

REPORT ON MACHINERY.

Port of Sunderland

No. in Survey held at Sunderland

Date, first Survey 4th March

Received at London Office

18

Last Survey 10th Nov 1893

Reg. Book.

(Number of Visits 34)

on the S.S. "Umfuli"

Gross 2369

Net 1512

When built 1893

Master R G Bringle Built at Sunderland By whom built James Laing

Engines made at Sunderland By whom made George Clark (Ld)

when made 1893

Boilers made at Sunderland By whom made George Clark (Ld)

when made 1893

Registered Horse Power 300

Owners Messrs Bullard King & Co

Port belonging to London

Com. Horse Power as per Section 28 244

ENGINES, &c.—

Description of Engines Triple compound

No. of Cylinders 3

Diameter of Cylinders 23, 38 & 62

Length of Stroke 42

Revolutions per minute 40

Diameter of Screw shaft as per rule 11

as fitted 11 3/4

Diameter of Tunnel shaft as per rule 10 7/16

Diameter of Crank shaft journals 11 3/4

Diameter of Crank pin 11 3/4

Size of Crank webs 22 x 4 1/8

Diameter of screw 16-3

Pitch of screw 14-6

No. of blades 4

State whether moveable not

Total surface 456

No. of Feed pumps 2

Diameter of ditto 3

Stroke 26

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 4 1/4

Stroke 26

Can one be overhauled while the other is at work yes

No. of Donkey Engines 2

Sizes of Pumps 8 x 10 & 5 1/2 x 3 1/2 x 5

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

Engine Room Three 3 1/2

In Holds, &c. Fore Hold two 3 Main hold two 3

6 Hold well & tunnel wells 3 after peak 3 after main tanks centre 4

Is a separate donkey suction fitted in Engine room & size yes 4

No. of bilge injections 1

sizes 5

Connected to condenser, or to circulating pump C.P.

Are the roses in Engine room always accessible yes

Are all the bilge suction pipes fitted with roses yes

Are the roses in Engine room always accessible yes

Are the sluces on Engine room bulkheads always accessible yes

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

That 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 4th Nov 1893

Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes

worked from top platform

MILLERS, &c.—

(Letter for record r)

Total Heating Surface of Boilers 3690

No. and Description of Boilers 2 ordinary marine type

Working Pressure 160 lbs

Tested by hydraulic pressure to 320 lbs

Date of test 5-6-93

Can each boiler be worked separately yes

Area of fire grate in each boiler 55

No. and Description of safety valves to

In boiler 2 direct spring

Area of each valve 40

Pressure to which they are adjusted 160 lbs

Are they fitted

With easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 20

Mean diameter of boilers 14-3 1/2

Length 10-6

Material of shell plates Steel

Thickness 1 1/4

Description of riveting: circum. seams d, r, lap.

long. seams treble riv'd. b.s.

Diameter of rivet holes in long. seams 1 1/4

Pitch of rivets 8 5/16

Lap of plates or width of butt straps 19

Percentages of strength of longitudinal joint

rivets 84.9

plate 84.9

Working pressure of shell by rules 148 lbs

Size of manhole in shell 16 x 13

No. of compensating ring flanged 3 deep

No. and Description of Furnaces in each boiler 3 Purves's pk

Material Steel

Outside diameter 3-5 1/4

Length of plain part top

Thickness of plates crown 1 1/2

Description of longitudinal joint welded

No. of strengthening rings 25

Working pressure of furnace by the rules 168 lbs

Combustion chamber plates: Material Steel

Thickness: Sides 1/16

Back 4/16

Top 10 x 9

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 163 lbs

Length of stays to ditto: Sides 10 x 8 3/4

Back 9 3/16

Top 10 x 9

Area supported by each stay 840

Working pressure by rules 144 lbs

End plates in steam space:

Material of stays iron

Diameter at smallest part 1 5/8

Pitch of stays 1 3/4 x 19 1/2

How are stays secured nuts

Working pressure by rules 149 lbs

Material of stays Steel

Diameter at smallest part 3

Area supported by each stay 324

Working pressure by rules 149 lbs

Material of Front plates at bottom Steel

Thickness 2 3/4

Material of Lower back plate Steel

Thickness 4/16

Greatest pitch of stays 1 1/2

Working pressure of plate by rules 160 lbs

Mean pitch of stays 9 1/2

Diameter of tubes 3 1/2

Pitch of tubes 4 3/4

Material of tube plates Steel

Thickness: Front 27/32

Back 24/32

Mean pitch of stays 9 1/2

Pitch across wide water spaces 1 1/2

Working pressures by rules 160 lbs

Girders to Chamber tops: Material Steel

Depth and

Thickness of girder at centre 8 3/4 x 3 3/4 x 2

Length as per rule 2-9

Distance apart 9

Number and pitch of Stays in each 2 stays 10 x 9

Working pressure by rules 164 lbs

Superheater or Steam chest; how connected to boiler none

Can the superheater be shut off and the boiler worked

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

How stayed

Stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

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Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

DONKEY BOILER—

Description

Vertical. Cochran's patent.

Made at Birkenhead

By whom made

Cochran & Co

When made 31-4-93

Where fixed

Stokehold

Working pressure 60 lbs

Tested by hydraulic pressure to

120 lbs

No. of Certificate

1176

Fire grate area

18 1/2 sq ft

Description of safety valves

direct spring

No. of safety valves 2

Area of each 5.9 sq ft

Pressure to which they are adjusted

60 lbs

fitted with easing gear

yes

If steam from main boilers can

enter the donkey boiler no

Diameter of donkey boiler 6'-0"

Length

13'-6"

Material of shell plates

Steel

Thickness

3/8"

Description of riveting long. seams

double riv lap

Diameter of rivet holes

3/4"

Whether punched or drilled

drilled

Pitch of rivets

2 1/2"

Lap of plating 3 1/8"

Per centage of strength of joint

Rivets 4/20%

Thickness of shell crown plates

3/8"

Radius of do.

3'-0"

No. of Stays to do.

no

Dia. of stays

Diameter of furnace Top

2'-6" radius

Bottom

5'-0" dia

Length of furnace

Thicknes of furnace plates

15/32"

Description

single riv lap

joint

Thickness of furnace crown plates

15/32"

Stayed by

hemispherical

Working pressure of shell by rules

40 lbs

Working pressure of furnace by rules

90 lbs

Diameter of uptake

16"

Thickness of uptake plates

1/2"

Thickness of water tubes

Description

SPARE GEAR. State the articles supplied:—

Top & bottom end connecting rod bolts & nuts

two main bearing bolts. one set of coupling bolts. crank pin bolts

feed & bilge pump valves. bolts nuts & iron etc

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED.

Manufacturer of main engines & boilers.

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

The machinery of this Vessel has been constructed under special

survey, the material and workmanship are good and effective

and the engines when tried under steam worked satisfactorily

The main steam pipes have been tested by hydraulic pressure

to 320 lbs & the watertight doors, sluice valves & pumps are

efficient working order. In my opinion this Vessel is eligible

for the record of LMC 11-93.

A report on the electric light will be forwarded when filled

It is submitted that
this vessel is eligible for
THE RECORD + LMC 11-93—

P. R. Salmon

13/11/93—

MACHINERY CERTIFICATE

Certificate (if required) to be sent to WRITTEN

The amount of Entry Fee.. £ 2 :

When applied for,

Special £ 32 : 4 :

11 Nov 1893

Donkey Boiler Fee £ :

When received,

Travelling Expenses (if any) £ :

5/11/93

P. R. Salmon

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

Committee's Minute

FRI 17 NOV 1893

Assigned

+ LMC 11, 93



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Foundation