

REPORT ON MACHINERY.

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No. 682

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(Received in London Office)

No. in Survey held at *Sunderland*

Date, first Survey *July 23rd 1881* Last Survey *Jan'y 26th 1882*

Reg. Book.

1594.38

Tons 1041.43

on the *S.S. Congella*

Master *R. Chwood*

Built at *Sunderland*

When built *1882*

Engines made at *Sunderland*

By whom made *Messrs Doxford & Sons* when made *1882*

Boilers made at *Sunderland*

By whom made *"* when made *1882*

Registered Horse Power *180*

Owners *Messrs Bullard, King & Co*

Port belonging to *London*

ENGINES, &c.—

Description of Engines *Vertical, compound, surface condensing direct acting*
 Diameter of Cylinders *33" & 62"* Length of Stroke *42"* No. of Rev. per minute *64* Point of Cut off, High Pressure *1/2 stroke* Low Pressure *1/2 stroke*
 Diameter of Screw shaft *11"* Diameter of Tunnel shaft *10 1/2"* Diameter of Crank shaft journals *11"* Diameter of Crank pin *11"* size of Crank webs *13" x 7 1/2"*
 Diameter of screw *14" & 9"* Pitch of screw *17" & 8"* No. of blades *4* state whether moveable *yes* total surface *64 sq ft*
 No. of Feed pumps *2* diameter of ditto *3"* Stroke *2" & 4"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *3"* Stroke *2" & 4"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *fore tanks, main tank, engine room well, after tank, and after wells*
 No. of Donkey Engines *2* Size of Pumps *8" x 10" & 4" x 8"* Where do they pump from *fore tanks main tank engine room well, after tank and after wells, and 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 *yes*
 No. of bilge injections *one* and sizes *4"* Are they connected to condenser, or to circulating pump *Condenser*
 How are the pumps worked *By levers on after engine crosshead*
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Both valves & cocks*
 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 *fore tank pipes* How are they protected *By a wooden 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 *new vessel*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *top platform of engine room*

BOILERS, &c.—

Number of Boilers *2* Description *Single ended iron, cylindrical & multitubular*
 Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *30-11-81*
 Description of ~~superheating apparatus~~ steam chest *Horizontal dome*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no superheater*
 No. of square feet of fire grate surface in each boiler *45 sq ft* Description of safety valves *Direct spring valves*
 No. to each boiler *2* area of each valve *12" & 56"* 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 *2" & 0"*
 Diameter of boilers *13" & 2"* Length of boilers *10" & 3"* description of riveting of shell long. seams *double butt strapped & circum. seams double riveted lap*
 Thickness of shell plates *15" & 16"* diameter of rivet holes *1 1/8"* whether punched or drilled *drilled* pitch of rivets *3" & 9"*
 Lap of plating *11" straps* per centage of strength of longitudinal joint *94/96 R 84* working pressure of shell by rules *84 lbs*
 Size of manholes in shell *16" x 12"* size of compensating rings *6" x 5 1/8"*
 No. of Furnaces in each boiler *3* outside diameter *3" & 2"* length, top *4" & 0"* bottom *4" & 0"*
 Thickness of plates *1 1/2"* description of joint *double butt & single riveted* rings are fitted *yes* greatest length between rings *4" & 0"*
 Working pressure of furnace by the rules *85 lbs*
 Combustion chamber plating, thickness, sides *1 1/2"* back *1 1/2"* top *1 1/2"*
 Pitch of stays to ditto sides *8 1/2" x 9 1/2"* back *9 1/2" x 9 1/2"* top *2" & 0" radius & 16" (pitched) gussets*
 If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *85 lbs*
 Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *93 lbs*
 End plates in steam space, thickness *7/8"* pitch of stays to ditto *19 1/2" x 15"* how stays are secured *nuts*
 Working pressure by rules *84 lbs* diameter of stays at smallest part *2 1/4"* working pressure by rules *82 lbs*
 Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"* greatest pitch of stays *14" x 9 1/2"* working pressure by rules *93 lbs*

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Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{1}{2} \times 4\frac{1}{2}$ " thickness of tube plates, front $\frac{3}{4}$ " back $\frac{3}{4}$ "
How stayed stay tubes pitch of stays $13\frac{1}{2} \times 9$ " width of water spaces $1\frac{1}{4}$ "
Diameter of ~~Superheater~~ Steam chest $4-0$ " length $4-9$ "
Thickness of plates $\frac{9}{16}$ " description of longitudinal joint *double rivet lap* diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $2\frac{3}{4}$ "
Working pressure of shell by rules 98 lbs Diameter of flue *none* thickness of plates
If stiffened with rings distance between rings Working pressure by rules
End plates ~~of superheater~~ of steam chest; thickness $\frac{9}{16}$ " How stayed *3 gusset stays and radius of $3-6$ "*
~~Superheater~~ steam chest; how connected to boiler *oval neck $16 \times 12 \times \frac{3}{4}$ "*

DONKEY BOILER— Description *Vertical. Three cross tubes*
Made at *Sunderland* By whom made *Wm. H. Welford & Co. Ltd.* Tested *25-11-81*
Where fixed *Stokehold* working pressure *80* lbs Tested by hydraulic pressure to *160* lbs No. of Certificate *468*
Fire grate area *16 sq ft* Description of safety valves *Direct spring* No. of safety valves *one* area of each *8-30*
If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes*
Diameter of donkey boiler *$5-6$ "* length *$12-9$ "* description of riveting *Longitudinal seams double rivet*
thickness of shell plates *$\frac{1}{2}$ "* diameter of rivet holes *$\frac{3}{4}$ "* whether punched or drilled *punched*
pitch of rivets *$2\frac{1}{2}$ "* lap of plating *$3\frac{1}{4}$ "* per centage of strength of joint *70%*
thickness of crown plates *$\frac{1}{2}$ "* stayed by *6 stays $1\frac{3}{4}$ " diam & uptake & dished to a radius of $5-0$ "*
Diameter of furnace, top *$4-0$ "* bottom *$4-8$ "* length of furnace *$5-0$ "*
thickness of plates *$\frac{9}{16}$ "* description of joint *lap single rivet*
thickness of furnace crown plates *$\frac{9}{16}$ "* stayed by *6 stays $1\frac{3}{4}$ " diam & uptake and dished to a radius of $5-0$ "*
Working pressure of shell by rules *80* lbs working pressure of furnace by rules *80* lbs
diameter of uptake *15 "* thickness of plates *$\frac{3}{8}$ "* thickness of water tubes *$\frac{5}{16}$ "*

The foregoing is a correct description,
Manufacturer.

William D. Dwyer *Hono. Manufacturer of engine & boiler, but not donkey boiler or mounting of donkey boiler*

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

The machinery of this vessel has been constructed under special survey. The material and workmanship are good and efficient. The engines and boilers have been tried under steam and in my opinion they are in good order and safe working condition and eligible for the distinguishing mark  Lloyd's M.C. in the Register Book

The amount of Entry Fee .. £ *3* : — : — received by me, *SW*

Special *SW* .. £ *24* : — : —

Certificate (if required) .. £ — : — : — *30 Jan 1882*

To be sent as per margin.

(Travelling Expenses, if any, £ — : — : —)

Committee's Minute

Friday, February, 3rd, 1882.

+ Lloyd's

Robert Edmund Taylor & Son, Printers, 19, Old Street, Goswell Road, London, E.C.

Park Salmon
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register
Foundation

Submitted that this vessel is eligible to have Lloyd's M.C. 1882
MD 2-2-82