

# REPORT ON MACHINERY.

No. 36803

Received at London Office WED 25 APR 1917

Date of writing Report 10-4-1914 When handed in at Local Office 14-4-1914 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 25<sup>th</sup> Aug. 1915 East Survey 12-4-1914  
 Reg. Book. on the Machinery for the S. S. "SMERDIS" (Number of Visits)  
 Master Carr Built at Ardrossan By whom built Ardrossan S. B. Co 264. When built 1914.  
 Engines made at Coatbridge By whom made Wm Beardmore & Co No. 440 when made 1914.  
 Boilers made at Paisley By whom made Messrs A. & Craig & Co No. 533/4 when made 1914.  
 Registered Horse Power Owners J. & P. Hutchison Port belonging to Glasgow  
 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 16", 26", 44" Length of Stroke 33" Revs. per minute 85 Dia. of Screw shaft as per rule 9.6" 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  
 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 3'-6"  
 Dia. of Tunnel shaft as per rule 9.6" Dia. of Crank shaft journals as per rule 8.83" Dia. of Crank pin 9" Size of Crank webs 16 1/2 x 6" Dia. of thrust shaft under  
 bars 9 1/4" Dia. of screw 11-8" Pitch of Screw 14-9" No. of Blades 4 State whether moveable No Total surface 50 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 3 Sizes of Pumps { 1-6" centrifugal, 1-4 1/2 x 5 x 10" Duplex, 1-9" x 8 x 10" Duplex. No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 3-2 1/4" Eng Room aft Port & Starboard } 2-2 1/2" Port & Starboard.  
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C. P. 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  
 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 26-9-16 of Stern Tube 26-9-16 Screw shaft and Propeller 26-9-16.  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door — worked from —

OILERS, &c.—(Letter for record S.) Manufacturers of Steel D. Colville & Sons & other well  
 Total Heating Surface of Boilers 2412 sq ft Forced Draft fitted No No. and Description of Boilers 2 English Patent Marine  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 16.6.16 No. of Certificate 13453  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 31.5 sq ft No. and Description of Safety Valves to  
 boiler 1 Double Spring loaded Area of each valve 3.940 Pressure to which they are adjusted 780 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers Length Material of shell plates  
 Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting or seams  
 Diameters of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
 Percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell  
 Plate compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
 of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
 bottom Thickness of plates bottom  
 Working pressure of furnace by the rules Combustion chamber plates Material Thickness Sides Back Top Bottom  
 Stays to ditto: Sides Back Top If stays are fitted with nuts or rivet heads Working pressure by rules  
 No. of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:  
 Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays  
 at smallest part Area supported by each stay Working pressure by rules Material of front plates at bottom  
 Material of Lower back plate Thickness Greatest pitch of stay Working pressure of plate by rules  
 Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays  
 Cross wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and  
 thickness of girder 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  
 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

PLEASE SEE GLASGOW REPORT No. 36089.



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

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with casing 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 \_\_\_\_\_ Rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_

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:— 2 4m Rod top + 2 4m Rod bottom ends bolts + nuts, 2 main bearing bolts + nuts, 1 set of coupling bolts, 1 set of feed + Bilge pump valves, 1 propeller, a quantity of assorted bolts + nuts. Sm of various sizes

The foregoing is a correct description,

**WILLIAM BEARDMORE & CO., LIMITED.** Manufacturer. *per R. Sneddon*

Dates of Survey while building	During progress of work in shops	1915 Aug 25 Sept 18-21-28 Oct 8-14 Nov 10-26 29 Dec 15-19 16 Jan 13-18 26-31 Feb 9-18 Mar 8 Apr 4-12 May 3-17 25 June 8
	During erection on board vessel	July 13-20 Aug 15-22 Sept 6-26-27-28 29 Oct 4-11 Nov 2 Dec 20-27 1917 Jan 10-15-18-24 Feb 2-7-14-27 Mar 6-15-31 Apr 3-7-8-9
	Total No. of visits	53

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_  
 " " " donkey " " " \_\_\_\_\_

**Dates of Examination of principal parts**—Cylinders 20-4-16 Slides 20-4-16 Covers 20-4-16 Pistons 6-9-16 Rods 6-9-16  
 Connecting rods 6-9-16 Crank shaft 22-8-16 Thrust shaft 6-9-16 Tunnel shafts 7me Screw shaft 12-8-16 Propeller 12-8-16  
 Stern tube 12-8-16 Steam pipes tested 21-2-14 Engine and boiler seatings 18-1-14 Engines holding down bolts 24-1-14  
 Completion of pumping arrangements 9-4-14 Boilers fixed 14-2-14 Engines tried under steam 9-4-14  
 Main boiler safety valves adjusted 6-3-14 Thickness of adjusting washers Port 1/4 = 9/32 Starboard 9/32 = 1/4  
 Material of Crank shaft S Identification Mark on Do. 6114 25-5-16 Material of Thrust shaft S Identification Mark on Do. 7-2-16  
 Material of Tunnel shafts 7me Identification Marks on Do. Material of Screw shafts W. S. Identification Marks on 176. 6114 12-8-16  
 Material of Steam Pipes Copper Test pressure 360 lbs per sq. in.

**General Remarks** (State quality of workmanship, opinions as to class, &c. The engines have been built under special survey in accordance with the Rules of the Society. They have been securely fitted on board + tried under steam. The workmanship + materials are of good quality throughout. The centrifugal circulating pump was found on trial to be too small + not satisfactory. In order to enable the vessel, which was already loaded, to make her voyage to Nantes + back a temporary connection was made with the large ballast pump for circulating the water through the condensers, this on being tested was found to give a vacuum of 22 inches + is, in my opinion, satisfactory as a temporary measure for the purpose intended.

It was also arranged for a satisfactory centrifugal circulating pump to be fitted + tested on the vessel's return from Nantes

The Machinery is in safe working order + eligible, in my opinion, for classification + to have the Record **F.L.M.C 4-14** when a satisfactory centrifugal circulating pump has been fitted + tested

The amount of Entry Fee .. £ 2 : 0 : 0 When applied for, \_\_\_\_\_

Special SUNDAY Donkey Boiler Fee .. £ 14 : 6 : 0 24/4/1917

Travelling Expenses (if any) £ 2 : 3/4 : 0 When received, 4/6/1917

**Fred. A. Ferguson,**  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW.** 24 APR. 1917

Assigned *Deferred for compln*

Certificate (if required) to be sent to \_\_\_\_\_  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

