

## REPORT ON MACHINERY.

No. 71157

Received at London Office of the NEWCASTLE LONDON TYNE

Date of writing Report 10<sup>th</sup> July 1918 When handed in at Local Office 10 Port of Newcastle  
 No. in Survey held at Newcastle Date, First Survey 12<sup>th</sup> Dec 1917 Last Survey 22<sup>nd</sup> July 1918  
 Reg. Book. on the S.S. "Wal. Mansion" (Number of Vessels 73) Tons { Gross 3135  
 Net 1859  
 Master Built at Newcastle By whom built Armstrong Whitworth & Co When built 1918  
 Engines made at Newcastle By whom made R. & S. Mainie Eng Co when made 1918  
 Boilers made at do By whom made do when made 1918  
 Registered Horse Power Owners The Shipping Controller Port belonging to London  
 Nom. Horse Power as per Section 28 430 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 25" - 41" - 68" Length of Stroke 46" Revs. per minute 80 Dia. of Screw shaft as per rule 13.52" Material of 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 ✓ 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 12.41" Dia. of Crank shaft journals as per rule 13.03" Dia. of Crank pin 13 1/4" Size of Crank webs 27 1/2" x 8 3/4" Dia. of thrust shaft under  
 collars 13 1/4" Dia. of screws 16'-0" Pitch of Screw 16'-3" No. of Blades 4 State whether moveable No Total surface 80 f  
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 3 Sizes of Pumps 2-9 1/2" x 7 x 18", 1-10 1/2" x 12 1/2" x 21" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Four 3" In Holds, &c. Two hold 2-3", Two Main hold 2-3"  
 Main hold 2-3", After main hold 2-3", After hold 2-2 1/2", Hold well 1-3 1/2", Tunnel well 1-2 1/2"  
 No. of Bilge Injections 1 sizes 8" Connected to condenser or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3"  
 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 None  
 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 Both  
 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 Hold suction 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  
 Dates of examination of completion of fitting of Sea Connections 17.4.18 of Stern Tube 17.4.18 Screw shaft and Propeller 19.6.18  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from ✓

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel John Spence & Sons  
 Total Heating Surface of Boilers 6324 f 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 2-31-5-18 No. of Certificate 2-9100  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 51.7 f No. and Description of Safety Valves to  
 each boiler Two, Spring Area of each valve 8.29 sq" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers uptakes and bunkers or woodwork 1'-6" Mean dia. of boilers 13'-9 3/4" Length 11'-8 5/16" Material of shell plates Steel  
 Thickness 1 1/8" Range of tensile strength 28 3/4 - 33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap  
 long. seams ABS. Y. Rivet Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 18"  
 Per centages of strength of longitudinal joint plates 86.1 Working pressure of shell by rules 187 lbs Size of manholes in shell 16" x 12"  
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 - Leighton's Material Steel Outside diameter 43"  
 Length of plain part top 17" Thickness of plates bottom 32" Description of longitudinal joint welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 190 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 3/4" Top 1 1/16" Bottom 1 1/16"  
 Pitch of stays to ditto: Sides 9 3/8" x 9" Back 10 1/2" x 9" Top 9 3/8" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193 lbs  
 Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 84.3 sq" Working pressure by rules 216 lbs End plates in steam space:  
 Material Steel Thickness 1 1/32" Pitch of stays 23 3/4" x 19 1/2" How are stays secured Kn. & W. Working pressure by rules 181 lbs Material of stays Steel  
 Diameter at smallest part 8.29" Area supported by each stay 46.3 sq" Working pressure by rules 186 lbs Material of Front plates at bottom Steel  
 Thickness 31/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 180 lbs  
 Diameter of tubes 2 3/4" Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 3/32" Back 3/4" Mean pitch of stays 10"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 184 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10 1/2" x 12" Length as per rule 35 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3-9"  
 Working pressure by rules 200 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked  
 separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet  
 holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓



71157  
R 4  
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 & two main bearing bolts & nuts, a set of coupling bolts, a set of feed & helge pump valves, a quantity of assorted bolts nuts & washers & a propeller*

*SS WARDIDA*

The foregoing is a correct description,

FOR THE NORTH-EASTERN MARINE ENGINEERING CO. LD.

*S. J. Harrison* Manufacturer.

Dates of Survey while building  
During progress of work in shops -- *1917 Dec. 12 Jan. 3, 7, 10, 14, 15, 23, 24, 25, 29, 30 Feb. 4, 6, 7, 8, 11, 13, 14, 15, 20, 21, 26 Mar. 4, 5, 6, 7, 8, 12, 13*  
During erection on board vessel -- *14, 15, 18, 19, 20, 22, 25, 26, 27, 28, 29, 30, 31 Apr. 3, 5, 8, 9, 11, 16, 17, 18, 19, 23, 25, 29 May 7, 13, 15, 16, 17, 20, 22, 23, 24*  
Total No. of visits *73*

Is the approved plan of main boiler forwarded herewith *yes*  
" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders *29. 4. 18* Slides *23. 5. 18* Covers *29. 1. 18* Pistons *15. 2. 18* Rods *7. 5. 18*  
Connecting rods *7. 5. 18* Crank shaft *26. 3. 18* Thrust shaft *11. 2. 18* Tunnel shafts *20. 3. 18* Screw shaft *8. 4. 18* Propeller *25. 4. 18*  
Stern tube *26. 3. 18* Steam pipes tested *21. 6. 18* Engine and boiler seatings *21. 6. 18* Engines holding down bolts *3. 7. 18*  
Completion of pumping arrangements *5. 7. 18* Boilers fixed *3. 7. 18* Engines tried under steam *5. 7. 18*  
Main boiler safety valves adjusted *5. 7. 18* Thickness of adjusting washers PB.  $P \frac{3}{8} S \frac{13}{32}$  CB.  $P \frac{13}{32} S \frac{3}{8}$  SB  $P \frac{1}{4} S \frac{11}{32}$   
Material of Crank shaft *Steel* Identification Mark on Do. *Y X 3-18* Material of Thrust shaft *Steel* Identification Mark on Do. *Y X 2-18*  
Material of Tunnel shafts *Steel* Identification Marks on Do. *Y X 3-18* Material of Screw shafts *Steel* Identification Marks on Do. *Y X 4-18*  
Material of Steam Pipes *Iron & Copper* Test pressure *540 lbs & 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 *Standard C.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines & boilers of this vessel have been constructed under special survey & the materials & workmanship are found to be good. The engines have been tried under steam & the boiler safety valves adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of +Lmc 7-18. A report on the electric installation will be forwarded when received from the Electrician.*

It is submitted that this vessel is eligible for THE RECORD + Lmc 7.18  
F. D.

*J. F. 18*  
*7-8-18*  
*J. F.*

The amount of Entry Fee ... £  
Special ... £ *69.13*  
Donkey Boiler Fee ... £  
Travelling Expenses (if any) £  
When applied for, *16 JUL 1918*  
When received, *6-9-18*

*Thomas Field*  
Engineer-Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *WED. 7-AUG. 18*  
Assigned *+Lmc 7.18*