

REPORT ON MACHINERY.

No. 24061

TUES. 5 JUN 1906

Port of Glasgow

Received at London Office

19

No. in Survey held at
Reg. Book.
54 on the

Glasgow

Date, first Survey 4 Oct 05

Last Survey 25 May 1906

(Number of Visits)

Master

Built at

Port Glasgow

By whom built

Russell & Co

Tons

Gross

Net

When built 1906

Engines made at

Glasgow

By whom made

David Rowan & Co

when made 1906

Boilers made at

do

By whom made

do

when made 1906

Registered Horse Power

Owners

Chadwick & Son

Port belonging to Liverpool

Nom. Horse Power as per Section 28

400

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

26" 42" 70"

Length of Stroke

48"

Revs. per minute

Dia. of Screw shaft

as per rule 1 1/2"

Material of screw shaft

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

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

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

Dia. of Tunnel shaft

as per rule 13" 9/8"

Dia. of Crank shaft journals

as per rule 13 3/4"

Dia. of Crank pin

1 1/4"

Size of Crank webs

8 7/8"

Dia. of thrust shaft under collars

1 1/4"

Dia. of screw

17" 10"

Pitch of Screw

18" 3"

No. of Blades

4

No. of Feed pumps

2

Diameter of ditto

3 3/4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4"

Stroke

24"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

3

Sizes of Pumps

9 x 12 x 10

5 1/2 x 3 1/2 x 5

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

In Engine Room

5 - 3 1/2"

In Holds, &c.

2 - 3 1/2"

each hold

Tunnel 2 1/2"

No. of Bilge Injections

1 sizes 6"

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Yes - 3 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

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

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

For Suctions

How are they protected

Wood covering

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Dates of examination of completion of fitting of Sea Connections

of Stern Tube

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Top grating

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel

Glasgow Bridge Steel Co. Ltd. Cambuslang

Total Heating Surface of Boilers

6621

Is Forced Draft fitted

No

No. and Description of Boilers

Three Single Ended

Working Pressure

180 lb

Tested by hydraulic pressure to

360 lb

Date of test

2.5.06

No. of Certificate

8056

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

57.75 sq

No. and Description of Safety Valves to

each boiler

Two Cockburn

Area of each valve

Smallest distance between boilers or uptakes and bunkers or woodwork

17 1/2"

Mean dia. of boilers

13" 0"

Length

11" 0"

Material of shell plates

Yes

Thickness

1 7/32"

Range of tensile strength

28 1/2 ton

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D. R. L.

long. seams

D. B. S.

Diameter of rivet holes in long. seams

1 7/16"

Pitch of rivets

8 3/4"

Lap of plates or width of butt straps

19 1/4"

Per centages of strength of longitudinal joint

rivets 94.9%

plate 83%

Working pressure of shell by rules

182 lb

Size of manhole in shell

16 x 12

Size of compensating ring

2" 7 x 2" 3

No. and Description of Furnaces in each boiler

3 Dighton

Material

Steel

Outside diameter

46 1/8"

Length of plain part

top 3 1/16"

Thickness of plates

crown 3 1/16"

Description of longitudinal joint

weld

No. of strengthening rings

—

Working pressure of furnace by the rules

190

Combustion chamber plates: Material

Steel

Thickness: Sides

3 1/32"

Back

2 1/32"

Pitch of stays to ditto: Sides

8 3/4 x 9"

Back

9 x 9"

Top

8 3/4 x 9"

If stays are fitted with nuts or riveted heads

Yes

Material of stays

Steel

Diameter at smallest part

2.07"

Area supported by each stay

81"

Working pressure by rules

204

Material

Steel

Thickness

1 7/16"

Pitch of stays

8 1/2 x 15 7/8"

How are stays secured

D. R. L.

Material of Front plates at bottom

Steel

Thickness

7/8"

Material of Lower back plate

Steel

Thickness

27/32"

Greatest pitch of stays

13 1/2"

Working pressure of plate by rules

187

Diameter of tubes

3 1/4"

Pitch of tubes

1 1/2 x 4 1/2"

Material of tube plates

Steel

Thickness: Front

3 1/32"

Back

1 3/16"

Mean pitch of stays

11 1/8"

Pitch across wide water spaces

13 1/2"

Working pressures by rules

184 lb

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9 x 17 1/2 x 12"

Length as per rule

35"

Distance apart

9"

Number and pitch of stays in each

3 - 8 3/4"

Working pressure by rules

200 lb

Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

separately

Yes

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

Working pressure of end plates

Area of safety valves to superheater

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Yes

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Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. 1 Description Multitubular Reported Rpt. 5
 Made at Glasgow By whom made David Rowan & Co. When made 1906 Where fixed
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment
 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
 Working pressure of shell by rules 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
 Working pressure of furnace by rules Thickness of furnace crown plates Stayed by
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— Propeller, tail shaft, set of air pump valves
set of circulating pump valves etc. & the bolts, nuts etc. required
by the Rules.

The foregoing is a correct description,

for David Rowan & Co. Manufacturers.

Dates of Survey while building
 During progress of work in shops— 1905: Oct. 4, 19, Nov. 4, 24, Dec. 7, 11, 22, 27, 28, 29, 30, Jan. 12, 19, Feb. 6, 22, 13, Mar.
 During erection on board vessel— 5, 9, 12, 16, April 10, 13, 21, 27, May 4, 15, 26, 28.
 Total No. of visits 28 Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 1.3.06 Slides 1.3.06 Covers 1.3.06 Pistons 16.3.06 Rods 1.3.06
 Connecting rods 1.3.06 Crank shaft 20.12.05 Thrust shaft 14.11.05 Tunnel shafts 11.12.05 Screw shaft 10.4.06 Propeller 10.4.06
 Stern tube 10.4.06 Steam pipes tested Various Engine and boiler seatings 17.5.06 Engines holding down bolts 17.5.06
 Completion of pumping arrangements 17.5.06 Boilers fixed 17.5.06 Engines tried under steam 25.5.06
 Main boiler safety valves adjusted 18.5.06 Thickness of adjusting washers S. 5 3/4, P. 3/4, C. 5 7/8, P. 3/4, P. 5 7/8, P. 3/4
 Material of Crank shaft Steel Identification Mark on Do. (X) 45 Material of Thrust shaft Steel Identification Mark on Do. (X) 45
 Material of Tunnel shafts Steel Identification Marks on Do. (X) 45 Material of Screw shafts Steel Identification Marks on Do. (X) 45
 Material of Steam Pipes Copper Test pressure 360 lb

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

The engines & boilers of this vessel have been constructed
under Special Survey & are of good materials & workmanship
They have been securely fitted on board & satisfactorily
tried under steam.

This vessel is in my opinion eligible for notation *L.M.C. 5, 0
in the Register Book.

It is submitted that
 this vessel is eligible for
 THE RECORD L.M.C. 5.06.

The amount of Entry Fee. £ 2.00 When applied for 6.6.06
 Special £ 40 When received 6.6.06
 Donkey Boiler Fee £
 Travelling Expenses (if any) £

Committee's Minute

Assigned + L.M.C. 5.06

Glasgow - 4 JUN 1906

H. Gardner-Smith.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.