

REPORT ON MACHINERY.

1025, AUG 27 1901

Port of *Greenock*

Received at London Office

No. in Survey held at *Greenock & Port Glasgow* Date, first Survey *27th Sept. 1900* Last Survey *16th Aug 1901*
Reg. Book.

(Number of Visits *104*.)

612 on the *Screw Steamer Seneca*

Tons { Gross *4847.99*
Net *3170.97*
When built *1901*

Master *Cormack* Built at *Port Glasgow* By whom built *Russell & Co.*

Engines made at *Greenock* By whom made *Rankin & Blackmore* when made *1901*

Boilers made at *do* By whom made *do* when made *1901*

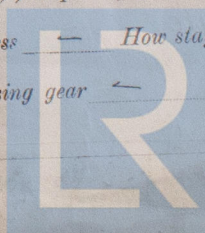
Registered Horse Power *403* Owners *Anglo-American Oil Co. (Ld.)* Port belonging to *London*

Nom. Horse Power as per Section 28 *403* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Inverted direct acting triple expansion* No. of Cylinders *Three* No. of Cranks *Three*
Dia. of Cylinders *26 1/2 43 1/2 42* Length of Stroke *48* Revs. per minute *70* Dia. of Screw shaft *as per rule 15.01 14.95* Lgth. of stern bush *60*
Dia. of Tunnel shaft *as per rule 13.26 13.16* Dia. of Crank shaft journals *as per rule 13.92 13.81* Dia. of Crank pin *14* Size of Crank webs *18 3/4 x 9* Dia. of thrust shaft under collars *14* Dia. of screw *18 1/2* Pitch of screw *17 1/2* No. of blades *Four* State whether moveable *no* Total surface *110 sq. ft.*
No. of Feed pumps *Two* Diameter of ditto *3 1/2* Stroke *26* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *Two* Diameter of ditto *4 1/2* Stroke *26* Can one be overhauled while the other is at work *yes*
No. of Donkey Engines *Three* Sizes of Pumps *14 x 10, duplex 4 1/2 x 8 1/2 3 1/2 x 6* No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room *Four 3 1/2* In Holds, &c. *Eight 3 1/2 in holds & one 2 1/2 in tunnel well*

No. of bilge injections *one* sizes *5 1/2* Connected to condenser, or to circulating pump *is pump* Is a separate donkey suction fitted in Engine room & 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 *no*
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 *—*
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 *on ship before launching* Is the screw shaft tunnel watertight *yes*
Is it fitted with a watertight door *yes* worked from *top platform*

BOILERS, &c.— (Letter for record *B*.) Total Heating Surface of Boilers *6,390 sq. ft.* Is forced draft fitted *no*
No. and Description of Boilers *Three cylindrical multitubular* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*
Date of test *10.6.01* Can each boiler be worked separately *yes* Area of fire grate in each boiler *61.75 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 *184 lbs* Are they fitted with easing gear *yes*
Smallest distance between boilers or uptakes and bunkers or woodwork *16 1/2* Mean dia. of boilers *14 1/2* Length *10 1/2* Material of shell plates *Steel*
Thickness *1 1/2* Range of tensile strength *29 to 32 tons* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap double* long. seams *9 BS table*
Diameter of rivet holes in long. seams *1 1/2* Pitch of rivets *8 3/4 x 4 3/8* Lap of plates or width of butt straps *18 1/4 straps*
Per centages of strength of longitudinal joint rivets *89.8* plate *85.4* Working pressure of shell by rules *180 lbs* Size of manhole in shell *16 x 12*
Size of compensating ring *30 x 26 x 1 1/2* No. and Description of Furnaces in each boiler *Three Deighton* Material *Steel* Outside diameter *48 1/4*
Length of plain part top *—* bottom *—* Thickness of plates crown *9 1/16* Description of longitudinal joint *welded* No. of strengthening rings *none*
Working pressure of furnace by the rules *182.6 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *9 1/16* Back *9 1/16* Top *19 1/32* Bottom *3 1/4*
Pitch of stays to ditto: Sides *7 3/4 x 7 3/4* Back *7 1/8 x 7 1/8* Top *7 1/8 x 7 1/8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *188 to 200 lbs*
Material of stays *Steel* Diameter at smallest part *1 1/2* Area supported by each stay *5 1/4 to 7 1/4* Working pressure by rules *180 to 200 lbs* and plates in steam space:
Material *Steel* Thickness *1* Pitch of stays *15 3/4 x 14 3/4* How are stays secured *double nuts* Working pressure by rules *192 lbs* Material of stays *Steel*
Diameter at smallest part *2 3/8* Area supported by each stay *232 sq. in.* Working pressure by rules *184 lbs* Material of Front plates at bottom *Steel*
Thickness *13 1/16* Material of Lower back plate *Steel* Thickness *13 1/16* Greatest pitch of stays *12 1/2 x 13 1/4* Working pressure of plate by rules *195 lbs*
Diameter of tubes *3 3/4* Pitch of tubes *4 3/8 x 4 3/8* Material of tube plates *Steel* Thickness: Front *3 1/4 x 9 1/16* Back *3 1/4* Mean pitch of stays *8 3/4*
Pitch across wide water spaces *14* Working pressures by rules *245 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9 1/4 x 14 double* Length as per rule *33* Distance apart *7 1/8* Number and pitch of Stays in each *Three 7 1/8*
Working pressure by rules *194 lbs* Superheater or Steam chest; how connected to boiler *—* 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 *—*



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DONKEY BOILER— No. Description *None fitted in this vessel.*

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 casing 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:— *1 propeller. 1 screw shaft & crank shaft. 12 shaft
coupling bolts & nuts. 2 do for top & bottom ends. 2 do for main bearings. 6 holding
down studs. 6 do for cylinder covers. 6 do for valve chest cover. 6 junk ring pins. 2 feed &
2 bilge pump valves. 2 do for circulating pump. 2 do for air pump. 1 feed escape valve
& spring.*

The foregoing is a correct description,

Rankin & Blackmore Manufacturer.

Dates of Survey while building { During progress of work in shops— 1900. Sep 27. 29. Oct 4. 11. 16. 18. 20. 23. 25. 31. Nov 2. 8. 13. 14. 20. 22. 26. 27. 30. Dec 4. 5. 11. 14. 18
During erection on board vessel— 1901. Jan 8. 11. 14. 17. 21. 24. 28. 30. Feb 1. 6. 8. 12. 14. 19. 21. 23. 26. March 2. 6. 11. 14. 18. 21
Total No. of visits { 25. 29. April 2. 5. 8. 11. 17. 20. 24. 26. 29. May 1. 3. 7. 10. 13. 15. 17. 22. 27. 29. June 1. 5. 7. 10. 11. 12. 14
17. 18. 20. 24. 28. July 1. 17. 18. 19. 20. 22. 24. 25. 26. 31. Aug 2. 5. 6. 7. 8. 9. 12. 13. 14. 15. 16.
10 H.

Is the approved plan of main boiler forwarded herewith *yes*

“ “ “ donkey “ “ “

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

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 *—* If two liners are fitted, is the shaft lapped or protected between the liners *—*

These engines and boilers have been specially surveyed during construction, workmanship good. Screw thrust & intermediate shafts examined when being turned and found apparently sound. Main steam pipes tested by hydraulic pressure to 380 lbs. test satisfactory.

*The engines and boilers are satisfactorily fitted in vessel & have been tested under full steam. They are now in good order & safe working condition and are in our opinion eligible to be noted in Register Book **LMC, 8.01.***

Spare gear continued

1 set safety valve springs. 12 boiler tubes. 12 condenser tubes. 1 set fire bars & a quantity of bolts nuts & iron assorted.

It is submitted that
this vessel is eligible for
THE RECORD. *+ L.M.C. 8.01*

28/8/01

28.8.01

The amount of Entry Fee. £ 3 : : : When applied for, 19.8.1901
Special £ 39 : : :
Donkey Boiler Fee £ : : :
Travelling Expenses (if any) £ : : : When received, 20.8.1901

A.B. Heron & R. Elliott
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Greenock District.

Committee's Minute *Glasgow. 28 AUG. 1901*

Assigned *+ L.M.C. 8.01.*

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