

## REPORT ON MACHINERY.

No. 21645

THUR. 7 APR 1904

Port of Glasgow

Received at London Office

10

No. in Survey held at  
Reg. Book.

Glasgow

Date, first Survey 20th May 03

Last Survey 24/3

1904

(Number of Visits 22)

Tons { Gross 3100  
Net 2035

When built 1903-1904

42 Sup. on the

Master James McDowell

Built at Port Glasgow

By whom built

A. Rodgers &amp; Co.

when made 1903

Engines made at

Glasgow

By whom made

A. Rodgers &amp; Co.

when made 1903

Boilers made at

Glasgow

By whom made

Ross &amp; Duncan

Port belonging to

Glasgow

Registered Horse Power

Owners

Hope &amp; Sloan

Is Electric Light fitted

No

Nom. Horse Power as per Section 28

275 275

Is Refrigerating Machinery fitted

No

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

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 24-40-65

Length of Stroke 42

Revs. per minute 100

light ship

as per rule 1371

Material of screw shaft

Dia. of Screw shaft

as fitted 13 1/2

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

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

Length of stern bush 4-4 1/2

Dia. of Tunnel shaft

as per rule 11 3/4

Dia. of Crank shaft journals

as per rule 12

Dia. of Crank pin 12 1/2

Size of Crank webs 8

Dia. of thrust shaft under

collars 12 1/2

Dia. of screw 16-0

Pitch of screw 16-0

No. of blades 4

State whether moveable

No

Total surface 76

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 2

Sizes of Pumps 6 x 4 x 6 D.

8 x 8 x 10 D.

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

In Engine Room 3-3 1/2

Tunnel 1-2 1/2

In Holds, &amp;c. 2-3

in each hold

No. of bilge injections 1

sizes 6

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

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Before launch

the screw shaft tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Top platform

4141

Is forced draft fitted

No

## BOILERS, &amp;c.—

(Letter for record (S))

Total Heating Surface of Boilers

4141

Is forced draft fitted

No

No. and Description of Boilers

2 Single-ended Mult.

Working Pressure 160 lbs

Tested by hydraulic pressure to 320 lbs.

Date of test 21-26-03

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

61.84

No. and Description of safety valves to

each boiler 2 Lockburn

Area of each valve

7.56

Pressure to which they are adjusted

165 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

abt. 18"

Mean dia. of boilers

15.3

Length

10' 6"

Material of shell plates

steel

Thickness 1 5/32

Range of tensile strength

27-32

Are they welded or flanged

no

Descrip. of riveting: cir. seams

L. D. R.

long. seams

D. B. I. R.

Diameter of rivet holes in long. seams

1 3/16

Pitch of rivets

8"

Lap of plates or width of butt straps

1' 5 1/2"

Per centages of strength of longitudinal joint

rivets 78.4

plate 85.3

Working pressure of shell by rules

141 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

4 x 1 5/32

No. and Description of Furnaces in each boiler

3 Doughtons

Material

steel

Outside diameter

4' 1 1/4"

Length of plain part

top 6-7

Thickness of plates

crown 14

Description of longitudinal joint

weld.

No. of strengthening rings

✓

Working pressure of furnace by the rules

166

Combustion chamber plates: Material

steel

Thickness: Sides

19 3/32

Back

19 3/32

Top

19 3/32

Bottom

5 3/8"

Pitch of stays to ditto: Sides

8 1/2 x 8 1/2

Back

8 1/2 x 8 1/2

Top

8 1/2 x 8 1/2

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

160 lbs

End plates in steam space:

Material of stays

steel

Diameter at smallest part

1 1/4"

Area supported by each stay

44.3

Working pressure by rules

164 lbs

Material of stays

steel

Material of stays

steel

Thickness

1 1/8"

Pitch of stays

1 1/2 x 1 1/2

How are stays secured

nuts

Diameter at smallest part

6 1/4"

Area supported by each stay

36.3

Working pressure by rules

148 lbs

Material of Front plates at bottom

steel

Thickness

3 3/4"

Material of Lower back plate

steel

Thickness

1 1/8"

Greatest pitch of stays

1 1/2 x 1 1/2

Working pressure of plate by rules

220 lbs

Diameter of tubes

3 1/2"

Pitch of tubes

4 5/8 x 4 3/4"

Material of tube plates

steel

Thickness: Front

1 3/4 3/4"

Back

3 3/4"

Mean pitch of stays

10' 9"

Pitch across wide water spaces

14"

Working pressures by rules

166 + 169 lbs

Girders to Chamber tops: Material

iron

Depth and

thickness of girder at centre

4" x 2"

Length as per rule

29' 6"

Distance apart

8 3/4"

Number and pitch of Stays in each

2-8 1/2"

Working pressure by rules

161 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

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

End plates: Thickness

How stayed

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Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

End plates: Thickness

How stayed



DONKEY BOILER— No. 1 Description Multitubular  
Made at Glasgow By whom made Ewing & Lawson When made 1874 Where fixed Main Deck  
Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 6027 Fire grate area 25<sup>4</sup>/<sub>16</sub> Description of safety valves Spring loaded  
No. of safety valves 2 Area of each 4.9<sup>4</sup>/<sub>16</sub> Pressure to which they are adjusted 83<sup>1</sup>/<sub>2</sub> lb If fitted with easing gear Yes If steam from main boilers can  
enter the donkey boiler No Dia. of donkey boiler 8'-3" Length 8'-3" Material of shell plates steel Thickness 15<sup>3</sup>/<sub>32</sub> Range of tensile  
strength 27 tons Descrip. of riveting long. seams T. R. Lap Dia. of rivet holes 1<sup>3</sup>/<sub>16</sub>" Whether punched or drilled drilled Pitch of rivets 3<sup>1</sup>/<sub>2</sub>"  
Lap of plating 6" Per centage of strength of joint Rivets 130 Plates 76.7 Thickness of shell crown plates — Radius of do. — No. of Stays to do. —  
Dia. of stays. — Diameter of furnace Top 30<sup>1</sup>/<sub>2</sub>" Bottom — Length of furnace 87" Thickness of furnace plates 39<sup>1</sup>/<sub>16</sub>" Description of  
joint weld Thickness of furnace crown plates — Stayed by — Working pressure of shell by rules 83<sup>1</sup>/<sub>2</sub> lb  
Working pressure of furnace by rules 83<sup>1</sup>/<sub>2</sub> lb Diameter of uptake — Thickness of uptake plates — Thickness of water tubes —

The foregoing is a correct description,  
 J. A. Rodger & Co. Manufacturers.  
 E. Hall-Brown.

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

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

In our opinion this vessel is eligible for notation ~~in~~ L.M.C.  
3.04 in the Register Book.

Donkey Brother killed 14/1/02, standing in shop since then.

It is submitted that  
this vessel is eligible for  
THE RECORD. ∴ LMC. 3.074

Recd.  
7.4.04

The amount of Entry Fee . . . . .	£	2	:	:	When applied for,
Special . . . . .	£	23	:	16	2' 12' . . . 1903.
Donkey Boiler Fee . . . . .	£	:	:	:	When received,
Travelling Expenses (if any) £	:	:	:	:	22' 12' . . . 1903.

*Assigned*

-1- d. M. b. 3. OH

H Gardner-Smith, A. J. Bassett,  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE  
WRITTEN. 8.4.04

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