

REPORT ON MACHINERY.

No. 16448

No. in Survey held at
Reg. Book.

Newcastle

Date, first Survey 29th Decr 1882 Last Survey 25th April 1883

(Received at London Office Rec'd 8th May, 1883)

(Number of Visits 10) Tons 1191

on the Steamer "Beta"

Master Richards Built at Newcastle When built 1883

Engines made at Newcastle By whom made R. J. Ham Rich- when made 1883

Boilers made at do By whom made W. J. Ham & Co when made 1883

Registered Horse Power 150 Owners Messrs. R. J. Ham & Co Port belonging to London

ENGINES, &c.—

Description of Engines *Vertical acting compound Surface condensing*
Diameter of Cylinders 27" x 54" Length of Stroke 36" No. of Rev. per minute 65 Point of Cut off, High Pressure 56% Low Pressure 47%
Diameter of Screw shaft 9 1/2" Diameter of Tunnel shaft 9" Diameter of Crank-shaft journals 9 1/2" Diameter of Crank pin 9 1/2" size of Crank webs 62" x 12"
Diameter of screw 12.6" Pitch of screw 15.6" No. of blades 4 state whether moveable *no* total surface 45 ft
Vo. of Feed pumps 2 diameter of ditto 3 1/2" Stroke 19" Can one be overhauled while the other is at work *yes*
Vo. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 19" Can one be overhauled while the other is at work *yes*
Where do they pump from *Engine space, tanks, holds, after well, hot well, & sea*
No. of Donkey Engines 2 Size of Pumps 4" x 9" x 8" x 10" Where do they pump from *Engine space, tanks, holds, after well, hot well & sea*

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 1 and sizes 5" Are they connected to condenser, or to circulating pump *circulating pump*

How are the pumps worked *Levers over condenser*

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 *below*

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 *new*

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

OILERS, &c.—

Number of Boilers 2 Description *Cylindrical single ended (Steel)*
Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs Date of test 30.3.83 by J. C. & Co. 1204

Description of superheating apparatus or steam chest *horizontal dome*

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 33 ft Description of safety valves *Spring*

No. to each boiler 2 area of each valve 8.3 Are they fitted with easing gear *yes*

No. of safety valves to superheater 1 area of each valve 1 are they fitted with easing gear *—*

Smallest distance between boilers and bunkers or woodwork 10"

Diameter of boilers 11.0" Length of boilers 9.9" description of riveting of shell long. seams *Lap tubes* circum. seams *Lap double*

Thickness of shell plates 3/32" diameter of rivet holes 1 1/16" whether punched or drilled *drilled* pitch of rivets 4"

Lap of plating 7 1/2" per centage of strength of longitudinal joint 73.4% working pressure of shell by rules 91 lbs

Size of manholes in shell 16" x 12" size of compensating rings 6 1/2" x 5"

No. of Furnaces in each boiler 2 outside diameter 3.2" length, top 6.6" bottom 9.0"

Thickness of plates 8" description of joint *rolled* if rings are fitted *no* greatest length between rings *—*

Working pressure of furnace by the rules 90 lbs

Combustion chamber plating, thickness, sides 5" back 5" top 5"

Pitch of stays to ditto, sides 8 1/8" back 8 1/4" top *Curved*

If stays are fitted with nuts or riveted heads *Riveted heads* working pressure of plating by rules 90 lbs

Diameter of stays at smallest part 1 1/16" working pressure of ditto by rules 98 lbs

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

Working pressure by rules 90 lbs diameter of stays at smallest part 2 3/4" working pressure by rules 110 lbs

Front plates at bottom, thickness 1/16" double Back plates, thickness 8" greatest pitch of stays *—* working pressure by rules *—*

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{3}{4}$ " thickness of tube plates, front $\frac{3}{4}$ " back $\frac{11}{16}$ "
How stayed *stay tubes* pitch of stays $14\frac{1}{4}$ " width of water spaces 6"
Diameter of Superheater or Steam chest 2.6" length 7.0"
Thickness of plates $\frac{3}{8}$ " description of longitudinal joint *Lap double* diameter of rivet holes $\frac{13}{16}$ " pitch of rivets $2\frac{1}{2}$ "
Working pressure of shell by rules 168.75 Diameter of flue \checkmark thickness of plates \checkmark
If stiffened with rings \checkmark distance between rings \checkmark Working pressure by rules \checkmark
End plates of superheater, or steam chest; thickness $\frac{3}{8}$ " How stayed *Spherical*
Superheater or steam chest; how connected to boiler *Iron neck*

DONKEY BOILER— Description *Vertical 3 crown tubes*
Made at *Gateshead* By whom made *Blake Chapman & Co* When made 2.4.83
Where fixed *Stokehold* working pressure 55 lbs Tested by hydraulic pressure to 110 lbs No. of Certificate 1203
Fire grate area 19.634 Description of safety valves *Spring* No. of safety valves 2 area of each 4.91
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no*
Diameter of donkey boiler 5.9 " length 12.6" description of riveting *Lap double riveted*
thickness of shell plates $\frac{3}{8}$ " diameter of rivet holes $\frac{3}{4}$ " whether punched or drilled *Punched*
pitch of rivets 3" lap of plating $3\frac{3}{4}$ " per centage of strength of joint 75%
thickness of crown plates $\frac{1}{2}$ " stayed by *5 Stays 1\frac{1}{2}" diam*
Diameter of furnace, top $4.5\frac{1}{4}$ " bottom 4.11" length of furnace 4.7"
thickness of plates $\frac{1}{2}$ " description of joint *Lap single riveted*
thickness of furnace crown plates $\frac{1}{2}$ " stayed by *As above*
Working pressure of shell by rules 63 lbs working pressure of furnace by rules 68 lbs
diameter of uptake 14" thickness of plates $\frac{3}{8}$ " thickness of water tubes $\frac{3}{8}$ "

The foregoing is a correct description,
Wigham Richardson & Co Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been specially surveyed during construction the material and workmanship good and renders the vessel eligible in my opinion to have the notification
☒ L.M.C. 4.83 in the Register Book of the Society.

is submitted that this vessel is eligible to have the notification + stay do in 64 83 is warranted

The amount of Entry Fee £ 3 : - : - received by me,
Special *WES* £ 22 : 10 : -
Certificate (if required) *gratis* - : - : - 5th May 1883
To be sent as per margin.
(Travelling Expenses, if any, £ - : - : -)

Committee's Minute *Tuesday 5th May 1883*
WES
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Richard Ains
Liverpool