

# REPORT ON MACHINERY.

5619

(Received in London Office RECEIVED 23rd FEB 11)

No. in Survey held at  
eg. Book.

Glasgow

Date, first Survey

5.2.81

Last Survey

21.2.82 18.82

on the *Screw Steamer "Aberdeen"*

Tons 3616 25  
2370-65

Master

*L. Matheson*

Built at

*Glasgow*

When built

*1881-2*

Engines made at

*Glasgow*

By whom made

*R. Napier & Co. when made 1881-2*

Boilers made at

"

By whom made

" " " when made 1881-2

Registered Horse Power

*400*

Owners

*Geo. Thompson & Co.*

Port belonging to

*Aberdeen*

## ENGINES, &c.

Description of Engines

*Kirk's Triple Expansion*

Diameter of Cylinders *30 40 70* Length of Stroke *54* No. of Rev. per minute *65* Point of Cut off, High Pressure *4/10* Low Pressure *4/10* Variable

Diameter of Screw shaft *15* Diameter of Tunnel shaft *13 1/2* Diameter of Crank shaft journals *15* Diameter of Crank pin *1 1/4* size of Crank webs *8 1/4*

Diameter of screw *1 1/4* Pitch of screw *2 3/16* No. of blades *four* state whether moveable *Yes* total surface *80 sq ft*

No. of Feed pumps *two* diameter of ditto *5 1/4* Stroke *22 1/2* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *two* diameter of ditto *5 1/4* Stroke *22 1/2* Can one be overhauled while the other is at work *Yes*

Where do they pump from *from all the compartments*

No. of Donkey Engines

*one*

Size of Pumps

*4 1/2 x 9*

Where do they pump from

*Sea Bilge Hotwell*

*Pulsometer (No. 6)*

*3 1/2*

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 *two* and size *3/4* Are they connected to condenser, or to circulating pump *one to each*

How are the pumps worked *By Levers*

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 *main steam pipes* How are they protected *By iron casing*

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 ship previous to being launched*

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

## BOILERS, &c.

Number of Boilers

*two*

Description

*Round Double ended*

Working Pressure

*125 lbs*

Tested by hydraulic pressure to

*250 lbs*

Date of test

*9.12.81*

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 *Yes*

No. of square feet of fire grate surface in each boiler *94 1/2* Description of safety valves *Direct Spring*

No. to each boiler *two* area of each valve *37.9* 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 *18"*

Diameter of boilers *13-11"* Length of boilers *9-6"* description of riveting of shell long. seams *Double riveted* circum. seams *Double riveted*

Thickness of shell plates *1 1/2* diameter of rivet holes *1 1/4* whether punched or drilled *Drilled* pitch of rivets *6 7/8"*

Lap of plating *15 1/2 x 1 1/2* per centage of strength of longitudinal joint *80%* working pressure of shell by rules *125 lbs*

Size of manholes in shell *14" x 11"* size of compensating rings *Stayed rings*

No. of Furnaces in each boiler *two* outside diameter *3-6"* mean length, top *4-10"* bottom *Through Furnaces*

Thickness of plates *3/16"* description of joint *Corrugated* if rings are fitted *None* greatest length between rings *—*

Working pressure of furnace by the rules

Combustion chamber plating, thickness, sides *3/16"* back *—* top *3/16"*

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

If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *137 lbs*

Diameter of stays at smallest part *1 1/2* working pressure of ditto by rules *140 lbs*

ad plates in steam space, thickness *15/16"* pitch of stays to ditto *15 x 15"* how stays are secured *By double nuts*

Working pressure by rules *140 lbs* diameter of stays at smallest part *2-1"* working pressure by rules *125 lbs*

Front plates at bottom, thickness *1/16"* Back plates, thickness *—* greatest pitch of stays *—* working pressure by rules *—*



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Diameter of tubes  $3\frac{3}{4}$ " pitch of tubes  $4\frac{1}{16}$ " thickness of tube plates, front  $\frac{3}{4}$ " back  $\frac{3}{4}$ "  
How stayed *By Tubes* pitch of stays  $13\frac{1}{2} \times 9\frac{3}{8}$ " width of water spaces  $\frac{1}{4}$ "  
Diameter of Superheater or Steam chest *None* 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 Longitudinal with two through furnaces and brick combustion chamber*  
Made at *Glasgow* By whom made *R. Napier & Sons* when made *1881-2*  
Where fixed *On Main Deck* working pressure *120 lbs* Tested by hydraulic pressure to *200 lbs* No. of Certificate *691*  
Fire grate area *24 ft* Description of safety valves *Direct Spring* No. of safety valves *Two* area of each  $\frac{1}{4}$ "  
If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
Diameter of donkey boiler *8 ft* length *4 ft* description of riveting *Double riveted*  
thickness of shell plates  *$1\frac{1}{16}$  Steel* diameter of rivet holes  $1\frac{3}{16}$ " whether punched or drilled *Drilled*  
pitch of rivets  $8\frac{15}{16}$ " lap of plating *Shaps  $1\frac{1}{4} \times 1\frac{1}{16}$*  per centage of strength of joint *80%*  
thickness of ~~end~~ *end* plates  $1\frac{1}{16}$ " stayed by *Stays  $2\frac{1}{4}$  dia  $13 \times 13$  pitch*  
Diameter of furnace *2'6"* bottom \_\_\_\_\_ length of furnace *7 ft over all* *(fitted with two anti-c*  
thickness of plates  $\frac{7}{16}$ " description of joint *Double butt shapped*  
thickness of furnace crown plates  $\frac{7}{16}$ " stayed by \_\_\_\_\_ *Sub plates  $\frac{1}{4}$ "*  
Working pressure of shell by rules *140 lbs* working pressure of furnace by rules *120 lbs* testing  $\frac{1}{2}$  length *(279 lbs between*  
diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

The foregoing is a correct description,  
*M. Napier & Sons. Manufacturer.*

**General Remarks**

(State quality of workmanship, opinions as to class, &c. *These Engines & Boilers are of good workmanship and have been thoroughly tested under the full pressure of Steam (120 lbs) up to 691 Revolutions and are now in good order & safe working condition and eligible in my opinion to be noted in the Register Book.* *Lloyd's*  
*M.C. 282*

The amount of Entry Fee .. £ 3 : 0 : 0 received by me, *(Signature)*

Special .. .. £ 10 : 0 : 0

Certificate (if required) .. £ 0 : 0 : 0 *23 Feb 1882*

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

Friday, February, 24th 1882

*James Morrison*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping  
*Clyde District*