

Rpt. 4.

## REPORT ON MACHINERY.

No. 71144

Date of writing Report 25<sup>th</sup> June 1918 When handed in at Local Office 29 JUL 1918 Port of NEWCASTLE-ON-TYNE  
 No. in Survey held at Newcastle Date, First Survey 28<sup>th</sup> Aug 1917 Last Survey 22<sup>nd</sup> July 1918  
 Reg. Book. on the S. S. "Clan Macvey" (Number of Visits 95)

Master Built at Newcastle By whom built Northumbrian & B. Co Tons { Gross 5818  
 Engines made at Newcastle By whom made H. E. Maine Eng Co 2315 when made 1918  
 Boilers made at do By whom made do when made 1918  
 Registered Horse Power Owners Cayzer Irvine & Co Ltd Port belonging to Glasgow

Nom. Horse Power as per Section 28 569 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 27"-45"-75" Length of Stroke 51" Revs. per minute 74 Dia. of Screw shaft as per rule 14.92 Material of steel  
 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'-8"  
 Dia. of Tunnel shaft as per rule 13.68 Dia. of Crank shaft journals as per rule 14.37 Dia. of Crank pin 14.5" Size of Crank webs 29"x94" Dia. of thrust shaft under  
 collars 15" Dia. of screw 17'-9" Pitch of Screw 17'-9" No. of Blades 4 State whether moveable no Total surface 96  
 No. of Feed pumps 2 Diameter of ditto 10 1/2"x8" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 10"x12"x10" & 7 1/2"x5"x6" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 3 1/2" In Holds, &c. Two in each hold 3 1/2", one in  
 Tunnel Well 2 1/2"  
 No. of Bilge Injections 1 sizes 10" Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 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 none  
 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 Hold suction 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  
 Dates of examination of completion of fitting of Sea Connections 17. 4. 18 of Stern Tube 17. 4. 18 Screw shaft and Propeller 28. 5. 18  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spence & Sons  
 Total Heating Surface of Boilers 8478 Is Forced Draft fitted yes No. and Description of Boilers Three, single-ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Dates of tests 1-9.5.18 No. of Certificates 1-9090  
 Can each boiler be worked separately yes Area of fire grate in each boiler 64 1/2 No. and Description of Safety Valves to  
 each boiler Two, Spring Area of each valve 9.62 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers on woodwork 2 ft Mean dia. of boilers 15'-9" Length 12'-0" Material of shell plates Steel  
 Thickness 3/16" Range of tensile strength 29 3/4 - 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 8. Lap  
 long. seams 8.8. Y. Rivet Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 1/2"  
 Per centages of strength of longitudinal joint 87.8 Working pressure of shell by rules 182 lbs Size of manhole in end 16"x12"  
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3, Morrison's Material Steel Outside diameter 50 1/2"  
 Length of plain part top bottom Thickness of plates crown 19" 32" Description of longitudinal joint Welded No. of strengthening rings yes  
 Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 17/16"  
 Pitch of stays to ditto: Sides 10 1/2"x9" Back 10"x9 3/4" Top 10 1/2"x9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lbs  
 Material of stays Steel Area at smallest part 2.03 Area supported by each stay 97.5 Working pressure by rules 187 lbs End plates in steam space:  
 Material Steel Thickness 17/16" Pitch of stays 23 3/4"x22 1/2" How are stays secured 8. N. W. Working pressure by rules 183 lbs Material of stays Steel  
Area at smallest part 9.62 Area supported by each stay 53.4 Working pressure by rules 189 lbs Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 186 lbs  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4"x3 5/8" Material of tube plates Steel Thickness: Front 1" Back 13/16" Mean pitch of stays 7 3/8"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 182 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9"x2" Length as per rule 35" Distance apart 10 1/2" Number and pitch of stays in each 3-9"  
 Working pressure by rules 181 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
 separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet  
 holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes  
 If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes  
 Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

W953-0181



VERTICAL DONKEY BOILER—

Manufacturers of Steel

*Home*

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 casing 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 top-end, two bottom-end & two main-bearing bolts & nuts, a set of coupling bolts, a set of feed & bilge pump valves, a quantity of assorted bolts nuts & wire & a propeller.*

The foregoing is a correct description,  
 FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD.  
*Superintendent*  
 Manufacturer.

SECRETARY. 1917  
 Dates of Survey while building  
 During progress of work in shops -- 23. 26. 27. 29. 30. Dec. 5. 10. 17. 18. 20. 27. 1916 Jan. 3. 10. 11. 16. 18. 22. 23. 24. 25. 29. 30. 31. Feb. 1. 4. 8. 11. 13. 14. 15. 20.  
 During erection on board vessel -- 21. 22. Mar. 5. 12. 13. 15. 18. 19. 20. 25. Apr. 2. 5. 11. 16. 17. 18. 23. 24. 25. 26. May 1. 2. 3. 6. 7. 8. 9. 13. 14. 15. 17. 21. 22. 27. 28.  
 Total No. of visits 93.

Is the approved plan of main boiler forwarded herewith *No*  
 Forwarded with report on "Clan Macvicar"  
 " " " donkey " "Clan" Macvicar

Dates of Examination of principal parts—Cylinders 30. 11. 17 Slides 6. 5. 18 Covers 11. 1. 18 Pistons 18. 3. 18 Rods 2. 5. 18  
 Connecting rods 2. 5. 18 Crank shaft 30. 1. 18 Thrust shaft 24. 10. 17 Tunnel shafts 10. 12. 17 Screw shaft 18. 1. 18 Propeller 14. 5. 18  
 Stern tube 11. 1. 18 Steam pipes tested 28. 5. 18 Engine and boiler seatings 21. 6. 18 Engines holding down bolts 21. 6. 18  
 Completion of pumping arrangements 21. 6. 18 Boilers fixed 21. 6. 18 Engines tried under steam 21. 6. 18  
 Main boiler safety valves adjusted 21. 6. 18 Thickness of adjusting washers P.B.  $P\frac{7}{16} S\frac{11}{32}$ . C.B.  $P\frac{11}{32} S\frac{1}{2}$ . S.B.  $P\frac{11}{32} S\frac{3}{8}$   
 Material of Crank shaft *Steel* Identification Mark on Do. *J. H. 1-18* Material of Thrust shaft *Steel* Identification Mark on Do. *J. H. 10-17*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *J. H. 12-17* Material of Screw shafts *Steel* Identification Marks on Do. *J. H. 1-18*  
 Material of Steam Pipes *Iron & Steel* Test pressure 540 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines & boilers of this vessel have been constructed under special survey & the materials & workmanship are sound & good. The engines have been tried under steam & the boiler safety valves adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of + LMC 6-18. A report on the electric installation will be forwarded when received from the Electricians*

It is submitted that  
 this vessel is eligible for  
 THE RECORD + LMC 7. 18 F.D.

*JWD* 31/7/18. *ARR*

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, \_\_\_\_\_  
 Special .. .. £ 48 : 9 : 0 \_\_\_\_\_  
 Donkey Boiler Fee .. .. £ ✓ : ✓ : ✓ When received, \_\_\_\_\_  
 Travelling Expenses (if any) £ ✓ : ✓ : ✓ 6-8-1915

*Thomas Field*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

1917-18  
 + LMC 7. 18 F.D.



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