

REPORT ON MACHINERY.

No. 13661.

Port of GreenockReceived at London U.S. 30 JUN 1903No. in Survey held at GreenockDate, first Survey 24th March 1902 Last Survey 24th June 1902

Reg. Book.

(Number of Visits 86)

on the

Screw Steamer "Mercury"

Master

Built at Port Glasgow

By whom built

Russell & Co.

Tons

Gross

Net

When built 1902

Engines made at

Greenock

By whom made

Rankin & Blackmore

when made

1902

Boilers made at

Greenock

By whom made

Rankin & Blackmore

when made

1902

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

340

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

No

ENGINES, &c.—Description of Engines

Triple ExpansionNo. of Cylinders ThreeNo. of Cranks ThreeDia. of Cylinders 25" 41" 67" Length of Stroke 45" Revs. per minute 65

Dia. of Screw shaft

as per rule 14.8"Material of IronIs the screw shaft fitted with a continuous liner the whole length of the stern tube No

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 in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes

If two

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

LappedLength of stern bush 61"

Dia. of Tunnel shaft

as per rule 12.8"

Dia. of Crank shaft journals

as per rule 12.8"as fitted 12.8"Dia. of Crank pin 12.8"Size of Crank webs 8 1/2" x 17"

Dia. of thrust shaft under

collars 13 1/2"Dia. of screw 1 1/4" 9"Pitch of screw 1 1/4" 6"No. of blades 4State whether moveable NoNo. of Feed pumps 2Diameter of ditto 3 1/2"Stroke 24"Can one be overhauled while the other is at work YesNo. of Bilge pumps 2Diameter of ditto 4 1/2"Stroke 24"Can one be overhauled while the other is at work YesNo. of Donkey Engines TwoSizes of Pumps 9" x 10"BallastOpen Feed

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

In Engine Room Four: 3 1/2" dia.In Holds, &c. No. 1 Hold: Two 3 1/2" dia.No. 2 Hold: Two 3 1/2" dia.No. 3 Hold: Two 3 1/2" dia.No. 4 Hold: Two 3 1/2" dia.Tunnel well: one 2 1/2" dia.No. of bilge injections 1sizes 5 1/2"Connected to condenser, or to circulating pump C.P.Is a separate donkey suction fitted in Engine room & size Yes: 3 1/2"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible YesAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the discharge pipes above or below the deep water line AboveAre they each fitted with a discharge valve always accessible on the plating of the vessel YesAre the blow off cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers NoneHow are they protected YesAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock At vesselIs the screw shaft tunnel watertight YesIs it fitted with a watertight door Yesworked from Top platform in Engine Room

BOILERS, &c.—

(Letter for record B)Total Heating Surface of Boilers 5438.5 sq. ft.Is forced draft fitted NoNo. and Description of Boilers Two: Cylindrical multi: Single EndedWorking Pressure 180 lbsTested by hydraulic pressure to 360 lbsDate of test 5/5/02Can each boiler be worked separately YesArea of fire grate in each boiler 41 sq. ft.

No. and Description of safety valves to

each boiler Two: Direct SpringArea of each valve 9.62"Pressure to which they are adjusted 185 lbsAre they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork About 15"Mean dia. of boilers 16' 0"Length 10' 9"Material of shell plates SteelThickness 1 1/2"Range of tensile strength 29-32 tonsAre they welded or flanged NoDescrip. of riveting: cir. seams Lap doublelong. seams Double Butt StrapsDiameter of rivet holes in long. seams 1 5/16"Pitch of rivets 9 5/16"Lap of plates on width of butt straps 19 1/2"

Per centages of strength of longitudinal joint

rivets 86.3Size of compensating ring 30 x 20 x 1 1/2"No. and Description of Furnaces in each boiler 4: plainMaterial SteelOutside diameter 40"

Length of plain part

top 6' 7"

Thickness of plates

crown 3 3/4"Description of longitudinal joint 4: weldedNo. of strengthening rings 4: 4 x 4"Working pressure of furnace by the rules 180 lbsCombustion chamber plates: Material SteelThickness: Sides 9/16"Back 9/16"Pitch of stays to ditto: Sides 7/8" x 7/8"Back 7/8" x 7/8"Top 7/8" x 7/8"If stays are fitted with nuts or riveted heads NutsWorking pressure by rules 183 lbsMaterial of stays SteelDiameter at smallest part 1 3/8"Area supported by each stay 79"Working pressure by rules 188 lbs

End plates in steam space:

Material SteelThickness 1 1/8"Pitch of stays 17 x 16 3/8"How are stays secured Double nutsDiameter at smallest part 2 3/8"Area supported by each stay 249"Working pressure by rules 190 lbsMaterial of Front plates at bottom SteelThickness 1 3/8"Material of Lower back plate SteelThickness 1 3/8"Greatest pitch of stays 12 1/2"Working pressure of plate by rules 224 lbsDiameter of tubes 3 1/4"Pitch of tubes 4 1/2" x 4 3/8"Material of tube plates SteelThickness: Front 3/4"Back 3/4"Pitch across wide water spaces 14 1/4"Working pressures by rules 182 lbs 256 lbsGirders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 9" x 1 1/2"Length as per rule 32"Distance apart 8 1/2"Number and pitch of Stays in each 2: 9 1/4"Working pressure by rules 194 lbsSuperheater 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

W608-0185

DONKEY BOILER— No. *One* Description *See Glasgow Report No. 20925.*
 Made at *Glasgow* By whom made *Lindsay Burnell & Co.* When made *22/2/03* Where fixed *on Deck.*
 Working pressure *90 lb* tested by *hydraulic* pressure to *180 lb* No. of Certificate *6549* Fire grate area *25.4* Description of safety valves *James Spring*
 No. of safety valves *2* Area of each *8.29* Pressure to which they are adjusted *94 lb* If fitted with easing gear *Yes*. If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *4 ft* Length *10 ft* Material of shell plates *Steel* Thickness *1/2 in* Range of tensile strength *36 tons* Descrip. of riveting long. seams *Double* Dia. of rivet holes *1/2 in* Whether punched or drilled *Drilled* Pitch of rivets *1 in*
 Lap of plating *1 in* Per centage of strength of joint *80* Rivets *1/2 in* Thickness of shell crown plates *1/2 in* Radius of do. *12 in* No. of Stays to do. *12*
 Dia. of stays. *1/2 in* Diameter of furnace Top *4 ft* Bottom *4 ft* Length of furnace *10 ft* Thickness of furnace plates *1/2 in* Description of joint *Double* Thickness of furnace crown plates *1/2 in* Stayed by *12 stays* Working pressure of shell by rules *90 lb*
 Working pressure of furnace by rules *90 lb* Diameter of uptake *4 ft* Thickness of uptake plates *1/2 in* Thickness of water tubes *1/2 in*

SPARE GEAR. State the articles supplied:— *Propeller & shaft, 12 shaft Couplings, 2 Connecting Rod Bolts, 2 Piston Rod Bolts, 2 main Bearing Bolts, 3 Crank shaft, 6 Piston Ring Bolts, 2 Feed pump valves, 2 Bilge pump valves, 12 Boiler tubes, 12 Condenser tubes, 1 Set of safety valve springs, 6 Cylinder Cover Studs & Nuts, 6 Valve Casing Cover Studs & Nuts, Iron of various sizes. Quantities of Bolts & Nut Assorted sizes.*
 The foregoing is a correct description,

Ramsay & Macdonald Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1902. March 24. May 7. 12. 19. 23. 26. Aug 12. 21. 29. Sep 2. 5. 9. 15. 17. 18. 19. 22. 23. 26. Oct 1. 2. 7.*
 During erection on board vessel— *9. 13. 16. 20. 23. 27. 28. 31. Nov 4. 6. 10. 13. 18. 19. 21. 27. Dec 1. 4. 9. 12. 18. 1903. Jan 9. 13. 21. 23. 29.*
 Total No. of visits *28. 30. June 1. 3. 9. 10. 13. 16. 17. 24.* (85 visits)
 Is the approved plan of main boiler forwarded herewith *Yes.*

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

*The Engines and Boilers of this vessel have been built under Special Survey and the materials and workmanship are good. When completed the machinery was examined while running a full power trial in the Firth, and found to work satisfactorily. It is now in good and efficient condition throughout and eligible in my opinion to have the record of **LMC 6.03** marked in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. **LMC 6.03***

Bale
17.03

17.03

The amount of Entry Fee. £ *3* : : :
 Special .. £ *37* : : :
 Donkey Boiler Fee .. £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, *24.6.1903*
 When received, *26.6.1903*

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

Committee's Minute

Glasgow 29 JUN 1903

Assigned

+ LMC 6.03.

MACHINERY CERTIFICATE
 WRITTEN 27-03



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 Foundation