

# REPORT ON MACHINERY.

3714

Port of Glasgow.

2 JUL 90

Received at London Office

No. 9929

No. in Survey held at Glasgow.

Date, first Survey 15<sup>th</sup> Jan 1889 Last Survey 20<sup>th</sup> June 1890

Reg. Book. on the S.S. "City of Vienna"

(Number of Visits 14)

Master Anderson Built at Belfast By whom built Workman, Clark & Co Ltd When built 1890

Engines made at Glasgow By whom made John & James Thomson when made 1890.

Boilers made at Glasgow By whom made John & James Thomson when made 1890.

Registered Horse Power 500 Owners George Smith & Son Port belonging to Glasgow.

## ENGINES, &c.—

Description of Engines Triple Expansion No. of Cylinders Three.

Diam. of Cylinders 32", 53" & 87 1/2" Length of Stroke 60" Rev. per minute 65 Point of Cut off, High Pressure Var. Low Pressure Var.

Diameter of Screw shaft 16 1/8" Diam. of Tunnel shaft 15 1/4" Diam. of Crank shaft journals 16 1/2" Diam. of Crank pin 16 1/2" size of Crank webs built

Diameter of screw 19'-6" Pitch of screw 24'-0" No. of blades 4. state whether moveable Yes total surface 104 ft<sup>2</sup>

No. of Feed pumps 2. diameter of ditto 5 1/2" Stroke 30" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2. diameter of ditto 5 1/2" Stroke 30" Can one be overhauled while the other is at work Yes.

Where do they pump from all compartments.

No. of Donkey Engines One set of 2 Size of Pumps 10" x 8" x 24" Weirs Where do they pump from Hotwell, Sea, bilges

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 8" Are they connected to condenser, or to circulating pump Yes.

How are the pumps worked Air, feed & bilge of engine. Circulating separate Centrifugal

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks both pump & engine

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

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 Main Steam How are they protected casing

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 attached

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from upper platform.

## BOILERS, &c.—

No. of Boilers Four. Description Multitubular Forced Draught Material Steel Letter (for record) S.

Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs. Date of test 10<sup>th</sup> April 1890.

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 52.2 Description of safety valves d. Spring No. to each boiler two

Area of each valve 9.621 Are they fitted with casing gear Yes No. of safety valves to superheater — area of each valve —

Are they fitted with casing gear — Smallest distance between boilers and bunkers or woodwork 15" Diameter of boilers 14'-6"

Length of boilers 11'-6" description of riveting of shell long. seams treb riv'd butt circum. seams d riv. lap Thickness of shell plates 1 5/16

Diameter of rivet holes 1 5/16 whether punched or drilled drilled pitch of rivets 8 1/2" & 4 1/4" Lap of plating 6 1/2" & 19 1/4" butt.

Percentage of strength of longitudinal joint 84.5 working pressure of shell by rules 162 lbs. size of manholes in shell 12" x 16"

No. of compensating rings McNeill's No. of Furnaces in each boiler three Description of Furnaces Hanged Seams

Outside diameter 43 3/8" length 9'-9" thickness of plates 9/16 description of joint welded if rings are fitted Yes

Greatest length between rings 18" 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 1/2" back 7 1/2" top 7 1/2" If stays are fitted with nuts or riveted heads into inside working pressure of plating by rules 173 lbs.

Diameter of stays at smallest part 1 1/4 x 1 3/8 working pressure of ditto by rules 160 lbs. end plates in steam space, thickness 1" & straps

Pitch of stays to ditto 15" x 17" how stays are secured d. nuts working pressure by rules 162 lbs. diameter of stays at smallest part 2 7/8" d. bars

Working pressure by rules 160 lbs. Front plates at bottom, thickness 13/16 Back plates, thickness 13/16

Greatest pitch of stays — working pressure by rules — Diameter of tubes 2 1/2" pitch of tubes 3 3/4" thickness of tube plates, front 7/8" back 7/8" how stayed stubs pitch of stays 7 1/2" width of water spaces 4"

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 —



BEL57-0047

**DONKEY BOILER**— Description *Multitubular Steel*  
 Made at *Glasgow* by whom made *John & Jas Thomson* when made *1890* where fixed *on deck*  
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2683* fire grate area *36 ft<sup>2</sup>* description of valves *direct spring* No. of safety valves *2* area of each *4.9"* if fitted with easing gear *yes* if steam from main boiler enter the donkey boiler *no* diameter of donkey boiler *12'-0"* length *10'-0"* description of riveting *lap treble riv*  
 Thickness of shell plates *7/16* diameter of rivet holes *1"* whether punched or drilled *drill* pitch of rivets *3 1/16* lap of plating *6 1/4*  
 per centage of strength of joint *73%* thickness of <sup>steam space</sup> ~~cover~~ plates *5/8"* stayed by *2 1/2" dia" stays pitched 16 1/4" x 14 1/2"*  
 Diameter of furnace, top *41* bottom *—* length of furnace *6'-9"* thickness of plates *1 7/32* description of joint *lap*  
 Thickness of <sup>C.Ch<sup>2</sup></sup> furnace ~~cover~~ plates *7/16* stayed by *stays 8" x 8" pitched* working pressure of shell by rules *80 lbs*  
 Working pressure of furnace by rules *91 lbs* diameter of <sup>tubes</sup> uptake *3 1/2"* thickness of <sup>tube</sup> plates *10/16* thickness of water tubes *—*

**SPARE GEAR.** State the articles supplied:— *One length crank shaft, propeller shaft, and two blades. Air pump rod. Crank pin brasses. Feed & bilge pump valves & seats. Top and bottom end bolts. Main bearing & coupling bolts.*  
 The foregoing is a correct description,  
 Manufacturer. *John & Jas Thomson*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The above mentioned engines and boilers have been built under special survey and are now completed onboard in a satisfactory manner of good workmanship and material. The machinery is in my opinion eligible to the notation of: + L.M.C. 6.90.*

*This vessel is fitted with two sets of dynamo and engines complete placed in engine room. The double wires for lighting the saloon etc are carried along the alley ways in wood casings, the wires being properly insulated and protected — No wires come in any way in contact with cargo space —*

*It is submitted that this vessel is eligible to have + L.M.C. 6.90 recorded*  
*W.A.*  
*2-7-90*

*[Large blue scribble]*

The amount of Entry Fee .. £ *3* : - : - received by me,  
 Special .. .. £ *52* : *10* : -  
 Donkey Boiler Fee .. .. £ - : - : -  
 Certificate (if required) .. £ - : - : - *20/6/1890*  
 To be sent as per margin.

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

Committee's Minute *FRI 4 JULY 1890*  
*+ L.M.C. 6.90*

*FRI 25 JULY 1890*

*Glasgow*  
 Lloyd's Register Foundation