

REPORT ON MACHINERY.

No. 52861.
No. 25141Port of *Glasgow*

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No. in Survey held at *Glasgow & Newcastle*
Reg. Book. *66* on the *Shue S-S "DICH-TAOO"*Date, first Survey *12 Nov 06* Last Survey *17 April 1907*
(Number of Visits)

Master *By whom built* *Newcastle* *By whom built* *Newthorne Leslie (N° 416)* When built *1907*
 Engines made at *Glasgow* By whom made *Ross & Duncan (N° 703)* when made *1907*
 Boilers made at *Do* By whom made *Do (N° 1117 & 1118)* when made *1907*
 Registered Horse Power *Owners* *Russian Steamer & Trading Co* Port belonging to *Odessa*
 Nom. Horse Power as per Section 28 *143* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *16", 26", 44"* Length of Stroke *33"* Revs. per minute *95* Dia. of Screw shaft *as per rule 9.52* Material of *iron*
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no* 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 *✓* Length of stern bush *3' 3"*
 Dia. of Tunnel shaft *as per rule 8.32* Dia. of Crank shaft journals *as per rule 8.73* Dia. of Crank pin *8 7/8"* Size of Crank webs *12 3/4" x 5 1/2"* Dia. of thrust shaft under
 collars *8 7/8"* Dia. of screw *10' 9"* Pitch of Screw *12' 0"* No. of Blades *4* State whether moveable *no* Total surface *50 sq*
 No. of Feed pumps *2* Diameter of ditto *3"* Stroke *16 1/2"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* Diameter of ditto *3 1/4"* Stroke *16 1/2"* Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines *3* Sizes of Pumps *Ballast 6" x 8" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps*
 In Engine Room *Iron 2* In Holds, &c. *In all holds two 2" Lateral well the 2 1/4"*

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 *ye 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 *✓*
 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 *at line*
 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 *ford bilge pipes* How are they protected *strong wood casing*
 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 *26-3-07* of Stern Tube *26-3-07* Screw shaft and Propeller *26-3-07*
 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.*) Manufacturers of Steel *Stewart & Lloyd*
 Total Heating Surface of Boilers *2480 sq* Is Forced Draft fitted *no* No. and Description of Boilers *2, single ended*
 Working Pressure *185 lbs* Tested by hydraulic pressure to *370 lbs* Date of test *12.3.07* No. of Certificate *8760*
 Can each boiler be worked separately *yes* Area of fire grate in each boiler *40.25 sq* No. and Description of Safety Valves to
 each boiler *Pair spring loaded* Area of each valve *3.97 sq* Pressure to which they are adjusted *190* Are they fitted with easing gear *yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *9"* Mean dia. of boilers *12' 0"* Length *10' 0"* Material of shell plates *steel*
 Thickness *1 1/8"* Range of tensile strength *58/52 tons* Are the shell plates welded or flanged *D.B.S.* Descrip. of riveting: cir. seams *D.B.S.*
 long. seams *T.A.D.B.S.* Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *7 1/4"* Lap of plates or width of butt straps *1' 3 1/2"*
 Per centages of strength of longitudinal joint *85.6%* Working pressure of shell by rules *195 lbs* Size of manhole in shell *16" x 12"*
 Size of compensating ring *6 3/4" x 1 1/8"* No. and Description of Furnaces in each boiler *2, horizontal* Material *steel* Outside diameter *49 5/8"*
 Length of plain part *top 19 1/2"* Thickness of plates *bottom 13 1/2"* Description of longitudinal joint *weld* No. of strengthening rings *✓*
 Working pressure of furnace by the rules *190 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *23/32"* Back *31/32"* Top *31/32"* Bottom *33/32"*
 Pitch of stays to ditto: Sides *9 1/2" x 8"* Back *9 1/2" x 8 1/2"* Top *9" x 8 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *186 lbs*
 Material of stays *steel* Diameter at smallest part *2.07"* Area supported by each stay *99.78 sq* Working pressure by rules *233 lbs* End plates in steam space:
 Material *steel* Thickness *1 1/2"* Pitch of stays *16 1/2" x 16"* How are stays secured *D.N. wash* Working pressure by rules *190 lbs* Material of stays *steel*
 Diameter at smallest part *5.18"* Area supported by each stay *264 sq* Working pressure by rules *196 lbs* Material of Front plates at bottom *steel*
 Thickness *7/8"* Material of Lower back plate *steel* Thickness *7/8"* Greatest pitch of stays *13 1/2" x 9 1/4"* Working pressure of plate by rules *197 lbs*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 3/8" x 4 3/8"* Material of tube plates *steel* Thickness: Front *7/8"* Back *3/4"* Mean pitch of stays *9 27/32"*
 Pitch across wide water spaces *13 3/4"* Working pressures by rules *206 lbs* Girders to Chamber tops: Material *iron* Depth and
 thickness of girder at centre *7 1/2" x 2 1/4"* Length as per rule *30 9/32"* Distance apart *8 1/2"* Number and pitch of stays in each *2 @ 9"*
 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.	Description				
Made at	By whom made	When made	Where fixed		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
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 Plates
Working pressure of shell by rules	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	
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:— 20 per tubes; 1 set piston rings; 1 spare propeller; 1 pair connecting rod brasses; 1 pair crosshead brasses; 1 air pump rod; 1 circulating pump rod; 1 A.P valve spindle 1- $\frac{1}{2}$ crank shaft; 1 propeller shaft; 2 dozen boiler tubes; 3 dozen condenser tubes; 1 A.P escape valve spring; 1 set safety valve springs

The foregoing is a correct description,

Ross & Duncan for W. Morrison. Manufacturer.

Dates of Survey while building	During progress of work in shops—	1906. Nov 12 Dec 12 18 27 1907. Jan 9 16 23 28 Feb 2 6 11 19 Mar 5 12 22
	During erection on board vessel—	April 12 17 Nov. 26 Dec 19 26 1907. Feb 6 19 Mar 12 18 26 Apr 3 5 16 23 28 26 29 30 May 1
	Total No. of visits	17

Is the approved plan of main boiler forwarded herewith no

Dates of Examination of principal parts—	Cylinders 6.2.07	Slides 18.12.06	Covers 9.1.07	Pistons 18.12.06	Rods 18.12.06
Connecting rods 12.11.06	Crank shaft 9.1.07	Thrust shaft 9.1.07	Tunnel shafts 9.1.07	Screw shaft 16.1.07	Propeller 16.1.07
Stern tube 27.12.06	Steam pipes tested 17.4.07	Engine and boiler seatings 26.3.07	Engines holding down bolts 23.4.07		
Completion of pumping arrangements 26.4.07	Boilers fixed 23.4.07	Engines tried under steam 26.4.07			
Main boiler safety valves adjusted 26.4.07	Thickness of adjusting washers all washers 3/8 thick C.E 17.18				
Material of Crank shaft steel	Identification Mark on Do. 170	Material of Thrust shaft steel	Identification Mark on Do. 407		
Material of Tunnel shafts steel	Identification Marks on Do. 409. 410	Material of Screw shafts iron	Identification Marks on Do. 703		
Material of Steam Pipes Copper	Test pressure 400 lbs per sq in				

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

The machinery has been built under special survey the material and workmanship being good

It is submitted that above vessel will be eligible for a record of + L.M.C (with date) subject to machinery being satisfactorily fitted aboard

The boilers are duplicates of No 114-15 plan of which has been forwarded

The whole of the above has been forwarded to Newcastle for fitting aboard

The Mach? has been properly fitted & is eligible in my opinion for classification & the record + L.M.C 5.07.

John H Heck.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5.07

The amount of Entry Fee..	£ 2 : 0 : 0	When applied for,
Special ..	£ 14 : 6 : 0	22 APR 1907
Donkey Boiler Fee ..	£ 7 : 3 : 0	When received,
Travelling Expenses (if any) £	:	26.4.1907

Committee's Minute

Glasgow 22 APR 1907

Assigned Deferred. for Completion

For Nwc

A. S. Thomas John H Heck.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
FRI, 10 MAY 1907

MACHINERY CERTIFICATE WRITTEN.