

# REPORT ON MACHINERY.

No. 315-92

Received at London Office

WED JUN. 26. 1912

Date of writing Report 22. 6. 1912 When handed in at Local Office 22. 6. 1912 Port of Glasgow

No. in Survey held at Troon. Date, First Survey 27. 7. 11 Last Survey 21. 6. 1912

Reg. Book. T.S. "ITATINGA" on the

Master R.E. McNeill Built at Troon. By whom built Ailsa S.B. Co (No 247) When built 1912

Engines made at Troon By whom made Ailsa S.B. Co (No 31.) when made 1912

Boilers made at Glasgow By whom made D. Rowan (No 170) when made 1912

Registered Horse Power Owners Companhia Nacional de Navigacao Costeira Port belonging to Rio de Janeiro

Nom. Horse Power as per Section 28 304. Is Refrigerating Machinery fitted for cargo purposes yes. Is Electric Light fitted yes.

ENGINES, &c.—Description of Engines T.S. Triple Expan. S. Condensing No. of Cylinders 36 each No. of Cranks 3

Dia. of Cylinders 16"-26"-42" Length of Stroke 30" Revs. per minute 124 Dia. of Screw shaft 8.65" 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 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 yes.

If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 36"

Dia. of Tunnel shaft as per rule 8.02" Dia. of Crank shaft journals as per rule 8.42" Dia. of Crank pin 8 7/8" Size of Crank webs 5 1/8" Dia. of thrust shaft under collars 8 5/8" Dia. of screw 10-0" Pitch of Screw 12-0" No. of Blades 4 State whether moveable no Total surface 31.5

No. of Feed pumps 4 Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work yes.

No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work yes.

No. of Donkey Engines 7 Sizes of Pumps Ball 6"x8"x8" Fan 4 1/2"x4"x5" Fresh W 3"x2"x3" Brine 4"x4"x5" In Engine Room 2-2 3/4" + 2-3" In Holds, &c. 2-2 1/4" + 2-3" aft 2-2 3/4"

kinnel well 2 1/4" No. of Bilge Injections 2 sizes 4 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes 3"

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 cocks & valves.

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 Ballast Bilge in cross-bunkers How are they protected 2 1/2" 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 and of Stern Tube and Screw shaft and Propeller 2. 4. 12.

Is the Screw Shaft Tunnel watertight yes. Is it fitted with a watertight door yes worked from Cylinder platform.

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Wm Beardmore & Co.

Total Heating Surface of Boilers 6005# Is Forced Draft fitted no. No. and Description of Boilers 2 main + 1 aux.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 29. 1. 12 No. of Certificate 11393 11394

Can each boiler be worked separately yes. Area of fire grate in each boiler 67.5 main 30 aux. No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve main 7.06 aux 3.14 Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 2-3" main 11" aux. Mean dia. of boilers main 15-9" aux 10-6" Length main 11-6" aux 10-0" Material of shell plates steel

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 bottom Thickness of plates crown bottom 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

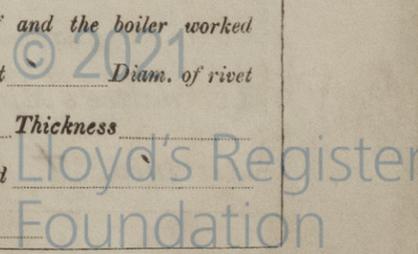
Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

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

See separate reports on the boiler



**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 \_\_\_\_\_

Values \_\_\_\_\_ 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:— *Two connecting rod top end & 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of feed & bilge pump valves, 1 set of piston springs, a quantity of assorted bolts & nuts, & iron of various sizes—*

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 - -	1911. July 27. Aug. 7. 16. 18. 21. 29. Sept. 7. 18. 26. Oct. 4. 9. 16. 26. Nov. 2. 6. 16. 24.
		Dec. 8. 13. 19. 28. 1912. Jan. 9. 13. 21. Feb. 6. 16. 22. March 4. 11. 18. 25.
	During erection on board vessel - -	April 2. 12. 18. 23. 29. May 6. 8. 14. 17. 20. 29. June 4. 6. 11. 14. 15. 21.
	Total No. of visits	48.

Is the approved plan of main boiler forwarded herewith *yes*  
 " " " donkey " " " *none*

Dates of Examination of principal parts—Cylinders 18.3.12 Slides 6.2.12 Covers 6.2.12 Pistons 6.2.12 Rods 12.4.12

Connecting rods 23.4.12 Crank shaft 18.3.12 Thrust shaft 18.3.12 Tunnel shafts 18.3.12 Screw shaft 18.3.12 Propeller 17.5.12

Stern tube 2.4.12 Steam pipes tested 17.5.12 Engine and boiler seatings 11.3.12 Engines holding down bolts 14.5.12

Completion of pumping arrangements 11.6.12 Boilers fixed 29.4.12 Engines tried under steam 15.6.12

Main boiler safety valves adjusted 11.6.12 Thickness of adjusting washers *P 5/16 S 1/2 P 7/16 S 7/16 A 7/16 F 3/8*

Material of Crank shaft *Steel* Identification Mark on Do. *31* Material of Thrust shaft *Steel* Identification Mark on Do. *31*

Material of Tunnel shafts *Steel* Identification Marks on Do. *31* Material of Screw shafts *iron* Identification Marks on Do. *31*

Material of Steam Pipes *Solid drawn copper* Test pressure *400 lbs*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The workmanship & materials are good. The engines have been built under Special Survey, fitted on board along with the boilers, & satisfactorily tried under steam.*

*The machinery of this vessel is eligible in <sup>our</sup> opinion for a record of + L.M.C 6.12 in the Register Book.*

*This vessel has been fitted with a Refrigerating Installation for cargo purposes, but not under Special Survey, the R.M.C. not being required. Please see particulars for the Register Book attached.*

*It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.12.*

*JWR 27/6/12*  
*H. Forster*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 3 : -	When applied for,	24.6.12.
Special	£ 21 : 18		
Donkey Boiler Fee	£ :	When received,	26/6/12
Travelling Expenses (if any)	£ 3 : 5		

Committee's Minute **GLASCOW** 25 JUN. 1912

Assigned *+ L.M.C 6.12*

*Ref. Mch.*



*Glasgow*

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

*22/6/12*

GLASGOW REPORT No.

31592

S/S "ITATINGA."

Do any trunkways pass through water-tight bulkheads are water-tight doors fitted and efficiently insulated

What means are adopted for closing the trunkways when carrying general cargo

The foregoing is a correct description.

Builders.

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	POWER.		INSULATED CARGO CHAMBERS.	
No. and whether Single or Duplex.	Makers.	Date of Construction.	System.	Type.		Cubic feet of air delivered per hour.	Ice melting capacity per 24 hours. Tons.	No.	Capacity.
No 9 Single	J & E. Hall Dartford, Kent.	1912	CO <sub>2</sub>	Hall	Brine Cork	✓	8	4	8000 Cub.ft.

Fee ..... £ : : { Fee applied for, ..... 190  
 Travelling Expenses £ : : { Received by me, ..... 190

Surveyor to Lloyd's Register.

*H. L. Pilditch.*

Committee's Minute

Assigned



0126 2/2

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet