

# REPORT ON MACHINERY

No. 73688

Received at London Office

WED. OCT 20 1920

Date of writing Report 19 When handed in at Local Office 19 OCT 1920 Port of NEWCASTLE ON TYNE

No. in Survey held at South Shields Date, First Survey 24<sup>th</sup> Feb Last Survey 29<sup>th</sup> September 1920  
 Reg. Book. on the S.S. "Trevonian" (Number of Visits 35)

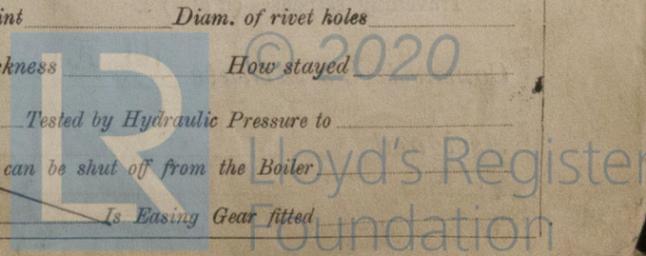
Master J. H. Kemp Built at South Shields By whom built J. Readhead & Sons Ltd. When built 1920  
 Engines made at South Shields By whom made J. Readhead & Sons Ltd. when made 1920  
 Boilers made at South Shields By whom made J. Readhead & Sons Ltd. when made 1920  
 Registered Horse Power \_\_\_\_\_ Owners Hain S.S. Co Ltd. Port belonging to H. Inc.  
 Nom. Horse Power as per Section 28 425 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 68 Dia. of Screw shaft as per rule 14.77 Material of screw shaft Steel 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'-0"  
 Dia. of Tunnel shaft as per rule 13.32 Dia. of Crank shaft journals as per rule 13.99 Dia. of Crank pin 14 1/2" Size of Crank webs 9 5/8" x 19" Dia. of thrust shaft under collars 14 3/4" Dia. of screw 17'-6" Pitch of Screw 17'-0" No. of Blades 4 State whether moveable Solid Total surface 96 sq ft  
 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 3 Sizes of Pumps Ballast pump 10 x 10 1/4" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps General service pump 7 1/2" x 5" x 6"  
 In Engine Room Four, 2 Port 3 1/2" dia & 2 Star 3 1/2" dia In Holds, &c. Two 3 1/2" in Nos. 1, 2, 3, & 4 holds and one 2 1/2" dia in funnel well.  
 No. of Bilge Injections one sizes 8" dia Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2" dia  
 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 Top platform

**BOILERS, &c.**—(Letter for record S(1)) Manufacturers of Steel John Spencer & Sons Ltd. Newburn

Total Heating Surface of Boilers 6876 sq ft Is Forced Draft fitted No No. and Description of Boilers 3 Single ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 2.7.20 No. of Certificate 9427  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63.3 sq ft No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 7.06 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'-10" Mean dia. of boilers 15'-7 1/4" 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 DR. Lap, long. seams T.R.D. butt  
 Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/8" 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 181.02 lbs Size of manhole in shell 16" x 12" plate 85.6%  
 Size of compensating ring 7" x 1 1/4" No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 4'-2 3/16"  
 Length of plain part top Thickness of plates crown Description of longitudinal joint Welded No. of strengthening rings ✓ bottom bottom 19/32"  
 Working pressure of furnace by the rules 188 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 x 9 1/4" Back 10 1/4 x 8 3/4" Top 10 3/8 x 9 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 192 lbs  
 Material of stays Iron Area at smallest part 2.43 sq in Area supported by each stay 89.6 sq in Working pressure by rules 213 lbs End plates in steam space: Material Steel Thickness 1 1/32" Pitch of stays 21" x 21 3/4" How are stays secured D.N.T.W. Working pressure by rules 191 lbs Material of stays Steel  
 Area at smallest part 8.48 sq in Area supported by each stay 445.8 sq in Working pressure by rules 197 lbs Material of Front plates at bottom Steel  
 Thickness 7/8" 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 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 9"  
 Pitch across wide water spaces 14" Working pressures by rules 181.2 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9" x 1 3/4" Length as per rule 2'-7 1/2" Distance apart 10 5/8" Number and pitch of stays in each 2, 9 1/2"  
 Working pressure by rules 205 lbs 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 \_\_\_\_\_



5110-5922M

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— *One propeller shaft, One propeller, Two main bearing bolts, Two bottom end & two top end bolts, One set of coupling bolts, One set of feed pump valves, One set of edge pump valves, Six main boiler tubes, Three main condenser tubes, Six junk pump bolts, Three patent tube stoppers, Three plain tube stoppers, Assorted iron bolts, nuts*

The foregoing is a correct description,

**ROB JOHN REEDHEAD & SONS, LIMITED,**

*W. P. Dewar*

*Eng<sup>r</sup> Manager*  
Manufacturer.

Dates of Survey while building { During progress of work in shops -- *1920, Jan. 7, Feb. 17, 24, Mar. 8, 26, Apr. 13, 23, 24, May 12, Jun. 7, 14, 30, Jul. 2, 12, 16, 19, 23, 26, 28, 29,*  
During erection on board vessel -- *Aug. 3, 4, 5, 6, 10, 12, 16, Sept. 7, 9, 13, 18, 22, 23, 29.*  
Total No. of visits -- *35.*

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *16/7/20* Slides *23/7/20* Covers *23/7/20* Pistons *23/7/20* Rods *26/7/20*  
Connecting rods *30/6/20* Crank shaft *23/7/20* Thrust shaft *30/6/20* Tunnel shafts *30/6/20* Screw shaft *30/6/20* Propeller *12/7/20*  
Stern tube *9/6/20* Steam pipes tested *12/8/20* Engine and boiler seatings *23/7/20* Engines holding down bolts *23/9/20 22/9/20*  
Completion of pumping arrangements *23/9/20* Boilers fixed *26/7/20* Engines tried under steam *23/9/20*  
Completion of fitting sea connections *14/6/20* Stern tube *14/6/20* Screw shaft and propeller *23/7/20*  
Main boiler safety valves adjusted *23/9/20* Thickness of adjusting washers *Port Boiler 5/16" 3/8" 3/8" 3/8" 3/8" 3/8"*  
Material of Crank shaft *Steel* Identification Mark on Do. *LLOYD'S No. 3196 D MR.* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYD'S No. 3196 MR. W.L.H.*  
Material of Tunnel shafts *Scrap Iron* Identification Marks on Do. *LLOYD'S No. 2190 D.D.W. 30.6.20 W.L.H.* Material of Screw shafts *Scrap Iron* Identification Marks on Do. *LLOYD'S No. 3196 MR. W.L.H.*  
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 *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 constructed under special survey, the material 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 in L.M.C. in red in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.20

*Reh*  
*12/10/20*

*A.R.R*

*W. L. Hall*  
Engineer Surveyor to Lloyd's Register of Shipping.



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The amount of Entry Fee ... £ *3* : - :  
Special ... £ *41* : *5* :  
Donkey Boiler Fee ... £ ~~2~~ : - :  
Travelling Expenses (if any) £ : :  
When applied for, *15 OCT 1920*  
When received, *22/10/20*

Committee's Minute *TUE. OCT. 26 1920*

Assigned *+ L.M.C. 9.20*