

Port of

Glasgow

Received at London Office

19

No. in Survey held at

Glasgow

Date, first Survey

29 Nov 02

Last Survey

20 May 1905

Reg. Book.

on the

Steel screw steamer "Stock Force"

(Number of Visits 21)

Gross

Net

Master

Built at

Workington

By whom built

R. Williamson &amp; Son (No 186)

When built

1905

Engines made at

Glasgow

By whom made

Messrs Ross &amp; Duncan (No 638)

when made

1905

Boilers made at

Glasgow

By whom made

as

when made

1905

Registered Horse Power

Owners The West Coast Shipping Co. Ltd.

Port belonging to

Whitehaven

Nom. Horse Power as per Section 28

90

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

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

Triple Expansion

No. of Cylinders

Three

No. of Cranks

Three

Dia. of Cylinders

14:22:34

Length of Stroke

27

Revs. per minute

90

Dia. of Screw shaft

as per rule

7.9

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

Yes

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

2' 8"

Dia. of Tunnel shaft

as per rule

6.8

Dia. of Crank shaft journals

as per rule

7.1

Dia. of Crank pin

7 1/4

Size of Crank webs

4 1/2 x 10 1/2

Dia. of thrust shaft under

collars

Dia. of screw

10' 0"

Pitch of screw

13' 0"

No. of blades

4

State whether moveable

No

Total surface

38'

No. of Feed pumps

Two

Diameter of ditto

2 1/2"

Stroke

13 1/2"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

2 3/4"

Stroke

13 1/2"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Three

Sizes of Pumps

6 x 4 x 6 duplex feed

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

In Engine Room

One 2 1/4" &amp; one 2"

3 x 2 x 3 duplex In Holds, &amp;c.

Two 2"

No. of bilge injections

1

sizes

3 1/2"

Connected to condenser, or to circulating pump

Yes

Is a separate donkey suction fitted in Engine room &amp; size

Yes 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

Larger valves: smaller 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

Forward Bilge Suctions

How are they protected

Wooden 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

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

Near vessel

Is the screw shaft tunnel watertight

Mach. apt

Is it fitted with a watertight door

Yes

worked from

## BOILERS, &amp;c.—

(Letter for record S)

Total Heating Surface of Boilers

1655

Is forced draft fitted

No

No. and Description of Boilers

One single ended

Working Pressure

160

Tested by hydraulic pressure to

320

Date of test

11.4.05

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

53 1/2

No. and Description of safety valves to

each boiler

Two direct spring

Area of each valve

5.93

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

2' 10"

Mean dia. of boilers

13' 6"

Length

10' 0"

Material of shell plates

Steel

Thickness

1 1/32

Range of tensile strength

28,632

Are they welded or flanged

No

Descrip. of riveting: cir. seams

double riv.

long. seams

Ink. no. straps

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

6 3/4"

Lap of plates or width of butt straps

1' 5 1/2"

1" thick

4/8 outside

Per centages of strength of longitudinal joint

rivets

83.3

Working pressure of shell by rules

162

Size of manhole in shell

12 x 16

Size of compensating ring

4 x 1 1/32

No. and Description of Furnaces in each boiler

Three, plain.

Material

Steel

Outside diameter

42"

Length of plain part

top

bottom

Thickness of plates

crown

2 3/32

Description of longitudinal joint

Welded

No. of strengthening rings

9 1/2

Top

Bottom

Working pressure of furnace by the rules

170

Combustion chamber plates: Material

Steel

Thickness: Sides

19/32

Back

9/16

Working pressure by rules

160

Pitch of stays to ditto: Sides

9 x 8 1/4"

Back

9 x 8 1/4"

Top

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

160

End plates in steam space:

Material of stays

Steel

Diameter at smallest part

1 1/32"

Area supported by each stay

1 1/8"

How are stays secured

Double nuts

Working pressure by rules

160

Material of stays

Steel

Material

Steel

Thickness

1 1/32"

Pitch of stays

18 1/2 x 17

Working pressure by rules

164

Material of Front plates at bottom

Steel

Diameter at smallest part

5.18

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

1 1/16"

Greatest pitch of stays

As approved

Working pressure of plate by rules

160

Mean pitch of stays

12"

Diameter of tubes

3 1/2"

Pitch of tubes

4 5/8" x 4 1/2"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

23/32"

Girders to Chamber tops: Material

Iron

Pitch across wide water spaces

13 1/2"

Working pressures by rules

160 lbs

Girders to Chamber tops: Material

Iron

Depth and

thickness of girder at centre

4" x 2"

Length as per rule

30"

Distance apart

8' 6"

Working pressure by rules

169

Superheater or Steam chest; how connected to boiler

Yes

Can the superheater be shut off and the boiler worked

Yes

Description of longitudinal joint

Diam. of rivet

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

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

Working pressure of end plates

Area of safety valves to superheater



**DONKEY BOILER—** No. 1 Description Vertical, Cross-tub.  
Made at Glasgow By whom made Wm. Marshall & Graham When made 1905 Where fixed Shetland  
Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 7504 Fire grate area 12 1/2 Description of safety valves Direct Spring  
No. of safety valves 1 Area of each 5.94 Pressure to which they are adjusted 85 lb If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 57 1/4" Length 9' 3" Material of shell plates Steel Thickness 3/8" Range of tensile strength 27632 Descrip. of riveting long. seams Double riv. lap Dia. of rivet holes 13/16 Whether punched or drilled Drilled Pitch of rivets 2 1/2"  
Lap of plating 4 1/4" Per centage of strength of joint 90.5 Thickness of shell crown plates 1/2" Radius of do. 5' 6" No. of Stays to do. Four  
Dia. of stays Iron 3/4" Diameter of furnace Top 48 Bottom 52 Length of furnace 58" Thickness of furnace plates 1/2" Description of joint Welded Thickness of furnace crown plates 1/2" Stayed by Same as crown Working pressure of shell by rules 94 1/2  
Working pressure of furnace by rules 92 1/2 lb Diameter of uptake 14 1/8" Thickness of uptake plates 1/16" Thickness of water tubes 3/8"

**SPARE GEAR.** State the articles supplied:— Two main bearing bolts. Two top end & two bottom end con. rod bolts. Set coupling bolts. Red & blue pump valves. Assorted iron & brass bolts. 35 Fire bars. Air & circulating pump valves.

The foregoing is a correct description,  
Wm. Marshall & Graham Manufacturer.

Dates of Survey while building { During progress of work in shops— 1904: Nov 29 Dec 22 31 1905: Jan 11 12 24 31 Feb 11 14 27 Mar 13 16 28 Apr 8 11  
During erection on board vessel— 1905: May 8 16 17 18 19 20  
Total No. of visits 21 Is the approved plan of main boiler forwarded herewith Yes  
" " " donkey " " " Yes

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
These engines & boilers have been constructed & fitted under Special Survey in accordance with the plans & requirements of the Rules. The workmanship is good.  
The Electric Lighting report will be forwarded soon.  
The machinery in my opinion renders the vessel eligible for the record + M.C. 5.05.

It is submitted that  
this vessel is eligible for  
**THE RECORD + L.M.C. 5.05. ELEC. LIGHT**

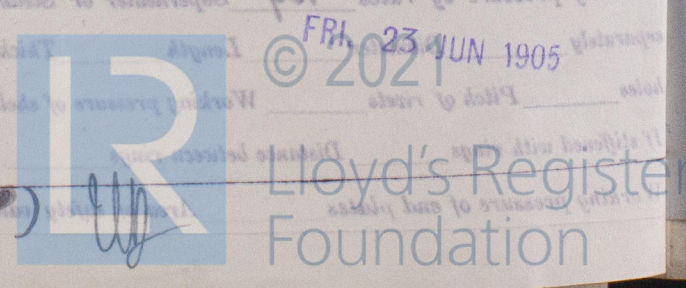
J.M. P.M.  
21.6.05.

The amount of Entry Fee... £ 1 : 0 : When applied for, 19 JUN 1905  
Special ... £ 13 : 10 :  
Donkey Boiler Fee ... £ 1 :  
Travelling Expenses (if any) £ 0 : When received, 22 JUN 1905

Committee's Minute Glasgow 18 JUN 1905

Assigned + L.M.C. 5.05.  
(Subject to classification of hull)  
When fee is paid

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



Certificate (if required) to be sent to