

Indb. 22. Ept 11039

Rpt. 4.

REPORT ON MACHINERY.

No. 28066

Received at London Office
SUNDERLAND, FRI. 8 APR. 1921

Date of writing Report 22-3-1921 When handed in at Local Office 6 APR 1921 Port of SUNDERLAND. Date, First Survey 31 Oct. 1919 Last Survey 12 May 1921

No. in Survey held at Reg. Boob. 80182 on the Steel S.S. LANCASTRIAN PRINCE

Master (red appointed) Built at Middlesbrough By whom built Furness Shipbuilding Ltd (N° 23) When built 1921

Engines made at Sunderland By whom made Richardsons, Westgarth & Co (N° 2158) when made 1921

Boilers made at do By whom made do do do do when made 1921

Registered Horse Power 538 Owners Prince Line Ltd Port belonging to Newcastle

Nom. Horse Power as per Section 28 538 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 26, 43, 43 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft 14.4 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 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5-2 1/4

Dia. of Tunnel shaft 13.06 Dia. of Crank shaft journals 13.7 Dia. of Crank pin 14.1 Size of Crank webs 27 1/2 x 9 Dia. of thrust shaft under collars 14 1/2 Dia. of screw 17-3 Pitch of Screw 18-0 No. of Blades 4 State whether moveable No Total surface 95 sq ft

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 8 x 5 1/2 x 8; 9 x 11 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3 1/2 In Holds, &c. No 1 - 2 of 3 1/2 No 2 - 2 of 3 1/2 No 3 - 2 of 3 1/2

No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump C.P. Yes 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 Yes

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 Yes

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

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 John Spencer & Sons, Ltd.

Total Heating Surface of Boilers 8166 sq ft Forced Draft fitted Yes No. and Description of Boilers 3 cylindrical Multitubular (S. End)

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 1-2-21 No. of Certificate 3749

Can each boiler be worked separately Yes Area of fire grate in each boiler 64 sq ft No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 12.5 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 1-6 Mean dia. of boilers 15-9 Length 12-0 Material of shell plates S.

Thickness 19 Range of tensile strength 28 3/4 to 32 3/4 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams T.R.

long. seams D.B.S., T.R. Diameter of rivet holes in long. seams 19 Pitch of rivets 8 3/4 Lap of plates or width of butt straps 1-6 1/4

Per centages of strength of longitudinal joint 85.6 Working pressure of shell by rules 188.4 Size of manhole in shell 16 1/2 x 13

Size of compensating ring 7 and 8 x 19 No. and Description of Furnaces in each boiler 3 Dayton Material S Outside diameter 4-13 3/4

Length of plain part 21 Thickness of plates 32 Description of longitudinal joint Weld No. of strengthening rings 1

Working pressure of furnace by the rules 215 Combustion chamber plates: Material S. Thickness: Sides 19 Back 19 Top 19 Bottom 27

Pitch of stays to ditto: Sides 8 1/4 x 7 1/2 Back 8 3/8 x 8 Top 8 3/4 x 7 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181.2

Material of stays S. Area at smallest part 1.73 sq in Area supported by each stay 6.4 Working pressure by rules 206 End plates in steam space: Material S. Thickness 15 Pitch of stays 16 x 19 1/2 How are stays secured D.N.T.W. Working pressure by rules 184 Material of stays S.

Area at smallest part 6.1 sq in Area supported by each stay 3.18 Working pressure by rules 200 Material of Front plates at bottom S.

Thickness 7 Material of Lower back plate S. Thickness 13 Greatest pitch of stays 13 1/2 x 8 Working pressure of plate by rules 185.5

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 1/4 Material of tube plates S. Thickness: Front 15 Back 3/4 Mean pitch of stays 9 5/16

Pitch across wide water spaces 13 1/2 Working pressures by rules 185 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 9 x 1 1/2 Length as per rule 2-6 25/32 Distance apart 8 3/4 Number and pitch of stays in each 3 @ 7 1/2

Working pressure by rules 216 Steam dome: description of joint to shell Yes % of strength of joint Yes

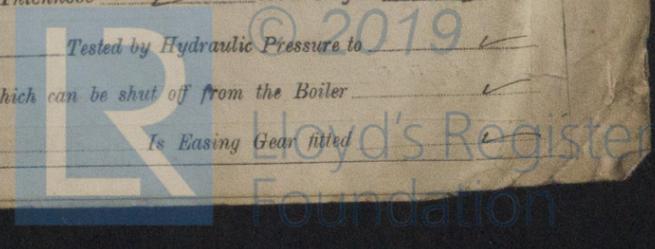
Diameter Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes

Pitch of rivets Yes Working pressure of shell by rules Yes Crown plates Yes Thickness Yes How stayed Yes

SUPERHEATER. Type Yes Date of Approval of Plan Yes Tested by Hydraulic Pressure to Yes

Date of Test Yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve Yes Pressure to which each is adjusted Yes Is Easing Gear fitted Yes



If any of the machinery or fittings mentioned in this report will be sent from the ship...

MS15-0212

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two Connecting rod top and bottom end bolts and nuts; two main bearing bolts and nuts; one set of coupling bolts and nuts; one set of feed and bilge pump valves; bolts, nuts, and iron of various sizes; one propeller shaft; one propeller.

The foregoing is a correct description, FOR RICHARDSONS, WESTGARTH & CO., LTD

Richard Russell

Manufacturer.

ASSISTANT MANAGER

Dates of Survey while building: During progress of work in shops -- 1919 Oct 31, 1920 May 14, 21, Jun 14, Jul 9, 19, 30, Aug 16, Sept 3, Oct 5, 20, 22, 29, Nov 12, 16, 25, 26, Dec 1, 7, 8, 15, 17, 20, 23, 24, 31, Jan 4, 13, 14, 17, 27, Feb 15, 15, 17, 23, Mar 5, 8, 11, 15, 17, 21, (4) Mdb. 1920 Nov. 8, 16, 24, 26, Dec. 6, 15, 21, Jan. 5, 11, 17, 21, 24, 25, 31, Feb. 3, Mar 31, Apr 7, 12, 19, 26, May 6, 12.

Total No. of visits 65

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 11-1-21 Slides 13-12-20 Covers 13-12-20 Pistons 8-12-20 Rods 5-10-20

Connecting rods 8-12-20 Crank shaft 7-6-20 Thrust shaft 26-11-20 Tunnel shafts 8-2-21 Screw shaft 17-1-21 Propeller 5-2-21

Stern tube 5-2-21 Steam pipes tested 13-7-20, 5-3-21 Engine and boiler seatings 24-11-21 Engines holding down bolts 5-3-21

Completion of pumping arrangements 12-5-21 Boilers fixed 23-2-21 Engines tried under steam 15-3-21

Completion of fitting sea connections 24-11-21 Stern tube 9-2-21 Screw shaft and propeller 10-2-21

Main boiler safety valves adjusted 15-3-21 Thickness of adjusting washers P. boiler - P. 5/16, S. 13/32; C. boiler - P. 7/16, S. 5/16; S. boiler - P. 1/2, S. 1/4

Material of Crank shaft *Imp. Steel* Identification Mark on Do. *6163 A.B.* Material of Thrust shaft *Imp. Steel* Identification Mark on Do. *2158 E.W.*

Material of Tunnel shafts *Iron* Identification Marks on Do. *6220 A.B.* Material of Screw shafts *Iron* Identification Marks on Do. *6220 A.*

Material of Steam Pipes *L.W. wrought iron* Test pressure 540 lbs. ^{sq}

Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes

Have the requirements of Section 49 of the Rules been complied with Yes, as approved

Is this machinery duplicate of a previous case Yes If so, state name of vessel *S.S. Delaware + Louisiana*

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

The Machinery has been built and installed under Special Survey. The materials and workmanship are good.

The vessel has returned to the Builders' yard for completion. To complete the survey, the Hold pumping connections and the Electric light installation to be examined.

Upon completion of Survey, this vessel's machinery is eligible in my opinion for Classification and the record + LMC with date 5.21 in the Register Book

Pumping arrangement and Electric light installation satisfactorily completed

It is submitted that this vessel is eligible for THE RECORD. + LMC. 5.21 F.D. C.L

FITTED FOR O.I. FUEL 5.21. FP ABOVE 150°F.

The amount of Entry Fee ... £ 6 : : Special ... £ 101 : 18 : Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ : : When applied for, - 6 APR 1921 When received, 30 May 1921

Ed W. Putter *W. Lewis* Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 10E JUN. 14 1921

Assigned + L.M.C. 5.21 L.D. C.L.

Lies for oil fuel 5.21. F. Above 150°F.



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SUNDERLAND. Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

CERTIFICATE WRITTEN.