

# REPORT ON MACHINERY.

No. 29314

Date of writing Report 10<sup>th</sup> Sept 1910, When handed in at Local Office 10 Port of Glasgow  
 No. in Survey held at Coatbridge & Glasgow, Date, First Survey 16<sup>th</sup> May 1910, Last Survey 9<sup>th</sup> Sept 1910  
 Reg. Book. S/S "BRENTHAM" (Number of Visits 247)

Master A. Campbell, Built at Glasgow By whom built Maekie & Thomson (N<sup>o</sup> 397) Tons { Gross 824.54  
 Engines made at Coatbridge By whom made W. V. V. Lidgerwood Esq. (N<sup>o</sup> 339) when made 1910 Net 370.75  
 Boilers made at Glasgow By whom made Lindsay, Burnett & Co (N<sup>o</sup> 1268) when made 1910  
 Registered Horse Power \_\_\_\_\_ Owners Messrs Paton & Hendry Port belonging to Glasgow  
 Nom. Horse Power as per Section 28 136 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted No.

**ENGINES, &c.**—Description of Engines Triple Expansion, S. Condensing No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 17"-27"-44" Length of Stroke 30" Revs. per minute \_\_\_\_\_ Dia. of Screw shaft as per rule 9" 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 ✓ 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 ✓ Length of stern bush 3'-6"  
 Dia. of Tunnel shaft as per rule 8" Dia. of Crank shaft journals as per rule 8.43" Dia. of Crank pin 8 3/4" Size of Crank webs 17 1/2" Dia. of thrust shaft under collars 8 3/4" Dia. of screw 10-9" Pitch of Screw 11-0" No. of Blades 4 State whether moveable No Total surface 44 1/2"  
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines Two Sizes of Pumps 7" x 7" x 8" & 6" x 4 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 - 2 1/2" bore In Holds, &c. 2 - 2" bore

No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes, 2 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 ✓  
 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 and of Stern Tube and Screw shaft and Propeller 3.8.10.  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**—(Letter for record \_\_\_\_\_) Manufacturers of Steel \_\_\_\_\_  
 Total Heating Surface of Boilers 2503 1/2 Is Forced Draft fitted no No. and Description of Boilers 1 single ended marine  
 Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs Date of test 3.8.10. No. of Certificate 10523.  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler \_\_\_\_\_ No. and Description of Safety Valves to each boiler 1 double spring loaded Area of each valve 8.29" Pressure to which they are adjusted 165 lbs. Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 7-10" 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 \_\_\_\_\_ Lap of plates or width of butt straps \_\_\_\_\_  
 Per centages of strength of longitudinal joint \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Size of man hole 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 are 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 \_\_\_\_\_

1m.10g.-T.



002138-002150-0224

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 none 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 connecting rod top end + 2 bottom end bolts + nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set each of feed + bilge pump valves, also 1 set each of air + circulating pump valves, a quantity of assorted bolts + nuts, iron of various sizes, + 2 feed check valves + seats.

The foregoing is a correct description,

For W. V. Lidgerwood Manufacturer. R Sneddon

Dates of Survey while building  
 During progress of work in shops— 1910 May 16. 21. 27. 30 June 6. 16. 27. 29. July 5. 12. 25. 26. 29. 30  
 During erection on board vessel — Aug. 1. 3. 10. 12. 16. 20. 22. 25. Sep 7. 9.  
 Total No. of visits 24 Is the approved plan of main boiler forwarded herewith yes ✓  
 " " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 27.5.10. Slides 12.7.10. Covers 12.7.10. Pistons 12.7.10. Rods 29.6.10.  
 Connecting rods 1.8.10. Crank shaft 27.6.10. Thrust shaft 29.7.10. Tunnel shafts none. Screw shaft 29.7.10. Propeller 29.7.10.  
 Stern tube 29.7.10. Steam pipes tested 22.8.10. Engine and boiler seatings 3.8.10. Engines holding down bolts 16.8.10.  
 Completion of pumping arrangements 9.9.10. Boilers fixed 7.9.10. Engines tried under steam 9.9.10.  
 Main boiler safety valves adjusted 7.9.10. Thickness of adjusting washers Both 5/16" thick.  
 Material of Crank shaft Steel Identification Mark on Do. 339. Material of Thrust shaft Steel Identification Mark on Do. 339.  
 Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shafts Iron. Identification Marks on Do. 339.  
 Material of Steam Pipes Copper ✓ Test pressure 350 lbs. ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The workmanship + materials are good: The engines + boiler have been built under special survey, fitted on board + satisfactorily tried under steam. ✓

The machinery of this vessel is eligible in our opinion for the notation + L.M.C. 9.10. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.10.

JWD 24/9/10 F.P.R.

The amount of Entry Fee .. £ 2 : - : When applied for, \_\_\_\_\_  
 Special .. .. £ 20 : 8 : } 10/9/10 - 1910  
 Donkey Boiler Fee .. .. £ : : } When received, \_\_\_\_\_  
 Travelling Expenses (if any) £ : : } 1.10 - 1910

A.H. Pilditch & H.B. Forster  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

GLASGOW 20 SEP 1910  
 Committee's Minute  
 Assigned + L.M.C. 9.10



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Form No. 1A. Write "Bridge Sheer Stroke" and "Upper Deck Sheer Stroke" opposite the corresponding letter.

No. of sets of Engines. One No. of Shafts. One Under Space. Turbine. Fore. Bridge. Peep. Side. Deck. Char. Space. Se. 18. Exce. Dedu. Non. For. less. No. Nam. Th. for. box. me. Da. 30)