

# REPORT ON MACHINERY.

Received from  
Surveyor  
28 FEB. 1901

Port of *Glasgow*

Received at London **TUES. MAR 5 1901**

No. in Survey held at  
Reg. Book.

*Glasgow*

Date, first Survey *31 July 00* Last Survey *19 Feb 1901*  
(Number of Visits *29*)

on the *S S "Ionian"*

Tons { Gross  
Net

Master \_\_\_\_\_ Built at \_\_\_\_\_ By whom built *Grangemouth & Co Ltd* When built *1901*

Engines made at *Coatbridge* By whom made *W. T. T. Ridgerwood* when made *1901*

Boilers made at *Glasgow* By whom made *L. Burnett & Co* when made *1901*

Registered Horse Power  Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

Nom. Horse Power as per Section 28 *103* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *No*

**ENGINES, &c.**—Description of Engines *Triple expansion - Screw*. No. of Cylinders *3*. No. of Cranks *3*.

Dia. of Cylinders *15" 25" 40"* Length of Stroke *30* Revs. per minute *100* Dia. of Screw shaft as per rule *8.12* as fitted *8.12* Lgth. of stern bush *3.0*

Dia. of Tunnel shaft as per rule *7.35* as fitted *7.34* Dia. of Crank shaft journals as per rule *7.74* as fitted *8* Dia. of Crank pin *8* Size of Crank webs *5 1/2* Dia. of thrust shaft under collars *8* Dia. of screw *10.9* Pitch of screw *11.6* No. of blades *4* State whether moveable *no* Total surface *40 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 *2 1/2* Stroke *13 1/2* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *Three* Sizes of Pumps *6 x 6 x 6 - 5 x 3 1/2 x 6* No. and size of Suctions connected to both Bilge and Donkey pumps *4 x 2 1/4 x 6*

In Engine Room *Two 2" dia. & One 2 1/2" dia.* In Holds, &c. *Forward hold two 2" dia.*  
*After hold one 3" dia. & one 3" dia. in Tunnel well*

No. of bilge injections *1* sizes *3 1/2* Connected to condenser, or to circulating pump pumps *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 *none*

Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *valves & cocks*

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 *before launch* Is the screw shaft tunnel watertight *yes*

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

**BOILERS, &c.**— (Letter for record *S*) Total Heating Surface of Boilers *1700 sq ft* Is forced draft fitted *No*

No. and Description of Boilers *One Single Ended* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*

Date of test *18/12/00* Can each boiler be worked separately  Area of fire grate in each boiler *55 sq ft* No. and Description of safety valves to each boiler *2 Safety Spring* Area of each valve *5.94* Pressure to which they are adjusted *180* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers, or woodwork *12"* Mean dia. of boilers *14-0"* Length *10-6"* Material of shell plates *Steel*

Thickness *1 5/32"* Range of tensile strength *28/32* Are they welded or flanged *No* Descrip. of riveting: cir. seam *Double R Lap* long. seams *Double Butt*

Diameter of rivet holes in long. seams *1 1/32"* Pitch of rivets *8 9/16"* Lap of plates or width of butt straps *19 1/2"*

Per centages of strength of longitudinal joint rivets *85.2* Working pressure of shell by rules *181 lbs* Size of manhole in shell *16" x 12"*

Size of compensating ring *M Keils* No. and Description of Furnaces in each boiler *3, Deighton* Material *Steel* Outside diameter *43"*

Length of plain part top  bottom  Thickness of plates crown *1 1/32"* Description of longitudinal joint *Welded* No. of strengthening rings *none*

Working pressure of furnace by the rules *190* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *1/16"* Top *5/8"* Bottom *5/8"*

Pitch of stays to ditto: Sides *9 x 8"* Back *9 1/8 x 8 3/4"* Top *9 x 8 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *186*

Material of stays *Steel* Diameter at smallest part *2.020* Area supported by each stay *79 3/4 sq in* Working pressure by rules *228* End plates in steam space: Material *Steel* Thickness *27/32"* Pitch of stays *19 1/8 x 19 1/8"* How are stays secured *Double Nut* Working pressure by rules *199* Material of stays *Steel*

Diameter at smallest part *7.50* Area supported by each stay *376 sq in* Working pressure by rules *190* Material of Front plates, at bottom *Steel* with *5/8 double*

Thickness *13/16"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *13 1/2"* Working pressure of plate by rules *302*

Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4"* Material of tube plates *Steel* Thickness: Front *13/16"* Back *25/32"* Mean pitch of stays *10 5/8"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *216 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *8 x 15 1/8"* Length as per rule *27 3/4"* Distance apart *9"* Number and pitch of Stays in each *two 8 1/2"*

Working pressure by rules *214 lbs* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately

holes  Diameter  Length  Thickness of shell plates  Material  Description of longitudinal joint  Diam. of rivet

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**— No. *one* Description *Ordinary vertical, 3 cross tubes.*  
 Made at *Coatbridge* By whom made *W. V. Lidgerwood* When made *1900* Where fixed *in stokehold.*  
 Working pressure *100 lb* tested by hydraulic pressure to *200 lb* No. of Certificate *5669* Fire grate area *26 sq ft* Description of safety valves *Patent Spring*  
 No. of safety valves *2* Area of each *4.91 sq ft* Pressure to which they are adjusted *102 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *6.6* Length *13.0* Material of shell plates *steel* Thickness *1/2* Range of tensile strength *27-32* Descrip. of riveting long seams *double rivetted* Dia. of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *3/4*  
 Lap of plating *5* Per centage of strength of joint *71.1* Rivets *4.2* Thickness of shell crown plates *7/8* Radius of do. *flat* No. of Stays to do. *8*  
 Dia. of stays *7/4-9th* Diameter of furnace Top *5.3 3/8* Bottom *6.0* Length of furnace *4.9* Thickness of furnace plates *1/16* Description of joint *welded* Thickness of furnace crown plates *1/16* Stayed by *8 stays - 3/4 dia - 9th* Working pressure of shell by rules *106 lb*  
 Working pressure of furnace by rules *111 lb* Diameter of uptake *15* Thickness of uptake plates *1/2* Thickness of water tubes *7/16*

**SPARE GEAR.** State the articles supplied:— *Two top ends + 2 bottom end bolts, 2 main bearing bolts, one set of coupling bolts, one set of feed + bilge pump valves. &c.*

The foregoing is a correct description,  
 In *W. V. Lidgerwood* Manufacturer.

Dates: During progress of work in shops— *1900:— July 31. Sep. 10. 18. 29. Oct. 1. 3. 4. 10. 16. 26. 29. Nov. 12. 14. 23. 27. 30. Dec. 4. 5. 18. 27.*  
 During erection on board vessel— *1901: Jan. 11. 15. 18. 21. 28. 29. Feb. 5. 13. 19.*  
 while building— *29.*  
 Total No. of visits *29.*

Is the approved plan of main boiler forwarded herewith *yes*  
 .. donkey .. *no*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *Donkey boiler same as that of the s/s "Cornbank." - Gls. Rept. No. 18525. Dec-1900 -*  
*The Machinery of this vessel has been constructed under Special Survey, the material & workmanship are of good quality, it has been securely fastened on board & tried under steam.*  
*At the time of adjusting the safety valves, the main valves were found leaking, these were opened out, but no opportunity was afforded to readjust them, this requires to be done. The vessel has sailed for Valencia, and as soon as the port is known to which she will return in the U.K. the Surveyor at that port will be informed.*  
*In my opinion this vessel's machinery is eligible to be classed in the Register Book & to have the record of + L.M.C. 2.01. when the main safety valves have been adjusted.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2.01

*J. W. Dimmock & Co*  
 11.4.01 11.4.01

The amount of Entry Fee. £ *2* : : When applied for, *1/31/01*  
 Special £ *15* : *9* : : *28/3/01*  
 Donkey Boiler Fee £ : : :  
 Travelling Expenses (if any) £ : : : *27-3-01*

*J. W. Dimmock & Co*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow. 4 - MAR 1901*  
 Assigned

FRI. APR 12 1901  
 + L.M.C. 2.01  
 Lloyd's Register  
 MACHINERY & BOILER  
 WRITTEN  
 Foundation

Glasgow

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