

# REPORT ON MACHINERY.

27886 *Seen*

495

No. 2703

(Received in London Office 30/8/80)

No. in Survey held at *Glasgow & Belfast*  
Reg. Book.

Date, first Survey *August 1879* Last Survey *August 1880*

on the *S. S. Rosetta*

Tons *3457*  
*2217*

Master *A. C. Barrow*

Built at *Belfast*

When built *1880*

Engines made at *Glasgow*

By whom made *J. Howden & Co.* when made *1880*

Boilers made at *Glasgow*

By whom made *J. Howden & Co.* when made *1880*

Registered Horse Power *700*

Owners *P. & O. S. M. Coy*

Port belonging to *Belfast*

**ENGINES, &c.—**

Description of Engines *Compound Inverted Direct Acting*

Diameter of Cylinders *54 1/4* Length of Stroke *60* No. of Rev. per minute *55 to 60* Point of Cut off, High Pressure *Variable* Low Pressure *Variable*

Diameter of Screw shaft *17 1/2* Diameter of Tunnel shaft *16* Diameter of Crank shaft journals *18* Diameter of Crank pin *18* size of Crank webs *2 1/2 x 1 1/4*

Diameter of screw *18. 10 1/2* Pitch of screw *2 1/4* No. of blades *Four* state whether moveable *Yes* total surface *91 1/2* sq feet

No. of Feed pumps *Two* diameter of ditto *6 1/2* Stroke *30* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *Two* diameter of ditto *6 1/2* Stroke *30* Can one be overhauled while the other is at work *Yes*

Where do they pump from *Holds, Moulds & Engine Room*

No. of Donkey Engines *Two* Size of Pumps *7 x 14 & 2 1/2 x 6* Where do they pump from *Large Donkey pumps*

*from sea. Hot well & Bilges. Small Donkey from sea to feed Donkey Boiler*

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 *8 inches* Are they connected to condenser, or to circulating pump *to Circulating Pump*

How are the pumps worked *by Levers from Crosshead*

Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Valves & 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 inside the Bunkers* 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 *on Slip previous to Ship being launched*

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

**BOILERS, &c.—**

Number of Boilers *Six* Description *Round top & bottom flat sided Multitubular*

Working Pressure *75 lbs* Tested by hydraulic pressure to *150 lbs per sq inch* Date of test *9<sup>th</sup> 27<sup>th</sup> & 29<sup>th</sup> April 1880*

Description of superheating apparatus or steam chest *no Superheater or Steam Chest*

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 *50* Description of safety valves *Direct Spring*

No. to each boiler *Two* area of each valve *15.9 sq inch* 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 *5"*

Diameter of boilers *12.9* Length of boilers *10.5* description of riveting of shell long. seams *Double riveted* circum. seams *Double Lap joint*

Thickness of shell plates *7/8* diameter of rivet holes *1 1/4 long 1 1/8* whether punched or drilled *long axis* pitch of rivets *6/8*

Lap of plating *12 1/4 Straps* per centage of strength of longitudinal joint *70.8* working pressure of shell by rules *80.9*

Size of manholes in shell *15 1/2 x 11 1/2* size of compensating rings *3 1/2 x 3 1/2 x 5/8*

No. of Furnaces in each boiler *Three* outside diameter *38 1/2* length, top *7.4* bottom *9.9*

Thickness of plates *7/16* description of joint *Welded* if rings are fitted *Yes* greatest length between rings *30 7 3/4*

Working pressure of furnace by the rules *120 lbs*

Combustion chamber plating, thickness, sides *7/16* back *1/2* top *7/16*

Pitch of stays to ditto sides *8 x 7 1/2* back *8 1/4 x 8* top *8 1/2 x 8*

If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *75 lbs for top 79 lbs for back 84 lbs for sides*

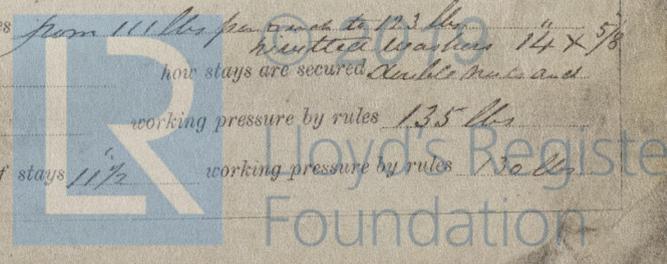
Diameter of stays at smallest part *1 1/4* working pressure of ditto by rules *from 111 lbs per sq inch to 123 lbs*

End plates in steam space, thickness *1 1/16* pitch of stays to ditto *16 x 18* how stays are secured *Double Nuts and*

Working pressure by rules *—* diameter of stays at smallest part *2 1/8* working pressure by rules *135 lbs*

Front plates at bottom, thickness *3/4* Back plates, thickness *3/4* greatest pitch of stays *11 1/2* working pressure by rules *100 lbs*

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Diameter of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{3}{4}$  thickness of tube plates, front  $\frac{1}{16}$  back  $\frac{1}{16}$   
 How stayed *Stay Tube* pitch of stays  $1\frac{1}{4} \times 9\frac{1}{2}$  width of water spaces  $6$   
 Diameter of Superheater or Steam chest \_\_\_\_\_ length \_\_\_\_\_  
 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 top & bottom flat sided* *See sketch*  
 Made at *Glasgow* By whom made, *J. Howden & Co* when made *1880*  
 Where fixed *Main Deck* working pressure *50 lbs* Tested by hydraulic pressure to *100* No. of Certificate *288*  
 Fire grate area *reduced to 14 sq ft by building up the grate with brick which is the owners intention to remove or in the future vary any part* Description of safety valves *Direct Spring* No. of safety valves *one* area of each *7 sq in*  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no, it would then valve for*  
 Diameter of donkey boiler *7.9"* length *8.6"* description of riveting *double & single*  
 thickness of shell plates  $\frac{1}{2}$  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 *69*  
 thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
 Diameter of furnace, top  $38$  bottom \_\_\_\_\_ length of furnace *6.1"* distance between rings *3.6"*  
 thickness of plates  $\frac{1}{2}$  description of joint *welded*  
 thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
 Working pressure of shell by rules *57 lbs* working pressure of furnace by rules *194 lbs*  
 diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

The foregoing is a correct description,  
*James Howden & Co* Manufacturers.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The Engines & Boilers have been carefully inspected and examined by us. the quality of workmanship is good, and the Machinery & Boilers are now in good order and safe working condition, and are in our opinion eligible to be noted in the Register Book. ✦ LLOYD'S. M.C. 8, 80*

*This submitted that this vessel is eligible to have the notification of Lloyd's M.C. recorded in the Register Book  
 J.M. 30/8/80*

*James Morrison*  
*Andrew C. Howden*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Glyde District*

The amount of Entry Fee *MC* £ 3 : 0 : 0 received by me,  
 Special .. £ 55 : 0 : 0  
 Certificate (if required) .. £ *Gratis* : 20/8 1880  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 9.9.0)

Committee's Minute *Tuesday, August 31st 1880.*