

REPORT ON MACHINERY.

TUES. AUG 27 1901

Port of *Sunderland & Middlesbrough*

Received at London Office 18

No. in Survey held at *Sunderland 7* Date, first Survey *28th May 1900* Last Survey *27th July 1901*
 Reg. Book. *Aug 2 hdb* Number of Visits *26*
 on the *Steel Screw Steamer "Burgermeister Hackemann"* Tons Gross *5189* Net *2696*
 Master *D. Gerdan* Built at *Stockton* By whom built *Craig Taylor & Co* When built *1901*
 Engines made at *Sunderland* By whom made *Richardsons Westgarth & Co* When made *1901*
 Boilers made at *"* By whom made *"* when made *1901*
 Registered Horse Power *359* Owners *J. J. Siemens & Co* Port belonging to *Hamburg*
 Nom. Horse Power as per Section 28 *359* 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 1/2" - 38 1/2" - 68"* Length of Stroke *48"* Revs. per minute *65* Dia. of Screw shaft as per rule *13.31"* as fitted *10.5"* Lgth. of stern bush *4-7"*
 Dia. of Tunnel shaft as per rule *12.04"* as fitted *12.25"* Dia. of Crank shaft journals as per rule *12.67"* as fitted *13.0"* Dia. of Crank pin *13.0"* Size of Crank webs *19x8 1/2"* Dia. of thrust shaft under collars *13"* Dia. of screw *17.0"* Pitch of screw *17.0"* No. of blades *4* State whether moveable *No* Total surface *55 sq ft*
 No. of Feed pumps *2* Diameter of ditto *3 3/4"* Stroke *27"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *27"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *Two* Sizes of Pumps *10 1/2 x 11" & 4 x 6"* No. and size of Suctions connected to both Bilge and Donkey pumps *In Engine Room 3 of 3 1/2"*
 In Engine Room *3 of 3 1/2"* In Holds, &c. *2 of 3 1/2" in each*
 No. of bilge injections *1* sizes *5"* Connected to condenser, or to circulating pump *CR* 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 *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 *on stocks* Is the screw shaft tunnel watertight *See Ship Rep 5*
 Is it fitted with a watertight door *yes* worked from *upper platform*

OILERS, &c.— (Letter for record *S*) Total Heating Surface of Boilers *57400 sq ft* Is forced draft fitted *No*
 No. and Description of Boilers *3 Ordinary Marine* Working Pressure *20 lbs* Tested by hydraulic pressure to *400 lbs*
 Date of test *11/2/01* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *47 sq ft* No. and Description of safety valves to each boiler *2 Spring* Area of each valve *7.07 sq ft* Pressure to which they are adjusted *200 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *2-6"* Mean dia. of boilers *13-3 1/4"* Length *10-6"* Material of shell plates *S*
 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.*
 Diameter of rivet holes in long. seams *1 1/32"* Pitch of rivets *9"* Lap of plates or width of butt straps *16 1/2"*
 Per centages of strength of longitudinal joint *85.17* Working pressure of shell by rules *232 lbs* Size of manhole in shell *16 x 12"*
 Size of compensating ring *Flanged* No. and Description of Furnaces in each boiler *3 Morrison* Material *S* Outside diameter *3-8 3/4"*
 Length of plain part top *U* bottom *U* Thickness of plates crown *9 1/16"* Description of longitudinal joint *Welded* No. of strengthening rings *✓*
 Working pressure of furnace by the rules *20 lbs* Combustion chamber plates: Material *S* Thickness: Sides *7/8"* Back *7/8"* Top *7/8"* Bottom *3/4"*
 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 *N.Y.W* Working pressure by rules *20 lbs*
 Material of stays *S* Area at smallest part *1.788 sq ft* Area supported by each stay *64 sq ft* Working pressure by rules *25 1/2 lbs* End plates in steam space:
 Material *S* Thickness *1 1/32"* Pitch of stays *16 1/2" x 14 1/2"* How are stays secured *N. D. B.* Working pressure by rules *222 lbs* Material of stays *S*
 Area at smallest part *61 sq ft* Area supported by each stay *240 sq ft* Working pressure by rules *203 lbs* Material of Front plates at bottom *S*
 Thickness *3/4"* Material of Lower back plate *S* Thickness *3/4"* Greatest pitch of stays *14 x 8"* Working pressure of plate by rules *236 lbs*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 7/8" x 4 1/4"* Material of tube plates *S* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *8 7/8" x 8 1/2"*
 Pitch across wide water spaces *13 1/2"* Working pressures by rules *232 lbs* Girders to Chamber tops: Material *S* Depth and thickness of girder at centre *9" 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 *25 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 *✓*



NO DONKEY BOILER-

No.		Description	
Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	No. of Certificate	Fire grate area
Description of safety valves			
No. of safety valves	Area of each	Pressure to which they are adjusted	If fitted with easing gear
If steam from main boilers can enter the donkey boiler		Dia. of donkey boiler	Length
Material of shell plates		Thickness	Range of tensile strength
Descrip. of riveting long. seams		Dia. of rivet holes	Whether punched or drilled
Pitch of rivets			
Lap of plating	Per centage of strength of joint	Rivets Platts	Thickness of shell crown plates
Radius of do.		No. of Stays to do.	
Dia. of stays.	Diameter of furnace Top	Bottom	Length of furnace
Thickness of furnace plates		Description of joint	
Thickness of furnace crown plates		Stayed by	
Working pressure of shell by rules			
Working pressure of furnace by rules		Diameter of uptake	Thickness of uptake plates
		Thickness of water tubes	

SPARE GEAR. State the articles supplied:— *Two top & bottom end, main bearing & a set of coupling bolts & nuts. Set of air, circ. feed & bilge pump valves. Propeller & tail shaft. A pair of top & bottom end brasses. Assorted bolts, nuts, & iron.*

The foregoing is a correct description,
 Manufacturer: *J. Russell* **CHIEF DRAUGHTSMAN**

Dates of Survey while building	During progress of work in shops -	1900 - May 28. June 13. July 24. Nov. 8. 12. Dec. 3. 11. 13. 17. 1901 -
	During erection on board vessel -	Jan'y 9. 21. 24. Feb'y 6. 11. 13. 20. 26. 28. Mar. 5. 7. 18. 21. July 19. 20. 27.
	Total No. of visits	26. <i>Mdb June 7-19 July 20 Aug 2</i>

Is the approved plan of main boiler forwarded herewith *Yes.*
 " " donkey " " " "

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 *rule* If the liner is in more than one length are the joints burned
 If the liner does not fit tightly at the port 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

The machinery & boilers of this vessel have been built under Special Survey. The materials & workmanship are good & efficient. The main boilers & steam pipes have been tested by water to twice the working pressure. All machinery examined under steam at working pressure & found satisfactory. In our opinion this vessel is worthy of the notation of L.M.C 8.01 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8.01

The amount of Entry Fee.	£ 3	=	When applied for,
Special	£ 37	19	13.8.1901
Donkey Boiler Fee	£		When received,
Travelling Expenses (if any) £			18/9/01

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

Committee's Minute **FRI. AUG 30 1901**

Assigned *+ L.M.C. 8.01*



Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)