

Rpt. 4.

ED FROM  
MEMOR

29 MAY 1906

## REPORT ON MACHINERY.

No. 57735.

Port of

LIVERPOOL.

Received at London Office WED. 30 MAY 1906

No. in Survey held at

Liverpool

Date, first Survey

40 Oct 1905

Last Survey

21 May

1906

(Number of Visits 56.)

Reg. Book

22 Supp-the Linn S.S. "Iris."

Master

Built at

Newcastle

By whom built

H. Stephenson &amp; Co. Ltd

Tons

Gross 445

Net 82

When built

1906.

Engines made at

Liverpool

By whom made

D. Hall &amp; Sons.

when made

1906.

Boilers made at

Liverpool

By whom made

D. Hall &amp; Sons.

when made

1906.

Registered Horse Power

(217)

Owners

Wallasey Urban District Council

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

148

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes.

ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders

6

No. of Cranks

6

Dia. of Cylinders

16"-24"-41"

Length of Stroke

21"

Revs. per minute

140

Dia. of Screw shaft

as per rule 4.94

Material of

Steel

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

No

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

No

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

Yes

Length of stern bush

3'-0"

Dia. of Tunnel shaft

as per rule 4.04

Dia. of Crank shaft journals

as per rule 4.42

Dia. of Crank pin

4 1/2"

Size of Crank webs

9x5"

Dia. of thrust shaft under

collars

Dia. of screw

4 1/2"

Pitch of Screw

10 1/6"

No. of Blades

3

State whether moveable

No

Total surface

23.6 sq

No. of Feed pumps

2

Diameter of ditto

5 1/2"

Stroke

15"

Can one be overhauled while the other is at work

Yes.

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

4 1/2"

Can one be overhauled while the other is at work

Yes.

No. of Donkey Engines

1

Sizes of Pumps

5 1/4 x 3 1/4 x 10"

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

In Engine Room

2-2" dia

In Holds, &amp;c.

12-2" dia

No. of Bilge Injections

6"

Connected to condenser, or to circulating pump

pump

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

1-2" dia.

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

Yes

Are all connections with the sea direct on the skin of the ship

Yes

Are they Valves or Cocks

Valves and cocks

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

Yes

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

19/4/06.

of Stern Tube

28/4/06.

Screw shaft and Propeller

28/4/06.

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

BOILERS, &amp;c.—(Letter for record

3)

Manufacturers of Steel

The Steel Co. of Scotland.

Total Heating Surface of Boilers

4054 sq

Is Forced Draft fitted

No

No. and Description of Boilers

Two cylindrical multitubular

Working Pressure

180 lbs.

Tested by hydraulic pressure to

360 lbs.

Date of test

12/2/06

No. of Certificate

1494

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

58.5 sq

No. and Description of Safety Valves to

each boiler

Two direct spring

Area of each valve

9.6 sq

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

9"

Mean dia. of boilers

10 1/3"

Length

14'-0"

Material of shell plates

Steel

Thickness

15/16"

Range of tensile strength

28/32"

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D.H. lap

long. seams

L.R. &amp; Butts

Diameter of rivet holes in long. seams

1"

Pitch of rivets

6 3/4"

Lap of plates or width of butt straps

1'-2 1/2"

Per centages of strength of longitudinal joint

rivets 92%

plate 85%

Working pressure of shell by rules

188 lbs.

Size of manhole in shell

16" x 12"

Size of compensating ring

4 1/2" x 15/16"

No. and Description of Furnaces in each boiler

2 Brightons

Material

Steel

Outside diameter

3'-4 1/4"

Length of plain part

top

Thickness of plates

crown

14/32"

Description of longitudinal joint

welded

No. of strengthening rings

Yes

Working pressure of furnace by the rules

189

Combustion chamber plates: Material

Steel

Thickness: Sides

9/16"

Back

1 1/16"

Top

9/16"

Pitch of stays to ditto: Sides

4 3/4"

Back

15 3/4"

Top

4 3/4"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

182 lbs.

Material of stays

Steel

Diameter at smallest part

1 3/8"

Area supported by each stay

60 sq

Working pressure by rules

194

End plates in steam space:

Material

Steel

Thickness

1"

Pitch of stays

15 1/2" x 15 1/2"

How are stays secured

Nuts &amp; washers

Working pressure by rules

225

Material of stays

Steel

Diameter at smallest part

5'-05"

Area supported by each stay

245 sq

Working pressure by rules

202

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Steel

Thickness

1"

Greatest pitch of stays

14"

Working pressure of plate by rules

196 lbs.

Pitch across wide water spaces

14"

Working pressures by rules

196 lbs.

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9 1/2" x 12"

Length as per rule

2'-4"

Distance apart

4 3/4"

Number and pitch of stays in each

3-4 3/4"

Working pressure by rules

240 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

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

Lloyd's Register

Foundation

002536-002542-0139



# 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 \_\_\_\_\_ Plates \_\_\_\_\_  
 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 \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:—Spare propeller shaft, stern push, 12 coupling bolts, 2 top & 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, eccentric & strap, 2 pair connecting rod brasses, feed & bilge pump valves, propeller.

The foregoing is a correct description,

Manufacturer.

David Ross & Sons

Dates of Survey while building { During progress of work in shops - 1905 Oct 4, 13, 21, 24, 30. Nov 3, 7, 11, 20, 21, 27. Dec 1, 6, 12, 15, 15, 16, 22, 24, 30.  
 { During erection on board vessel - 1906 Jan 11, 19, 24, 24, 23, 26, 24, 31. Feb 2, 8, 12, 13, 14, 17, 20, 21, 26. No. 5, 6, 12, 14, 20, 21, 26.  
 Total No. of visits 56. 31. Apr 10, 19, 25, 26, 28, 30. May 3, 16, 22. Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 1/12/05 Slides 8/12/05 Covers 8/12/05 Pistons 8/12/05 Rods 8/12/05  
 Connecting rods 8/12/05 Crank shaft 26/2/06 Thrust shaft 2/1/06 Tunnel shafts 8/2/06 Screw shaft 6/3/06 Propeller 19/4/06.  
 Stern tube 19/4/06 Steam pipes tested 30/4/06. Engine and boiler seatings 19/4/06 Engines holding down bolts 3/5/06.  
 Completion of pumping arrangements 3/5/06. Boilers fixed 3/5/06. Engines tried under steam 22/5/06.  
 Main boiler safety valves adjusted 22/5/06. Thickness of adjusting washers R 3/8 - 3/8 + 5/16 3/8.  
 Material of Crank shaft Steel Identification Mark on Do. 1041344 Material of Thrust shaft Steel Identification Mark on Do. 1041344  
 Material of Tunnel shafts Steel Identification Marks on Do. 1041344 Material of Screw shafts Steel Identification Marks on Do. 1041344  
 Material of Steam Pipes Copper Test pressure 360 lbs.

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

The machinery of this vessel has been built under special survey, the material and workmanship are of good description, the boilers have been tested by hydraulic pressure to 360 lbs and found satisfactory and the safety valves adjusted under steam to 185 lbs., the engines have been tried under steam and found satisfactory.  
 The vessel is in our opinion eligible for the notification + L. M. C. 5, 06.

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 5-06. ELEC: LIGHT.

The amount of Entry Fee. £ 2 : 0 : 0 When applied for.  
 Special £ 26 : 14 : 0 29 MAY 1906  
 Donkey Boiler Fee £ : : : Not Det.  
 Travelling Expenses (if any) £ : : : When received.

Committee's Minute LIVERPOOL 29 MAY 1906

Assigned

Transmit to London.

WED. 6 JUN 1906

L. J. Davidson & J. H. Ashdown  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE WRITTEN.

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