

# REPORT ON MACHINERY.

3576

3516

No. 8944

No. in Survey held at Reg. Book.

Port of Glasgow

Received at London Office

21 JUL 1888

Date, first Survey 9<sup>th</sup> Jan 1888 Last Survey 14<sup>th</sup> Jan 1889

(Number of Visits 53)

24/28

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 & Coy when made 1888

Boilers made at Glasgow By whom made James Howden & Coy when made 1888

Registered Horse Power 240. Owners Irish Shipowners (Lim) Port belonging to Belfast

## ENGINES, &c.—

Description of Engines Triple Expansion (three cranks)

Diameter of Cylinders 23" 37" & 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 sq ft

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 Tanks, Hotwell, Sea & Bilges One Pulameter 1/2" 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 condensers, 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 bunkers 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 area of each valve

Are they fitted with easing gear Smallest distance between boilers and bunkers 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" & 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" & double 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 1/2" pitch of tubes 4 1/2" thickness of tube plates, front 3/4" back 1/16" how stayed stays 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



BELLS-D196

**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 sq ft* 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 ~~shell~~ <sup>end</sup> plates *5/8"* stayed by *1 3/4" stays 15" x 13" pitch*  
 Diameter of furnace, top *31"* bottom *-* length of furnace *6'-9"* thickness of plates *7/16"* description of joint *welded*  
 Thickness of furnace <sup>tube</sup> 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:— *Toro 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*

*M.H.  
21.1.89*

*Howden*

The amount of Entry Fee .. £ *2* : : : received by me,  
 Special .. .. £ *32* : : :  
 Donkey Boiler Fee .. .. £ : : :  
 Certificate (if required) .. £ : : : *18/1/1889*  
 (To be sent as per margin.)  
 (Travelling Expenses, if any, £ .. ..)

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

Committee's Minute *TUES 22 JAN 1889*  
*+ done 1/89*