

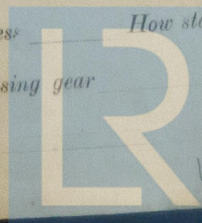
REPORT ON MACHINERY.

7. E. Sept 11476.
No. 20441

Port of *Sunderland* Received at London Office *SAI, MAR 30 1901*
 Date, first Survey *3 Dec 1900* Last Survey *5 March 1901*
 No. in Survey held at *Sld 7 Hpl.* (Number of Visits *1374*)
 Reg. Book. *supp* on the *Steel S.S. "Polamhall"* Tons { Gross *4010*
 Master *Kepple* Built at *A. pool* By whom built *J. B. & D. D. Co. Ltd* When built *1901*
 Engines made at *Sunderland* By whom made *Richardsons Westgarth & Co. Ltd* When made *1901*
 Boilers made at *"* By whom made *"* When made *1901*
 Registered Horse Power *314* Owners *Steel & Pool Navigation Co.* Port belonging to *H. Hartlepool*
 Nom. Horse Power as per Section 28 *318* Is Refrigerating Machinery fitted *no* Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *23"-41"-67"* Length of Stroke *45* Revs. per minute *65* Dia. of Screw shaft *as per rule 12.64"* Lgth. of stern bush *4'-6"*
 Dia. of Tunnel shaft *as per rule 11.44"* Dia. of Crank shaft journals *as per rule 12.04"* Dia. of Crank pin *12 1/2"* Size of Crank webs *18 x 8 1/2"* Dia. of thrust shaft under collars *13"* Dia. of screw *16-6"* Pitch of screw *16-6"* No. of blades *4* State whether moveable *no* Total surface *77 #*
 No. of Feed pumps *2* Diameter of ditto *3"* Stroke *30"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *3"* Stroke *30"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *2* Sizes of Pumps *10 x 10 1/2 x 11 x 5 1/2 x 3 1/2 x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *3 of 3 1/2"* In Holds, &c. *See, one 2 1/2" in chain locker, two 3 1/2"*
 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 *2 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 *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 *20.3.01* Is the screw shaft tunnel watertight *yes*
 Is it fitted with a watertight door *yes* worked from *upper platform*

BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *4840 #* Is forced draft fitted *No*
 No. and Description of Boilers *2 Ordinary Marine* Working Pressure *165 lbs* Tested by hydraulic pressure to *330*
 Date of test *20/12/00* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *62 #* No. and Description of safety valves to each boiler *2 Spring* Area of each valve *8.30"* 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 *22"* Mean dia. of boilers *15-6 1/2"* Length *10'6"* Material of shell plates *S*
 Thickness *1 1/16"* Range of tensile strength *28/32* Are they welded or flanged *No* Descrip. of riveting: cir. seams *DRL* long. seams *T.R.D.B*
 Diameter of rivet holes in long. seams *1 9/32"* Pitch of rivets *9 1/4"* ~~Top of plates~~ width of butt straps *16"*
 Per centages of strength of longitudinal joint rivets *78.96* Working pressure of shell by rules *175.3 lbs* Size of manhole in shell *16" x 12"*
 Size of compensating ring *Flanged* No. and Description of Furnaces in each boiler *4 plain* Material *S* Outside diameter *40 1/2"*
 Length of plain part top *37-2"* Thickness of plates crown *3 3/4"* Description of longitudinal joint *Welded* No. of strengthening rings *L*
 Working pressure of furnace by the rules *174 lbs* Combustion chamber plates: Material *S* Thickness: Sides *1 9/32"* Back *1 9/32"* Top *1 9/32"* Bottom *5/8"*
 Pitch of stays to ditto: Sides *8 x 8"* Back *8 x 8"* Top *8 x 8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *190 lbs*
 Material of stays *S* Diameter at smallest part *1.50"* Area supported by each stay *640"* Working pressure by rules *187 lbs* End plates in steam space:
 Material *S* Thickness *1"* Pitch of stays *16 1/2 x 16"* How are stays secured *D.N.* Working pressure by rules *169.5 lbs* Material of stays *S*
 Diameter at smallest part *5.05"* Area supported by each stay *2640"* Working pressure by rules *191 lbs* Material of Front plates at bottom *S*
 Thickness *3/4"* Material of Lower back plate *S* Thickness *3/4"* Greatest pitch of stays *16"* Working pressure of plate by rules *244 lbs*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2 x 4 1/4"* Material of tube plates *S* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *13 1/2 x 8 1/2"*
 Pitch across wide water spaces *14"* Working pressures by rules *206 lbs* Girders to Chamber tops: Material *S* Depth and
 thickness of girder at centre *8 x 1 1/2"* Length as per rule *28 3/4"* Distance apart *8"* Number and pitch of Stays in each *2 of 8"*
 Working pressure by rules *198 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 stays 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



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DONKEY BOILER— No. *Two* Description *Blakes Patent*
 Made at *Kidderminster* By whom made *Richardson Westgarth & Co.* When made *1901* Where fixed *St. Richard*
 Working pressure *100* tested by hydraulic pressure to *200* No. of Certificate *24088* Fire grate area *18.5* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *5.94* Pressure to which they are adjusted *105 1/2* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *6.6* Length *15.6* Material of shell plates *Steel* Thickness *1/2* Range of tensile strength *27.32* Descrip. of riveting long. seams *Lap donkey* Dia. of rivet holes *13/16* Whether punched or drilled *Drilled* Pitch of rivets *2 9/16*
 Lap of plating *4 1/2* Per centage of strength of joint Rivets *69* Thickness of shell crown plates *1/2* Radius of do. *4 1/2* No. of Stays to do. *1*
 Dia. of stays *1* Diameter of furnace Top *2.6* Bottom *5.1* Length of furnace *5.5* Thickness of furnace plates *5/8* Description of joint *Lap Single* Thickness of *fireman* plates *9/16* Stayed by *1 1/8* *1 1/4* *9/4* *pitch* Working pressure of shell by rules *102.3*
 Working pressure of furnace by rules *100.4* Diameter of *uptake* *2 1/2* Thickness of *uptake* plates *15/16* *5/8* Thickness of *water* tubes *5/16*

SPARE GEAR. State the articles supplied: *Two top & bottom end, main bearing & set of coupling bolts & nuts. Set of air, circ, feed & bilge pump valves. 1/2 crank, propeller & shaft, 2 safety valve springs, assorted bolts, nuts, & iron.*

The foregoing is a correct description,

RICHARDSONS, WESTGARTH & CO., LTD

Manufacturer.

Judicious & Russell

CHIEF DRAUGHTSMAN

Dates of Survey while building { During progress of work in shops - 1900 - Dec 3. 14. 1901 - Jan 9. 21. 24. 30. Feb 6. 13. 20. 26. 27. March 4. 5.
 During erection on board vessel - - -
 Total No. of visits *13*
at Npl. 1901. Jan. 11. Feb. 5. 18. Mar. 20. = 4.
 Is the approved plan of main boiler forwarded herewith *No*
 " " " donkey " " " *no*

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

Material of screw shaft *Is the screw shaft fitted with a continuous liner the whole length of the stern tube*
Is the after end of the liner made water tight in the propeller boss *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*

These engines & boilers have been built under Special Survey, the materials and workmanship are good & efficient. The main boilers & steam pipes have been tested to twice the working pressure. Engines & boilers examined under steam at working pressure & found satisfactory.

In our opinion this vessel is worthy of the notation in the Register Book of + L.M.C. 3.01

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.01.

The amount of Entry Fee. £ *3* : : When applied for, *7.3.1901*
 Special £ *35* : *13* : :
 Donkey Boiler Fee £ : : : When received, *19.4.01*
 Travelling Expenses (if any) £ : : :

Committee's Minute

TUES. APR 2 1901

Assigned

+ L.M.C. 3.01

MACHINERY CERTIFICATE WRITTEN.

W. F. Moore & Richard Hirst
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.



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