

# REPORT ON MACHINERY.

No. 27805

SAT. MAY 15 1920

Received at London Office

Date of writing Report 5-5-1920 When handed in at Local Office 5-5-1920 Port of Sunderland

Survey held at Sunderland Date, First Survey 1 April 1920 Last Survey 3 May 1920

Book. Machinery of the new steel S.S. LYS. (Number of Visits 47)

Master L. Whinney Built at Sunderland By whom built S.P. Austin & Son, Ltd Tons { Gross 1880 Net 999 When built 1920

Machines made at Sunderland By whom made Richardsons Westgarth & Co. Ltd. (No. 2125 when made 1920)

Boilers made at do By whom made do when made 1920

Registered Horse Power 201 Owners (Stephenson Clarke & Co.) Port belonging to London

Horse Power as per Section 28 201 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

FINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

No. of Cylinders 20 1/2 - 33 - 54 Length of Stroke 39" Revs. per minute 70 Dia. of Screw shaft 11.6" Material of screw shaft Scrap 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 Yes

Is 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 cranks are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4-2"

Dia. of Tunnel shaft 10.32" Dia. of Crank shaft journals 10.83" Dia. of Crank pin 11.3" Size of Crank webs 7 x 22" Dia. of thrust shaft under bars 11" Dia. of screw 14-3" Pitch of Screw 15-3" No. of Blades 4 State whether moveable No Total surface 62 sq ft

No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 1/4" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 9 x 11 x 10, 5 1/2 x 3 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps In Holds, &c. Forehold - 2 @ 3", Main hold 2 @ 3"

Engine Room 2 @ 3"

No. of Bilge Injections 1 sizes 5" 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 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

Are all pipes carried through the bunkers None How are they protected None

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 None Is it fitted with a watertight door Yes worked from Machinery aft.

MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons, Ltd. R.S.B.

Total Heating Surface of Boilers 3160 sq ft Is Forced Draft fitted No No. and Description of Boilers Two Cylindrical S.E. Multitubular

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 3-9-19 No. of Certificate 3604

Can each boiler be worked separately Yes Area of fire grate in each boiler 43.75 sq ft No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 5.94 sq in 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 1-8" Mean dia. of boilers 13-3" Length 10-6" Material of shell plates Steel

Thickness 1 3/32" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. lap

g. seams T.R., D.B. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 1/8" Lap of plates or width of butt straps 15"

Percentages of strength of longitudinal joint rivets 85.8 Working pressure of shell by rules 183.8 Size of manhole in shell 16 x 12" plate 85.7

No. of compensating ring 1 No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 3-0 1/2"

Length of plain part top 6-9" Thickness of plates crown 23/32" Description of longitudinal joint welded No. of strengthening rings 1 bottom 32/32"

Working pressure of furnace by the rules 184.4 Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 21/32" Top 11/16" Bottom 13/16"

Height of stays to ditto: Sides 10 3/8 x 8 1/2" Back 9 1/4 x 8 1/2" Top 10 3/8 x 8 1/2" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 181.5

Material of stays Steel Area at smallest part 1.79 sq in Area supported by each stay 88.2 sq in Working pressure by rules 182.6 End plates in steam space: Material Steel Thickness 1 3/16" Pitch of stays 18 1/2 x 18 1/2" How are stays secured D.N. + W. Working pressure by rules 184.6 Material of stays Steel

Area at smallest part 6.1 sq in Area supported by each stay 342 sq in Working pressure by rules 185.3 Material of Front plates at bottom Steel

Thickness 25/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 188.5

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 3/8" Material of tube plates Steel Thickness: Front 25/32" Back 25/32" Mean pitch of stays 10"

Clearance across wide water spaces 14 1/4" Working pressures by rules 191.4 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 13 1/2" Length as per rule 30 9/16" Distance apart 10 3/8" Number and pitch of stays in each 2 @ 8 1/2"

Working pressure by rules 185.2 Steam dome: description of joint to shell None % of strength of joint None

Thickness of shell plates 25/32" Material Steel Description of longitudinal joint welded Diam. of rivet holes 1 1/8"

Working pressure of shell by rules 183.8 Crown plates None Thickness None How stayed None

SUPERHEATER. Type None Date of Approval of Plan None Tested by Hydraulic Pressure to None

Date of Test None Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler None

Diameter of Safety Valve None Pressure to which each is adjusted None Is Easing Gear fitted None

IS A DONKEY BOILER FITTED? *No.*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two Connecting rod tops & bottom end bolts & nuts, two main bearing bolts, one set of Coupling bolts, one set of feed & bilge pump valves, iron and bolts of various sizes, 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 April May 2 7 14 21 30 June 11 16 29 July 3 10 18 25 Aug 1 7 14 21 22 31 Sep 3 10 18*  
During erection on board vessel -- *Oct 3 Nov 10 Jan 26 28 31 Feb 6 13 16 19 Mar 2 4 17 20 24 31 Apr 12 16 20 26 29 30 May 3*  
Total No. of visits *47*

Is the approved plan of main boiler forwarded herewith *No (see S.I. Vaup)*

" " " donkey " " " *Yes* No. 27758

Dates of Examination of principal parts—Cylinders *1-8-19* Slides *18-8-19* Covers *1-8-19* Pistons *18-8-19* Rods *18-7-19*  
Connecting rods *30-8-19* Crank shaft *2-6-19* Thrust shaft *18-7-19* Tunnel shafts *Nil* Screw shaft *12-11-19* Propeller *28-1-20*  
Stern tube *18-2-20* Steam pipes tested *16-2-20, 8-3-20* Engine and boiler seatings *4-3-20* Engines holding down bolts *12-4-20*  
Completion of pumping arrangements *20-4-20* Boilers fixed *24-3-20* Engines tried under steam *16-4-20*  
Completion of fitting sea connections *4-3-20* Stern tube *2-3-20* Screw shaft and propeller *17-3-20*  
Main boiler safety valves adjusted *16-4-20* Thickness of adjusting washers *Port boiler P 11, S 5, Stan boiler P 9, S 9*  
Material of Crank shaft *Engt steel* Identification Mark on Do. *6081AB* Material of Thrust shaft *Engt steel* Identification Mark on Do. *2125E.W.R.*  
Material of Tunnel shafts *None* Identification Marks on Do. *✓* Material of Screw shafts *Cramp iron* Identification Marks on Do. *2125E.W.R.*  
Material of Steam Pipes *Copper* Test pressure *360 lbs*

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case *Yes*. If so, state name of vessel *S.I. Vaup. (Sld rpt No 27758)*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Workmanship and Materials are good. The Machinery has been constructed under Special Survey and is eligible in my opinion for Classification and the record LMC 5, 20*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5.20

*Handwritten signatures and dates: JWR, 17/5/20, RFB*

SUNDERLAND.

The amount of Entry Fee ... £ *2 : 0 : 0* When applied for, ...  
Special ... £ *30 : 1 : 0* ... *28.4.20*  
Donkey Boiler Fee ... £ : : :  
Travelling Expenses (if any) £ : : :  
When received, ... *20/5/20 RFB*

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

Committee's Minute  
Assigned *+ LMC 5.20*

CERTIFICATE WRITTEN

