

## REPORT ON MACHINERY.

No. 9866.

Received at London Office

SAT. 25 AUG. 1917

Date of writing Report

When taken at Dock Office 20.8.17

Port of

Middlesbrough

No. in Survey held at  
Reg. Book.

Stockton-on-Tees

Date, First Survey

28<sup>th</sup> Dec/16

Last Survey

17<sup>th</sup> Aug 1917

on the

Steel Screw Steamer "Embleton"

(S.S. No 509)

Master

Roddam

Built at

Stockton

By whom built

Messrs Refner &amp; Sons

Tons

Gross 5376.75

Engines made at

Stockton

By whom made

Messrs Blair &amp; Co Ltd (No 1844)

when made

1917

Boilers made at

Stockton

By whom made

Messrs Blair &amp; Co Ltd

when made

1917

Registered Horse Power

Owners

Hderton Steamship Co Ltd

Port belonging to

London

Nom. Horse Power as per Section 28

399

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

## ENGINES, &amp;c.—Description of Engines

Tri-compound

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

26-42-70

Length of Stroke

48

Revs. per minute

57

Dia. of Screw shaft

as per rule 14.48

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

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

light fit

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

Length of stern bush

Dia. of Tunnel shaft

as per rule 12.98

Dia. of Crank shaft journals

as per rule 13.68

Dia. of Crank pin

14.8

Size of Crank webs

28.4 x 9.5

Dia. of thrust shaft under

collars

14.4

Dia. of screw

17.6

Pitch of Screw

17.6

No. of Blades

4

State whether moveable

no

Total surface

96 sq ft

No. of Feed pumps

2

Diameter of ditto

3.5

Stroke

34

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

5

Stroke

34

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

Sizes of Pumps

Ballant 7x10

Dred 4x8

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

In Engine Room

3 @ 3.5

In Holds, &amp;c. 2 @ 3.5 each hold: Tunnel well

No. of Bilge Injections

1

size

7

Connected to condenser, or to circulating pump

yes

Is a separate Donkey Suction fitted in Engine room &amp; size

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

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

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

What pipes are carried through the bunkers

Suctions to forward holds

How are they protected

wood ceiling

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

4.6.17

of Stern Tube

4.6.17

Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight

see hull Report

Is it fitted with a watertight door

yes

worked from

top platform

## BOILERS, &amp;c.—(Letter for record (Y))

Manufacturers of Steel

Messrs John Hume &amp; Sons

Total Heating Surface of Boilers

6565

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

26.4.17

No. of Certificate

5752

Can each boiler be worked separately

yes

Area of fire grate in each boiler

67

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

Smallest distance between boilers on uptakes and bunkers or woodwork

2.6

Mean dia. of boilers

17.6

Length

11.6

Material of shell plates

Thickness

1.32

Range of tensile strength

28-32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

2 B-3 Riv

Diameter of rivet holes in long. seams

1.7

Pitch of rivets

9.5

Lap of plates on width of butt straps

5 Rivets per pitch

rivets

92.6

Working pressure of shell by rules

183

Size of manhole in shell

Per centages of strength of longitudinal joint

plate

84.45

Size of compensating ring

7.2 x 1.32

No. and Description of Furnaces in each boiler

3 Dighton

Material

Steel

Outside diameter

50.52

Length of plain part

top

bottom

Thickness of plates

3.2

Description of longitudinal joint

Weld

No. of strengthening rings

Working pressure of furnace by the rules

193

Combustion chamber plates: Material

Steel

Thickness: Sides

2 3/32

Back

2 1/32

Pitch of stays to ditto: Sides

9.5 x 8

Back

9.5 x 8.5

Top

9.5 x 8

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

Material of stays

iron

Diameter at smallest part

1.79

Area supported by each stay

76

Working pressure by rules

196

End plates in steam space

Material

Steel

Thickness

1.8

Pitch of stays

21

How are stays secured

nuts &amp; washers

Working pressure by rules

188

Material of stays

Diameter at smallest part

8.48

Area supported by each stay

482

Working pressure by rules

183

Material of Front plates at bottom

Steel

Thickness

1

Material of Lower back plate

Steel

Thickness

1 1/2

Greatest pitch of stays

14.7 x 8.5

Working pressure of plate by rules

225

Diameter of tubes

3.5

Pitch of tubes

4.5 x 4.5

Material of tube plates

Steel

Thickness: Front

1 1/2

Back

1 1/2

Mean pitch of stays

9.5

Pitch across wide water spaces

14.5

Working pressures by rules

220

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

8.5 x 2

Length as per rule

33

Distance apart

9.5

Number and pitch of stays in each

3 @ 8

Working pressure by rules

190

Superheater or Steam chest; how connected to boiler

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

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

Lloyd's Register

FOU 905-0057



IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes - Indt Rpt 9774*

SPARE GEAR. State the articles supplied: - *2 each of con rod top end, bottom end and main bearing bolts and nuts: one set of coupling bolts and nuts: one set of feed and bilge pump valves: assorted bolts and nuts: iron of various sizes: one propeller and minor gear.*

The foregoing is a correct description,

FOR BLAIR & CO., LIMITED.

*Bro Mitchell*

Manufacturer.

Dates of Survey while building

During progress of work in shops - -  
During erection on board vessel - -  
Total No. of visits

*1916 Dec 28, 1917 Jan 8, 11, 15, 22, 25, 30, Feb 1, 6, 12, 14, 16, 21, 26, 28, Mar 5, 8, 13, 16, 19, 22, 23, 26, 27, 30, Apr 2, 5, 6, 11, 13, 16, 17, 19, 21, 24, 25, 26, 27, May 3, 4, 9, 11, 14, 16, 17, 31, 28, 34, 35, June 1, 11, 19, 22, 27, July 2, 4, 5, 9, 16, 23, 31, Aug 7, 9, 13, 14, 16, 17.*

*67*

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders *13.4.17* Slides *13.4.17* Covers *24.4.17* Pistons *24.4.17* Rods *24.4.17*  
Connecting rods *4.5.17* Crank shaft *21.4.17* Thrust shaft *30.3.17* Tunnel shafts *5.3.17* Screw shaft *1.6.17* Propeller *21.5.17*  
Stern tube *25.5.17* Steam pipes tested *4.14.3.17* Engine and boiler seatings *4.6.17* Engines holding down bolts *27.6.17*

Completion of pumping arrangements *17.8.17* Boilers fixed *9.8.17* Engines tried under steam *9.8.17*

Main boiler safety valves adjusted *9.8.17* Thickness of adjusting washers Port Blr *P-5/16* Star Blr *P-5/16*

Material of Crank shaft *Eng Steel* Identification Mark on Do. *7087* Material of Thrust shaft *Eng Steel* Identification Mark on Do. *1777 N*

Material of Tunnel shafts *Eng Steel* Identification Marks on Do. *1777 N* Material of Screw shafts *W. Iron* Identification Marks on Do. *7087*

Material of Steam Pipes *Lap welded W. Iron* Test pressure *540*

Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F. *✓*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *S.S. Sturton* Rpt No *7630* *✓*

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 were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory.*

*The machinery is now in a good and safe working conditions and renders the vessel eligible in my opinion to have the notation of *L.M.C.-8.17* in the Register Book.*

*The vessel is fitted with "Wireless"*

*The ballast pumping arrangements have been altered in accordance with the instructions of Mr Frank representing the Shipping Controller, with a view to carrying oil fuel in the double bottom, and these alterations do not in my opinion effect the efficiency of the ballast pumping arrangements.*

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 8.17.

The amount of Entry Fee ... £ *3-0-0*

Special ... £ *39-19-0*

Donkey Boiler Fee ... £ *✓*

Travelling Expenses (if any) £ *✓*

When applied for,

*20/8/17*

When received,

*23/8/17*

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

Committee's Minute

*TUE AUG 28 1917*

Assigned

MACHINERY CERTIFICATE

WRITTEN



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Foundation