

REPORT ON MACHINERY.

Port of **LIVERPOOL.**

SAT. FEB 8 1896

Received at London Office 18

No. in Survey held at
Reg. Book.

Liverpool

Date, first Survey

July 19th 95

Last Survey

July 19th 1895

(Number of Visits)

on the

Steel Steamer "Alagonia"

Tons { Gross 2699
Net 1720

Master

Built at

Port Glasgow

By whom built

W Hamilton & Co

When built

1895

Engines made at

Greenock

By whom made

Naughton & Blackmore

when made

1895

Boilers made at

do

By whom made

do

when made

1895

Registered Horse Power

241

Owners

E. F. & W Roberts

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

ENGINES, &c.—

Description of Engines

Inverted Triple Expansions

No. of Cylinders

3

Diameter of Cylinders

22 $\frac{1}{2}$ " 34" 61"

Length of Stroke

42

Revolutions per minute

65

Diameter of Screw shaft

as per rule **10 $\frac{3}{8}$ "**

Diameter of Tunnel shaft

as per rule **10 $\frac{3}{8}$ "**

Diameter of Crank shaft journals

11 $\frac{5}{8}$ "

Diameter of Crank pin

11 $\frac{5}{8}$ "

Size of Crank webs

4 $\frac{1}{2}$ " x 15"

Diameter of screw

15 $\frac{1}{2}$ "

Pitch of screw

15 $\frac{1}{2}$ "

No. of blades

4

State whether moveable

no

Total surface

68 sq feet

No. of Feed pumps

2

Diameter of ditto

3"

Stroke

20"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

3 $\frac{1}{2}$ "

Stroke

0

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

Sizes of Pumps

12" x 10" + 4 $\frac{1}{2}$ " x 7"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

(4) of 3" dia

In Holds, &c.

(6) of 3" dia

Pumps draw from red. tanks. Bilge of all compartments. Hold and two Condensers

No. of bilge injections

1

sizes

4"

Connected to condenser, or to circulating pump

yes

Is a separate donkey suction fitted in Engine room & size

yes 2 $\frac{1}{2}$ "

Are all the bilge suction pipes fitted with roses

yes

Are the roses in Engine room always accessible

yes

Are the sluices on Engine room bulkheads always accessible

X

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

both

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

yes

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

yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

yes

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

July 19th 95

Is the screw shaft tunnel watertight

yes

Is it fitted with a watertight door

yes

worked from **top platform in Engine room**

OILERS, &c.—

(Letter for record (S))

Total Heating Surface of Boilers

3621 sq feet

No. and Description of Boilers

(2) Laid & Muel S. E.

Working Pressure

160 lb

Tested by hydraulic pressure to

X

Date of test

X

Can each boiler be worked separately

yes

Area of fire grate in each boiler

60 sq ft

No. and Description of safety valves to

each boiler

(2) direct spring

Area of each valve

X

Pressure to which they are adjusted

X

Are they fitted

with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

12"

Mean diameter of boilers

14 $\frac{1}{2}$ "

Length

10 $\frac{1}{2}$ "

Material of shell plates

steel

Thickness

1 $\frac{1}{2}$ "

Description of riveting: circum. seams **8 riv. deep** long. seams **rip riv. thru**

Diameter of rivet holes in long. seams

1 $\frac{1}{2}$ "

Pitch of rivets

8 $\frac{1}{2}$ "

Lap of plates or width of butt straps

19" stops

Per centages of strength of longitudinal joint

rivets. **88.5**

plate. **85.3**

Working pressure of shell by rules

173 lb

Size of manhole in shell

16" x 12"

Size of compensating ring

30 x 26 x 1 $\frac{1}{2}$ "

No. and Description of Furnaces in each boiler

3 Plain

Material

steel

Outside diameter

3 $\frac{1}{2}$ "

Length of plain part

6 $\frac{1}{2}$ "

Thickness of plates

1 $\frac{1}{2}$ "

Description of longitudinal joint

d. butt strip

No. of strengthening rings

1

Working pressure of furnace by the rules

172 lb

Combustion chamber plates: Material

steel

Thickness: Sides

9 $\frac{1}{16}$ "

Back

9 $\frac{1}{16}$ "

Top

9 $\frac{1}{16}$ "

Bottom

16"

Pitch of stays to ditto: Sides

7 $\frac{1}{2}$ " x 8"

Back

7 $\frac{1}{2}$ " x 8"

Top

7 $\frac{1}{2}$ " x 8"

If stays are fitted with nuts or riveted heads

yes

Working pressure by rules

165 lb

Material of stays

steel

Diameter at smallest part

1 $\frac{1}{4}$ "

Area supported by each stay

62"

Working pressure by rules

161

End plates in steam space:

Material

steel

Thickness

1"

Pitch of stays

16 $\frac{1}{2}$ " x 16"

How are stays secured

d. nut

Working pressure by rules

164 lb

Material of stays

steel

Diameter at smallest part

2 $\frac{1}{16}$ "

Area supported by each stay

264"

Working pressure by rules

160

Material of Front plates at bottom

steel

Thickness

3 $\frac{1}{4}$ "

Material of Lower back plate

steel

Thickness

3 $\frac{1}{4}$ "

Greatest pitch of stays

12 $\frac{1}{2}$ "

Working pressure of plate by rules

160 lb

Diameter of tubes

3 $\frac{1}{2}$ "

Pitch of tubes

4 $\frac{5}{8}$ " x 4 $\frac{5}{8}$ "

Material of tube plates

steel

Thickness: Front

3 $\frac{1}{4}$ "

Back

3 $\frac{1}{2}$ "

Mean pitch of stays

13 $\frac{1}{8}$ " x 9 $\frac{1}{4}$ "

DONKEY BOILER— Description *Cylindrical & Multitubular steel*
 Made at *Stockton on Tees* By whom made *Riley Bros* When made *1895* Where fixed *on deck*
 Working pressure *80 lb* Tested by hydraulic pressure to *X* No. of Certificate *X* Fire grate area *24.6* Description of safety valves *direct spring*
 No. of safety valves *2* Area of each *X* Pressure to which they are adjusted *X* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *X* Diameter of donkey boiler *9' 0"* Length *8' 0"* Material of shell plates *steel* Thickness *$\frac{17}{32}$ "*
 Description of riveting long seams *hip iron & Lap* Diameter of rivet holes *$\frac{13}{16}$ "* Whether punched or drilled *X* Pitch *ribs 2 1/2"*
 Lap of plating *4 1/2"* Per centage of strength of joint *Rivets 76% Plates 75%* Thickness of shell crown plates *$\frac{17}{32}$ "* Radius of do. *✓* No. of Stays to do. *✓*
 Dia. of stays *✓* Diameter of furnace Top *2' 4 1/2"* Bottom *✓* Length of furnace *5' 3"* Thickness of furnace plates *$\frac{13}{32}$ "* Description of joint *X* Thickness of furnace crown plates *$\frac{5}{8}$ "* Stayed by *man stays from 1 1/2" dia* Working pressure of shell by rules *82 lb*
 Working pressure of furnace by rules *80 lb* Diameter of uptake *✓* Thickness of uptake plates *✓* Thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *X*

The foregoing is a correct description,

Manufacturer.

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

Vessel placed in dry dock. all sea-connections. Propeller after end of shaft and bush examined and found in good condition. The Machinery and boiler were not opened out for examination at the date of this survey. but the various detail and arrangements were on examination as far as could be seen found in conformity with the requirements of the rules.

The dimensions and particulars given in this report are partly from actual measurement and partly from the builders plans. The Machinery and boiler have been constructed under the inspection of the Bureau Veritas Surveyors and the steel of which the boiler are constructed was tested by them at the Mossend & Motherwell Steel Works.

We would respectfully submit that in addition to a special survey being held on the machinery that the main and donkey boilers be tested by hydraulic pressure to at least one and a half times the working pressure, and the main steam pipes to twice the working pressure, and if found efficient by the surveyor at Melbourne we are of opinion that the machinery is worthy of the Committee's favourable consideration for the record *L.M.C.* in the Society's Register Book.

Note—Particulars not obtainable marked in red—thus *X*

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 2 : 0 : 0	When applied for,
1/2 Special	£ <i>X</i> : <i>X</i> : <i>X</i>	18..
Donkey Boiler Fee	£ 16 : 0 : 0	When received,
Travelling Expenses (if any) £	:	3. 11. 18. 96

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

Committee's Minute **‘LIVERPOOL’** - 7 FEB. 96

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Assigned *Transmit to London*



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