

# REPORT ON MACHINERY.

Port of Greenock

Received at London Office TUES 23 JUNE 1903

No. in Survey held at Greenock Date, first Survey 20th Oct/02 Last Survey 12th June 1903  
Reg. Book. (Number of Visits 60)

on the Screw Steamer "Schuykill" } Gross  
Tons }  
Net }  
When built 1903

Master R. Nicholas Built at Port Glasgow By whom built Russell & Co

Engines made at Greenock By whom made Rankin & Blackmore when made 1903

Boilers made at Greenock By whom made Rankin & Blackmore when made 1903

Registered Horse Power \_\_\_\_\_ Owners Anglo-American Oil Co Port belonging to London

Nom. Horse Power as per Section 28 418 Is Refrigerating Machinery fitted No Is Electric Light fitted No

## ENGINES, &c.—Description of Engines Triplic Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 27" 43" 72" Length of Stroke 48" Revs. per minute 60 Dia. of Screw shaft 15 1/2" 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 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 Yes Length of stern bush 61"

Dia. of Tunnel shaft 13 1/2" Dia. of Crank shaft journals 13 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 4 State whether moveable Yes Total surface 105.59 sq. ft.

No. of Feed pumps 1 Diameter of ditto 3 3/4" Stroke 24" Can one be overhauled while the other is at work Yes Lamont main feed pump

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes 8" x 6" x 8" duplex

No. of Donkey Engines 3 Sizes of Pumps 8 x 9 x 9" 8 x 5 x 8" 5 x 3 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 2 sizes 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 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 None How are they protected Yes

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 New Vessel Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Upper platform

## BOILERS, &c.— (Letter for record \$) Total Heating Surface of Boilers 6850 sq. ft. Is forced draft fitted No

No. and Description of Boilers Three: Cylindrical mult. Single ended. Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs.

Date of test 8/4/03. Can each boiler be worked separately Yes Area of fire grate in each boiler 61 1/2 sq. ft. No. and Description of safety valves to

each boiler Two: Direct Spring Area of each valve 7.06 sq. in. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork About 14" Mean dia. of boilers 15' 0" Length 11' 0" Material of shell plates Steel

Thickness 1 3/16" Range of tensile strength 29-32 tons Are they welded or flanged No Descrip. of riveting: cir. seams Lap double long. seams D'ble Butt Straps

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/8" 4 7/8" Lap of plates or width of butt straps 18 1/4"

Per centages of strength of longitudinal joint rivets 86.5 Working 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's Material Steel Outside diameter 48 1/4"

Length of plain part 7' 0 3/4" Thickness of plates 19 3/32" Description of longitudinal joint Weld No. of strengthening rings Yes

Working pressure of furnace by the rules 196 lbs. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 19/32" Bottom 13/16"

Pitch of stays to ditto: Sides 7/4" x 7/4" Back 7/4" x 7/4" Top 8" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 65 sq. in. Working pressure by rules 191 lbs. End plates in steam space:

Material Steel Thickness 3 1/32" Pitch of stays 15" x 15" How are stays secured D'ble nut & washers Working pressure by rules 198 lbs. Material of stays Steel

Diameter at smallest part 2 3/8" Area supported by each stay 22.5 sq. in. Working pressure by rules 192 lbs. Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 15 1/2" Working pressure of plate by rules 209 lbs.

Diameter of tubes 5" Pitch of tubes 4 1/8" x 4 1/8" Material of tube plates Steel Thickness: 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 1 1/2" 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 \_\_\_\_\_ 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 \_\_\_\_\_

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one was sent.

W1276-0091



**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:— *3 Crank shaft, Propeller shaft, 4 C.I. propeller blades, 2 Connecting Rod Bolts top end, 2 Crank pin Bolts nuts, 2 main Bearing Bolts, 1 set Coupling Bolts, 12 Joint Ring Studs, 1 set piston Ring for HP & MC 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 Sprung, 10 main Boiler tubes, 10 Condenser tubes*

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

*Ranston Macnamara* 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. 4. 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. 26. 30. June 1. 3. 5. 6. 9. 10. 12.

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 **L.M.C. 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*

*940*  
*23.6.03*  
*24.6.03*

*Greenock.*

Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee..	£ 3 : . . .	When applied for,
Special .. ..	£ 40 : 18 : .	16.6.1902
Donkey Boiler Fee .. ..	£ : : .	When received,
Travelling Expenses (if any) £	: : .	22.6.03

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

Committee's Minute \_\_\_\_\_ Glasgow 22 JUN 1903

Assigned \_\_\_\_\_ + L.M.C. 6.03. *940 for it paid*

