

REPORT ON MACHINERY

MUN 10 JUL 1899

Port of *Greenock*

Received at London Office 18

No. in Survey held at *Greenock & Port Glasgow* Date, first Survey *31 August 1898* Last Survey *4 July 1899*
 Reg. Book. (Number of Visits *109*)

on the *Screw Steamer "Auchenarden"*

Tons { Gross *3618.56*
 Net *2350.63*
 When built *1899*

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

Engines made at *Greenock* By whom made *Rankin & Blackmore* when made *1899*

Boilers made at *Do* By whom made *Do* when made *1899*

Registered Horse Power *300* Owners *Auchen Steam Ship Co. (Limd)* Port belonging to *Glasgow*

Nom. Horse Power as per Section 28 *300* Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Inverted Direct Acting Triple Expansion* No. of Cylinders *Three* No. of Cranks *Three*
 Diameter of Cylinders *23.39 x 6.5* Length of Stroke *4.5* Revolutions per minute *70* Diameter of Screw shaft *as per rule 12.43*
 Diameter of Tunnel shaft *as fitted 11 1/2* Diameter of Crank shaft journals *12 1/4* Diameter of Crank pin *12 1/4* Size of Crank webs *16 1/8 x 8 7/16*
 Diameter of screw *17.0* Pitch of screw *16.3* No. of blades *four* State whether moveable *no* Total surface *88 sq*
 No. of Feed pumps *Two* Diameter of ditto *3 1/2* Stroke *24* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *Two* Diameter of ditto *4 1/2* Stroke *24* Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines *Two* Sizes of Pumps *12 x 10 & 6 x 8* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Three 3 1/2* In Holds, &c. *Eight 3 1/2 in holds & one 2 1/2 in tunnel well*

No. of bilge injections *One size 5 1/2* Connected to condenser, or to circulating pump *as a separate donkey suction fitted in Engine room & size 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
 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 *Bilge pipes* How are they protected *Wood casing*
 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 *in ship before launching* Is the screw shaft tunnel watertight *yes*
 Is it fitted with a watertight door *yes* worked from *Top*

BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *4550. sq* Is forced draft fitted *no*
 No. and Description of Boilers *Two Cylindrical Multitubular* Working Pressure *180* Tested by hydraulic pressure to *360 lbs*
 Date of test *1/6/99* Can each boiler be worked separately *yes* Area of fire grate in each boiler *66 sq* No. and Description of safety valves to
 each boiler *Two direct spring* Area of each valve *8.3 sq* 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 *12* Mean diameter of boilers *15.6*
 Length *10.6* Material of shell plates *Steel* Thickness *1 1/2* Description of riveting: circum. seams *Lap double* long. seams *2 B straps triple*
 Diameter of rivet holes in long. seams *1 1/16* Pitch of rivets *9 in 4 1/2* Lap of plates or width of butt straps *19 1/4 straps*
 Per centages of strength of longitudinal joint *91* Working pressure of shell by rules *181 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 *50*
 Length of plain part *top 7 1/2 bottom 5 1/2* Thickness of plates *7 1/2* Description of longitudinal joint *welded* No. of strengthening rings
 Working pressure of furnace by the rules *184 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 1/4 x 7 1/4* Back *7 1/4 x 7 1/4* Top *8 x 8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *182 to 190*
 Material of stays *Steel* Diameter at smallest part *1 1/8 x 1 1/2* Area supported by each stay *60 to 84 sq* Working pressure by rules *180 to 184* End plates in steam space:
 Material *Steel* Thickness *1 1/2* Pitch of stays *16 1/4 x 16* How are stays secured *double nuts* Working pressure by rules *183 lbs* Material of stays *Steel*
 Diameter at smallest part *2 3/8* Area supported by each stay *260 sq* Working pressure by rules *180 lbs* Material of Front plates at bottom *Steel*
 Thickness *13/16* Material of Lower back plate *Steel* Thickness *9/16* Greatest pitch of stays *12 1/2 to 14 1/4* Working pressure of plate by rules *289 lbs*
 Diameter of tubes *3 1/2* Pitch of tubes *4 1/8 x 4 1/8* Material of tube plates *Steel* Thickness: Front *27/32* Back *27/32* Mean pitch of stays *9 1/4 x 11 1/2*
 Pitch across wide water spaces *14 1/4* Working pressures by rules *231 lbs* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *9 1/8 x 3/4* Length as per rule *32 1/4* Distance apart *8* Number and pitch of Stays in each *Three 8*
 Working pressure by rules *207 lbs* Superheater or Steam chest; how connected to boiler
 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— Description *See Glasgow report No 17131 attached*

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 _____

enter the donkey boiler _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____

Description of riveting long. seams _____ Diameter 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 _____

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. 12 shaft coupling bolts & nuts
2 do for top & 2 do for bottom end. 2 do for main bearing. 6 do for holding down. 6 do for cylinder
covers. 6 do for valve chest covers. 6 junk ring pins. 2 feed & 2 bilge pump valves. 1 feed
escape valve & spring. 3 Cylinder escape valves & springs. 1 set safety valve springs.

The foregoing is a correct description,

Pantlin & Blair Manufacturer.

Dates of Survey while building

During progress of work in shops—	1898: Aug 31. Sep 30. Oct. 4. 6. 8. 10. 11. 14. 17. 19. 21. 23. 25. Nov. 1. 7. 11. 17. 22. 23. 26. Dec. 2. 5. 9. 13. 15. 17. 21. 24. 26. 27. 29. 31. 1899: Jan. 11. 12. 16. 17. 18.
During erection on board vessel—	1898: Dec 31. Feb. 6. 8. 10. 14. 17. 20. 24. 27. Mar. 3. 6. 8. 10. 13. 15. 17. 23. 27. 31. Apr. 4. 7. 12. 14. 17. 19. 21. 24. 26. 27. 28. May 1. 2. 4. 6. 8. 9. 10. 15. 16. 18. 22. 24. 28. 30. June 1. 2. 3. 5. 6. 7. 9. 10. 12. 15. 16. 20. 24. 28. 29. July 1. 2. 3. 4.
Total No. of visits	109

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

ENGINES—Length of stern bush *4.4* Diameter of crank shaft journals *as per rule 12.8* Diameter of thrust shaft under collars *12 1/4*

BOILERS—Range of tensile strength *29.6 32 ton* Are they welded or flanged *no* **DONKEY BOILERS**—No. *one* Range of tensile strength *28 1/2*

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

These Engines & Boilers have been specially surveyed during construction workmanship good. Thrust tunnel & screw shafts examined when being turned and found apparently sound. Main steam pipes tested by hydraulic pressure 450 lbs test satisfactory. The Engines & Boilers are satisfactorily fitted in hull and 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.**

Spare gear continued

12 tubes for main boilers. 12 tubes for surface Condenser. 1 set gear (circumferential) pump. 1/2 set fire bars. a quantity of bolts nuts & iron assorted.

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 7-99

The amount of Entry Fee. £ 3 : - :
Special £ 35 : - :
Donkey Boiler Fee £ : - :
Travelling Expenses (if any) £ : - :

When applied for,

4 7 18 99

When received,

21 7 18 99

Committee's Minute

JUL 11 1899

Assigned

+ L.M.C. 7.99

MACHINERY CERTIFICATE
GIVEN.

C. B. Thomas R. Elliott
Engineer Surveyor to Lloyd's Register of British & Foreign Ships



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Foundation