

# REPORT ON MACHINERY.

No. 47804.

Port of Newcastle

No. in Survey held at South Shields

Date, first Survey May 12

Received at London Office

Last Survey 20<sup>th</sup> October 1904

Reg. Book.

(Number of Visits 23)

on the S.S. SOUTHVILLE

Master G. Han

Built at South Shields By whom built Messrs J. Readhead & Son

Tons { Gross 3518  
Net 2266

Engines made at South Shields

By whom made Messrs J. Readhead & Son

When built 1904

Boilers made at do

By whom made do

when made 1904-10

Registered Horse Power

Owners Balloy & Starfield

Port belonging to South Shields

Nom. Horse Power as per Section 28 293.4

Is Refrigerating Machinery fitted No

Is Electric Light fitted No

## ENGINES, &c.—Description of Engines

Tri-compound

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 24-40-65 Length of Stroke 45 Revs. per minute 60

Dia. of Screw shaft 13-17

Material of screw shaft Scrap iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes

Is the after end of the liner made water tight

in the propeller boss Yes If the liner is in more than one length are the joints burned 1 length

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Fitting

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush 4.5

Dia. of Tunnel shaft 11.64

Dia. of Crank shaft journals 12.22

Dia. of Crank pin 12.14

Size of Crank webs 8 1/2 x 15 1/2

Dia. of thrust shaft under collars 12 3/4

Dia. of screw 16.3

Pitch of screw 15-17.6

No. of blades 4

State whether moveable No

Total surface 73 sq

No. of Feed pumps 2

Diameter of ditto 3 1/2

Stroke 24

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 4 3/8

Stroke 24

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2

Sizes of Pumps 13 1/2 x 9 x 13 & 6 x 4 x 6

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3

of 3 1/2" diam

In Holds, &c. Fore hold P & S. Two of 3 1/2"

No. of bilge injections 1

sizes 5 1/2"

Connected to circulating pump

Is a separate donkey suction fitted in Engine room & size Yes 3 1/2"

Are all the bilge suction pipes fitted with roses Yes

Are the roses in Engine room always accessible Yes

Are the sluices on Engine room bulkheads always accessible No sluices

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 and all boiler mountings accessible at all times Yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock New York

Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Engine room gratings

## BOILERS, &c.—

(Letter for record 2)

Total Heating Surface of Boilers 4507.3

Is forced draft fitted No

No. and Description of Boilers Two Single ended

Working Pressure 160

Tested by hydraulic pressure to 320 lbs

Date of test 23-8-04

Can each boiler be worked separately Yes

Area of fire grate in each boiler 45 sq

No. and Description of safety valves to each boiler Two Spring loaded

Area of each valve 7.066

Pressure to which they are adjusted 165 lbs

Are they fitted with easing gear Yes

Smallest distance between boilers 22"

Mean dia. of boilers 15.8"

Length 10-4"

Material of shell plates Steel

Thickness 1 3/16

Range of tensile strength 27/32

Are they welded or flanged No

Descrip. of riveting: cir. seams Lap T.R

long. seams D.B.S

Diameter of rivet holes in long. seams 1 3/8

Pitch of rivets 8 1/16

Lap of plates or width of butt straps 1-9 1/2"

Per centages of strength of longitudinal joint rivets 84.39

plate 84.51

Working pressure of shell by rules 160 lbs

Size of manhole in shell 16 x 12"

Size of compensating ring 6" x 1 3/16

No. and Description of Furnaces in each boiler 3 Dighton

Material Steel Outside diameter 3-10"

Length of plain part top

Thickness of plates bottom 1/2"

Description of longitudinal joint Welded

No. of strengthening rings —

Working pressure of furnace by the rules 162

Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 7/8

Pitch of stays to ditto: Sides 9 x 8 7/8

Back 8 1/2 x 8 1/2

Top 8 1/2 x 8

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 187 End plates in steam space: 162

Material of stays Iron

Diameter at smallest part 1 1/4 x 1 1/8

Area supported by each stay 9 x 8 7/8

Working pressure by rules 187

Material of Front plates at bottom Steel

Material Steel

Thickness 1 1/32

Pitch of stays 17 1/4 x 17 1/8

How are stays secured Welded

Working pressure by rules 183

Material of stays Steel

Diameter at smallest part 5.05

Area supported by each stay 17 1/4 x 17 1/8

Working pressure by rules 166

Material of Front plates at bottom Steel

Thickness 3/4

Material of Lower back plate Steel

Thickness 13/16

Greatest pitch of stays 19 x 13

Working pressure of plate by rules 169

Diameter of tubes 3 1/2

Pitch of tubes 4 3/4

Material of tube plates Steel

Thickness: Front 3/4 Back 3/4

Mean pitch of stays 9 1/2 x 11.5"

Pitch across wide water spaces 14"

Working pressures by rules 177

Girders to Chamber tops: Material Steel

Depth and thickness of girder at centre 8 x 1 1/2

Length as per rule 2.5 1/2

Distance apart 8 1/2

Number and pitch of Stays in each Two 8"

Working pressure by rules 160

Superheater or Steam chest: how connected to boiler

Can the superheater be shut off and the boiler worked separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

How stayed

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

End plates: Thickness

How stayed

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

End plates: Thickness

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How stayed

Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

End plates: Thickness

How stayed

W649-0164

**DONKEY BOILER**— No. *One* Description *Blake's Improved Vertical*  
 Made at *Middlesbrough* By whom made *Richardson Westgarth & Co.* When made *11.5.04* Where fixed *Stockholm*  
 Working pressure *80* tested by hydraulic pressure to *110* No. of Certificate *5209* Fire grate area *28 sq ft* Description of safety valves *Spring loaded*  
 No. of safety valves *1* Area of each *15.9* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *7.6* Length *16.3* Material of shell plates *Steel* Thickness *15/32* Range of tensile strength *27/32* Descrip. of riveting long. seams *D.R. Lap* Dia. of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *3"*  
 Lap of plating *4 5/8* Per centage of strength of joint *Plates 68.75* Thickness of shell crown plates *15/32* Radius of do. *3.9* No. of Stays to do. *—*  
 Dia. of stays *—* Diameter of furnace Top *3.9* Bottom *6.0* Length of furnace *4.7 1/2* Thickness of furnace plates *5/8* Description of joint *S.R. Lap* Thickness of furnace crown plates *Back 14/32* Stayed by *Cylindrical tube* Working pressure of shell by rules *81 lbs*  
 Working pressure of furnace by rules *91.6* Diameter of uptake *2 1/4* Thickness of uptake plates *1"* Pitch of water tubes *3 5/8*

**SPARE GEAR.** State the articles supplied:— *1 Spare propeller shaft, 2 Main Bearing, 2 top end 2 bottom end bolts & nuts, 1 set coupling bolts, 1 set feed, air, circulating & bilge pump valves, iron & bolts & nuts assorted*

The foregoing is a correct description.

*John Readhead & Sons* Manufacturer.

Dates of Survey { During progress of work in shops - - } *1904 May 12, 13, 20, 27 June 2, 15, 30 July 10, 22, 28, 29 Aug 10, 12, 23, 31 Sept 12, 14, 20, 28 Oct 3, 5, 20*  
 { During erection on board vessel - - }  
 building { Total No. of visits *23* } Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " " *Yes*

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

*The machinery of this vessel has been built under Special Survey & in my opinion is eligible for record F.L.M.C. 10.04*

It is submitted that this vessel is eligible for THE RECORD F.L.M.C. 10.04

*EmS.*

*25.10.04*

*J.L.*  
*25.10.04*

*Newcastle-on-Tyne*

The amount of Entry Fee... £ *2* : : :  
 Special ... £ *34:14* : : :  
 Donkey Boiler Fee ... £ : : :  
 Travelling Expenses (if any) £ : : :  
 When applied for, *24 OCT 1904*  
 When received, *25/10/04*

*C. A. Dryden Jones*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI. 28 OCT 1904

MACHINERY CERTIFICATE WRITTEN.

Committee's Minute

Assigned

*+ L.M.C. 1004*



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