

# REPORT ON MACHINERY.

No. 14658

Port of

Sunderland

No. in Survey held at

Sunderland

Date, first Survey

11<sup>th</sup> Sept. 1885 Last Survey 26<sup>th</sup> June 1888

Reg. Book.

on the

S. S. Kathleen

Master J. Carter

Built at

Sunderland

By whom built

Osbourne, Graham & Co

Engines made at

Sunderland

By whom made

G. Clark

Boilers made at

Do

By whom made

Do

Registered Horse Power

160

Owners

Thomas Bell

When built

1888

when made

1888

Port belonging to Newcastle

## ENGINES, &c.

Description of Engines

C. J. D. A. Triple expansion, 3 cyl. & 3 Cranks

Diameter of Cylinders

20.33 x 5.4

Length of Stroke

36

No. of Rev. per minute

65

Point of Cut off, High Pressure 1/8 stroke Low Pressure 1/4 stroke

Diameter of Screw shaft

10.4

Diam. of Tunnel shaft

9.4

Diam. of Crank shaft journals

10.4

Diam. of Crank pin 10.4 size of Crank webs 20.3 x 7.4

Diameter of screw

14.0

Pitch of screw

16.3

No. of blades

4

state whether moveable no total surface 58.2 sq. ft

No. of Feed pumps

2

diameter of ditto

3

Stroke

18

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

diameter of ditto

3.2

Stroke

18

Can one be overhauled while the other is at work

yes

Where do they pump from

The bilges of the engine room, aft well, and ballast tanks.

No. of Donkey Engines

2

Size of Pumps

8.4 x 10.4 & 2.2 x 6.4

Where do they pump from The large one from the bilge

Are all the bilge suction pipes fitted with roses

yes

Are the roses always accessible

yes

Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections

1

and sizes

4 diam

Are they connected to condenser, or to circulating pump

to Circulating pump

How are the pumps worked

by levers from the pistons of Crosshead of after engine.

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

yes

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

yes

Are they Valves or Cocks

both

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

yes

Are the discharge pipes above or below the deep water line

above

What pipes are carried through the bunkers

none

Are the blow off cocks fitted with a spigot and brass covering plate

yes

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

yes

How are they protected

yes

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

yes

Is the screw shaft tunnel watertight

yes

and fitted with a sluice door

yes

worked from top platform of engine room

## BOILERS, &c.

Number of Boilers

2

Description

Cyl. & Multitubular

Whether Steel or Iron

steel

Working Pressure

150 lbs

Tested by hydraulic pressure to

300 lbs

Date of test

May 16<sup>th</sup> 1888

Description of superheating apparatus or steam chest

none

Can each boiler be worked separately

yes

Can the superheater be shut off and the boiler worked separately

no superheater.

No. of square feet of fire grate surface in each boiler

40.2

Description of safety valves

spring

No. to each boiler

2

Area of each valve

4.6

Are they fitted with easing gear

yes

No. of safety valves to superheater

1

area of each valve

1

Are they fitted with easing gear

yes

Smallest distance between boilers and bunkers or woodwork

12

Length of boilers

9.9

Description of riveting of shell long. seams

treble riv butt

circum. seams

double riv lap

Thickness of shell plates

1 1/2

Diameter of rivet holes

1.52

whether punched or drilled

drilled

pitch of rivets

7 1/2 x 3 3/4

Lap of plating

17 3/4 straps

Percentage of strength of longitudinal joint

84.6

working pressure of shell by rules

159 lbs

size of manholes in shell

16 x 13

Size of compensating rings

7 3/4 x 1 1/2

length, top

6.8

bottom

6.8

thickness of plates

1 1/2

Description of joint

Corrugated

if rings are fitted no

Pitch of stays to ditto, sides

8 x 8

back

8 x 8

top

8 x 8

working pressure of furnace by the rules

157 lbs

combustion chamber plating, thickness, sides

9/16

back

9/16

top

9/16

Outside diameter

3.7

length, top

6.8

bottom

6.8

thickness of plates

1 1/2

Description of joint

Corrugated

if rings are fitted no

Greatest length between rings

15 7/8

working pressure of furnace by the rules

157 lbs

combustion chamber plating, thickness, sides

9/16

back

9/16

top

9/16

Pitch of stays to ditto, sides

8 x 8

back

8 x 8

top

8 x 8

working pressure of furnace by the rules

157 lbs

combustion chamber plating, thickness, sides

9/16

back

9/16

top

9/16

rules

157 lbs

Diameter of stays at smallest part

1 1/2

working pressure of ditto by rules

165 lbs

end plates in steam space, thickness

15 1/2

32

Description of joint

Corrugated

if rings are fitted no

Pitch of stays to ditto

15 7/8

working pressure of furnace by the rules

157 lbs

combustion chamber plating, thickness, sides

9/16

back

9/16

top

9/16

smallest part

2 3/4 diam

working pressure by rules

170 lbs

Front plates at bottom, thickness

1/16

Back plates, thickness

3/4

thickness of tube

3/4

Greatest pitch of stays

12 x 8

working pressure by rules

150 lbs

Diameter of tubes

3 1/2

pitch of tubes

5 1/2 x 4 3/4

thickness of tube

3/4

plates, front

7/8

back

3/4

length

10 1/4 x 9 1/4

width of water spaces

17 1/2 x 1 1/4

diam. of rivet holes

1/4

Diameter of Superheater or Steam chest

none

working pressure of shell by rules

150 lbs

diameter of flue

10 1/4

thickness of plates

1/16

Description of longitudinal joint

Corrugated

if stiffened with rings

yes

Pitch of rivets

10 1/4

working pressure of shell by rules

150 lbs

diameter of flue

10 1/4

thickness of plates

1/16

Description of longitudinal joint

Corrugated

if stiffened with rings

yes

Distance between rings

15 7/8

working pressure by rules

150 lbs

end plates of superheater, or steam chest; thickness

15 1/2

32

how stayed

yes

Superheater or steam chest; how connected to boiler

yes

yes

yes

yes

yes

yes



DONKEY BOILER— Description *Vertical, Cyl. 3 cross tubes.*  
Made at *Stockton* by whom made *Thos. Sudron & Co.* when made *16.2.88* where fixed *in stockhole*  
Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *1525* fire grate area *20 sq. ft.* description of safety  
valves *spring* No. of safety valves *2* area of each *7 in.* if fitted with easing gear *yes* if steam from main boilers can  
enter the donkey boiler *no* diameter of donkey boiler *6.0* length *13.6* description of riveting *double rivet lap*  
Thickness of shell plates *15/32* diameter of rivet holes *13/16* whether punched or drilled *punched* pitch of rivets *2 3/4* lap of plating *4 1/2*  
per centage of strength of joint *70* thickness of crown plates *15/32* stayed by *6 stays 1 1/2 dia.*  
Diameter of furnace, top *4.10* bottom *5.4 1/2* length of furnace *5.4* thickness of plates *17/32* description of joint *single rivet lap*  
Thickness of furnace crown plates *17/32* stayed by *6 stays 1 1/2 dia.* working pressure of shell by rules *70 lbs*  
Working pressure of furnace by rules *69.4 lbs* diameter of uptake *12* thickness of plates *3/8* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *2 Main bearing bolts & nuts. 1 set of Coupling bolts  
and nuts, 1 set of Connecting rod bolts & nuts. 1 set of feed and bilge  
pump valves, bolts nuts and rim, assorted.*

The foregoing is a correct description,

*Wm. G. Clark* Manufacturer. *Except of the Donkey Boiler.*  
*Henry Clark*

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

*The Machinery of this vessel was constructed under special survey,  
the materials and workmanship are good and efficient.  
The Main steam pipes were tested by hydraulic pressure to 320 lbs  
per sq. inch and found satisfactory. The Engines & Boilers  
have been tried under steam, and in my opinion are in good  
order and safe working condition, and eligible for the  
L.M.C. 6.88. in the Register Book of the Society.*

The amount of Entry Fee .. £ *2* : *0* : — received by me,  
Special .. £ *24* : *0* : —  
Donkey Boiler Fee .. £ — : — : —  
Certificate (if required) .. £ — : — : — *4 July 1888*  
To be sent as per margin.

(Travelling Expenses, if any, £ — : — : —)

Committee's Minute

*+ Lmb 6/88*

FRIDAY 6 JULY 1888

*William Allison*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register  
Foundation