

# REPORT ON MACHINERY.

21984

No. 4804

(Received in London Office 31/5/80)

No. in Survey held at Port Glasgow

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

Reg. Book.

on the Steel Screw Steamer "Valencia"

Tons 1354.9  
841.9

Master Walter Built at Port Glasgow When built 1880

Engines made at Port Glasgow By whom made Blackwood & Jordan when made 1880

Boilers made at Port Glasgow By whom made Blackwood & Jordan when made 1880

Registered Horse Power 120 Owners Ardrossan Shipping Coy 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 40 Point of Cut off, High Pressure Variable Low Pressure 5/8 stroke

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 None

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 40 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 None Can the superheater be shut off and the boiler worked separately None

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 casing gear Yes

No. of safety valves to superheater None area of each valve None are they fitted with casing gear None

Smallest distance between boilers and bunkers or woodwork About 16" to bunker sides, no woodwork seen.

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

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

Lap of plating 8 1/2" per centage of strength of longitudinal joint 75 working pressure of shell by rules 44 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 Whole length of boiler

Thickness of plates 1/2" case description of joint Double straps if rings are fitted Tigerson 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 None sides 4 3/4" x 4 3/4" back 4 3/4" x 4 3/4" top 8 3/4" x 8 3/4" (guiders)

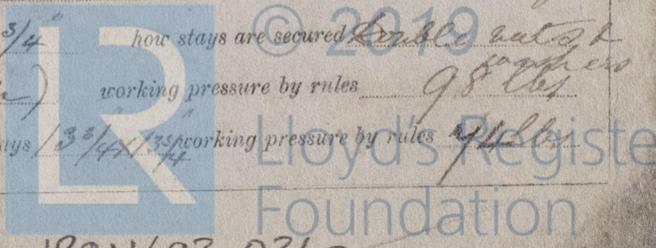
If stays are fitted with nuts or riveted heads Riveted heads at sides where plating curved working pressure of plating by rules 43 lbs at sides 89 lbs in centre plates

Diameter of stays at smallest part 1 1/8" 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



IRON 493-0360

20987 Dup

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 shell  
**DONKEY BOILER**— Description Round vertical, cross tubes.  
 Made at Fort Glasgow By whom made Blackwood & Gordon when made 1880  
 Where fixed At Stobhill 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 inches  
 If fitted with casing 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 6 5 lbs working pressure of furnace by rules 56 lbs, not taking cross tubes into account  
 diameter of uptake 1 5" thickness of plates 7/16" (steel) thickness of water tubes 3/8"

The foregoing is a correct description,  
 Pro Blackwood & Gordon Manufacturers.  
 & McGeochan 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 jacking arrangements have been carried out in accordance with plans submitted, and approved by the Committee in letter of 4th May 1880, and the vessel is in my opinion eligible to be classed "Lloyds P.C." and noted "5.80"

*The machinery of this vessel has been examined and found to be in accordance with the rules. It is submitted that the vessel is eligible to be classed "Lloyds P.C." and noted "5.80".*  
 M.P. 31.5.80  
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The amount of Entry Fee £ 2: 0: 0 received by me,  
 Special .. £ 18: 0: 0  
 Certificate (if required) .. £ 0: 0: 0  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 14 1/2 - 20: 0: 0)

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

Committee's Minute Friday, June 4th 1880