

# REPORT ON MACHINERY.

Port of Greenock

Received at London Office 2 MAR 92

No. in 46 Survey held at Greenock & Port Glasgow Date, first Survey 17<sup>th</sup> January 1891 Last Survey 26<sup>th</sup> February 1892

Reg. Book. Greenock & Port Glasgow (Number of Visits 106)

Master J. Lennierich Built at Port Glasgow By whom built Russell & Co. Tons { Gross 3822.18 Net 3343.96

Engines made at Greenock By whom made Kincaid & Co. (Lim<sup>d</sup>) when made 1891 & 2

Boilers made at Glasgow By whom made H. Wallace & Co. when made 1891

Registered Horse Power 160 Owners Rickmers Reismihlen Rhederi Port belonging to Bremenhausen

Nom. Horse Power as per Section 28 113 & Shiffbau. Actien Gesellschaft

**ENGINES, &c.** — Description of Engines Inverted Direct Acting, Triple Expansion, No. of Cylinders Three

Diameter of Cylinders 16.26 & 4.2, Length of Stroke 27 Revolutions per minute 108 Diameter of Screw shaft 7.47 as per rule 7.47 as fitted 8

Diameter of Tunnel shaft 1.17 as per rule 1.17 Diameter of Crank shaft journals 8 Diameter of Crank pin 8 Size of Crank webs 10 x 6

Diameter of screw 10.0 Pitch of screw from 8 feet up No. of blades Two State whether moveable yes Total surface 21.3 square feet

No. of Feed pumps Two Diameter of ditto 2 1/2 Stroke 18 Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 3 1/2 Stroke 18 Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 10 x 9 & Duplex 3 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 2 1/2 In Holds, &c. One 3. Another 2 1/2 in tunnel well

No. of bilge injections one sizes 3 1/2 Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes

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

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 yes

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from top platform

**BOILERS, &c.** — (Letter for record —) Total Heating Surface of Boilers —

No. and Description of Boilers See Glasgow Report, attached hereto Working Pressure — Tested by hydraulic pressure to —

Date of test — Can each boiler be worked separately — Area of fire grate in each boiler — No. and Description of safety valves to each boiler —

Area of each valve — Pressure to which they are adjusted — Are they fitted with easing gear — Smallest distance between boilers or uptakes and bunkers or woodwork — Mean diameter of boilers —

Length — Material of shell plates — Thickness — Description of riveting: circum. 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 — 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 — Thickness of plates — 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 —

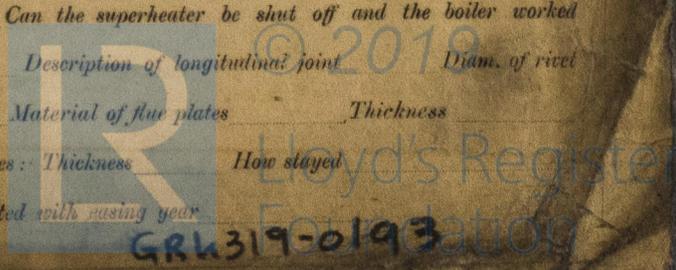
Working pressure by rules — Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked separately —

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 —

If not, state whether, and when, not, will be at a Report also sent on the Hull of the Ship



**DONKEY BOILER**— Description *See Glasgow Report attached hereto.*

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 casing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long. seams \_\_\_\_\_ Diameter 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. \_\_\_\_\_

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:— 2 pump lead links and nuts. 2 Eccentric straps 2 bolts for straps. 1 horse shoe thrust block 3 piston packing rings (one for each size.) 2 springs for feed pump relief valves. 1 set ballast pump valves. 1 do for feed Donkey pump 1 slide valve spindle. 2 top & 2 bottom end bolts & nuts. 2 Main bearing bolts. 1 set coupling

The foregoing is a correct description,

Pro **KINCAID & CO LIMITED** Manufacturer. *John G. Aronold*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *These Engines have been specially surveyed during construction. Workmanship good. Main steam pipe satisfactorily tested by hydraulic pressure to 3000 square inch. The machinery and boilers have been satisfactorily fitted on board & tested under full steam. Boiler water gauge glasses were found unsatisfactory during the steam test trial. They did not indicate the correct height of water in the boiler, which was as retained by the test and the vessel has sailed from this port for Cardiff to load for Singapore prior to the Engineer's survey. Water gauges on boiler satisfactory. The Surveyors at Cardiff have been advised of the circumstances in this case, and when the gauges are found to show the correct height of water in the boiler the reports upon by the Society's Surveyors at Cardiff, the vessel will in my opinion be eligible to be entered in Register Book.*

*Spare gear Continued.*

1 pair crosshead bushes. 1 slide for link motion. 1 set of feed & bulge pump valves. 1 set of Air & Circulating pump valves. 1 Air pump rod. 1 Circulating pump rod. 1 Crank shaft 2 propeller blades. 1 feed check valve for Main & Donkey boilers. 11 to 14 packing glands. 12 tubes for Main Boiler. Fire bars for Main & Donkey boilers. A quantity of bolts nuts & iron assorted.

*Water gauge glasses have been made to show the correct level of the water inside the boiler. 2 3 92*

Certificate (if required) to be sent to **Greenock Office**

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

Special . . . . . £ 16 : 19 : : When received, \_\_\_\_\_

Donkey Boiler Fee . . . . . £ \_\_\_\_\_ : : \_\_\_\_\_

Travelling Expenses (if any) £ \_\_\_\_\_ : : \_\_\_\_\_

*A. C. Heron*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 8 MAR 1892** **FRI 11 MAR 1892**

Assigned \_\_\_\_\_

*+ Lmb 2 92 subject to see later report*

