

# REPORT ON MACHINERY.

No. 5425

Received at London Office

THURSDAY 20 DEC 1883

No. in Survey held at *Hull* Date, first Survey *March 13. 83* Last Survey *30th Nov 1883*  
 Reg. Book. *Steel* on the *Steam Ship "Rosario"* (Number of Visits *26*) *1862.06*  
 Master *Hull* Built at *Hull* By whom built *Charles S. B. & Co. Ltd* When built *1883*  
 Engines made at *Hull* By whom made *Charles C.* when made *1883*  
 Boilers made at *Hull* By whom made *Charles C.* when made *1883*  
 Registered Horse Power *140* Owners *Thomas Nelson, Sons & Co* Port belonging to *Hull*

## ENGINES, &c.—

Description of Engines *Vertical inverted, triple cylinder compound with 3 cranks*  
 Diameter of Cylinders *30", 33" & 58"* Length of Stroke *36"* No. of Rev. per minute *60* Point of Cut off, High Pressure *19"* Low Pressure *19"*  
 Diameter of Screw shaft *10"* Diam. of Tunnel shaft *9 1/2"* Diam. of Crank shaft journals *10 1/4"* Diam. of Crank pin *10 1/4"* size of Crank webs *12" x 7"*  
 Diameter of screw *14" 6"* Pitch of screw *16" 0"* No. of blades *4* state whether moveable *yes* total surface *52 sq. ft.*  
 No. of Feed pumps *2* diameter of ditto *3 3/4"* Stroke *20"* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *2* diameter of ditto *3 3/4"* Stroke *20"* Can one be overhauled while the other is at work *yes*  
 Where do they pump from *all compartments (below bilges) & one from the sea with a delivery to the deck*  
 No. of Donkey Engines *Two* Size of Pumps *Ballast 4" x 6" Centrifugal double pump* Where do they pump from *the feed donkey from the bilge system from sea & bilge with delivery to deck overhead. Boiler & much exhaust to tank. The Ballast engine pumps from the tanks & from the bilge system (non-return valve on delivery) also from sea & bilge delivery to deck & overboard.*  
 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 *no*  
 No. of bilge injections *one* and sizes *4 1/4"* Are they connected to condenser, or to circulating pump *to circulating pump.*  
 How are the pumps worked *The bilge, feed & air pumps are worked by rockshafts from piston and crank. The centrifugal pump for circulation, thru condenser driven by separate engine.*  
 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 *none* How are they protected *X*  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes in engine room*  
 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 *now new*  
 Is the screw shaft tunnel watertight *reputed* and fitted with a sluice door *yes* worked from *upper platform in engine room*

## BOILERS, &c.—

Number of Boilers *Two* Description *Circular, multitubular* Whether Steel or Iron *Steel*  
 Working Pressure *150 lbs* Tested by hydraulic pressure to *300 lbs* Date of test *20th Sept. 83*  
 Description of superheating apparatus or steam chest *none fitted*  
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *X*  
 Area of square feet of fire grate surface in each boiler *30* Description of safety valves *Spring loaded* No. to each boiler *2*  
 Area of each valve *9.6 sq. in.* Are they fitted with easing gear *yes* No. of safety valves to superheater *X* area of each valve *X*  
 Are they fitted with easing gear *X* Smallest distance between boilers and bunkers or ~~woodwork~~ *10"* Diameter of boilers *11' 7"*  
 Length of boilers *10' 0"* description of riveting of shell long. seams *triple rivet butts* circum. seams *double rivet laps* Thickness of shell plates *1 3/32"*  
 Diameter of rivet holes *1/8"* whether punched or drilled *drilled* pitch of rivets *long = 5 1/8"* Lap of plating *16 3/4" Butt straps*  
 Percentage of strength of longitudinal joint *78* working pressure of shell by rules *159 lbs* size of manholes in shell *16" x 12"*  
 Size of compensating rings *28" x 24" x 1"* No. of Furnaces in each boiler *2*  
 Outside diameter *41"* length, top *6' 6"* bottom *8' 9"* thickness of plates *9/16"* description of joint *welded* if rings are fitted *Corrugation*  
 Greatest length between rings *6"* working pressure of furnace by rules *150 lbs* combustion chamber plating, thickness, sides *9/16"* back *9/16"* top *9/16"*  
 Pitch of stays to ditto, sides *7 1/2" to 8"* back *8 1/4" x 7"* top *7 1/2" x 7"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *150 lbs* Diameter of stays at smallest part *1 1/16"* working pressure of ditto by rules *150 lbs* end plates in steam space, thickness *7/8"*  
 Pitch of stays to ditto *18" x 15"* how stays are secured *able nut machine* working pressure by rules *150 lbs* diameter of stays at smallest part *2 1/4" center rows* working pressure by rules *176 lbs* Front plates at bottom, thickness *13/16"* Back plates, thickness *13/16"*  
 Greatest pitch of stays *12" x 8 1/2" x 7 1/2"* working pressure by rules *150 lbs* Diameter of tubes *3 1/2"* pitch of tubes *5" x 5"* thickness of tube plates, front *12/16" double butt straps* back *3/4"* how stayed *stay tubes* pitch of stays *14 1/2" in mid width of water spaces* *1 1/2"*  
 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 stay *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 *No steam chest, not superheated*

HUL396-0200



## DONKEY BOILER—

Description *Blake's patent. Vertical cylinder with internal furnace & chamber.*Made at *Manchester* by whom made *Blake & Co.* when made *1883* where used *on deck*Working pressure *60 lb* tested by hydraulic pressure to *120 lb* No. of Certificate *1883* fire grate area *18 sq. ft.* description of safetyvalves *Spring loaded* No. of safety valves *2* area of each *7 1/4 sq. in.* if fitted with easing gear *yes* if steam from main boilers canenter the donkey boiler *no* diameter of donkey boiler *6' 0"* length *12' 0"* description of riveting *Long Seam double end Cap.*Thickness of shell plates *7/16"* diameter of rivet holes *3/4"* whether punched or drilled *punched* pitch of rivets *2 1/2"* lap of plating *4"*percentage of strength of joint *67 1/2%* thickness of crown plates *7/16"* stayed by *hemispherical top*Diameter of furnace, top *2' 2"* bottom *5' 0" x 4' 7"* length of furnace *4' 6" on long side* thickness of plates *13/32"* description of joint *single rivet Cap*Thickness of furnace crown plates *7/16"* stayed by *gusset to shell* working pressure of shell by rules *64 lb*Working pressure of furnace by rules *60 lb* diameter of uptake *10"* thickness of plates *7/16" + 7/8"* thickness of water tubes *—*SPARE GEAR. State the articles supplied:— *1 Propeller shaft. 4 propeller blades 76 studs nuts for d.**1 Air pump rod. 2 main bearing bolts. 2 top & 2 bottom end bolts for connecting rods**1 Coupling bolt 1/2 set main bearing bolts for each piston. 24 studs for 9 lanes 7 covers, fitted.**1 L.P. valve spindle. 1 Eccentric strap 1 set Relief & feed pump valves. 1 Spring for each Escape valve**2 Safety valve springs. { Bolt & nut assembly. Part of the same assembly**1/10 set fire bars. { supplied in ship stores —*The foregoing is a correct description,  
EARLE'S SHIPBUILDING & ENGINEERING COY. LIMITED*M. Pearson* Manufacturer.

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

The machinery & <sup>main</sup> Boilers of this vessel, made, tested & fitted on the ship in accordance with the rules of good workmanship & material are in my opinion in safe working condition. The donkey Boiler is supplied by the Owners & fitted by me after having been placed on the ship.

The case is respectfully submitted as eligible for the notation

L.M.C. 12.83

in the Register Book

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

Special .. £ 21 : : "

Donkey Boiler Fee .. £ 2 : 2 : "

Certificate (if required) .. £ : : 18

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

THURSDAY 27 DEC 1883

18

Engineer Surveyor to Lloyd's Register of British &amp; Foreign