

Port of Glasgow

Received at London Office MAY 1905

No. in Survey held at Irvine, Glasgow & Ayr Date, first Survey 13<sup>th</sup> Oct 04 Last Survey 25<sup>th</sup> March 1905

Reg. Book. on the S S Senga

Master Built at Ayr By whom built Ailsa Shipbuilding Co (133) When built 1905

Engines made at Irvine By whom made Messrs Penfrew Bros & Co when made 1905

Boilers made at Glasgow By whom made Messrs Lindsay, Burnett & Co (1012) when made 1905

Registered Horse Power Owners Messrs W. W. C. Smith & Co Port belonging to

Nom. Horse Power as per Section 28 87. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Compound Surface Condensing No. of Cylinders 4 No. of Cranks 2 Dia. of Cylinders 18 & 40 Length of Stroke 27 Rebs. per minute 90 Dia. of Screw shaft 8 1/2 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 34 1/2 Dia. of Tunnel shaft as per rule None Dia. of Crank shaft journals as fitted 8 1/2 Dia. of Crank pin 5 1/4 Size of Crank webs 15 5/8 Dia. of thrust shaft under collars 8 1/4 Dia. of screw 9-6 Pitch of screw 12-6 No. of blades 4 State whether moveable No Total surface 34 sq ft No. of Feed pumps 2 Diameter of ditto 2 1/2 Stroke 13 1/2 Can one be overhauled while the other is at work Yes No. of Bilge pumps 2 Diameter of ditto 3 Stroke 13 1/2 Can one be overhauled while the other is at work Yes No. of Donkey Engines One Sizes of Pumps 5 1/2 x 3 1/2 x 5 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room No. 2" diameter In Holds, &c. No. 2" diam

No. of bilge injections one sizes 4" Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & sizes 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 Peak & hold How are they protected Wood boxing 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 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 1540 Is forced draft fitted No No. and Description of Boilers One Single Ended Working Pressure 130 Tested by hydraulic pressure to 260 Date of test 1.3.05 Can each boiler be worked separately Yes Area of fire grate in each boiler 48.5 No. and Description of safety valves to each boiler No direct spring Area of each valve 7.070 Pressure to which they are adjusted 135 lbs Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 4-0 Mean dia. of boilers 13.6 Length 10.0 Material of shell plates Steel Thickness 7/8 Range of tensile strength 28-32 Are they welded or flanged No Descrip. of riveting: cir. seams Doub. riv. long. seams S. Straps Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 6 x 3 Lap of plates or width of butt straps 11 1/4 x 7/8 inside Per centages of strength of longitudinal joint rivets 84.25 plate 81.25 Working pressure of shell by rules 131 Size of manhole in shell 16" x 12" Size of compensating ring McNeil's flanged No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 3 1/4 Length of plain part top 7.5 bottom 7.5 Thickness of plates crown 5/8 Description of longitudinal joint Welded No. of strengthening rings One bottom Working pressure of furnace by the rules 140 Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back 9/16 Top 19/32 Bottom 9/16 Pitch of stays to ditto: Sides 10 x 8 Back 9 x 8 1/2 Top 11 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 130 Material of stays Steel Diameter at smallest part 1.44 Area supported by each stay 88 max. Working pressure by rules 131 End plates in steam space: Material Steel Thickness 1/16 Pitch of stays 19 x 20 1/2 How are stays secured Doub. nuts Working pressure by rules 138 Material of stays Steel Section Diameter at smallest part 5.26 Area supported by each stay 19 x 20 1/2 Working pressure by rules 134 Material of Front plates at bottom Steel Thickness 3/4 Material of Lower back plate 1/16 Steel Thickness 1/16 Greatest pitch of stays 13 Working pressure of plate by rules 131 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 9/16 Material of tube plates Steel Thickness: Front 3/4 Back 23/32 Mean pitch of stays 11 1/4 Pitch across wide water spaces 14 Working pressures by rules 140 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 x 1 1/2 Length as per rule 27 1/2 Distance apart 11 Number and pitch of Stays in each Two at 8 Working pressure by rules 161 Superheater or Steam chest; how connected to boiler Yes 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

W407-0035

**DONKEY BOILER—** *N. None* Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_  
 Plates \_\_\_\_\_  
 Dia. of stays \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_  
 Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied: *Two top & two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts one set of feed and one set of bilge pump valves, a quantity of assorted bolts & nuts, iron, and one propeller.*

The foregoing is a correct description,  
*Reufrew Bros & Co* Manufacturer.

Dates { During progress of work in shops - 1904: Oct. 13, 24, 25. Nov. 4, 9, 10, 21. Dec. 2, 5, 7, 12, 14, 20, 22, 29. 1905: Jan. 11, 12, 16, 23, 26.  
 During erection on board vessel - Feb. 2, 8, 9, 21, 28. Mar. 1, 2, 9, 10, 11, 14, 23, 28, 30. Apr. 4, 11, 18, 22, 25.  
 building {  
 Total No. of visits *39* Is the approved plan of main boiler forwarded herewith *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tried under steam.*

*The machinery of this vessel is now in our opinion eligible for record of L.M.C. & 05 (in red) in register book.*

*Boiler plan and two forging reports now attached.*

It is submitted that this vessel is eligible for THE RECORD L.M.C. & 05

*Res. H. 5.05*

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

The amount of Entry Fee. . . £ 1 : :  
 Special . . . . . £ 13 : 1 :  
 Donkey Boiler Fee . . . . £ 2 : 5 :  
 Travelling Expenses (if any) £ : :  
 When applied for, 3 MAY 1905  
 When received, 31-5-05

*George Murdoch & Arthur L. Jones*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow - 3 MAY 1905*  
 Assigned *+ L.M.C. 14.05.*

