

## REPORT ON MACHINERY.

No. 25250

Received at London Office

THU. JUL 25 1912

Date of writing Report

19

When handed in at Local Office

24. 7. 12 Port of Hull.

Date, First Survey

Mar 4<sup>th</sup>

Last Survey

July 16<sup>th</sup> 1912

No. in Survey held at Reg. Book.

9 supp. on the

S. K. "ANDREW MARVEL"

Master

Built at

Hull

By whom built

Cochran &amp; Sons

Engines made at

Hull

By whom made

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

when made

1912.

Boilers made at

By whom made

when made

1912

Registered Horse Power

Owners

Pickering &amp; Haldon's Son, Thwaites &amp; Co. Ltd. belonging to Hull.

Nom. Horse Power as per Section 28

79.

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

No.

ENGINES, &amp;c.—Description of Engines Triple Expansion

No. of Cylinders

No. of Cranks

Dia. of Cylinders 12<sup>3</sup>/<sub>4</sub> - 22 - 36

Length of Stroke

24

Revs. per minute

112

Dia. of Screw shaft

as per rule 7.44

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 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 6.44

Dia. of Crank shaft journals

as per rule 7.44

as fitted

7.44

Dia. of Crank pin

7.44

Size of Crank webs

4<sup>3</sup>/<sub>4</sub> x 14

Dia. of thrust shaft under

collars

No. of Feed pumps

1

Diameter of ditto

2<sup>3</sup>/<sub>4</sub>

Stroke

14<sup>1</sup>/<sub>2</sub>

Can one be overhauled while the other is at work

No. of Bilge pumps

1

Diameter of ditto

2<sup>3</sup>/<sub>4</sub>

Stroke

14<sup>1</sup>/<sub>2</sub>

Can one be overhauled while the other is at work

No. of Donkey Engines

1

Sizes of Pumps

6" x 4<sup>1</sup>/<sub>2</sub> x 6"

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

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

In Holds, &amp;c. One 2" 1/2" duct well, one 2" 1/2" main hold,

on 2" 1/2" fore-castle. &amp; join 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

2<sup>1</sup>/<sub>2</sub>"

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 &amp; stokehold cuttings

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

15.6.12

of Stern Tube

15.6.12

Screw shaft and Propeller

15.6.12

Is the Screw Shaft Tunnel watertight

0

Is it fitted with a watertight door

worked from

BOILERS, &amp;c.—(Letter for record S.) Manufacturers of Steel Phoenix Works, Ltd., Birmingham, the order being of 1908.

Total Heating Surface of Boilers

1295 sq ft

Is Forced Draft fitted

No.

No. and Description of Boilers One eff. mult. single ended.

Working Pressure

200 lbs.

Tested by hydraulic pressure to

400 lbs.

Date of test

18.6.12

No. of Certificate

1908.

Can each boiler be worked separately

-

Area of fire grate in each boiler

46 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

13.6"

Length

10.6"

Material of shell plates

S.

Thickness

1<sup>3</sup>/<sub>16</sub>"

Range of tensile strength

29 tons

Are the shell plates welded or flanged

No.

Descrip. of riveting: cir. seams

2.10.

long. seams

D. B. S. P.

Diameter of rivet holes in long. seams

1<sup>3</sup>/<sub>16</sub>"

Pitch of rivets

8"

Lap of plates or width of butt straps

16<sup>5</sup>/<sub>8</sub>"

Per centages of strength of longitudinal joint

rivets 85%

plate 85%

Working pressure of shell by rules

202 lbs.

Size of manhole in shell

16" x 12"

Size of compensating ring

4" x 1<sup>3</sup>/<sub>16</sub>"

No. and Description of Furnaces in each boiler

3 plain

Material

S.

Outside diameter

38"

Length of plain part

top 6.5<sup>3</sup>/<sub>4</sub>"

bottom

Thickness of plates

crown 5<sup>1</sup>/<sub>16</sub>"

bottom

6<sup>1</sup>/<sub>16</sub>"

Description of longitudinal joint

Welded.

No. of strengthening rings

0

Working pressure of furnace by the rules

212 lbs.

Combustion chamber plates: Material

S.

Thickness: Sides

23"

Back

32"

Top

4"

Bottom

32"

Pitch of stays to ditto: Sides

8" x 10"

Back

8<sup>1</sup>/<sub>2</sub>" x 10"

Top

8<sup>1</sup>/<sub>2</sub>" x 11"

If stays are fitted with nuts or riveted heads

No.

Working pressure by rules

213 lbs.

End plates in steam space:

Material of stays

S.

Diameter at smallest part

1.40"

Area supported by each stay

101.062

Working pressure by rules

213 lbs.

Material of stays

S.

Material

S.

Thickness

1<sup>3</sup>/<sub>16</sub>"

Pitch of stays

18" x 18"

How are stays secured

No. 22.

Working pressure by rules

206 lbs.

Diameter at smallest part

6.33"

Area supported by each stay

324.0"

Working pressure by rules

203 lbs.

Material of Front plates at bottom

S.

Thickness

1<sup>5</sup>/<sub>16</sub>"

Material of Lower back plate

S.

Thickness

3<sup>3</sup>/<sub>4</sub>"

Greatest pitch of stays

14<sup>1</sup>/<sub>2</sub>" x 8<sup>1</sup>/<sub>2</sub>"

Working pressure of plate by rules

204 lbs.

Diameter of tubes

3<sup>1</sup>/<sub>2</sub>"

Pitch of tubes

5<sup>1</sup>/<sub>2</sub>" x 5"

Material of tube plates

S.

Thickness: Front

1<sup>5</sup>/<sub>16</sub>"

Back

8"

Mean pitch of stays

10"

Pitch across wide water spaces

14<sup>1</sup>/<sub>2</sub>" x 14<sup>1</sup>/<sub>2</sub>"

Working pressures by rules

315 lbs.

Girders to Chamber tops: Material

S.

Depth and

thickness of girder at centre

10<sup>3</sup>/<sub>4</sub>"

Length as per rule

2.11<sup>3</sup>/<sub>8</sub>"

Distance apart

1"

Number and pitch of stays in each

8 - 8"

Working pressure by rules

203 lbs.

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

How stayed

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

Working pressure of end plates

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Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates



VERTICAL DONKEY BOILER— Manufacturers of Steel

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 Safety  
 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  
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays Plates  
 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 Radius of do. Stayed by  
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

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

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

The foregoing is a correct description,

Charles D. Holmes, DIRECTOR, Manufacturer.

Dates of Survey while building 1912:— Mar 4. 6. Apr 12. 23. 25 May 1. 7. 15. 17. 22. 30 Jun 5. 7. 11. 14. 15. 18. 20. 27  
 During progress of work in shops - - -  
 During erection on board vessel - - - July 5. 6. 10. 16  
 Total No. of visits 24

Is the approved plan of main boiler forwarded herewith R/L No 251625

Dates of Examination of principal parts—Cylinders 30.5.12 Slides 4.6.12 Covers 14.6.12 Pistons 4.6.12 Rods 20.6.12  
 Connecting rods 20.6.12 Crank shaft 14.5.12 Thrust shaft 4.6.12 Tunnel shafts - Screw shaft 5.6.12 Propeller 14.5.12  
 Stern tube 14.5.12 Steam pipes tested 6.4.12 Engine and boiler seatings 15.6.12 Engines holding down bolts 4.4.12  
 Completion of pumping arrangements 10.4.12 Boilers fixed 10.4.12 Engines tried under steam 10.4.12  
 Main boiler safety valves adjusted 10.4.12 Thickness of adjusting washers Forward 5" After 3"  
 Material of Crank shaft S. Identification Mark on Do. N° 895 T.G.D. Material of Thrust shaft S. Identification Mark on Do. N° 895 T.G.D.  
 Material of Tunnel shafts - Identification Marks on Do. - Material of Screw shafts S. Identification Marks on Do. N° 895 T.G.D.  
 Material of Steam Pipes Solid drawn copper Test pressure 400 lbs. per sq. inch hydraulic.

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 secured on board & tested under steam they are now in good order & safe working condition & respectfully submitted as being suitable in my opinion to be classed with the notation of L.M.C. 7.12 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 7.12.

S.M. J.W.D. 25/7/12

The amount of Entry Fee .. £ 1 : 0 :  
 Special .. £ 11 : 14 :  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : 4/1 :  
 When applied for, 23.7.12  
 When received, 31.7.12

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

Committee's Minute

FRI. JUL. 26. 1912

Assigned

thmc. 7.12

MACHINERY CERTIFICATE WRITTEN



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