

# REPORT ON MACHINERY

No. 34542

WED. 20 MAR. 1918

Received at London Office

Date of writing Report 19 When handed in at Local Office 19 Port of Glasgow  
 No. in Survey held at Clydebank Date, First Survey 30<sup>th</sup> Aug. 1915 Last Survey 6<sup>th</sup> March 1918  
 Reg. Book. on the S/S Saint Dunston's St Dunstons Hill (Number of Visits 48)

Master Built at Ardrossan By whom built Ardrossan Dock & Ship Co Ltd (270) When built 1918  
 Engines made at Clydebank By whom made Aitchison Blair Lim (92) when made 1918

Boilers made at Glasgow By whom made Lindsay Burnett & Co (nos 1564/65) when made 1918

Registered Horse Power Owners Inead Son & Hussey Port belonging to London  
 Nom. Horse Power as per Section 28 149 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 14" 28" 46" Length of Stroke 33" Revs. per minute 98 Dia. of Screw shaft as per rule 9.35" 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 one length 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 — Length of stern bush 3-4"

Dia. of Tunnel shaft as per rule 8.6 Dia. of Crank shaft journals as per rule 9.09 Dia. of Crank pin 9 1/2" Size of Crank webs 6 1/2 x 12 1/2" Dia. of thrust shaft under collars 9 1/8" Dia. of screw 11-6" Pitch of Screw 13-4 1/2" No. of Blades 4 State whether moveable no Total surface 45-7 sq ft

No. of Feed pumps 2 Diameter of ditto 3" Stroke 14" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 14" Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps duplex general 7 1/2-6 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room two 2 1/2" in stokehold one 2 1/2" in engine room In Holds, &c. two 2 1/2"

No. of Bilge Injections 1 sizes 4 3/4" Connected to condenser, or to circulating pump each fits a separate Donkey Suction fitted in Engine room & size yes 2 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 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 Hold Bilge Suctions How are they protected Strong 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 20.11.17 of Stern Tube 20.11.17 Screw shaft and Propeller 20.11.17

Is the Screw Shaft Tunnel watertight no tunnel Is it fitted with a watertight door — worked from —

BOILERS, &c.—(Letter for record S) Manufacturers of Steel See separate report (no 37096)

Total Heating Surface of Boilers 2524 sq ft Is Forced Draft fitted no No. and Description of Boilers Two Single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lb Date of test 13.8.17 No. of Certificate 13878

Can each boiler be worked separately yes Area of fire grate in each boiler 45 sq ft No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 4.91 sq in Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4-6" 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 — 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 — Thickness of plates — 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 —

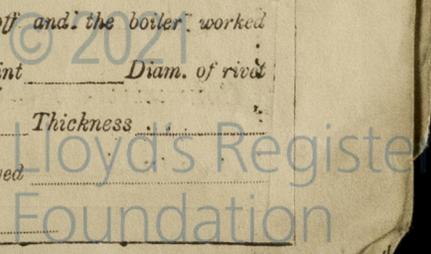
Diameter of tubes — Pitch of tubes — Material of tube plates — Thickness: Front — Back — Mean pitch of stays —

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 —



IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: *1 Tail Shaft, 1 Propeller, 2 Top and bolts & nuts, 2 Bottom and bolts & nuts, 2 Main bearing bolts, 1 Set Coupling bolts, 1 Set feed & Bilge Pump Valves, 1 Set air Pump Valves, 1 Set Circulating Pump Valves assorted bolts & nuts & Bar Iron of various sizes.*

The foregoing is a correct description,  
**AITCHISON, BLAIR LTD.**

*Arch. Blair*

Manufacturer.

Dates of Survey while building: During progress of work in shops - *1915 Aug 20, Sep 4, 8, 14, 16, 22, 28, 30, 31, Nov 16, 22, 30, Dec 21, 1914 Jan 1, 22, Apr 12, 16, 30, May 10, June 1.*  
During erection on board vessel - *Aug 1, 23, Sep 3, 10, 20, 28, Oct 15, Nov 19, 20, 26, Dec 5, 10, 18, 27, 1914 Jan 7, 9, 11, 15, 18, 21, Feb 8, 12, 13, 15, Mar 5, 6.*  
Total No. of visits *48*

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts - Cylinders *16-11-16* Slides *19-11-17* Covers *16-11-16* Pistons *30-11-16* Rods *15-10-17*  
Connecting rods *15-10-17* Crank shaft *30-4-17* Thrust shaft *20-9-17* Tunnel shafts *—* Screw shaft *1-6-17* Propeller *1-6-17*  
Stern tube *1-6-17* Steam pipes tested *8-2-18* w.g.m. Engine and boiler seatings *28-9-17* Engines holding down bolts *15-2-18*  
Completion of pumping arrangements *6-3-18* Boilers fixed *18-1-18* Engines tried under steam *5-3-18, 6-3-18*  
Main boiler safety valves adjusted *12-2-18* Thickness of adjusting washers *St 15 Pt 5/16 Sta 3/32 Pt 1/32 Pt 5/16 Sta 9/32*  
Material of Crank shaft *steel* Identification Mark on Do. *98 etc* Material of Thrust shaft *steel* Identification Mark on Do. *98 etc*  
Material of Tunnel shafts *none* Identification Marks on Do. *—* Material of Screw shafts *steel* Identification Marks on Do. *98 etc*  
Material of Steam Pipes *Copper* Test pressure *360 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 Engines and Boilers of this Vessel have been built under special survey the workmanship and materials are good, they have been well fitted on board, tried under Steam and found to work satisfactorily.*

*The machinery of this Vessel is eligible in our opinion for the record of + L.M.C. in the Register Book*

*When tried under Steam the Sta Boiler main feed check Valve Chest was leaking slightly, owing to the brass of which it is made being porous, but it is in safe working condition, a new Chest has been ordered and it will be fitted at the owners convenience.*

N.B. *The record in my opinion need not be withheld for above slight defect - J.H.C.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 3.18.

The amount of Entry Fee ... £ 2 : 0 :  
Special ... £ 13 : 19 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ 3 : 14 :  
When applied for: *13.3.1918*  
When received: *2.4.1918*

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

Committee's Minute **GLASGOW. 19 MAR 1918**

Assigned *+ L.M.C 3.18*



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*Glasgow*

*Committee (if required) to be sent to*

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

*11/3/18*