

# 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.

Date, first Survey *31 July 00* Last Survey *19 Feb 01*  
(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. 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* Lgth. of stern bush *3.0*  
Dia. of Tunnel shaft as per rule *7.35* Dia. of Crank shaft journals as per rule *7.74* 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  
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 lb* Tested by hydraulic pressure to *360 lb*  
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 1/32"* Range of tensile strength *28/32* Are they welded or flanged *no* Descrip. of riveting: cir. seam *Double R Lap* long. seams *4 rivets*  
Diameter of rivet holes in long. seams *1 1/32"* Pitch of rivets *8 1/16"* 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 lb* Size of manhole in shell *16" x 12"*  
Size of compensating ring *McNeil* No. and Description of Furnaces in each boiler *3. Deighton* Material *Steel* Outside diameter *43"*  
Length of plain part top ☒ 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 1/2"* 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*  
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 lb* 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 lb* 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— No. one Description Ordinary Vertical, 3 cross tubes.  
 Made at Coatbridge By whom made W. V. 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 in 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 Rivets 4.7 Plates 7.1 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 1/2" 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. V. Lidgerwood Manufacturer.

Dates During progress of work in shops— 1900:— Jy. 31. Sep. 10. 18. 29. Oct. 1. 3. 4. 10. 16. 26. 29. Nov. 12. 14. 23. 27. 30. Dec. 4. 5. 18. 27.  
 while building During erection on board vessel— 1901:— Jan. 11. 15. 18. 21. 28. 29. Feb. 5. 13. 19.  
 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. N° 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

The amount of Entry Fee. £ 2 :  
 Special .. .. £ 15 : 9 :  
 Donkey Boiler Fee .. .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 1/31/00  
 When received, 27-3-01

Committee's Minute

Glasgow. 4 - MAR 1901

Assigned

Devered for completion

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

FRI. APR 12 1901

+ L.M.C. 2.01

Lloyd's Register  
 Foundation