

Date of writing Report 16-9-10 When handed in at Local Office 24/9/10 Port of Glasgow
No. in Survey held at Glasgow Date, First Survey 18th April 1910 Last Survey 9th September 1910
Reg. Book. on the TS/S "PORTO-SEGURO" (Number of Visits 23)
Master R. S. Built at Port Glasgow By whom built Murdoch & Murray (N^o 235) When built 1910
Engines made at Glasgow By whom made Muir & Houston (N^o 633) when made 1910
Boiler made at Glasgow By whom made Muir & Houston (N^o 633) when made 1910
Registered Horse Power 95 Owners Empresa Navegacao Bahiana Port belonging to Bahia
Nom. Horse Power as per Section 28 95 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Twin-triple expansion No. of Cylinders 6 No. of Cranks 6
Dia. of Cylinders 10 1/2", 16 1/2", 27 1/2" Length of Stroke 21 Revs. per minute 160 Dia. of Screw shaft as per rule 6.01 Material of screw shaft Scrap Iron
Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight
in the propeller boss yes If the liner is in more than one length are the joints burned If the liner does not fit tightly at the part
between the bearings in the stern tube, is the space changed with a plastic material insoluble in water and non-corrosive If two
liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 2.5"
Dia. of Tunnel shaft as per rule 5.36 Dia. of Crank shaft journals as per rule 5.32 Dia. of Crank pin 5 3/4" Size of Crank webs 3 3/4" x 10 1/2" Dia. of thrust shaft under
collars 5 3/4" Dia. of screw 6-3" Pitch of Screw 9-6" No. of Blades 4 State whether moveable no Total surface 2.1 ft²
No. of Feed pumps each 2 Diameter of ditto 2 1/4" Stroke 10" Can one be overhauled while the other is at work yes
No. of Bilge pumps each 2 Diameter of ditto 2 1/4" Stroke 10" Can one be overhauled while the other is at work yes
No. of Donkey Engines 2 Sizes of Pumps 5 x 3 1/2 x 6 1/2 6 x 6 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Port 2", Starboard 2", special 2" In Holds, &c. Forward port 2", Starboard 2"
(After hold 2" Tunnel well 2") (To main engines 2" pipes) (To Ballast Dky 2 1/2" pipe)
No. of Bilge Injections 2 sizes each 3" Connected to condenser, or to circulating pump 6" Is a separate Donkey Suction fitted in Engine room & size yes, 2"
Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible none
Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both
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 above
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 forward pipes How are they protected 1 1/2" wood casing
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes
Dates of examination of completion of fitting of Sea Connections and of Stern Tube and Screw shaft and Propeller See Greenock Rpt.
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from deck

BOILERS, &c.—(Letter for record) Manufacturers of Steel Steel Co. of Scotland & Lancashire
Total Heating Surface of Boilers 1747 ft² Is Forced Draft fitted no No. and Description of Boilers one single ended marine
Working Pressure 180 lbs Tested by hydraulic pressure to 360 Date of test 20-8-10 No. of Certificate 10551
Can each boiler be worked separately Area of fire grate in each boiler 54 1/2 ft² No. and Description of Safety Valves to
each boiler Double Spring Loaded Area of each valve 5.410 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean dia. of boilers 14-0" Length 10-6" Material of shell plates steel
Thickness 1 9/16" Range of tensile strength 28/32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 10 R.
long. seams 10 B.S.T.R. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 1-5"
Per centages of strength of longitudinal joint rivets 86 Working pressure of shell by rules 180 lbs Size of manhole in shell 16 x 12"
plate 85 Size of compensating ring 2-4 x 2-0 x 1-0 No. and Description of Furnaces in each boiler 3 corrugated Material steel Outside diameter 3-7"
Length of plain part top 3 1/4" Thickness of plates crown 3 1/4" Description of longitudinal joint welded No. of strengthening rings
bottom 3 1/2" Working pressure of furnace by the rules 190 Combustion chamber plates: Material steel Thickness: Sides 4 1/6" Back 4 1/6" Top 4 1/6" Bottom 13/16"
Pitch of stays to ditto: Sides 8 1/2 x 9 Back 9 1/2 x 8 Top 9 x 8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185
Material of stays steel Diameter at smallest part 2-03, 1-73 Area supported by each stay 76.50 Working pressure by rules 239, 181 End plates in steam space:
Material steel Thickness 13/16" Pitch of stays 1-6 x 1-7 How are stays secured 10 B.W. Working pressure by rules 195 Material of stays steel
Diameter at smallest part 6-10 Area supported by each stay 342 0" Working pressure by rules 185 Material of Front plates at bottom steel
Thickness 3/4" Material of Lower back plate steel Thickness 3 1/2" Greatest pitch of stays 12 1/2 x 8 Working pressure of plate by rules 223
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 8 15/16"
Pitch across wide water spaces 14 1/2" Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 20 8 1/2 x 1 Length as per rule 2-10 Distance apart 9" Number and pitch of stays in each 30 8 1/2"
Working pressure by rules 196 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet
holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed
Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

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VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety
 Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____
 If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____
 Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____
 Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____
 Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____
 Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1910. Augt 8.
 { During erection on board vessel - -
 Total No. of visits One.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders _____ Slides _____ Covers _____ Pistons _____ Rods _____
 Connecting rods _____ Crank shaft _____ Thrust shaft _____ Tunnel shafts _____ Screw shaft _____ Propeller _____
 Stern tube _____ Steam pipes tested _____ Engine and boiler seatings _____ Engines holding down bolts _____
 Completion of pumping arrangements _____ Boilers fixed _____ Engines tried under steam _____
 Main boiler safety valves adjusted _____ Thickness of adjusting washers _____
 Material of Crank shaft _____ Identification Mark on Do. _____ Material of Thrust shaft _____ Identification Mark on Do. _____
 Material of Tunnel shafts _____ Identification Marks on Do. _____ Material of Screw shafts _____ Identification Marks on Do. _____
 Material of Steam Pipes _____ Test pressure _____

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

The propellers, stern bushes, and fittings of the connections examined before launching & found in order.

The amount of Entry Fee .. £ : : When applied for,
 Special .. £ : :19....
 Donkey Boiler Fee .. £ : : When received,
 Travelling Expenses (if any) £ : :19....

Committee's Minute

GLASGOW 28 SEP. 1910

Com.

Assigned

See accompanying Machinery report.

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



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