

# REPORT ON MACHINERY.

No. *4804*

No. in Survey held at *Port Glasgow*

Reg. Book.

Date, first Survey *Jan 9<sup>th</sup> 1880* Last Survey *May 29<sup>th</sup> 1880*

on the

*Steel Screw Steamer "Valencia"*

Tons *841.9*

Master *Walter* Built at *Port Glasgow* When built *1880*

Engines made at *Port Glasgow* By whom made *Blackwood & Gordon* when made *1880*

Boilers made at *Port Glasgow* By whom made *Blackwood & Gordon* when made *1880*

Registered Horse Power *120* Owners *Ardrossan Shipping Co.* Port belonging to *Ardrossan*

## ENGINES, &c.—

Description of Engines *Compound, Inverted, Direct-Acting, Surface condensing*

Diameter of Cylinders *30" & 52"* Length of Stroke *36"* No. of Rev. per minute *70* Point of Cut off, High Pressure *Variable* Low Pressure *3/4*

Diameter of Screw shaft *9 3/4"* Diameter of Tunnel shaft *9"* Diameter of Crank shaft journals *9 3/4"* Diameter of Crank pin *9 3/4"* size of Crank webs *1 1/2" x 9 3/4"*

Diameter of screw *13" 0* Pitch of screw *16.6"* No. of blades *4* state whether moveable *Yes* total surface *40 sq. ft.*

No. of Feed pumps *2* diameter of ditto *3 1/4"* Stroke *18"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* diameter of ditto *3 1/4"* Stroke *18"* Can one be overhauled while the other is at work *Yes*

Where do they pump from *Bilge pumps from all bilges, feed pumps from hotwell.*

No. of Donkey Engines *2* Size of Pumps *1 - 4 1/2" x 8"* Where do they pump from *Small donkey from sea, Bilges by hotwell.*

*Ballast donkey from ballast tanks and sea.*

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 *1* and sizes *3"* Are they connected to condenser, or to circulating pump *Circulating pump.*

How are the pumps worked *By levers from main crossheads*

Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Valves and 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 *Just below*

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 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 *New ship, before being launched.*

Is the screw shaft tunnel watertight *Stuffing box and fitted with a sluice door* *Yes* worked from *Top of engine room.*

## BOILERS, &c.—

Number of Boilers *One* Description *Round, horizontal, tubular, double-ended, steel boiler.*

Working Pressure *70 lbs* Tested by hydraulic pressure to *150 lbs* Date of test *15<sup>th</sup> April, 1880.*

Description of ~~superheating apparatus or~~ steam chest *vertical steam dome*

Can each boiler be worked separately *—* Can the superheater be shut off and the boiler worked separately *—*

No. of square feet of fire grate surface in ~~each~~ boiler *66 sq. ft.* Description of safety valves *Direct spring (own make.)*

No. to ~~each~~ boiler *2* area of each valve *14.7 sq. in.* 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 *About 16" to bunker sides, no woodwork near.*

Diameter of boilers *12' 0"* Length of boilers *15' 9"* description of riveting of shell long. seams *Double lap* circum. seams *Double lap*

Thickness of shell plates *5/8"* diameter of rivet holes *1" (steel)* whether punched or drilled *Drilled* pitch of rivets *4"*

Lap of plating *8 1/2"* per centage of strength of longitudinal joint *75* working pressure of shell by rules *74 lbs*

Size of manholes in shell *14" x 13"* size of compensating rings *Strong flat ring.*

No. of Furnaces in each boiler *4* outside diameter *3' 5"* length, top *6' 4"* bottom *9'* whole length of boiler *15' 9"*

Thickness of plates *1/2" case* description of joint *Double straps* if rings are fitted *2 Tinsan* greatest length between rings *6' 4"*

Working pressure of furnace by the rules *46 lbs*

Combustion chamber plating, thickness, sides *4/16"* back *4/16"* top *4/16"*

Pitch of stays to ditto *—* sides *4 3/4" x 4 3/4"* back *4 3/4" x 4 3/4"* top *8 3/4" x 8 3/4" (girders)*

If stays are fitted with nuts or riveted heads *Riveted heads at sides where plating curved* working pressure of plating by rules *43 lbs at sides 89 lbs in centre plates*

Diameter of stays at smallest part *1 7/8"* working pressure of ditto by rules *132 lbs*

End plates in steam space, thickness *5/8"* pitch of stays to ditto *13 3/4" x 13 3/4"* how stays are secured *Double nut & washers*

Working pressure by rules *44 lbs* diameter of stays at smallest part *2" (Iron)* working pressure by rules *98 lbs*

Front plates at bottom, thickness *5/8"* Back plates, thickness *5/8"* greatest pitch of stays *13 3/4" x 13 3/4"* working pressure by rules *44 lbs*




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Diameter of tubes 3" (Steel) pitch of tubes 4 1/4" thickness of tube plates, front 5/8" back 5/8"  
How stayed Tubes pitch of stays 14" x 14" & 14" x 8 1/2" width of water spaces 5 1/2"  
Diameter of ~~Superheater~~ Steam chest 4' 0" length 4' 3"  
Thickness of plates 3/8" description of longitudinal joint Double lap diameter of rivet holes 3/4" pitch of rivets 2 1/2"  
Working pressure of shell by rules 8 1/2 lbs 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 1/2" How stayed Well dished & by 4 - 2" diam. sta  
~~Superheater~~ or steam chest; how connected to boiler Neck piece strongly flanged & riveted to the  
Round vertical, cross tubes.  
DONKEY BOILER— Description           
Made at Port Glasgow By whom made Blackwood & Gordon when made 1880  
Where fixed At Stoddard working pressure 50 lbs Tested by hydraulic pressure to 100 lbs No. of Certificate 8  
Fire grate area 14 sq ft Description of safety valves Direct spring No. of safety valves 1 area of each 4 sq inch  
If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler By opening cocks on main  
Diameter of donkey boiler 5' 2" length 11' 0" description of riveting Double lap  
thickness of shell plates 3/8" diameter of rivet holes 3/4" whether punched or drilled Punched  
pitch of rivets 2 1/2" lap of plating 5" per centage of strength of joint 70  
thickness of crown plates 7/16" (steel) stayed by Dished & 4 vertical stays, also uptake  
Diameter of furnace, top 4' 2" bottom 4' 4" length of furnace 5' 6"  
thickness of plates 7/16" (steel) description of joint Lap joint  
thickness of furnace crown plates 7/16" (steel) stayed by Dished, 4 vertical stays & uptake  
Working pressure of shell by rules 65 lbs working pressure of furnace by rules 56 lbs, not taking cross tubes into  
diameter of uptake 15" thickness of plates 7/16" (steel) thickness of water tubes 3/8" account

The foregoing is a correct description,

Pro Blackwood & Gordon Manufacturers.  
& McGeachan managers

General Remarks (State quality of workmanship, opinions as to class, &c. Materials and workmanship good.

The engines and boilers are in good and efficient condition.  
the pumping arrangements have been carried out in  
accordance with plans submitted, and approved by the  
Committee in letter of 4<sup>th</sup> May 1880, and the vessel is  
in my opinion eligible to be classed  Lloyds R.C.,  
and noted "5.80"

*The Machinery of this vessel  
has been examined and found  
to be in all respects in accordance  
with the rules. It is submitted that  
the vessel is eligible to be  
classified in the Register.  
29 May 1880 - MP 31.5.80*

The amount of Entry Fee £ 2: 0: 0 received by me,

Special £ 18: 0: 0

Certificate (if required) £ 0: 0: 0 29 May 1880  
To be sent as per margin.

(Travelling Expenses, if any, £ 14 1/-)

Committee's Minute

Friday, June, 4<sup>th</sup> 1880

Alfred H. Atkin  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Greenock

Lloyd's Register  
Foundation