

## REPORT ON MACHINERY.

No. 24754

SAT. 11 MAR 1911

Port of Sunderland Date, first Survey 31 Mar 1910 Last Survey 3 March 1911  
 No. in Survey held at 88 Reg. Book. "Lexie" (Number of Visits 50)  
 Master Sunderland Built at Sunderland By whom built Messrs Bartram & Sons Gross 2778  
 Engines made at Sunderland By whom made Messrs J. Dickinson & Sons Ltd. Net 2375  
 Boilers made at do By whom made do when made 1911  
 Registered Horse Power 315 Owners Laming & Co. Ltd. (Laming & Co.) Port belonging to London  
 Nom. Horse Power as per Section 28 315 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 24" x 40" x 66" Length of Stroke 45" Revs. per minute 40 Dia. of Screw shaft 13.85 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 ✓ If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4'-9"  
 Dia. of Tunnel shaft 12.24 Dia. of Crank shaft journals 12.85 Dia. of Crank pin 12.4 Size of Crank webs 23 1/4 x 8 Dia. of thrust shaft under  
 collars 12.4 Dia. of screw 14'-0" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable No Total surface 85 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 22 1/2" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 22 1/2" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 2 @ 4 x 6 Ballast 9 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 @ 3 1/2" + 1 @ 4" Special In Holds, &c. 2 @ 3 1/2" in each hold  
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 4"  
 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 ✓  
 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 25.1.11 of Stern Tube 25.1.11 Screw shaft and Propeller 6.2.11  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record 8) Manufacturers of Steel Spence & Sons  
 Total Heating Surface of Boilers 4821 sq ft Is Forced Draft fitted No No. and Description of Boilers 2 single ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 25-1-11 No. of Certificate 2884  
 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 loaded Area of each valve 8.3 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 18" Mean dia. of boilers 16'-0" Length 11'-0" Material of shell plates steel  
 Thickness 1 1/2" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 5/16" Lap of plates or width of butt straps 20 1/8"  
 Per centages of strength of longitudinal joint 92.5 Working pressure of shell by rules 181 lbs Size of manhole in shell 12 x 16  
 Size of compensating ring 8 3/4 x 19 3/8 No. and Description of Furnaces in each boiler 3 Corrugated Material steel Outside diameter 51 1/8"  
 Length of plain part top 9 1/2" Thickness of plates crown 9 1/2" Description of longitudinal joint weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 184 lbs Combustion chamber plates: Material steel Thickness: Sides 1 1/2" Back 1 1/2" Top 1 1/2" Bottom 1 1/2"  
 Pitch of stays to ditto: Sides 9 x 10 Back 8 1/2 x 10 1/2 Top 9 x 10 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186 lbs  
 Material of stays steel Diameter at smallest part 2.031 Area supported by each stay 90 sq in Working pressure by rules 203 lbs End plates in steam space:  
 Material steel Thickness 1 1/2" Pitch of stays 18 1/4 x 20 How are stays secured D.N.W. Working pressure by rules 181 lbs Material of stays steel  
 Diameter at smallest part 6 1/4" Area supported by each stay 36.5 sq in Working pressure by rules 184 lbs Material of Front plates at bottom steel  
 Thickness 1 1/2" Material of Lower back plate steel Thickness 2 1/2" Greatest pitch of stays 14 1/4 x 10 1/4 Working pressure of plate by rules 184 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 1 3/4" Back 1 1/2" Mean pitch of stays 10 1/8"  
 Pitch across wide water spaces 13 1/4" Working pressures by rules 266 lbs Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 2 @ 4 1/2" x 1" Length as per rule 2-6 1/2" Distance apart 10" Number and pitch of stays in each 2 @ 9"  
 Working pressure by rules 190 lbs 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 \_\_\_\_\_  
 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 \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR.

State the articles supplied:—

1 Propeller, 1 set coupling bolts, 2 Main Bearing bolts & nuts  
 2 Top end & 2 Bottom end bolts & nuts, 1 set feed & bridge pump valves, 2 feed check  
 valves, 2 safety valve springs, 1 set air & air pump valves, Assorted bolts nuts &  
 iron.

The foregoing is a correct description,

J. H. Dickinson. Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1909 Mar. 31 Apr. 5-8-16-19-21-22-23-26-27-29 May 4-6-10-12-14-17-19-21-24-27-28 June 4-7-14  
 During erection on board vessel— July 2-22-26 Sept. 7-27 Oct. 1-8 Nov. 8-19 1910 Apr. 14 June 11 Aug. 16 Sept. 14 Oct. 31 Nov. 8-10 1911 Jan. 10-11-18-25  
 Total No. of visits Feb. 6-8-15-23 Mar. 3 (50) Is the approved plan of main boiler forwarded herewith Yes. ✓

Dates of Examination of principal parts—Cylinders 1.10.09 Slides 1.10.09 Covers 1.10.09 Pistons 19.11.09 Rods 19.11.09  
 Connecting rods 14.4.10 Crank shaft 14.4.10 Thrust shaft 14.4.10 Tunnel shafts 14.4.10 Screw shaft 14.4.10 Propeller 14.4.10  
 Stern tube 14.4.10 Steam pipes tested 8.2.1911 Engine and boiler seatings 11.6.10 Engines holding down bolts 8.2.11  
 Completion of pumping arrangements 15.2.11 Boilers fixed 8.2.11 Engines tried under steam 15.2.11  
 Main boiler safety valves adjusted 15.2.11 Thickness of adjusting washers Pot. Bl. F 4 1/2 A 15 3/2 Star B F 3/8 A 13 3/2  
 Material of Crank shaft Steel Identification Mark on Do. 3046, P.A. Material of Thrust shaft Steel Identification Mark on Do. 2365, H.K.  
 Material of Tunnel shafts Steel Identification Marks on Do. 2524, H.K. 2380, H.K. 2415, H.K. 5433, K.H. 2425, H.K.  
 Material of Steam Pipes Copper 5 Solid drawn 1 1/2" dia. x 5 W.G. Test pressure 400 lb. Identification Marks on Do. 3934, M.R.

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery and  
 boilers of this vessel have been built under special  
 survey. Materials and workmanship good.  
 Engines and boilers examined under full  
 steam & found satisfactory.  
 It is submitted that this vessel is eligible for  
 the record of L.M.C. 3-11

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + LMC 3. 11.

The amount of Entry Fee.. £ 3 :- :-  
 Special .. .. £ 35 15 0  
 Donkey Boiler Fee .. .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 10.3.1911  
 When received, 14.3.1911

Committee's Minute

Assigned

TUE. 14 MAR 1911

+ LMC 3. 11

William Butler, J. J. Findlay  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINERY CERTIFICATE  
 WRITTEN.



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Lloyd's Register  
 Foundation

Rpt. 5a.

Date of writing

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Reg. Book.

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