

REPORT ON MACHINERY.

No. 5899

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

Date, first Survey *28/10/81* Last Survey *14/9/82* 1882

on the *S.S. "Deerhound."*

Tons

Master *James R. Thomson* Built at *Millwall* When built *1882*
Engines made at *Glasgow* By whom made *R. H. Pearson & Co.* when made *1882*
Boilers made at *"* By whom made *Thos. Penman & Co.* when made *1882*
Registered Horse Power *40* Owners *Rupert R. Thomson & Co.* Port belonging to *"*

ENGINES, &c.—

Description of Engines *Compound Inverted direct acting*
Diameter of Cylinders *20" & 38"* Length of Stroke *30"* No. of Rev. per minute *80* Point of Cut off, High Pressure *7/8"* Low Pressure *9/16"*
Diameter of Screw shaft *4"* Diameter of Tunnel shaft *8 1/4"* Diameter of Crank shaft journals *4"* Diameter of Crank pin *4"* size of Crank webs *5" x 8 1/2"*
Diameter of screw *10' 0"* Pitch of screw *13' 6" 15'* No. of blades *4* state whether moveable *no* total surface *24 sq. ft.*
No. of Feed pumps *One* diameter of ditto *3"* Stroke *15"* Can one be overhauled while the other is at work *"*
No. of Bilge pumps *One* diameter of ditto *3"* Stroke *15"* Can one be overhauled while the other is at work *"*
Where do they pump from *Sea, Holds, Tanks, Bilges*
No. of Donkey Engines *one* Size of Pumps *3" x 8"* Where do they pump from *Sea, Holdwell, Bilges*
Holds, Tanks
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
No. of bilge injections *one* and sizes *3" diam* Are they connected to condenser, or to circulating pump *to Circulating Pump*
How are the pumps worked *with levers from L. P. piston rod crosshead*
Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or 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* 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
Is the screw shaft tunnel watertight *"* and fitted with a sluice door *yes* worked from *the upper platform.*

BOILERS, &c.—

Number of Boilers *One* Description *Cylindrical Single ended Multitubular*
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs.* Date of test *24th August 1882*
Description of ~~superheating apparatus~~ or steam chest *Horizontal.*
Can each boiler be worked separately *"* Can the superheater be shut off and the boiler worked separately *No.*
No. of square feet of fire grate surface in each boiler *49* Description of safety valves *direct spring*
No. to each boiler *two* area of each valve *12, 5 1/2 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 *"*
Smallest distance between boilers and bunkers or woodwork *12"*
Diameter of boilers *10' 6"* Length of boilers *10' 6"* description of riveting of shell long. seams *double lap* circum. seams *double lap.*
Thickness of shell plates *13/16"* diameter of rivet holes *1 1/8"* whether punched or drilled *drilled* pitch of rivets *4 1/4"*
Lap of plating *4 3/4"* per centage of strength of longitudinal joint *73.5* working pressure of shell by rules *82.3 lbs.*
Size of manholes in shell *14" x 11"* size of compensating rings *20 1/2" x 18 1/2"*
No. of Furnaces in each boiler *two* outside diameter *3' 6"* length, top *6' 9"* bottom *9' 3"*
Thickness of plates *1/2" steel* description of joint *double butt* if rings are fitted *yes* greatest length between rings *4' 0"*
Working pressure of furnace by the rules *49 lbs.*
Combustion chamber plating, thickness, sides *7/16"* back *7/16"* top *1/2"*
Pitch of stays to ditto sides *8 1/4" x 4"* back *8 1/4" x 8 1/4"* top *Under 26" x 6" x 1 1/4" pitch 9"*
If stays are fitted with nuts or riveted heads *Nuts both sides* working pressure of plating by rules *49 lbs.*
Diameter of stays at smallest part *1 1/16"* working pressure of ditto by rules *81 lbs.*
End plates in steam space, thickness *1 1/16"* pitch of stays to ditto *14 1/2" x 14 1/2"* how stays are secured *double nut & washers*
Working pressure by rules *80 lbs.* diameter of stays at smallest part *2 1/4"* working pressure by rules *89 lbs.*
Front plates at bottom, thickness *1 1/16"* Back plates, thickness *1 1/16"* greatest pitch of stays *12 1/4"* working pressure by rules *110 lbs.*

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Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{2}$ " thickness of tube plates, front $\frac{7}{16}$ " back $\frac{1}{16}$ "
How stayed *S. tubes* pitch of stays $14\frac{1}{2}$ " width of water spaces 6"
Diameter of Superheater or Steam chest $3'6"$ length $4'6"$
Thickness of plates $\frac{1}{2}$ " description of longitudinal joint *Single lap* diameter of rivet holes $\frac{7}{8}$ " pitch of rivets $2\frac{1}{4}$ "
Working pressure of shell by rules *110 lbs.* 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 $9\frac{1}{16}$ " How stayed *rod stay $2\frac{1}{4}$ " dia double nut, cross*
Superheater or steam chest; how connected to boiler *coiled throat.*

DONKEY BOILER— Description *Vertical, two cross tubes, non shell, front & rear*
Made at *Glasgow* By whom made *Thos. Foran & Co* when made *1882*
Where fixed in *Stokefield* working pressure *80 lbs.* Tested by hydraulic pressure to *160 lbs.* No. of Certificate *834*
Fire grate area Description of safety valves *direct spring* No. of safety valves *one* area of each *7.07 sq in.*
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler
Diameter of donkey boiler $5'0"$ length $9'0"$ description of riveting *double coiled lap joint*
thickness of shell plates $\frac{7}{16}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *drilled*
pitch of rivets $2\frac{1}{4}$ " lap of plating $3\frac{1}{8}$ " per centage of strength of joint *67 Rule 19 Unit*
thickness of crown plates $\frac{7}{16}$ " stayed by *4 rod stay $2"$ dia*
Diameter of furnace, top $3'11"$ bottom $4'4"$ length of furnace $4'5"$
thickness of plates $\frac{1}{2}$ " description of joint *Single lap*
thickness of furnace crown plates $\frac{7}{16}$ " stayed by *4 rod stay $2"$ dia*
Working pressure of shell by rules *82 lbs.* working pressure of furnace by rules *92 lbs.*
diameter of uptake $11\frac{3}{4}$ " thickness of plates $\frac{3}{8}$ " thickness of water tubes $\frac{7}{16}$ "

The foregoing is a correct description,

Thos. Foran & Co Manufacturer.

Thos. Downie

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above engines and*
boilers were surveyed during construction, the
workmanship and materials being good. These are
recommended to the consideration of the Committee.
The machinery has been forwarded to London to be put
on board the vessel building at that port.

The machinery and boilers have been securely fitted on board, the
safety valves were set to 80 lbs working pressure and the engines work
satisfactorily.

It is submitted that this vessel is eligible to have the notification
+ L. M. C. 12.82 recorded in the Register Book

The amount of Entry £ 2 0 0 received by me, *Glasgow*
Special £ 10 10 0
Certificate (if required) : :
To be sent as per margin
(Printing expenses, if any, £ 10/-) *7.7.83*
Committee's Minute *11th January, 1883.*

Thos. Downie
C. J. Bromeyer
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
London