

REPORT ON MACHINERY.

LONDON, 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 10th)

612 on the Screw Steamer "Seneca" Tons { Gross 4847.99
Net 3170.97
Master Cormack Built at Port Glasgow By whom built Russell & Coy. When built 1901.

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

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

Registered Horse Power 403 Owners Anglo-American Oil Co. (Lims) 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
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.

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 14x10, duplex 4 1/2 x 8 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 pumps as 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 5/32 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 Straps.

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 85.7. 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 5/32 No. and Description of Furnaces in each boiler Three Deighton's Material Steel Outside diameter 48 1/4

Length of plain part top — bottom — Thickness of plates crown 2 1/16 bottom 3 1/16 Description of longitudinal joint welded. No. of strengthening rings none

Working pressure of furnace by the rules 182 lbs. Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back 9/16 Top 19/32 Bottom 3/4

Pitch of stays to ditto: Sides 7 3/4 x 7 3/4 Back 7 1/8 x 7 1/8 Top 7 7/8 x 7 7/8 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 3/8 to 1 1/2 Area supported by each stay 5 1/4 to 7 1/4 Working pressure by rules 180 to 200 lbs. End 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 13/16 Material of Lower back plate Steel Thickness 13/16 Greatest pitch of stays 12 1/2 x 13 1/4 Working pressure of plate by rules 195 lbs.

Diameter of tubes 3 1/4 Pitch of tubes 4 3/8 x 4 3/8 Material of tube plates Steel Thickness: Front 3 1/2 x 9/16 Back 3/4 Mean pitch of stays 8 3/4

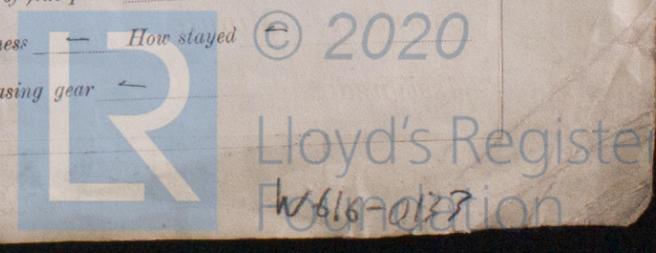
Pitch across wide water spaces 14 Working pressures by rules 245 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/4 x 3/4 double Length as per rule 33 Distance apart 7 7/8 Number and pitch of Stays in each Three 7 7/8

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 —



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, 4 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. 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.
	Total No. of visits	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 **L.M.C., 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**

Greenock. Certificate (if required) to be sent to the Surveyors in the space for Committee's Minute.

The amount of Entry Fee.	£ 3	When applied for,	19. 8. 1901
Special Donkey Boiler Fee	£ 39	When received,	20. 8. 1901
Travelling Expenses (if any)	£		

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.*



MINISTRY CERTIFICATE WRITTEN 28/8/01