

REPORT ON MACHINERY

No. 8063.

THU. AUG. 14. 1913

Received at London Office

Date of writing Report 12th Aug 1913 When handed in at Local Office 12th Aug 1913 Port of MIDDLESBROUGH

No. in Survey held at Middlesbrough Date, First Survey 23rd Jan Last Survey 2nd Aug 1913
Reg. Book. on the S.S. "Valegarth" (Number of Visits 55)

Master Built at Middlesbrough By whom built Sir Raylton Dixon & Co. Ld. When built 1913

Engines made at Middlesbrough By whom made Richardsons, Westgarth & Co. Ld. when made 1913

Boilers made at do By whom made do when made 1913

Registered Horse Power 184 Owners Rea Shipping Co. Ld. Port belonging to Liverpool

Nom. Horse Power as per Section 28 184 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 18", 30", 50" Length of Stroke 36" Revs. per minute as per rule 10.7" Material of Steel
Dia. of Screw shaft as fitted 11" screw shaft

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 yes 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'-9 1/2"

Dia. of Tunnel shaft as per rule 9.3" Dia. of Crank shaft journals as per rule 9.76" Dia. of Crank pin 10 1/8" Size of Crank webs 16x6 1/2" Dia. of thrust shaft under collars 10 1/8" Dia. of screw 13-6" Pitch of Screw 14-6" No. of Blades 4 State whether moveable No Total surface 58 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work yes

No. of Donkey Engines Two Sizes of Pumps 8x8x8, 6x4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 2 1/2" In Holds, &c. Fore hold two 2 1/2" After

hold two 2 1/2" Tunnel well 2 1/2"

No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump ✓ 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 Below

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, Fore bilge suction How are they protected 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 8.7.13 of Stern Tube 25.7.13 Screw shaft and Propeller 25.7.13

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top grating

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel John S. Pencer & Sons Ld.

Total Heating Surface of Boilers 3136 sq. ft. Is Forced Draft fitted No No. and Description of Boilers Two S.E. Cylin. Multi.

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15.7.13 No. of Certificate 5419

Can each boiler be worked separately yes Area of fire grate in each boiler 54 1/4 sq. ft. No. and Description of Safety Valves to each boiler Two direct spring Area of each valve 7" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4'-6" Mean dia. of boilers 13-6" Length 10-6" Material of shell plates Steel

Thickness 1 3/32" Range of tensile strength 28 3/4-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams BR. Lap

long. seams BR. Lap Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 1-6"

Per centages of strength of longitudinal joint rivets 91.5 Working pressure of shell by rules 185 lbs Size of manhole in shell 17 x 13"

plate 86.6 Size of compensating ring 35 1/2 x 30 x 1 3/32" No. and Description of Furnaces in each boiler Three Reightons Material Steel Outside diameter 3'-5 3/4"

Length of plain part top ✓ Thickness of plates crown 17" Description of longitudinal joint Welded No. of strengthening rings ✓

bottom ✓ Working pressure of furnace by the rules 196 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9 3/4 x 8 1/2" Back 11 x 8" Top 11 x 7" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193 lbs

Material of stays Steel Diameter at smallest part 2.1" Area supported by each stay 88" Working pressure by rules 215 lbs End plates in steam space:

Material Steel Thickness 1 3/16" Pitch of stays 19 1/2 x 19" How are stays secured BR. & W. Working pressure by rules 180 lbs Material of stays Steel

Diameter at smallest part 7.02" Area supported by each stay 360" Working pressure by rules 203 lbs Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 15 7/16 x 7 1/2" Working pressure of plate by rules 192 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates Steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 11 1/4"

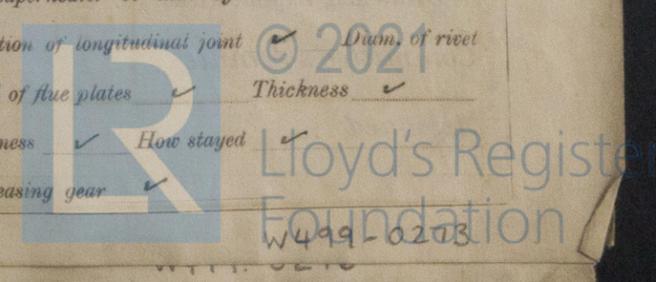
Pitch across wide water spaces 15 1/4" Working pressures by rules 332 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/2 x 1 3/4" Length as per rule 2-5 1/16" Distance apart 11" Number and pitch of stays in each 3 @ 7"

Working pressure by rules 230 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 ✓



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *See Glasgow Report No 32386*

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 casing 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*

Working pressure of shell by rules *Thickness of shell crown plates* Radius of do. *No. of stays to do.* Dia. of stays *Plates*

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* Radius of do. *Stayed by*

Diameter of uptake *Thickness of uptake plates* Thickness of water tubes *Dates of survey*

SPARE GEAR. State the articles supplied:— *Two top & two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Main & donkey feed check valves. Assorted bolts & nuts etc.*

The foregoing is a correct description,
 For and on behalf of
 RICHARDSONS, WESTGARTH & Co. Ltd.
 Manufacturer. *M. S. Jackson.*

Dates of Survey while building	During progress of work in shops	<i>1913</i> Jan. 23-29, Feb. 12-24, Mar. 3, 4-12, 13, 17, 20-29, 31, Apr. 9, 10-15, 18, 21, 23, 27, 30, May 7, 9, 15, 20, 22, 28, 29, 30, Jun 5, 6, 11, 13, 18, 20, 21, 24
	During erection on board vessel	<i>25, 27, 30 July, 4, 8, 9, 10, 11, 12, 15, 17, 21, 25, 28, 30, Aug. 5, 6, 7, 9</i>
	Total No. of visits	<i>55</i>

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts	Cylinders <i>11.6.13</i>	Slides <i>10.7.13</i>	Covers <i>10.7.13</i>	Pistons <i>30.6.13</i>	Rods <i>30.6.13</i>
Connecting rods	<i>30.6.13</i>	Crank shaft <i>29.4.13</i>	Thrust shaft <i>15.7.13</i>	Tunnel shafts <i>17.7.13</i>	Screw shaft <i>17.7.13</i>
Stern tube	<i>17.7.13</i>	Steam pipes tested <i>5.5.13</i>	Engine and boiler seatings <i>8.7.13</i>	Engines holding down bolts <i>7-5-13</i>	Engines tried under steam <i>7-5-13</i>
Completion of pumping arrangements	<i>9.5.13</i>	Boilers fixed <i>9-5-13</i>	Engines holding down bolts	<i>7-5-13</i>	
Main boiler safety valves adjusted	<i>7-5-13</i>	Thickness of adjusting washers	<i>See Rules S.T. 1/2 P.T. 1/2 P.T. Rules S.T. 3/4 P.T. 1/2</i>		
Material of Crank shaft	<i>Steel</i>	Identification Mark on Do. <i>5420AB</i>	Material of Thrust shaft	<i>Steel</i>	Identification Mark on Do. <i>4493HK</i>
Material of Tunnel shafts	<i>Steel</i>	Identification Marks on Do. <i>5415PA. 8313KH. 5414PA. 4491HK.</i>	Material of Screw shafts	<i>Steel</i>	Identification Marks on Do. <i>4492HK.</i>
Material of Steam Pipes	<i>Solid Drawn Copper</i>		Test pressure	<i>360 lbs per sq inch.</i>	

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

Note:— When the starboard main boiler was nearly completed the bottom shell plate was found to be laminated. This plate has now been renewed, & this necessitated the renewal of all the screw stays at back & shell of boiler. These stays have now been renewed a size larger in diameter than shown on the approved plan.

The Engines and boilers of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in our opinion eligible to have the notation of + LMC 8.13 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.13

The amount of Entry Fee	£ 2 : 0	When applied for, <i>15.8.13</i>
Special	£ 27 : 12	When received, <i>15.8.13</i>
Donkey Boiler Fee	£ :	
Travelling Expenses (if any)	£ :	

L. Kerr & John Robson.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. AUG. 15. 1913*
 Assigned *+ L.M.C. 8.13*



Write "Bridge Sheer Strake" and "Upper Deck Sheer Strake" opposite the corresponding letter.
 Write "Bridle Sheer Strake" and "Upper Deck Sheer Strake" opposite the corresponding letter.
 Certificate (if registered) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)