

# REPORT ON MACHINERY.

No. 6594

No. in Survey held at *Glasgow*  
Reg. Book.

Date, first Survey *19 Feb 1884* Last Survey *14 July 1884*  
(Number of Visits *25*)

Received at London Office Rec'd 21st JULY, 1884

on the *S. S. Gran Chaco Argentino.*

Tons *511*

Master *Wilkinson* Built at *Glasgow* By whom built *Ritken & Mansel* When built *1884*

Engines made at *Glasgow* By whom made *Hutson & Corbett* when made

Boilers made at *"* By whom made *"* when made *"*

Registered Horse Power *95* Owners *Jarrado & Molero* Port belonging to *Buenos Ayres.*

## ENGINES, &c.—

Description of Engines *Compound Inverted Direct Acting.*  
Diameter of Cylinders *24" & 46"* Length of Stroke *36"* No. of Rev. per minute *80* Point of Cut off, High Pressure *Var* Low Pressure *"*  
Diameter of Screw shaft *9 1/8"* Diam. of Tunnel shaft *8 3/4"* Diam. of Crank shaft journals *9 1/8"* Diam. of Crank pin *9 1/8"* size of Crank webs *6 1/2" x 10 1/2"*  
Diameter of screw *10'-6"* Pitch of screw *13'-6"* No. of blades *4* state whether moveable *N.* total surface *24 ft*  
No. of Feed pumps *Two* diameter of ditto *3 1/4"* Stroke *14"* Can one be overhauled while the other is at work *yes*  
No. of Bilge pumps *Two* diameter of ditto *3 1/4"* Stroke *14"* 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 1/2" dia x 10" Stroke* Where do they pump from *Sea, Hotwell and 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 *4"* Are they connected to condenser, or to circulating pump *Cir. pump.*  
How are the pumps worked *by levers*  
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 *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 *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 *on stocks before launching*  
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

## BOILERS, &c.—

Number of Boilers *Two* Description *Round Horizontal* Whether Steel or Iron *Steel*  
Working Pressure *100 lbs* Tested by hydraulic pressure to *200 lbs.* Date of test *6th June 1884*  
Description of superheating apparatus or steam chest *Horizontal Steam dome*  
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 *35.* Description of safety valves *d. Spring* No. to each boiler *Two*  
Area of each valve *9.6* 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* *4'-0"* Diameter of boilers *10'-3"*  
Length of boilers *9'-9"* description of riveting of shell long. seams *d. butte.* circum. seams *d. lap.* Thickness of shell plates *4 3/8" 64*  
Diameter of rivet holes *1 1/8"* whether punched or drilled *drill* pitch of rivets *5 1/4"* Lap of plating *butts*  
Per centage of strength of longitudinal joint *79.* working pressure of shell by rules *104 lbs* size of manholes in shell *12 x 15*  
Size of compensating rings *6" ring 3/4 thick* No. of Furnaces in each boiler *Two*  
Outside diameter *39"* length, top *6'-9"* bottom *9'-6"* thickness of plates *1 1/32"* description of joint *d. butte* if rings are fitted *L. down.*  
Greatest length between rings *6'-6"* working pressure of furnace by the rules *100 lbs* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*  
Pitch of stays to ditto, sides *8 3/4" x 8 3/4"* back *8 3/4" x 8 3/4"* top *9" x 9"* If stays are fitted with nuts or riveted heads *Nuts.* working pressure of plating by rules *101 lbs* Diameter of stays at smallest part *1.3"* working pressure of ditto by rules *120 lbs* and plates in steam space, thickness *1 1/16"*  
Pitch of stays to ditto *13" x 13 1/2"* how stays are secured *d. nuts* working pressure by rules *110 lbs* diameter of stays at smallest part *2 1/8" screws* working pressure by rules *100 lbs* Front plates at bottom, thickness *7/8"* Back plates, thickness *7/8"*  
Greatest pitch of stays *"* working pressure by rules *"* Diameter of tubes *3 1/4"* pitch of tubes *4 1/2"* thickness of tube plates, front *1 1/16"* back *1 1/16"* how stayed *stayed* pitch of stays *9 x 13 1/2"* width of water spaces *6"*  
Diameter of Superheater or Steam chest *4'-0"* length *6'-6"* thickness of plates *7/16"* description of longitudinal joint *d. lap.* diam. of rivet holes *7/8"*  
Pitch of rivets *3"* 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 *3/4"* how stayed *Four stays*  
*2 1/8" diameter* Superheater or steam chest; how connected to boiler *by Copper pipes*



6597 gls.

DONKEY BOILER—

Description

Vertical

Made at Glasgow by whom made Hutton & Corbett when made 1884 where fixed Stokehold  
Working pressure 60 lbs tested by hydraulic pressure to 120 lbs No. of Certificate 1421 fire grate area 14 ft description of safety  
valves d. Spring No. of safety valves One 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 5'-3" length 9'-9" description of riveting Single Lap  
Thickness of shell plates 3/8" diameter of rivet holes 7/8" whether punched or drilled him pitch of rivets 2 3/16" lap of plating 3 1/2"  
percentage of strength of joint 60 thickness of crown plates 5/8" stayed by 5 Stays 1 1/8" dia also Angle Iron  
Diameter of furnace, top 4'-3" bottom 4'-10" length of furnace 5'-0" thickness of plates 7/16" description of joint Lap  
Thickness of furnace crown plates 5/8" stayed by as above working pressure of shell by rules 70 lbs  
Working pressure of furnace by rules 60 lbs diameter of uptake 14 1/2" thickness of plates 3/8" thickness of water tubes 3/8"

SPARE GEAR.

State the articles supplied:—

Propeller and shaft complete. Air pump. Rod & Bucket. Circulating Pump Rod. Top and Bottom end  
branes and bolts. Valve spindle. Main bearing and Coupling  
bolts. Feed & Bridge pump Valves. Bolts Nuts and washers.

The foregoing is a correct description,

J. Hutton & Corbett Manufacturer  
J. Hutton & Corbett

General Remarks

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

The above mentioned

Engines and Boilers are now completed on board in a  
satisfactory manner and the Machinery is now  
in my opinion in a safe and good working  
condition and eligible to be noted in the British  
Register Book: + L. M. C. 7. 84.

This submitted that this vessel  
is eligible to have the  
notification + L. M. C. 7. 84  
recorded.

D. S.  
21/7/84

The amount of Entry Fee £ 1 : 0 : 0 received by me,  
Special .. £ 14 : 5 : 0  
Donkey Boiler Fee .. £ 0 : 0 : 0  
Certificate (if required) .. £ 0 : 0 : 0 14/4/1884  
To be sent as per margin.

(Travelling Expenses, if any, £ - 8/- )

Committee's Minute

TUESDAY 22 JULY 1884

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

John Underberg  
Glasgow

Lloyd's Register  
Foundation