

REPORT ON MACHINERY. 9415

No. 9415

Port of *Glasgow*

No. in Survey held at *Glasgow*
Reg. Book.

Date, first Survey *22nd Sept. 1888* Last Survey *Oct 7th 1889*

(Number of Visits *44*)

Tons *1154*

on the *S. S. "Mangara"*

Master *A. Albrechtson* Built at *Glasgow* By whom built *A. Stephen & Sons* When built *1889*

Engines made at *Glasgow* By whom made " " " " when made *1889*

Boilers made at " By whom made " " " " when made *1889*

Registered Horse Power *170* Owners *MacLay & McIntyre* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Triple Expansion (3 Cranks)*
Diameter of Cylinders *18" 69" 16"* Length of Stroke *39"* No. of Rev. per minute *70* Point of Cut off, High Pressure *Variable* Low Pressure
Diameter of Screw shaft *10"* Diam. of Tunnel shaft *9 1/2"* Diam. of Crank shaft journals *10"* Diam. of Crank pin *10 1/4"* size of Crank webs *7 x 11 1/4 built*
Diameter of screw Pitch of screw No. of blades *4* state whether moveable *Yes* total surface
No. of Feed pumps *Two* diameter of ditto *3 1/2"* Stroke *21"* Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps *Two* diameter of ditto *4 1/2"* Stroke *21"* Can one be overhauled while the other is at work *Yes*
Where do they pump from *all Compartments*
No. of Donkey Engines *Two* Size of Pumps *4" x 4 1/2" x 4"* *8" x 8" x 8"* Where do they pump from *Sea Bilges & Hotwell*

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 *4 1/2"* Are they connected to condenser, or to circulating pump *To circulating*
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 *None* How are they protected
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 *On ship before launching*
Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper platform*

BOILERS, &c.—

Number of Boilers *One* Description *Round Horizontal* Whether Steel or Iron *Steel*
Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *21st March 1889*
Description of superheating apparatus or steam chest *None*
Can each boiler be worked separately Can the superheater be shut off and the boiler worked separately
No. of square feet of fire grate surface in each boiler *54 ft²* Description of safety valves *Direct Spring* No. to each boiler *Two*
Area of each valve *4"* Are they fitted with easing gear *Yes* No. of safety valves to superheater area of each valve
Are they fitted with easing gear Smallest distance between boilers and bunkers or woodwork *about 76"* Diameter of boilers *14.6"*
Length of boilers *11' 9"* description of riveting of shell long. seams *Double riveted* circum. seams *Double riveted* thickness of shell plates *10/16"*
Diameter of rivet holes *1 5/16"* whether punched or drilled *Drilled* pitch of rivets *8 3/8"* Lap of plating *Straps*
Per centage of strength of longitudinal joint *84%* working pressure of shell by rules *166 lbs* size of manholes in shell *12" x 16"*
Size of compensating rings *Double pieces fitted* No. of Furnaces in each boiler *Three*
Outside diameter *3.6"* length, top *8' 7 3/4"* bottom thickness of plates *9/16"* description of joint if rings are fitted
Greatest length between rings working pressure of furnace by the rules *166 lbs* combustion chamber plating, thickness, sides *7/32"* back *7/32"* top *7/32"*
Pitch of stays to ditto, sides *7/4" x 7/4"* back *7/4" x 7/4"* stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *160 lbs* diameter of stays at smallest part *1 3/8" x 1 1/2"* working pressure of ditto by rules *175 lbs* plates in steam space, thickness *16/16"*
Pitch of stays to ditto *15" x 15"* how stays are secured *By double nuts* working pressure by rules diameter of stays at smallest part *2 3/8" = 4.5" area* working pressure by rules *180 lbs* Front plates at bottom, thickness *14/16"* Back plates, thickness *14/16"*
Greatest pitch of stays working pressure by rules Diameter of tubes *3 1/2"* pitch of tubes *4 3/4" x 4 3/8"* thickness of tube plates, front *14/16"* back *14/16"* how stayed *By tubes* pitch of stay *9 1/2" x 9 1/2" x 10 1/2"* width of water spaces *about 6"*
Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes
Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings
Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed
Superheater or steam chest; how connected to boiler

(State if Report is also sent on the Hull of the Ship)

[Form No. 8—2000—5/6/88—T. & S.—Copyright Ink.]

GLS 158-0224

DONKEY BOILER—

Description

9415 gls
Round Vertical (Cross tubes)

Made at

Clayton

by whom made

A. Stephenson

when made

1889

where fixed

In Stephens

Working pressure

70 lbs

tested by hydraulic pressure to

140 lbs

No. of Certificate

2303

fire grate area

2 1/4

description of safety

valves

Direct Spring

No. of safety valves

Two

area of each

4"

if fitted with easing gear

yes

if steam from main boilers can

enter the donkey boiler

2 1/2"

diameter of donkey boiler

6'-6"

length

11'-8"

description of riveting

Double + Single

Thickness of shell plates

13/32"

diameter of rivet holes

7/8"

whether punched or drilled

Drilled

each of rivets

3/4"

lap of plating

15"

per centage of strength of joint

65%

thickness of crown plates

1 1/16"

stayed by

nine stays

1 3/4" dia

uptake

1 3/4"

description of joint

lap

Diameter of furnace, top

5'-11"

bottom

5'-10"

length of furnace

5'-8"

thickness of plates

9/16"

description of joint

lap

Thickness of furnace crown plates

9/16"

stayed by

As above

rows of screw stays

working pressure of shell by rules

4 1/4 lbs

Working pressure of furnace by rules

As above

diameter of uptake

1 3/4"

thickness of plates

9/16"

thickness of water tubes

1 1/2" dia

1 1/2"

1 1/2"

SPARE GEAR. State the articles supplied:

Two Connecting rod bolts for top & bottom

ends, 2 main bearing bolts, 1 set coupling bolts, one feed & bridge

pump valve, also one set of rubber valves, assortment of bolt

nuts, iron, boiler & condenser tubes, pumps, metallic valves &c

The foregoing is a correct description, also 2 speller blades

Alex. Stephenson & Sons, Manufacturer.

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

These Engines & Boilers

are of good workmanship and materials and

are now in good order, safe working condition

and eligible in my to be noted in the Register

book

Lloyds. M. C. 10/89

It is submitted that this vessel is eligible

to have + L.M.C. 10.89 recorded

The amount of Entry Fee

£ 2 : - : -

received by me,

Special

£ 25 : 10 : -

Donkey Boiler Fee

£ - : - : -

Certificate (if required)

£ - : - : -

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

FRIDAY 11 OCT 1889

+ L.M.C. 10/89

James Morrison

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

Clyde District

Foundation

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