

## REPORT ON MACHINERY.

No. 24981.

Port of Glasgow

Received at London Office TUES. MAR 19 1907

No. in Survey held at Glasgow

Date, first Survey 12 Dec 04 Last Survey March 8 1907

Reg. Book.

84 on the

(Number of Visits)

Master

Built at Port Glasgow

By whom built W Hamilton &amp; Co

Tons

When built 1907

Engines made at Glasgow

By whom made

David Rowan &amp; Co (P.H.20)

when made 1907

Boilers made at do

By whom made do

when made 1907

Registered Horse Power

Owners W Just &amp; Co (Ings)

Port belonging to Liverpool.

Nom. Horse Power as per Section 28 387.

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

## ENGINES, &amp;c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 25 1/2 - 42 - 70 Length of Stroke 45

Revs. per minute

Dia. of Screw shaft as per rule 14 1/2

Material of 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

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

If two

Dia. of Tunnel shaft as per rule 12 1/2

Dia. of Crank shaft journals as per rule 13 1/2

Dia. of Crank pin 14 1/2

Size of Crank webs 8 1/2

Dia. of thrust shaft under

collars 14 1/4

Dia. of screw 17 3/4

Pitch of Screw 18 3/4

No. of Blades 4

State whether moveable No

Total surface 96 #

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 2 x 10, 6 x 6 x 8, 5 1/2 x 4 1/2

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

In Engine Room

4 - 3 1/2

In Holds, &amp;c. 2 - 3 1/2 each hold

Tunnel 2 3/4

After mill 3 1/2

No. of Bilge Injections 1

size 7

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room &amp; 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 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

For 3 suction

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 Yes

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

Dates of examination of completion of fitting of Sea Connections

9

of Stern Tube 9

Screw shaft and Propeller 10 R. Rpt.

Is the Screw Shaft Tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Top grating

## BOILERS, &amp;c.—(Letter for record (S))

Manufacturers of Steel

The Clyde Bridge Steel Co Ltd

Total Heating Surface of Boilers 5106

Is Forced Draft fitted Yes

No. and Description of Boilers

Two Single Ended

Working Pressure 180 lb

Tested by hydraulic pressure to 360 lb

Date of test 30/11/06

No. of Certificate 8396

Can each boiler be worked separately Yes

Area of fire grate in each boiler 60.5 #

No. and Description of Safety Valves to

each boiler 2 Spring

Area of each valve 9.6

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 66.14

Mean dia. of boilers 15.3

Length 11.9

Material of shell plates

Thickness 1 1/2

Range of tensile strength 28 1/2 tons

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams D. R. L.

long. seams A. B. 8

Diameter of rivet holes in long. seams 1 1/16

Pitch of rivets 8 1/2

Lap of plates or width of butt straps 19 1/4

Per centages of strength of longitudinal joint

rivets 93.7

plate 83.7

Working pressure of shell by rules

180 lb

Size of manhole in shell 16 x 12

Size of compensating ring 2.9 x 2.5

No. and Description of Furnaces in each boiler 3 Forc'd

Material

Outside diameter 4.0 1/4

Length of plain part top

Thickness of plates

crown 1 1/2

Description of longitudinal joint

weld

No. of strengthening rings

Working pressure of furnace by the rules 208

Combustion chamber plates: Material

steel

Thickness: Sides 3 1/2

Back 3 1/2

Top 3 1/2

Bottom 3 1/2

Pitch of stays to ditto: Sides 8 1/2 x 8 1/2

Back 10 x 8

Top 8 1/2 x 9 1/2

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 184 lb

Material of stays steel

Diameter at smallest part 2.07

Area supported by each stay 81

Working pressure by rules 204

End plates in steam space:

Material steel

Thickness 1 1/2

Pitch of stays 19 1/2 x 16 1/2

How are stays secured 9 nuts

Working pressure by rules 180

Material of stays steel

Diameter at smallest part 6.41

Area supported by each stay 325

Working pressure by rules 197

Material of Front plates at bottom steel

Thickness 7/8

Material of Lower back plate steel

Thickness 7/8

Greatest pitch of stays 14 3/4

Working pressure of plate by rules 188

Diameter of tubes 2 1/2

Pitch of tubes 3 1/4 x 3 5/8

Material of tube plates steel

Thickness: Front 1

Back 7/8

Mean pitch of stays 9

Pitch across wide water spaces 13 3/4

Working pressures by rules 190 lb

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 9 3/4 x 7 1/2

Length as per rule 33

Distance apart 9 1/2

Working pressure by rules 220

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

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

Working pressure of end plates

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Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates



# VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description *Multitubular See Rpt. 5.*  
 Made at *Glasgow* By whom made *David Rowan & Co.* When made 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 Rivets  
 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 and pump valves, set circulating pump valves, for top and brasses, for bottom end brasses, top half eccentric strap, etc., & the bolts etc. required by the Rules.*

The foregoing is a correct description,

*David Rowan & Co.* Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1907. Dec 15 1907. Jan 9 16 23 Feb 9 15 Mar 1 29 Apr 5 12 27 May 5 19 29 Jun 12 16 29 Jul 12 Aug 1 11 Oct 4 19  
 During erection on board vessel— Nov 12 Dec 7 11 15 28 29 1907. Jan 4 19 Feb 6 8 Mar 5 12 16 Apr 9 21 27 May 21 Jun 22 Sep 2 5 Oct 25 29 31  
 Total No. of visits *69*

Is the approved plan of main boiler forwarded herewith *Same as "donkey" " " " " " "*

Dates of Examination of principal parts—Cylinders *2/9/06 etc.* Slides *2/9/06 etc.* Covers *2/9/06 etc.* Pistons *2/9/06 etc.* Rods *2/9/06 etc.*  
 Connecting rods *2/9/06 etc.* Crank shaft *7/10/06 etc.* Thrust shaft *7/10/06 etc.* Tunnel shafts *7/10/06 etc.* Screw shaft *9/11/05 etc.* Propeller *20/12/06*  
 Stern tube *20/12/06* Steam pipes tested *29/10/06, 26/2/07* Engine and boiler seatings *20/2/07* Engines holding down bolts *28/2/07*  
 Completion of pumping arrangements *2/3/07* Boilers fixed *2/3/07* Engines tried under steam *2nd 8<sup>th</sup> 1907*  
 Main boiler safety valves adjusted *2/3/07* Thickness of adjusting washers *D. 3. 14/32 P. 17/32 P. 5 14/32 P. 13/32*  
 Material of Crank shaft *Iron* Identification Mark on Do. *(HGS)* Material of Thrust shaft *Steel* Identification Mark on Do. *(HGS)*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *(HGS)* Material of Screw shafts *Steel* Identification Marks on Do. *(HGS)*  
 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 3.07 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. *\* L. M. C. 3.07.*

F. D. ELEC LIGHT.

*20/3/07*

The amount of Entry Fee.. £ *3* : :  
 Special .. £ *39* : *7* :  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : :

When applied for, 6 MAR 1907  
 When received, 21.3.07

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

Committee's Minute

Assigned

*\* L. M. C. 3.07*



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