

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes in Engine room

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes

Were stern tube, propeller, screw shaft, and all connections examined in dry dock How run 9<sup>th</sup> September 1889.

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Main Deck.

## BOILERS, &c.—

No. of Boilers One Description Cylindrical Multitube Whether Steel or Iron Steel

Working Pressure 150 lb Tested by hydraulic pressure to 300 lb Date of test 5<sup>th</sup> July 1889.

Description of superheating apparatus or steam chest None fitted

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

Area of square feet of fire grate surface in each boiler 24.25 sq ft Description of safety valves Spring loaded No. to each boiler Two

Area of each valve 5.98 sq in Are they fitted with easing gear Yes No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear Yes Smallest distance between boilers and bunkers or woodwork 8" Diameter of boilers 10.6"

Length of boilers 9.4 1/2' description of riveting of shell long. seams all staggered circum. seams all in lap Thickness of shell plates 14/16

Diameter of rivet holes 1 1/32" whether punched or drilled drilled pitch of rivets 6 7/8" Lap of plating 11 3/4"

Percentage of strength of longitudinal joint 82.3% working pressure of shell by rules 150 lb size of manholes in shell 16" x 12"

No. of compensating rings 6" x 14/16" No. of Furnaces in each boiler Two

Inside diameter 39" length, top 6.4" bottom 6.4" thickness of plates 7/8" description of joint Welded if rings are fitted Yes

Best length between rings 20" working pressure of furnace by the rules 150 lb combustion chamber plating, thickness, sides 17/32 back 17/32 top 17/32

No. of stays to ditto, sides 7 1/2 back 7 1/2 top 7 1/2 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 155 lb

Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 176 lb end plates in steam space, thickness 14/16"

No. of stays to ditto 15 1/2 how stays are secured all nuts working pressure by rules 152 lb diameter of stays at smallest part 2 5/16"

working pressure by rules 160 lb Front plates at bottom, thickness 1 3/16" Back plates, thickness 1 1/16"

Best pitch of stays 10" working pressure by rules 150 lb Diameter of tubes 3 1/2" pitch of tubes 4 13/16" thickness of tube plates, front 3/4" back 3/4"

how stayed Stayed pitch of stays 9 1/16" width of water spaces 10"

Diameter of Superheater or Steam chest — length — thickness of plates — description of longitudinal joint — diam. of rivet holes —

No. 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 —

Description of furnaces Holmes Patent

HUL401-0174

Lloyd's Register Foundation



## DONKEY BOILER—

Description

*No Donkey Boiler*

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 \_\_\_\_\_ if fitted with easing gear \_\_\_\_\_ if steam from main boilers can  
 enter the donkey boiler \_\_\_\_\_ diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
 Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_  
 Percentage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ description of joint \_\_\_\_\_  
 Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of plates \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_  
 Thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ working pressure of furnace by rules \_\_\_\_\_ diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Two top end bolts, Two bottom end bolts, Two main  
 bearing bolts, One set coupling bolts, One set feed valve pump valves, Bolts &  
 nuts for R.C. Crank shaft (three cranks) Propeller shaft, Propeller, Feed pump  
 plunger valve spindle & air pump rod*

The foregoing is a correct description,

*Pro Charles Holmes* Manufacturer.  
*W. H. D. for*

General Remarks (State quality of workmanship, opinions as to class, &c. *Workmanship Good*)

*The Boiler and Machinery of this Vessel have been  
 constructed under Special Survey and placed on board in accordance  
 with the Society's Rules. They are now in my opinion in satisfactory  
 condition and the case is respectfully submitted for the notific-  
 ation + L.M.C. 10.89. in the Register Book.*

*It is submitted that this Vessel is eligible to have  
 + N.E.B. 89. + L.M.C. 10.89 recorded -*

*W.A.  
 11-10-89*

The amount of Entry Fee .. £ 1 : - : - received by me.

Special .. £ 8 : - : -

Donkey Boiler Fee .. £ - : - : -

Certificate (if required) .. £ - : - : -

To be sent as per margin.

(Travelling Expenses, if any, £ - : - : -)

Committee's Minute

TUES 15 OCT 1889

*+ N.E.B. 89 + L.M.C. 10.89*

*Charles Holmes*  
 Engineer Surveyor to Lloyd's Register of British Foreign Shipping.

Lloyd's Register  
 Foundation