

# REPORT ON MACHINERY.

Port of *Southampton*

Received at London Office THURS 7 MAY 1891

No. *3071*

No. in Survey held at *Southampton*

Date, first Survey *July 28 1890* Last Survey *April 27 1891*

(Number of Visits *28*)

Reg. Book.

on the *Steel screw steamer Cassel*

Tons { Gross *424.87*  
Net *not determined*

Master *R. J. Reynolds* Built at *Southampton* By whom built *Southampton Naval Works* When built *1891*

Engines made at *Southampton* By whom made *Southampton Naval Works* when made *1891*

made at *Southampton* By whom made *Southampton Naval Works* when made *1891*

Registered Horse Power *95* Owners *Weatherley, Mead & Hussey* Port belonging to *London*

## ENGINES, &c.—

Description of Engines *Triple, inverted cylinders, surface condensing* No. of Cylinders *3*

No. of Cylinders *13 1/2, 22 & 34* Length of Stroke *24* Rev. per minute *125* Point of Cut off, High Pressure *Low Pressure*

Diameter of Screw shaft *6 1/2* Diam. of Tunnel shaft *6 1/4* Diam. of Crank shaft journals *6 1/2* Diam. of Crank pin *6 3/4* size of Crank webs *7 1/2 x 4 1/2*

Diameter of screw *8' 10"* Pitch of screw *8' 10"* No. of blades *4* state whether moveable *no* total surface *2009.76*

No. of Feed pumps *one* diameter of ditto *2 3/4* Stroke *12* Can one be overhauled while the other is at work *X*

No. of Bilge pumps *one* diameter of ditto *2 3/4* Stroke *12* Can one be overhauled while the other is at work *X*

Where do they pump from *fore hold (2), Engine room (3), after hold & tunnel.*

No. of Donkey Engines *two* Size of Pumps *Ballast Bilge 8 1/2 x 8 Southampton* Where do they pump from *the ballast pump from tanks, ca. bilge system, and separate suction to E.R. bilge... it delivers overboard, on deck. to condenser of each boiler. the feed donkey pumps from a hot well to boiler, and also circulates water in boiler*

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 3/8 in diameter* Are they connected to condenser, or to circulating pump *to circulating pump*

How are the pumps worked *by rocking levers from platform and crosshead*

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 before launching 15 April 1891*

Is the screw shaft tunnel watertight *reputed* and fitted with a sluice door *yes* worked from *upper platform*

## BOILERS, &c.—

No. of Boilers *one* Description *Circular, multitubular* Material *Steel* Letter (for record) *(16)*

Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *3rd March 1891*

Description of superheating apparatus or steam chest *None fitted*

Can each boiler be worked separately *X* Can the superheater be shut off and the boiler worked separately *X*

No. of square feet of fire grate surface in each boiler *42* Description of safety valves *Spring loaded* No. to each boiler *2*

Area of each valve *4.91 sq. m.* 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 *on woodwork 9' to shell* Diameter of boiler *11.7'*

Length of boilers *10' 8"* description of riveting of shell long. seams *double butt straps 4 rivets in a pitch* circum. seams *double riv' laps* Thickness of shell plates *1"*

Diameter of rivet holes *1/4"* whether punched or drilled *drilled* pitch of rivets *8.55* Lap of plating *19 1/2 straps*

Percentage of strength of longitudinal joint *85.38* working pressure of shell by rules *159.7 lbs* size of manholes in shell thickness *16 x 12"*

Size of compensating rings *2' 2 1/2" x 2' 1 1/4"* No. of Furnaces in each boiler *2* Description of Furnaces *Ribbed*

Outside diameter *3' 9 1/2"* length *7' 3"* thickness of plates *7/16"* description of joint *welded* if rings are fitted *no*

Greatest length between rings *16 3/4 ft* working pressure of furnace by the rules *167 lbs* combustion chamber plating, thickness, sides *9/16"* back *9/16"* top *7/8"*

Pitch of stays to ditto, sides *7 3/4"* back *7 3/4"* top *8 7/8"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by

rules *160 lbs* Diameter of stays at smallest part *1.24 x 1.53* working pressure of ditto by rules *160 lbs* end plates in steam space, thickness *17/16"* with large rounded radiating plates. diameter of stays at

smallest part *1 1/2" area - 5"* working pressure by rules *175 lbs* Front plates at bottom, thickness *13/16"* Back plates, thickness *15 1/16"* and doubled in middle part thickness of tube

Greatest pitch of stays *13' in mid* working pressure of rules *160 lbs* Diameter of tubes *3"* pitch of tubes *4 1/2" & 4 7/8"* thickness of tube

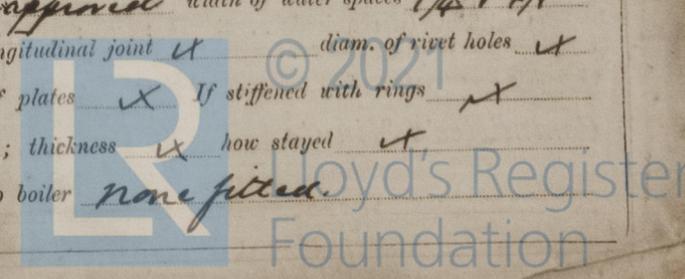
plates, front *15 1/16"* back *3/4"* how stayed *Stay rivets as approved* width of water spaces *1/4" & 3/8"*

Diameter of Superheater or Steam chest *X* length *X* thickness of plates *1"* description of longitudinal joint *X* diam. of rivet holes *X*

Pitch of rivets *X* working pressure of shell by rules *160 lbs* diameter of flue *X* thickness of plates *X* If stiffened with rings *X*

Distance between rings *X* working pressure by rules *160 lbs* end plates of superheater, or steam chest; thickness *X* how stayed *X*

Superheater or steam chest; how connected to boiler *none fitted*



500898-0352

**DONKEY BOILER**— Description *Please see Midaleobns report forwarded with Southampton report*  
 Made at *—* by whom made *—* when made *—* where fixed *in St. Helena*  
 Working pressure *80 lb* tested by hydraulic pressure to *—* No. of Certificate *—* fire grate area *—* description of safety valves *Spring loaded*  
 No. of safety valves *one* area of each *9 sq. in.* if fitted with easing gear *yes* if steam from main boilers enter the donkey boiler *—*  
 diameter of donkey boiler *—* length *—* description of riveting *—*  
 Thickness of shell plates *—* diameter of rivet holes *—* whether punched or drilled *—* pitch of rivets *—* lap of plating *—*  
 per centage of strength of joint *—* thickness of crown plates *—* stayed by *—*  
 Diameter of furnace, top *—* bottom *—* length of furnace *—* thickness of plates *—* description of joint *—*  
 Thickness of furnace crown plates *—* stayed by *—* working pressure of shell by rules *—*  
 Working pressure of furnace by rules *—* diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

**SPARE GEAR.** State the articles supplied:— *2 bottom end & 2 top end bolts & nuts - 2 main bearings & 1 set coupling bolts. 1 set piston springs for h.p. cylinder. 1 set bitge of sea pump valves. 12 boiler tubes. 12 condenser tubes. 50 bolts & nuts assorted. Sundry pieces iron*

The foregoing is a correct description,  
*J. B. Wells* Manufacturer.  
 GENERAL MANAGER

**General Remarks** (State quality of workmanship, opinions as to class, &c. *Workmanship & material good*)  
*The boiler & machinery of this vessel constructed under special survey are now, in my opinion in satisfactory condition, and the case is respectfully submitted for the notification of L.M.C. in the Register Book of the Society*

*It is submitted that this vessel is eligible to have + L.M.C. 4-91 recorded  
 W.A. 7.5-91*

*[Large handwritten signature]*

The amount of Entry Fee .. £ 1 : 0 : 0 received by me,  
 Special .. .. . £ 10 : 10 : 0  
 Donkey Boiler Fee .. .. £ - : - : -  
 Certificate (if required) .. .. £ - : - : - 18  
 To be sent as per certificate  
 (Travelling Expenses *not written*)

*John B. Stewin*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute *FRI. 8 MAY 1891 + L.M.C. 4/91*

