

# REPORT ON MACHINERY.

RECEIVED FROM SURVEYOR. 29 JUN 1904

Port of Liverpool

Received at London Office SAT. 16 JUL 1904

No. in Survey held at Northwich Date, first Survey 3 Sept 03 Last Survey 22<sup>nd</sup> June 1904  
 Reg. Book. on the Steel screw steamer "LONSDALE" (Number of Visits 12)  
 Master Thos. Kingley Built at Northwich By whom built W. J. Yarwood Tons { Gross / Net }  
 Engines made at Northwich By whom made W. J. Yarwood when made 1904  
 Boilers made at do By whom made do when made 1904  
 Registered Horse Power 39 Owners Whitehaven & Isle of Man S.S. Co. Port belonging to Whitehaven  
 Nom. Horse Power as per Section 28 39 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Compound surface condensing No. of Cylinders 2 No. of Cranks 2  
 Dia. of Cylinders 14" & 28 1/2" Length of Stroke 21 Revs. per minute 120 Dia. of Screw shaft 6.03 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 26 1/4"  
 Dia. of Tunnel shaft 6.25 Dia. of Crank shaft journals 5.95 Dia. of Crank pin 6.25 Size of Crank webs 8 x 4 1/2" Dia. of thrust shaft under collars 6.25 Dia. of screw 7 ft Pitch of screw 9-6" No. of blades 4 State whether moveable Yes Total surface 15.2 sq ft  
 No. of Feed pumps one Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps one Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines one Sizes of Pumps 6 x 4 x 6 duplex No. and size of Suctions connected to both Bilge and Donkey pumps in Engine Room Two - 2" In Holds, &c. one - 2"

No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size Yes 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 Valves and Cocks  
 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  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Yes Is the screw shaft tunnel watertight Yes  
 Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 724.32 sq ft Is forced draft fitted No  
 No. and Description of Boilers One Cylindrical multi-tubular Working Pressure 120 lbs Tested by hydraulic pressure to 240 lbs  
 Date of test 15/4/04 Can each boiler be worked separately Yes Area of fire grate in each boiler 40 sq ft No. and Description of safety valves to each boiler 2 Spring loaded Area of each valve 9.62 sq ft Pressure to which they are adjusted 120 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 10 1/2" Mean dia. of boilers 10 ft Length 9-6" Material of shell plates Steel  
 Thickness 1/16" Range of tensile strength 27 to 32 Are they welded or flanged Double riveted Descrip. of riveting: cir. seams Double riveted long. seams Double riveted  
 Diameter of rivet holes in long. seams 15/16" Pitch of rivets 4 1/2" Lap of plates or width of butt straps 15"  
 Per centages of strength of longitudinal joint rivets 81.3 Working pressure of shell by rules 123 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring M. C. Rings No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 3-5 3/16"  
 Length of plain part top 6-3" bottom 6-0" Thickness of plates crown 19/32" Description of longitudinal joint welded No. of strengthening rings 1/2 ring  
 Working pressure of furnace by the rules 126 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 19/32"  
 Pitch of stays to ditto: Sides 8 1/2 x 8 1/2" Back 9 x 9" Top 7 3/4 x 8 1/2" Are stays fitted with nuts or riveted heads Nuts Working pressure by rules 151 lbs  
 Material of stays Steel Diameter at smallest part 1.39" Area supported by each stay 81 sq in Working pressure by rules 146 lbs End plates in steam space: Material Steel Thickness 1/16" Pitch of stays 15" x 15" How are stays secured Nuts Working pressure by rules 175 lbs Material of stays Steel  
 Diameter at smallest part 1.93" Area supported by each stay 225 sq in Working pressure by rules 130 Material of Front plates at bottom Steel  
 Thickness 1/16" Material of Lower back plate Steel Thickness 1/16" Greatest pitch of stays 14 x 9" Working pressure of plate by rules 129 lbs  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/16" Material of tube plates Steel Thickness: Front 1/16" Back 1/16" Mean pitch of stays 11 7/8"  
 Pitch across wide water spaces 14 3/8" Working pressures by rules 182 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 6 1/2 x 1 1/4" Length as per rule 2-2" Distance apart 7 3/4" Number and pitch of Stays in each Two - 8 1/2"  
 Working pressure by rules 141 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes  
 If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes  
 Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

**DONKEY BOILER—** No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_  
 Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Two piston rod top end bolts and nuts, Two bottom end bolts and nuts. Two main bearing bolts, one set of coupling bolts. One set of bilge and feed pump valves. Assorted bolts and nuts and iron of various sizes.*

The foregoing is a correct description,  
 Manufacturer. *W. J. Garwood*

Dates of Survey while building { During progress of work in shops - - } 1903. *Sept 3. Oct 16. Nov 3. Dec 15. 31.* 1904. *Jan 20. Mar 25. April 15. 29.*  
 { During erection on board vessel - - } *May 3. June 9. 22.*  
 Total No. of visits. *12.*

Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " " *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The engines and boiler of this vessel have been built under special survey, and in accordance with the plans approved by the Committee, the material and workmanship is of good quality. The boiler has been tested both under hydraulic pressure and steam and the machinery examined under working conditions, and is now in my opinion eligible to have the notation **L.M.C. 6-04** now recorded.*

*It is submitted that this vessel is eligible for THE RECORD*  
**L.M.C. 6.04**

*W.S.*  
*18.7.04*  
*W.S.*  
*18.7.04*

Certificate (if required) to be sent to \_\_\_\_\_  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee.. £ *1 : 0 : 0* When applied for, *5 JUL 1904*  
 Special .. .. £ *8 : 0 : 0*  
 Donkey Boiler Fee .. .. £ *3 : 14 : 6* When received, *4.7.04*  
 Travelling Expenses (if any) £ : : \_\_\_\_\_

*H. H. Ashton*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **LIVERPOOL. 15 JUL 1904**

Assigned *L.M.C. 6.04*  
*W.S.*

MACHINERY CERTIFICATE  
 WAITEN. 19/7

