

REPORT ON MACHINERY.

No. 29741

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Date of writing Report Feb. 4th 1911 When handed in at Local Office 10/21 10 11. Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 5th Sept. Last Survey Feb. 3rd 1911
 Reg. Book. 31 on the s/s "ENDCLIFFE" (Number of Visits 30)
 Master _____ Built at Maryport By whom built W. Walker Tons { Gross 371
 Engines made at Glasgow By whom made J. Ritchie when made 1911 Net 99
 Boilers made at Glasgow By whom made A. & W. Dalglisk when made 1910
 Registered Horse Power _____ Owners J. W. Ward Ltd. Port belonging to Liverpool
 When built 1911
 Nom. Horse Power as per Section 28 70 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Compound Surface Condensing No. of Cylinders two No. of Cranks two
 Dia. of Cylinders 17"-36" Length of Stroke 24" Revs. per minute 108 Dia. of Screw shaft 7.63" Material of screw shaft Iron
 as per rule 7.63" as fitted 8.3"
 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 — 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 — If two
 liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 2'-10"
 Dia. of Tunnel shaft None Dia. of Crank shaft journals 7.31" Dia. of Crank pin 7.34" Size of Crank webs 14 1/2 x 6 Dia. of thrust shaft under
 collars 7 3/4" Dia. of screw 9'-0" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable no Total surface 32 ft²
 No. of Feed pumps one Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work —
 No. of Bilge pumps one Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work —
 No. of Donkey Engines two Sizes of Pumps 3 1/2 x 5 + 5 3/4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 10 2" In Hold, &c. 10 2"

No. of Bilge Injections one size 4" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 10 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 —
 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 — of Stern Tube — Screw shaft and Propeller See Barrow Report No 1496
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door — worked from —

OILERS, &c.—(Letter for record _____) Manufacturers of Steel _____
 Total Heating Surface of Boilers _____ Is Forced Draft fitted _____ No. and Description of Boilers _____
 Working Pressure _____ Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____
 Can each boiler be worked separately _____ Area of fire grate in each boiler _____ No. and Description of Safety Valves to
 each boiler _____ Area of each valve _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____
 Smallest distance between boilers or uptakes and bunkers or woodwork _____ Mean dia. of boilers _____ Length _____ Material of shell plates _____
 Thickness _____ Range of tensile strength _____ Are the shell plates welded or flanged _____ Descrip. of riveting: cir. seams _____
 long. seams _____ Diameter of rivet holes in long. seams _____ Pitch of rivets _____ of plates or width of butt straps _____
 Per centages of strength of longitudinal joint _____ Working pressure of shell by rules _____ Size of manhole in shell _____
 Size of compensating ring _____ No. and Description of Furnaces in each boiler _____ Material _____ Outside diameter _____
 Length of plain part _____ Thickness of plates _____ Description of longitudinal joint _____ No. of strengthening rings _____
 Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
 Pitch of stays to ditto: Sides _____ Back _____ Top _____ If stays fitted with nuts or riveted heads _____ Working pressure by rules _____
 Material of stays _____ Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ End plates in steam space: _____
 Material _____ Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of stays _____
 Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____
 Thickness _____ Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____
 Diameter of tubes _____ Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____
 Pitch across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and
 thickness of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____
 Working pressure by rules _____ Superheater or Steam chest; how connected to boiler _____ Can the superheater be shut off and the boiler worked
 separately _____ 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 _____

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:— *2 Connecting rod top end bolts & nuts, 2 connecting rod bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts, 1 set of piston springs, quantity of assorted bolts & nuts and iron of various sizes.*

The foregoing is a correct description,
 Manufacturer.



George Brown

Dates of Survey while building
 During progress of work in shops— 1910. Sep. 5. 13. 29. Oct. 1. 4. 7. 12. 17. 24. 31. Nov. 7. 9. 14. 16. 21. 30. Dec. 5.
 During erection on board vessel— 19. 21. 28. 1911. Jan. 5. 6. 11. 16. 18. 20. 22. 24. 30. Feb. 3
 Total No. of visits— 30
 Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 12-10-10 Slides 12-10-10 Covers 7-10-10 Pistons 29-9-10 Rods 24-10-10
 Connecting rods 24-10-10 Crank shaft 29-9-10 Thrust shaft 29-9-10 Tunnel shafts *None* Screw shaft 29-9-10 Propeller 29-9-10
 Stern tube 29-9-10 Steam pipes tested 18-1-11 Engine and boiler seatings 5-1-11 Engines holding down bolts 20-1-11
 Completion of pumping arrangements 23-1-11 Boilers fixed 20-1-11 Engines tried under steam 30-1-11 + 3-2-11
 Main boiler safety valves adjusted 24-1-11 Thickness of adjusting washers *Port 3/8" Star 3/8"*
 Material of Crank shaft *Steel* Identification Mark on Do. 2578 Material of Thrust shaft *Steel* Identification Mark on Do. 37
 Material of Tunnel shafts *None* Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. 37
 Material of Steam Pipes *Copper* Test pressure *300 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The materials & workmanship are good. The machinery of this vessel has been built under special survey and is eligible in my opinion for classification and the Record + L.M.C. 2-11*

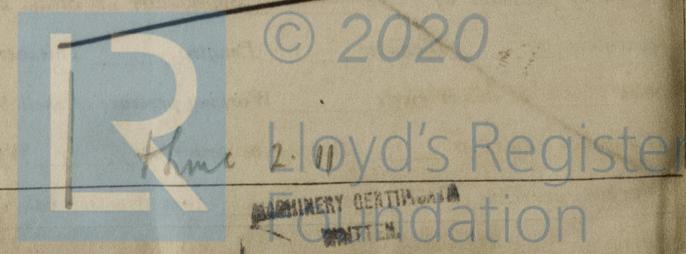
It is my opinion that this vessel is eligible for THE RECORD + LMC 2-11

J.P.M. 16/2/11

The amount of Entry Fee .. £ 1 : 0 : 0 When applied for, _____
 Special .. £ 7 : 0 : 0 _____
 Donkey Boiler Fee .. £ _____
 Travelling Expenses (if any) £ _____
 When received, _____

H.P. Forster
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow 14 FEB. 1911*
 Assigned *+ LMC 2, 11 subject to classification of hull.*



Glasgow.

Certificate (if required) to be sent to

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