

Rpt. 4.

REPORT ON MACHINERY.

No. 8051

Date of writing Report 23.7.13

When handed in at Local Office

Received at London Office

24 July 1913

Port of

Middlesbrough

WED. AUG. 6-1913

No. in Survey held at

Stockton-on-Tees

Date, First Survey

19. Dec. 1912

Last Survey

15. July 1913

Reg. Book.

on the

Steel Screw Steamer 'ATHERSTONE'

(Number of Visits)

(S.S.N. 157)

Tonnage

Gross

Net

When built 1913

Master

Built at Thornaby

By whom built Messrs Craig Taylor & Co

Engines made at

Stockton

By whom made

Messrs Blair & Co Ltd (No. 1760)

when made 1913

Boilers made at

Stockton

By whom made

Messrs Blair & Co Ltd

when made 1913

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

371

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

26-42½-69½

Length of Stroke

45

Revs. per minute

58

Dia. of Screw shaft

as per rule 14.13

Material of

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 in one

yes

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

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

Dia. of Tunnel shaft as per rule 12.72

Dia. of Crank shaft journals as per rule 13.35

Dia. of Crank pin 14½

Size of Crank webs 27½ x 24

Dia. of thrust shaft under

collars 14½

Dia. of screw 17'-0"

Pitch of Screw 17'-0"

No. of Blades 4

State whether movable no

Total surface 90 sq

No. of Feed pumps 2

Diameter of ditto 3½

Stroke 33"

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 4½

Stroke 33"

Can one be overhauled while the other is at work yes

No. of Donkey Engines 2

Sizes of Pumps Ballast - 9 x 10

Feed - 4 x 8

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

In Engine Room 3 @ 3½"

In Holds, &c. 2 @ 3½ each hold

No. of Bilge Injections 1 sizes 7"

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 no

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 suction to four holds

How are they protected wood casing

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 26.5.13

of Stern Tube 26.5.13

Screw shaft and Propeller 24.6.13

the Screw Shaft Tunnel watertight on hull plating

Is it fitted with a watertight door yes

worked from top platform

MILERS, &c.—(Letter for record (S))

Manufacturers of Steel Messrs John Spencer & Sons Ltd

Total Heating Surface of Boilers 5988

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 9.4.13

No. of Certificate 5052

Can each boiler be worked separately yes

Area of fire grate in each boiler 61½ sq

No. and Description of Safety Valves to

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 or uptakes and bunkers or woodwork 2'-0"

Mean dia. of boilers 16'-9"

Length 11'-6"

Material of shell plates steel

Thickness 1½"

Range of tensile strength 28-32

Are the shell plates welded or flanged no

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

seams 2B-3 Riv Diameter of rivet holes in long. seams 1½"

Pitch of rivets 9½"

Lap of plates or width of butt straps 20½ x 1½"

5 Rivets per pitch

rivets 89.0

Percentages of strength of longitudinal joint plate 85.15

Working pressure of shell by rules 183

Size of manhole in shell 16" x 12"

of compensating ring 7½ x 1½"

No. and Description of Furnaces in each boiler 3 Morrison

Material steel

Outside diameter 48.4"

Thickness of plates crown 3½"

bottom 64"

Description of longitudinal joint Weld

No. of strengthening rings

Working pressure of furnace by the rules 189

Combustion chamber plates: Material steel

Thickness: Sides ½"

Back ½"

Top ½"

Bottom 3/32"

of stays to ditto: Sides 9½ x 8½"

Back 9½ x 9½"

Top 10½ x 8½"

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 181

Material of stays steel

Diameter at smallest part 1.99

Area supported by each stay 90.23

Working pressure by rules 198

End plates in steam space:

Material steel

Thickness 1½"

Pitch of stays 22½"

How are stays secured nuts & 10 x 1 washers

Working pressure by rules 185

Material of stays steel

Diameter at smallest part 8.48

Area supported by each stay 473

Working pressure by rules 186

Material of Front plates at bottom steel

Thickness 1"

Material of Lower back plate steel

Thickness 1½"

Greatest pitch of stays 14½" x 9½"

Working pressure of plate by rules 200

Diameter of tubes 3½"

Pitch of tubes 4½" x 4½"

Material of tube plates steel

Thickness: Front 1½"

Back 1½"

Mean pitch of stays 9½"

Clearance across wide water spaces 14½"

Working pressures by rules 192

Girders to Chamber tops: Material steel

Depth and

Thickness of girder at centre 8½ x 2"

Length as per rule 33

Distance apart 10½"

Number and pitch of stays in each 3 @ 8½"

Working pressure by rules 185

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

Strengthened 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

VERTICAL DONKEY BOILER—

Manufacturers of Steel *See Middlesbrough Report No 7969*

No.	Description			Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safe		
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				
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets 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	Stayed by					
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey				

SPARE GEAR. State the articles supplied:— *Two each of con-rod top end, bottom end, and main bearing bolts and nuts: one set of coupling bolts & nuts: one set of feed & bilge pump valves: one set each HP & MP piston rings; assorted bolts and nuts: iron of various sizes and one tail end shaft*

The foregoing is a correct description,

Geo Nettleship

Manufacturer,

Dates of Survey while building	During progress of work in shops—	1912 Dec. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31.
	During erection on board vessel—	1913 May 6. 8. 10. 22. 26. Jun. 11. 24. 27. 30. July 1. 7. 9. 11. 15.
	Total No. of visits	47.

(Is the approved plan of main boiler forwarded herewith *yes*)
(Return for duplicate Boiler " " " donkey " " " retain for duplicate Boiler)

Dates of Examination of principal parts—Cylinders *14.3.13* Slides *12.3.13* Covers *27.3.13* Pistons *27.3.13* Rods *27.3.13*
Connecting rods *26.3.13* Crank shaft *21.3.13* Thrust shaft *26.3.13* Tunnel shafts *14.3.13* Screw shaft *22.3.13* Propeller *25.4.13*
Stern tube *8.5.13* Steam pipes tested *30.6.13* Engine and boiler seatings *26.5.13* Engines holding down bolts *27.6.13*
Completion of pumping arrangements *11.7.13* Boilers fixed *11.7.13* Engines tried under steam *11.7.13*
Main boiler safety valves adjusted *11.7.13* Thickness of adjusting washers *Port B P-3/8 Star B P-11/32*
Material of Crank shaft *By Steel* Identification Mark on Do. *6811* Material of Thrust shaft *By Steel* Identification Mark on Do. *9336*
Material of Tunnel shafts *By Steel* Identification Marks on Do. *9336-N* Material of Screw shafts *iron* Identification Marks on Do. *6811*
Material of Steam Pipes *Solid drawn copper (7x5/8 & 5x1/2)* Test pressure *400 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. *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 boilers examined under steam and all found satisfactory. In my opinion this vessel is eligible to have the notation of LMC-7.13 in the Register Book*

It is submitted that this vessel is eligible for THE RECORD. + LMC 7.13.

T.J.S. 6.8.13. G.P.R.

The amount of Entry Fee..	£ 3 - 0 - 0	When applied for,
Special	£ 38 - 11 - 0	5.8.13
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any) £	:	7.8.13

Wm Morrison
Engineer Surveyor to Lloyd's Register of British & Foreign Ships

Committee's Minute *FRI. AUG. 8 - 1913*

Assigned *+ LMC 7.13*

MACHINERY CERTIFICATE
WRITTEN



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