

REPORT ON MACHINERY.

No. 158.

(Received in London Office 12th JUNE 1882.)

No. in Survey held at

Aberdeen

Date, first Survey 27/9/81

Last Survey 7th June 1882

Reg. Book.

on the I.S.S. "Dabulamanzi"

1537.16
Tons 980.31

Master E. G. Zangley

Built at Aberdeen

When built June 1882

Engines made at Aberdeen

By whom made Hall Russell & Co. when made 1882

Boilers made at Do

By whom made " " when made 1882

Registered Horse Power 200.

Owners J. J. Kennie & Son

Port belonging to Aberdeen

ENGINES, &c.—

Description of Engines Direct Acting Compound Inst. Cys. Surface Condensing

Diameter of Cylinders 33" + 64" Length of Stroke 42" No. of Rev. per minute 65 Point of Cut off, High Pressure 2/3 Low Pressure 9/16

Diameter of Screw shaft 11 1/2" Diameter of Tunnel shaft 11 1/4" Diameter of Crank shaft journals 12" Diameter of Crank pin 12" size of Crank webs 8 1/2" x 13 1/2"

Diameter of screw 14" 5" Pitch of screw 18" 6" No. of blades 4 state whether moveable Bol total surface 50.2 feet

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

No. of Bilge pumps two diameter of ditto 3 3/4" Stroke 22" Can one be overhauled while the other is at work Yes

Where do they pump from All Compartments & through ship side

No. of Donkey Engines Two = Feed Size of Pumps 8" x 10" x 4 1/2" Where do they pump from Tanks. Compartments

Through Condenser and ship side (Feed) from sea Hatchell bilges to boilers on deck

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 4 1/2" Are they connected to condenser, or to circulating pump Circulating

How are the pumps worked by levers from low pressure piston crosshead

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 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 before launch 22/4/82

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

BOILERS, &c.—

Number of Boilers Two Description Circular Tubular

Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs Date of test 22nd April 1882

Description of superheating apparatus on steam chest Horizontal domes

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 64.5 feet Description of safety valves direct spring load H.R. Co

No. to each boiler two area of each valve 14.19"² 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 9"

Diameter of boilers 13" 6" Length of boilers 10" 6" description of riveting of shell long. seams butt S.R. circum. seams lap S.R.

Thickness of shell plates 1" diameter of rivet holes 1 1/4" whether punched or drilled both pitch of rivets 5"

Lap of plating 11" + 5 1/2" per centage of strength of longitudinal joint 75.77% working pressure of shell by rules 92 lbs

Size of manholes in shell 16" x 11 1/2" size of compensating rings 5" x 3 1/2" x 3 1/4"

No. of Furnaces in each boiler Three outside diameter 46" 40" length, top 7" 3" bottom 10" 0"

Thickness of plates 3/32" + 9/16" description of joint butt S.R. if rings are fitted wing 7" flanged in centre greatest length between rings 3" 9"

Working pressure of furnace by the rules Centre 97 lbs - wing 146 half length.

Combustion chamber plating, thickness, sides 8/16" back 8/16" top 8/16"

Pitch of stays to ditto sides 8 1/2" x 8 1/2" back 8 1/2" x 8 1/2" top round

If stays are fitted with nuts or riveted heads Nuts both ends working pressure of plating by rules 113 lbs

Diameter of stays at smallest part 1 1/4" + 1 1/8" bottom T working pressure of ditto by rules 6181 lbs

End plates in steam space, thickness 13/16" pitch of stays to ditto 15" x 15" how stays are secured thro ends nuts

Working pressure by rules 105 lbs diameter of stays at smallest part 2 1/4" working pressure by rules 5192 lbs

Front plates at bottom, thickness 13/16" Back plates, thickness 13/16" greatest pitch of stays 10" x 8 1/2" working pressure by rules 6189 lbs

3410 AB

Diameter of tubes $3\frac{1}{8}$ " pitch of tubes $4\frac{1}{2} \times 4\frac{3}{4}$ thickness of tube plates, front $\frac{12}{16}$ " back $\frac{12}{16}$ "
How stayed *tubes only* pitch of stays $13\frac{1}{2} \times 9\frac{1}{2}$ width of water spaces $1\frac{3}{8}$ "
Diameter of ~~Superheater~~ Steam chest $3\frac{1}{2}$ " length $6\frac{1}{2}$ "
Thickness of plates $\frac{8}{16}$ description of longitudinal joint *lap D.R.* diameter of rivet holes $\frac{13}{16}$ pitch of rivets $2\frac{1}{2}$ "
Working pressure of shell by rules $123\frac{1}{2}$ Diameter of flue $\frac{1}{2}$ thickness of plates $\frac{1}{2}$
If stiffened with rings $\frac{1}{2}$ distance between rings $\frac{1}{2}$ Working pressure by rules $\frac{1}{2}$
End plates of ~~superheater~~ steam chest; thickness $\frac{10}{16}$ How stayed *dished and one 2 $\frac{1}{2}$ bolt stay in centre of plates*
~~Superheater~~ or steam chest; how connected to boiler *by one malleable neck riveted to shells*

DONKEY BOILER—*one* Description *Round Vertical*
Made at *Aberdeen* By whom made *Hall Russell & Co* when made *June 1882*
Where fixed *stoke hold* working pressure *set to 70 lbs* Tested by hydraulic pressure to *180 lbs* No. of Certificate *171*
Fire grate area *12.5 feet* Description of safety valves *Direct Spring* No. of safety valves *one* area of each *7.17*
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
Diameter of donkey boiler *5.0* length *11.0* description of riveting *lap double riveted*
thickness of shell plates $\frac{1}{2}$ diameter of rivet holes $\frac{3}{4}$ whether punched or drilled *punched*
pitch of rivets $2\frac{1}{2}$ lap of plating $\frac{1}{2}$ per centage of strength of joint *70.70 %*
thickness of crown plates $\frac{10}{16}$ stayed by *5 diagonal stays to shell*
Diameter of furnace, top *3.8* bottom *4.6* length of furnace *6.3*
thickness of plates $\frac{1}{2}$ description of joint *lap single riveted*
thickness of furnace crown plates $\frac{1}{2}$ stayed by *dished*
Working pressure of shell by rules *90 lbs* working pressure of furnace by rules *73 lbs*
diameter of uptake *13* thickness of plates $\frac{1}{2}$ thickness of water tubes $\frac{7}{16}$

The foregoing is a correct description,

Hall Russell & Co Manufacturer's

General Remarks (State quality of workmanship, opinions as to class, &c. *The boilers and Machinery*)
of this vessel have been built in accordance with the requirements of the Rules. and to plans of boilers submitted for the Committees approval dated 29.9.81. The material and workmanship are of the best description. The boilers have been tested under steam. and the safety valves set to a working pressure of 90 lbs per square inch. and the Machinery seen at work. and in my opinion all are in good and safe working order. and eligible to be entered into the Register Book with the distinctive Mark + Lloyd's M.C in red 6.82.

The amount of Entry Fee $\pounds 3$: - : - received by me, *and sent to Dundee J.H. Little*
Special .. $\pounds 30$: - : -

Certificate (if required) .. \pounds - : 6 : 0 *11 June 1882*
To be sent as per margin.
(Travelling Expenses, if any, $\pounds 5-9-6$)

Committee's Minute

Tuesday, 13th June, 1882.

John Sturrock
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Dundee & District