

## REPORT ON MACHINERY.

No. 27373

Received at London Office

SAT. APR. 18. 1914

Date of writing Report

19

When handed in at Local Office

17.4 to 14 Port of Hull

Date, First Survey

Dec. 4<sup>th</sup>

Last Survey

April 9<sup>th</sup> 1914

No. in Survey held at

Hull

Reg. Book.

52461 on the Hull S. K. "DOCTOR LEE"

(Number of Visits)

22

Tons

Gross 307

Net 124

When built

1914

Master

Built at

Hull

By whom built

Cochrane &amp; Sons Ltd.

when made

1914

Engines made at

By whom made

Boilers made at

Hull

By whom made

Messrs. Charles W. Holmes &amp; Co. Ltd.

When made

1914

Registered Horse Power

Owners, P. J. Halden &amp; Co. Ltd. Port belonging to

Hull

Nom. Horse Power as per Section 28

84

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

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

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

13" - 23" - 34"

Length of Stroke

26"

Revs. per minute

Dia. of Screw shaft

as per rule 7.88

Material of screw shaft

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

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

If two

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

Length of stern bush

36"

Dia. of Tunnel shaft

as per rule 4.04

Dia. of Crank shaft journals

as per rule 4.39

Dia. of Crank pin

7 1/2"

Size of Crank webs

4 3/4" x 4 1/4"

Dia. of thrust shaft under

collars

4 1/2"

Dia. of screw

9 1/2"

Pitch of Screw

11.0"

No. of Blades

4

State whether moveable

No

No. of Feed pumps

1

Diameter of ditto

2 5/8"

Stroke

14 3/4"

Can one be overhauled while the other is at work

No. of Bilge pumps

1

Diameter of ditto

2 5/8"

Stroke

14 3/4"

Can one be overhauled while the other is at work

No. of Donkey Engines

1

Sizes of Pumps

6" x 4 1/4" x 6"

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

In Engine Room Two 2" one forward &amp; one aft

In Holds, &amp;c One 2 1/2" one forward, one 2" one main hold,

one 2 1/2" one main hold. Bilge suction from all bilges with discharge on deck

No. of Bilge Injections

1

sizes

3"

Connected to condenser, or to circulating pump

Pump

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

3"

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

0

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

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

28.1.14 of Stern Tube

28.1.14 Screw shaft and Propeller

28.1.14

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

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

Manufacturers of Steel Phoenix &amp; Co. Ltd. of Hull

Total Heating Surface of Boilers

1440 sq ft

Is Forced Draft fitted

No

No. and Description of Boilers

One cyl. mult. simple end. d.

Working Pressure

200 lbs.

Tested by hydraulic pressure to

400 lbs.

Date of test

3.3.14

No. of Certificate

2064

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

48 sq ft

No. and Description of Safety Valves to

each boiler

Two Spring

Area of each valve

4.90"

Pressure to which they are adjusted

200 lbs.

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

6"

Mean dia. of boilers

13.9"

Length

10.6"

Material of shell plates

S

Thickness

1 1/4"

Range of tensile strength

29 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

20.8.2

long. seams

20.8.2

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

8 1/2"

Lap of plates or width of butt straps

18"

Per centages of strength of longitudinal joint

rivets 88.9

plate 85

Working pressure of shell by rules

202

Size of manhole in shell

16" x 12"

Size of compensating ring

4" x 1 1/4"

No. and Description of Furnaces in each boiler

3 plain

Material

S

Outside diameter

3.4"

Length of plain part

top 6.6 1/2"

Thickness of plates

bottom 1 1/4"

Description of longitudinal joint

Weld

No. of strengthening rings

0

Working pressure of furnace by the rules

206

Combustion chamber plates: Material

S

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Pitch of stays to ditto: Sides

10" x 8"

Back

8 1/2" x 9 1/2"

Top

11" x 8"

If stays are fitted with nuts or riveted heads

No

Working pressure by rules

217

Material of stays

S

Diameter at smallest part

2.075"

Area supported by each stay

86.40"

Working pressure by rules

215

End plates in steam space:

Material

S

Thickness

1 1/2"

Pitch of stays

8 1/2" x 8 1/2"

How are stays secured

No. 5.8.6

Working pressure by rules

205

Material of stays

S

Diameter at smallest part

7.50"

Area supported by each stay

342.250"

Working pressure by rules

228

Material of Front plates at bottom

S

Thickness

1 1/4"

Material of Lower back plate

S

Thickness

1 1/4"

Greatest pitch of stays

13 3/4" x 9 3/4"

Working pressure of plate by rules

212

Diameter of tubes

3 1/2"

Pitch of tubes

4 1/2" x 4 1/2"

Material of tube plates

S

Thickness: Front

1 1/4"

Back

1 1/4"

Mean pitch of stays

9 1/2"

Pitch across wide water spaces

14" edg.

Working pressures by rules

200

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

11" - 1 1/4"

Length as per rule

3.0 1/2"

Distance apart

11"

Working pressure by rules

201

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

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



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—Two each top & bottom and connecting rod bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set each fuel & bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts etc.

The foregoing is a correct description,

p. pro CHARLES J. HOLMES & CO. LTD.

Arthur Holmes

DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1913: Dec 4. 1914: Jan 12, 14, 21, 27, 28, 29 Feb 4, 6, 10, 12, 16, 21, 25. Mar 3, 9, 12, 23, 26, 27  
During erection on board vessel - - Apr 3, 9  
Total No. of visits 22

Is the approved plan of main boiler forwarded herewith R 27354

" " " donkey " " " Sir Mark Sykes

Dates of Examination of principal parts—Cylinders 12.2.14 Slides 12.3.14 Covers 12.3.14 Pistons 3.3.14 Rods 3.3.14

Connecting rods 9.3.14 Crank shaft 25.2.14 Thrust shaft 25.2.14 Tunnel shafts - Screw shaft 21.1.14 Propeller 21.1.14

Stern tube 21.1.14 Steam pipes tested 24.3.14 Engine and boiler seatings 28.1.14 Engines holding down bolts 27.3.14

Completion of pumping arrangements 9.4.14 Boilers fixed 3.4.13 Engines tried under steam 3.4.14

Main boiler safety valves adjusted 3.4.14 Thickness of adjusting washers Forward  $\frac{3}{8}$ " Aft  $\frac{1}{16}$ "

Material of Crank shaft Steel Identification Mark on Do. 110 T.G.D. Material of Thrust shaft Steel Identification Mark on Do 110 T.G.D.

Material of Tunnel shafts - Identification Marks on Do. - Material of Screw shafts Iron Identification Marks on Do 110 T.G.D.

Material of Steam Pipes Solid drawn copper Test pressure 400 lbs. per sq. inch hydraulic

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 "SIR MARK SYKES"

General Remarks (State quality of workmanship, opinions as to class, &c. The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials & workmanship are sound & good. The boiler tested by hydraulic pressure & with the engines run on board & tested under steam they are now in good order & safe working condition & respectfully submitted as being eligible in my opinion to be classed with the notation of T.G.C. 4.14 in the Register of British & Foreign Shipping.

It is submitted that this vessel is eligible for THE RECORD. + LMC 4.14.

The amount of Entry Fee ... £ 1 : 0 :  
Special ... £ 13 : 1 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ 4/11 :  
When applied for, 17.4.1914  
When received, 30/4/1914

Committee's Minute TUE. APR. 21. 1914

Assigned + LMC 4.14

MACHINERY CERTIFICATE WRITTEN.

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



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Lloyd's

Foundation

These par

Signal Letter

Official Nu

1 3 6, 1

No., Date, and P

Whether British Foreign Built.

British

Number of Deck

Number of Mast

Rigged ...

Stern ...

Build ...

Galleries ...

Head ...

Framework and vessel ...

Number of Bulkh

Number of water and their capac

Total to quarter the depth to bottom of keel

No. of sets of Engines.

Description

One. Triple exp. direct act. inverted.

No. of Shafts.

Particulars

One. Description. Number. Iron or Steel. Loaded Pressure.

GRO

Under Tonnage Dec

Space or spaces betw

Turret or Trunk ...

Forecastle ...

Bridge space ...

Roop or Break ...

Side Houses ...

Deck Houses ...

Chart House ...

Spaces for machinery Section 78 (2) of the 1894 ...

Excess of Hatchways

Gross Tonna

Deductions, as per Co

Registered T

NOTE 1.—The tonnage of Deck for prop

NOTE 2.—The underment

Open fo

less compa

Name of Mast

No. of Owners

Name, Residence, and

Pickering

whose princ

in the city an

Manager:-

Dated 26th

(830) (69862) Wt. 28981/72