

REPORT ON MACHINERY.

NEWCASTLE-ON-TYNE

No. 7824

TUE. MAR. 25. 1913

Date of writing Report

19

When handed in at Local Office

20.3.13

Port of

MIDDLESBROUGH-ON-TYNES

No. in Survey held at Reg. Book.

Stockton-on-Tees

Date, First Survey

1st Feb. 1912

Last Survey

1st April 1913

76 built on the Steel screw steamer "Hannah"

(S.S. No 186)

Gross 3697 Tons Net 2321

Master

Built at Newcastle

By whom built Tynes Iron & Co. Ltd

When built 1913

Engines made at

Stockton

By whom made

Thos. Blair & Co. Ltd (No 1752) when made 1913

Boilers made at

Stockton

By whom made

Thos. Blair & Co. Ltd when made 1913

Registered Horse Power

Owners J. Rahtkens & Co

Port belonging to Middlesbrough

Nom. Horse Power as per Section 28 348

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines

Tri-compound

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 25-42-68

Length of Stroke 45

Revs. per minute 57

Dia. of Screw shaft

Material of screw shaft 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

If the liner is in more than one length are the joints burned in one 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 tight fit

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

Length of stern bush 5-19/16

Dia. of Tunnel shaft as per rule 12.46

Dia. of Crank shaft journals as per rule 13.09

Dia. of Crank pin 14 1/4

Size of Crank webs 27 1/2 x 9 1/4

Dia. of thrust shaft under collars 14 1/4

Dia. of screw 17-0

Pitch of Screw 17-6

No. of Blades 4

State whether moveable no

Total surface 92 sq ft

No. of Feed pumps 2

Diameter of ditto 3 1/4

Stroke 33

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 4 3/4

Stroke 33

Can one be overhauled while the other is at work yes

No. of Donkey Engines 2

Sizes of Pumps

Ballast 9 x 15

Feed 4 x 8

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

In Engine Room 3 @ 3 1/2 + dry tank 1 @ 3 1/2

In Holds, &c. 2 @ 3 1/2 in No. 1, 2 + 3 holds;

1 @ 3 1/2 + 2 @ 3 in No. 4 hold; Fannal with one @ 2 1/4

No. of Bilge Injections 1

size 6 1/4

Connected to condenser, or to circulating pump yes

Is a separate Donkey Suction fitted in Engine room & size yes-4"

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 none

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 fore hold How are they protected same as other

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

Dates of examination of completion of fitting of Sea Connections 19.2.13 of Stern Tube 19.2.13 Screw shaft and Propeller 5.3.13

Is the Screw Shaft Tunnel watertight see hull report Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (0))

Manufacturers of Steel Messrs John Mowlem & Sons

Total Heating Surface of Boilers 5506

Is Forced Draft fitted no

No. and Description of Boilers 2 single ended

Working Pressure 180

Tested by hydraulic pressure to 360

Date of test 2.12.12

No. of Certificate 4991

Can each boiler be worked separately yes

Area of fire grate in each boiler 69 3/4 sq ft

No. and Description of Safety Valves to each boiler 2 direct spring

Area of each valve 8.29

Pressure to which they are adjusted 185

Are they fitted with easing gear yes

Smallest distance between boilers on upper and lower decks 2-6" External diam. of boilers 16-6" Length 11-6" Material of shell plates steel

Thickness 15/16

Range of tensile strength 28-32

Are the shell plates welded or flanged no

Descrip. of riveting: cir. seams 2-R-lap

long. seams 2B-3 Riv Diameter of rivet holes in long. seams 1 1/8

Pitch of rivets 9 5/8

Lap of plates or width of butt straps 20 1/2 x 1 1/4

Per centages of strength of longitudinal joint

ribs 87.4

plate 85.7

Working pressure of shell by rules 183

Size of manhole in shell 16" x 12"

Size of compensating ring 7 3/4 x 1 5/8

No. and Description of Furnaces in each boiler 3 Brighton

Material steel

Outside diameter 50 15/32

Length of plain part top

Thickness of plates crown 1 3/32

bottom 1 1/4

Description of longitudinal joint Weld

No. of strengthening rings

Working pressure of furnace by the rules 186

Combustion-chamber plates: Material steel

Thickness: Sides 21/32

Back 21/32

Top 21/32

Bottom 31/32

Pitch of stays to ditto: Sides 9 5/8 x 8 1/4

Back 8 5/8 x 9 1/4

Top 9 5/8 x 8 1/4

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 186

Material of stays steel

Diameter at smallest part 1.59

Area supported by each stay 79.5

Working pressure by rules 225

End plates in steam space: Material steel

Thickness 1 3/32

Pitch of stays 20 1/2 x 1 1/8

How are stays secured nuts + 9 x 1 washers

Working pressure by rules 188

Material of stays IRON

Diameter at smallest part 10.3

Area supported by each stay 399

Working pressure by rules 194

Material of Front plates at bottom steel

Thickness 1"

Material of Lower back plate steel

Thickness 1 1/16

Greatest pitch of stays 14 1/2 x 9 1/4

Working pressure of plate by rules 210

Diameter of tubes 3 1/2

Pitch of tubes 4 3/4 x 4 3/8

Material of tube plates steel

Thickness: Front 1 1/16

Back 1 1/16

Mean pitch of stays 10 3/32

Pitch across wide water spaces 14 1/2

Working pressures by rules 192

Girders to Chamber tops: Material steel

Depth and thickness of girder at centre 8 1/4 x 2"

Length as per rule 33

Distance apart 9 1/2

Number and pitch of stays in each 3 @ 8 1/4"

Working pressure by rules 187

Superheater or Steam chest; how connected to boiler none

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

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

Are they fitted with easing gear

1004755M



VERTICAL DONKEY BOILER— *Manufacturers of Steel See Middlesbrough Report No. 7642*

No. *one* Description *Horace patent*
 Made at *Stockton* By whom made *Gussie Thos Anderson & Co* When made _____ Where fixed _____
 Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety Valves _____
 No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____
 If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____
 Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____ Rivets _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Plates _____
 Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____
 Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____
 Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *2 top & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, a quantity of assorted bolts nuts and iron, 1 spare propeller.*

The foregoing is a correct description,
FOR BLAIR & Co., LIMITED.
Wm Nettleship Manufacturer.

Dates of Survey while building
 During progress of work in shops -- SECRETARY. *1912. Feb. 1, 2, 7, 8, 10, 14, 15, 17, 18, 22, 24, 25, 28, 30, 31, 1913. 1, 4, 6, 8, 11, 14, 15, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 1914. 2, 3, 9, 11, 12.*
 During erection on board vessel -- *13, 16, 18, 20, 23, 24, 1913. Jan. 7, 8, 10, 13, Feb. 4, 5, 6, Mar. 5, 7, 10, 13, 14.*
 Total No. of visits *12 + 5* Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders *29.11.12* Slides *29.11.12* Covers *27.11.12* Pistons *9.12.12* Rods *9.12.12*
 Connecting rods *9.12.12* Crank shaft *11.12.12* Thrust shaft *28.11.12* Tunnel shafts *13, 23, 24.12.12* Screw shaft *4.2.13* Propeller *5.2.13*
 Stern tube *6.2.13* Steam pipes tested *10.3.13* Engine and boiler seatings *19.2.13* Engines holding down bolts *10.3.13*
 Completion of pumping arrangements *13.3.13* Boilers fixed *13.3.13* Engines tried under steam *13.3.13*
 Main boiler safety valves adjusted *13.3.13* Thickness of adjusting washers *P. Blk 5-1/4 B; Stan. Blk 5-1/2*
 Material of Crank shaft *Ing Steel* Identification Mark on Do. *6786* Material of Thrust shaft *Ing Steel* Identification Mark on Do. *8959.N*
 Material of Tunnel shafts *Ing Steel* Identification Marks on Do. *8959.N* Material of Screw shafts *iron* Identification Marks on Do. *6786*
 Material of Steam Pipes *Solid drawn copper (7x5/8 + 5x5/8)* Test pressure *400 lb*

General Remarks (State quality of workmanship, opinions as to class, &c. *To complete the survey the donkey boiler requires to be secured in place, mountings fitted to same, and safety valves adjusted: Tunnel & hold suction completed and spare gear examined. It is proposed to complete the survey at Newcastle. The surveyors have been advised.*)

The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers and main steam pipes were tested by hydraulic pressure and the engines and main boilers examined under steam and all found satisfactory. In my opinion the vessel will be eligible to have the notation of *⊕ L.M.C. 4/13* with a date when the survey has been completed.

The donkey boiler has been fitted & secured, its mounting examined, & safety valves adjusted, tunnel & hold suction completed & examined, spare gear examined.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 4.13.

Wm Morrison & Cooper
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ *3-0-0* When applied for, *at this time*
 Special .. £ *37-8-0* APR 14 1913
 Donkey Boiler Fee .. £ _____
 Travelling Expenses (if any) £ _____
 When received, *16/4/13*

Committee's Minute
 Assigned *Hmc 4.13*
 FRI. APR. 13. 1913

MACHINERY CERTIFICATE WRITTEN

NEWCASTLE-ON-TYNE. Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)

