

# REPORT ON MACHINERY.

No. 5282

(Received in London Office)

No. in Survey held at Glasgow  
Reg. Book.

Date, first Survey 8<sup>th</sup> June

Last Survey January 14<sup>th</sup> 1880

2094  
Tons 1589

on the Screw Steamer "Carnotta"

Master L. J. Mappemann

Built at Glasgow

When built 1880

Engines made at Glasgow

By whom made A. & J. Inglis

when made 1880

Boilers made at Glasgow

By whom made " " "

when made 1880

Registered Horse Power 200

Owners A. Gray & Co. L. Dawes

Port belonging to Glasgow

## ENGINES, &c.—

Description of Engines Compound Inverted direct acting

Diameter of Cylinders 34" x 60" Length of Stroke 45" No. of Rev. per minute 74 Point of Cut off, High Pressure — Low Pressure —

Diameter of Screw shaft 11 1/2" Diameter of Tunnel shaft 10 3/4" Diameter of Crank shaft journals 12" Diameter of Crank pin 12" size of Crank webs 7 1/2" x 13"

Diameter of screw 14" x 9" Pitch of screw 18" to 20" No. of blades 4 ~~state~~ whether moveable yes total surface 55 sq ft

No. of Feed pumps Two diameter of ditto 3 3/4" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two diameter of ditto 3 3/4" Stroke 24" Can one be overhauled while the other is at work Yes

Where do they pump from From Bilge

No. of Donkey Engines Two Size of Pumps 8" x 4 1/2" x 8" 10" x 4" x 9" Where do they pump from From Sea Bilge, Attwell & water 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 5 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 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 Bilge pipes to fore hold How are they protected By wood casing

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 Slip previous to being launched

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper Deck platform

## BOILERS, &c.—

Number of Boilers Two Description Round Longitudinal, (Internal parts steel)

Working Pressure 95 lbs Tested by hydraulic pressure to 150 lbs Date of test 19.10.80

Description of superheating apparatus or steam chest One Round Longitudinal Receiver common to both boilers

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately No Superheater, the Receiver is completed by copper pipes

No. of square feet of fire grate surface in each boiler 61.5 sq ft Description of safety valves Direct Spring

No. to each boiler Two area of each valve 15.9" 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 15" to underside of deck

Diameter of boilers 13' 8" Length of boilers 10' 3" description of riveting of shell long. seams Double riveted circum. seams double

Thickness of shell plates 1" diameter of rivet holes 1 1/8" whether punched or drilled — pitch of rivets 4 1/2"

Lap of plating 8 3/4" per centage of strength of longitudinal joint 75% working pressure of shell by rules 87 lbs

Size of manholes in shell 15" x 12" size of compensating rings —

No. of Furnaces in each boiler Three outside diameter 3' 6" length, top 6' 6" bottom 9' 6"

Thickness of plates 9/16" description of joint double butt straps if rings are fitted Half lap greatest length between rings filled on bottom of chamber

Working pressure of furnace by the rules 95 lbs

Combustion chamber plating, thickness, sides 8/16" back 8/16" top 8/16"

Pitch of stays to ditto sides 8" x 8 1/2" back 8 1/2" x 8 1/2" top 8 1/2" x 8 1/2"

If stays are fitted with nuts or riveted heads Nuts inside working pressure of plating by rules 106 lbs

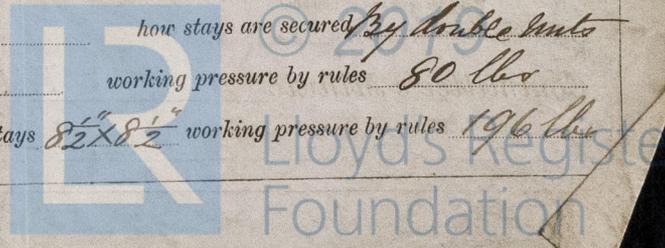
Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 101 lbs

End plates in steam space, thickness 1 3/16" pitch of stays to ditto 1 1/4" x 1 1/2" how stays are secured By double nuts

Working pressure by rules 105 lbs diameter of stays at smallest part 2 1/4" working pressure by rules 80 lbs

Front plates at bottom, thickness 1 3/16" Back plates, thickness 1 3/16" greatest pitch of stays 8 1/2" x 8 1/2" working pressure by rules 106 lbs

Form No. 8, 2000-3/10/80



Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $4\frac{1}{2}$ " thickness of tube plates, front  $1\frac{1}{16}$ " back  $1\frac{1}{16}$ "  
 How stayed *By Tubes* pitch of stays  $13\frac{1}{2} \times 13\frac{1}{2}$ " width of water spaces 6"  
 Diameter of Superheater or Steam chest 6ft length 5'9"  
 Thickness of plates  $1\frac{1}{16}$ " description of longitudinal joint *double* diameter of rivet holes  $\frac{7}{8}$ " pitch of rivets  $2\frac{3}{4}$ "  
 Working pressure of shell by rules 95 lbs Diameter of flue *no flue* thickness of plates —  
 If stiffened with rings — distance between rings — Working pressure by rules —  
 End plates of superheater, or steam chest; thickness  $1\frac{1}{16}$ " How stayed *By Bar Stays 2\frac{1}{4}" dia (9 stays)*  
 Superheater or steam chest; how connected to boiler *By Copper pipes*

**DONKEY BOILER—** Description *Round vertical with W. Housie's Cross division in fire box*  
 Made at *Glasgow* By whom made *A & J Inglis* when made *1880*  
 Where fixed *On Upper deck* working pressure 50 lbs Tested by hydraulic pressure to 100 lbs No. of Certificate 413  
 Fire grate area  $23\frac{1}{2}$  Description of safety valves *Swallowtail* No. of safety valves *Two* area of each 4"  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler *6ft* height *9'6"* description of riveting *double & single*  
 thickness of shell plates  $\frac{5}{16}$ " diameter of rivet holes  $\frac{3}{4}$ " whether punched or drilled *punched & rimmed*  
 pitch of rivets  $2\frac{3}{4}$ " lap of plating  $3\frac{1}{2}$ " per centage of strength of joint —  
 thickness of crown plates  $1\frac{1}{16}$ " stayed by *8 Bar stays 1\frac{1}{4}" dia & Uptake 1\frac{1}{4}" dia*  
 Diameter of furnace, top  $4'11"$  bottom  $5'4"$  height of furnace *5'6" from bars*  
 thickness of plates  $\frac{7}{16}$ " description of joints *single riveted*  
 thickness of furnace crown plates  $\frac{7}{16}$ " stayed by *bar stays*  
 Working pressure of shell by rules 53 lbs working pressure of furnace by rules *stayed across by flat tubes*  
 diameter of uptake 14" thickness of plates  $\frac{7}{16}$ " thickness of water tubes  $\frac{1}{16}$ "

The foregoing is a correct description,

*A & J Inglis* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The Engines & Boilers are of good workmanship, and are now in good order & safe working condition and eligible in my opinion to be noted in the Register Book* **Lloyd's M.C. 1.81**)

*It is submitted that this vessel is eligible to have the notification & Lloyd's M.C. recorded in the Register Book*  
*Jan 27/1881*

The amount of Entry Fee ... £ 7 : - : - received by me.  
 Special ... £ 30 : - : -  
 Testing steel for Boilers 3 3 -  
 Certificate (if required) .. £ - : - : -  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 1. 1. 0)

Committee's Minute Friday, January 28th, 1881.  
*James Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
 Clyde District  
*Lloyd's Register*  
 Foundation