

# REPORT ON MACHINERY.

No. 8165

THURS 13 OCT 1887

No. in Survey held at Glasgow Date, first Survey 15<sup>th</sup> February Last Survey Oct 8<sup>th</sup> 1887  
 Reg. Book. on the Screw Steamer "Cascougada" (Number of Visits 36) Tons 1482.82  
 Master W. Quer Built at Glasgow By whom built A. Stephen & Sons When built 1887  
 Engines made at Glasgow By whom made " " " " when made 1887  
 Boilers made at " " By whom made " " " " when made 1887  
 Registered Horse Power 1407 1/2 Owners Lapin & Reid Port belonging to Glasgow

**ENGINES, &c.—**

Description of Engines Triple Expansion  
 Diameter of Cylinders 18" 29" 46" Length of Stroke 39" No. of Rev. per minute 42 Point of Cut off, High Pressure Low Pressure  
 Diameter of Screw shaft 10" Diam. of Tunnel shaft 9 1/2" Diam. of Crank shaft journals 10" Diam. of Crank pin 10 1/4" size of Crank webs 4" x 11 1/4"  
 Diameter of screw 13.8" Pitch of screw 1 1/4" No. of blades Four state whether moveable Yes total surface 4 1/2"  
 No. of Feed pumps Two diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two diameter of ditto 4 1/2" Stroke 21" Can one be overhauled while the other is at work Yes  
 Where do they pump from All Compartments  
 No. of Donkey Engines Two Size of Pumps 7" x 14 1/4" x 7" Where do they pump from Sea Trice Hotwell & Ballast Tanks  
 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 1/2" Are they connected to condenser, or to circulating pump To circulating  
 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 near to lead line  
 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 ship before launching  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper deck

**BOILERS, &c.—**

Number of Boilers One Description Round Horizontal Whether Steel or Iron Steel  
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 23<sup>rd</sup> September 1887 W.C.R.  
 Description of superheating apparatus or steam chest none  
 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 50 ft<sup>2</sup> Description of safety valves Direct Spring No. to each boiler Two  
 Area of each valve 9.62" 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 10" Diameter of boilers 14 1/2"  
 Length of boilers 11' 9" description of riveting of shell long. seams double butt strap circum. seams treble rivet Thickness of shell plates 1 1/32"  
 Diameter of rivet holes 15/16" whether punched or drilled Drilled pitch of rivets 8 1/2" Lap of plating 22' straps  
 Percentage of strength of longitudinal joint 84 7/10 working pressure of shell by rules 166 lbs size of manholes in shell 16" x 12"  
 Size of compensating rings Mechanic's rings fitted No. of Furnaces in each boiler 1 1/2" x 18 1/2" shell  
 Outside diameter 3' 3" length, top 8' 3" bottom 11 1/2" thickness of plates 7/16" description of joint Corrugated if rings are fitted —  
 Greatest length between rings — working pressure of furnace by the rules 166 lbs combustion chamber plating, thickness, sides 1/32" back 1/32" top 1/32"  
 Pitch of stays to ditto, sides 7" x 7" back 7 1/2" x 7 1/2" top 7" x 7" If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 166 lbs Diameter of stays at smallest part 1 3/8" working pressure of ditto by rules 175 lbs end plates in steam space, thickness 1 1/32"  
 Pitch of stays to ditto 10" x 16 1/2" how stays are secured by double nuts working pressure by rules 160 lbs diameter of stays at smallest part 2 3/4" = 5.5 area working pressure by rules 180 lbs Front plates at bottom, thickness 1 1/16" Back plates, thickness 1 1/16"  
 Greatest pitch of stays 12 1/2" x 7" working pressure by rules 160 lbs Diameter of tubes 3 1/2" pitch of tubes 4 5/8" x 4 3/4" thickness of tube plates, front 1 1/16" back 1 1/16" how stayed by tubes pitch of stays 9 1/2" x 9 1/2" width of water spaces 6"  
 Diameter of Superheater or Steam chest None length — thickness of plates — description of longitudinal joint — diam. of rivet holes —  
 Pitch of rivets — working pressure of shell by rules — diameter of flue — thickness of plates — It 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 —

8165 gds

**DONKEY BOILER**— Description *Round Vertical*  
 Made at *Glasgow* by whom made *A. Stephen & Son* when made *1884* where fixed *In Steekhold*  
 Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *1861* fire grate area *24 1/2* description of safety valves *Sweet Spring* No. of safety valves *Two* area of each *4"* if fitted with easing gear *Yes* if steam from main boilers enter the donkey boiler *No* diameter of donkey boiler *6' 6"* length *11' 3"* description of riveting *Double + Single*  
 Thickness of shell plates *13/32"* diameter of rivet holes *7/8"* whether punched or drilled *Drilled* pitch of rivets *3 1/2"* lap of plating *5"*  
 per centage of strength of joint *65%* thickness of crown plates *10/16"* stayed by *Nine Stays 1 3/4" dia and Uptake*  
 Diameter of furnace, top *5' 1"* bottom *4' 3"* length of furnace *5' 8"* thickness of plates *9/16"* description of joint *Lap, Single*  
 Thickness of furnace crown plates *9/16"* stayed *as above* working pressure of shell by rules *72*  
 Working pressure of furnace by rules *Surmace fitted with 3 cross tubes + 4 rows of screw stays* diameter of uptake *15"* thickness of plates *9/16" Iron* thickness of water tubes *9/16"*

**SPARE GEAR.** State the articles supplied:— *2 Connecting rod bolts for top + bottom ends 2 main bearing bolts, 1 set Coupling bolts, 1 Feed + bilge pump valve, also set Indicators valves, 2 Propeller blades, safety valves and assortment of bolts, nuts, iron, Boiler + Condenser tubes*

The foregoing is a correct description,  
*Alex. Stephen & Son* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c) *These Engines and Boilers are of good workmanship and materials and are now in good order and safe working condition and eligible in my opinion to be noted in the Register Book* *Lloyds M.C. 10/84*

*Submitted that this vessel is eligible to have the notification + L.M.C. 10.87*  
*13.10.87*

*James Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Clyde District*

The amount of Entry Fee .. £ *2* : - : - received by me,  
 Special .. .. £ *25* : *10* : -  
 Donkey Boiler Fee .. .. £ - : - : -  
 Certificate (if required) .. £ - : - : - *11/10/1884*  
 To be sent as per margin. *4/6*  
 (Travelling Expenses, if any, £ - *4/6*.)

Committee's Minute **FRIDAY 14 OCT 1887**  
*+ L.M.C.*