

REPORT ON MACHINERY.

No. 38402

Received at London Office TUE. 31 DEC. 1918

Date of writing Report 19 When handed in at Local Office 19 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 8th May 1918 Last Survey 14th December, 1918
 Reg. Book. on the S.S. WAR COWSLIP (Number of Visits 62)

Master Built at Glasgow By whom built Harland & Wolff (20529) When built 1918
 Engines made at Glasgow By whom made Harland & Wolff Ltd (20548) when made 1918
 Boilers made at Dumbarton By whom made W Denny & Bros (50303) when made 1918
 Registered Horse Power Owners Port belonging to
 Nom. Horse Power as per Section 28 517 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 15 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 5-0 1/2
 Dia. of Tunnel shaft 13 1/2 Dia. of Crank shaft journals 14 1/2 Dia. of Crank pin 14 1/2 Size of Crank webs 28 x 9 Dia. of thrust shaft under collars 14 3/4 Dia. of screw 17-6 Pitch of Screw 16-6 No. of Blades 4 State whether moveable No Total surface 102 1/4
 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 3 Sizes of Pumps 1 feed 9 1/2 x 7 x 18, 1 general 9 1/2 x 7 x 18, 1 ballast 10 1/2 x 14 x 24 (Lead out) No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 of 3 1/2", 3 stokehold 2 of 3 1/2" In Holds, &c. No 1, 2 of 3 1/2" No 2 2 of 3 1/2" cross
 Bunkers 2 of 3 1/2", No 3 2 of 3 1/2", No 4 2 of 3 1/2" Tunnel 1 of 3 1/2"
 No. of Bilge Injections 1 sizes 8" 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 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 Below
 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 7 d Suctions How are they protected Wood Casings
 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 20-11-18 of Stern Tube 20-11-18 Screw shaft and Propeller 20-11-18
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No marked from entry by trunkway

BOILERS, &c.—(Letter for record S) Manufacturers of Steel See Separate Report
 Total Heating Surface of Boilers 7668 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single enders
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 14-1-18, 8-11-18 No. of Certificate 14523, 14522
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63.34 No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 9.620 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1-9 Mean dia. of boilers 15-6 Length 11-6 Material of shell plates
 Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
 long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
 Per centages of strength of longitudinal joint rivets: Working pressure of shell by rules Size of manhole in shell
 Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter
 Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:
 Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 Working pressure by rules Superheater or Steam chest; how connected to boiler 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. June Description

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 2 top end, 2 bottom end, 2 main bearing and 6 coupling bolts and nuts, set of feed and bilge Pump Valves assorted Iron bolts and nuts and other spares as required by Specification

The foregoing is a correct description,
F. C. Black Manufacturer.

Dates of Survey while building	During progress of work in shops --	1918. May 8. 16. 21. 23. 28. 30. June 3. 5. 12. 19. 24. 27. July 1. 3. 5. 8. 10. 11. 24. 29. 30. 31. Aug. 2. 19. 22. 26. 27. 28. Sep. 9. 11.
	During erection on board vessel ---	17. 19. 24. 26. Oct. 2. 4. 9. 14. 15. 17. 29. Nov. 4. 19. 20. 25. 29. Dec. 3. 5. 9. 10. 13. 14. 16.
	Total No. of visits	63.2

Is the approved plan of main boiler forwarded herewith _____

_____ " " " donkey " " "

Dates of Examination of principal parts—Cylinders 4.10.18 Slides 30.7.18 Covers 3.6.18 Pistons 3.6.18 Rods 3.6.18

Connecting rods 4.10.18 Crank shaft 9.10.18 Thrust shaft 30.7.18 Tunnel shafts 30.7.18 Screw shaft 4.11.18 Propeller 4.11.18

Stern tube 4.11.18 Steam pipes tested 15.10.17 Engine and boiler seatings 20.11.18 Engines holding down bolts 10.12.18

Completion of pumping arrangements 10.12.18 Boilers fixed 13.12.18 Engines tried under steam 10.12.18 14.12.18

Main boiler safety valves adjusted 10.12.18 Thickness of adjusting washers Sta B₁ S₅ P₅ cent B₁ S₅ P₅ PCB₁ S₅ P₅ 1154

Material of Crank shaft Steel Identification Mark on Do. 548JE Material of Thrust shaft Steel Identification Mark on Do. 2088JP
 2086JP, 2474JP, 2083JP, 2123JP, 2119JP, 2085JP

Material of Tunnel shafts Steel Identification Marks on Do. _____ Material of Screw shafts Steel Identification Marks on Do. 1523JP

Material of Steam Pipes _____ Iron Test pressure 540 lb

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been constructed under special survey in accordance with the Rules & approved plans and has been seen working under steam satisfactorily, materials and workmanship are good.

The machinery is eligible in my opinion to be Class A + LMC 12.18.

It is submitted that this vessel is eligible for **THE RECORD. + LMC 12.18. F.D.**

J. D. [Signature]
 21/12/18

The amount of Entry Fee	£ 117 12	When applied for,	16/12/18
Special	£	When received,	8.3.19
Donkey Boiler Fee	£		
Travelling Expenses (if any) £			

J. A. [Signature]
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW. 30 DEC 1918**
 Assigned + LMC 12.18



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