

REPORT ON MACHINERY.

No. 28637

Received at London Office **WFD. 16 MAR 1910**

Date of writing Report 8th March 1910 When handed in at Local Office 11th March 1910 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 13th Sept. Last Survey 2nd March 1910
 Reg. Book. S.S. Amethyst (Number of Visits 37)

Master R. Williamson Built at Bowling By whom built Scott & Sons (No 219) Tons Gross 661.57
Net 262.63

Engines made at Glasgow By whom made Mait & Houston Ltd (No 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
as fitted 9.5

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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes 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 moceable 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 2 - 2 1/2" & 1 special 2 1/2"

In Engine Room 2 - 2 1/2" & 1 special 2 1/2" 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 of 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 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 Yes worked from Yes

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 28/32 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" Lap of plates or width of butt straps 1' 4 3/4"

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

plate 85

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

Length of plain part top 72" bottom 69" Thickness of plates crown 33" bottom 32" 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 25/32"

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

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

Material Steel Thickness 31/32" Pitch of stays 17" x 16" How are stays secured D.N. work 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 Yes

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 -

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. *None* 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 _____

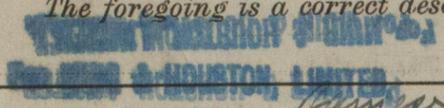
Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

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

Glasgow & Johnston Limited

Dates of Survey while building

During progress of work in shops - -	1909. Sep 13. 20. 30. Oct 5. 8. 11. 13. 20. 21. 25. 27. Nov 2. 9
	During erection on board vessel - -
	17. 20. 22. Dec 2. 4. 9. 14. 15. 1910. Jan 13. 20. 24. 25. 31. Feb 4. 7. 8. 11. 16. 21. 29
Total No. of visits	37

Is the approved plan of main boiler forwarded herewith Yes

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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 Propeller 13. 1. 10

Stern tube 13. 1. 10 Steam pipes tested 22. 2. 10 Engine and boiler seatings 24. 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* 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.P.S. H.G.D.
17.3.10

The amount of Entry Fee .. £ 2-0-0 When applied for, _____

Special .. £ 20-8-0 _____

Donkey Boiler Fee .. £ : : When received, _____

Travelling Expenses (if any) £ : : _____

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

Committee's Minute **GLASGOW 15 MAR. 1910**

Assigned + L.M.C. 3.10



Glasgow

Certificate (if required) to be sent to

14-3-10

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