

## REPORT ON MACHINERY.

No. 2536

Received at London Office

SAT. FEB. 3-1912

Date of writing Report

19

When handed in at Local Office

2. 1. 1912 Port of

SUNDERLAND.

No. in Survey held at  
Reg. Book.

SUNDERLAND.

Date, First Survey

24 March

Last Survey

18 January 1912

(Number of Visits)

38

Gross 1844

Net 1122

When built 1912

Master

Wrightson

Built at

Sunderland

By whom built

John Priestman &amp; Co.

Engines made at

Sunderland

By whom made

Richardsons, Westgarth &amp; Co. Ltd.

when made

1912

Boilers made at

do.

By whom made

do.

when made

1912

Registered Horse Power

Owners

Manchu &amp; Co. (Matthew, Angell &amp; Co. Ltd.)

Port belonging to

London

Nom. Horse Power as per Section 28

260

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes

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

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

21 1/2, 35, 58

Length of Stroke

39

Revs. per minute

75

Dia. of Screw shaft

11 1/2

Material of screw shaft

Ingot 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

Yes

If two

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

Length of stern bush

4-3

Dia. of Tunnel shaft

as per rule 10.69

Dia. of Crank shaft journals

as per rule 11.22

Dia. of Crank pin

11 1/2

Size of Crank webs

16 x 7 1/2

collars

11 1/4

Dia. of screw

14-6

Pitch of Screw

15-6

No. of Blades

4

No. of Feed pumps

2

Diameter of ditto

3 1/4

Stroke

21

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

3 1/4

Stroke

21

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

10 x 10

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

6 x 4 x 6

In Engine Room

3 of 3

In Holds, &amp;c.

2 of 3 in each

No. of Bilge Injections

1 size

5

Connected to condenser, or to circulating pump

C.P.

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

Yes, 4"

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

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

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

6.11.12

of Stern Tube

6.11.1912

Screw shaft and Propeller

6.11.1912

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from top platform

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

S)

Manufacturers of Steel

J. Spencer &amp; Son, Ltd.

Total Heating Surface of Boilers

4444 sq ft

Is Forced Draft fitted

No.

No. and Description of Boilers

2 Single-ended

Working Pressure

180 lb.

Tested by hydraulic pressure to

360 lb.

Date of test

24-10-11

No. of Certificate

2962

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

59 sq ft

No. and Description of Safety Valves to

each boiler

2 Spring

Area of each valve

8.29"

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

1-6"

Mean dia. of boilers

15-3 1/2"

Length

10-6"

Material of shell plates

Steel

Thickness

1 3/16"

Range of tensile strength

28.9 to 32.4

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D.K. lap

long. seams

T.R.D.B.

Diameter of rivet holes in long. seams

1 1/4"

Pitch of rivets

8 3/4"

Lap of plates or width of butt straps

1-4 3/4"

Per centages of strength of longitudinal joint

rivets 85-64

plate 85-89

Working pressure of shell by rules

181 lb

Size of manhole in shell

16 x 12 in end plate

Size of compensating ring

Flanged

No. and Description of Furnaces in each boiler

3 Horizontal

Material

Steel

Outside diameter

48 3/4"

Length of plain part

top

Thickness of plates

crown 3/16"

Description of longitudinal joint

Weld

No. of strengthening rings

Working pressure of furnace by the rules

181 lb

Combustion chamber plates: Material

Steel

Thickness: Sides

4/16"

Back

3/32"

Top

4/16"

Bottom

Pitch of stays to ditto: Sides

10 3/4 x 8 1/2"

Back

9 1/2 x 9"

Top

9 1/4 x 8 1/2"

If stays are fitted with nuts or riveted heads

nuts

Material of stays

Steel

Area at smallest part

1.788 sq ft

Area supported by each stay

88.2 sq ft

Working pressure by rules

182

End plates in steam space:

Material

S

Thickness

1 3/32"

Pitch of stays

22 x 18 1/4"

How are stays secured

S. Nut

Working pressure by rules

182 lb

Material of Front plates at bottom

Steel

Thickness

25/32"

Greatest pitch of stays

13 1/2 x 9"

Working pressure of plate by rules

296

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2 x 4 1/2"

Material of tube plates

Steel

Thickness: Front

25/32"

Back

25/32"

Mean pitch of stays

Pitch across wide water spaces

14"

Working pressures by rules

218

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

2-8 1/4 x 3 1/4"

Length as per rule

30.06

Distance apart

9 1/4"

Number and pitch of stays in each

2-8 1/2"

Working pressure by rules

182

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

End plates: Thickness

How stayed

If stiffened with rings

Distance between rings

Working pressure by rules

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays
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:— Propeller, tail shaft, crank, bottom end bearing top end bearing, eccentric strap, air pump rod, valve spindle; 2 top end, 2 bottom end, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set feed & bilge pump valves assorted iron, nuts & bolts &c

FOR RICHARDSONS, WESTGARTH & CO., LTD

The foregoing is a correct description,

Manufacturer.

Frederic H. Russell

ASSISTANT MANAGER.

Dates of Survey while building	During progress of work in shops --	14.11.11 Mar. 29.30. June 7. July 11.17.25. Aug 12. 18.23.28 Sept. 1.6.20.23.28
	During erection on board vessel ---	Oct. 2. 10.11.19.20.25.27. 30.31. Nov. 6.8. 10.14. 21.23. Dec. 29.30 Jan 9.11.13.15/16
	Total No. of visits	38

Is the approved plan of main boiler forwarded herewith

Yes

Dates of Examination of principal parts—Cylinders	28.8.11	Slides	28.8.11	Covers	1.9.11	Pistons	1.9.11	Rods	1.9.11
Connecting rods	1.9.11	Crank shaft	10.10.11	Thrust shaft	10.10.11	Tunnel shafts	10.10.11	Screw shaft	20.10.11
Propeller	20.10.11	Stern tube	20.10.11	Steam pipes tested	8.11.11	Engine and boiler seatings	30.10.11	Engines holding down bolts	30.10.11
Completion of pumping arrangements	6.11.11	Boilers fixed	6.11.11	Engines tried under steam	13.1.12	Main boiler safety valves adjusted	13.1.12	Thickness of adjusting washers	PB 7 1/2, S 7 1/2, SB 7 1/2, S 7 1/2
Material of Crank shaft	Steel	Identification Mark on Do.	1993 H.S.	Material of Thrust shaft	Steel	Identification Mark on Do.	6765 K.H.	Material of Tunnel shafts	Steel
Identification Marks on Do.	6766 K.H.	Material of Screw shafts	Steel	Identification Marks on Do.	6768 K.H.	4460 P.A.	Material of Steam Pipes	Copper	Test pressure
									400 lb.

## 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 good.  
The engines have been tried under full steam & found satisfactory.  
It is submitted that the machinery of this vessel is eligible for classification and to have record of +LMC 1-12 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 1.12.

J.W.D. 7/2/12

J.R.D.

The amount of Entry Fee	£ 2. =	When applied for,
Special	£ 33. =	When received,
Donkey Boiler Fee	£ :	
Travelling Expenses (if any)	£ :	

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

Committee's Minute TUE. FEB. 6—1912

Assigned + L.M.C. 1.12

MACHINERY CERTIFICATE  
GRANTED



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Lloyd's Register  
Foundation

Certificate (if required) to be sent to Sunderland.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)