

## REPORT ON MACHINERY.

No. 24612

Port of

Glasgow

Received at London Office

1005 NOV 1906

19

No. in Survey held at  
Reg. Book. on the

Glasgow

Date, first Survey 28 Feb

Last Survey 30 Oct 1906

S.S. "BLOEMFONTEIN."

(Number of Visits)

Master

Built at

Dumbarton

By whom built

A. McMillan &amp; Son

Tons

Gross

Net

When built

1906

Engines made at

Glasgow

By whom made

Dunsmuir &amp; Jackson Ltd

when made

1906

Boilers made at

do

By whom made

do

do

when made

1906

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28 478

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

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

Triple expansion, - screw

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

16", 44", 73"

Length of Stroke

48"

Revs. per minute

74

Dia. of Screw shaft

as per rule 14.43

Material of

iron

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

5' 0 1/2"

Dia. of Tunnel shaft

as per rule 13.12

Dia. of Crank shaft journals

as per rule 13.77

Dia. of Crank pin

14 1/4"

Size of Crank webs

9 1/4" tk

Dia. of thrust shaft under

collars

14 1/4"

Dia. of screw

17.3"

Pitch of Screw

17.3"

No. of Blades

4

State whether moveable

yes

Total surface

92 sq. ft.

No. of Feed pumps

2

Diameter of ditto

4"

Stroke

26"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

26"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

5

Sizes of Pumps

Weirs 8 x 10 x 71 - 8 x 5 1/2 x 8

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

In Engine Room

Four 3 1/2" dia.

In Holds, &amp;c.

Two 3 1/2" dia. in each Nos 1,

2 &amp; 3 holds.

Tunnel &amp; after hold wells 3 1/2" dia.

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

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

none

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

9/8/06

of Stern Tube

9/8/06

Screw shaft and Propeller

9/8/06

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 Calderbank &amp; D. Colville &amp; Sons

Total Heating Surface of Boilers

6742

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

9/16/10/06

No. of Certificate

8426 &amp; 8284

Can each boiler be worked separately

yes

Area of fire grate in each boiler

64.6

No. and Description of Safety Valves to

each boiler

2 Patent spring

Area of each valve

9.62

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

12"

Mean dia. of boilers

16" 6"

Length

12' 0"

Material of shell plates

steel

Thickness

1 1/2"

Range of tensile strength

28 to 32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

double

long. seams

treble

Diameter of rivet holes in long. seams

1 3/8"

Pitch of rivets

9 1/2"

Lap of plates on width of butt straps

20"

Per centages of strength of longitudinal joint

rivets 86.5

plate 85.4

Working pressure of shell by rules

183 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

McNeil's

No. and Description of Furnaces in each boiler

3 Deighton

Material steel

Outside diameter

4' 3"

Length of plain part

top } ✓

Thickness of plates

crown } 19"

bottom } 32"

Description of longitudinal joint

welded

No. of strengthening rings

✓

Working pressure of furnace by the rules

185

Combustion chamber plates: Material

steel

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Bottom

15/16"

Pitch of stays to ditto: Sides

8" x 9"

Back

8" x 9 1/2"

Top

8" x 9"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

185 lbs

Material of stays

steel

Diameter at smallest part

1.76"

Area supported by each stay

70 1/2"

Working pressure by rules

194 lbs

End plates in steam space:

Material

1 5/32"

Thickness

steel

Pitch of stays

18" x 18"

How are stays secured

nuts

Working pressure by rules

nuts

Material of stays

steel

Diameter

Area

at smallest part

6.33"

Area supported by each stay

324"

Working pressure by rules

185

Material of Front plates at bottom

steel

Thickness

4/8"

Material of Lower back plate

steel

Thickness

13/16"

Greatest pitch of stays

13 1/2" x 8"

Working pressure of plate by rules

3/4

Material of tube plates

steel

Diameter of tubes

2 1/2"

Pitch of tubes

3 5/8" x 3 5/8"

Material of tube plates

steel

Thickness: Front

3 1/2"

Back

1 1/6"

Mean pitch of stays

abt 8 1/2"

Pitch across wide water spaces

13 1/2"

Working pressures by rules

184 lbs

Girders to Chamber tops: Material

iron

thickness of girder at centre

9 1/2" x 2-1"

Length as per rule

34 3/4"

Distance apart

9"

Number and pitch of stays in each

3-8"

Working pressure by rules

194 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

✓

holes



VERTICAL DONKEY BOILER—

Manufacturers of Steel

See report attached.

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  
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 & two bottom end connecting rod bolts, two main bearing bolts, one set of coupling bolts, etc. & one set of feed & bilge pump valves.

The foregoing is a correct description,

For DUNSMUIR & JACKSON, Limited.

James Fletcher

Manufacturer.

Dates of Survey while building  
During progress of work in shops— 1906. Feb 28. Mar 6. June 19. July 2. 12. 20. 28. Aug 1. 3. 8. 9. 16. Sep 13. 19. 20.  
During erection on board vessel— 27. Oct 1. 12. 15. 22. 29. 30.  
Total No. of visits— 22.

Is the approved plan of main boiler forwarded herewith yes.

Auxiliary donkey " " " yes.

Dates of Examination of principal parts—Cylinders Various Slides do Covers do Pistons do Rods do  
Connecting rods do Crank shaft 16/8/06 Thrust shaft 1/8/06 Tunnel shafts 28/7+3/8/06 Screw shaft 28/7/06 Propeller 28/7/06  
Stern tube 28/7/06 Steam pipes tested 27/9/06 } Engine and boiler seatings 23/10/06 Engines holding down bolts 29/10/06.  
Completion of pumping arrangements 29/10/06 Boilers fixed 29/10/06 Engines tried under steam 29/10/06.  
Main boiler safety valves adjusted 29/10/06 Thickness of adjusting washers P.B. -  $7\frac{3}{8}$ ,  $5\frac{7}{16}$  - S.B. -  $7\frac{3}{8}$ ,  $5\frac{7}{16}$  - S.B. -  $5\frac{7}{16}$  + aft  $\frac{3}{8}$ .  
Material of Crank shaft iron Identification Mark on Do. J.W.D. Material of Thrust shaft steel Identification Mark on Do. J.W.D.  
Material of Tunnel shafts steel Identification Marks on Do. J.W.D. Material of Screw shafts iron Identification Marks on Do. J.W.D.  
Material of Steam Pipes Iron Test pressure 540 lbs. " "

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been constructed under Special Survey, the materials & workmanship are of good quality, it has been securely fitted on board, tried under steam, & found satisfactory. In my opinion it is eligible to be classed in the Register Book with the record of L.M.C. 10.06.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 10.06. F.D. ELEC. LIGHT.

14.11.06

The amount of Entry Fee. £ 3 : : When applied for. 12 NOV 1906  
Special £ 43. 18 : :  
Donkey Boiler Fee £ : : : When received. 14.11.06  
Travelling Expenses (if any) £ : : : 1906

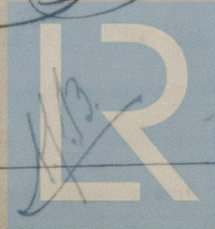
Committee's Minute

Assigned

Glasgow 12 NOV 1906

+ L.M.C. 10.06

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



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MACHINERY CERTIFICATE  
WRITTEN 12 NOV 1906