

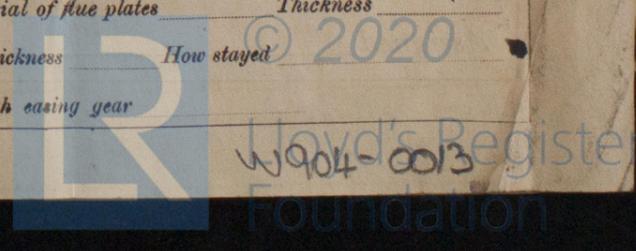
# REPORT ON MACHINERY.

Received at London Office SAT. 25 MAR. 1916

Date of writing Report 1<sup>st</sup> July 1916 When handed in at Local Office 24 MAR 1916 Port of Sunderland  
 No. in Survey held at Sunderland Date, First Survey 1<sup>st</sup> July 1915 Last Survey 15-3-16 1916  
 Reg. Book. on the S.S. "The Limerick" Estimer Belfast 1 Dec 15 Number of Visits 3 Tons } Gross 2293  
 } Net 1216  
 Master W. Kerr Built at Londonderry By whom built The North of Ireland S.B. & Ld. 5/11/16 When built 1916  
 Engines made at Sunderland By whom made Macballe & Pollock Ltd (N<sup>o</sup> 261) when made 1916  
 Boilers made at Sunderland By whom made Macballe & Pollock Ltd (N<sup>o</sup> 261) when made 1916  
 Registered Horse Power Owners Bromport Steamship Co Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 240 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 21" 34" 56" Length of Stroke 39" Revs. per minute 85 Dia. of Screw shaft as per rule 11.91" as fitted 12.316" Material of screw shaft steel  
 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'-0 1/2"  
 Dia. of Tunnel shaft as per rule 10.5" as fitted 10.98" Dia. of Crank shaft journals as per rule 11.02" as fitted 11.78" Dia. of Crank pin 11 3/8" Size of Crank webs 16 1/2" x 7 1/2" Dia. of thrust shaft under  
 collars 11 3/8" Dia. of screw 14 1/4" Pitch of Screw 15'-9" No. of Blades 4 State whether moveable no Total surface 73.6 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 1 Ballast 8" x 10" x 10" 2 Feed 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
 in Engine Room 4-3" In Holds, &c. 4-3" + 2-3" in Deep Tank  
 No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 1-3 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 ✓  
 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 Fore 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 11-4-16 of Stern Tube 11-4-16 Screw shaft and Propeller 11-4-16  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform E. Room

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons Ltd.  
 Total Heating Surface of Boilers 4080 sq ft Is Forced Draft fitted no No. and Description of Boilers two single ended marine  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 21-1-16 & 8-2-16 No. of Certificates 3326 & 3328  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 61.3 sq ft No. and Description of Safety Valves to  
 each boiler two direct spring Area of each valve 5.93 sq in Pressure to which they are adjusted 18.5 lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 10'-3" Mean dia. of boilers 14'-9" Length 10'-6" Material of shell plates Steel  
 Thickness 1 1/8" Range of tensile strength 29,374-33,000 lbs Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.  
 g. seams TR. ABS Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 14 5/8"  
 Percentages of strength of longitudinal joint rivets 88.7 Working pressure of shell by rules 180 Size of manhole in shell 16" x 12"  
 Diameter of compensating ring 27" x 29" x 1 1/8" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 3'-9 1/4"  
 Length of plain part top 76 5/8" bottom 76 3/4" Thickness of plates crown 1 1/16" bottom 1 1/16" Description of longitudinal joint welded No. of strengthening rings none  
 Working pressure of furnace by the rules 184 Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 1/16"  
 Distance of stays to ditto: Sides 9 1/4" x 9 5/8" Back 9 3/8" x 9" Top 10" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183  
 Material of stays Steel Diameter at smallest part 2.035" Area supported by each stay 100 sq in Working pressure by rules 183 End plates in steam space:  
 Material Steel Thickness 1 1/4" Pitch of stays 21" x 18" How are stays secured D.N. Working pressure by rules 183 Material of stays Steel  
 Diameter at smallest part 6' 10" Area supported by each stay 345 sq in Working pressure by rules 183.8 Material of Front plates at bottom Steel  
 Thickness 1 5/16" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 15 1/4" x 9" Working pressure of plate by rules 193  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/16" x 4 9/16" Material of tube plates Steel Thickness: Front 1 5/16" Back 1 3/16" Mean pitch of stays 11.28"  
 Distance across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8" x 17 1/8" Length as per rule 28' 1/8" Distance apart 10" Number and pitch of stays in each 2 @ 8 1/2"  
 Working pressure by rules 186 Superheater or Steam chest; how connected to boiler none 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  
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 Total No. of Visits 2 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



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *one propeller (C. Iron), set coupling bolts, set top end & set bottom end bolts, set main bearing bolts, 3 tube stoppers; 2 Feed & 2 Bilge Pump valves; 1/2 set air pump valves & set circulating pump valves; 2 Feed Check valves; 3 Condenser tubes & 4 ferrules; safety valve & spring; feed escape valve spring, bolts nuts, iron etc.*

The foregoing is a correct description,

MAC COLL & POLLOCK LTD.

*G. D. Richardson*

Manufacturer.

Dates of Survey while building: During progress of work in shops: 1915 Jul. 1, Oct. 28, Nov. 4, 9, 10, 15, 18, 19, 30, Dec. 1, 3, 22, Jan. 13, 21, 25, 28, 31, Feb. 8, 9, 17, 22, Mar. 6, 14. During erection on board vessel: 1915, Dec. 1, 1916, Apr. 1-15, May 13, June 1, 27. Total No. of visits: 29. Is the approved plan of main boiler forwarded herewith? *Yes*

Dates of Examination of principal parts: Cylinders 30-11-15, Slides 31-1-16, Covers 1-12-15, Pistons 13-1-16, Rods 25-1-16, Connecting rods 28-1-16, Crank shaft 23-8-15, Thrust shaft 9-2-16, Tunnel shafts 17-2-16, Screw shaft 6-3-16, Propellers 2-2-2, Stern tube 15-3-16, Steam pipes tested 1-6-16, Engine and boiler seatings 13-3-16, Engines holding down bolts 13-5-16, Completion of pumping arrangements 27-6-16, Boilers fixed 1-6-16, Engines tried under steam 27-6-16, Main boiler safety valves adjusted 27-6-16, Thickness of adjusting washers *Steam 1/8 - 3/8, Piston 1/16 - 3/16*

Material of Crank shaft: *Steel* Identification Mark on Do. *A595CK* Material of Thrust shaft: *Steel* Identification Mark on Do. *A495A*  
Material of Tunnel shafts: *Steel* Identification Marks on Do. *4514 AF0* Material of Screw shafts: *Steel* Identification Marks on Do. *4525 A*

Material of Steam Pipes: *N. Iron* Test pressure: *5-40 lbs*

Is an installation fitted for burning oil fuel? *No* 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? *No* If so, state name of vessel: \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The materials and workmanship are good. The machinery has been constructed under special survey and forwarded to Londonderry to be fitted in the vessel. Belfast surveyors advised 22-3-16*

*Machinery securely fitted on board, and tested satisfactory under steam. In my opinion it is eligible for records + L.M.C. 6-16, with notation "Electric Light".*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.16.

*JWD*  
*14/7/16*

*Lewis Davis R. J. Beven*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee ... £ 2 : - :  
Special *2/3 fee* £ 21 : 6 :  
Donkey Boiler Fee ... £ 10 : 14 :  
When applied for, 24 MAR 1916  
When received, 9-5/1916  
Travelling Expenses (if any) £ 9 : 5 : 0  
*Belfast Office*  
Committee's Minute TUE, AUG. 8-1916  
Assigned *+ L.M.C. 6.16*

SUNDERLAND.

Certificate (if required) to be sent to \_\_\_\_\_

MACHINERY CERTIFICATE WRITTEN.