

# REPORT ON MACHINERY.

Port of *Newcastle*

THUR, 2 FEB 1899

No. in Survey held at *Wallsend*

Date, first Survey *4 May 1898* Last Survey *Jan 24 1899*

g. Book. *% Politician*

(Number of Visits) Gross *7214* Net *4738*

on the

Tons }  
When built *1-99*

Registered Built at *Wallsend* By whom built *Swan & Hunter*

Engines made at *Wallsend* By whom made *The Wallsend Shipway & Eng Co* when made *1-99*

Boilers made at *Wallsend* By whom made *The Wallsend Shipway & Eng Co* when made *1-99*

Registered Horse Power Owners *J & J Harrison* Port belonging to *Liverpool*

Net Horse Power as per Section 28 *571* Is Electric Light fitted *yes*

**ENGINES, &c.—Description of Engines** *Triple* No. of Cylinders *3* No. of Cranks *3*

Diameter of Cylinders *27 1/2, 45 1/2, 75"* Length of Stroke *60"* Revolutions per minute *70* Diameter of Screw shaft *as per rule 14 1/2"*

Diameter of Tunnel shaft *as per rule 18"* Diameter of Crank shaft journals *15 1/2"* Diameter of Crank pin *16 1/2"* Size of Crank webs *24 x 10 1/2"*

Diameter of screw *19'-0"* Pitch of screw *20'-0"* No. of blades *4 bronze* State whether moveable *yes* Total surface *94 sq ft*

No. of Feed pumps *2* Diameter of ditto *4 1/2"* Stroke *30"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* Diameter of ditto *5"* Stroke *30"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *3* Sizes of Pumps *Ballast 10 x 10 1/2 x 10"* *two No. 1 feed pumps 10 x 8 x 24"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *fine 3 1/2" dia* In Holds, &c. *After peak, tunnel hold wells one 3 1/2" suction*

No. of bilge injections *1* sizes *10 1/2"* Connected to *condenser, or to circulating pump* *yes* Is a separate donkey suction fitted in Engine room of size *yes 3 1/2"*

Are all the bilge suction pipes fitted with roses *yes* Are the roses in Engine room always accessible *yes* Are the sluices on Engine room bulkheads always accessible *none*

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 *below*

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*

How are they protected *—*

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *yes*

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *yes*

When were stern tube, propeller, screw shaft, and all connections examined *in dry dock before launch* Is the screw shaft tunnel watertight *yes*

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

**BOILERS, &c.—** (Letter for record *5*) Total Heating Surface of Boilers *10150 sq ft* Is forced draft fitted *no*

and Description of Boilers *2 Double ended & 1 Single ended* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*

Date of test *10-8-98* Can each boiler be worked separately *yes* Area of fire grate in each boiler *126 sq ft* No. and Description of safety valves to each boiler *2 Spring loaded* Area of each valve *2.5 sq ft* Pressure to which they are adjusted *182 lbs* Are they fitted with easing gear *yes* Smallest distance between boilers or uptakes and bunkers or woodwork *24"* Mean diameter of boilers *15'-9"*

Length *14'-6"* Material of shell plates *steel* Thickness *1 1/8"* Description of riveting: circum. seams *DNTR lap* long. seams *DBS double rivet*

Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *9 3/8"* Lap of plates or width of butt straps *20 1/2"*

Percentage of strength of longitudinal joint *89.6* Working pressure of shell by rules *206 lbs* Size of manhole in shell *16 x 12"*

Size of compensating ring *8 x 1 1/2"* No. and Description of Furnaces in each boiler *6 Morrison's* Material *steel* Outside diameter *48"*

Length of plain part *top 43"* Thickness of plates *bottom 64"* Description of longitudinal joint *welded* No. of strengthening rings *none*

Working pressure of furnace by the rules *229* Combustion chamber plates: Material *steel* Thickness: Sides *1/2"* Back *—* Top *1/2"* Bottom *1/2"*

Pitch of stays to ditto: Sides *9 1/2 x 9 1/2"* Back *—* Top *9 1/2 x 9 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *191 lbs*

Material of stays *steel* Diameter at smallest part *1 1/2" = 16 1/4"* Area supported by each stay *85.5 sq ft* Working pressure by rules *213 lbs* End plates in steam space: Material *steel* Thickness *1 1/2"* Pitch of stays *18 1/2 x 15 1/2"* How are stays secured *DN+W* Working pressure by rules *246 lbs* Material of stays *steel*

Diameter at smallest part *3 = 27 1/4"* Area supported by each stay *299 sq ft* Working pressure by rules *184 lbs* Material of Front plates at bottom *steel*

Thickness *1"* Material of Lower back plate *—* Thickness *—* Greatest pitch of stays *—* Working pressure of plate by rules *—*

Diameter of tubes *3 1/4"* Pitch of tubes *4 3/8 x 4 3/8"* Material of tube plates *steel* Thickness: Front *1"* Back *3/2"* Mean pitch of stays *9 1/2"*

Pitch across wide water spaces *14"* Working pressures by rules *195 lbs* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *2 plates 11 1/2 x 3"* Length as per rule *44 1/2"* Distance apart *9 1/2"* Number and pitch of Stays in each *3 off - 9 1/2"*

Working pressure by rules *194 lbs* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked separately *—*

Boiler holes Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Is stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

W300-0175

**BOILER**— Description *Single ended one boiler*  
 Made at *Wallsend* By whom made *The Wallsend Slipway & Engineering Co* When made *1-99* Where fixed *and stakhold*  
 Working pressure *180* tested by hydraulic pressure to *360* No. of Certificate *5337* Fire grate area *56 sq ft* Description of safety valves *(2) Spring loaded*  
 No. of safety valves *two* Area of each *7.07 sq ft* Pressure to which they are adjusted *182 1/2* If fitted with easing gear *yes* If steam from main boilers can enter this donkey boiler *yes* Diameter of donkey boiler *14-0"* Length *10-6"* Material of shell plates *steel* Thickness *1 5/32"*  
 Description of riveting long seams *lap double ribble riveted* Diameter of rivet holes *1 1/32"* Whether punched or drilled *drilled* Pitch of rivets *8 7/16"*  
 Width of straps *1 8/16"* Per centage of strength of joint *3 Morrison's* Rivets *82.7* Thickness of shell *end* plates *1 1/32"* Radius of do. *Pitch* of Stays to do. *17 x 18 1/2"*  
 Dia. of stays *3 1/4" = 3.03"* Diameter of furnace *43* Bottom *—* Length of furnace *—* Thickness of furnace plates *19"* Description of joint *welded* Thickness of furnace *end* plates *1 1/2"* Stayed by *Steel stays 1 3/4" dia. pitch sides 8 3/4" x 9 1/4"* Working pressure of shell by rules *203 7/8*  
 Working pressure of furnace by rules *219 1/2* Diameter of *water* tubes *4 5/8" x 4 5/8"* Thickness of *water* tubes *4 5/8" x 4 5/8"*  
 Girders *2 plates 8 3/4" x 1/2" length 33 1/2"* Thickness of *water* tubes *4 5/8" x 4 5/8"* Stay tubes mean pitch *9 1/4"*  
 SPARE GEAR. State the articles supplied:— *1 crank shaft, 1 propeller shaft, 2 propeller blades, 1 valve spindle, 3 sets of coupling bolts, 1 set of crosshead bolts, 1 set of bottom end bolts & 2 main bearing bolts, 1 set of top & 1 set of bottom end brasses, 1 air pump rod, bucket & head valve, 1 eccentric sheave & strap, 1 shaft for centrifugal pump & 1 set of piston springs & 1 set of feed valve pump valves & 1 main & 1 donkey feed check*

The foregoing is a correct description,

**THE WALLSEND SLIPWAY & ENGINEERING CO., LIMITED.**

Manufacturer.

Dates During progress of work in shops - -  
 of Survey During erection on board vessel - -  
 while building Total No. of visits

*May 4<sup>th</sup> 1898 First Survey*  
*Jan'y 24<sup>th</sup> 1899 Last*  
*33*

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

ENGINES—Length of stern bush *5-6"* Diameter of crank shaft journals *as per rule 14-6"* Diameter of thrust shaft under collars *15 1/2"*  
 BOILERS—Range of tensile strength *31-34* Are they welded or flanged *Hungar* **BOILERS**—No. *one* Range of tensile strength *31-34*  
 Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith *yes*

*This vessel is fitted with a Weirs evaporator, Weirs feed pumps & feed heater also Brown's condenser for distilling purposes.*  
*The machinery of this vessel has been constructed and fitted on board under special survey the workmanship being sound & good throughout. The engines & boilers have been tried under steam & found satisfactory, which in my opinion renders the vessel eligible for the record of **+ L.M.C 1-99** in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 199. Electric Light.

*A.C.H.*

*2.2.99.*

*2.2.99.*

Certificate (if required) to be sent to

The amount of Entry Fee. . . £ *3* : :  
 Special . . . £ *48* : *11* :  
 Donkey Boiler Fee . . . £ *2* : *2* :  
 Travelling Expenses (if any) £ : :  
 When applied for. *1/21-99*  
 When received. *1.2.99*

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

*Robert Haig*

Committee's Minute

**FRI. 3 FEB 1899**

Assigned

*+ L.M.C 1,99*



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