

REPORT ON MACHINERY.

No. 47727

Port of Newcastle-on-Tyne

Received at London Office

TUES. 11 OCT. 1904

No. in Survey held at

South Shields

Date, first Survey May 13

Last Survey

Sep 27 1904

Reg. Book.

on the

S.S. GRASMERE

(Number of Visits 2)

Tons

Gross 599.45

Net 280.18

When built 1904

Master W. S. Robbing

Built at

Blyth

By whom built

Blyth Shipbuilding Co. Ltd

Engines made at

South Shields

By whom made

G. J. Grey

when made

1904

Boilers made at

South Shields

By whom made

J. S. Ettringham & Co

when made

1904

Registered Horse Power

100

Owners

Grasmere S. S. Co. Ltd

Port belonging to

Newcastle-on-Tyne

Nom. Horse Power as per Section 28

97.56

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Tri-compound

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

18 x 25 x 41

Length of Stroke

27

Revs. per minute

Dia. of Screw shaft

as per rule 8.52

Material of

Screw shaft

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

No

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

No

If two

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

Painted

Length of stern bush

36"

Dia. of Tunnel shaft

as per rule 7.47

Dia. of Crank shaft journals

as per rule 7.845

Dia. of Crank pin

8

Size of Crank webs

11 x 5 1/4

Dia. of thrust shaft under

collars

8"

Dia. of screw

10.3

Pitch of screw

13 - 4 1/2"

No. of blades

4

State whether moveable

No

Total surface

40 sq

No. of Feed pumps

2

Diameter of ditto

2 1/2"

Stroke

14

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

2 1/2"

Stroke

14

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

4 1/2 x 2 1/4 x 4

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

In Engine Room

Two of 2 1/2" x 2

6 x 7 1/2 x 6

In Holds, &c. 2 Wings 2"

1 centre 3"

No. of bilge injections

1

sizes

3 1/2"

Connected to condenser, or to circulating pump

Pump

Is a separate donkey suction fitted in Engine room & size

Yes 3"

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

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

What pipes are carried through the bunkers

None

How are they protected

No

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

New Vents

Is the screw shaft tunnel watertight

No tunnel

Is it fitted with a watertight door

Yes

worked from

Engineshaft

BOILERS, &c.—

(Letter for record (S))

Total Heating Surface of Boilers

1617.5 sq

Is forced draft fitted

No

No. and Description of Boilers

One Single Ended Multitubular

Working Pressure

180 lb

Tested by hydraulic pressure to

360.

Date of test

26.8.04

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

50 sq

No. and Description of safety valves to

each boiler

Two Spring Loaded

Area of each valve

5.94

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

No side bunkers

Mean dia. of boilers

31.75"

Length

10' - 3"

Material of shell plates

S.

Thickness

1/32

Range of tensile strength

28-32

Are they welded or flanged

Yes

Descrip. of riveting: cir. seams

D.R.L.

long. seams

D.B.S. T.R.

Diameter of rivet holes in long. seams

1/4"

Pitch of rivets

7 3/8"

Lap of plates or width of butt straps

17 1/2"

Per centages of strength of longitudinal joint

rivets 85.1

plate 83

Working pressure of shell by rules

181

Size of manhole in shell

16" x 12"

Size of compensating ring

7 1/2" x 1 1/2"

No. and Description of Furnaces in each boiler

3 Plain

Material

S.

Outside diameter

41 1/2"

Length of plain part

top 73"

bottom 68"

Thickness of plates

crown 3/4"

bottom 3/4"

Description of longitudinal joint

D.B.S. S.P.

No. of strengthening rings

Yes

Working pressure of furnace by the rules

183

Combustion chamber plates: Material

S.

Thickness: Sides

23/32"

Back

21/32"

Top

23/32"

Bottom

Pitch of stays to ditto: Sides

10 1/4" x 9 5/8"

Back

8 1/4" x 9 1/2"

Top

9" x 10 1/2"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

180

Material of stays

S.

Diameter at smallest part

1 1/2" x 1 1/2"

Area supported by each stay

98 sq

Working pressure by rules

210 lb

End plates in steam space:

Material

S.

Thickness

1 1/2" x 1 1/2"

Pitch of stays

8 1/4" x 18"

How are stays secured

D.N.W.

Working pressure by rules

193

Material of stays

S.

Diameter at smallest part

2 1/2"

Area supported by each stay

338 sq

Working pressure by rules

181

Material of Front plates at bottom

S.

Thickness

1"

Material of Lower back plate

S.

Thickness

29"

Greatest pitch of stays

15 5/8" x 8 1/4"

Working pressure of plate by rules

181

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2" x 4 1/2"

Material of tube plates

S.

Thickness: Front

1"

Back

3/4"

Mean pitch of stays

9" x 14 1/2"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

183

Girders to Chamber tops: Material

S.

Depth and

thickness of girder at centre

6 1/2" x 2 1/4"

Length as per rule

32"

Distance apart

9"

Number and pitch of Stays in each

Working pressure by rules

181

Superheater or Steam chest; how connected to boiler

No

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If 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

Yes

DONKEY BOILER— No. *one* Description *one Cochran's Patent*
 Made at *Amman* By whom made *Cochran & Co. Amman Ltd* When made *1904* Where fixed *Stockholm*
 Working pressure *80 lbs* Heated by hydraulic pressure to *160 lbs* No. of Certificate *4137* Fire grate area *9 1/2* Description of safety valves *Spring*
 No. of safety valves *one* Area of each *4.9* Pressure to which they are adjusted *82 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *4'-6"* Length *9'-0"* Material of shell plates *Steel* Thickness *1 3/32"* Range of tensile strength *27 1/32* Descrip. of riveting long seams *Double* Dia. of rivet holes *25/32* Whether punched or drilled *drilled* Pitch of rivets *2 5/8"*
 Lap of plating *8 7/8"* Per centage of strength of joint *76.4* Rivets *70.2* Thickness of shell crown plates *7/16* Radius of do. *4'-9"* No. of Stays to do. *39* Description of stays *7/16" thick* **RADIUS** Diameter of furnace Top *1'-10 1/2"* Bottom *✓* Length of furnace *✓* Thickness of furnace plates *1 3/32"* Description of joint *nicked* Thickness of furnace crown plates *1/2"* Stayed by *✓* Working pressure of shell by rules *114 lbs*
 Working pressure of furnace by rules *108 lbs* Diameter of **TUBES** *2 1/2"* Thickness of **TUBE** plates *1/2"* Thickness of **STAY** tubes *1/4"*

SPARE GEAR. State the articles supplied:— *Two top end, 2 bottom, end, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 set piston bolts, 1 set feed, bilge, air & air pump valves, 1 main 1 donkey chuck valves, 1 propeller*

The foregoing is a correct description,

Wm. J. Eltringham & Co. Manufacturers of Marine Boilers

G. T. Heyn Manufacturing Engineers

Dates of Survey while building
 During progress of work in shops— *Eng: 1904 June 6, 16, 29, July 26, Aug 16, 25, Sep 2, 12, 15, 16, 1904, 27.*
 During erection on board vessel— *Eng: 1904 May 12, June 2, 9, 15, July 14, Aug 5, 16, 26.*
 Total No. of visits *21*

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *no*

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

The main boiler has been constructed under special survey, the material & workmanship found good, tested to the requirements & eligible in my opinion for classification. The machinery of this vessel has been built under special survey & in my opinion is eligible for record F.L.N.C.9.04

It is submitted that this vessel is eligible for THE RECORD. - F.L.N.C.9.04

11.10.04
11.10.04

The amount of Entry Fee.. £ *1* : : : When applied for, *10 OCT 1904*
 Special £ *14.14* : : : When received, *18710.14*
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : *11.10.04*

Committee's Minute

FRI. 14 OCT 1904

Assigned

L.M.C.9.04

MACHINERY CERTIFICATE WRITTEN.



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Newcastle-on-Tyne

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)