

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. 1537.16
on the I.S.S. "Dabulamanzi" Tons 980.31

Master E. G. Langley 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 Exp 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 web 8 1/2 x 13 1/2"
Diameter of screw 14 1/2" Pitch of screw 18 1/2" No. of blades 4 state whether moveable Not 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 = Ballast 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" 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 18 1/2" Length of boilers 10 1/2" 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 1/2" bottom 10 1/2"
Thickness of plates 3/32 + 9/16" description of joint butt S.R. if rings are fitted wing flanged in centre greatest length between rings 3 1/2"
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 two ends nut
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

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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
 How stayed *Tubes Nuts* 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 $6\frac{1}{10}$ "
 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 \leftarrow thickness of plates \leftarrow
 If stiffened with rings \leftarrow distance between rings \leftarrow Working pressure by rules \leftarrow
 End plates of ~~superheater~~ steam chest; thickness $\frac{10}{16}$ How stayed *dished and one $2\frac{3}{4}$ 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 $5\frac{1}{2}$ " length $11\frac{1}{2}$ " 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 \leftarrow 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 $3\frac{1}{8}$ " bottom $4\frac{1}{2}$ " length of furnace $6\frac{1}{3}$ "
 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 $13\frac{1}{2}$ " 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 \times Lloyd's M.C in red 6.82.

Approved that this vessel is eligible to have the notification following recorded in the records on 17/6/82

The amount of Entry Fee £ 3 : - : - received by me, and sent to Dundee *J.H. Little*
 Special .. £ 30 : - : -
 Certificate (if required) .. £ - : 6 : 0 *11 June 1882*
 (Travelling Expenses, if any, £ 5-9-6)
 Committee's Minute Tuesday, 13th June, 18 82.

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