

REPORT ON MACHINERY.

No. 22313

Port of

Glasgow

Received at London Office

TUES. 29 NOV 1904

No. in Survey held at
Reg. Book.

Glasgow

Date, first Survey

25th May

Last Survey

12th Nov 1904

on the

"THE SULTAN."

(Number of Visits)

Master

Built at

Ayr

By whom built

Aulsa S.B. Co

Gross
Tons

Net

When built

1904

Engines made at

Glasgow

By whom made

Muir & Houston Ltd

when made

1904

Boilers made at

Glasgow

By whom made

Muir & Houston Ltd

when made

1904

Registered Horse Power

Owners

J. Hay

Port belonging to

Glasgow

Nom. Horse Power as per Section 28

98¹/₂

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Compound, - Screw

No. of Cylinders

2

No. of Cranks

2

Dia. of Cylinders

20¹/₂" & 44"

Length of Stroke

30

Revs. per minute

95

Dia. of Screw shaft

as per rule 9.57
as fitted 10

Material of

iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

no

Is the after end of the liner made water tight

in the propeller boss

yes

If the liner is in more than one length are the joints burned

✓

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

✓

If two

liners are fitted, is the shaft lapped or protected between the liners

no liner, bederwald's patent

Length of stern bush

3" 4"

Dia. of Tunnel shaft

as per rule 8.52
as fitted none

Dia. of Crank shaft journals

as per rule 8.94
as fitted 9.5

Dia. of Crank pin

9.5

Size of Crank webs

5.5

Dia. of thrust shaft under

collars

9.5

Dia. of screw

10.6

Pitch of screw

13.6

No. of blades

4

State whether moveable

no

Total surface

38 sq. ft

No. of Feed pumps

2

Diameter of ditto

2

Stroke

15

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

3

Stroke

15

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

Three

Sizes of Pumps

7x4x8, 4x2x6, 6x6x6

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

In Engine Room

Two 2" dia

In Holds, &c.

Two 2" dia

No. of bilge injections

1

sizes

3"

Connected to condenser, or to circulating pump

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

none

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

yes

Are they Valves or Cocks

Valves & cocks

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 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

before launch

Is the screw shaft tunnel watertight

none

Is it fitted with a watertight door

✓

worked from

✓

BOILERS, &c.—

(Letter for record (S))

Total Heating Surface of Boilers

1543 sq. ft

Is forced draft fitted

no

No. and Description of Boilers

One single ended

Working Pressure

130 lbs

Tested by hydraulic pressure to

260 lbs

Date of test

13/10/04

Can each boiler be worked separately

✓

Area of fire grate in each boiler

67.5

No. and Description of safety valves to

each boiler

2 Patent Spring

Area of each valve

8.29

Pressure to which they are adjusted

135 lbs

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

4.6

Mean dia. of boilers

14.3

Length

10.0

Material of shell plates

steel

Thickness

3/32

Range of tensile strength

38.5

Are they welded or flanged

no

Descrip. of riveting: cir. seams

double

long. seams

treble

Diameter of rivet holes in long. seams

1.8

Pitch of rivets

7.5

Lap of plates or width of butt straps

17"

Per centages of strength of longitudinal joint

rivets 86.7
plate 85

Working pressure of shell by rules

135 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

the heels

No. and Description of Furnaces in each boiler

3 plain

Material steel Outside diameter

3.9"

Length of plain part

top 6.0
bottom 5.4

Thickness of plates

crown 11/16
bottom 11/16

Description of longitudinal joint

welded

No. of strengthening rings

partial

Working pressure of furnace by the rules

141 lbs

Combustion chamber plates: Material

steel

Thickness: Sides

9/16

Back

9/16

Top

9/16

Bottom

9/16

Pitch of stays to ditto: Sides

8x9

Back

9x9

Top

8x8

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

138 lbs

Material of stays

steel

Diameter at smallest part

1.45

Area supported by each stay

81

Working pressure by rules

140 lbs

End plates in steam space:

Material steel

Thickness

13/16

Pitch of stays

16x15

How are stays secured

nuts

Working pressure by rules

130 lbs

Material of stays

steel

Area at smallest part

3.86

Area supported by each stay

240

Working pressure by rules

135 lbs

Material of Front plates at bottom

steel

Thickness

11/16

Material of Lower back plate

steel

Thickness

11/16

Greatest pitch of stays

13x9

Working pressure of plate by rules

13

Diameter of tubes

3 1/2

Pitch of tubes

4.94 x 4.75

Material of tube plates

steel

Thickness: Front

11/16

Back

5/8

Mean pitch of stays

9 5/8

Pitch across wide water spaces

14 1/2

Working pressures by rules

171 lbs

Girders to Chamber tops: Material

iron

Depth

3-8"

thickness of girder at centre

7 x 2 - 7/8

Length as per rule

2.8

Distance apart

8"

Number and pitch of Stays in each

3-8"

Working pressure by rules

130 lbs

Superheater or Steam chest; how connected to boiler

none

Can the superheater be shut off and the boiler work

separately

✓

Diameter

✓

Length

✓

Thickness of shell plates

✓

Material

✓

holes

✓

Pitch of rivets

✓

Working pressure of shell by rules

✓

Diameter of flue

✓

Material of flue plates

✓

If stiffened with rings

✓

Distance between rings

✓

Working pressure by rules

✓

End plates: Thickness

✓

How stayed

✓

Working pressure of end plates</

DONKEY BOILER— No. *One* Description *Ordinary Vertical*
 Made at *Glasgow* By whom made *Muir & Houston Ltd.* When made *1904* Where fixed *in stokehold*
 Working pressure *70* tested by hydraulic pressure to *140 lbs* No. of Certificate *7261* Fire grate area *16 1/2* Description of safety valves *patent spring*
 No. of safety valves *One* Area of each *7.07* Pressure to which they are adjusted *75 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *5" 0"* Length *10" 3"* Material of shell plates *steel* Thickness *3/8"* Range of tensile strength *27-37* Descrip. of riveting long. seams *double (lap)* Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *3 1/4"*
 Lap of plating *5"* Per centage of strength of joint Rivets *11.3* Thickness of shell crown plates *5/8"* Radius of do. *4" 6"* No. of Stays to do. *none*
 Dia. of stays *✓* Diameter of furnace Top *3" 11"* Bottom *4" 5"* Length of furnace *4" 0 3/4"* Thickness of furnace plates *1/2"* Description of joint *welded* Thickness of furnace crown plates *5/8"* Stayed by *✓* Working pressure of shell by rules *92 lbs*
 Working pressure of furnace by rules *101 lbs* Diameter of uptake *15"* Thickness of uptake plates *1/2"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *2 Top, & 2 bottom end connecting rod bolts, 2 main bearing bolts, One set of coupling bolts, and one set of feed & bilge pump valves, etc.*

The foregoing is a correct description,
 For **MUIR & HOUSTON, LIMITED,** Manufacturer.

Dates of Survey while building { During progress of work in shops— 1904 May 25 30 June 24 July 5 12 15 26 Aug 1 11 15 23 29 Sept 1
 { During erection on board vessel — 9 14 16 21 25 29 Oct 8 13 17 24 Nov 2 8 12
 Total No. of visits *25* Is the approved plan of main boiler forwarded herewith *yes*
 " " " donkey " " " *yes*

General Remarks (State quality of workmanship, opinions as to class, &c. *Machinery aft.*)
The machinery of this vessel has been constructed under Special Survey, the materials & workmanship of good quality, it has been securely fastened on board, tried under steam, & found to be satisfactory.
*In my opinion it is eligible to be classed in the Register Book with the record of **L.M.C. 11.04.***

It is submitted that
 this vessel is eligible for
THE RECORD L.M.C. 11.04.

30.11.04

30.11.04

Amount of Entry Fee... £ 1 : : When applied for, *28 NOV 1904*
 Special ... £ 14 : 14 :
 Donkey Boiler Fee ... £ : : When received, *1.12.04*
 Travelling Expenses (if any) £ : : *19*

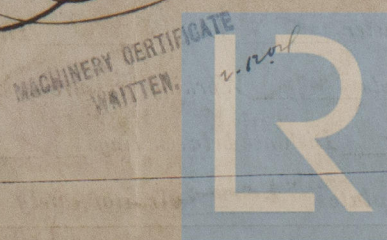
Committee's Minute

Glasgow 28 NOV 1904

Assigned

L.M.C. 11.04.

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



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