

# REPORT ON MACHINERY. 23105

No. 23105

Port of *Newcastle*

No. in Survey held at  
Reg. Book.

*Newcastle*

Date, first Survey

*April 1st*

Received at London Office

Last Survey

*July 20, 1889*

(Number of Visits *21*)

*2729*

Tons *1791*

on the

*S. S. "Prudentia"*

Master -

*Pop*

Built at

*Newcastle*

By whom built

*Palmer Co. Ltd.*

When built

*1889*

Engines made at

*Newcastle*

By whom made

*Palmer Co. Ltd.*

When made

*1889*

Boilers made at

*do*

By whom made

*do*

*do*

When made

*1889*

Registered Horse Power

*300*

Owners

*A. Stuart*

Port belonging to

*London*

## ENGINES, &c.

Description of Engines

*Triple expansion Surface condensing*

Diameter of Cylinders *24" 38" 62"* Length of Stroke *42"* No. of Rev. per minute *70* Point of Cut off, High Pressure *25%* Low Pressure *23%*

Diameter of Screw shaft *12"* Diam. of Tunnel shaft *11 1/4"* Diam. of Crank shaft journals *12"* Diam. of Crank pin *12"* size of Crank webs *8 1/4" x 16 1/2"*

Diameter of screw *15" 8"* Pitch of screw *17" 6"* No. of blades *24* state whether moveable *yes* total surface *66.5-8*

No. of Feed pumps *2* diameter of ditto *3 1/2"* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* diameter of ditto *4 1/4"* Stroke *18"* Can one be overhauled while the other is at work *yes*

Where do they pump from *Feed from hot well. Bilge from engine space. after well in Sea*

No. of Donkey Engines *1* Size of Pumps *4" x 6"* Where do they pump from *Sanitary. engine space*

*fore peak. after well in Sea*

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 *none*

No. of bilge injections *1* and *yes* *5"* Are they connected to condenser, or to circulating pump *Circulating pump*

How are the pumps worked *Locos on Centre 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 *Peak Suction* How are they protected *Covered with wood*

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 *Palmer dock 8.7.89*

Is the screw shaft tunnel watertight *none* and fitted with a sluice door *worked from*

## BOILERS, &c.

Number of Boilers

*2*

Description

*Cylindrical Single ended*

Whether Steel or Iron

*Steel*

Working Pressure

*150*

Tested by hydraulic pressure to

*300*

Date of test

*24.6.89* *to of Ca. 2890*

Description of superheating apparatus or steam chest

*none*

Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no*

No. of square feet of fire grate surface in each boiler *66* Description of safety valves *Spring* No. to each boiler *2*

Area of each valve *0.3* Are they fitted with easing gear *yes* No. of safety valves to superheater *no* area of each valve *no*

Are they fitted with easing gear *no* Smallest distance between boilers and bunkers or woodwork *Ship Side* Diameter of boilers *15' 0"*

Length of boilers *10' 9"* description of riveting of shell long. seams *N.B. 13. 1/2" circum. seams* Lap double Thickness of shell plates *1 1/2"*

Diameter of rivet holes *1 3/4"* whether punched or drilled *Drilled* pitch of rivets *8 1/4"* Lap of plating *17 1/2"*

Per centage of strength of longitudinal joint *85.2* working pressure of shell by rules *150* size of manholes in shell *16" x 12"*

Size of compensating rings *no* No. of Furnaces in each boiler *4*

Outside diameter *37"* length, top *6' 6"* bottom *7' 0"* thickness of plates *1/2"* description of joint *Welded* if rings are fitted *yes*

Greatest length between rings *9"* working pressure of furnace by the rules *162* combustion chamber plating, thickness, sides *9/16"* back *7/16"* top *9/16"*

Pitch of stays to ditto, sides *8"* back *8"* top *Curved* If stays are fitted with nuts or riveted heads *both* working pressure of plating by rules *157*

Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *153* end plates in steam space, thickness *15/16"*

Pitch of stays to ditto *As per plan* how stays are secured *N.W. & W. Markers* working pressure by rules *150* diameter of stays at smallest part *2.465*

working pressure by rules *155* Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"*

Greatest pitch of stays *12"* working pressure by rules *160* Diameter of tubes *3 1/4"* pitch of tubes *4 1/2"* thickness of tube plates, front *3/4"* back *15/16"*

how stayed *Subs* pitch of stays *As per plan* width of water spaces *6"*

Diameter of Superheater or Steam chest *none* length *no* thickness of plates *no* description of longitudinal joint *no* diam. of rivet holes *no*

Pitch of rivets *no* working pressure of shell by rules *no* diameter of flue *no* thickness of plates *no* If stiffened with rings *no*

Distance between rings *no* working pressure by rules *no* end plates of superheater, or steam chest; thickness *no* how stayed *no*

Superheater or steam chest; how connected to boiler *no*



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**DONKEY BOILER**— Description *Vertical with three crop tubes*  
 Made at *Stockton* by whom made *J. Hudson & Co. Ld.* when made *22.6.89* where fixed *On board*  
 Working pressure *70* tested by hydraulic pressure to *140* No. of Certificate *1857* fire grate area *21 9* description of safety  
 valves *Spring* No. of safety valves *1* area of each *11.04* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6.0* length *13.0* description of riveting *Lap double*  
 Thickness of shell plates *1 5/8* diameter of rivet holes *1 5/8* whether punched or drilled *Punched* pitch of rivets *2 3/4* lap of plating *4 1/2*  
 per centage of strength of joint *70* thickness of crown plates *1 5/8* stayed by *6 stays 1 1/2" off centre*  
 Diameter of furnace, top *4' 10"* bottom *5' 4 1/2"* length of furnace *5' 4"* thickness of plates *1 3/8* description of joint *Lap Single*  
 Thickness of furnace crown plates *1 3/8* stayed by *Same as crown of shell* working pressure of shell by rules *70 lbs.*  
 Working pressure of furnace by rules *69.4 lbs.* diameter of uptake *12"* thickness of plates *3/8"* thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *2 Main bearing bolts & nuts. 2 top end bolts & nuts. 2 bottom end bolts & nuts. 1 Set of Shaft coupling bolts & nuts. 1 Set of feed & trip pump valves. 2 propeller blades. Turb & bolts & iron parts etc.*

The foregoing is a correct description, *Ld.*  
*J. Hudson* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been specially surveyed during construction the material and workmanship good and renders the vessel eligible in my opinion to have the Record + Lm 6.7.89 in the Register Book of the Society.*

*Heating Surface in two boilers 24418 9*  
*nominal H.P. as per Circular No. 712 = 271 H.P.*

*CONF*

*It is submitted that this vessel is eligible to have + L.M.C. 7.89 recorded.*  
*W.A.*  
*J.D. 89*

The amount of Entry Fee .. £ 2 : - : - *was received by me*  
 Special .. £ 33 : 11 : - *1901*  
 Donkey Boiler Fee .. £ - : - : -  
 Certificate (if required) .. £ gratis : *9/8/89*  
 To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

FRIDAY 8 AUGUST 1889

*+ Lm 6.7.89*

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