

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office 11th 21 NOV 1905

No. in Survey held at Glasgow

Date, first Survey 9<sup>th</sup> Jan

Last Survey Nov 2<sup>nd</sup> 1905

Reg. Book.

(Number of Visits)

28 Ship on the S.S. "Matoppo"

Tons <sup>Gross</sup>

Master

Built at Port Glasgow

By whom built W Hamilton & Co

When built 1905

Engines made at Glasgow

By whom made D Rowan & Co

when made 1905

Boilers made at Ido

By whom made do

when made 1905

Registered Horse Power

Owners Bucknall Bros

Port belonging to London

Nom. Horse Power as per Section 28 487

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

## ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 26-44-73

Length of Stroke 48

Revs. per minute

Dia. of Screw shaft <sup>as per rule</sup> 14.8

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 —

Length of stern bush 5-3

Dia. of Tunnel shaft <sup>as per rule</sup> 13.57

Dia. of Crank shaft journals <sup>as per rule</sup> 14.25

Dia. of Crank pin 14.5

Size of Crank webs 9.5

Dia. of thrust shaft under collars 15

Dia. of screw 17-6

Pitch of screw 17-0

No. of blades 4

State whether moveable Yes

Total surface 100

No. of Feed pumps 2

Diameter of ditto 4

Stroke 24

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 4.5

Stroke 24

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 4 + 2 feed

Sizes of Pumps 9x12x10, 5.5x3.5x5, 8x5x8

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

In Engine Room 6 - 3.5

In Holds, &c. 2 - 2.5

2-4 hold 1-3.5 Tunnel 2.5

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 3.5

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 For 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launch

Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from Top gratings

## BOILERS, &c.—No. of Certificate 7562 (Letter for record (5))

Total Heating Surface of Boilers 6687

Is forced draft fitted Hawden's

No. and Description of Boilers Three Single Ended

Working Pressure 200 lb

Tested by hydraulic pressure to 400 lb

Date of test 31/5/05

Can each boiler be worked separately Yes

Area of fire grate in each boiler 57.75

No. and Description of safety valves to each boiler Two Cockburn

Area of each valve 8.39

Pressure to which they are adjusted 210 lb

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2-6

Mean dia. of boilers 14-9

Length 11-6

Material of shell plates Steel

Thickness 1.5

Range of tensile strength 28.5

Are they welded or flanged No

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

long. seams D.B.S.

Diameter of rivet holes in long. seams 17/16

Pitch of rivets 9.5

Lap of plates or width of butt straps 21

Per centages of strength of longitudinal joint 84.87

Working pressure of shell by rules 200 lb

Size of manhole in shell 16x12

No. and Description of Furnaces in each boiler 3 Dighton

Material Steel

Outside diameter 3' 10 3/16

Length of plain part 2-7x2-3x1.5

Thickness of plates 1.932

Description of longitudinal joint weld

No. of strengthening rings —

Working pressure of furnace by the rules 204

Combustion chamber plates: Material Steel

Thickness: Sides 2 1/32

Back 7/8

Top 2 1/32

Bottom 15/16

Pitch of stays to ditto: Sides 8x8 1/4

Back 7x9

Top 8x9

If stays are fitted with nuts or riveted heads Nuts

Working pressure by rules 206

Material of stays Steel

Diameter at smallest part 2.07

Area supported by each stay 72

Working pressure by rules 230

End plates in steam space:

Material Steel

Thickness 1.8

Pitch of stays 18 1/2 x 15 1/2

How are stays secured D. nuts

Working pressure by rules 200

Material of stays Steel

Diameter at smallest part 6.4

Area supported by each stay 278

Working pressure by rules 230

Material of Front plates at bottom Steel

Thickness 7/8

Material of Lower back plate Steel

Thickness 15/16

Greatest pitch of stays 14 1/4

Working pressure of plate by rules 212 1/2

Diameter of tubes 3 1/4

Pitch of tubes 4 1/2 x 4 1/2

Material of tube plates Steel

Thickness: Front 1 1/32

Back 7/8

Mean pitch of stays 11 7/8

Pitch across wide water spaces 14 1/4

Working pressures by rules 200 lb

Girders to Chamber tops: Material Steel

Depth and thickness of girder at centre (8 1/4 x 1) x 2

Length as per rule 31

Distance apart 9

Number and pitch of Stays in each 3-8

Working pressure by rules 235

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

—

—

—

—

—

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**DONKEY BOILER**— No. 1 Description Cylindrical - Reported Separately.  
 Made at \_\_\_\_\_ By whom made David Rowan & Co Date of test \_\_\_\_\_ Where fixed Tween Decks  
 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:— Tail shaft, 2 propeller blades, 1 eccentric strap,  
for bottom end brasses, air pump bucket & rod, circulating pump  
bucket & rod, air pump head valve seat & guard, set of air &  
circulating pump valves, etc., & the bolts etc. required by the rules.  
 The foregoing is a correct description,  
David Rowan & Co Manufacturer.

Dates { During progress of work in shops - } 1905. Jan 9. Feb 9. 15. Mar. 1. 2. 7. 11. 21. Apr. 1. 6. 16. 27. May 17. 19. 22.  
 { During erection on board vessel - } Jan. 12. 16. 29. July 12. Aug. 1. 11. 19. 25. Nov. 18.  
 { while building } \_\_\_\_\_  
 Total No. of visits 25.  
 Is the approved plan of main boiler forwarded herewith Yes  
 " " " donkey " " " Yes

**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. 11.05**  
in the Register Book.

It is submitted that  
 this vessel is eligible for  
**THE RECORD L.M.C. 11.05. F.D. ELEC. LIGHT.**

W. L.  
21.11.05

The amount of Entry Fee... £ 3 : :  
 Special ... £ 44 : 7 :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 Glasgow 20 NOV 1905

When applied for, 20 NOV 1905  
 When received, 22. 11. 05  
H. S. Rowan & Co  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned **+ L.M.C. 11.05.**  
 Glasgow 20 NOV 1905  
 FRI. 18 MAY 1906  
 TUES. 31 JUL 1906  
 TUES. 11 SEP 1906

MACHINERY CERTIFICATE  
 WRITTEN, 21.11.05

Lloyd's Register  
 Foundation

FLAT (If Bra) GARB...  
 State thickness way of Bot...  
 R STRA...  
 DOUBLIN Length and thickness...  
 POOP SIDE BRIDGE S FORECAST...  
 Man manufact...  
 Plates, I...  
 PLATE LANA...  
 Has the...  
 FRAME REVER...  
 LOWER...  
 Bowsprit Topmast Rigging Sails...  
 EQUIP...  
 Number of Certificate...  
 55188  
 55186  
 55187  
 28219  
 28218  
 Number of Certificate...  
 28948  
 28947  
 Iron Stream Elm or Steel Wire  
 Boats TW Pumps, Nth Windlass is Engine Ro...  
 What arrang Coal Bunk Number of S Ceiling in Cargo Hat State size No Number of V...  
 Bulwarks, The above is Builder's S...

No. in Sur Req. Book...  
 on th...  
 Master...  
 Engines made...  
 Boilers made...  
 Registered Ho...  
 MULTITU...  
 (Letter for re...  
 Boilers...  
 No. of Certif...  
 safety valves...  
 Are they fitte...  
 Smallest dist...  
 Material of...  
 Descrip. of...  
 Lap of plat...  
 rules 10...  
 boiler 2...  
 Description...  
 plates: Ma...  
 Top 9 3/4...  
 smallest pa...  
 Pitch of ste...  
 Area supp...  
 Lower back...  
 Pitch of tw...  
 water spac...  
 girder at...  
 Working p...  
 separately...  
 holes...  
 If stiffene...  
 Working...  
 VERT...  
 Made at...  
 Working...  
 No. of sa...  
 enter the...  
 strength...  
 Lap of p...  
 Radius o...  
 Thicknes...  
 plates...  
 Dates of Surve while building...