

REPORT ON MACHINERY.

No. 66950

Received at London Office MON DEC 21 1914

Date of writing Report

DEC 19 1914

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

S. Shields

Date, First Survey

19th May 1914

Last Survey

25th Nov 1914

Number of Vents 33

Master

Built at

S. Shields

By whom built

J. Readhead & Sons

When built

1914

Engines made at

S. Shields

By whom made

J. Readhead & Sons

when made

1914

Boilers made at

S. Shields

By whom made

J. Readhead & Sons

when made

1914

Registered Horse Power

Owners

Edward Hain & Sons

Port belonging to

H. H. H.

Nom. Horse Power as per Section 28

386

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

26"-42"-69"

Length of Stroke

48"

Revs. per minute

60

Dia. of Screw shaft

as per rule 14.44

Material of

screw shaft

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

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

Yes

If two

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

Yes

Length of stern-bush

4'-10"

Dia. of Tunnel shaft

as per rule 12.93

Dia. of Crank shaft journals

as per rule 13.57

Dia. of Crank pin

13 3/4"

Size of Crank webs

18"x9"

Dia. of thrust shaft under

collars

14 1/2"

Dia. of screw

17'-6"

Pitch of Screw

17'-6"

No. of Blades

4

State whether moveable

No

Total surface

87 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

1 1/2"x9"x13"

7 1/2"x5"x6"

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

In Engine Room

Three 3 1/2"

In Holds, &c.

Two in each hold

3 1/2"

one

No. of Bilge Injections

1

size

5 1/2"

Connected to condenser, or to circulating pump

Yes

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

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

None

How are they protected

Yes

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

15-10-14

of Stern Tube

15-10-14

Screw shaft and Propeller

27-10-14

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Top platform

BOILERS, &c.—(Letter for record R.)

Manufacturers of Steel

J. Readhead & Sons

Total Heating Surface of Boilers

6329 sq

Is Forced Draft fitted

No

No. and Description of Boilers

Two, single ended

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

15-10-14

No. of Certificate

8713

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

66 sq

No. and Description of Safety Valves to

each boiler

2 - Spring

Area of each valve

7.07 sq

Pressure to which they are adjusted

18.5 lbs

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

18"

Mean dia. of boilers

17'-0"

Length

11'-6"

Material of shell plates

Steel

Thickness

1 3/8"

Range of tensile strength

28-32

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

8-Lap

long. seams

185 1/2 Rivet

Diameter of rivet holes in long. seams

1 3/8"

Pitch of rivets

9 1/32"

Lap of plates or width of butt straps

1'-9 1/4"

Per centages of strength of longitudinal joint

rivets 85-3

plate 85-3

Working pressure of shell by rules

182 lbs

Size of manhole in shell

16"x12"

Size of compensating ring

7"x1 3/8"

No. and Description of Furnaces in each boiler

3 - Moisons

Material

Steel

Outside diameter

51"

Length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint

Unstayed

No. of strengthening rings

Yes

Working pressure of furnace by the rules

185 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

1"

Pitch of stays to ditto: Sides

10"x9 1/4"

Back

9 1/16"x9 1/4"

Top

10"x9"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

192 lbs

Material of stays

Steel

Diameter at smallest part

2-31"

Area supported by each stay

92.5 sq

Working pressure by rules

187 lbs

End plates in steam space:

Material

Steel

Thickness

1 1/16"

Pitch of stays

25"x21"

How are stays secured

Nuts & W.

Working pressure by rules

183 lbs

Material of stays

Steel

Material of Front plates at bottom

Steel

Thickness

7/8"

Material of Lower back plate

Steel

Thickness

1"

Greatest pitch of stays

15"

Working pressure of plate by rules

216 lbs

Diameter of tubes

3 1/2"

Pitch of tubes

4 3/4"

Material of tube plates

Steel

Thickness: Front

7/8"

Back

7/8"

Mean pitch of stays

9 1/2"

Pitch across wide water spaces

14"

Working pressures by rules

194 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

8 1/4"x1 3/4"

Length as per rule

30 1/2"

Distance apart

10"

Working pressure by rules

193 lbs

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

separately

Yes

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

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

Yes

Lloyd's Register

Foundation

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IS A DONKEY BOILER FITTED? yes

If so, is a report now forwarded? yes

SPARE GEAR. State the articles supplied: - 2 top-end, 2 bottom-end & 2 main-bearing bolts & nuts, a set of coupling bolts, a set of feed & bilge pump valves, a quantity of assorted bolts nuts & washers, a solid propeller, a screw shaft and one crank.

The foregoing is a correct description,

John Readhead

Manufacturer.

Dates of Survey while building { During progress of work in shops - - May 19 1914
During erection on board vessel - - 7.9.12.15.19.22.22. Nov. 5.9.13.17.25.
Total No. of visits 33

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " yes

Dates of Examination of principal parts - Cylinders 10.8.14 Slides 14.8.14 Covers 14.8.14 Pistons 20.10.14 Rods 19.10.14
Connecting rods 19.10.14 Crank shaft 20.10.14 Thrust shaft 12.10.14 Tunnel shafts 12.10.14 Screw shaft 12.10.14 Propeller 9.10.14
Stern tube 7.10.14 Steam pipes tested 5.11.14 Engine and boiler seatings 13.11.14 Engines holding down bolts 13.11.14
Completion of pumping arrangements 13.11.14 Boilers fixed 13.11.14 Engines tried under steam 13.11.14
Main boiler safety valves adjusted 13.11.14 Thickness of adjusting washers M.B. all $\frac{3}{8}$ " H.B. $F \frac{5}{16}$ A $\frac{3}{8}$ "

Material of Crank shaft Steel Identification Mark on Do. R.L.A. 10.14 Material of Thrust shaft Steel Identification Mark on Do. R.L.A. 10.14
Material of Tunnel shafts Steel Identification Marks on Do. R.L.A. 10.14 Material of Screw shafts Steel Identification Marks on Do. R.L.A. 10.14

Material of Steam Pipes Copper Test pressure 360 lbs

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. "Gematon"

General Remarks (State quality of workmanship, opinions as to class, &c. The engines & boilers of this vessel have been constructed under special survey & the materials & workmanship are found to be good. The engines have been tried under steam & the safety valves of main & donkey boilers adjusted. The machinery is now in good & safe working condition and eligible in our opinion to have the notation of +LMC 11.14

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 11.14.

The amount of Entry Fee ... £ 3 0 0 When applied for, DEC 19 1914
Special ... £ 39 6 0
Donkey Boiler Fee ... £ 2 2 0 When received, 22 12 1914
Travelling Expenses (if any) £ : : :

Committee's Minute TUE. DEC. 22. 1914

Assigned

+ LMC 11.14



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Lloyd's Register
Foundation

Rpt. 5a.

Date of writing Report

No. in Survey

Reg. Book.

on the

Master

Engines made at

Boilers made at

Registered Horse

MULTITUBULAR

(Letter for recon

Boilers on

No. of Certificate

safety valves to

Are they fitted

Smallest distance

Material of shell

Descrip. of rivets

Lap of plates

rules 96

boiler 2-

Description of

plates: Material

Top 12" x 10"

smallest part

Pitch of stays

Area supported

Lower back plate

Pitch of tubes

water spaces

girder at centre

Working pressure

separately

holes

If stiffened with

Working pressure

Dates of Survey while building

GENERAL

constituted

are

Survey

Travelling

Committee

Assigned