

REPORT ON MACHINERY

No. 28153.

Received at London Office

WFT 6 OCT 1909

Date of writing Report 29th Sept 1909 When handed in at Local Office 29th Sept 1909 Port of Glasgow

No. in Survey held at Groon Date, First Survey 6th April 1909 Last Survey 25th Sept 1909

Reg. Book. 17 on the S S Laverock (Number of Visits 30) Gross 1199.39 Tons Net 263.77

Master H. C. Ferris Built at Groon By whom built Aitca S B C La When built 1909

Engines made at Groon By whom made Aitca S B C La when made 1909

Boilers made at Govan By whom made Dunsmuir & Jackson La when made 1909

Registered Horse Power _____ Own General Steam Navigation Co La Port belonging to London

Nom. Horse Power as per Section 28 251 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 22", 35" & 59" Length of Stroke 39 Revs. per minute 86 Dia. of Screw shaft as per rule 11 3/4" 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 Red lead

If two liners are fitted, is the shaft lapped or protected between the liners _____ Length of stern bush 66"

Dia. of Tunnel shaft as per rule None Dia. of Crank shaft journals as per rule 11 1/2" Dia. of Crank pin 11 1/8" Size of Crank webs 20x7" Dia. of thrust shaft under collars 11 1/8" Dia. of screw 13-9" Pitch of Screw 16-6" No. of Blades 4 State whether moveable No Total surface 59 sq ft

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 19 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 19 1/2" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps 8 3/4" & 6 1/2" & 2 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room One 4", Iron 2 1/4" and one 2 1/2" In Holds, &c. Two 2 1/4" in 1 and 2 holds

No. of Bilge Injections 1 sizes 5 1/2" Connected to condenser, or to circulating pump Pump Is 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 Yes

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 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

Dates of examination of completion of fitting of Sea Connections 5/8/09 of Stern Tube 6-12/8/09 Screw shaft and Propeller 12/8/09

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from _____

BOILERS, &c.—(Letter for record S) Manufacturers of Steel As per attached report on Boilers

Total Heating Surface of Boilers 4180 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended

Working Pressure 170 lb per sq in Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____

Can each boiler be worked separately Yes Area of fire grate in each boiler 58 1/4 sq ft No. and Description of Safety Valves to each boiler No direct spring Area of each valve 5.94 sq in Pressure to which they are adjusted 175 lb per sq in Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork Stokehold Mean dia. of boilers _____ Length _____ Material of shell plate _____

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 strap _____

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 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 _____

VERTICAL DONKEY BOILER—

Manufacturers of Steel

Spencer & Lons

No. *One* Description *vertical as per attached Middlesbrough report No 5901*
 Made at *Stockton* By whom made *Riley Bros Ltd* When made *1909* Where fixed *on main deck*
 Working pressure *80 lbs* tested by hydraulic pressure to *100* Date of test *23/9/09* No. of Certificate *28/4/09* Fire grate area *28 1/4 sq ft* Description of Safety
 Valves *Direct Spring* No. of Safety Valves *2* Area of each *5.940* pressure to which they are adjusted *85 lbs* Date of adjustment *23/9/09*
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *30* Length *12*
 Material of shell plates *Steel* Thickness *1/2* Range of tensile strength *30* Descrip. of riveting long. seams *30* Rivets *30*
 Dia. of rivet holes *1/2* Whether punched or drilled *drilled* Pitch of rivets *1/2* Lap of plating *1/2* Per centage of strength of joint *100* Plates *100*
 Working pressure of shell by rules *80* Thickness of shell crown plates *1/2* Radius of do. *30* No. of stays to do. *10* Dia. of stays *1/2*
 Diameter of furnace Top *30* Bottom *30* Length of furnace *12* Thickness of furnace plates *1/2* Description of joint *30*
 Working pressure of furnace by rules *80* Thickness of furnace crown plates *1/2* Stayed by *10*
 Diameter of uptake *30* Thickness of uptake plates *1/2* Thickness of water tubes *1/2* Dates of survey *23/9/09*

SPARE GEAR. State the articles supplied:

As required by the rules also, propeller and propeller shaft, set of crank pin crosses, guide shoe, valve spindle & nuts, 2 eccentric straps, air pump rod & bucket condenser & boiler tubes etc.

The foregoing is a correct description, FOR ALBA SHIPBUILDING CO., LIMITED

W. S. Watson, Manufacturer.

Dates of Survey while building: During progress of work in shops - *1909. Apr. 6. 9. 12. 19. 23. 27. 30. May 5. 11. 14. 17. 18. 24. 27. 28. 31. June 2. 4. 7. 9. 11. 15. 17. 11*
 During erection on board vessel - *21. 23. 24. 25. 29. July 1. 2. 6. 7. 9. 13. 15. Aug 4. 6. 18. 19. 24. Sep 6. 9. 13. 15. 16. 20. 22. 23. 28.*
 Total No. of visits *50* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts: Cylinders *11/5, 17/5* Slides *19/4, 27/4* Covers *11/5, 24/5/09* Pistons *25/5, 31/5* Rods *25/5, 2/6*
 Connecting rods *28/5, 31/5* Crank shaft *12/4, 19/4* Thrust shaft *11/5, 17/5* Tunnel shafts *None* Screw shaft *11/5, 17/5/09* Propeller *6/8/09*
 Stern tube *17/6, 23/6* Steam pipes tested *9/9/09* Engine and boiler seatings *24/8/09* Engines holding down bolts *6/9/09*
 Completion of pumping arrangements *13/9/09* Boilers fixed *6/9/09* Engines tried under steam *28/9/09*
 Main boiler safety valves adjusted *23/9/09* Thickness of adjusting washers *1/32" 10/32" 10/32" 10/32"* Identification Mark on Do. *3068*
 Material of Crank shaft *Steel* Identification Mark on Do. *3079* Material of Thrust shaft *Steel* Identification Mark on Do. *3068*
 Material of Tunnel shafts *None* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *3068*
 Material of Steam Pipes *Lap Weld Iron & Copper* Test pressure *Iron 510 Copper 340 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c) *The machinery of this vessel has been built under special survey, it & the boilers have been securely fitted on board and satisfactorily tested under full steam. Speed 12.4 Knots.*

In my opinion the machinery of this vessel is now eligible for record of L.M.C. 9.09 (mixed) in register book.

For forging reports, main & donkey boiler plans & Middlesbrough report No 5901 now attached.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9.09.

J.W.D. 8/10/09
J.R.R. 6/10/09

George Murdoch
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ *2 : 0* :
 Special .. £ *32 11* :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ *4 : 14 : 10*

Committee's Minute **GLASCOW**

Assigned + LMC 9.09

5.OCT.1909

MACHINERY CERTIFICATE WRITTEN 6.10.09



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Write 'Sheer Strake' opposite its corresponding letter.

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certificates (if required) to be sent to

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