

## REPORT ON MACHINERY.

No. 29221

WED. 24 AUG 1910

Port of Glasgow

Received at London Office

19

No. in Survey held at GlasgowDate, first Survey 18<sup>th</sup> MarchLast Survey Aug 16<sup>th</sup> 1910

Reg. Book.

(Number of Visits 16)Sup. on the J. J. "Barshaw"Tons { Gross 793.85  
Net 359.61Master John S. Patrickson Built at Port Glasgow By whom built James R. & Co. Glasgow When built 1910Engines made at Glasgow By whom made David Rowan & Co. (2.537) when made 1910Boilers made at do By whom made do when made 1910Registered Horse Power \_\_\_\_\_ Owners Paton & Henderson Port belonging to GlasgowNom. Horse Power as per Section 28 136 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted noENGINES, &c.—Description of Engines Triple ExpansionNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 17-27-44 Length of Stroke 30 Revs. per minute 100 Dia. of Screw shaft as per rule Material of IronIs 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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If twoliners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 3-1Dia. of Tunnel shaft as per rule Dia. of Crank shaft journals as per rule Dia. of Crank pin 8-3/4 Size of Crank webs 5-1/2 Dia. of thrust shaft undercollars 8-3/4 Dia. of screw 11-0 Pitch of Screw 11-6 No. of Blades 4 State whether moveable no Total surface 40No. of Feed pumps 2 Diameter of ditto 2-1/2 Stroke 15 Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 3 Stroke 15 Can one be overhauled while the other is at work YesNo. of Donkey Engines 2 Sizes of Pumps 7x7x8, 6x4x4x6 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room 2-2-1/4 In Holds, &c. 2-2-1/4No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump — Is a separate Donkey Suction fitted in Engine room & size Yes-2-1/4Are 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 BothAre 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 AboveAre they 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 YesWhat pipes are carried through the bunkers For suction How are they protected Wood coveringAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections — of Stern Tube — Screw shaft and Propeller James R. & Co.Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door — worked from —BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel James Dunlop & Co. Ltd.Total Heating Surface of Boilers 2493 Is Forced Draft fitted no No. and Description of Boilers One Single EndedWorking Pressure 160 lb Tested by hydraulic pressure to 320 lb Date of test 28/6/10 No. of Certificate 10470Can each boiler be worked separately — Area of fire grate in each boiler 65 No. and Description of Safety Valves toeach boiler Cockburn double Area of each valve 8.29 Pressure to which they are adjusted 165 lb Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork Stokehold Mean dia. of boilers 16-0 Length 11-0 Material of shell plates steelThickness 1-5/32 Range of tensile strength 28-1/2/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.L.Long. seams D.B.S. Diameter of rivet holes in long. seams 1-7/16 Pitch of rivets 8-1/2 Lap of plates or width of butt straps 19Percentages of strength of longitudinal joint 102.1 Working pressure of shell by rules 160 lb Size of manhole in shell 16x12Size of compensating ring Hanged No. and Description of Furnaces in each boiler 4 Dugilton Material steel Outside diameter 42-1/16Length of plain part top Thickness of plates bottom Description of longitudinal joint weld No. of strengthening rings —Working pressure of furnace by the rules 161 Combustion chamber plates: Material steel Thickness: Sides 9/32 Back 9/16 Top 9/32 Bottom 9/32Pitch of stays to ditto: Sides 8-1/4x9 Back 8-3/4x7-1/2 Top 8-1/4x9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 161Material of stays steel Diameter at smallest part 1-4/8 Area supported by each stay 6.6 Working pressure by rules 177 End plates in steam space:Material steel Thickness 1-3/32 Pitch of stays 16x20 How are stays secured D. nuts Working pressure by rules 167 Material of stays steelDiameter at smallest part 4-9 Area supported by each stay 31.6 Working pressure by rules 160 Material of Front plates at bottom steelThickness 1-5/32 Material of Lower back plate steel Thickness 2-3/32 Greatest pitch of stays 12 Working pressure of plate by rules 160Diameter of tubes 3-1/2 Pitch of tubes 4-3/4x4-3/4 Material of tube plates steel Thickness: Front 15/16 Back 3/4 Mean pitch of stay 10-7/16Pitch across wide water spaces 13-1/2 Working pressures by rules 161 Girders to Chamber tops: Material steel Depth andThickness of girder at centre 9-5/8x3-1/2x2 Length as per rule 34-1/2 Distance apart 9 Number and pitch of stays in each 3-8-1/4Working pressure by rules 169 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler workedseparately — 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 \_\_\_\_\_

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	None	
Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Di. of donkey boiler	Length
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams
Di. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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:— Two top end bolts & nuts, 2 bottom end bolts & nuts, set coupling bolts & nuts, 2 main bearing bolts, fuel & bilge valves, assorted iron & bolts, 6 air pump valves, piston springs for HP & MP, etc.

The foregoing is a correct description,

*Mr David Rowan & Co* Manufacturer.

Dates of Survey while building: During progress of work in shops— 1910. March 18. April 11. 18. 26. May 9. 27. June 1. 3. 10. 28. July 13. During erection on board vessel— Aug 5. 8. 9. 12. 16. Total No. of visits 16.

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 9/5/10 Slides 9/5/10 Covers 9/5/10 Pistons 9/5/10 Rods 9/5/10 Connecting rods 9/5/10 Crank shaft 3/6/10 Thrust shaft 3/6/10 Tunnel shafts — Screw shaft 27/5/10 Propeller 27/5/10 Stern tube 3/6/10 Steam pipes tested 5/8/10 Engine and boiler seatings 8/8/10 Engines holding down bolts 9/8/10 Completion of pumping arrangements 9/8/10 Boilers fixed 12/8/10 Engines tried under steam 16/8/10 Main boiler safety valves adjusted 12/8/10 Thickness of adjusting washers P. 7/16 S 7/16 Material of Crank shaft steel Identification Mark on Do. H.G.S. Material of Thrust shaft steel Identification Mark on Do. H.G.S. Material of Tunnel shafts — Identification Marks on Do. Material of Screw shafts Iron Identification Marks on Do. Material of Steam Pipes Copper Test pressure 320 lbs

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

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible to have notation **LMC 8.10** in the Register Book.

It is submitted that this vessel is eligible for **THE RECORD. LMC 8.10**

The amount of Entry Fee £2 : : When applied for, 24/8/1910  
Special £20-8-0 : :  
Donkey Boiler Fee : :  
Travelling Expenses (if any) £ : : When received, 24/8/1910

Committee's Minute **GLASGOW 25 AUG. 1910**

Assigned **+ LMC 8.10**

*H. B. Smith*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping



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