

# REPORT ON MACHINERY.

No. 26994  
TUE. DEC. 9-1913

Date of writing Report 2<sup>nd</sup> Nov. 1913 When handed in at Local Office 8-12-13 Port of Hull  
 No. in Survey held at Hull Date, First Survey Aug 21<sup>st</sup> Last Survey Nov 29<sup>th</sup> 1913  
 Reg. Book 4154 on the steel Se X "T.R. FERENS" (Number of Visits 19)  
 Master W. J. ... Built at Hull By whom built Cochrane & Sons Ltd Tons } Gross 307  
 Engines made at Hull By whom made Amos & Smith Ltd } Net 124  
 Boilers made at Hull By whom made Amos & Smith Ltd } When built 1913  
 Registered Horse Power 90 Owner Pickering & Haldane Ltd Port belonging to Hull  
 Nom. Horse Power as per Section 28 90 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 13-22<sup>3</sup>/<sub>4</sub>-37 Length of Stroke 26 Revs. per minute 7.94 Dia. of Screw shaft 8<sup>1</sup>/<sub>4</sub> Material of screw shaft S.  
 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 no 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 no If two liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 3'-0"  
 Dia. of Tunnel shaft 7.02 Dia. of Crank shaft journals 7.37 Dia. of Crank pin 7<sup>1</sup>/<sub>2</sub> Size of Crank web 11<sup>3</sup>/<sub>4</sub> x 4<sup>3</sup>/<sub>4</sub> Dia. of thrust shaft under collars 7<sup>1</sup>/<sub>2</sub> Dia. of screw 9'-9" Pitch of Screw 11'-3" No. of Blades 4 State whether moveable no Total surface 34<sup>5</sup>/<sub>8</sub>  
 No. of Feed pumps 1 Diameter of ditto 2<sup>7</sup>/<sub>8</sub> Stroke 12" Can one be overhauled while the other is at work no  
 No. of Bilge pumps 1 Diameter of ditto 2<sup>7</sup>/<sub>8</sub> Stroke 12" Can one be overhauled while the other is at work no  
 No. of Donkey Engines one Sizes of Pumps 6" x 4<sup>1</sup>/<sub>2</sub> x 6 No. and size of Suctions connected to both Bilge and Donkey pumps Two 2" one for d. one aft.  
 In Engine Room Two 2" one for d. one aft. In Holds, &c. Three - 2" Fishroom Forepeak.  
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size 2" ejector  
 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 no  
 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 Hold suction How are they protected Wood casing  
 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 29.9.13 of Stern Tube 29.9.13 Screw shaft and Propeller 29.9.13  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from yes

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel Beck & Co. Werk Schatz-Krauth, Huckelshausen.  
 Total Heating Surface of Boilers 1511 Is Forced Draft fitted no No. and Description of Boilers One single-ended  
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 11.11.13 No. of Certificate 2034  
 Can each boiler be worked separately yes Area of fire grate in each boiler 48 No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 4.9 Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 7" Mean dia. of boiler 13-11<sup>3</sup>/<sub>8</sub> Length 10-7<sup>3</sup>/<sub>32</sub> Material of shell plates S.  
 Thickness 1<sup>3</sup>/<sub>16</sub> Range of tensile strength 29-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams U.R.L.  
 long. seams D.B.S. rivet Diameter of rivet holes in long. seams 1<sup>1</sup>/<sub>4</sub> Pitch of rivets 8<sup>3</sup>/<sub>4</sub> Lap of plates or width of butt straps 17<sup>3</sup>/<sub>4</sub>  
 Per centages of strength of longitudinal joint 87.83 Working pressure of shell by rules 200 lbs. Size of manhole in shell 16 x 12  
 Size of compensating ring 40 x 30 x 1<sup>3</sup>/<sub>16</sub> No. and Description of Furnaces in each boiler 3 plain Material S. Outside diameter 3'-4<sup>1</sup>/<sub>8</sub>  
 Length of plain part 6'-6" Thickness of plates 1<sup>3</sup>/<sub>16</sub> Description of longitudinal joint welded No. of strengthening rings no  
 Working pressure of furnace by the rules 206 Combustion chamber plates: Material S. Thickness: Sides 1<sup>1</sup>/<sub>16</sub> Back 2<sup>3</sup>/<sub>32</sub> Top 1<sup>1</sup>/<sub>16</sub> Bottom 1<sup>3</sup>/<sub>16</sub>  
 Pitch of stays to ditto: Sides 9<sup>3</sup>/<sub>4</sub> x 7<sup>3</sup>/<sub>4</sub> Back 9<sup>5</sup>/<sub>8</sub> x 8<sup>1</sup>/<sub>2</sub> Top 7<sup>1</sup>/<sub>4</sub> x 9<sup>1</sup>/<sub>2</sub> Are stays fitted with nuts or riveted heads nut Working pressure by rules 210  
 Material of stays S. Diameter at smallest part 2.597 Area supported by each stay 81.81 Working pressure by rules 217 End plates in steam space: Material S. Thickness 1<sup>5</sup>/<sub>32</sub> Pitch of stays 17<sup>3</sup>/<sub>4</sub> x 17<sup>3</sup>/<sub>4</sub> Are stays secured D.B.S. rivet Working pressure by rules 201 Material of stays S.  
 Diameter at smallest part 7.24 Area supported by each stay 315.0625 Working pressure by rules 238 Material of Front plates at bottom S.  
 Thickness 1" Material of Lower back plate S. Thickness 2<sup>9</sup>/<sub>32</sub> Greatest pitch of stays 13<sup>3</sup>/<sub>4</sub> x 9<sup>5</sup>/<sub>8</sub> Working pressure of plate by rules 217  
 Diameter of tubes 3<sup>1</sup>/<sub>2</sub> Pitch of tubes 5 x 4<sup>3</sup>/<sub>4</sub> Material of tube plates S. Thickness: Front 1" Back 2<sup>7</sup>/<sub>32</sub> Mean pitch of stays 12<sup>1</sup>/<sub>2</sub> x 4<sup>3</sup>/<sub>4</sub>  
 Pitch across wide water spaces 13<sup>3</sup>/<sub>4</sub> Working pressures by rules 203 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 9<sup>3</sup>/<sub>4</sub> x 2 Length as per rule 36" Distance apart 9<sup>1</sup>/<sub>2</sub> Number and pitch of stays in each 3 at 7<sup>3</sup>/<sub>4</sub>  
 Working pressure by rules 209 Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked separately no  
 Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no  
 If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no  
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

IS A DONKEY BOILER FITTED?

no.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

Two each top & bottom end connecting rod bolts & nuts, two main bearing bolts and nuts, one set of coupling bolts & nuts, one set each feed & bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts, etc.

The foregoing is a correct description, FOR AMOS & SMITH LTD.

W. H. Wade Managing Director. Manufacturer.

Dates of Survey while building

During progress of work in shops -- 1913 Aug 21 Sep 13, 27, 29 Oct 7, 16, 17, 21, 28, 30 Nov 1, 4, 11, 18, 19. During erection on board vessel --- Nov 24, 26, 28, 29. Total No. of visits 19

Is the approved plan of main boiler forwarded herewith? yes

Dates of Examination of principal parts - Cylinders 7.10.13. Slides 7.10.13. Covers 7.10.13. Pistons 7.10.13. Rods 4.11.13. Connecting rods 4.11.13. Crank shaft 1.11.13. Thrust shaft 4.11.13. Tunnel shafts Screw shaft 27.9.13. Propeller 27.9.13. Stern tube 27.9.13. Steam pipes tested 24.11.13. Engine and boiler seatings 29.9.13. Engines holding down bolts 24.11.13. Completion of pumping arrangements 28.11.13. Boilers fixed 24.11.13. Engines tried under steam 26.11.13. Main boiler safety valves adjusted 26.11.13. Thickness of adjusting washers AV 3/8 bare. FV 1/32. Material of Crank shaft S. Identification Mark on Do. 1189. Material of Thrust shaft S. Identification Mark on Do. 1189. Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts S. Identification Marks on Do. 1189. Material of Steam Pipes Copper solid drawn. Test pressure 400 lbs. hyd. pressure. Is an installation fitted for burning oil fuel. 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? yes. If so, state name of vessel "Lord Loudesborough"

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are sound and good. The Boiler tested by hydraulic pressure and with the engines secured on board and tested under steam they are now in good order and safe-working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of +LMC 11.12 in the Register book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.13.

JWD 9/12/13

The amount of Entry Fee ... £ 1 : : When applied for, 8/12 1913. Special ... £ 13 : 10 : 0. Donkey Boiler Fee ... £ : : When received, 31/12/13. Travelling Expenses (if any) £ : 4 : 1

J. G. MacKillop Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. DEC. 12. 1913

Assigned +LMC 11.13

MACHINERY CERTIFICATE WRITTEN



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