

Port of Glasgow

Received at London Office

TUES. JAN 1 1907

No. in Survey held at Paisley

Date, first Survey 20<sup>th</sup> March Last Survey 14<sup>th</sup> Nov 1906

Reg. Book.

on the

Thames Conservancy Hopper 2<sup>nd</sup> 5.

(Number of Visits)

Tons

Gross

Net

Master

Built at Paisley

By whom built

Fleming &amp; Ferguson

When built 1906

Engines made at

Paisley

By whom made

Fleming &amp; Ferguson

when made 1906

Boilers made at

do

By whom made

do

when made 1906

Registered Horse Power

Owners Thames Conservancy

Port belonging to London

Nom. Horse Power as per Section 28

158

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 18.29.48 Length of Stroke 30

Revs. per minute

Dia. of Screw shaft

as per rule 9.2

Material of screw shaft

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

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 48"

Dia. of Tunnel shaft

as per rule 8.337

as fitted 8.34

Dia. of Crank shaft journals

as per rule 8.714

as fitted 9

Dia. of Crank pin

9.4

Size of Crank webs

6.1.7.2

Dia. of thrust shaft under

collars 9

Dia. of screw 11.0

Pitch of Screw 12.6

No. of Blades 4

State whether moveable

No

Total surface

47

No. of Feed pumps 2

Diameter of ditto 3

Stroke 15

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps 2

Diameter of ditto 3

Stroke 15

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines 2

Sizes of Pumps 6x4x6, 6x4x6

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

In Engine Room 2 - 2.2

In Holds, &amp;c. 5 - 2.2

No. of Bilge Injections 1 sizes 5

Connected to condenser, or to circulating pump

Pump

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

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

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

What pipes are carried through the bunkers

For Suctions

How are they protected

Wood covering

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

7

of Stern Tube

8

Screw shaft and Propeller 18/10/06

Is the Screw Shaft Tunnel watertight

None

Is it fitted with a watertight door

worked from

—

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

Manufacturers of Steel

J. &amp; C. of Scotland.

Total Heating Surface of Boilers

2841

Is Forced Draft fitted

No

No. and Description of Boilers

Two Single Ended

Working Pressure

115 lb

Tested by hydraulic pressure to

350 lb

Date of test 18.10.06

No. of Certificate 8391

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

59

No. and Description of Safety Valves to

each boiler

Two spring loaded

Area of each valve

5.94

Pressure to which they are adjusted

165 lb

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

Stokehold

Mean dia. of boilers

13.0

Length

10.0

Material of shell plates

Thickness

1.3/16

Range of tensile strength

27.5-632

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D. R. L.

long. seams

D. B. S.

Diameter of rivet holes in long. seams

1.4

Pitch of rivets

8.3/4

Gap of plates or width of butt straps

18.3/8

Per centages of strength of longitudinal joint

rivets 87.8

plate 85.7

Working pressure of shell by rules

200 lb

Size of manhole in shell

16x12

Size of compensating ring

2.6x2.2x1.3

No. and Description of Furnaces in each boiler

3 Fox's

Material

slut

Outside diameter

3.7

Length of plain part

top 1.7

bottom 1.32

Thickness of plates

crown 1.7

Description of longitudinal joint

weld

No. of strengthening rings

2

Working pressure of furnace by the rules

180

Combustion chamber plates: Material

slut

Thickness: Sides

2.1/32

Back

9.1/16

Top

Pitch of stays to ditto: Sides

9.3/4x8

Back

7.2x8.4

Top

9x9

If stays are fitted with nuts or riveted heads

Yes

Material of stays

slut

Diameter at smallest part

1.4

Area supported by each stay

7.0

Working pressure by rules

187

End plates in steam space:

Material

slut

Thickness

1.8

Pitch of stays

17.2x17.4

How are stays secured

D. R. L.

Working pressure by rules

180 lb

Material of Front plates at bottom

slut

Thickness

1.3/16

Area supported by each stay

3.10

Working pressure by rules

197

Material of Lower back plate

slut

Thickness

1.3/16

Material of Lower back plate

slut

Thickness

3/4

Greatest pitch of stays

14.5

Working pressure of plate by rules

—

Diameter of tubes

3.1/4

Pitch of tubes

4.5

Material of tube plates

slut

Thickness: Front

3.1/4

Back

3.1/4

Pitch across wide water spaces

14.5

Working pressures by rules

250 lb

Girders to Chamber tops: Material

slut

Depth and

thickness of girder at centre

7.3/4x1.3/8x2

Length as per rule

Working pressure by rules

177 lb

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

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

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Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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Working pressure of end plates

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Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. Description *Iron* When made Where fixed  
 Made at By whom made  
 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 Rivets  
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint 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:— *Two top end bolts, 2 bottom end bolts, set of coupling bolts, two main bearing bolts, assorted iron, fud & bridge valves, etc.*

The foregoing is a correct description,

Manufacturer.

*For Fleming & Ferguson, Ltd.*

Secretary.

Dates of Survey while building  
 During progress of work in shops— *1906: Mar 20 Apr 24 May 9 15 June 19 July 12 21 Aug 24 30 Sep 10*  
 During erection on board vessel— *19 27 Oct 1 18 19 Nov 1 10 12 14*  
 Total No. of visits *19*

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *24/8/06* Slides *24/8/06* Covers *24/8/06* Pistons *24/8/06* Rods *24/8/06*  
 Connecting rods *24/8/06* Crank shaft *20/3/06* Thrust shaft *9/5/06* Tunnel shafts *15/5/06* Screw shaft *1/10/06* Propeller *1/10/06*  
 Stern tube *1/10/06* Steam pipes tested *6/11/06* Engine and boiler seatings *1/11/06* Engines holding down bolts *12/11/06*  
 Completion of pumping arrangements *14/11/06* Boilers fixed *14/11/06* Engines tried under steam *14/11/06*  
 Main boiler safety valves adjusted *14/11/06* Thickness of adjusting washers *1/4 Bk. F 5/16 A 1/4 Pt. Bk. F 3/16 A 1/4*  
 Material of Crank shaft *slut* Identification Mark on Do. *HCS* Material of Thrust shaft *slut* Identification Mark on Do. *HCS*  
 Material of Tunnel shafts *—* Identification Marks on Do. *HCS* Material of Screw shafts *slut* Identification Marks on Do. *HCS*  
 Material of Steam Pipes *Copper* Test pressure *350 lb*

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

*These engines & boilers have been constructed under special survey & are of good materials & workmanship. They have been satisfactorily fitted on board.*

*This vessel is in my opinion eligible for notation *L.M.C. 11.06* in the Register Book.*

*The boilers are designed for a working pressure of 175 lb but are only to be used for 160 lb. The N.H.P. & the rule signs of shafting given above are based on 160 lb pressure.*

It is submitted that this vessel is eligible for the RECORD *L.M.C. 11.06*

*JSM 1/10/07*

*Note WP 160 lb*

The amount of Entry Fee. £ *2* : : When applied for, *31 DEC 1906*  
 Special .. £ *28* : *14* :  
 Donkey Boiler Fee .. £ : : When received, *4.1.07*  
 Travelling Expenses (if any) £ : : *19*

Committee's Minute

Assigned

*+ L.M.C. 11.06*

MACHINERY CERTIFICATE WRITTEN 1-1-07

*H. Sandhu-Smith*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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