

REPORT ON MACHINERY.

No. *8585*

Received at London Office 31 DEC 1893

No. in Survey held at *Greenock & Glasgow*

Date, first Survey *16th Feb 1883* Last Survey *28th Dec 1883*

Reg. Book.

(Number of Visits *57*) *1163.41*

on the

S.S. "Cassia"

Tons *748.83*

Master

Built at

Port Glasgow

By whom built

Murdoch & Murray

When built

1883

Engines made at

Greenock

By whom made

Wineaid & Co

when made

1883

Boilers made at

Glasgow

By whom made

H. Wallace & Coy

when made

1883

Registered Horse Power

99

Owners

Stephen, Mawson & Goss

Port belonging to

Newport, Mon.

ENGINES, &c.—

Description of Engines

Compound Inverted Direct Acting

Diameter of Cylinders

29 & 57

Length of Stroke

39"

No. of Rev. per minute

75

Point of Cut off, High Pressure

22"

Low Pressure

Diameter of Screw shaft

9 3/4

Diam. of Tunnel shaft

9 1/2

Diam. of Crank shaft journals

10"

Diam. of Crank pin

10"

size of Crank webs

11 3/4 x 6 1/2

Diameter of screw

1 3/8

Pitch of screw

1 1/2

No. of blades

Four

state whether moveable

no

total surface

57 sq feet

No. of Feed pumps

Two

diameter of ditto

3"

Stroke

21"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

Two

diameter of ditto

3"

Stroke

21"

Can one be overhauled while the other is at work

yes

Where do they pump from

Engine Room, Cargo Hold & Tanks

No. of Donkey Engines

Two

Size of Pumps

4 1/2 x 10 & 6 x 8

Where do they pump from

6 pumps from Sea, Tanks

& Bilge. 4 1/2 pump from Sea Tanks. Bilge. Hot well & Main Boiler

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

one

and sizes

1"

Are they connected to condenser, or to circulating pump

Circulating pump

How are the pumps worked

By Levers

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

Pinch & Steaming Engine pipes

How are they protected

Shield & Wood

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

yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges

yes

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

27th December 1883

Is the screw shaft tunnel watertight

yes

and fitted with a sluice door

yes

worked from

Engine Room top platform

BOILERS, &c.—

Number of Boilers

One

Description

Cylindrical Multitubular

Whether Steel or Iron

(Steel)

Working Pressure

80 lb

Tested by hydraulic pressure to

160 lb

Date of test

December 1st 1883

Description of superheating apparatus or steam chest

Vertical Steam Chest with neck

Can each boiler be worked separately

yes

Can the superheater be shut off and the boiler worked separately

no

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

78 sq feet

Description of safety valves

Direct spring

No. to each boiler

Two

Area of each valve

12.6 sq

Are they fitted with easing gear

yes

No. of safety valves to superheater

—

area of each valve

—

Are they fitted with easing gear

yes

Smallest distance between boilers and bunkers or woodwork

8"

Diameter of boilers

16' 6"

Length of boilers

10' 4"

description of riveting of shell long. seams

Quad. Riv. Lap.

circum. seams

Double Riv. Lap.

Thickness of shell plates

27/32"

Diameter of rivet holes

1 3/16"

whether punched or drilled

punched

pitch of rivets

5 1/2"

Lap of plating

10 1/2"

Per centage of strength of longitudinal joint

78%

working pressure of shell by rules

80 lb

size of manholes in shell

15" x 12"

Size of compensating rings

Flat ring 4" x 3/4"

No. of Furnaces in each boiler

1

Outside diameter

3' 4"

length, top

6' 6"

bottom

9' 6"

thickness of plates

1/2"

description of joint

Double Butt shop

if rings are fitted

Greatest length between rings

9'

working pressure of furnace by the rules

86 lb

combustion chamber plating, thickness, sides

1/2"

back

1/2"

top

Pitch of stays to ditto, sides

8 1/2" + 8 1/2"

back

8 1/2" + 8 1/2"

top

Circular

stays are fitted with nuts or riveted heads

Riveted

working pressure of plating by

rules

89 lb

Diameter of stays at smallest part

1 1/8"

working pressure of ditto by rules

83 lb

end plates in steam space, thickness

23/32"

Pitch of stays to ditto

15" x 14 1/2"

how stays are secured

Nuts & Washers

working pressure by rules

82 lb

diameter of stays at

—

smallest part

3"

Greatest pitch of stays

12" x 8 1/2"

working pressure by rules

80 lb

Diameter of tubes

3 1/2" & 4"

pitch of tubes

4 1/4" x 4 1/4"

thickness of tube

8"

plates, front

11/16"

back

11/16"

how stayed

Clubs

pitch of stays

14 1/4" x 14 1/4"

width of water spaces

8"

Diameter of Superheater or Steam chest

3' 0"

length

5' 6"

thickness of plates

7/16"

description of longitudinal joint

Double Lap

diam. of rivet holes

13/16"

Pitch of rivets

3 1/4"

working pressure of shell by rules

160 lb

diameter of flue

4"

thickness of plates

DONKEY BOILER—

Description

Vertical with Cross Tubes (Steel.)

Made at Glasgow

by whom made J. Milson Son

when made 1883 where fixed in Match hole

Working pressure 180 lbs. tested by hydraulic pressure to 160 lbs. No. of Certificate 1210. fire grate area 19 sq. ft. description of safety

valves Direct spring No. of safety valves 2 area of each 9.64 if fitted with easing gear 101 if steam from main boilers can

enter the donkey boiler diameter of donkey boiler 6'-0" length 11'-0" description of riveting Single & double

Thickness of shell plates 13/32 diameter of rivet holes 13/16 whether punched or drilled punched pitch of rivets 2 1/8 lap of plating 2 1/2

percentage of strength of joint 72 thickness of crown plates 1/2 stayed by 6 rod stays 1 1/2 dia

Diameter of furnace, top 4'-4 1/2 bottom 5'-2 1/2 length of furnace 5'-0" thickness of plates 13/32 description of joint Lap.

Thickness of furnace crown plates 1/2 stayed by Uptake & 6 rod stays 1 1/2 dia working pressure of shell by rules 86 lbs

Working pressure of furnace by rules 147 lbs. diameter of uptake 1 1/4 thickness of plates 3/8 thickness of water tubes 3/8

SPARE GEAR. State the articles supplied:— 1 propeller a half length of crank shaft 1 set of coupling

bolts, 2 Main bearing bolts, 2 top & bottom end bolts & nuts, 1 set of feed & bilge pump

bolts, 1 side valve spindle, 7 rubber valves for air & circulating pumps & boiler tubes

& condenser tubes, 12 junk ring pins, 250 wood screws for condenser tubes, a quantity of bolts, nuts & washers

The foregoing is a correct description,

Amcaid & Co. Manufacturers of Engines.

General Remarks

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

The Engines & Boilers have been

specially surveyed during construction. Quality of workmanship good. And the

Engines & Boilers are now in good order & safe working condition. And are in

my opinion eligible to be noted in the Register Book L.M.C. 12.83.

Examiners. Screw. Tunnel & Thrust Shafts when being rough turned and found them apparently free from flaws & defects.

It is submitted that this vessel
is eligible to have the
L.M.C. recorded AM 7/1/84

The amount of Entry Fee £ 1 : 0 : 0 received by me,

Special £ 14 : 17 : 0 at Glasgow 29/12/83

Donkey Boiler Fee £ 2 : 2 : 0 Glasgow 15/10/83 (M.D.)

Certificate (if required) £ Gratis 18

To be sent as per margin.

(Travelling Expenses, if any, £ none)

Committee's Minute

TUESDAY 1 JAN 1884

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

Glasgow District.

Lloyd's Register
Foundation