

REPORT ON MACHINERY.

Port of Glasgow

THUR. 19 OCT 1899

No. in Survey held at GlasgowDate, first Survey 30 May 1899 Last Survey 14th October 1899

Reg. Book.

(Number of Visits 28)703 on the S.S. ClaverdonGross 3200
Tons Net 2057Master H. Parker Built at Port Glasgow By whom built H. Hamilton & Co When built 1899. 9Engines made at Glasgow By whom made David Rowan & Co. when made 1899Boilers made at Glasgow By whom made David Rowan & Co when made 1899Registered Horse Power Owners Edmund Hazlehurst & Co Port belonging to LondonTom. Horse Power as per Section 28 301Is Electric Light fitted No.

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Diameter of Cylinders 24", 40" & 65" Length of Stroke 42" Revolutions per minute 67 Diameter of Screw shaft as per rule 12.42
as per rule 11.24 Diameter of Crank shaft journals 11.53 Diameter of Crank pin 12 1/2" Size of Crank webs 22 1/2" x 8 1/2"
as fitted 11 3/4" Diameter of screw 16-6" Pitch of screw 18-6"/11-6" No. of blades 4 State whether moveable No Total surface 80 sq ft

No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 21" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three Sizes of Pumps (8x5x8)(8x10x8)(4 1/2 x 2 1/2 x 5) and size of Suctions connected to both Bilge and Donkey pumps

Engine Room One 3" port, one 3" starboard & two 3" centre In Holds, &c. One 3" port & one 3" starboard in
No's 1, 2 & 3 holds, one 3 1/2" in No 4, and one 3 1/2" in tunnel well.

No. of bilge injections five sizes 5" Connected to condenser, or to circulating pump ✓ Is a separate donkey suction fitted in Engine room & sizes 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 ✓

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

Are pipes carried through the bunkers Bilge pipes to No's 1 & 2 holds How are they protected Wood boxing.

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 before launch. Is the screw shaft tunnel watertight yes.

Is it fitted with a watertight door yes worked from Engine room top platform.

BOILERS, &c.—(Letter for record Y) Total Heating Surface of Boilers 4691 sq ft Is forced draft fitted No.

and Description of Boilers Two, Single Ended. Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs.

Star 21/9/99 Can each boiler be worked separately yes Area of fire grate in each boiler 70 1/2 sq ft No. and Description of safety valves to test 23/9/99. Cockburn.

boiler Two, direct spring Area of each valve 8.29 sq ft Pressure to which they are adjusted 185 lbs. Are they fitted

easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 16" Mean diameter of boilers 15-6"

th 10-9" Material of shell plates Steel Thickness 19/32" Description of riveting: circum. seams Double R Lap long. seams Double R Butt.

diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 19 7/8" x 1 1/2" inside

percentages of strength of longitudinal joint 94.3 Working pressure of shell by rules 183 lbs Size of manhole in shell 16" x 12"

of compensating ring 28x28x1 1/2" No. and Description of Furnaces in each boiler 3, Purvis Material Steel Outside diameter 48 1/2"

th of plain part top 7" Thickness of plates bottom 19/32" Description of longitudinal joint Welded No. of strengthening rings None

ing pressure of furnace by the rules 195 Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 19/32" Top 19/32" Bottom 7/8"

of stays to ditto: Sides 8 x 7 1/2" Back 8 x 7 1/2" Top 8 x 8 1/2" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 182

rial of stays Iron Diameter at smallest part 3.06 sq ft Area supported by each stay 64 sq ft Working pressure by rules 231 End plates in steam space:

rial Steel Thickness 1 1/32" Pitch of stays 16 1/2" x 15 1/2" How are stays secured Double Nuts Working pressure by rules 213 lbs Material of stays Steel

at smallest part 5.27 sq ft Area supported by each stay 256 sq ft Working pressure by rules 205 Material of Front plates at bottom Steel

ness 13/16" Material of Lower back plate Steel Thickness 11/16" Greatest pitch of stays 14" Working pressure of plate by rules 292

diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 23/32" Back 23/32" Mean pitch of stays 11 1/4"

across wide water spaces 14 1/2" Working pressures by rules 198 lbs Girders to Chamber tops: Material Iron Depth and

ess of girder at centre 8 1/4" x 1 3/4" Length as per rule 30" Distance apart 8 1/4" Number and pitch of Stays in each Three 8"

ing pressure by rules 197 lbs Superheater or Steam chest; how connected to boiler None. Can the superheater be shut off and the boiler worked

Diameter	Length	Thickness of shell plates	Material	Description of longitudinal joint	Diam. of rivet
Pitch of rivets	Working pressure of shell by rules	Diameter of flue	Material of flue plates	Thickness	
ened with rings	Distance between rings	Working pressure by rules	End plates: Thickness	How stayed	
ing pressure of end plates	Area of safety valves to superheater	Are they fitted with easing gear			

DONKEY BOILER— Description *See attached report.* When made _____ Where fixed _____
Made at _____ By whom made _____
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 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:— *As required by the rules, also one propeller and one propeller shaft.*

The foregoing is a correct description,
Manufacturer.

David Rowan

Dates of Survey while building
During progress of work in shops— 1899: May. 20. Jun. 13. 17. 20. 29. Aug. 10. 14. 19. 29. 31. Sep. 4. 7. 8. 13. 18. 19. 22.
During erection on board vessel— 23. 26. 27. 28. Oct. 3. 4. 6. 9. 12. 14.
Total No. of visits 28.

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

ENGINES—Length of stern bush *44"* Diameter of crank shaft journals *11.83* as per rule *12 1/2* as fitted Diameter of thrust shaft under collars *12 1/2*
BOILERS—Range of tensile strength *28/32* Are they welded or flanged *Neither* **DONKEY BOILERS**—No. *1* Range of tensile strength *28/32*
Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith *yes*

The machinery of this vessel has been built under special survey, the materials & workmanship being of good quality, it has been securely fitted on board, and a satisfactory full speed trial run.

*In my opinion the machinery of this vessel is eligible for record of **L M C 10-99** (in red) in register book.*

Two boiler plans, two certificates of forgings and Greenock on sea cocks & propeller. now forwarded.

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 10.99.

Certificate (if required) to be sent to

The amount of Entry Fee. £ 3 : :
Special £ 35 : :
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : :
When applied for, 13/10/99.
When received, 16/10/99.

Committee's Minute

Assigned

FRI 20 OCT 1899

+ L.M.C. 10.99

MACHINERY CERTIFICATE
WRITTEN.

George Murdoch
Engineer Surveyor to Lloyd's Register of British & Foreign Ships

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Foundation