

REPORT ON MACHINERY.

No. 69271.

SAT. APR. 26. 1913

Date of writing Report 24 APR 1913 When handed in at Local Office 24 APR 1913 Port of
No. in Survey held at Birkenhead Date, First Survey 2 Sept 1912 Last Survey 17 April 1913
Reg. Book. on the Twin S.S. "Doon" (Number of Visits 8.)
Master Eccleston Built at Birkenhead By whom built Cammell Laird & Co. Tons Gross 1352.76
Engines made at Birkenhead By whom made Cammell Laird & Co. when made 1913-4
Boilers made at do By whom made do when made 1913-4
Registered Horse Power 181 Owners Royal Mail Steam Packet Co. Port belonging to Buenos Ayres
Nom. Horse Power as per Section 28 181 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Twin Screw, Inverted Compound S. Eng. No. of Cylinders Two each No. of Cranks 2, each
Dia. of Cylinders H.P. 15" L.P. 32" Length of Stroke 19" Revs. per minute 170 Dia. of Screw shaft as per rule 6.51" Material of screw shafts Steel.
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 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 Length of stern bush 4' 1"
Dia. of Tunnel shaft as per rule 6.01" Dia. of Crank shaft journals as per rule 6.39" Dia. of Crank pin 6.58" Size of Crank webs 13x4 3/8" Dia. of thrust shaft under
collars 6.58" Dia. of screw 6" 6" Pitch of Screw 8" 6" No. of Blades 4 State whether moveable yes Total surface 21.5 sq. ft.
No. of Feed pumps 2. No. of Bilge pumps 2. Diameter of ditto 6" 8" Stroke 18" Can one be overhauled while the other is at work yes
No. of Donkey Engines 1. Sizes of Pumps 3" x 3" x 5" Duplex No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room one 2 1/2" direct to Bilge Pump, one 2 1/2" to Main Bilge Pump. Holds, &c. Pipe 2" Suctions 3 Port and 3 Starboard
one 2" Suction from fore cargo hold.
No. of Bilge Injections one sizes 6" dia. Connected to condenser, or to circulating pump in engine room & size yes 2 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 none
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
Dates of examination of completion of fitting of Sea Connections Jan. 14-16-22 of Stern Tube Jan. 14-16-22 of Screw shaft and Propeller Dec. 13-14 Jan. 8-22-14
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door none worked from

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Plates Stewart & Lytle, Glasgow Steel Co. of Scotland
Total Heating Surface of Boilers 3465 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers Two 3. Furnaces Circ. Shell S. End
Working Pressure 140 lbs. Tested by hydraulic pressure to 280 lbs. Date of test Jan. 27. No. of Certificate 1969
Can each boiler be worked separately yes Area of fire grate in each boiler 52 sq. ft. No. and Description of Safety Valves to
each boiler Two Spring loaded Area of each valve 9.621" Pressure to which they are adjusted 145 lbs. Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 6" 0" Mean dia. of boilers 12" 9" Length 10" 4" Material of shell plates Steel
Thickness 3/32" Range of tensile strength 28/32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Lap D. R.
long. seams Lap R. R. Diameter of rivet holes in long. seams 15/16" Pitch of rivets 6.375" Lap of plates or width of butt straps 13 13/16"
Per centages of strength of longitudinal joint rivets 85.29% Working pressure of shell by rules 141.66 lbs. Size of manhole in shell 16" x 12"
Size of compensating ring 11" 1/2" x 3/32" No. and Description of Furnaces in each boiler 3. Furnaces Circ. Shell S. End Material Steel Outside diameter 3' 3 3/8"
Length of plain part top 7' 6" bottom 7' 6" Thickness of plates crown 7/16" Description of longitudinal joint welded No. of strengthening rings 1
Working pressure of furnace by the rules 157.8 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"
Pitch of stays to ditto: Sides 7 3/8" x 7" Back 7 3/8" x 7 1/4" Top 7 1/4" x 7" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 142.1 lbs.
Material of stays Steel Diameter at smallest part 1.215" Area supported by each stay 53.85 sq. in. Working pressure by rules 170.8 lbs. End plates in steam space:
Material Steel Thickness 3/32" Pitch of stays 17 1/2" x 15" How are stays secured nuts & washers Working pressure by rules 146.4 lbs. Material of stays Steel
Diameter at smallest part 2 5/16" Area supported by each stay 262.5 sq. in. Working pressure by rules 166 lbs. Material of Front plates at bottom Steel
Thickness 3/32" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 13 1/2" x 6 5/8" Working pressure of plate by rules 198 lbs.
Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" x 3 3/4" Material of tube plates Steel Thickness: Front 3/32" Back 1/2" Mean pitch of stays 8 1/2"
Pitch across wide water spaces 13 1/2" Working pressures by rules 173 lbs. Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 5 5/8" x 27/32" Length as per rule 2' 2 1/2" Distance apart 7 1/4" Number and pitch of stays in each stay 7"
Working pressure by rules 150 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
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

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description			
Made at	By whom made	When made	Where fixed	
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
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 long. seams	
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint
Working pressure of shell by rules	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
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

SPARE GEAR. State the articles supplied:—1. Propeller Shaft, 2 cast-iron Propellers, Half crank Shaft, 1 Piston Rod, 1 Valve spindle, 2 Main Bearing bolts & nuts, 1 Set of coupling bolts & nuts, 2 top and bolts 2 Bottom end bolts & nuts, 6 Shank ring bolts, 1 Set of top & bottom main bearing trusses, 1 Set of piston rings for each piston, 1 main & donkey head check valve, 1 Set connecting rod top & bottom trusses, 20 end cover tubes & 40 ferrules, 1 escape valve spring for N. & S. P. Cyls, 2 feed escape valve springs, 2 Safety valve springs, 1 Set of fuel lines from Boiler, 50 boiler tubes, 1 Set air pump valves, 1 Propeller for Air Pump, 1 Set Section & delivery valves for all Pumps.

The foregoing is a correct description,

Manufacturer.

CAMMELL, LARSEN & SON, LIMITED,

J. M. Gibson

Dates of Survey while building	During progress of work in shops --	1912 June 19. Aug 16. 21. 29. Sept 2. 6. 9. 11. 12. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 1913 Jan 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30.	ENGINEERING MANAGER.																																																																																									
	During erection on board vessel --	1912 June 19. Aug 16. 21. 29. Sept 2. 6. 9. 11. 12. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 1913 Jan 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30.																																																																																										
	Total No. of visits	87.	29. Feb 5. 10. 13. 18. 19. 25. 28. March 4. 6. 7. 10. 11. 12. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. April 3. 5. 8. 11. 14. 15. 16. 17.																																																																																									
Is the approved plan of main boiler forwarded herewith <i>yes</i>																																																																																												
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General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery of this Vessel has now been built under Special Survey and in accordance with the approved plans herewith enclosed. The Materials and workmanship are of a good quality and when tried under steam were found satisfactory in every respect and is now eligible in our opinion for the Notification in the Register Book. LMC 4-13. F.D.

It is submitted that this vessel is eligible for THE APPROVED + LMC 4.13. F.D.

The amount of Entry Fee .. £ 2 : 0 :
Special .. £ 27 : 3 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :

When applied for.
24 APR 1913

When received.
24/4/13

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute LIVERPOOL 25 APR 1913

Assigned

II

LMC 4-13

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