

REPORT ON MACHINERY.

Port of *Sunderland.*

DEC 1893

No. in Survey held at *Sunderland.*  
Reg. Book.

Date, first Survey *16<sup>th</sup> June/93* Last Survey *Nov<sup>r</sup> 32<sup>nd</sup> 1893*  
(Number of Visits *32*)

on the *Sps. "Mim"*

Tons { Gross *919.64*  
Net *564.38*  
When built *1893.*

Master *W. Crosby.* Built at *Sunderland* By whom built *Strand Slipway Co.*

Engines made at *Sunderland.* By whom made *N. E. M. Eng Co. Ltd* when made *1893.*

Boilers made at *Sunderland* By whom made *N. E. M. Eng Co. Ltd* when made *1893.*

Registered Horse Power *99 106 HP* Owners *Genwick, Stobart & Co* Port belonging to *London.*

Nom. Horse Power as per Section 28 *120*

ENGINES, &c.— Description of Engines *Tri compound. 3 crank S.* No. of Cylinders *3.*  
Diameter of Cylinders *14" 28" 46"* Length of Stroke *30"* Revolutions per minute *70* Diameter of Screw shaft *as per rule 8.32"*  
Diameter of Tunnel shaft *as fitted 8.5"* Diameter of Crank shaft journals *8.2"* Diameter of Crank pin *8.2"* Size of Crank webs *5 3/4" x 12 1/2"*  
Diameter of screw *12 feet* Pitch of screw *13' 4 1/2"* No. of blades *4* State whether moveable *f.* Total surface *44 f.*  
No. of Feed pumps *2* Diameter of ditto *3"* Stroke *18"* Can one be overhauled while the other is at work *yes.*  
No. of Bilge pumps *2* Diameter of ditto *3"* Stroke *18"* Can one be overhauled while the other is at work *yes.*  
No. of Donkey Engines *2* Sizes of Pumps *6" x 9" 5 1/2" x 3 1/2" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room *6 3" C 3" D 3"* In Holds, &c. *2 of 3" to No. 1 hold. 2 of 3" to*  
*after hold 1 of 2 1/2" to after well.*  
No. of bilge injections *1* sizes *4"* Connected to condenser, or to circulating pump *C.P.* Is a separate donkey suction fitted in Engine room & size *yes 4"*  
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 *yes.*  
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*  
How are they protected —  
What pipes are carried through the bunkers *none.*  
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 *new vessel* Is the screw shaft tunnel watertight *yes*  
Is it fitted with a watertight door *yes.* worked from *top platform*

BOILERS, &c.— (Letter for record *S.*) Total Heating Surface of Boilers *1870 f.*  
No. and Description of Boilers *1 Cylindrical multitubular* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs.*  
Date of test *14/9/93* Can each boiler be worked separately — Area of fire grate in each boiler *42 f.* No. and Description of safety valves to  
each boiler *Spring 2 valves.* Area of each valve *7.07 f.* Pressure to which they are adjusted *165 lbs.* Are they fitted  
with easing gear *yes.* Smallest distance between boilers or uptakes and bunkers or woodwork *14"* Mean diameter of boilers *14 feet*  
Length *10 feet.* Material of shell plates *S* Thickness *1 1/32"* Description of riveting: circum. seams *d. r. lap.* long. seams *d. r. butt.*  
Diameter of rivet holes in long. seams *18"* Pitch of rivets *7"* Lap of plates or width of butt straps *16 1/4"*  
Per centages of strength of longitudinal joint *86.6* Working pressure of shell by rules *166 lbs* Size of manhole in shell *16" x 12"*  
Size of compensating ring *8" x 1 1/32"* No. and Description of Furnaces in each boiler *3 plain* Material *S.* Outside diameter *39"*  
Length of plain part *top 6' 2" bottom 6' 6"* Thickness of plates *top 3 1/32" bottom 3 3/32"* Description of longitudinal joint *d. butt straps.* No. of strengthening rings  
Working pressure of furnace by the rules *162 lbs* Combustion chamber plates: Material *S.* Thickness: Sides *5/8"* Back *1/2"* Top *5/8"* Bottom *5/8"*  
Pitch of stays to ditto: Sides *9" x 9"* Back *10" x 10"* Top *8 1/2" x 8"* If stays are fitted with nuts or riveted heads *nuts.* Working pressure by rules *163 lbs*  
Material of stays *S.* Diameter at smallest part *1 9/16"* Area supported by each stay *100 in* Working pressure by rules *171 lbs* End plates in steam space:  
Material *S.* Thickness *1 5/16"* Pitch of stays *15 1/2" x 15 1/2"* How are stays secured *d. nuts* Working pressure by rules *164 lbs* Material of stays *S*  
Diameter at smallest part *2 3/8"* Area supported by each stay *240 in* Working pressure by rules *166 lbs* Material of Front plates at bottom *S*  
Thickness *3/4"* Material of Lower back plate *S.* Thickness *1 1/8"* Greatest pitch of stays *13"* Working pressure of plate by rules *168 lbs*  
Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *S.* Thickness: Front *1 1/2"* Back *3/4"* Mean pitch of stays *9 1/4"*  
Pitch across wide water spaces *14"* Working pressures by rules *231 lbs.* Girders to Chamber tops: Material *S.* Depth and  
thickness of girder at centre *6" x 2"* Length as per rule *28"* Distance apart *8"* Number and pitch of Stays in each *2" of 8 1/2"*  
Working pressure by rules *164 lbs* Superheater or Steam chest; how connected to boiler *none.* Can the superheater be shut off and the boiler worked  
separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet  
holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —  
If 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 —

Is a Report also sent on the Hull of the Ship?



Lloyd's Register Foundation



DONKEY BOILER— Description *Meredith Patent*

Made at *Stockton* By whom made *Relay Bros.*

When made *9/93* Where fixed *Stokehole*

Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *716* Fire grate area *20 sq ft* Description of safety valves *Spring*

No. of safety valves *2* Area of each *3.98* Pressure to which they are adjusted *83 lbs* 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'-6"* Material of shell plates *Steel* Thickness *1/2"*

Description of riveting long seams *lap double* Diameter of rivet holes *1 1/8"* Whether punched or drilled *punched* Pitch of rivets *2 1/2"*

Lap of plating *4 1/4"* Per centage of strength of joint Rivets *4 1/2"* Thickness of shell crown plates *1 1/2"* Radius of do. *3 ft* No. of Stays to do. *none*

Dia. of stays. — Diameter of furnace Top *4'-1"* Bottom *5'-3"* Length of furnace *2'-3"* Thickness of furnace plates *1/2"* Description of joint *lap single* Thickness of furnace crown plates *1/2"* Stayed by *pitched 10 1/2 ft radius* Working pressure of shell by rules *82 lbs*

Working pressure of furnace by rules *80 lbs* Diameter of uptake *2 3/4"* Thickness of uptake plates *1/2"* Thickness of water tubes *1/2"*

Stays *18" and 8 1/4 x 8 1/2 pitch*

SPARE GEAR. State the articles supplied:— *1 set of connecting rod top and bottom end bolts &*

*nuts, 2 main bearing bolts and nuts, 1 set of coupling bolts, 1 set of*

*feed and bilge pump valves, nuts bolts and assorted iron*

*spare propeller.*

The foregoing is a correct description,  
*Wm. H. Clifton, Marine Engineer*  
*Wm. H. Clifton, Manufacturer.*

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

*constructed under special survey. materials and workmanship*  
*good and efficient, main steam pipe subjected to a hydraulic test*  
*of 320 lbs found sound, sluice valves & water tight doors in good*  
*working order. In my opinion this vessel is eligible for the record*  
*of L.M.C 11/93 in the Register.*

It is submitted that  
this vessel is eligible for  
THE RECORD + L.M.C. 11.93 -

*Prob*  
*5/12/93.-*

Certificate (if required) to be sent to *MACHINERY VERIFICATION*

WRITTEN.

The amount of Entry Fee.. £ *2* : : When applied for,

Special .. .. £ *18* : : *29.11.93*

Donkey Boiler Fee .. .. £ : : When received,

Travelling Expenses (if any) £ : : *8.12.93*

Committee's Minute

TUES. 5 DEC 1893

TUES. 23 JAN 1894

Assigned

*+ L.M.C 11.93*

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



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