

## REPORT ON MACHINERY.

No. 15465

Date of writing Report *Sept. 1908* When handed in at Local Office *18th Sept 1908* Port of *Greenock* Received at London Office *WED 23 SEP 1908*

No. in Survey held at *Greenock* Date, First Survey *17th June 1907* Last Survey *18th Sept 1908*

Reg. Book. on the *Steel S.S. "Georgia" (Russell & Co. No. 584)* (Number of Visits *127*) Gross *5427.45* Tons Net *3690.67*

Master *Antonio Martinisigh* Built at *Port Glasgow* By whom built *Russell & Co.* When built *1908*

Engines made at *Greenock* By whom made *J. G. Kincaid & Co. Ld.* when made *1908*

Boilers made at *Greenock* By whom made *J. G. Kincaid & Co. Ld.* when made *1908*

Registered Horse Power *502* Owners *Unione Austriaca di Nav. (Soc. Anon.)* Port belonging to *Trieste*

Nom. Horse Power as per Section 28 *502* Is Refrigerating Machinery fitted for cargo purposes *No.* Is Electric Light fitted *Yes.*

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

Dia. of Cylinders *24"-44"-43"* Length of Stroke *48"* Revs. per minute *70* Dia. of Screw shaft *as per rule 14.88* Material of screw shaft *Iron*

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 *60"*

Dia. of Tunnel shaft *as per rule 13.33* Dia. of Crank shaft journals *as per rule 14.11* Dia. of Crank pin *14"* Size of Crank webs *21"x9"* Dia. of thrust shaft under collars *14"* Dia. of screw *18"-0"* Pitch of Screw *18ft.* No. of Blades *4* State whether moveable *No* Total surface *102 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"* Stroke *24"* Can one be overhauled while the other is at work *Yes.*

No. of Donkey Engines *2, Duplex* Sizes of Pumps *13"x10" and 5"x8"* No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room *Four-3½"* In Holds, &c. *No. 1, two-3½"; No. 2, two-3½"; No. 3, two-3½"; No. 4, two-3½"; Tunnel well, one-2½"*

No. of Bilge Injections *1* sizes *6½"* Connected to condenser, or to circulating pump *Cir. p.* Is a separate Donkey Suction fitted in Engine room & size *Yes, 3½"*

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.*

Dates of examination of completion of fitting of Sea Connections *23/7/08* of Stern Tube *23/7/08* Screw shaft and Propeller *23/7/08*

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*) Manufacturers of Steel *Clydebridge Steel Works + D. Colville & Son.*

Total Heating Surface of Boilers *7305 sq. ft.* Is Forced Draft fitted *Yes.* No. and Description of Boilers *Three S.E. Cyl. Multitubular*

Working Pressure *180 lbs.* Tested by hydraulic pressure to *360 lbs.* Date of test *14/3/08.* No. of Certificate *881*

Can each boiler be worked separately *Yes.* Area of fire grate in each boiler *54.75 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.* Are they fitted with easing gear *Yes.*

Smallest distance between boilers *side of vessel 33"* Mean dia. of boilers *14-9"* Length *11-9"* Material of shell plates *Steel*

Thickness *13/16"* Range of tensile strength *28 to 32 tons* Are the shell plates welded or flanged *No.* Descrip. of riveting: cir. seams *D.R.* long. seams *2.R. D.B. Stays* Diameter of rivet holes in long. seams *1¼"* Pitch of rivets *8 7/16"* Lap of plates or width of butt straps *1-6½"*

Per centages of strength of longitudinal joint rivets *88.46* Working pressure of shell by rules *180 lbs.* Size of manhole in shell *16"x12"* plate *85.61*

Size of compensating ring *32¼"x28¼"* No. and Description of Furnaces in each boiler *3, Deighton* Material *Steel* Outside diameter *3-10¼"*

Length of plain part *top 190 lbs.* Thickness of plates *crown 9 7/16"* Description of longitudinal joint *welded* No. of strengthening rings *✓* bottom *✓*

Working pressure of furnace by the rules *190 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *10 3/32"* Back *10 3/32"* Top *10 3/32"* Bottom *11 1/16"*

Pitch of stays to ditto: Sides *8½"x8"* Back *9 3/8"x8"* Top *8½"x8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *180 lbs.*

Material of stays *Steel* Diameter at smallest part *1.79 in.* Area supported by each stay *81.6 sq. in.* Working pressure by rules *194 lbs.* End plates in steam space: Material *Steel* Thickness *1 3/32"* Pitch of stays *22 3/8"x18 1/2"* How are stays secured *D. nuts* Working pressure by rules *186 lbs.* Material of stays *Steel*

Area at smallest part *7.5 sq. in.* Area supported by each stay *409.4 sq. in.* Working pressure by rules *183 lbs.* Material of Front plates at bottom *Steel*

Thickness *57/64"* Material of Lower back plate *Steel* Thickness *27/32"* Greatest pitch of stays *14"x8 3/4"* Working pressure of plate by rules *181 lbs.*

Diameter of tubes *2 1/2"* Pitch of tubes *3 1/16"x3 1/16"* Material of tube plates *Steel* Thickness: Front *57/64"* Back *11/16"* Mean pitch of stays *9 3/32"*

Pitch across wide water spaces *12 1/2"* Working pressures by rules *182 lbs.* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *8 1/2"x1 1/16"* Length as per rule *31 2/32"* Distance apart *8 1/2"* Number and pitch of stays in each *3-8"*

Working pressure by rules *207 lbs.* Superheater or Steam chest; how connected to boiler *✓* 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 *✓*



VERTICAL DONKEY BOILER—Manufacturers of Steel

No. *Two* Description *Cochran's Patent*  
 Made at *Aunan* By whom made *Cochran & Co.* When made *1908* Where fixed *on main deck*  
 Working pressure *100 lb.* tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety  
 Valves *Spring loaded* No. of Safety Valves *2* Area of each *4.95* Pressure to which they are adjusted *100 lb.* Date of adjustment  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler Length  
 Material of shell plates Thickness Range of tensile strength *110,264.91* Pitch of rivets Lap of plating Per centage of strength of joint Rivets  
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets  
 Working pressure of shell by rules Thickness of shell plates Radius of do. No. of stays to do. Dia. of stays  
 Diameter of furnace Top Bottom *See Glasgow Report* Length of furnace Thickness of furnace plates Description of joint  
 Working pressure of furnace by rules Thickness of furnace crown plates Stayed by  
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— *2 top end, 2 bott. end, 2 main bearing, 6 holding down, 12 shaft coupling, 6 junk ring, 6 valve chest cover, and 6 cylinder cover, bolts and nuts. 2 feed and 2 bilge pump valves. 1 feed escape, and 3 cyl. escape, valves + springs. 1 C.I. propeller. One prop. shaft. 3 feed check valves. 1 set Air pump valves. 12 boiler, + 12 condenser tubes + 120 ferrules. 1 set Imm. B. S.V. openings. Spare fire-bars for main + donkey boilers. Assorted bolts, nuts and iron.*

The foregoing is a correct description,

*John Y. Kincaid & Co Ltd.* Manufacturer.

*127.* Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " " *Yes*  
 Dates of Examination of principal parts—Cylinders *3/3/08* Slides *28/2/08* Covers *3/3/08* Pistons *28/2/08* Rods *22/1/08*  
 Connecting rods *23/1/08* Crank shaft *23/1/08* Thrust shaft *10/8/08* Tunnel shafts *10/8/08* Screw shaft *24/2/08* Propeller *3/9/08*  
 Stern tube *28/2/08* Steam pipes tested *1/8/08 + 10/8/08* Engine and boiler seatings *28/7/08* Engines holding down bolts *10/8/08*  
 Completion of pumping arrangements *10/8/08* Boilers fixed *10/8/08* Engines tried under steam *18/9/08*  
 Main boiler safety valves adjusted *20/8/08* Thickness of adjusting washers *P<sub>16</sub> 5 5/32; P<sub>17</sub> 5 7/16; P<sub>18</sub> 5 3/8; P<sub>19</sub> 5 1/4; P<sub>20</sub> 5 1/8; P<sub>21</sub> 5 1/16; P<sub>22</sub> 5 1/32*  
 Material of Crank shaft *Steel* Identification Mark on Do. *2013 A.T.G.* Material of Thrust shaft *Steel* Identification Mark on Do. *2013 A.T.G.*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *2013 A.T.G.* Material of Screw shafts *Iron* Identification Marks on Do. *2013 A.T.G.*  
 Material of Steam Pipes *Copper* Test pressure *360 lbs.*

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

*The above Engines and Boilers have been built under special survey. They have been efficiently fitted on board, worked under a full pressure of steam and found satisfactory. They are in safe working condition and eligible, in my opinion, for the notification of L.M.C. 9.08 in the Register Book.*

Marks on Main B.

Marks on D. B.

*N<sup>o</sup> 881.  
Lloyds Inst  
360 lbs.  
17/3/08 R.E.*

*N<sup>o</sup> 9442-3.  
Lloyds Inst.  
200 lbs.  
10-4-08 A. McK.*

*It is submitted that  
this vessel is eligible for  
THE RECORD L.M.C. 9.08.  
ELEC. LIGHT.  
F. D.*

*J.C. 24.9.08*

*24.9.08*

The amount of Entry Fee .. £ *3* : : :  
 Special .. £ *45* : : :  
 Donkey Boiler Fee .. £ : : :  
 Travelling Expenses (if any) £ : : :  
 When applied for, *17/9/08*  
 When received, *23/9/08*

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

Committee's Minute *GLASGOW 22 SEP. 1908*

Assigned *+ LMC 9.08.*

*F.D.*

MACHINE WRITTEN *23/9/08*