

Rpt. 4.

## REPORT ON MACHINERY.

No. 61988

Date of writing Report

19

When handed in at Local Office

Received at London Office

MON. MAR. 25. 1912

Port of **NEWCASTLE ON TYNE.**No. in Survey held at  
Reg. Book.*Newcastle*Date, First Survey 10<sup>th</sup> Apr 1911Last Survey 9<sup>th</sup> Mar 1912

(Number of Visits 59)

Master

Built at

*Newcastle*

By whom built

*Swan Hunter & W. Richardson*

Gross 4896

Net 3045

When built 1912

Engines made at

*Newcastle*

By whom made

*Wallsend Shipway & Eng Co. Ltd*

Boilers made at

#

By whom made

when made 1912

Registered Horse Power

Owners *Rotterdamseche Lloyd*Port belonging to *Rotterdam*

Nom. Horse Power as per Section 28

411

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

Yes

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

*Triple*

No. of Cylinders

No. of Cranks

Dia. of Cylinders 26" 42 1/2" &amp; 70"

Length of Stroke 48"

Revs. per minute 73

Dia. of Screw shaft

Material of

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

no liner

Is the after end of the liner made water tight

in the propeller boss

If the liner is in more than one length are the joints burned

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

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

*Leadall Gland*

Length of stern bush 5'-4"

Dia. of Tunnel shaft

as per rule 12.89

Dia. of Crank shaft journals

as per rule 13.65

Dia. of Crank pin

13 3/4"

Size of Crank webs

9 1/2" X 2 1/2"

Dia. of thrust shaft under

collars

13 3/4"

Dia. of screw

18'-0"

Pitch of Screw

17'-3"

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 1/4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

10" X 10" X 10"

7 1/2" X 5" X 6"

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

In Engine Room

4 of 3 1/2" dia.

In Holds, &amp;c.

2 of 3 1/2" in each hold, 2 of

3 1/2" in deep tank &amp; 1 of 3" in tunnel well.

No. of Bilge Injections

1 sizes

7 1/2" Connected to condenser, or to circulating pump

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

no

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

*four bilge suction*

How are they protected

*iron 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

19/1/12

of Stern Tube

19/1/12

Screw shaft and Propeller

19/1/12, 26/1/12

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

*Main deck*

OILERS, &amp;c.—(Letter for record

S)

Manufacturers of Steel

*J. & S. Spence & Sons*

Total Heating Surface of Boilers

5550

Is Forced Draft fitted

Yes

No. and Description of Boilers

2

*Single-ended*

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

29/6/11

No. of Certificate

8157

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

64

No. and Description of Safety Valves to

each boiler

2 direct spring

Area of each valve

9.6

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

22"

Mean dia. of boilers

15'-9 1/2"

Length

12'-0"

Material of shell plates

steel

Thickness

1/32"

Range of tensile strength

29-32 tons

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

d. r. lap

ng. seams

2 r. d. butt

Diameter of rivet holes in long. seams

1/32"

Pitch of rivets

9"

Lap of plates or width of butt straps

19 3/4"

Per centages of strength of longitudinal joint

rivets 91.26

plate 85.0

Working pressure of shell by rules

189 lbs

Size of manhole in shell

16" X 12"

Size of compensating ring

flanged

No. and Description of Furnaces in each boiler

3

*Horizontal*

Material

steel

Outside diameter

49 7/8"

Length of plain part

top 19 3/2

bottom 19 3/2

Thickness of plates

crown 19 3/2

Description of longitudinal joint

welded

No. of strengthening rings

Working pressure of furnace by the rules

189 lbs

Combustion chamber plates: Material

steel

Thickness: Sides

5/8"

Back

5/8"

Top

Pitch of stays to ditto: Sides

7 3/4" X 7 3/8"

Back

7 1/2" X 8"

Top

7 3/4" X 7 3/4"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

225 lbs

Material of stays

steel

Diameter at smallest part

1.45"

Area supported by each stay

68

Working pressure by rules

184 lbs

End plates in steam space:

Material

steel

Thickness

1 3/8"

Pitch of stays

7 5/8" X 17"

How are stays secured

d. nuts

Working pressure by rules

251 lbs

Material of Front plates at bottom

steel

Thickness

1

Material of Lower back plate

steel

Thickness

7/8"

Greatest pitch of stays

15" X 8"

Working pressure of plate by rules

183 lbs

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4" X 3 3/4"

Material of tube plates

steel

Thickness: Front

1"

Back

2 5/32"

Mean pitch of stays

7 1/8"

Pitch across wide water spaces

13 1/4"

Working pressures by rules

204.5 lbs

Girders to Chamber tops: Material

steel

Depth and

Thickness of girder at centre

8 3/4" X 1 1/2"

Length as per rule

33 1/2"

Distance apart

7 3/4"

Number and pitch of stays in each

3, 7 3/4"

Working pressure by rules

185 lbs

Superheater or Steam chest; how connected to boiler

none

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

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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



# 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  
 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:— 2 top end & 2 bottom end bolts, 2 main bearing bolts, 1 set of coupling bolts, set of feed & bilge pump valves, 1 propeller shaft, 1 propeller, piston bolts, springs, assorted nuts bolts and a quantity of assorted iron &c.

The foregoing is a correct description, FOR THE WALLSEND SLIPWAY & ENGINEERING CO., LIMITED.

Manufacturer.

A. Laing DIRECTOR

Dates of Survey while building  
 During progress of work in shops— 1911  
 During erection on board vessel— 1912  
 Total No. of visits 59

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 28/6/11 Slides 16/5/11 Covers 2/6/11 Pistons 26/7/11 Rods 14/7/11  
 Connecting rods 14/7/11 Crank shaft 13/7/11 Thrust shaft 13/7/11 Tunnel shafts Screw shaft 6/1/12 Propeller 18/10/11  
 Stern tube 17/11/11 Steam pipes tested 23/8/11 Engine and boiler seatings 19/1/12 Engines holding down bolts 20/2/12  
 Completion of pumping arrangements 9/3/12 Boilers fixed 20/2/12 Engines tried under steam 22/2/12  
 Main boiler safety valves adjusted 22/2/12 Thickness of adjusting washers 1/8" 3/8" 1/2" 5/16"  
 Material of Crank shaft Steel Identification Mark on Do. 13/7/11 Material of Thrust shaft Steel Identification Mark on Do. 13/7/11  
 Material of Tunnel shafts Steel Identification Marks on Do. 17/8/11 Material of Screw shafts Steel Identification Marks on Do. 15/1/12  
 Material of Steam Pipes Lap welded iron Test pressure 540 lbs.

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

The machinery of this vessel has been built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, and the engines have been tried under full steam. In my opinion the vessel is eligible for the record of L.M.C. 3, 12.

The amount of Entry Fee .. £ 3 :

Special .. £ 40 : 11 :

Donkey Boiler Fee .. £ 2 : 2 :

Travelling Expenses (if any) £ :

Committee's Minute

Assigned

TUE. APR. 2 1912

+ L.M.C. 3.12

F.D.

When applied for,

MAR 23 1912

When received,

22-7-12

Charles Cooper

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



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