

# REPORT ON MACHINERY.

No. 67082

Received at London Office TUE. JAN. 26. 1915

Date of writing Report 23<sup>rd</sup> Jan 1915 When handed in at Local Office 25<sup>th</sup> Jan 1915 Port of NEWCASTLE-ON-TYNE.

No. in Survey held at Newcastle Date, First Survey 11<sup>th</sup> Jan 1913 Last Survey 19<sup>th</sup> Jan 1915  
Reg. Book. 315 upon the Machinery of the S.S. Reading (Number of Visits 42) Gross 3801 Net 2396

Master Built at Newcastle By whom built Northumbrian S.B.C. When built 1914

Engines made at Newcastle By whom made N.E. Marine Eng. Co. when made 1915

Boilers made at " By whom made " when made 1915

Registered Horse Power Owners J. Cory & Sons Ltd Port belonging to Cardiff

Nom. Horse Power as per Section 28 367 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines *Triple* No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 25", 41", 69" Length of Stroke 48" Revs. per minute 62 Dia. of Screw shaft as per rule 14.21" Material of screw shafts 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 as per rule 12.7" Dia. of Crank shaft journals as per rule 13.3" Dia. of Crank pin 14" Size of Crank webs 28" x 8 1/2" Dia. of thrust shaft under collars 14" Dia. of screw 17-3" Pitch of Screw 18-3" No. of Blades 4 State whether moveable no Total surface 92 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 26" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 4 Sizes of Pumps 9" x 11" x 10", 7 1/2" x 5" x 6", 6" x 5 1/4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 5 of 3 1/2" In Holds, &c. 2 of 3 1/2" in each hold & 1 of 2 1/2" in tunnel well  
 No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump pumps 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 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 none How are they protected Yes  
 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 21/5/14 of Stern Tube 21/5/14 Screw shaft and Propeller 4/6/14  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

**BOILERS, &c.**—(Letter for record P) Manufacturers of Steel J. Spencer & Sons  
 Total Heating Surface of Boilers 5796 Is Forced Draft fitted no No. and Description of Boilers 3 Single-ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15/5/14 No. of Certificate 8655  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 52 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 707 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 or woodwork 1'-6" Mean dia. of boilers 13'-9 1/2" Length 10'-9" Material of shell plates Steel  
 Thickness 1 3/32 Range of tensile strength 28 3/4 - 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. t. lap long. seams E. & d. butt Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 17 3/4"  
 Per centages of strength of longitudinal joint rivets 86.4 Working pressure of shell by rules 182.3 lbs Size of manhole in shell 16" x 12" plate 86.4  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Dighton Material steel Outside diameter 41 1/2"  
 Length of plain part top bottom Thickness of plates crown 1/2" Description of longitudinal joint welded No. of strengthening rings  
 Working pressure of furnace by the rules 182 lbs Combustion chamber plates: Material steel Thickness: Sides 23/32 Back 23/32 Top 23/32 Bottom 29/32  
 Pitch of stays to ditto: Sides 10 1/2 x 9 3/8 Back 10 1/2 x 9 3/8 Top 10 1/2 x 9 3/8 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 98.4 Working pressure by rules 185 lbs End plates in steam space  
 Material steel Thickness 1 3/8" Pitch of stays 24" x 19 3/4" How are stays secured a new Working pressure by rules 185 lbs Material of stays steel  
 Diameter at smallest part 8.29 Area supported by each stay 474 Working pressure by rules 81.8 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 x 9 3/8 Working pressure of plate by rules 190 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 3/4" Mean pitch of stays 9 x 8 3/4"  
 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 1 1/2" Length as per rule 30" Distance apart 10 1/2" Number and pitch of stays in each 2 of 9 3/8  
 Working pressure by rules 185 lbs Superheater or Steam chest; how connected to boiler none 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 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

4120-124700-214700

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

*Two top & 2 bottom end bolts, 2 main bearing bolts  
1 set of coupling bolts, 1 set of fuel & bilge pump  
valves, a quantity of assorted bolts nuts & iron, spare  
propeller & minor details.*

The foregoing is a correct description,

NORTH EASTERN MARINE ENGINEERING Co., LTD.

*G. J. Harrison* Manufacturer.

Dates of Survey while building	During progress of work in shops -- } During erection on board vessel --- } Total No. of visits	Secretary. 1913		1914	
		Jan. 11. 18. Jul. 4. 7. 18. 24. 28 Aug. 7. Sep. 4. 19. Oct. 2. 9. Feb. 16. Mar. 13		Jan. 4. 15. 18. Apr. 8. Dec. 9. 29	
		24. 26. 31. Apr. 2. 7. 8. 20. 21. 27. 28 May. 1. 5. 7. 11. 12. 13. 15. 20. 21. 27. 29		1912 Jan 19	

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *19/8/14* Slides *21/4/14* Covers *2/10/14* Pistons *9/10/14* Rods *18/6/14*  
 Connecting rods *18/4/14* Crank shaft *4/5/14* Thrust shaft *8/4/14* Tunnel shafts *2/4/14* Screw shaft *27/4/14* Propeller *1/5/14*  
 Stern tube *12/5/14* Steam pipes tested *25/4/14* Engine and boiler seatings *21/5/14* Engines holding down bolts *15/6/14*  
 Completion of pumping arrangements *29/12/14* Boilers fixed *4/6/14* Engines tried under steam *18/6/14*  
 Main boiler safety valves adjusted *18/6/14* Thickness of adjusting washers *P. 3 5/16 P. 3/8 C. 3 3/8 P. 3/8 P. 3 3/8 P. 1 3/8*  
 Material of Crank shaft *Steel* Identification Mark on Do. *4/5/14* Material of Thrust shaft *Steel* Identification Mark on Do. *20/4/14*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *7/4/14* Material of Screw shafts *Iron* Identification Marks on Do. *1/5/14*  
 Material of Steam Pipes *Lapwelded iron* Test pressure *540 lbs*  
 Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case *No* If so, state name of vessel *...*

General Remarks (State quality of workmanship, opinions as to class, &c. ...)

*The machinery of this vessel has been built under special survey, the materials used are good, and the workmanship is satisfactory, it has been properly fitted on board and secured, the engines have been tried under full power. In my opinion this vessel is eligible for the record of L.M.C. 1.15.*

It is recommended that this vessel is eligible for THE RECORD. + L.M.C. 1.15.

*J.W.D.* *APR*  
26/1/15

*Charles Cooper*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee ... £ 3 :	When applied for, JAN 25 1915
Special ... £ 38 : 7	When received, 11/7/15
Donkey Boiler Fee ... £ :	
Travelling Expenses (if any) £ :	

Committee's Minute FRI. JAN. 29. 1915

Assigned *+ L.M.C. 1.15*

NEWCASTLE-ON-TYNE.

The Surveyors are requested not to write on or below the space for Committee's Minute.

