

REPORT ON MACHINERY.

WED. 13 APR. 1921

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Date of writing Report 8-2-1921 When handed in at Local Office 10-2-1921 Port of *Sunderland*
No. in Survey held at *Sunderland* Date, First Survey 31 Oct 1919 Last Survey 10 Feb 1921
Reg. Book. 80161 on the *Steel S.S. LOUISIANA* (Number of Visits 33 + 16)
Master *J. Indrisen* Built at *Middlesborough* By whom built *Furness Shipbuilding Co. Ltd (N° 22)* when built 1921
Engines made at *Sunderland* By whom made *Messrs Richardson Westgarth & Co. Ltd (N° 215)* when made 1921
Boilers made at *do.* By whom made *do.* when made 1921
Registered Horse Power *✓* Owners *Actus Norge. Mexico Gulf Union.* Port belonging to *Yuskerp*
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, 73 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft as per rule 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 *✓* 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 5-2 1/4
Dia. of Tunnel shaft as per rule 13.06 Dia. of Crank shaft journals as per rule 13.7 Dia. of Crank pin 14 1/2 Size of Crank webs 27 1/2 x 9 Dia. of thrust shaft under collars 14 1/4 Dia. of screw 14-3 Pitch of Screw 18-0 No. of Blades 4 State whether moveable *No* Total surface 95 ft²
No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 24 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. 2 of 8 1/2 in each hold and 1 of 2 1/2 in Tunnel well.
No. of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump C.P. 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 *✓*
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*
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 Is Forced Draft fitted *Yes* No. and Description of Boilers *Three S.E. Cylindrical Multitubular*
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 27-8-20 No. of Certificate 3710
Can each boiler be worked separately *Yes* Area of fire grate in each boiler 64 ft² No. and Description of Safety Valves to each boiler *Two; spring loaded* Area of each valve 12.57 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 1 1/2 Range of tensile strength 28.75 to 32.75 Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams T.R.
long. seams DBS, 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 rivets 85.6 Working pressure of shell by rules 188.7 Size of manhole in shell 13 x 16 1/2
plate 85.35 Size of compensating ring 2-5 x 2-6 1/2 No. and Description of Furnaces in each boiler *Howe Daylight* Material S Outside diameter 4-1 3/4
Length of plain part top Thickness of plates crown 21 Description of longitudinal joint *weld* No. of strengthening rings 1
bottom 32 Working pressure of furnace by the rules 215 Combustion chamber plates: Material S Thickness: Sides 19 Back 19 Top 19 Bottom 25
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 Area supported by each stay 67 Working pressure by rules 206 End plates in steam space:
Material S Thickness 1 1/8 Pitch of stays 16 x 19 How are stays secured *D.N.T.W.* Working pressure by rules 184.1 Material of stays S
Area at smallest part 6.1 Area supported by each stay 318 Working pressure by rules 200 Material of Front plates at bottom S
Thickness 7/8 Material of Lower back plate S Thickness 13/16 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 33 x 3 11/16 Material of tube plates S Thickness: Front 15/16 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 2-8 1/4 Distance apart 8 3/4 Number and pitch of stays in each 3 @ 7 1/2
Working pressure by rules 185 Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to
Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

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 & nuts; two bearing bolts & nuts; one set of Coupling bolts & nuts; one set of feed & bilge pump valves, bolts, nuts, & iron of various sizes; one propeller shaft & one propeller.

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

Heinie St. Russell

ASSISTANT MAN

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } at Sunderland 31 Oct 1919 to 10 Feb 1921 - 55 visits
{ During erection on board vessel -- } at Middlesbrough 8th Nov. to 15th Dec 1921 - 16 visits
Total No. of visits

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 10-8-20 Slides 16-8-20 Covers 10-8-20 Pistons 10-8-20 Rods 9-7-20

Connecting rods 12-4-20 Crank shaft 17-3-20 Thrust shaft 2-7-20 Tunnel shafts 7-12-20 Screw shaft 20-4-20 Propeller 5-10-20

Stern tube 19-11-20 Steam pipes tested 8-9-20, 13-1-21 Engine and boiler seatings 13-11-20 Engines holding down bolts 11-1-21

Completion of pumping arrangements 16-3-21 Boilers fixed 22-12-20 Engines tried under steam 26-1-21

Completion of fitting sea connections 8-10-20 Stern tube 13-12-20 Screw shaft and propeller 13-12-20

Main boiler safety valves adjusted 26-1-21 Thickness of adjusting washers P. boiler - P. 5/16, S. 3/8; C. boiler - P. 7/32, S. 7/32; S. boiler - P. 5/16

Material of Crank shaft Steel Identification Mark on Do. 6157 A.B. Material of Thrust shaft Steel Identification Mark on Do. No. 2157 E

Material of Tunnel shafts Iron Identification Marks on Do. 6024 A.B. Material of Screw shafts Iron Identification Marks on Do. No. 6146 A

Material of Steam Pipes L.W. Steel Test pressure 540 lbs.

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

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 Machinery Survey, the Hold pumping connections, and the Electric light installation to be examined, Bilge direct suction to be fitted from donkey.

Upon Completion of Survey this vessel's Machinery is eligible in my opinion for Classification and the record + LMC with date

Pumping arrangement & Electric light installation satisfactorily completed 3.21

The amount of Entry Fee ... £ 6 : - :
Special ... £ 101 : 18 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 11 FEB 1921
When received, 23/3/21

Committee's Minute FRI APR 15 1921

Assigned + LMC 3.21
Used for oil fuel 3.21
F.P. above 150°F.
F.D. C.L.

MACHINERY CERT.
WRITTEN 14/4/21

Ed. W. Hutter & Co.
Engineer Surveyors to Lloyd's Register of Shipping.



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Foundation