

## REPORT ON MACHINERY.

No. 7698.  
TUE DEC. 24. 1912

Date of writing Report 23/12/12 When handed in at Local Office 12/12/12 Port of Middlesbrough-on-Tees.

No. in Survey held at Stockton-on-Tees Date, First Survey 11th Aug. Last Survey 18th Dec., 1912  
Reg. Book. on the Steel Screw Steamer "Glan Macbride" (S.S. No. 474) Tons } Gross 4885.60  
Master H. Taylor Built at Stockton By whom built Messrs. Refiner & Sons Ltd. When built 1912 } Net 3008.90

Engines made at Stockton By whom made Messrs. Blair & Co. Ltd. (No. 1748) when made 1912  
Boilers made at Stockton By whom made Messrs. Blair & Co. Ltd. when made 1912  
Registered Horse Power Owners R. & L. H. H. & Co. Ltd. Port belonging to Glasgow

Nom. Horse Power as per Section 28 393 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3  
Dia. of Cylinders 26-43-71 Length of Stroke 48 Revs. per minute 60 Dia. of Screw shaft as per rule 14.7 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 in one 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 tight fit  
If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-4"  
Dia. of Tunnel shaft as per rule 13.04 Dia. of Crank shaft journals as per rule 13.69 Dia. of Crank pin 14 1/2 Size of Crank webs 28 1/2 x 9 1/2 Dia. of thrust shaft under collars 14 1/2 Dia. of screw 18'-0" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable no Total surface 100 sq ft  
No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 34 Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 Diameter of ditto 5 Stroke 34 Can one be overhauled while the other is at work yes  
No. of Donkey Engines 3 Sizes of Pumps 2 fed 5 x 6 x 1/2" & 1" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 3 @ 3 1/2" & Dry tank 1 @ 3 1/2" In Holds, &c. 2 @ 3 1/2" in each hold  
Tunnel with one @ 2 1/2"

No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes-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 yes  
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  
That pipes are carried through the bunkers four hold suction How are they protected wood ceiling  
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 25.10.12 of Stern Tube 25.10.12 Screw shaft and Propeller 30.10.12  
the Screw Shaft Tunnel watertight on hull Rpt. Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs. John Spencer & Sons  
Total Heating Surface of Boilers 6243 Is Forced Draft fitted no No. and Description of Boilers 3 single ended  
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 8.10.12 No. of Certificate, 4958  
Can each boiler be worked separately yes Area of fire grate in each boiler 58.1 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 8.29 sq in Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes  
Smallest distance between boilers or uptakes and bunkers 2'-9" External Mean dia. of boilers 15'-0" Length 11'-3" Material of shell plates steel  
Thickness 1 1/2 Range of tensile strength 27-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2-R. lap  
Pitch of rivets 8 3/4 Lap of plates or width of butt straps 19 1/2 x 1 1/4  
Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 19 1/2 x 1 1/4  
Centages of strength of longitudinal joint plate 85.02 Working pressure of shell by rules 194 Size of manhole in shell 16" x 12"  
Diameter of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 45 1/2  
Length of plain part top 7 1/2 bottom 7 1/2 Thickness of plates crown 3/8 Description of longitudinal joint Weld No. of strengthening rings  
Working pressure of furnace by the rules 191 Combustion chamber plates: Material steel Thickness: Sides 3/8 Back 5/8 Top 2 1/2 Bottom 2 1/2  
Pitch of stays to ditto: Sides 7 3/4 x 7 3/4 Back 7 3/4 x 7 3/4 Top 7 3/4 x 7 3/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 220  
Material of stays steel Diameter at smallest part 1.69 Area supported by each stay 62 Working pressure by rules 193 End plates in steam space:  
Material steel Thickness 1 1/2 Pitch of stays 18 1/2 x 1 1/2 How are stays secured nuts & washers Working pressure by rules 215 Material of stays steel  
Diameter at smallest part 7.86 Area supported by each stay 360 Working pressure by rules 186 Material of Front plates at bottom steel  
Thickness 1 1/2 Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 14 1/2 x 7 3/4 Working pressure of plate by rules 250  
Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 3/4 Material of tube plates steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 10 3/2  
Pitch across wide water spaces 14 1/2 Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and  
Thickness of girder at centre 8 1/2 x 1 1/4 Length as per rule 32 Distance apart 7 3/4 Number and pitch of stays in each 3 @ 7 3/4  
Working pressure by rules 195 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  
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 **NONE**

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 Safety
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	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:— Two each of connecting rod top end, bottom end and main bearing bolts and nuts: one set of coupling bolts and nuts: one set of feed and bilge pump valves: assorted bolts and nuts: iron of various sizes: one screw shaft: one propeller: one valve spindle and one pair con rod bottom end brasses.

The foregoing is a correct description,

**BLAIR & Co., LIMITED.** Manufacturer.

Dates of Survey while building	During progress of work in shops --	1912. Aug. 6. 9. 12. 14. 15. 30. Sept. 3. 5. 7. 9. 12. 13. 16. 18. 20. 22. 24. 25. 26. 27. Oct. 1. 3. 4. 7. 8. 10. 14. 17. 19.
	During erection on board vessel --	1912. 22. 23. 24. 25. 30. Nov. 4. 1. 5. 7. 11. 13. 14. 18. 22. 26. Dec. 3. 6. 13. 16. 18.
	Total No. of visits	50

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

Dates of Examination of principal parts—Cylinders	18.9.12	Slides	24.9.12	Covers	24.9.12	Pistons	25.9.12	Rods	25.9.12
Connecting rods	20.9.12	Crank shaft	25.9.12	Thrust shaft	25.9.12	Tunnel shafts	25.9.12	Screw shaft	25.10.12
Stern tube	24.10.12	Steam pipes tested	15.11.12	Engine and boiler seatings	25.10.12	Engines holding down bolts	5.11.12		
Completion of pumping arrangements	3.12.12	Boilers fixed	3.12.12	Engines tried under steam	3.12.12				
Main boiler safety valves adjusted	3.12.12	Thickness of adjusting washers	P.B.S. - 5/32	C.B.S. - 5/32	S.B.S. - 5/32				
Material of Crank shaft	Ing Steel	Identification Mark on Do.	6766	Material of Thrust shaft	Ing Steel	Identification Mark on Do.	9083-N		
Material of Tunnel shafts	Ing Steel	Identification Marks on Do.	9083-N	Material of Screw shafts	Iron	Identification Marks on Do.	6766		
Material of Steam Pipes	Solid drawn Copper (4 1/2 x 5 S.W.G.)	Test pressure	400 lbs						

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

The machinery of this vessel has been built under special survey: The materials and workmanship are sound and good: The boilers and main steam pipes were tested by hydraulic pressure, and the engines and boilers examined under steam with satisfactory results.

The machinery is now in a good and safe working condition and eligible in our opinion to have the notation of **LMC-12-12** in the Register Book

It is submitted that this vessel is eligible for THE RECORD + LMC 12.12.

The amount of Entry Fee	£ 3-0-0	When applied for,	22.12.12
Special	£ 39-13-0	When received,	28.12.12
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

Committee's Minute

TUE. DEC. 31. 1912

Assigned

+ LMC 12.12

**Wm Morrison & John Robson.**  
Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE  
WRITTEN.



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Foundation