

REPORT ON MACHINERY.

No. 28637

Date of writing Report 8th March 1910 When handed in at Local Office 11th March 1910 Port of Glasgow Received at London Office WED. 16 MAR 1910

No. in Survey held at Glasgow Date, First Survey 13th Sept. Last Survey 2nd March 1910

Reg. Book. 88 Sup. on the S.S. "Amethyst" (Number of Visits 37) Tons { Gross 661.57 Net 262.63

Master R. Williamson Built at Bowling By whom built Scott & Sons (N° 219) When built 1910

Engines made at Glasgow By whom made Muir & Houston Ltd (N° 629) when made 1910

Boilers made at Do By whom made Do when made 1910

Registered Horse Power 136 Owners W. Robertson Port belonging to Glasgow

Nom. Horse Power as per Section 28 136 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 17", 28", 45" Length of Stroke 33" Revs. per minute 104 Dia. of Screw shaft as per rule 9.37 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 3' 2"

Dia. of Tunnel shaft as per rule 8.31 Dia. of Crank shaft journals as per rule 8.73 Dia. of Crank pin 8 7/8" Size of Crank webs 6" x 13" Dia. of thrust shaft under collars 8 7/8" Dia. of screw 11' 6" Pitch of Screw 12' 0" No. of Blades 4 State whether moveable No Total surface 44 sq ft

No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 6" x 4" x 6" Duplex No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 - 2 1/2" & 1" special 2 1/2"

In Engine Room 2 - 2 1/2" & 1" special 2 1/2" 127 Pulley & balls in Holds, &c. 2 - 2 1/2"

No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump Yes 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 ✓

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 ✓

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 24. 1. 10 of Stern Tube 24. 1. 10 Screw shaft and Propeller 24. 1. 10

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

OILERS, &c.—(Letter for record S.) Manufacturers of Steel Wm Beardmore & Steel Co of Scotland

Total Heating Surface of Boilers 2336 sq ft Is Forced Draft fitted No No. and Description of Boilers 2 single ended

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 8. 2. 10 No. of Certificate 10282

Can each boiler be worked separately Yes Area of fire grate in each boiler 35 sq ft No. and Description of Safety Valves to each boiler double spring loaded Area of each valve 3.976 sq in Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 5' 10" Mean dia. of boilers 12' 0" Length 10' 0" Material of shell plates Steel

Thickness 29/32" Range of tensile strength 38/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. Riv.

long. seams T. R. O. B. P. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 1/2" Top of plates or width of butt straps 1' 4 3/4"

Per centages of strength of longitudinal joint 87.7 Working pressure of shell by rules 162 lbs Size of manhole in shell 16" x 12"

Size of compensating ring W. R. L. No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 3' 8"

Length of plain part top 72" Thickness of plates bottom 69" Description of longitudinal joint weld No. of strengthening rings one

Working pressure of furnace by the rules 163 Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 23/32"

Pitch of stays to ditto: Sides 7 1/2" x 8" Back 8" x 8" Top 8" x 8 1/2" Are stays fitted with nuts or riveted heads No Working pressure by rules 160

Material of stays Steel Diameter at smallest part 1.45" Area supported by each stay 68 sq in Working pressure by rules 170 End plates in steam space: ✓

Material Steel Thickness 31/32" Pitch of stays 17" x 16" How are stays secured D. N. W. L. Working pressure by rules 163 Material of stays Steel

Area at smallest part 5.05 sq in Area supported by each stay 272 sq in Working pressure by rules 192 Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13" x 8" Working pressure of plate by rules 166

Diameter of tubes 3 1/2" Pitch of tubes 5" x 4 3/4" Material of tube plates Steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 9 3/4"

Pitch across wide water spaces 14" Working pressures by rules 212 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8" x 2 @ 1" Length as per rule 2' 8" Distance apart 8 1/2" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 209 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 —

Stays 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

No. <i>None</i>	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	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts & nuts: 2 connecting rod bottom end bolts & nuts: 2 main bearing bolts: 1 set of coupling bolts: 1 set of feed & bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes

The foregoing is a correct description,

Manufacturer,

Dates of Survey while building	During progress of work in shops—	During erection on board vessel—	Total No. of visits	Is the approved plan of main boiler forwarded herewith
			37	Yes

Dates of Examination of principal parts—Cylinders	9.11.09	Slides	9.11.09	Covers	9.11.09	Pistons	5.10.09	Rods	14.12.09
Connecting rods	14.12.09	Crank shaft	2.10.09	Thrust shaft	9.11.09	Tunnel shafts	✓	Screw shaft	13.1.10
Stern tube	13.1.10	Steam pipes tested	22.2.10	Engine and boiler seatings	34.1.10	Engines holding down bolts	16.2.10		
Completion of pumping arrangements	25.2.10	Boilers fixed	25.2.10	Engines tried under steam	2.3.10				
Main boiler safety valves adjusted	1.3.10	Thickness of adjusting washers	Steel & iron	Port BL { P. 5/16" S. 3/8"	Port BL { P. 5/16" S. 3/8"				
Material of Crank shaft	iron	Identification Mark on Do.	2359	Material of Thrust shaft	Steel	Identification Mark on Do.	3370		
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	iron	Identification Marks on Do.	629		
Material of Steam Pipes	Copper	Test pressure	400 lbs per sq"						

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery has been built under special survey: the material and workmanship being good, and satisfactorily tried under steam. It is submitted that above vessel is eligible for a record of + L.M.C. 3.10 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.10

J.R.K. H.G.H.
17.3.10

The amount of Entry Fee	£ 2-0-0	When applied for,	10/3/10
Special	£ 20-8-0	When received,	30.3.10
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute GLASGOW 15 MAR. 1910

Assigned + L.M.C. 3.10

A. J. Thomas

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



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