

# REPORT ON MACHINERY.

No. 72491

Received at London Office

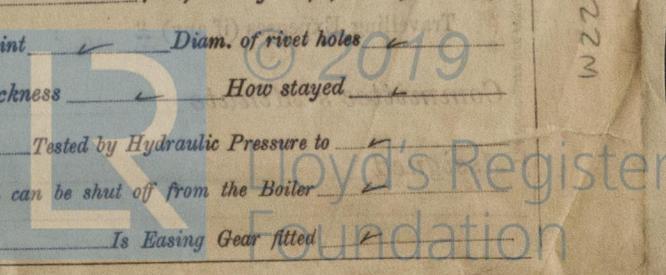
20 NOV 1919

Date of writing Report 19 When handed in at Local Office Port of Newcastle on Tyne  
 No. in Survey held at South Shields Date, First Survey 28<sup>th</sup> July Last Survey 5<sup>th</sup> Nov. 1919  
 Reg. Book. on the S.S. "Yrekieve" (Number of Vents 22)  
 Master J. Readhead & Son Built at South Shields By whom built J. Readhead & Son Tons { Gross 5244 Net 3230  
 Engines made at South Shields By whom made J. Readhead & Son when made 1919  
 Boilers made at South Shields By whom made J. Readhead & Son when made 1919  
 Registered Horse Power 513 Owners Hain S.S. Co. Ltd Port belonging to Green  
 Nom. Horse Power as per Section 28 513 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 27, 44, 73 Length of Stroke 48 Revs. per minute 77 Dia. of Screw shaft 14.66 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 No 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 No Length of stern bush 5'-0 1/2"  
 Dia. of Tunnel shaft 13.334 as per rule 13.334 Dia. of Crank shaft journals 14 as per rule 14 Dia. of Crank pin 14 1/2 Size of Crank webs 9x22 1/2 Dia. of thrust shaft under  
 rollers 14 3/4 Dia. of screw 17-6 Pitch of Screw 16-6 No. of Blades 4 State whether moceable Solid Total surface 98.2  
 No. of Feed pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Three Sizes of Pumps General Service 9 1/2 x 7 x 18 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Five 3 1/2" diameter Balkast 10 1/2 x 14 x 24 In Holds, &c. Two 3 1/2" in Nos. 1, 2, & 3 holds & Cross  
 Bunkers Two 3 1/2" in No. 4 hold and one 3" in tunnel well  
 No. of Bilge Injections One sizes 13" Connected to condenser, or to circulating pump pump 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 No  
 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 Forward bilge pipes 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  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

OILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Son Ltd.  
 Total Heating Surface of Boilers 7563 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single Ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 18/7/19 No. of Certificate 9261  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63.3 No. and Description of Safety Valves to  
 each boiler Two direct Area of each valve 9.62 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 2'-4" Mean dia. of boilers 15-6" Length 11-6" Material of shell plates Steel  
 Thickness 1 1/4" Range of tensile strength 28/32 ton Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R Lap  
 long. seams 6 R Butt Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 1/2"  
 Per centages of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 182 lbs Size of manhole in shell 16 x 12"  
 plate 85.6 No. and Description of Furnaces in each boiler 3 Doughton Material Steel Outside diameter 50 3/16"  
 Length of plain part top Thickness of plates crown 19/32 Description of longitudinal joint Welded No. of strengthening rings 1  
 bottom bottom 19/32 Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 1/16 Top 23/32 Bottom 1"  
 Pitch of stays to ditto: Sides 10 5/8 x 9 1/4 Back 10 1/4 x 8 3/4 Top 10 5/8 x 9 1/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181 lbs  
 Material of stays Steel Area at smallest part 2.75 Area supported by each stay 104 Working pressure by rules 219 End plates in steam space:  
 Material Steel Thickness 1 1/32 Pitch of stays 20 1/2 x 21 3/4 How are stays secured Double nuts & washers Working pressure by rules 192 Material of stays Steel  
 Area at smallest part 8.48 Area supported by each stay 446 Working pressure by rules 192 Material of Front plates at bottom Steel  
 Thickness 3/32 Material of Lower back plate Steel Thickness 27/32 Greatest pitch of stays 13 5/8 x 8 3/4 Working pressure of plate by rules 187 lbs  
 Diameter of tubes 2 3/4 Pitch of tubes 4 x 3 7/8 Material of tube plates Steel Thickness: Front 3/32 Back 3/4 Mean pitch of stays 9 7/8"  
 Pitch across wide water spaces 13 5/8" Working pressures by rules 181 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10" x 1 3/4 Length as per rule 35 9/16 Distance apart 10 5/8 Number and pitch of stays in each Three 9 1/4"  
 Working pressure by rules 187 lbs Steam dome: description of joint to shell None % of strength of joint 100  
 Diameter 1 Thickness of shell plates 1 Material Steel Description of longitudinal joint Welded Diam. of rivet holes 1 1/8"  
 Pitch of rivets 1 1/2" Working pressure of shell by rules 187 lbs Crown plates 1 Thickness 1 How stayed 1

SUPERHEATER. Type None Date of Approval of Plan 1919 Tested by Hydraulic Pressure to 360 lbs  
 Date of Test 1919 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes  
 Diameter of Safety Valve 1 Pressure to which each is adjusted 180 lbs Is Easing Gear fitted No



5200-422M

IS A DONKEY BOILER FITTED? *None*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Propeller, Propeller shaft, 2 top end bolts + nuts, 2 Bottom end bolts + nuts, 2 Main bearing bolts + nuts, 6 Couplings bolts + nuts, 1 Feed pump suction valve, 1 Feed pump discharge valve, 1 Bilge pump suction + discharge valve, 3 Main check valves, 3 Donkey feed check valves, 50 Bolts + nuts assorted, 6 Studs of each size for boiler mounting covers, 12 Cylinder cover + steam chest studs, 12 Junkring studs + nuts, One HP piston valve, 6 Air pump valves, 5 Bars of round iron 3/8", 1/2", 5/8", 3/4", 1".

The foregoing is a correct description, For JOHN READHEAD & SONS, Ltd.

*W. P. Dewey* Manufacturer. MANAGER, ENGRS. DEPT.

Dates of Survey while building: During progress of work in shops -- 1919, Feb. 22, Mar. 13, 31, Apr. 30, May 2, 6, 24, 29, Jun 5, 13, Jul 8, 15, Aug 13, 29, Sep 3, 10, 17, 24, 31. During erection on board vessel -- 12, 16, 19, 25, Oct 1, 8, Nov 5. Total No. of visits 22. Is the approved plan of main boiler forwarded herewith  " " " donkey " " "

Dates of Examination of principal parts—Cylinders 31/3/19 Slides 6/5/19 Covers 31/3/19 Pistons 30/4/19 Rods 31/3/19 Connecting rods 30/4/19 Crank shaft 31/3/19 Thrust shaft 31/3/19 Tunnel shafts 5/6/19, 13/9/19 Screw shaft 13/3/19, 25/9/19 Propeller 13/3/19, 29/9/19 Stern tube 19/8/19, 3/9/19 Steam pipes tested 23/9/19 Engine and boiler seatings 3/9/19 Engines holding down bolts 1/10/19 Completion of pumping arrangements 1/10/19 Boilers fixed 29/9/19 Engines tried under steam 1/10/19 Completion of fitting sea connections 3/9/19 Stern tube 3/9/19 Screw shaft and propeller 12/9/19 Main boiler safety valves adjusted 1/10/19 Thickness of adjusting washers 7/16" 3/8" 1/2" 3/8" 7/16" 7/16" Material of Crank shaft *Steel* Identification Mark on Do. Material of Thrust shaft *Steel* Identification Mark on Do. Material of Tunnel shafts *Iron* Identification Marks on Do. Material of Screw shafts *Iron* Identification Marks on Do. Material of Steam Pipes *Iron* Test pressure 540 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 *Standard Vessel B. type*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been constructed under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tried under steam at moorings for 2 1/2 hours.*

*The machinery of this vessel is now in my opinion eligible for record of L.M.C. II, 19. (in red) in the register book.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. II. 19. F.D.

The amount of Entry Fee ... £ : : When applied for, 20 NOV 1919 Special ... £ 116 10 : : Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ : : When received, 22/11/19

Committee's Minute TUE. NOV. 25. 1919 Assigned + L.M.C. II, 19 F.D. Engineer Surveyor to Lloyd's Register of Shipping. *W. L. Hall*



Certificate (if required) to be sent to

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