

REPORT ON MACHINERY.

16776

No. 16448

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

No. in Survey held at Newcastle Date, first Survey 29th Decr 1882 Last Survey 25th April 1883

Reg. Book. on the Leur Steamer "Beta" (Number of Visits 10) Tons 1191

Master Richards Built at Newcastle When built 1883

Engines made at Newcastle By whom made Styham Rich when made 1883

Boilers made at do By whom made Watson & Co when made 1883

Registered Horse Power 150 Owners Comerara & Peirce Port belonging to London

Engines, &c.— Steam Shipping Co

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 5/8" Diameter of Tunnel shaft 9" Diameter of Crank-shaft journals 9 5/8" Diameter of Crank pin 9 5/8" size of Crank webs 6 1/2" x 1 1/2"

Diameter of screw 12.6" Pitch of screw 15.6" No. of blades 2 state whether moveable no total surface 45 sq

No. of Feed pumps 2 diameter of ditto 3 1/4" Stroke 19" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 3 1/4" 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" & 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 Cei-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 sq 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 — area of each valve — 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 1 1/8"

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 Welded 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 3/8" 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 3/16" working pressure of ditto by rules 98 lbs

End plates in steam space, thickness 1/16" & 9/16" 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 5/8" greatest pitch of stays — working pressure by rules —

Report rec'd 15/5/83

Boiler Gracing & results of Steel test sent to Engineer's Office and returned

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 $14\frac{1}{2}$ " 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 *Stokhold* 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 Stay 1\frac{1}{2}" diam*
 Diameter of furnace, top $21.5\frac{1}{4}$ " bottom 21.11 " 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. H.83 in the Register Book of the Society.

is submitted that this vessel is eligible to have the notification in the Register Book of the Society + stay do in 64 83

Richard Aird
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Newcastle

The amount of Entry Fee £ 3 : - : - received by me,
 Special *WLS* £ 22 : 10 : -
 Certificate (if required) *gratis* - : - : - *5th May 1883*
 (Travelling Expenses, if any, £ - : - : -)

Committee's Minute *Tuesday 5th May 1883*