

# REPORT ON MACHINERY.

26433

No.

No. in Survey held at *London*  
Reg. Book.

Date, first Survey *Feb. 5<sup>th</sup>*

Last Survey *Feb. 17<sup>th</sup> 1880*

Tons *366*  
*673*

on the *"Cynthia" New-Louis*

Master

Built at *Port Glasgow*

When built *1872*

Engines made at *Glasgow*

By whom made *Walker & Henderson* when made *1872*

Boilers made at *Glasgow*

By whom made *Walker & Henderson* when made *1872*

Registered Horse Power *90*

Owners

Port belonging to *Liverpool*

## ENGINES, &c.—

Description of Engines *Compound Inverted*

Diameter of Cylinders *24" and 42"* Length of Stroke *30* No. of Rev. per minute *58* Point of Cut off, High Pressure *Low Pressure*

Diameter of Screw shaft *7 3/4* Diameter of Tunnel shaft *8 1/8* Diameter of Crank shaft journals *8 1/8* Diameter of Crank pin *8* size of Crank webs

Diameter of screw *14 ft.* Pitch of screw *15 ft.* No. of blades *4* state whether moveable *yes* total surface

No. of Feed pumps *2* diameter of ditto *3 1/2* Stroke *15* Can one be overhauled while the other is at work *no*

No. of Bilge pumps *2* diameter of ditto *3 1/2* Stroke *15* Can one be overhauled while the other is at work *no*

Where do they pump from *Engine Room & Ballast Tank*

No. of Donkey Engines *2* Size of Pumps *6"* Where do they pump from *Engine Room and Ballast Tank*

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 *none* and sizes *none* Are they connected to condenser, or to circulating pump *yes*

How are the pumps worked *From cross head of Air & Circulating Pump*

Are all connections with the sea direct on the skin of the ship *yes* 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 *no* Are the discharge pipes above or below the deep water line *below*

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 *Wash Down from Donkey* How are they protected *not 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 *February 1880*

Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine Room platform*

## BOILERS, &c.—

Number of Boilers *One* Description *Tubular*

Working Pressure *55 lbs.* Tested by hydraulic pressure to *90 lbs.* Date of test *August 1879*

Description of superheating apparatus or steam chest *plain dome, no superheater*

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 *2* Description of safety valves *Lever*

No. to each boiler *2* area of each valve *yes* Are they fitted with easing gear *yes*

No. of safety valves to superheater *2* area of each valve *yes* are they fitted with easing gear *yes*

Smallest distance between boilers and bunkers or woodwork *4 in.*

Diameter of boilers *12 ft.* Length of boilers *9' 6"* description of riveting of shell long. seams *double lap* circum. seams *double lap*

Thickness of shell plates *3/4* diameter of rivet holes *3/4* whether punched or drilled *yes* pitch of rivets *3"*

Lap of plating *6"* per centage of strength of longitudinal joint *yes* working pressure of shell by rules *yes*

Size of manholes in shell *yes* size of compensating rings *yes*

No. of Furnaces in each boiler *3* outside diameter *3' 4" & 3' 1"* length, top *6' 3"* bottom *yes*

Thickness of plates *1/2* description of joint *single riveted* if rings are fitted *yes* greatest length between rings *yes*

Working pressure of furnace by the rules *yes*

Combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*

Pitch of stays to ditto *11" x 9"* sides *yes* back *yes* top *yes*

If stays are fitted with nuts or riveted heads *riveted heads* working pressure of plating by rules *yes*

Diameter of stays at smallest part *1 1/2"* working pressure of ditto by rules *yes*

End plates in steam space, thickness *7/8"* pitch of stays to ditto *13 1/2"* how stays are secured *nuts*

Working pressure by rules *yes* diameter of stays at smallest part *1 1/2"* working pressure by rules *yes*

Front plates at bottom, thickness *3/4* Back plates, thickness *3/4* greatest pitch of stays *13 1/2"* working pressure by rules *yes*



Diameter of tubes 3 pitch of tubes 4 3/4 thickness of tube plates, front 3/4 (Iron 26423) 3/4 back  
How stayed Bolt & nut pitch of stays 10 x 14 width of water spaces 1 1/4  
Diameter of Superheater or Steam chest 3.6 length high 6ft.  
Thickness of plates 1/2 description of longitudinal joint Lap (single diameter of rivet holes 3/4 pitch of rivets 2 1/4  
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 Vertical cross tubes  
Made at London. By whom made Mc Gowan when made September 1879.  
Where fixed On deck working pressure 50lbs. Tested by hydraulic pressure to 120lbs. No. of Certificate  
Fire grate area Description of safety valves Spring lever. 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 4 feet length 9.6 description of riveting single lap.  
thickness of shell plates 3/8 diameter of rivet holes 3/4 whether punched or drilled punched  
pitch of rivets 2 lap of plating 3 per centage of strength of joint  
thickness of crown plates stayed by  
Diameter of furnace, top bottom 3. length of furnace  
thickness of plates 3/8 description of joint single lap  
thickness of furnace crown plates 1/2 stayed by  
Working pressure of shell by rules working pressure of furnace by rules  
diameter of uptake 9 thickness of plates 1/2 thickness of water tubes 1/2

The foregoing is a correct description,

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. Examined High & Low Pressure Cylinders, Slides, Air & Circulating pumps, which were found to be in good condition. All crank shaft & tunnel bearings in good condition. Propeller disconnected & stern bush lined up. All sea cocks & connections examined & found in good order. Safety valves & Stop valves examined, in good condition. Boiler examined, recommended a new plate to be fitted in combustion chamber. This plate has been renewed & new stays put in. The Boiler tested by hydraulic pressure to 98 lbs which proved satisfactory. Recommended pressure gauge to be fitted in stoke hold which has been done. The Engine and Boiler are now in good order and safe working condition and render the vessel in my opinion eligible to have the notification B & M. S. recorded in the Register Book, provided the Boiler is subjected to a survey, twelve months from this date.

The amount of Entry Fee .. £ 2 : - : - received by me.

Special .. £ 5 : 5 : 0

Certificate (if required) .. £ : 2 : 6

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

Tuesday, April, 27th 1880.

Geo. E. Wilkinson.  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

It is submitted that this vessel is eligible to have the notification B & M. S. recorded in the Register Book, provided the Boiler is subjected to a survey, twelve months from this date.