

# REPORT ON MACHINERY

TUES 11 JUNE 1889

No. 9216

Port of Glasgow 5<sup>th</sup> June

Received at London Office

13

No. in Survey held at

Glasgow

Date, first Survey

27<sup>th</sup> Mar.

Last Survey

31 May 1889

(Number of Visits 10)

343.46

Tons

564.24

585 on the Machinery of H.S. Dunbritton "ex Sofia"

Master G. Hadden

Built at

Middlesbro

By whom built

Richardson Duck & Co

When built

1860

Engines made at

Birkenhead

By whom made

Laird Brothers

when made

1869

Boilers made at

do

By whom made

do

when made

1880

Registered Horse Power

80 85 1/2

Owners

J & W. W. C. Smith

Port belonging to

Glasgow

## ENGINES, &c.—

Description of Engines

Compound surface condensing direct acting

Diameter of Cylinders

43 1/2" & 24"

Length of Stroke

24"

No. of Rev. per minute

60

Point of Cut off, High Pressure

Low Pressure

Diameter of Screw shaft

8"

Diam. of Tunnel shaft

4 1/2"

Diam. of Crank shaft journals

4 1/2"

Diam. of Crank pin

4 1/2"

size of Crank webs 8 1/4" x 5 1/4"

Diameter of screw

not

Pitch of screw

ascertained

No. of blades

3

state whether moveable solid total surface

No. of Feed pumps

1

diameter of ditto

3 3/4"

Stroke

9

Can one be overhauled while the other is at work

✓

No. of Bilge pumps

1

diameter of ditto

3 3/4"

Stroke

9

Can one be overhauled while the other is at work

✓

Where do they pump from

Fore peak, fore hold, main hold, engine room & after peak

No. of Donkey Engines

one

Size of Pumps

2 3/4" diam

Where do they pump from

Same as bilge pumps

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

✓

No. of bilge injections

1

and sizes

3"

Are they connected to condenser, or to circulating pump

condenser

How are the pumps worked

by eccentric

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

all but

air & bilge discharges

Are they Valves or Cocks

both

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

not all

Are the discharge pipes above or below the deep water line

below

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

no

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

✓

What pipes are carried through the bunkers

Air & circulating pump

How are they protected

It is a strong wrought iron pipe

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

Now

Is the screw shaft tunnel watertight

yes

and fitted with a sluice door

yes

worked from

Main deck

## BOILERS, &c.—

Number of Boilers

one

Description

Cylindrical Multitub

Whether Steel or Iron

Working Pressure

80 lbs

Tested by hydraulic pressure to

160 lbs

Date of test

22<sup>nd</sup> July 1880 stamped

Description of superheating apparatus or steam chest

cylindrical receiver

(by R. Ashbridge)

Can each boiler be worked separately

✓

Can the superheater be shut off and the boiler worked separately

Consult Eng. Dept

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

45 ft<sup>2</sup>

Description of safety valves

Direct spring

No. to each boiler

two

Area of each valve

12.56

Are they fitted with easing gear

yes

No. of safety valves to superheater

area of each valve

12.56"

Are they fitted with easing gear

✓

Smallest distance between boilers and bunkers or woodwork

8"

Diameter of boilers

12.6"

Length of boilers

10' 0"

description of riveting of shell long. seams

circum. seams

Thickens of shell plates

✓

Thickens of shell plates

✓

Diameter of rivet holes

whether punched or drilled

pitch of rivets

Lap of plating

✓

Per centage of strength of longitudinal joint

working pressure of shell by rules

size of manholes in shell

Size of compensating rings

✓

No. of Furnaces in each boiler

three

Outside diameter

length, top

bottom

thickness of plates

description of joint

if rings are fitted

✓

Greatest length between rings

working pressure of furnace by the rules

Pitch of stays to ditto, sides

back

top

If stays are fitted with nuts or riveted heads

working pressure of plating by

rules

Diameter of stays at smallest part

working pressure of ditto by rules

end plates in steam space, thickness

✓

Pitch of stays to ditto

how stays are secured

working pressure by rules

diameter of stays at

smallest part

working pressure by rules

Front plates at bottom, thickness

Back plates, thickness

✓

Greatest pitch of stays

working pressure by rules

Diameter of tubes

plates, front

back

how stayed

pitch of stays

width of water spaces

✓

Diameter of Superheater or Steam chest

length

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

Superheater or steam chest; how connected to boiler

✓

Superheater or steam chest; how connected to boiler

✓

Superheater or steam chest; how connected to boiler

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✓



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DONKEY BOILER— Description Cylindrical vertical / tested & stamped by R. Ashbridge  
Made at Birkenhead by whom made Laird Brothers when made 1880 where fixed on Main deck  
Working pressure 60 tested by hydraulic pressure to 120 No. of Certificate none fire grate area 1449 description of safety  
valves Direct spring No. of safety valves one area of each 8.3" if fitted with easing gear yes if steam from main boilers can  
enter the donkey boiler no diameter of donkey boiler 5' 0" length 9' 6" description of riveting  
Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_  
per centage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_  
Thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_  
Working pressure of furnace by rules \_\_\_\_\_ diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— Valve spindle to fit both valves, pump rod  
to suit air & cir pumps, 2 top end bolts, 2 bottom end bolts & 2 Main  
bearing bolts, set of valves for feed & bilge pumps.

The foregoing is a correct description,

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. The Machinery of this  
vessel was made in 1869 by Messrs Laird & Co Birkenhead, & in  
1880 was supplied by them with new Boilers (Main & donkey)  
The Engines have, at this time, been opened up, and all the  
working parts examined. Cylinders, pistons, slide valves, pumps,  
crank shaft, & tunnel shafting, propeller length drawn in, & sea  
cocks & valves taken out & overhauled. All the pumps with their  
connections examined & some of the pipes renewed. The sea cocks  
(some of them are on flat of ships bottom) have been fitted with guards.  
Discharge pipes & connections examined.

Main & donkey boilers with their connections examined through  
out & safety valves set to working pressure under steam.

These Engines & Boilers have not hitherto been examined  
by the Society's Surveyors, but with the view of the vessel being  
classed in the Register Book of this Society, we have now ex-  
amined them throughout, and have found them in good working  
order, and in accordance with the Society's Rules, except the  
Sea cocks being fitted under the Stokehold plates, and the Air  
& Circulating pump Discharge Valves, being some distance from  
the ship's side. We would submit the case for the favourable  
consideration of the Committee, the engines & boilers being  
in our opinion eligible to be noted in the Register Book

B & M.S. 6, 89

Application has been made for a tracing of the Boilers to Messrs  
Laird & also Mr. Ashbridge through Mr. McCreagh at Liverpool but he was  
unable to obtain this for

The amount of Entry Fee £ 1 : - : - received by me, \_\_\_\_\_

Special £ 5 : 5 : -

Donkey Boiler Fee £ - : - : -

Certificate (if required) £ - : - : - 12/6/89

To be sent as per margin.

(Travelling Expenses, if any, £ \_\_\_\_\_)

Committee's Minute

FRIDAY 34 JUNE 1889

B & M.S. 5/89

James Morrison Charles Cooper  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Glasgow's Register  
Foundation