

# REPORT ON MACHINERY

No. 27421  
WED. 17 FEB 1909

Registered at London Office

Date of writing Report Feb 14<sup>th</sup> 09 When founded in at Local Office 13<sup>th</sup> Feb 1909 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 28<sup>th</sup> Oct 1908 Last Survey 6-9-1909  
 Reg. Book. 22 on the S.S. "J & J Monks" (Number of Visits) Gross 282.58  
 Tons Net 98.42  
 Master Bowling Built at Glasgow By whom built Leith & Sons No 213 When built 1909  
 Engines made at Glasgow By whom made Ross & Duncan No 485 when made 1908-9  
 Boiler made at Glasgow By whom made Ross & Duncan No 1235 when made 1908-9  
 Registered Horse Power 44 Owners J. H. Monks (Partners) Ltd Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 44 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 14" x 36" Length of Stroke 24" Revs. per minute 105 Dia. of Screw shaft 4 1/4" 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 in the propeller boss Yes  
 If the liner is in more than one length are the joints burned Yes 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 Yes Length of stern bush 2-4  
 Dia. of Tunnel shaft 4 1/2" Dia. of Crank shaft journals 4 1/2" Dia. of Crank pin 4 1/2" Size of Crank webs 5 x 14 Dia. of thrust shaft under collars 4 1/2" Dia. of screw 8-9 Pitch of Screw 11-0 No. of Blades 4 State whether moveable Yes Total surface 30.2  
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines One Sizes of Pumps 6" x 4" x 26" (No. 1) & 4" x 4" x 26" (No. 2) No. and size of Suctions connected to both Bilge and Donkey pumps in Engine Room 1 @ 2 1/4", 2 @ 2" including donkey special. In Holds, &c. 2 @ 9" & 1 @ 9" ejector suction.  
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump C.P. As a separate Donkey Suction fitted in Engine room & size 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 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  
 What pipes are carried through the bunkers Sold suction How are they protected with casings  
 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 12-1-09 of Stern Tube 12-1-09 Screw shaft and Propeller 12-1-09  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door worked from  
 Manufacturers of Steel David Colville & Sons.

## BOILERS, &c.—(Letter for record)

Total Heating Surface of Boilers 11488 Is Forced Draft fitted No No. and Description of Boilers One single ended  
 Working Pressure 135 lbs Tested by hydraulic pressure to 240 lbs Date of test 4-1-09 No. of Certificate 9656  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 49.4 No. and Description of Safety Valves to each boiler One spring loaded Area of each valve 6.49 Pressure to which they are adjusted 140 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 3-4" Mean dia. of boilers 13-0" Length 10-0" Material of shell plates steel  
 Thickness 3/32" Range of tensile strength 28-37 lbs Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.  
 long. seams T.R.D.B.S Diameter of rivet holes in long. seams 1" Pitch of rivets 6 1/4" Lap of plates or width of butt straps 15 3/4"  
 Per centages of strength of longitudinal joint rivets 88.6 Working pressure of shell by rules 135 lbs Size of manhole in shell 12 x 16"  
 Size of compensating ring 4 1/2" x 2 1/2" No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 40 1/2"  
 Length of plain part top 15 1/2" Thickness of plates crown 3/8" Description of longitudinal joint welded No. of strengthening rings One  
 bottom 15 1/2" Working pressure of furnace by the rules 138 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 9/16"  
 Pitch of stays to ditto: Sides 9 1/2" x 8" Back 9" x 8" Top 9" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 14 lbs  
 Material of stays steel Area at smallest part 1.48 Area supported by each stay 46 sq" Working pressure by rules 155 lbs End plates in steam space: Material steel Thickness 1 1/16" Pitch of stays 18 x 16" How are stays secured D.N. Wash. Working pressure by rules 183 lbs Material of stays steel  
 Area at smallest part 2.99 sq" Area supported by each stay 98 sq" Working pressure by rules 143 lbs Material of Front plates at bottom steel  
 Thickness 3/4" Material of Lower back plate steel Thickness 3/4" Greatest pitch of stays 13 1/2" x 9" Working pressure of plate by rules 144 lbs  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/8" x 4 1/8", 4 1/4" x 4 1/4", 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 3/4" Back 2 1/2" Mean pitch of stays 9 3/8"  
 Pitch across wide water spaces 14" Working pressures by rules 145 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 6 1/2" x 2" Length as per rule 28 1/2" Distance apart 8" Number and pitch of stays in each 2 @ 9"  
 Working pressure by rules 169 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes  
 Diameter 14" Length 14" Thickness of shell plates 3/8" Material Iron Description of longitudinal joint Welded Diam. of rivet holes 1 1/16" Pitch of rivets 1 1/16" Working pressure of shell by rules 145 lbs Diameter of flue 14" Material of flue plates Iron Thickness 3/8"  
 If stiffened with rings Yes Distance between rings 14" Working pressure by rules 145 lbs End plates: Thickness 3/8" How stayed Welded  
 Working pressure of end plates 145 lbs Area of safety valves to superheater 145 lbs Are they fitted with easing gear Yes

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No.	Description			When made	Where fixed
Made at	By whom made				
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		Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

**SPARE GEAR.** State the articles supplied:—

2 long rod top end bolts & nuts, 2 long rod bot end bolts & nuts, 2 main bearing bolts, One set coupling bolts  
1 set feed ledge pump valves, 2 rivets bolts, nuts, & washers

The foregoing is a correct description,

Ross & Duncan Manufacturer.

Dates of Survey while building	During progress of work in shops -	1908. Oct 28. Nov 3. 6. 12. 13. 19. 23. 25. 30. Dec 3. 7. 14. 15. 22. 30.	
		During erection on board vessel -	1909. Jan 7. 8. 11. 12. 25. 29. 30. Feb 1. 2. 3. 5-6.
		Total No. of visits	27

Is the approved plan of main boiler forwarded herewith  Yes.

Dates of Examination of principal parts—	Cylinders	4-17-08	Slides	14-17-08	Covers	12-17-08	Pistons	14-17-08	Rods	14-17-08	
Connecting rods	22-12-08	Crank shaft	23-11-08	Thrust shaft	22-12-08	Tunnel shafts	none	Screw shaft	30-12-08	Propeller	30-12-08
Stern tube	30-12-08	Steam pipes tested	30-1-09	Engine and boiler seatings	19-1-09	Engines holding down bolts	3-2-09				
Completion of pumping arrangements	1-2-09	Boilers fixed	29-1-09	Engines tried under steam	3-2-09 + 6-2-09						
Main boiler safety valves adjusted	3-2-09	Thickness of adjusting washers	Port 5/16 Stand 5/16 full								
Material of Crank shaft	Iron	Identification Mark on Do.	485	Material of Thrust shaft	Iron	Identification Mark on Do.	485				
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	Iron	Identification Marks on Do.	485				
Material of Steam Pipes	Copper.			Test pressure	240 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 of good quality, the boiler has been satisfactorily tested under hydraulic pressure and the machinery has been securely fitted on board and satisfactorily tried under steam.

While proceeding down the river to go on official trial a bolt got into the S.P. cylinder which bent the S.P. piston rod slightly this was put right & other parts of the machinery opened up & found satisfactory and all the gear was put back as before (see damage report).

The machinery of this vessel is in my opinion eligible to be classed and have record **LMC 2-09**

It is submitted that this vessel is eligible for THE RECORD. **LMC 2.09**

The amount of Entry Fee	£ 1-0-0	When applied for	15. 2. 09
Special	£ 11-11-0	When received	10/2/09
Donkey Boiler Fee	£ 10-0-0	When applied for	12-11-09
Travelling Expenses (if any)	£	When received	17/2/09

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

Committee's Minute **GLASGOW 16 FEB. 1909**

Assigned **+ LMC 2.09**

MACHINERY CERTIFICATE WRITTEN 17/2-09



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Lloyd's Register Foundation

Glasgow.

Certificate (if required) to be sent to

J.P.R. 18/2/09