

# REPORT ON MACHINERY.

lfls No. 26187.  
No. 2684.

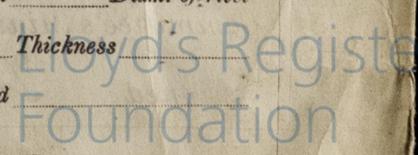
Fitted in this vessel whilst building.  
Port of "Dublin & Glasgow"

Received at London Office  
TUES. 28 JAN 1908  
23<sup>rd</sup> Jan 1908  
17<sup>th</sup> Dec 1907.

No. in Survey held at Dublin & Glasgow Date, first Survey 21<sup>st</sup> Nov Last Survey 17<sup>th</sup> Dec 1907  
 Reg. Book on the S.S. "Carlingford" (Number of Visits 7)  
 Master Dublin Built at Dublin By whom built Dublin Dockyard Co Tons Gross 1907  
 Engines made at Glasgow By whom made Ross & Duncan (No 735) when made 1907  
 Boilers made at Do By whom made Do (No 1166) when made 1907  
 Registered Horse Power 81 Owners J. Cockington & Co Ltd Port belonging to Dundalk  
 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

**ENGINES, &c.—Description of Engines**  
 Compound No. of Cylinders 2 No. of Cranks 2  
 Dia. of Cylinders 18" 38" Length of Stroke 27" Revs. per minute 100 Dia. of Screw shaft as per rule 8.15" 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  
 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 2.9"  
 Dia. of Tunnel shaft as per rule 7.52" Dia. of Crank shaft journals as per rule 7.89" Dia. of Crank pin 8" Size of Crank webs 5.4" x 11.3" Dia. of thrust shaft under bars 8" Dia. of screw 9-6" Pitch of Screw 12-0" No. of Blades 4 State whether moveable no Total surface 35 sq ft  
 of Feed pumps 2 Diameter of ditto 3" Stroke 13.2" Can one be overhauled while the other is at work yes  
 of Bilge pumps 2 Diameter of ditto 3" Stroke 13.2" Can one be overhauled while the other is at work yes  
 of Donkey Engines 1 Sizes of Pumps 6" x 4" x 6" duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 1-2 1/4" 1-2" 1-2 1/4" special In Holds, &c. one 2 1/2" to F.P.T. two 2" to hold one 5" hand pump to hold one 3" hand pump to fore peak one 2" to after peak tank.  
 of Bilge Injections 1 sizes 3 1/4" Connected to condenser, or to circulating pump hand pump Is a separate Donkey Suction fitted in Engine room & size yes - 2 1/4"  
 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  
 How are the pipes carried through the bunkers 2 to Hold & 1 to F.P.T. 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  
 Date of examination of completion of fitting of Sea Connections 17<sup>th</sup> Dec of Stern Tube 9<sup>th</sup> Dec Screw shaft and Propeller 12<sup>th</sup> Dec 1907  
 Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.—(Letter for record 8)** Manufacturers of Steel David Colville & Sons Ltd  
 Heating Surface of Boilers 1477 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended  
 Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs Date of test 7.11.07 No. of Certificate 9060  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 40 sq ft No. and Description of Safety Valves to boiler double spring loaded Area of each valve 5.41 sq in Pressure to which they are adjusted 135 lbs Are they fitted with easing gear yes  
 Minimum distance between boilers or uptakes and bunkers or woodwork 5-0" Mean dia. of boilers 12-9" Length 10-0" Material of shell plates Steel  
 Thickness 13/16" Range of tensile strength 28/33 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 0 Riv.  
 Material of seams T. R. O. B. S. Diameter of rivet holes in long. seams 15/16" Pitch of rivets 5 7/8" Lap of plates or width of butt straps 1-3"  
 Working pressure of longitudinal joint rivets 86 Working pressure of shell by rules 132 lbs Size of manhole in shell 16" x 12"  
 of compensating ring 6 3/4" x 13/16" No. and Description of Furnaces in each boiler 2 Main Material Steel Outside diameter 3-11"  
 of plain part top 6-0" Thickness of plates crown 31 Description of longitudinal joint weld No. of strengthening rings one  
 bottom 32  
 Working pressure of furnace by the rules 132 Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 7/32" Top 9/16" Bottom 9/16"  
 of stays to ditto: Sides 9 3/4" x 8 1/4" Back 8" x 8" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 135  
 Material of stays Steel Diameter at smallest part 1.24" Area supported by each stay 64 sq in Working pressure by rules 155 End plates in steam space:  
 Material Steel Thickness 29/32" Pitch of stays 17" x 17 1/2" How are stays secured 0. nuts & washers Working pressure by rules 130 Material of stays Steel  
 Diameter at smallest part 3.98" Area supported by each stay 297.5 sq in Working pressure by rules 139 Material of Front plates at bottom Steel  
 Thickness 11/16" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 1 1/4" x 8" Working pressure of plate by rules 137  
 of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/4" Material of tube plates Steel Thickness: Front 11/16" x 1/2" Back 11/16" Mean pitch of stays 10 7/8"  
 across wide water spaces 14 1/2" Working pressures by rules 143 lbs Girders to Chamber tops: Material iron Depth and  
 of girder at centre 6 1/2" x 2" Length as per rule 30 25/32" Distance apart 8 1/2" Number and pitch of stays in each 2 @ 9"  
 Working pressure by rules 134 Superheater or Steam chest; how connected to boiler ✓ 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  
 fitted 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 \_\_\_\_\_ Description of S \_\_\_\_\_

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 \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— 2 connecting rod top end bolts & nuts; 2 connecting rod bottom end bolts and nuts; 2 main bearing bolts; 1 set of coupling bolts; 1 set of feed and bilge pump valves; a quantity of assorted bolts & nuts; iron of various sizes; 3 boiler tubes; 6 condenser tubes; 60 firebricks

The foregoing is a correct description,  
*Ross Duncan* Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1907. July 29. Aug 5. 23. 27. Sep 4. 10. 13. 17. 20. 24. Oct 8. 17. 23. 31. Nov 1. 7.
	During erection on board vessel - -	19. 20. 26. Dec 2. 6. 9. 13. 17. 1908. Jan 6. 9. 14. 16. 21. 23.
	Total No. of visits	31.

Is the approved plan of main boiler forwarded herewith  Yes

Dates of Examination of principal parts—Cylinders	1. 11. 07	Slides	22. 10. 07	Covers	1. 11. 07	Pistons	11. 11. 07	Rods	22. 10. 07
Connecting rods	22. 10. 07	Crank shaft	4. 9. 07	Thrust shaft	11. 11. 07	Tunnel shafts	✓	Screw shaft	20. 11. 07
Stern tube	20. 11. 07	Steam pipes tested	14. 1. 08	Engine and boiler seatings	Dublin	Engines holding down bolts	14. 1. 08		
Completion of pumping arrangements	16. 1. 08	Boilers fixed	14. 1. 08	Engines tried under steam	16. 1. 08				
Main boiler safety valves adjusted	16. 1. 08	Thickness of adjusting washers	Port 5/16" Star 5/16"						
Material of Crank shaft	iron	Identification Mark on Do.	735	Material of Thrust shaft	iron	Identification Mark on Do.	735		
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	iron	Identification Marks on Do.	735		
Material of Steam Pipes	Copper	Test pressure	400 lbs per sq"						

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

The Discharge valves, & Sea Cocks of this vessel are in my opinion well fitted & fastened. The Stern Post has been bored in place & the Tube well fitted. The stern bush, Propeller & shaft are in place, the Thrust Shaft also in place & temporarily fastened, to enable the vessel to be towed to Glasgow for completion.

The machinery has been built under special survey: the material and workmanship being good and satisfactorily tried under steam.

It is submitted that above vessel will be eligible for a record of + L.M.C. 1.08 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 1.08.

Glasgow

Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee..	£ 1.0.0	When applied for,	28/1/08
Special .. .. .	£ 12.3.0	When received,	29/1/08
Donkey Boiler Fee .. .. .	£ :		
Travelling Expenses (if any) £	:		

Macmillan A. J. Thomas  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute Glasgow 27 JAN 1908

FRI. 7 FEB 1908

Assigned Transmit to London

+ L.M.C. 1.08 Lloyd's Register Foundation

MACHINERY CERTIFICATE WRITTEN