

## REPORT ON MACHINERY.

No. 13655.

Port of GreenockReceived at London Office JUN 23 1903No. in Survey held at GreenockDate, first Survey 20th Oct/02 Last Survey 12th June 1903

Reg. Book.

(Number of Visits 66)on the Screw Steamer SchuykillMaster R. NicholasBuilt at Port GlasgowBy whom built Russell & CoGross  
TonsNet  
When built 1903Engines made at GreenockBy whom made Rankin & Blackmorewhen made 1903Boilers made at GreenockBy whom made Rankin & Blackmorewhen made 1903

Registered Horse Power

Owners Anglo-American Oil CoPort belonging to LondonNom. Horse Power as per Section 28 418Is Refrigerating Machinery fitted NoIs Electric Light fitted No

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

Triplic ExpansionNo. of Cylinders ThreeNo. of Cranks ThreeDia. of Cylinders 27" 43" 72"Length of Stroke 48"Revs. per minute 60

Dia. of Screw shaft

as per rule 18"Material of Ironas fitted 15 1/2"

screw shaft)

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 YesIf 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 YesLength of stern bush 61"

Dia. of Tunnel shaft

as per rule 13 1/2"as fitted 13 1/2"

Dia. of Crank shaft journals

as per rule 13 1/2"as fitted 14 1/2"Dia. of Crank pin 14 1/2"Size of Crank webs 9" x 18 1/2"

Dia. of thrust shaft under

collars 14"Dia. of screw 18 1/2"Pitch of screw 16 1/2"No. of blades 14State whether moveable YesTotal surface 105.5 sq. ft.No. of Feed pumps 1Diameter of ditto 3 1/4"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 3

SIZES OF PUMPS

8" x 9" 8" x 8" 5" x 8" 5" x 6"

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

In Engine Room Three: 3 1/2" dia.In Holds, &c. Fore Hold: Two 3 1/2" dia. Main Hold: Two 3 1/2" dia.Deep Tank: Two 6" dia. & Two 3 1/2" dia. After Hold: Two 3 1/2" dia. Aftermost Hold: Two 3 1/2" dia. Tunnel Well: 1-2 1/2" dia.No. of bilge injections 2sizes 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" dia.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 New VesselIs the screw shaft tunnel watertight YesIs it fitted with a watertight door Yesworked from Upper platform

## BOILERS, &amp;c.—

(Letter for record S)Total Heating Surface of Boilers 6850 sq. ft.Is forced draft fitted NoNo. and Description of Boilers Three: Cylindrical Multi Single Ended Working Pressure 180 lbs.Tested by hydraulic pressure to 360 lbs.Date of test 8/4/03Can each boiler be worked separately YesArea of fire grate in each boiler 61 1/2 sq. ft.

No. and Description of safety valves to

each boiler Two: Direct SpringArea of each valve 7.06 sq. in.Pressure to which they are adjusted 185 lbs.Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork About 14"Mean dia. of boilers 15' 0"Length 11' 0"Material of shell plates SteelThickness 1 1/8"Range of tensile strength 29-32 tonsAre they welded or flanged NoDescrip. of riveting: cir. seams Lap Double long. seams D'ble Butt SnapsDiameter of rivet holes in long. seams 1 1/4"Pitch of rivets 8 1/8"4 7/8"Lap of plates or width of butt straps 18 1/4"

Per centages of strength of longitudinal joint

rivets 86.5plate 85.9Working pressure of shell by rules 182 lbs.Size of manhole in shell 16" x 12"Size of compensating ring 30" x 26" x 1 1/4"No. and Description of Furnaces in each boiler 3: Dighton'sMaterial SteelOutside diameter 48 1/4"

Length of plain part

top 2' 0 3/4"

Thickness of plates

crown 19 3/32"Description of longitudinal joint WeldNo. of strengthening rings YesWorking pressure of furnace by the rules 196 lbs.Combustion chamber plates: Material SteelThickness: Sides 9/16"Back 9/16"Top 3/32"Bottom 1/16"Pitch of stays to ditto: Sides 7/8" x 7/8"Back 7/8" x 7/8"Top 8" x 8"If stays are fitted with nuts or riveted heads NutsWorking pressure by rules 182 lbs.Material of stays SteelDiameter at smallest part 1 3/8"Area supported by each stay 62 sq. in.Working pressure by rules 191 lbs.

End plates in steam space:

Material SteelThickness 3/32"Pitch of stays 15" x 15"How are stays secured D'ble Nut & WashersWorking pressure by rules 198 lbs.Material of stays SteelDiameter at smallest part 2 3/8"Area supported by each stay 225 sq. in.Working pressure by rules 192 lbs.Material of Front plates at bottom SteelThickness 13/16"Material of Lower back plate SteelThickness 13/16"Greatest pitch of stays 13 1/2"Working pressure of plate by rules 209 lbs.Diameter of tubes 3"Pitch of tubes 4 1/8" x 4 1/8"Material of tube plates SteelThickness: Front 3/4"Back 3/4"Mean pitch of stays 9 1/4"Pitch across wide water spaces 14"Working pressures by rules 183 lbs. 233 lbs.Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 9 1/2" x 13"Length as per rule 35 1/2"Distance apart 8"Number and pitch of Stays in each 3: 8"Working pressure by rules 281 lbs.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

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

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Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

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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 tong, 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:— *1 Crank Shaft, Propeller shaft, 4 C.I. propeller blades, 2 Connecting Rod Bolts top end, 2 Crank pin Bolt nuts, 2 main Bearing Bolts, 1 set Coupling Bolt, 12 Joint Ring Studs, 1 set piston Ring for H.P. M.C. pistons, 1 set Circulating pump valves, 1 set Feed & Bilge pump valves, 1 set valves for each Donkey pump, 1 full set Safety & Relief valve Spring, 10 main Boiler tubes, 10 Condenser tubes*

The foregoing is a correct description, \_\_\_\_\_ Quantities of Bolt nuts and Iron of various Sizes.

*Ranston & Macdonald* Manufacturer.

Dates of Survey while building

During progress of work in shops— *1902. Oct. 20. 23. 27. 28. 31. Nov. 4. 6. 11. 13. 18. 19. 21. 27. Dec. 4. 9. 12. 1903. Jan. 13. 21. 23. 29. Feb. 2. 5. 9. 11.*

During erection on board vessel — *18. 21. 24. March 3. 9. 11. 12. 13. 16. 19. 23. 24. 26. 27. April 1. 2. 3. 8. 9. 10. 11. 15. 22. 24. 27. May 4. 11. 12. 19. 20. 22. 23. 25.*

Total No. of visits *60.*

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

“ “ “ donkey “ “ “ *✓*

## 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 they were examined when running a full power trial in the Firth of Clyde and found to work satisfactorily.*

*The Machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of **LMC 6.03** marked in the Society's Register Book.*

*It is submitted that this vessel is eligible for THE RECORD - L M C 6.03*

*23.6.03*

*24.6.03*

The amount of Entry Fee.. £ *3* : . . . . . When applied for, *16.6.1903*

Special .. £ *40* : *18* : . . . . . When received, *22.6.03*

Donkey Boiler Fee .. £ : : . . . . .

Travelling Expenses (if any) £ : : . . . . .

*Shd. Amr. Austin*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

*Glasgow 22 JUN 1903*

*+ L.M.C. 6.03.*  
*When fee is paid*

*Greenoch.*

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)