

# REPORT ON MACHINERY

No. 34713

Received at London Office

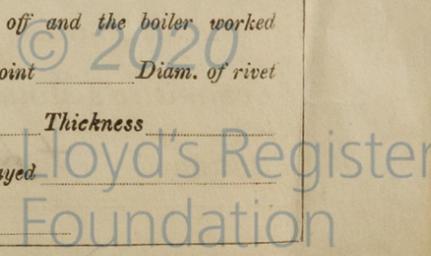
Date of writing Report 19 When handed in at Local Office 10 Port of Glasgow  
 No. in Survey held at Clydebank Date, First Survey 28/5/14 Last Survey 29/12/1914  
 Reg. Book. on the s/s Clarecastle (Number of Visits 20)  
 Master Built at Bowling By whom built Scott & Sons Tons Gross 627 Net 236  
 Engines made at Clydebank By whom made Aitchison Blair & Co when made 1914  
 Boilers made at Glasgow By whom made Dunmuir & Jackson Ltd when made 1914  
 Registered Horse Power Owners John Kelly Ltd Port belonging to Belfast  
 Nom. Horse Power as per Section 28 113 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 15 - 25 1/2 - 41 Length of Stroke 30 Revs. per minute 108 Dia. of Screw shaft as per rule 8.46 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 close fit If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 2' 10 5/8"  
 Dia. of Tunnel shaft as per rule 7.77 Dia. of Crank shaft journals as per rule 8.15 Dia. of Crank pin 8 1/2 Size of Crank webs 5 1/2 x 15 3/8 Dia. of thrust shaft under collars 8 1/4 Dia. of screw 10'-0" Pitch of Screw 13'-6" No. of Blades 4 State whether moveable no Total surface 37 sq ft  
 No. of Feed pumps 2 Diameter of ditto 2 1/4 Stroke 16 1/2 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/4 Stroke 16 1/2 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 1 duplex 7-4 1/2 x 8 feed & general Ballast No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 of 2 1/4" In Holds, &c. Hold 2 of 2 1/2"  
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump circ. pump Is a separate Donkey Suction fitted in Engine room & size yes 2 1/4"  
 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 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 bilge 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 25.11.14 of Stern Tube 25.11.14 Screw shaft and Propeller 25.11.14  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door — worked from —

**BOILERS, &c.**—(Letter for record ) Manufacturers of Steel See separate report  
 Total Heating Surface of Boilers 1938 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended  
 Working Pressure 180 lbs sq in Tested by hydraulic pressure to Date of test No. of Certificate  
 Can each boiler be worked separately Area of fire grate in each boiler 57 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 5.94 sq in Pressure to which they are adjusted 185 lbs sq in Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 6'-0" 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 rivets plate Working pressure of shell by rules Size of manhole in shell  
 Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
 Length of plain part top Thickness of plates crown 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

If not, state whether, and when, one will be sent

Is a Report also sent on the Hull of the Ship?



**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 \_\_\_\_\_ 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:— *2 top end, 2 bottom end, 2 main bearing and set of coupling bolts & nuts. Set of feed and bilge pump valves. 1 main and 1 donkey feed check valves. Assorted iron bolts & nuts.*

**AITCHISON, BLAIR LTD.**

The foregoing is a correct description,

Manufacturer.

*Arch. Blair* Director

Dates of Survey while building: During progress of work in shops - 1914 May 28 June 29 Aug 4 21 31 Sept 11 15 25 Oct 5 13 28 Nov 3 6 Dec 11 14 15 18 21 26 29  
 During erection on board vessel -  
 Total No. of visits *20* Is the approved plan of main boiler forwarded herewith \_\_\_\_\_  
 " " " donkey " " " \_\_\_\_\_

**Dates of Examination of principal parts**—Cylinders *29-6-14* Slides *15-9-14* Covers *29-6-14* Pistons *21-8-14* Rods *29-6-14*  
 Connecting rods *29-6-14* Crank shaft *4-8-14* Thrust shaft *29-6-14* Tunnel shafts \_\_\_\_\_ Screw shaft *28-10-14* Propeller *13-10-14*  
 Stern tube *21-8-14* Steam pipes tested *18-12-14* Engine and boiler seatings *25-11-14* Engines holding down bolts *21-12-14*  
 Completion of pumping arrangements *21-12-14* Boilers fixed *21-12-14* Engines tried under steam *29-12-14*  
 Main boiler safety valves adjusted *26-12-14* Thickness of adjusting washers PV  $\frac{3}{8}$ " SV  $\frac{23}{64}$   
 Material of Crank shaft *steel* Identification Mark on Do. *91 AC* Material of Thrust shaft *steel* Identification Mark on Do. *91 AC*  
 Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of Screw shafts *steel* Identification Marks on Do. *91 AC*  
 Material of Steam Pipes *solid drawn copper* Test pressure *360 lbs*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been constructed under special survey in accordance with the rules, and has been seen working under steam satisfactorily. Materials and workmanship are good.*

*This machinery is eligible in my opinion to be classed +LMC-12.14.*

It is submitted that this vessel is eligible for **THE RECORD + LMC.12.14.**

*JM Jar*  
 7/1/15

*Harry Clarke*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 2 : 0 :	When applied for,	
Special	£ 16 : 19 :	When received,	
Donkey Boiler Fee	£ 6 : 9 :		
Travelling Expenses (if any)	£ : : :		

Committee's Minute **GLASGOW** - 6 JAN 1915  
 Assigned *+ L.M.C. 12.14.*



MACHINERY CERTIFICATE WRITTEN 7-1-15

GLASGOW

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

L.M.C. 24/11/15