

## REPORT ON MACHINERY.

No. 21668

Port of

Sunderland

JUES. 16 FEB 1904

Received at London Office 19

No. in Survey held at

Sunderland

Date, first Survey

8th July '03

Last Survey

28 Jan 1904

Reg. Book.

on the

Steel Screw Steamer Saint Robert

(Number of Visits)

Tons

Gross 3749.  
Net 2394

When built 1904

Master

Caffarata

Built at

Sunderland

By whom built

W. Pickering &amp; Son

Engines made at

Sunderland

By whom made

George Clark (Limited)

when made 1904

Boilers made at

Sunderland

By whom made

George Clark (Limited)

when made 1904

Registered Horse Power

Owners (Rankin, Gilmour &amp; Co)

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

343

Is Refrigerating Machinery fitted

no

Is Electric Light fitted

no

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

Triple Expansion

No. of Cylinders

Three

No. of Cranks

Dia. of Cylinders

24-40-64

Length of Stroke

45

Revs. per minute

65

Dia. of Screw shaft

as per rule 13.76  
as fitted 13.11

Material of screw shaft

Steel fast

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

Dia. of Tunnel shaft

as per rule 12.14  
as fitted 12.14

Dia. of Crank shaft journals

as per rule 12.75  
as fitted 12.34

Dia. of Crank pin

2 3/4

Size of Crank webs

24 1/2 x 8 1/2

collars

13

Dia. of screw

1 1/4

Pitch of screw

1 1/4

No. of blades

4

State whether moveable

yes

Total surface

82

No. of Feed pumps

Two

Diameter of ditto

3 1/2

Stroke

26

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

Two

Diameter of ditto

4 1/4

Stroke

26

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

Two

Sizes of Pumps

7 1/2 x 9 x 10

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

In Engine Room

four 3 1/2

In Holds, &amp;c.

forehold Two 3 1/2, Main Hold Two 3 1/2

deep Tank

Two 2 3/4

After Hold

Two 3 1/2

Aftermost Hold

Two 3 1/2

after well one 2 3/4

No. of bilge injections

one

sizes 5 1/2

Connected to condenser, or to circulating pump

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

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are they each fitted with a discharge valve always accessible on the plating of the vessel

What pipes are carried through the bunkers

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

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

Is the screw shaft tunnel watertight

Is it fitted with a watertight door

BOILERS, &amp;c.— (Letter for record (7°) Total Heating Surface of Boilers

No. and Description of Boilers

Date of test

each boiler

Smallest distance between boilers or uptakes and bunkers or woodwork

Thickness

Diameter of rivet holes in long. seams

Pitch of rivets

Per centages of strength of longitudinal joint

Size of compensating ring

Length of plain part

Working pressure of furnace by the rules

Pitch of stays to ditto

Material of stays

Material

Diameter at smallest part

Pitch of stays

Diameter at smallest part

Thickness

Diameter of tubes

Pitch of tubes

Material of tube plates

Pitch across wide water spaces

thickness of girder at centre

Working pressure by rules

Superheater or Steam chest; how connected to boiler

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

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

W689-0262

Lloyd's Register  
Foundation



**DONKEY BOILER—** No. *one* Description *Cylindrical single ended with two plain furnaces*  
 Made at *Sunderland* By whom made *Wm. McLeod & Piddock* When made *30/9/03* Where fixed *on deck*  
 Working pressure *110 lb* tested by hydraulic pressure to *220 lb* No. of Certificate *2196* Fire grate area *32 sq ft* Description of safety valves *direct spring*  
 No. of safety valves *two* Area of each *4.91* Pressure to which they are adjusted *115 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *10-3* Length *9-6* Material of shell plates *steel* Thickness *23/32* Range of tensile strength *2827/32* Descrip. of riveting long. seams *Lap - double riveted* Dia. of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *3.285*  
 Lap of plating *6 1/4* Per centage of strength of joint Rivets *44.5* Thickness of shell *end* plates *23/32* Radius of *top* *14 x 14* No. of Stays to do. *—*  
 Dia. of stays. *2* Diameter of furnace *Top 36 1/2 Bottom 34* Length of furnace *8-4* Thickness of furnace plates *14/32* Description of joint *Welded* Thickness of *com. etc.* furnace *cross* plates *14/32* Stayed by *1 1/2 over stays* Working pressure of shell by rules *113.2 lb*  
 Working pressure of furnace by rules *116.5 lb* Diameter of *uptake* *3 1/4* Thickness of *uptake* plates *F 23/32 B 7/8* Thickness of *water* tubes *1/2*

**SPARE GEAR.** State the articles supplied:— *2 connecting rod bottom end bolts + nuts, 2 piston rod bolts + nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed + bilge pump valves, 1 set each piston rings + mounted bolts + nuts + keys - 1 propeller + shaft, 1 large 1 small half eccentric straps, air pump rod, 1 bottom end brass, 2 safety valve springs, 12 boiler + 12 condenser tubes, 12 piston bolts -*

The foregoing is a correct description,  
**FOR GEORGE CLARK LIMITED.**  
*James C. Clark.* Manufacturer of *Main Engines + Boilers only*

Dates of Survey { During progress of work in shops - - 1903- July 8.13.30 Aug 12.26.27 Sep 1.3.5.21.22.25.30 Oct 1.7.12.15.20.23.29  
 while building { During erection on board vessel - - Nov. 3.5.6.13.17.18.24.26.30 Dec. 2.17.19.27.29.30 - 1904- Jan 18.25.28  
 Total No. of s *58* Is the approved plan of main boiler forwarded herewith *yes.*  
 " " " donkey " " " *yes.*

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

*The Machinery of this vessel has been built under special survey the material + workmanship sound + good, the Boilers and steam pipes tested to double the working pressure by hydraulic pressure, the Engines worked well under steam and the safety Valves were adjusted to the working pressure + fitted with easing gear -*

*This vessel is eligible in my opinion to have the notation of **\*LMC 104** in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD **\*LMC. 1.04. F.D.***

The amount of Entry Fee. £ *3* : : : When applied for, *10.2.04*  
 Special .. £ *37* : *3* : : *16.2.04*  
 Donkey Boiler Fee .. £ : : : When received, *24/2/04*  
 Travelling Expenses (if any) £ : : : *16.2.04*

*Wm. McLeod*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 19 FEB 1904**  
 Assigned *\*LMC 1.04 7D*