

REPORT ON MACHINERY.

Received at London Office **MONDAY NOV 22 1886**

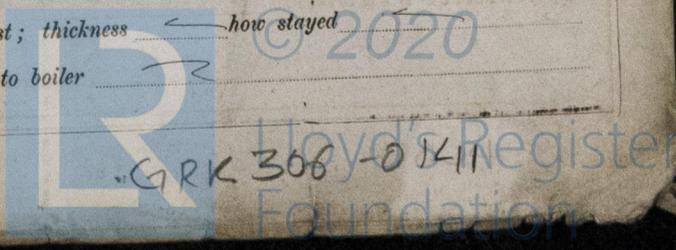
No. **9223**
 No. in Survey held at **Port Glasgow** Date, first Survey **17th May 1886** Last Survey **18th Nov 1886**
 (Number of Visits **48**) Tons **1018.63**
 on the **S.S. "Australind"** Tons **553.60**
 Master **Julloch** Built at **Port Glasgow** By whom built **Blackwood & Gordon** When built **1886**
 Engines made at **Port Glasgow** By whom made **Blackwood & Gordon** when made **1886**
 Boilers made at " " By whom made " " when made **1886**
 Registered Horse Power **125** Owners **C. Bethell & Co., J. Trinder, Anderson & Co.** Port belonging to **Fremantle**

ENGINES, &c.—

Description of Engines **Compound Inverted Direct Acting Triple Expansion**
 Diameter of Cylinders **19.30 & 50** Length of Stroke **36"** No. of Rev. per minute **66** Point of Cut off, High Pressure **20¹/₂** Low Pressure **18³/₈**
 Diameter of Screw shaft **9¹/₂"** Diam. of Tunnel shaft **9¹/₄"** Diam. of Crank shaft journals **9¹/₂"** Diam. of Crank pin **9¹/₂"** size of Crank webs **7x11**
 Diameter of screw **13.4** Pitch of screw **16.6** No. of blades **four** state whether moveable **no** total surface **50 sq feet**
 No. of Feed pumps **Two** diameter of ditto **3¹/₂"** Stroke **18"** Can one be overhauled while the other is at work **yes**
 No. of Bilge pumps **Two** diameter of ditto **3¹/₂"** Stroke **18"** Can one be overhauled while the other is at work **yes**
 Where do they pump from **Engine room, Stokehold & Cargo Holds**
 No. of Donkey Engines **Two** Size of Pumps **3¹/₄" double acting & 2³/₈" single** Where do they pump from **Sea, Hot well, Bilge & Ballast tanks**
 Are all the bilge suction pipes fitted with roses **yes** Are the roses always accessible **yes** Are the sluices on Engine room bulkheads always accessible **yes**
 No. of bilge injections **one** and sizes **4" valve, pipe 3¹/₂"** Are they connected to condenser, or to circulating pump **condenser**
 How are the pumps worked **By levers**
 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**
 That pipes are carried through the bunkers **bilge pipes, ballast tank & fresh water pipes** How are they protected **wood casing**
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times **yes**
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges **yes**
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock **on slip before vessel was launched**
 Is the screw shaft tunnel watertight **yes** and fitted with a sluice door **yes** worked from **Engine room, mid platform**

BOILERS, &c.—

Number of Boilers **Two** Description **Round Horizontal Multitubular** Whether Steel or Iron **Steel**
 Working Pressure **150 lbs** Tested by hydraulic pressure to **300 lbs per sq in** Date of test **2nd October 1886**
 Description of superheating apparatus or steam chest **none**
 Can each boiler be worked separately **yes** Can the superheater be shut off and the boiler worked separately **yes**
 Area of square feet of fire grate surface in each boiler **48** Description of safety valves **Direct Spring** No. to each boiler **Two**
 Area of each valve **7.06 sq in** Are they fitted with easing gear **yes** No. of safety valves to superheater **—** area of each valve **—**
 Are they fitted with easing gear **—** Smallest distance between boilers and bunkers or woodwork **20" to deck, 8" in** Diameter of boilers **12" 0"**
 Length of boilers **10' 0"** description of riveting of shell long. seams **Double butt strap** circum. seams **Double** Thickness of shell plates **1¹/₁₆"**
 Diameter of rivet holes **1¹/₄"** whether punched or drilled **Drilled** pitch of rivets **8¹/₂" & 4¹/₄"** Lap of plating **22 Straps**
 Percentage of strength of longitudinal joint **85.3** working pressure of shell by rules **163 lbs** size of manholes in shell end **16x12"**
 No. of compensating rings **6x1"** No. of Furnaces in each boiler **Three (Corrugated)**
 Inside diameter **36¹/₂"** length, top **7' 3"** bottom **9' 3"** thickness of plates **1¹/₂"** description of joint **Welded** if rings are fitted **no**
 Greatest length between rings **—** working pressure of furnace by the rules **164 lbs** combustion chamber plating, thickness, sides **2¹/₂"** back **2¹/₂"** top **2¹/₂"**
 Pitch of stays to ditto, sides **9x9"** back **9x9"** top **radial** If stays are fitted with nuts or riveted heads **nuts** working pressure of plating by rules **16.3 lbs**
 Diameter of stays at smallest part **1¹/₂"** working pressure of ditto by rules **16.3 lbs** end plates in steam space, thickness **1⁵/₁₆"**
 Pitch of stays to ditto **14¹/₂" x 14¹/₂"** how stays are secured **Double nuts** working pressure by rules **150 lbs** diameter of stays at smallest part **2³/₈" full**
 Working pressure by rules **16.2 lbs** Front plates at bottom, thickness **1¹/₁₆"** Back plates, thickness **3¹/₄"**
 Greatest pitch of stays **9¹/₂"** working pressure by rules **191 lbs** Diameter of tubes **3¹/₄"** pitch of tubes **4¹/₂" x 4¹/₂"** thickness of tube plates, front **3¹/₄" & 5¹/₈" doubling plate** back **3¹/₄"** how stayed **Stay tubes** pitch of stays **9x9"** width of water spaces **5' 6"**
 Diameter of Superheater or Steam chest **—** length **—** thickness of plates **—** description of longitudinal joint **—** diam. of rivet holes **—**
 Pitch of rivets **—** working pressure of shell by rules **—** diameter of flue **—** thickness of plates **—** If stiffened with rings **—**
 Distance between rings **—** working pressure by rules **—** end plates of superheater, or steam chest; thickness **—** how stayed **—**
 Superheater or steam chest; how connected to boiler **—**



ARK 306-01411

DONKEY BOILER— Description *See attached report*

Made at _____ by whom made _____ when made _____ where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____ description of safe
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can
 enter the donkey boiler _____ diameter of donkey boiler _____ length _____ description of riveting _____

Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____

per centage of strength of joint _____ thickness of crown plates _____ stayed by _____

Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of 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 plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *1 set of Coupling bolts. 2 top end & 2 bottom end bolts
 nuts. 2 main bearing bolts & nuts. 1 set of feed & bilge pump valves. 1 set of piston pins
 & valves for circulating pump. 1 set of valves for air pump. safety valve spring. 1 pair
 of connecting rod brasses. 1 air bucket & rod. 1 circulating pump bucket & rod.*

The foregoing is a correct description,

pro Blackwood & Gordon Manufacturer.
A.B. McEachron

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines & Boilers have
 been specially surveyed during construction. workmanship of good
 quality. Shafts examined when being turned, and found satisfactory.
 The Machinery and Boilers satisfactorily tested under steam and are
 now in good order and safe working condition, and eligible in my
 opinion to be noted in the Register Book L.M.C. 11.86.*

Spare Gear Continued

*1 air pump head valve. 1 length of crank shaft. 1 propeller shaft
 1 propeller. 103 tubes for boiler. 50 tubes for surface Condenser and 100
 packing glands spare springs for escape valves. a set of fire bars, and
 a quantity of bolts, nuts, and iron assorted.*

*is submitted herewith
 vessel is double bottom
 the machinery & boiler
 11.86 records + 2nd
 27/1/86*

[Large blue scribble]

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,
 Special .. £ 18 : 15 : 0
 Donkey Boiler Fee .. £ r : :
 Certificate (if required) .. £ gratis : 19/11/1886
 To be sent as per margin.

(Travelling Expenses, if any, £ *Nil*)

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

Committee's Minute

TUESDAY NOV 23 1886

J. L. Mc

