

# REPORT ON MACHINERY.

3576

3516  
No. 8944

Port of *Glasgow*

No. in Survey held at *Glasgow*

Reg. Book.

Date, first Survey *9<sup>th</sup> Jan 1888* Last Survey *14<sup>th</sup> Jan 1889*  
(Number of Visits *53*)

on the *S. S. Lord Londonderry*  
Master *Mr Arthur* Built at *Belfast* By whom built *Harland & Wolff* When built *1888*  
Engines made at *Glasgow* By whom made *James Howden & Co* when made *1888*  
Boilers made at *Glasgow* By whom made *James Howden & Co* when made *1888*  
Registered Horse Power *240* Owners *Irish Shipowners (Linn)* Port belonging to *Belfast*

## ENGINES, &c.—

Description of Engines *Triple Expansion (three cranks)*  
Diameter of Cylinders *23.37 x 60* Length of Stroke *42* No. of Rev. per minute *75* Point of Cut off, High Pressure *var* Low Pressure *var*  
Diameter of Screw shaft *11 1/2* Diam. of Tunnel shaft *11* Diam. of Crank shaft journals *11 1/2* Diam. of Crank pin *11 1/2* size of Crank webs *built*  
Diameter of screw *15-0* Pitch of screw *16-6 to 17-6* No. of blades *4* state whether moveable *yes* total surface *66 ft<sup>2</sup>*  
No. of Feed pumps *2* diameter of ditto *3* Stroke *20* Can one be overhauled while the other is at work *yes*  
No. of Bilge pumps *2* diameter of ditto *4 1/2* Stroke *20* Can one be overhauled while the other is at work *yes*  
Where do they pump from *All compartments*  
No. of Donkey Engines *One* Size of Pumps *4" Cameron donkey* Where do they pump from *Bunks, Hotwell,*  
*Sea & bilges. One Pulameter 1/2 y. size -*  
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 *5"* Are they connected to condenser, or to circulating pump *yes*  
How are the pumps worked *by levers. off main crosshead.*  
Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Valves*  
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 *about two feet under.*  
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  
What pipes are carried through the bunks *bilge suction* How are they protected *wood flooring*  
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 *See Belfast Report No 3507 attached.*  
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

## OILERS, &c.—

Number of Boilers *Two* Description *Multitubular* Whether Steel or Iron *Steel*  
Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *29<sup>th</sup> October 1888.*  
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  
No. of square feet of fire grate surface in each boiler *54* Description of safety valves *d. Spring* No. to each boiler *two*  
Area of each valve *7"* Are they fitted with easing gear *yes* No. of safety valves to superheater  
Are they fitted with easing gear  
Smallest distance between boilers and bunks or woodwork *No side bunking* Diameter of boilers *14-0"*  
Length of boilers *10-6"* description of riveting of shell long. seams *d. butt str.* circum. seams *d. riv lap* Thickness of shell plates *1 7/32*  
Diameter of rivet holes *1 9/32* whether punched or drilled *drilled* pitch of rivets *9" x 4 1/2" base* Lap of plating *18 1/2" butt str.*  
Percentage of strength of longitudinal joint *85%* working pressure of shell by rules *160 lbs* size of manholes in shell *12" x 16"*  
Size of compensating rings *Forged ring riv. to shell.* No. of Furnaces in each boiler *three*  
Outside diameter *41"* length, top *7-4"* bottom *10-0"* thickness of plates *1 7/32* description of joint *Purves' Patent* if rings are fitted  
Greatest length between rings  
working pressure of furnace by the rules *160 lbs* combustion chamber plating, thickness, sides *9/16" back 9/16" top 9/16"*  
Pitch of stays to ditto, sides *7 3/4 x 8" back 7 3/4" top 8"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by  
rules *160 lbs* Diameter of stays at smallest part *1 3/8 x 1 1/2* working pressure of ditto by rules *160 lbs* end plates in steam space, thickness *7/8" x donk straps*  
Pitch of stays to ditto *15 1/2" x 15 1/2"* how stays are secured *d nuts* working pressure by rules *160 lbs* diameter of stays at  
smallest part *2 7/8" bars* working pressure by rules *160 lbs* Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"*  
Greatest pitch of stays  
working pressure by rules  
Diameter of tubes *3 1/4"* pitch of tubes *4 1/2"* thickness of tube  
plates, front *3/4"* back *1/16"* how stayed *stubs* pitch of stays *9"* width of water spaces *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



DONKEY BOILER— Description *Multitubular (steel)*  
Made at *Glasgow* by whom made *J. Howden & Co* when made *1888* where fixed *on deck*  
Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *2109* fire grate area *20 ft<sup>2</sup>* description of safety valves *direct spring* No. of safety valves *2* area of each *7* if fitted with easing gear *yes* if steam from main boilers can enter the donkey boiler *no* diameter of donkey boiler *8'-6"* length *8'-8"* description of riveting *double riv lap*  
Thickness of shell plates *1/2"* diameter of rivet holes *13/16"* whether punched or drilled *drill* pitch of rivets *2 5/8"* lap of plating *4"*  
per centage of strength of joint *74%* thickness of ~~cover~~ <sup>end</sup> plates *5/8"* stayed by *1 3/4" stays 15" x 13" pitch*  
Diameter of furnace, <sup>top</sup> *31"* bottom *—* length of furnace *6'-9"* thickness of plates *7/16"* description of joint *welded*  
Thickness of <sup>tube</sup> furnace crown plates *5/8"* stayed by *stay tubes* working pressure of shell by rules *70 lbs*  
Working pressure of furnace by rules *85 lbs* diameter of uptake <sup>tubes</sup> *— 3 1/2"* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *Two propeller blades, Air pump rods*  
*High & Intermediate Valve spindles — Feed and bilge pump valves.*  
*Top and bottom end bolts, main bearing and coupling bolts. Bolts nuts various assorted.*

The foregoing is a correct description,

Manufacturer.

*James Howden & Co*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The above machinery which has been built under special survey is now completed onboard the vessel in a satisfactory manner of good workmanship and material and is in my opinion eligible to be noted in the Society's Register.*  
*Book : + L.M.C. 1.89.*

*The shafting has been built & turned at the engine makers works and examined by me during construction.*

*It is submitted that this vessel is eligible to have + L.M.C. 1.89 recorded*

*W.H.*  
*21.1.89*

*W.H.*

The amount of Entry Fee .. £ *2* : - : - received by me,

Special .. .. £ *32* : - : -

Donkey Boiler Fee .. .. £ - : - : -

Certificate (if required) .. £ - : - : -

To be sent as per margin.

(Travelling Expenses, if any, £ .. ..)

Committee's Minute

*TUES 22 JAN 1889*

*+ L.M.C. 1/89*

*John Anderson*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*Glasgow.*