

# REPORT ON MACHINERY

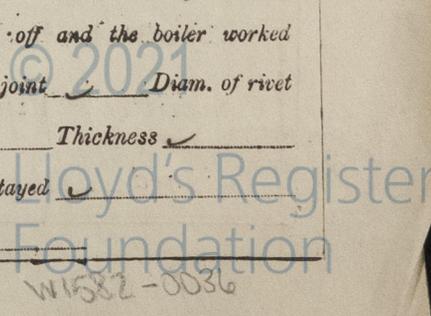
No. 70694  
21 FEB. 1913

Received at London Office

Date of writing Report 28<sup>th</sup> Dec. 1912 When handed in at Local Office 19 Port of Newcastle-on-Tyne  
 No. in Survey held at Newcastle Date, First Survey 5<sup>th</sup> Feb. 1918 Last Survey 5<sup>th</sup> Feb. 1918  
 Reg. Book. on the H.M.S. "Chrysanthemum" (Number of Visits         ) Tons          Gross          Net           
 Master          Built at Newcastle By whom built Mr W. G. Armstrong Whitworth & Co When built           
 Engines made at Newcastle By whom made Wallsend Slipway & Engineering Co when made           
 Boilers made at do By whom made do when made           
 Registered Horse Power          Owners The Admiralty Port belonging to           
 Nom. Horse Power as per Section 28 337 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 20 1/2" - 33" - 37" - 37" Length of Stroke 30" Revs. per minute 168 Dia. of Screw shaft 10 1/2" 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          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           
 liners are fitted, is the shaft lapped or protected between the liners          Length of stern bush 3'-6"  
 Dia. of Tunnel shaft 9.47" Dia. of Crank shaft journals 9.94" Dia. of Crank pin 10 1/2" Size of Crank webs 17 1/4" x 6 1/2" Dia. of thrust shaft under           
 collars 10 3/4" Dia. of screw 9'-6" Pitch of Screw 12'-3" No. of Blades 4 State whether moveable no Total surface 34 sq  
 No. of Feed pumps 2 Diameter of ditto 10 1/2" x 8" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 10" x 8 1/2" Stroke 15" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps Bilge 4 1/2" x 5" x 12" Feed 8" x 5 1/2" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps           
 In Engine Room 2-2 1/2" in Boiler Rooms 4-2 1/2" in Auxiliary & R. 1-2 1/2" In Holds, &c. Warrant Officer's stoke 1-2 1/2", running gear           
 stoke 1-2 1/2", Provision Room 1-2 1/2", Officer's stoke 2-2 1/2", Lunnel 1-2 1/2", shaft space 1-2 1/2", steering gear          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 2 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 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 Bilge pipes How are they protected Iron 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 9-11-17 of Stern Tube 9-11-17 Screw shaft and Propeller 9-11-17  
 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 6,072 sq Is Forced Draft fitted yes No. and Description of Boilers Two, single-ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 6-9-17 No. of Certificate 8995  
 Can each boiler be worked separately yes Area of fire grate in each boiler 78 sq No. and Description of Safety Valves to           
 each boiler Two, spring Area of each valve 14.19 sq Pressure to which they are adjusted 185 lbs Are they fitted with casing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 7 1/2" Mean dia. of boilers 16'-0" Length 11'-6" Material of shell plates Steel  
 Thickness 1 3/16" Range of tensile strength 31-35 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 8. Lap  
 long. seams BS. P. Riv. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 3/8"  
 Per centages of strength of longitudinal joint rivets 87.84 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"  
 plate 85.71  
 Size of compensating ring McNeil's No. and Description of Furnaces in each boiler 4-Moisson's Material Steel Outside diameter 43 1/4"  
 Length of plain part          Thickness of plates          Description of longitudinal joint Welded No. of strengthening rings           
 Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32" Back 5/8" Top 19/32" Bottom 15/16"  
 Pitch of stays to ditto: Sides 8 3/4" x 7 5/8" Back 9 1/8" x 8 1/8" Top 8 3/4" x 7 5/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 lbs  
 Material of stays Steel Diameter at smallest part 1.73" Area supported by each stay 74.1 sq Working pressure by rules 187 lbs End plates in steam space:           
 Material Steel Thickness 1 1/8" Pitch of stays 19 1/2" x 15 3/4" How are stays secured 9 n. Working pressure by rules 180 lbs Material of stays Steel  
 Diameter at smallest part 5.41" Area supported by each stay 307 sq Working pressure by rules 183 lbs Material of Front plates at bottom Steel  
 Thickness 3/4" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 14" Working pressure of plate by rules 187 lbs  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 5/8" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 1/4"  
 Pitch across wide water spaces 13 1/2" Working pressures by rules 236 lbs Girders to Chamber tops: Material Steel Depth and           
 thickness of girder at centre 9" x 1 3/8" Length as per rule 31" Distance apart 8 3/4" Number and pitch of stays in each 3-7 5/8"  
 Working pressure by rules 189 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 casing gear         



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 & bilge pump valves, a quantity of assorted bolts nuts & iron, two piston rods, one eccentric rod, one H.P. piston valve, one slide rod, two pairs main bearings, two pairs top-end & bottom-end bushes, a set of thrust collars, a set of lignum vitae for parts so fitted, a bronze propeller, a set of springs for each piston, a set of safety valve springs, 3 condensers tubes, 2 boiler tubes etc.

The foregoing is a correct description,

FOR THE WALLSEND-SLIPWAY & ENGINEERING CO. LIMITED.

*H. Lewis*

Manufacturer.

DIRECTOR

Dates of Survey while building: During progress of work in shops - 1917 Apr. 5, 11, 16, 26, 27, 30, May 2, 4, 7, 8, 10, 14, 15, 16, 17, 21, 24, 29, 30, Jun. 4, 14, 17, 20, 21, Jul. 23, 16, 19, 24, Aug. 1, 2, 10, 15, 22, 24, 29, Sep. 6, 11, 13, 17, 24, Oct. 1, 8, 29, Nov. 9, 12, 19, 21, 22, 25, Dec. 6, 13, 21. During erection on board vessel - 1918 Feb. 2, 5. Total No. of visits 55

Is the approved plan of main boiler forwarded herewith, no forwarded with previous report "donkey"

Dates of Examination of principal parts - Cylinders 12.9.17 Slides 1.8.17 Covers 16.7.17 Pistons 2.8.17 Rods 24.7.17 Connecting rods 24.7.17 Crank shaft 6.9.17 Thrust shaft 22.8.17 Tunnel shafts 7.11.17 Screw shaft 17.9.17 Propeller 29.8.17 Stern tube 1.8.17 Steam pipes tested 28.11.17 Engine and boiler seatings 14.11.17 Engines holding down bolts 22.11.17 Completion of pumping arrangements 21.12.17 Boilers fixed 22.11.17 Engines tried under steam 21.12.17 Main boiler safety valves adjusted 21.12.17 Thickness of adjusting washers FB. F 3/8" A 5/16" AB. F 3/8" A 1/2" Material of Crank shaft Steel Identification Mark on Do. J. 9.17 Material of Thrust shaft Steel Identification Mark on Do. J. 8.17 Material of Tunnel shafts Steel Identification Marks on Do. J. 11.17 Material of Screw shafts Steel Identification Marks on Do. J. 9.17 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 H. M. S. "Anchusa"

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 and 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 2.18. 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 2.18. F.D.

*J.W.D.* 22/2/18. *J.P.C.*

The amount of Entry Fee ... £ 119.11.11 When applied for, Jan. 18/18 Special ... £ 10.3.19 When received, Feb. 1918 Donkey Boiler Fee ... £ Travelling Expenses (if any) £ Thomas Field Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute TUE 26 FEB. 1918 Assigned + LMC 2.18

Newcastle on Tyne

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



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