

REPORT ON MACHINERY.

THUR. 10 SEP 1903

Port of WEST HARTLEPOOL

Received at London Office

No. in Survey held at Hartlepool Date, first Survey 1st Sept. 1902 Last Survey 4th Sept. 1903Reg. Book. Steel S. S. Clan Macleod (Number of Visits 146)on the Steel S. S. Clan Macleod Tons { Gross 4796
Net 3043Master Gomic Built at N. Hartlepool By whom built Jurness, Nisbet & Co. Ltd. When built 1903Engines made at Hartlepool By whom made Richardsons, Westgarth & Co. Ltd. When made 1903Boilers made at Hartlepool By whom made Richardsons, Westgarth & Co. Ltd. When made 1903Registered Horse Power 448 Owners Gayzer, Irvine & Co. Port belonging to GlasgowNom. Horse Power as per Section 28 452 Is Refrigerating Machinery fitted No Is Electric Light fitted YesENGINES, &c. — Description of Engines Triple expansion No. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 26" 41" 41" Length of Stroke 48" Revs. per minute 69 Dia. of Screw shaft 16" Lgth. of stern bush 4'-6"Dia. of Tunnel shaft 14" Dia. of Crank shaft journals 15" Dia. of Crank pin 15" Size of Crank webs 9 1/2" x 23 1/2" Dia. of thrust shaft undercollars 16" Dia. of screw 17'-9" Pitch of screw 16'-3" to 19'-2" No. of blades 4 State whether moveable Yes Total surface 91 sq. ft.No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work YesNo. of Donkey Engines Two Sizes of Pumps 100 lb. 1 1/2" x 2 1/2" 13 1/2" x 1 1/2" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Four 3 1/2" dia. In Holds, &c. Twelve. — One 2 1/2" dia. in fore peak,Two 3 1/2" dia. in each hold, and one 2 1/2" dia. in tunnel well.No. of bilge injections one sizes 6 1/2" Connected to condenser, or to circulating pump per pump Is a separate donkey suction fitted in Engine room & size Yes 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 YesAre 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 aboveAre 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 YesWhat pipes are carried through the bunkers none How are they protected YesAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock Nov. vessel Is the screw shaft tunnel watertight YesIs it fitted with a watertight door Yes worked from upper platform.BOILERS, &c. — (Letter for record S.) Total Heating Surface of Boilers 6107 sq. ft. Is forced draft fitted Yes (Howden)No. and Description of Boilers 2 single ended. Cyl. Mult. Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs.Date of test 5-6-03 Can each boiler be worked separately Yes Area of fire grate in each boiler 62.9 sq. ft. No. and Description of safety valves toeach boiler Two spring direct Area of each valve 110" Pressure to which they are adjusted 20 3/4 lbs. Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 4'-4" Mean dia. of boilers 16'-2" Length 11'-9" Material of shell plates steelThickness 1 1/8" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams treble long. seams trebleDiameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 21"Per centages of strength of longitudinal joint 85-9 Working pressure of shell by rules 200 lbs. Size of manhole in shell 13" x 16 1/2"Size of compensating ring 29" x 30" x 1 1/8" No. and Description of Furnaces in each boiler 3 Monson Material steel Outside diameter 50 3/4"Length of plain part 7'-11" Thickness of plates 2 1/8" Description of longitudinal joint weld No. of strengthening rings 1Working pressure of furnace by the rules 210 lbs. Combustion chamber plates: Material steel Thickness: Sides 3/32" Back 2 1/32" Top 3 1/32" Bottom 1"Pitch of stays to ditto: Sides 9" x 7 1/2" Back 8 1/2" x 8 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 204 lbs.Material of stays steel Diameter at smallest part 1 1/2" Area supported by each stay 69.70" Working pressure by rules 202 lbs. End plates in steam space:Material steel Thickness 1 1/8" Pitch of stays 14" x 14" How are stays secured D. N. M. Working pressure by rules 203 lbs. Material of stays steelDiameter at smallest part 2 1/8" Area supported by each stay 289.4" Working pressure by rules 205 lbs. Material of Front plates at bottom steelThickness 3/8" Material of Lower back plate steel Thickness 3/8" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 204 lbs.Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates steel Thickness: Front 1" Back 3/4" Mean pitch of stays 4 1/2"Pitch across wide water spaces 13 1/2" Working pressures by rules 210 lbs. Girders to Chamber tops: Material steel Depth andthickness of girder at centre 1 1/2" Length as per rule 1 1/2" Distance apart 1 1/2" Number and pitch of Stays in each 1 1/2"Working pressure by rules 210 lbs. Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler workedseparately Yes Diameter 1 1/2" Length 1 1/2" Thickness of shell plates 1 1/8" Material steel Description of longitudinal joint treble Diam. of rivetholes 1 1/8" Pitch of rivets 9 3/4" Working pressure of shell by rules 200 lbs. Diameter of flue 1 1/2" Material of flue plates steel Thickness 1 1/8"If stiffened with rings Yes Distance between rings 1 1/2" Working pressure by rules 200 lbs. End plates: Thickness 1 1/8" How stayed YesWorking pressure of end plates 210 lbs. Area of safety valves to superheater Yes Are they fitted with easing gear Yes

DONKEY BOILER— No. *One* Description *Cylindrical Multitubular*
 Made at *Newcastle* By whom made *H. Stephenson & Co.* When made *26.3.03* Where fixed *Stoke hold.*
 Working pressure *100 lb.* tested by hydraulic pressure to *200 lb.* No. of Certificate *1540* Fire grate area *300* Description of safety valves *Spring direct*
 No. of safety valves *2* Area of each *5.94* Pressure to which they are adjusted *105 lb.* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *11-3* Length *9-1 1/2* Material of shell plates *steel* Thickness *1/8* Range of tensile strength *27-32* Descrip. of riveting long. seams *quadruple lap* Dia. of rivet holes *1/2* Whether punched or drilled *D.* Pitch of rivets *4 1/2*
 Lap of plating *6 1/2* Per centage of strength of joint *80* Rivets *80* Thickness of shell crown plates *3/32* Radius of do. *pitch* No. of Stays to do. *15 x 15*
 Dia. of stays *2" off* Diameter of furnace *Top 36 1/2 Bottom 36* Length of furnace *69* Thickness of furnace plates *1/2* Description of joint *1 strap* Thickness of furnace crown plates *9/16* Stayed by *Iron stay 1 1/2" off* Working pressure of shell by rules *101 lb.*
 Working pressure of furnace by rules *106 lb.* Diameter of uptake *3* Thickness of uptake plates *1 1/16 7 23/32* Thickness of water tubes *1/2*

SPARE GEAR. State the articles supplied:— *2 bon. rod top & 2 con. rod bottom and bolt & nut, 2 main bearing & one set of coupling bolts, one set of rings for S.P. & I.P. pistons, one set of feed bilge air cl. & ballast pump valves, bolt nut & iron various sizes, 2 propeller blades, propeller shaft, 6 boiler & 6 condenser tubes, spiral spring for safety valve.*

The foregoing is a correct description,
 For **RICHARDSON, WESTGARTH & CO., LIMITED.** Manufacturer.

Dates of Survey while building
 During progress of work in shops—
 During erection on board vessel—
 Total No. of visits

Is the approved plan of main boiler forwarded herewith

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

Material of screw shaft *Ingot steel* 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 *Yes* If two liners are fitted, is the shaft lapped or protected between the liners

The main steam pipes have been tested by hyp. pressure to 400 lbs. per sq. in. and found tight.
 The engines and boilers of this vessel have been built under special survey in accordance with the Rule requirements, the materials and workmanship are good and efficient, when completed and fitted on board were tried under steam at moorings with satisfactory results, and are now in good working order and, in my opinion, eligible to have **L.M.C. 9, 03** marked in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.03 F.D. Elec. LIGHT

The amount of Entry Fee... £ 3
 Special ... £ 42
 Donkey Boiler Fee ... £
 Travelling Expenses (if any) £

When applied for.

When received.

Committee's Minute FRI. 11 SEP 1903

Assigned

MACHINERY CERTIFICATE WRITTEN.

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



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