

REPORT ON MACHINERY.

Port of *Newcastle-on-Tyne*

10th. 21 AUG 1902

Received at London Office

No. in
Reg. Book.

Survey held at

Newcastle

Date, first Survey

Sep 12 '01

Last Survey

Aug 11 1902(Number of Visits *31*)

on the

S.S. 'Duna'

Tons

Gross *2916*Net *1842*When built *1902*

Master

J. Mulatto

Built at

Newcastle

By whom built

W. Dobson & Co

Engines made at

Newcastle

By whom made

*North Eastern Mar. Eng. Co*when made *1902*

Boilers made at

Newcastle

By whom made

*North Eastern Mar. Eng. Co*when made *1902*

Registered Horse Power

Owners

Adria Royal Hung. S.H. Co

Port belonging to

Fiume

Nom. Horse Power as per Section 28

294

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

*3*No. of Cranks *3*

Dia. of Cylinders

21½, 37½, 63

Length of Stroke

42

Revs. per minute

70

Dia. of Screw shaft

13½

Lgth. of stern bush

4' 9"

Dia. of Tunnel shaft

11½

Dia. of Crank shaft journals

12½

Dia. of Crank pin

12½

Size of Crank webs

14½ x 6½

Dia. of thrust shaft under

collars

Dia. of screw

15-11

Pitch of screw

17-0

No. of blades

4

State whether moveable

No

Total surface

765

No. of Feed pumps

2

Diameter of ditto

3½

Stroke

22

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

3½

Stroke

22

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

7-9-9, 9-4-4-7

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

In Engine Room

Four 3" Two 5"

In Holds, &c.

Two in each hold 3" run in

No. of bilge injections

1

sizes

5½

Connected to condenser, or to circulating pump

Yes

Is a separate donkey suction fitted in Engine room & size

*Yes 5"*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 *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

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

Now

Is the screw shaft tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Upper platform

BOILERS, &c.—

(Letter for record *Yes*)

Total Heating Surface of Boilers

4630 sq

Is forced draft fitted

No

No. and Description of Boilers

Two Simple Endless

Working Pressure

200 lbs

Tested by hydraulic pressure to

400 lbs

Date of test

20/6/02

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

58 sq

No. and Description of safety valves to

each boiler

Two Spring Valves

Area of each valve

7.07 sq

Pressure to which they are adjusted

205 lbs

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

12"

Mean dia. of boilers

15-1½"

Length

11-6"

Material of shell plates

S

Thickness

1½"

Range of tensile strength

29-32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

Lap double

long. seams

d.b. to riv.

Diameter of rivet holes in long. seams

13/32

Pitch of rivets

10"

Lap of plates or width of butt straps

20 7/8"

Percentages of strength of longitudinal joint

88

Working pressure of shell by rules

202

Size of manhole in shell

16 x 72

Size of compensating ring

Flanged in

No. and Description of Furnaces in each boiler

3 Brass C

Material

S

Outside diameter

49"

Length of plain part

top

Thickness of plates

*bottom**3 21/32*

Description of longitudinal joint

Welded

No. of strengthening rings

Yes

Working pressure of furnace by the rules

214

Combustion chamber plates: Material

S

Thickness: Sides

1/16

Back

1/16

Top

1/16

Bottom

1/4"

Pitch of stays to ditto: Sides

9½ x 8

Back

9½ x 8

Top

9½ x 8

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

211

Material of stays

2mm

Diameter at smallest part

1½ 1/16

Area supported by each stay

76 sq

Working pressure by rules

200

End plates in steam space:

Material

S

Thickness

1½"

Pitch of stays

19 7/8 x 21 5/8

How are stays secured

d.n.o.w.

Working pressure by rules

202

Material of stays

S

Diameter at smallest part

3½

Area supported by each stay

412

Working pressure by rules

202

Material of Front plates at bottom

S

Thickness

1½"

Material of Lower back plate

S

Thickness

1½"

Greatest pitch of stays

14½"

Working pressure of plate by rules

230

Mean pitch of stays

8 7/8"

Diameter of tubes

3¼

Pitch of tubes

4½ x 4 3/8

Material of tube plates

S

Thickness: Front

15/16

Back

7/8"

Mean pitch of stays

8 7/8"

Pitch across wide water spaces

14½"

Working pressures by rules

310

Girders to Chamber tops: Material

S

Depth and

3 8"

Thickness of girder at centre

9 5/8 x 2"

Length as per rule

34½"

Distance apart

9½"

Working pressure by rules

210

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

Yes

Diameter

Yes

Length

Yes

Thickness of shell plates

Yes

Material

Yes

Description of longitudinal joint

Yes

Diam. of rivet

Yes

Pitch of rivets

Yes

Working pressure of shell by rules

Yes

Diameter of flue

Yes

Material of flue plates

Yes

Thickness

Yes

Stiffened with rings

Yes

Distance between rings

Yes

Working pressure by rules

Yes

End plates: Thickness

Yes

How stayed

Yes

Working pressure of end plates

DONKEY BOILER—

No. *Two* Description *Mundiths Patent*

Made at *Stratton* By whom made *Riley Bros.* 2722 When made *7/4/02* Where fixed *upper deck*

Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *2767* Fire grate area *22 sq* Description of safety valves *spring*

No. of safety valves *2* Area of each *3.98* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *6-6"* Length *13-0"* Material of shell plates *S* Thickness *1/2"* Range of tensile strength *27-32* Descrip. of riveting long. seams *lap double* Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *3 1/2"*

Lap of plating *4 1/2"* Per centage of strength of joint *71.7* Thickness of shell crown plates *3/32"* Radius of do. *dished* No. of Stays to do. *✓* Dia. of stays *✓* Diameter of furnace Top *4-5 1/2"* Bottom *5-6 5/8"* Length of furnace *30"* Thickness of furnace plates *5/8"* Description of joint *lap single* Thickness of furnace crown plates *3/8"* Stayed by *dished* Working pressure of shell by rules *97*

Working pressure of furnace by rules *110* Diameter of uptake *3"* Thickness of uptake plates *19/32"* Thickness of water tubes *5/16"*

SPARE GEAR. State the articles supplied:— *Two top end & two bottom end cm. rod bolts and nuts, two main bearing bolts, one at coupling bolts, one set feed & bill pump valves, assorted bolts & nuts, Iron of various sizes.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops— *1901 Sep. 12. Nov. 6. 1902 Jan. 24. 28. Feb. 17. 26. March 10. 13. 20. 27. April 7. 14. 22. 30. May 6. 22. 27. June 5. 12. 20.*
During erection on board vessel— *July 3. 7. 11. 15. 17. 29. Aug. 7. 11*
Total No. of visits *31.*

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

" " " donkey " " *no*

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

Material of screw shaft *Iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *yes*

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 *✓*

The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good and under the vessel class in my opinion to have record of L.M.C. 702

It is submitted that this vessel is eligible for THE RECORD *L.M.C. 802.*

The amount of Entry Fee.. £ *2* : : : When applied for, *14.8.02*
Special .. £ *34 14* : : : *19.02*
Donkey Boiler Fee .. £ : : : When received, *21.8.02*
Travelling Expenses (if any) £ : : : *19.02*

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

Committee's Minute

FRI. 22 AUG 1902

Assigned

MACHINERY CERTIFICATE WRITTEN



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Lloyd's Register Foundation

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.)