

REPORT ON MACHINERY.

No. 69865

14 MAY 1917

Received at London Office

Date of writing Report

10

When handed in at Local Office

10

Port of

Newcastle on Tyne

No. in Survey held at Newcastle on Tyne

Date, First Survey

17th Nov 16

Last Survey

12th May 1917

Reg. Book.

on the SCREW STEAMER "HELIUM"

(Number of Vistas

29

Gross

Net

Master

Built at

Selly

By whom built

Cochrane & Sons

When built

1914

Engines made at

By whom made

Shields & Co. Ltd. & Co. Ltd.

when made

1914

Boilers made at

By whom made

Pollock & Co. Ltd.

when made

1914

Registered Horse Power

Owners

United Shipways Ltd.

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

89

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

No. of Cranks

Dia. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft

Material of

Steel

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

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

If two

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

Dia. of Tunnel shaft

as per rule

Dia. of Crank shaft journals

as per rule

Dia. of Crank pin

Size of Crank pins

Dia. of thrust shaft under

collars

Dia. of screw

Pitch of Screw

No. of Blades

State whether moveable

Total surface

31.59 sq. ft.

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Diameter of ditto

Stroke

No. of Donkey Engines

Sizes of Pumps

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

In Engine Room

One 2 1/2" dia.

In Holds, &c.

Two 2 1/2" dia.

No. of Bilge Injections

sizes

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Yes 2 1/2" dia.

Are all the bilge suction pipes fitted with roses

Yes

Are the roses in Engine room 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

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

Hold suction

How are they protected

By 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

4/5/17

of Stern Tube

4/5/17

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Yes

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel

J. Spencer & Sons Ltd.

Total Heating Surface of Boilers

1175 sq. ft.

Is Forced Draft fitted

No

No. and Description of Boilers

One cylinder boiler Single

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

16/12/17

No. of Certificate

8936

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

33.59 sq. ft.

No. and Description of Safety Valves to

each boiler

2 1/2" Spring Loaded

Area of each valve

4.9 sq. in.

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

6 to 7 feet

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Thickens

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top

Thickness of plates

crown

Description of longitudinal joint

No. of strengthening rings

bottom

Working pressure of furnace by the rules

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Thickens

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

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

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 of end plates

Area of safety valves to superheater

Are they fitted with easing gear

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:— 2 main Bearing Belts, 2 Crank Pin Belts, 2 Crosshead Belts, 1 set Coupling Belts, 2 Feed pump valves, 2 Relief Pump valves, 2 Check valves, 20 Brass ferrules, 6 Condenser tubes, 6 Boiler tubes, 1 Piston Bolt & Nut, a quantity of Belts, nuts, assorted, Iron of various sizes.

The foregoing is a correct description,

E. S. Bradshaw.

Manufacturer.

May 12th 1914.

Dates of Survey while building

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

1916

Nov. 17, 22, 27, Dec. 5, 14, 19, 22, 29

1917

Jan. 4, 8, 12, 16, 19, 23, 26, Feb. 1, 6, 7, 12, 14, 16, 21

21, Mar. 5, 6, 8, 15, 19, 21, 26, Apr. 2, 5, 19, 30, May 3, 4, 7, 10, 12

39.

Is the approved plan of main boiler forwarded herewith

no

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 1/2/17 Slides 6/3/17 Covers 10/5/17 Pistons 1/2/17 Rods 12/1/17

Connecting rods 6/2/17 Crank shaft 12/1/17 Thrust shaft 27/11/16 Tunnel shafts - Screw shaft 23/11/17 Propeller 19/11/17

Stern tube 30/4/17 Steam pipes tested 7/5/17 Engine and boiler seatings 24/10/17 Engines holding down bolts 2/5/17

Completion of pumping arrangements 10/5/17 Boilers fixed 10/5/17 Engines tried under steam 10/5/17

Main boiler safety valves adjusted 10/5/17 Thickness of adjusting washers Cent 32, Start 32

Material of Crank shaft Steel Identification Mark on Do. 2498 Material of Thrust shaft Steel Identification Mark on Do. 2498

Material of Tunnel shafts - Identification Marks on Do. - Material of Screw shafts Iron Identification Marks on Do. 2498

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 ss. Lithium

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

The engines and boilers of this vessel were built under special survey and the materials and workmanship are good. When completed they were examined under steam and found to work satisfactorily.

The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of L.M.C. 5, 17, marked in the Society's Register Book

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 5. 17.

JWR.
16/5/17

The amount of Entry Fee ... £ 1 : : :
Special ... £ 6 : 9 :
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ : : :
When applied for, 14 MAY 1917
When received, 26.7.17

Committee's Minute 18 MAY 1917

Assigned

+ L.M.C. 5. 17

MACHINERY CERTIFICATE
WRITTEN



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Foundation