

## REPORT ON MACHINERY.

No. 7073.

Received at London Office

TUE APR 30 1912

Date of writing Report 29<sup>th</sup> April 1912 When handed in at Local Office 29<sup>th</sup> April 1912 Port of Belfast

No. in Survey held at Belfast Date, First Survey Mar 28<sup>th</sup> 1912 Last Survey 23<sup>rd</sup> April 1912  
 Reg. Book. on the T. S. S. Makarini (Number of Visits 62)

Master                      Built at Belfast By whom built Wothman Clark & Co Ltd Tons                      Gross                      Net                       
 Engines made at Belfast By whom made Wothman Clark & Co Ltd (No 310) when made 1912  
 Boilers made at Do By whom made Do (No 310) when made 1912  
 Registered Horse Power                      Owners Lyons Line Ltd Port belonging to London  
 Nom. Horse Power as per Section 28 804 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines 2 twin Triple Expansion No. of Cylinders 6 No. of Cranks 6  
 Dia. of Cylinders 23" 38½" 64½" Length of Stroke 45" Revs. per minute 80 Dia. of Screw shaft as per rule 13.6" Material of Steel  
as fitted 14" screw shaft  
 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 5'-0"  
 Dia. of Tunnel shaft as per rule 12.23" Dia. of Crank shaft journals as per rule 12.84" Dia. of Crank pin 13½" Size of Crank webs as fitted 14" Dia. of thrust shaft under  
 collars 13½" Dia. of screw 16'-6" Pitch of Screw 18'-3" No. of Blades 3 State whether moveable Yes Total surface 78.5 sq ft  
 No. of Feed pumps 4 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 5½" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 7 Sizes of Pumps Various sizes No. and size of Suctions connected to both Bilge and Donkey pumps  
 in Engine Room 5-3½" In Holds, &c. No 1-2-3½" No 2-2-3½" No 3-2-3½"  
Bunker 2-3½" No 4-2-3½" No 5-2-3½" Tunnel well 1-2½"  
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 3½"  
 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 both  
 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 bilge & ballast How are they protected wood 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 24.1.12 of Stern Tube 24.1.12 Screw shaft and Propeller 1.2.12  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper deck

OILERS, &c.—(Letter for record S.) Manufacturers of Steel Wm Beardmore & Co & Steel Co of Scotland  
 Total Heating Surface of Boilers 11628 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 4 single ended  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 5.1.12 No. of Certificate 447  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 68.33 sq ft No. and Description of Safety Valves to  
 each boiler double spring loaded Area of each valve 11.04 sq in Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 19" Mean dia. of boilers 16.42" Length 12.0" Material of shell plates Steel  
 Thickness 1½" Range of tensile strength 241324 lbs Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.T.R.  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1½" Pitch of rivets 10½" Lap of plates or width of butt straps 23½"  
 Per centages of strength of longitudinal joint 87% Working pressure of shell by rules 235 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring Mc Nichol No. and Description of Furnaces in each boiler 4 Dighton Material Steel Outside diameter 3' 9¾"  
 Length of plain part top 41" Thickness of plates bottom 64" Description of longitudinal joint weld No. of strengthening rings                       
 Working pressure of furnace by the rules 226 Combustion chamber plates: Material Steel Thickness: Sides 41" Back 21/32" Top 41/64" Bottom 29/32"  
 Pitch of stays to ditto: Sides 8½" x 8¼" Back 9½" x 7½" Top 8" x 8¼" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 203  
 Material of stays Steel Diameter at smallest part 1.76" Area supported by each stay 66 sq in Working pressure by rules 213 End plates in steam space:  
 Material Steel Thickness 1½" Pitch of stays 17" x 20¼" How are stays secured D.N. & nut Working pressure by rules 201 Material of stays Steel  
 Diameter at smallest part 7.85" Area supported by each stay 344.25 sq in Working pressure by rules 237 Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 32.64" Greatest pitch of stays 13½" x 7½" Working pressure of plate by rules 234  
 Diameter of tubes 2½" Pitch of tubes 3¼" x 3½" Material of tube plates Steel Thickness: Front 63/64" Back 13/16" Mean pitch of stays 7½"  
 Pitch across wide water spaces 13½" Working pressures by rules 204 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9¼" x 20¾" Length as per rule 34.32" Distance apart 8¼" Number and pitch of stays in each 3 @ 8"  
 Working pressure by rules 200 Superheater or Steam chest; how connected to boiler                      Can the superheater be shut off and the boiler worked  
 separately Yes 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                       
 If stiffened with rings Yes 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 Yes



# 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 Sa
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:— 2 connecting rod top end bolts & nuts: 2 connecting rod bottom end bolts & nuts: 2 main bearing bolts: 1 set of coupling bolts: 1 set of feed & bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes: 1 propeller shaft: 2 cast iron blades: 1 set of A.C. M.C. & L.C. packing rings & springs etc.

The foregoing is a correct description,  
FOR WORKMAN, CLARK & CO., LIMITED  
Manufacturer.

Dates of Survey while building  
During progress of work in shops— March 28 June 16. 19. 24. 30. July 10. 24 August 1. 9. 15. 22. 24. 30. Sept. 12. 20. 26. 27. 29 to Feb. 1. 12  
During erection on board vessel— Feb 5. 8. 9. 12. 14. 15. 19. 21. 23. 24. 26. 27 Mar. 4. 11. 13. 15. 31. 36 Apr. 12. 13. 16. 17. 20. 23  
Total No. of visits 82

Is the approved plan of main boiler forwarded herewith ☒ Yes

" " " donkey " " " ☒ Yes

Dates of Examination of principal parts—Cylinders 19. 6. 11 Slides 30. 10. 11 Covers 30. 10. 11 Pistons 24. 8. 11 Rods 22. 8. 11  
Connecting rods 26. 9. 11 Crank shaft 10. 10. 11 Thrust shaft 30. 11. 11 Tunnel shafts 29. 9. 11 Screw shaft 30. 11. 11 Propeller 16. 10. 11  
Stern tube 4. 1. 12 Steam pipes tested 11. 3. 12 Engine and boiler seatings 24. 1. 12 Engines holding down bolts 15. 3. 12  
Completion of pumping arrangements 17. 4. 12 Boilers fixed 26. 3. 12 Engines tried under steam 20. 4. 12  
Main boiler safety valves adjusted 16. 4. 12 Thickness of adjusting washers No. 1. 1 1/2 3 13/32 5 7/8 7 3/8  
No. 2. 3/8 4. 3/8 6 13/32 8 13/32  
Material of Crank shaft Steel Identification Mark on Do. 310 Material of Thrust shaft Steel Identification Mark on Do. 310  
Material of Tunnel shafts Steel Identification Marks on Do. 310 Material of Screw shafts Steel Identification Marks on Do. 310  
Material of Steam Pipes Wrought iron Test pressure 650 lbs per sq. in.

General Remarks (State quality of workmanship, opinions as to class, &c. Donkey Engine:— Ballast 10" x 11" x 10"  
Sea service 8 1/2" x 6" x 8": Sanitary 6" x 6" x 6": Fresh Water 4" x 4" x 5": 2 Weirs 12 1/2" x 9 1/2" x 26"  
Refrigerator Pump 8" x 10" x 10"

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

It is submitted that above vessel is eligible for a record of + L. M. C. 4. 12 in the Register Book

It is submitted that this vessel is eligible for THE RECORD + LMC 4. 12.

F.D.

JUR APR 1912

The amount of Entry Fee .. £ 3 - 0 - 0 When applied for,  
Special .. £ 60 - 4 - 0 At 11. 12. 19. 12  
Donkey Boiler Fee .. £ : : When received,  
Travelling Expenses (if any) £ : : 27. 4. 12

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

Committee's Minute FRI. MAY 3. 1912

Assigned Thine 4. 12



© 2021 Lloyd's Register Foundation

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