

Rpt. 4. **REPORT ON MACHINERY.** No. 27910

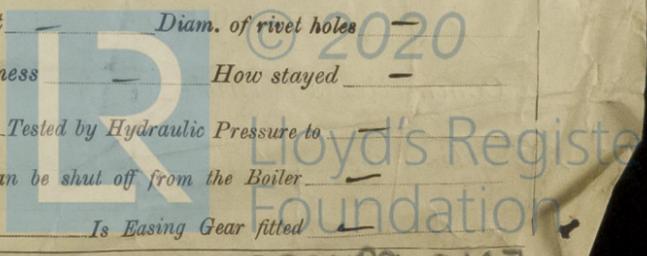
Received at London Office FRI. AUG. 27 1920

Date of writing Report 19 When handed in at Local Office 26 AUG 1920 Port of **SUNDERLAND.**
 No. in Survey held at **SUNDERLAND.** Date, First Survey 28 Jan '20 Last Survey 24 August 19 20
 Reg. Book. on the **S/S "SYDLAND"** (Number of Visits 34)
 Master **H. J. Larsson** Built at **Sunderland** By whom built **Miss Wm Doreford (524)** Tons { Gross 6563
 Engines made at **Sunderland** By whom made **Miss G. Clark & Co (115)** when made 1920 Net 4079
 Boilers made at **Sunderland** By whom made **Miss G. Clark & Co (115)** when made 1920
 Registered Horse Power Owners **Angf. Akt. Virfing (of Stockholm)** Port belonging to **Gothenburg**
 Nom. Horse Power as per Section 28 **577** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

ENGINES, &c.—Description of Engines **Triple** No. of Cylinders **3** No. of Cranks **3**
 Dia. of Cylinders **27.44 1/2, 75"** Length of Stroke **54"** Revs. per minute **70** Dia. of Screw shaft as per rule **15.6** Material of screw shaft **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 **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 **No**
 If two liners are fitted, is the shaft lapped or protected between the liners **Yes** Length of stern bush **5-10"**
 Dia. of Tunnel shaft as per rule **13.91** Dia. of Crank shaft journals as per rule **14.6** Dia. of Crank pin **14 3/4** Size of Crank webs **20 1/2 x 9 1/2** Dia. of thrust shaft under collars **14 3/4** Dia. of screw **18.0** Pitch of Screw **18.0** No. of Blades **4** State whether moveable **Yes** Total surface **102 sq**
 No. of Feed pumps **2** Diameter of ditto **5"** Stroke **30"** Can one be overhauled while the other is at work **Yes**
 No. of Bilge pumps **2** Diameter of ditto **5"** Stroke **30"** Can one be overhauled while the other is at work **Yes**
 No. of Donkey Engines **3** Sizes of Pumps **1 1/2 x 1 1/2 x 2 1/2, 1 x 5 x 6, 1 x 8 x 8** No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room **4 @ 3 1/2, 1 in each compartment 2 1/2, 1 in oil hold 3 1/2** In Holds, &c. **No. 1, 2, 2 each 3 1/2, No. 3, 2 @ 3 1/2, 2 @ 3"**
 No. of Bilge Injections **1** sizes **9"** Connected to condenser, or to circulating pump **Yes** Is a separate Donkey Suction fitted in Engine room & size **4 1/2 sq**
 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 **No**
 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 **Spencer & Sons**
 Total Heating Surface of Boilers **8547 sq** Is Forced Draft fitted **Yes** No. and Description of Boilers **Three single ended**
 Working Pressure **180 lbs** Tested by hydraulic pressure to **360 lbs** Date of test **20. 7. 20** No. of Certificate **3702**
 Can each boiler be worked separately **Yes** Area of fire grate in each boiler **63 sq** No. and Description of Safety Valves to each boiler **Two spring valves** Area of each valve **11.04** 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 **Way of Bridge Mean dia. of boilers 15-11** Length **12-0** Material of shell plates **S**
 Thickness **1 5/16** Range of tensile strength **38 1/2 - 32 3/8** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **Lap ditto**
 long. seams **No. 15 lb. riv.** Diameter of rivet holes in long. seams **1 5/16** Pitch of rivets **6 3/4** Lap of plates or width of butt straps **19 1/2**
 Per centages of strength of longitudinal joint rivets **88** Working pressure of shell by rules **188** Size of manhole in shell **12 x 16**
 Size of compensating ring **Flanged** No. and Description of Furnaces in each boiler **3 Dighton** Material **S** Outside diameter **4-5 3/4**
 Length of plain part top **3 3/8** Thickness of plates crown **3 3/8** Description of longitudinal joint **Welded** No. of strengthening rings **—**
 bottom **6 1/4** Working pressure of furnace by the rules **181** Combustion chamber plates: Material **S** Thickness: Sides **3/4** Back **5/8** Top **3/4** Bottom **3/4**
 Pitch of stays to ditto: Sides **7 1/8 x 7 1/8** Back **7 1/8 x 7 1/8** Top **7 1/8 x 7 1/8** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **218**
 Material of stays **S** Area at smallest part **1.44 sq** Area supported by each stay **62 sq** Working pressure by rules **210** End plates in steam space: Tons **105**
 Material **S** Thickness **1 1/4** Pitch of stays **21 1/2 x 16** How are stays secured **D. N. & W.** Working pressure by rules **222** Material of stays **S**
 Area at smallest part **7.06 sq** Area supported by each stay **348 sq** Working pressure by rules **222** Material of Front plates at bottom **S**
 Thickness **2 1/2** Material of Lower back plate **S** Thickness **2 1/2** Greatest pitch of stays **15 1/2** Working pressure of plate by rules **184**
 Diameter of tubes **2 1/2** Pitch of tubes **3 3/4 x 3 5/8** Material of tube plates **S** Thickness: Front **2 1/2** Back **3/4** Mean pitch of stays **7 1/2 x 7 1/2**
 Pitch across wide water spaces **12 1/2** Working pressures by rules **202** Girders to Chamber tops: Material **S** Depth and thickness of girder at centre **9 1/4 x 1 1/2** Length as per rule **34 5/8** Distance apart **7 1/2** Number and pitch of stays in each **3, 7 1/8**
 Working pressure by rules **187** 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 **—**



002784-002789-0167

IS A DONKEY BOILER FITTED?

NO

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two top end & two bottom end connecting rod bolts and nuts, two main bearing bolts, one set coupling bolts, one set fuel and bilge pump valves, assorted bolts and nuts, Iron of various sizes on Propeller shaft

The foregoing is a correct description, FOR GEORGE CLARK LIMITED

W. S. Spence Manufacturer.

Dates of Survey while building: During progress of work in shops - 1920 Jan 25 Feb 2 26 Mar 8 22 23 27 Apr 8 13 14 17 19 22 May 6 10 31 Jun 2 4 15 18 21 25 29; During erection on board vessel - Jul 14 20 30 Aug 6 10 13 13 17 19 20 24; Total No. of visits (34) Is the approved plan of main boiler forwarded herewith 410

Dates of Examination of principal parts: Cylinders 15.6.20 Slides 30.7.20 Covers 15.6.20 Pistons 15.6.20 Rods 14.4.20; Connecting rods 15.6.20 Crank shaft 8.3.20 Thrust shaft 26.2.20 Tunnel shafts 26.2.20 Screw shaft 14.4.20 Propeller 4.6.20; Stern tube 14.4.20 Steam pipes tested 13.6.20, 19.8.20 Engine and boiler seatings 10.8.20 Engines holding down bolts 12.6.20; Completion of pumping arrangements 10.8.20 Boilers fixed 17.8.20 Engines tried under steam 24.8.20; Completion of fitting sea connections 17.4.20 Stern tube 10.8.20 Screw shaft and propeller 10.8.20; Main boiler safety valves adjusted 24.8.20 Thickness of adjusting washers PC 13 1/4 P 3/8 5 3/8 Lute 13 1/4 P 3/8 5 3/8 Star B 1/2 P 1/2 5 7/8; Material of Crank shaft Steel Identification Mark on Do. 1115 L.C.D. Material of Thrust shaft Steel Identification Mark on Do. 1115 L.C.D.; Material of Tunnel shafts Steel Identification Marks on Do. 1115 L.C.D. Material of Screw shafts Steel Identification Marks on Do. 1115 G.A.H.; Material of Steam Pipes Iron Test pressure 540 lbs sq in

Is an installation fitted for burning oil fuel 410 Is the flash point of the oil to be used over 150°F. 410; Have the requirements of Section 49 of the Rules been complied with 410, as approved; Is this machinery duplicate of a previous case NO. If so, state name of vessel

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

The machinery of this vessel has been built under special survey, the materials and workmanship are sound and good and render the vessel eligible in my opinion to have rank of 1-L.M.C. 8.20. Fitted for burning oil fuel 8.20 F.P. above 150°F. The oil fuel installation has been fitted in a satisfactory manner and in accordance with the approved plans.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 8.20. F.I. Fitted for oil fuel 8.20 F.P. above 150°F.

A.P.S. Reilly 29/8/20

W. S. Spence Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 3 : ; Special ... £ 48 : 17 : ; Donkey Boiler Fee ... £ : ; Travelling Expenses (if any) £ : ; When applied for, 26 AUG 1920; When received, 4/9/20

Committee's Minute TUE. SEP. 7 1920 Assigned + L.M.C. 8.20 F.I. Fitted for oil fuel 8.20 F.P. above 150°F.

MACHINERY CERT. WRITTEN.



SUNDERLAND.

Certificate (if required) to be sent to The Surveyors are requested not to write on or below the space for Committee's Minute.