

REPORT ON MACHINERY.

9840

No. 9840

Port of Glasgow

WED 21 MAY 1890

Received at London Office

No. in Survey held at Dumbarton

Date, first Survey 31st Oct 1889 Last Survey May 16 1890

Reg. Book.

(Number of Visits 13)

on the S. S. "Potomac"

Gross 2004 Tons Net 1263

Master J. C. Arthur Built at Dumbarton By whom built Denny & Co

When built 1890

Engines made at Dumbarton By whom made Denny & Co

when made 1890

Boilers made at

By whom made

when made 1890

Registered Horse Power 135

Owners Union Steam Ship Co. of N. Z. Land Port belonging to Dunedin

ENGINES, &c.—

Description of Engines

Quadruple Expansion

No. of Cylinders Four

Diam. of Cylinders

18" 36"

Length of Stroke 39"

Rev. per minute 105

Point of Cut off, High Pressure

Diameter of Screw shaft

10 3/4"

Diam. of Tunnel shaft

10"

Diam. of Crank shaft journals

10 3/4"

Diam. of Crank pin

10 3/4"

size of Crank webs

4"

Diameter of screw

15"

Pitch of screw

1 1/2"

No. of blades

4

state whether moveable

Yes

total surface

58.4 sq. ft.

No. of Feed pumps

Two

diameter of ditto

3 1/4"

Stroke

20"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

diameter of ditto

3 1/4"

Stroke

20"

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

8" x 6" x 9"

Where do they pump from

Sea Bilges Hotwell and Ballast Tanks

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 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 Valve 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

Bilge pipes to the hold

How are they protected

By wood casing

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.

No. of Boilers

Two

Description

Round Horizontal

Material

Steel

Letter (for record)

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

April 8th 1890

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

Yes

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

44 sq. ft.

Description of safety valves

Direct Spring

No. to each boiler

Two

Area of each valve

4.91"

Are they fitted with easing gear

Yes

No. of safety valves to superheater

4

area of each valve

—

Are they fitted with easing gear

—

Smallest distance between boilers and bunkers or woodwork

About 8"

Diameter of boilers

12'-11 3/4"

Length of boilers

10'-4 1/2"

Description of riveting of shell long. seams

Double riveted

double butt straps

seams

Double riveted

Thickness of shell plates

1 9/16"

Diameter of rivet holes

1 9/16" x 1 1/16"

whether punched or drilled

Drilled

pitch of rivets

8"

Lap of plating

18 3/4" straps

—

Per centage of strength of longitudinal joint

83 1/2%

working pressure of shell by rules

183 lbs

size of manholes in shell

14" x 13"

Size of compensating rings

Double plates

No. of Furnaces in each boiler

Three

Description of Furnaces

Corrugated

Outside diameter

3'-4 7/8"

length

5'-8 3/4"

thickness of plates

1 9/32"

description of joint

Welded

if rings are fitted

—

Greatest length between rings

—

working pressure of furnace by the rules

184 lbs

combustion chamber plating, thickness, sides

9/16"

back

9/16"

top

9/16"

Pitch of stays to ditto, sides

4" x 4"

back

4" x 6"

top

4" x 4"

stays are fitted with nuts or riveted heads

Nuts

working pressure of plating by

rules

198 lbs

Diameter of stays at smallest part

1 3/8" x 1 3/4"

working pressure of ditto by rules

247 lbs

plates in steam space, thickness

18"

—

—

—

—

Pitch of stays to ditto

14" x 16 1/4"

how stays are secured

By double nuts

working pressure by rules

235 lbs

Front plates at bottom, thickness

1 3/16"

Back plates, thickness

1 1/16"

—

Greatest pitch of stays

—

working pressure by rules

—

Diameter of tubes

3"

pitch of tubes

4 1/4" x 1 1/2"

thickness of tube

—

—

plates, front

12/16"

back

14/16"

how stayed

by tubes

pitch of stays

4 1/4" x 8 1/2"

width of water spaces

about 6"

—

Diameter of Superheater or Steam chest

None

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

—

—

DONKEY BOILER— Description *Round Vertical*
Made at *Sturminster Newton* by whom made *Jenny & Co* when made *1890* where fixed *In the Wharfedale*
Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *2635* fire grate area *26 ft²* description of safety
valves *Direct Spring* No. of safety valves *Two* area of each *5.94 in²* if fitted with easing gear *Yes* if steam from main boilers or
enter the donkey boiler *No* diameter of donkey boiler *6' 6"* length *13 ft* description of riveting *Double riveted*
Thickness of shell plates *7/16"* diameter of rivet holes *7/8"* whether punched or drilled *Drilled* pitch of rivets *3 1/8"* lap of plating *4 1/2"*
per centage of strength of joint *42 7/10* thickness of crown plates *7/16"* stayed by *4 stays 2 3/8" dia + 11 plates*
Diameter of furnace, top *5 ft* bottom *5' 9"* length of furnace *6' 6"* thickness of plates *7/16"* description of joint *Lap*
Thickness of furnace crown plates *7/16"* stayed by *11 stays 9" pitch*
Working pressure of furnace by rules *✓* diameter of uptake *18"* thickness of plate *1/2"* iron thickness of water tubes *9/16"* iron

SPARE GEAR. State the articles supplied:— *2 Connecting rod bolts top & bottom, 2*
bearing bolts, 1 set coupling bolts, one piece of crank shaft
Propeller shaft & 4 blades with studs & nuts, 1 pair crank
pin brasses, one set of valves for all the pumps, assortment
The foregoing is a correct description, *bolts, nuts, springs, tubes, & other*
Jenny & Co. Manufacturers

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines and Boilers*
are of good workmanship and materials and are now
in good order and safe working condition and they
in my opinion to be noted in the Register Book + L.C.
M.C. 5790

It is submitted that this vessel is eligible
to have + L.M.C. 5790 recorded.
M.A.
21-5-90

The amount of Entry Fee .. £ *2* : - : - received by me,
Special .. £ *20* : *5* : -
Donkey Boiler Fee .. £ - : - : -
Certificate (if required) .. £ - : - : - *19/5* 1890
To be sent as per margin.
(Travelling Expenses, if any, £)
Committee's Minute *FRI 23 MAY 1890*
+ L.M.C. 5790

James Morrison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
Clyde District
Lloyd's Register
Foundation