

REPORT ON MACHINERY.

Port of

Glasgow

Received at London Office

19

No. in Survey held at
Reg. Book.

Paisley

Date, first Survey

10 April 1901

Last Survey

not held 1902.

(Number of Visits 45)

on the

Liverpool Steel Screw Hopper Barge No 22.

Tons

Gross 700.57
Net 300.58

Master

Built at

Paisley

By whom built

Fleming & Ferguson Ltd

When built

1902

Engines made at

Paisley

By whom made

Fleming & Ferguson Ltd

when made

1902

Boilers made at

do

By whom made

do

do

when made

1902

Registered Horse Power

Owners

Henry Cock & Harbour Board Port belonging to Liverpool.

Nom. Horse Power as per Section 28

133

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

No.

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

Three

No. of Cranks

3

Dia. of Cylinders

16 1/2, 26 - 4 3/4

Length of Stroke

27

Revs. per minute

110

Dia. of Screw shaft

as per rule 8 1/2

Lgth. of stern bush

36"

Dia. of Tunnel shaft

as per rule 7 1/2

Dia. of Crank shaft journals

as per rule 8 1/2

Dia. of Crank pin

8

Size of Crank webs

16 1/2

Dia. of thrust shaft under

collars 8 1/4

Dia. of screw

10 - 0"

Pitch of screw

12 - 6"

No. of blades

4

State whether moveable

No

Total surface

31.6 sq ft

No. of Feed pumps

one

Diameter of ditto

2 1/4"

Stroke

15"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

one

Diameter of ditto

2 1/4"

Stroke

15"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

7 x 5 x 12 (Heiss)

No. and size of

Suctions connected to both Bilge and Donkey pumps

In Engine Room

One 2 1/2" diameter

In Holds, &c

Two 2 1/4" in stokehold, two 2 1/4"

No. of bilge injections

1 sizes 6"

Connected to

circulating pump

Is a separate donkey suction fitted in Engine room & size

yes, 2 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

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

Suction pipes to hold

How are they protected

Hood boxing

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

the screw shaft tunnel watertight

Is it fitted with a watertight door

worked from

No.

BOILERS, &c.—

(Letter for record

S)

Total Heating Surface of Boilers

2446 sq ft

Is forced draft fitted

No

No. and Description of Boilers

Two, Single Ended

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

17/4/02

Can each boiler be worked separately

yes

Area of fire grate in each boiler

40 3/4 sq ft

No. and Description of safety valves to

each boiler

Two, Cockburn

Area of each valve

3.90

Smallest distance between boilers or uptakes and bunkers or woodwork

18"

Mean dia. of boilers

11 - 7"

Length

10 - 0"

Material of shell plates

Steel

Thickness

1"

Range of tensile strength

27/32

Are they welded or flanged

No

Descrip. of riveting: cir. seams

Double Lap

seams

5 inch

Diameter of rivet holes in long. seams

1 1/16"

Pitch of rivets

7 1/2"

Lap of plates or width of butt straps

15 7/8"

Per centages of strength of longitudinal joint

rivets 87.9

plate 85.8

Working pressure of shell by rules

187 lb

Size of manhole in shell

16" x 12"

Size of compensating ring

McKee's

No. and Description of Furnaces in each boiler

Two, Morrison

Length of plain part

top 10"

Thickness of plates

crown 9 1/16"

Description of longitudinal joint

Welded

No. of strengthening rings

Two

Working pressure of furnace by the rules

180

Combustion chamber plates: Material

Steel

Pitch of stays to ditto: Sides

7 3/4"

Back

7 3/4"

Top

9/8 x 8"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

183

Material of stays

Steel

Diameter at smallest part

4 1/2"

Area supported by each stay

530"

Working pressure by rules

183

End plates in steam space:

Material

Steel

Thickness

7/8"

Pitch of stays

15 1/4 x 18 1/4"

How are stays secured

Double Nuts

Working pressure by rules

180

Material of Front plates at bottom

Steel

with 1/16" doubler.

Thickness

3/4"

Material of Lower back plate

Steel

Thickness

1/16"

Greatest pitch of stays

13"

Working pressure of plate by rules

185

Diameter of tubes

3"

Pitch of tubes

4 1/8"

Material of tube plates

Steel

Thickness: Front

3/4"

Back

1/16"

Mean pitch of stays

8 1/4"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

206 lb.

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

8" x 1 1/2"

Length as per rule

27 3/4"

Distance apart

9 7/8"

Number and pitch of Stays in each

Two, 8"

Working pressure by rules

190 lb

Superheater or Steam chest; how connected to boiler

None.

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

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

Lloyd's Register

Foundation

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DONKEY BOILER— No. ✓ Description *None.*

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____

Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____

Descrip. of riveting long. seams _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____

Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied: *Two top and two bottom end bolts + nuts, two main bearing bolts + nuts, one set coupling bolts + nuts, one set each of feed + bilge pump valves, one set of rings + springs for each piston, a few bars of iron, assorted bolts + nuts, one set of crank pin brasses and one circulating pump vane.*

The foregoing is a correct description, _____

Manufacturer. _____

Dates of Survey while building

During progress of work in shops	1901: Apr. 10, 25, May 9, 16, Jun. 19, 25, 28, Jul. 3, 26, 31, Aug. 2, 19, 26, 30, Sep. 4, 6, 13, 19, 27, Oct. 7, 8, 9, 17, 19.
During erection on board vessel	21, 30, Nov. 6, 7, 14, 22, 26, Dec. 3, 13, 20, 27, 1902: Jan. 14, 17, 24, 29, Feb. 5, 6, 13, 17, 18, 21.
Total No. of visits	45.

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

" " " donkey " " *None.*

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

Material of screw shaft *S. M. Steel* 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 *yes.*

If the liner does not fit tightly at the part between the bearings & 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 built under special survey, the material and workmanship are of good quality, it has been securely fitted on board and a full speed trial run which was in every way satisfactory.

In our opinion the machinery of this barge is now eligible for regd of L.M.C. 2.02 (in red) in register book.

This is a sister vessel to Barge No 21. Clayton report. No 19311.

Boiler plans & forging report now attached, please return boiler plans when done with as there is another set of boilers under construction.

It is submitted that this vessel is eligible for THE RECORD. LMC 2.02

The amount of Entry Fee. £ 2 :
Special " " " £ 19 : 19 :
Donkey Boiler Fee " " " £ : :
Travelling Expenses (if any) £ : :
When applied for, 22/2/02
When received, 27/2/02

George Murdoch James Hollison
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow. 24 FEB. 1902*

Assigned *+ d M.C. 2.02.*

Menu fee recd.

