

REPORT ON MACHINERY.

No. 71144

Date of writing Report 25th June 1918 When handed in at Local Office 29 JUL 1918 Received at London Office TUE. 30 JUL. 1918
 No. in Survey held at Newcastle Port of NEWCASTLE-ON-TYNE
 Reg. Book. on the S.S. "Clan Macvey" Date, First Survey 28th Aug 1917 Last Survey 22nd July 1918
 Master Built at Newcastle By whom built Northumberland S.B. Co Tons Gross 5818
Engines made at Newcastle By whom made N.E. Marine Eng Co 2315- when built 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 screw shaft 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 sq ft
 No. of Feed pumps 2 Diameter of ditto 10 1/2" x 8" 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, 1-14.5.18, 1-17.5.18 No. of Certificates 1-9090, 1-9093, 1-9096
 Can each boiler be worked separately yes Area of fire grate in each boiler 64 1/2 sq ft No. and Description of Safety Valves to each boiler Two, Spring Area of each valve 9.62 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 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 B.S. 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 rivets 87.8 plate 85.7 Working pressure of shell by rules 182 lbs Size of manhole in shell 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 19" Thickness of plates bottom 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" x 9" Back 10" x 9 1/2" Top 10 1/2" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lbs
 Material of stays Steel Area supported by each stay 2.03 sq ft Working pressure by rules 187 lbs End plates in steam space: Material Steel Thickness 17/16" Pitch of stays 13 3/4" x 22 1/2" How are stays secured S.N.W. Working pressure by rules 183 lbs Material of stays Steel
Area supported by each stay 5.34 sq ft 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" x 3 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" x 2" 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

VERTICAL DONKEY BOILER—

Manufacturers of Steel *Kone*

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 & iron & a propeller.*

The foregoing is a correct description,
FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD.
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
	During erection on board vessel ---	21. 22. May. 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	23 JUL 1918
Donkey Boiler Fee £ ✓ : ✓ : ✓	When received,
Travelling Expenses (if any) £ ✓ : ✓ : ✓	6-8-1918

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

Committee's Minute

Assigned

FRI. 9-AUG. 1918
 + LMC 7.18 F.D.



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