

## REPORT ON MACHINERY.

No. 21895

Port of *Sunderland*

TUES. 26 JUL 1904

Received at London Office

19

No. in Survey held at  
Reg. Book.Date, first Survey *20th January* Last Survey *18th July* 1904(Number of Visits *40*)Gross *3929*  
Tons Net *2505*  
When built *1904*✓ on the *Hel. S.S. "Benvenue"*Master *R. Skoble* Built at *Sunderland* By whom built *Barham & Son*Engines made at *Sunderland* By whom made *J. Dickinson & Sons Ltd*when made *1904*Boilers made at *Sunderland* By whom made *J. Dickinson & Sons Ltd*when made *1904*

Registered Horse Power

Owners *W. Thomson & Co.*Port belonging to *Leith*Nom. Horse Power as per Section 28 *852*Is Refrigerating Machinery fitted *No*Is Electric Light fitted *Yes*

## ENGINES, &amp;c.—Description of Engines

*Tri-compound*No. of Cylinders *3*No. of Cranks *3*Dia. of Cylinders *26"-42"-68"* Length of Stroke *48"* Revs. per minute *70*Dia. of Screw shaft as per rule *14 1/2"*Material of screw shaft *W.S.*Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes*

Is the after end of the liner made water tight

in the propeller boss *Yes* If the liner is in more than one length are the joints burned

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush *5'-1"*Dia. of Tunnel shaft as per rule *12 3/4"*Dia. of Crank shaft journals as per rule *13 1/2"*Dia. of Crank pin *14"*Size of Crank webs *Patent*

Dia. of thrust shaft under

collars *13 1/2"*Dia. of screw *17'-0"*Pitch of screw *18'-0"*No. of blades *4*State whether moveable *Yes*Total surface *84 sq ft*No. of Feed pumps *2*Diameter of ditto *4"*Stroke *24"*Can one be overhauled while the other is at work *Yes*No. of Bilge pumps *2*Diameter of ditto *4 1/2"*Stroke *24"*Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *Two*Sizes of Pumps *Two 7 1/2" x 4 1/2" x 10"; 9" x 11" x 10"*

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *2 of 3 1/2" in engine space, 2 of 3 1/2" in boiler space*In Holds, &c. *2 of 3 1/2" in each hold, 3 1/2" to after well + peak*No. of bilge injections *1*sizes *5"*Connected to condenser, or to circulating pump *C.P.*Is a separate donkey suction fitted in Engine room & size *Yes Two 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

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

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 *18/7/04*Is the screw shaft tunnel watertight *Yes*Is it fitted with a watertight door *Yes*worked from *Top platform*

## BOILERS, &amp;c.—

(Letter for record *S*)Total Heating Surface of Boilers *5500 sq ft*Is forced draft fitted *No*No. and Description of Boilers *Two cylindrical multitubular*Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs*Date of test *2/6/04* Can each boiler be worked separately *Yes*Area of fire grate in each boiler *84 sq ft*

No. and Description of safety valves to

each boiler *Two spring loaded*Area of each valve *9.6 sq in*Pressure to which they are adjusted *185 lbs*Smallest distance between boilers or uptakes and bunkers or woodwork *18"*Mean dia. of boilers *17'-0"*Length *11'-0"* Material of shell plates *Steel*Thickness *1 3/8"* Range of tensile strength *28-32*Are they welded or flanged *No*Descrip. of riveting: cir. seams *D.R.L.*long. seams *T.R.D.B.S.*Diameter of rivet holes in long. seams *1 3/8"*Pitch of rivets *9 3/8"*Length of plates or width of butt straps *1'-9 1/2"*

Per centages of strength of longitudinal joint

rivets *88.9*plate *85.4*Working pressure of shell by rules *182 lbs*Size of manhole in shell *16" x 12"*Size of compensating ring *8 3/8" x 1 3/8"*No. and Description of Furnaces in each boiler *4 Dighton's*Material *Steel*Outside diameter *3'-10"*Length of plain part *top*Thickness of plates *crown**1 9/16"*Description of longitudinal joint *Welded*

No. of strengthening rings

Working pressure of furnace by the rules *191 lbs*Combustion chamber plates: Material *Steel*Thickness: Sides *7/8"*Back *7/8"*Top *7/8"*Bottom *7/8"*Pitch of stays to ditto: Sides *9 1/2" x 9"*Back *9 1/2" x 9"*Top *10" x 9"*If stays are fitted with nuts or riveted heads *Yes*Working pressure by rules *180 lbs*Material of stays *Steel*Area at smallest part *2.03 sq in*Area supported by each stay *90 sq in*Working pressure by rules *203 lbs*

End plates in steam space:

Material *Steel*Thickness *1 1/8"*Pitch of stays *19 1/2" x 16 1/2"*How are stays secured *D.N.W.*Working pressure by rules *184 lbs*Material of stays *Steel*Area at smallest part *6.1 sq in*Area supported by each stay *321.75 sq in*Working pressure by rules *189 lbs*Material of Front plates at bottom *Steel*Thickness *7/8"*Material of Lower back plate *Steel*Thickness *3/32"*Greatest pitch of stays *15" x 9"*Working pressure of plate by rules *186 lbs*Diameter of tubes *3 1/4"*Pitch of tubes *4 1/2"*Material of tube plates *Steel*Thickness: Front *1 5/16"*Back *7/8"*Mean pitch of stays *9"*Pitch across wide water spaces *13 1/4"*Working pressures by rules *180 lbs*Girders to Chamber tops: Material *Steel*

Depth and

thickness of girder at centre *7 1/2" x 14" x 2*Length as per rule *32 1/2"*Distance apart *10"*Number and pitch of Stays in each *3 of 9"*

Can the superheater be shut off and the boiler worked

separately *Yes*

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

Foundation


007488-007497-0052



SPARE GEAR. State the articles supplied:— Propeller shaft, two propeller blades, single throw crank shaft, air & circulating pump rods, two top end & two bottom end bolts & nuts, two main bearing bolts & nuts, set of coupling bolts, set of feed & bilge pump valves & assorted bolts, nuts & iron.

JOHN DICKINSON & SONS, Limited *Manufacturer.*

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

The machinery of this vessel has been constructed under special survey, the material + workmanship being of good quality. The boilers + main steam pipes have been tested in accordance with the Rules, the whole satisfactorily tried under steam + the safety valves adjusted to the working pressures. This vessel is eligible in my opinion to have the notation in the Register Book of  L.M.C. 7,04.

It is submitted that  
this vessel is eligible for  
THE RECORD, + LMC, 704 ELEC LIGHT

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

FRI. 29 JUL 1904

*Assigned*

+ Lm 6. 7. 04  
elec. light

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Lloyd's Register  
Foundation