

Rpt. 4.

REPORT ON MACHINERY.

No. 61138
SAT. OCT. 7 - 1911

Received at London Office

Date of writing Report 10 When handed in at Local Office 10 Port of Newcastle on Tyne
 No. in Survey held at Newcastle on Tyne Date, First Survey 7th Nov. 1910 Last Survey 27th Sept. 1911
 Reg. Book. on the "S.S. Rothley" (Number of Visits 70) Tons } Gross 3942
 Master Blyth Built at Blyth By whom built Blyth Shipbuilding Co. L^d When built 1911
 Engines made at Wallend By whom made North Eastern Marine Engineering L^d when made 1911
 Boilers made at Wallend By whom made Sitto when made 1911
 Registered Horse Power 356 Owners Red. F. Steam Ship Co. L^d Port belonging to Newcastle
 Nom. Horse Power as per Section 28 356 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25" 41" 68" Length of Stroke 45" Revs. per minute 70 Dia. of Screw shaft 13.87" 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 5' 0"
 Dia. of Tunnel shaft 12.39" Dia. of Crank shaft journals 13.0" Dia. of Crank pin 13.25" Size of Crank webs 26 x 8 3/4" Dia. of thrust shaft under collars 13.4" Dia. of screw 17.0" Pitch of Screw 17.0" No. of Blades 4 State whether moceable no Total surface 90 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 13-8 x 10 x 10, 7 1/2 x 5 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 of 3 1/2" & Tunnel well 3 1/2" In Holds, &c. N^o 1. 2 of 3 1/2" dia. N^o 2. 2 of 3 1/2" dia.
after hold 2 of 3 1/2" dia. + one in well 3 1/2" dia.
 No. of Bilge Injections 1 sizes 4" 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 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 fore 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 10-5-11 of Stern Tube 10-5-11 Screw shaft and Propeller 5.7.11
 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 J. Spencer & Sons
 Total Heating Surface of Boilers 5762 sq ft Is Forced Draft fitted no No. and Description of Boilers 2 S.E. Cyl^r built
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15-7-11 No. of Certificate 8155
 Can each boiler be worked separately Yes Area of fire grate in each boiler 68.06 sq ft No. and Description of Safety Valves to each boiler 2 spring
 Area of each valve 8.29 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 17" Mean dia. of boilers 16.9 3/8" Length 11' 0" Material of shell plates steel
 Thickness 1 5/16" Range of tensile strength 28 3/4/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.v. lap
 long. seams End to End Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 19 3/4"
 Per centages of strength of longitudinal joint, rivets 85.8 Working pressure of shell by rules 182.3 lbs Size of manhole in shell 16 x 12"
 plates 85.6
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Deighton Material steel Outside diameter 5' 3 1/2"
 Length of plain part top 7" Thickness of plates bottom 7" Description of longitudinal joint weld No. of strengthening rings 1
 Working pressure of furnace by the rules 188.2 lbs Combustion chamber plates: Material steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 1 1/8"
 Pitch of stays to ditto: Sides 9 3/8" x 10 1/2" Back 9" x 10 1/2" Top 9 3/8" x 10 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180.5 lbs
 Material of stays steel Diameter at smallest part 2.03" Area supported by each stay 94.5 sq in Working pressure by rules 183 lbs End plates in steam space:
 Material steel Thickness 1 9/16" Pitch of stays 26 3/8" x 24" How are stays secured d.v. w Working pressure by rules 181 lbs Material of stays steel
 Diameter at smallest part 11.04" Area supported by each stay 633 sq in Working pressure by rules 181.5 lbs Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 14 1/2" x 10 1/2" Working pressure of plate by rules 189 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 1" Back 13/16" Mean pitch of stays 9 x 8 3/4"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 183 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8" x 2" Length as per rule 2.9" Distance apart 9 3/8" Number and pitch of stays in each 2-10 1/2"
 Working pressure by rules 182.5 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes
 Diameter 1" Length 1" Thickness of shell plates 15/16" Material steel Description of longitudinal joint weld Diam. of rivet holes 1 1/32" Pitch of rivets 9 3/4" Working pressure of shell by rules 182.3 lbs Diameter of flue 1" Material of flue plates steel Thickness 1 5/16"
 If stiffened with rings Yes Distance between rings 1" Working pressure by rules 182.3 lbs End plates: Thickness 1 5/16" How stayed Yes
 Working pressure of end plates 182.3 lbs Area of safety valves to superheater 1 Are they fitted with easing gear Yes

9810-201
102-0186

Lloyd's Register Foundation

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 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 _____ 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:— 1 Propeller, 2 Top end, 2 Bottom end, 2 Main bearing
 + one set of Coupling bolts, 1 set feed + bilge pump Valves, bolts + nuts assorted
 and iron of sizes

The foregoing is a correct description,
NORTH EASTERN MARINE ENGINEERING Co., LTD. Manufacturer.

J. J. Harrison Secretary.

1910 1911

During progress of work in shops -- Secretary. Nov 7. 10. 14. 28. 30. Dec. 5. 21. Jan. 11. 16. 20. 25. 27. 30. Feb. 1. 6. 9. 10. 13. 15. 16. 17. 21. 27. Mar. 2. 6. 7. 8. 10. 14. 15. 17. 24. 29. Apr. 5. 4. 5. 10. 12. 13. 19. 21. 24. May. 1. 3. 4. 9. 10. 15. 16. 22. 23. 25. 29. 30. Jun. 1. 2. 6. 9. 12. 15. 27. 28. Jul. 3. 5. 7. 14. 18. Sep. 27.

Dates of Survey while building: During erection on board vessel -- Total No. of visits 70

Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Cylinders 11.5.11 Slides 9.6.11 Covers 29.5.11 Pistons 29.5.11 Rods 11.5.11

Connecting rods 23.5.11 Crank shaft 23.5.11 Thrust shaft 14.3.11 Tunnel shafts 4.5.11 Screw shaft 24.4.11 Propeller 12.6.11

Stern tube 4.5.11 Steam pipes tested 23.5.11 Engine and boiler seatings 11.4.11 Engines holding down bolts 11.7.11

Completion of pumping arrangements 18.7.11 Boilers fixed 11.7.11 Engines tried under steam 18.7.11

Main boiler safety valves adjusted 18.7.11 Thickness of adjusting washers P.P. $\frac{3}{8}$, P.S. $\frac{5}{16}$ full; S.P. $\frac{5}{16}$, S.S. $\frac{5}{16}$ full

Material of Crank shaft *steel* Identification Mark on Do *RWL 23/5/11* Material of Thrust shaft *Steel* Identification Mark on Do *RWL 14.3*

Material of Tunnel shafts *Iron* Identification Marks on Do *RWC 4.5.11* Material of Screw shafts *Iron* Identification Marks on Do *RWC 24.4*

Material of Steam Pipes *Iron* Test pressure 540 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery of this vessel has been constructed under special survey, the workmanship and materials used are both of good quality, the Engines have been tried under steam ahead & astern and worked satisfactorily*

*We beg to recommend that this vessel is eligible in our opinion to have the record **L.M.C. 9.11** in the Register Book*

It is submitted that this vessel is eligible for **THE RECORD + L.M.C. 9.11.**

J.W.D.
 11/10/11

The amount of Entry Fee .. £ 3 : 0 : 0

Special .. £ 37 : 16 : 0

Donkey Boiler Fee .. £ : :

Travelling Expenses (if any) £ : :

When applied for, **OCT 6 1911**

When received, 11. 10. 1911

Committee's Minute

Assigned

R.W. Coomber + J. Keller
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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.)