

# REPORT ON MACHINERY.

Port of *Glasgow*

Received at London Office 18

No. in Survey held at *Glasgow & Leith* Date, first Survey *18<sup>th</sup> May* Last Survey *1 August 1896*  
 Reg. Book. *at Leith* (Number of Visits) *26* Gross *1148.8* Net *1.8*  
 on the *S S Huskisson.*  
 Master *R. George* Built at *Leith* By whom built *John Cran & Co* When built *1896*  
 Engines made at *Leith* By whom made *John Cran & Co* when made *1896*  
 Boiler made at *Glasgow* By whom made *Hindray Burnet & Co* when made *1896. 8*  
 Registered Horse Power *84* Owners *Alexandra Towing Co (Limited)* Port belonging to *Liverpool*  
 Nom. Horse Power as per Section 28 *85* Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Compound* No. of Cylinders *2* No. of Cranks *2*  
 Diameter of Cylinders *21" + 42"* Length of Stroke *27"* Revolutions per minute *100* Diameter of Screw shaft *as per rule 7.57"*  
 Diameter of Tunnel shaft *as per rule 7.19"* Diameter of Crank shaft journals *7 7/8"* Diameter of Crank pin *7 7/8"* Size of Crank webs *14 7/8" x 5 3/4"*  
 Diameter of screw *9' 3"* Pitch of screw *14' 0"* No. of blades *4* State whether moveable *no* Total surface *33.3 sq*  
 No. of Feed pumps *1* Diameter of ditto *2 3/4"* Stroke *15"* Can one be overhauled while the other is at work   
 No. of Bilge pumps *1* Diameter of ditto *3"* Stroke *15"* Can one be overhauled while the other is at work   
 No. of Donkey Engines *one* Sizes of Pumps *5 1/4" x 3 1/2" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *two 2" dia* In Holds, &c. *one to each hold 2" dia.*

No. of bilge injections *1* sizes *3 1/2"* Connected to condenser, or to circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes 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   
 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 *new vessel* Is the screw shaft *bulkhead* tunnel watertight *yes*  
 Is it fitted with a watertight door *no* worked from

BOILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *1522 sq* Is forced draft fitted *no*  
 No. and Description of Boilers *one cylindrical return tube* Working Pressure *100* Tested by hydraulic pressure to *200*  
 Date of test *21/8/96* Can each boiler be corked separately  Area of fire grate in each boiler *57.74* No. and Description of safety valves to  
 each boiler *two - spring* Area of each valve *9.62 sq* Pressure to which they are adjusted *100 lbs* Are they fitted  
 with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *5 ft* Mean diameter of boilers *14-0 25/32*  
 Length *10-0* Material of shell plates *Steel* Thickness *25/32"* Description of riveting: circum. seams *D R Lap* long. seams *Double R butt*  
 Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *5 7/8"* Lap of plates or width of butt straps *16"*  
 Per centages of strength of longitudinal joint rivets *86* Working pressure of shell by rules *101* Size of manhole in shell *16" x 12"*  
 Size of compensating ring *1/2" dia* No. and Description of Furnaces in each boiler *3 40x8"* Material *Steel* Outside diameter *14 1/2"*  
 Length of plain part *top* Thickness of plates *bottom* *3/8"* Description of longitudinal joint *Welded* No. of strengthening rings   
 Working pressure of furnace by the rules *115* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *5/8"*  
 Pitch of stays to ditto: Sides *11" x 11"* Back *10 1/2" x 10 1/8"* Top *10 1/2" x 9"* If stays are fitted with nuts or riveted heads *putted inside* Working pressure by rules *111 1/2*  
 Material of stays *Steel* Area at smallest part *1.45* Area supported by each stay *12.6* Working pressure by rules *108 1/2* End plates in steam space:  
 Material *Steel* Thickness *1"* Pitch of stays *21 1/4" x 20 1/4"* How are stays secured *D. nuts & washers* Working pressure by rules *100* Material of stays *Steel*  
 Diameter at smallest part *5.270* Area supported by each stay *4620* Working pressure by rules *102* Material of Front plates at bottom *Steel*  
 Thickness *1/16"* Material of Lower back plate *Steel* Thickness *1/16"* Greatest pitch of stays *18"* Working pressure of plate by rules *185*  
 Diameter of tubes *3 1/2"* Pitch of tubes *4 7/8"* Material of tube plates *Steel* Thickness: Front *1/16"* Back *1/16"* Mean pitch of stays *12 5/16"*  
 Pitch across wide water spaces *14 3/4"* Working pressures by rules *100* Girders to Chamber tops: Material *Iron* Depth and  
 thickness of girder at centre *6 3/4" x 1 1/2"* Length as per rule *31"* Distance apart *10 1/2"* Number and pitch of Stays in each *two 9"*  
 Working pressure by rules *103* Superheater or Steam chest; how connected to boiler *none* 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



**DONKEY BOILER—** 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 \_\_\_\_\_  
 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:— *As per Rule.*

The foregoing is a correct description,

*Ridway & Currier Co.* Manufacturer. *John Brant & Co. Makers of Engines*

Dates of Survey while building  
 During progress of work in shops: 1896. May 18, 22, 28, June 4, 9, 14, 22, 26, 30 July 9, 15, 28, August 4.  
 During erection on board vessel: 9, 21  
 Total No. of visits: 42.

General Remarks (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under the usual conditions of survey. The material and workmanship being of good quality. and was afterwards tested by hydraulic pressure to two hundred pounds per square inch. This boiler has been forwarded to Leith to be fitted on board.*

*Photo print of boiler now forwarded.*

The engines of this vessel have been constructed under special survey, the materials & workmanship are found & good. The boiler has been securely fitted on board. The engines have been tried under steam & the safety valves of boiler adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of *+ L.M.C. 9, 96*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9, 96

*Thomas Field*  
*George Purdoch*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee... £ 1 : 0 : 0  
 Special... £ 4 : 4 : 0  
 Donkey Boiler Fee... £ 8 : 11 : 0  
 Travelling Expenses (if any) £ : : 0

FRI 23 OCT 1896

Committee's Minute  
 Assigned

*+ L.M.C. 9, 96*



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