

Rpt. 4.

# REPORT ON MACHINERY.

No. 37710.

Received at London Office WED. 24 APR. 1918

Date of writing Report 10 When handed in at Local Office 10 Port of Glasgow at Old 14 May 1918  
 No. in Survey held at Glasgow Date, First Survey 13th Aug. 1917 Last Survey 4th April 1918  
 Reg. Book 132 on the steel S.S. "War Stag" (Number of Visits 24) Gross 52 49  
 Master Built at Sunderland By whom built Wm Dorrard & Sons (525) When built 1918  
 Engines made at Glasgow By whom made D. Rowan & Co (687) when made 1918.  
 Boilers made at Sunderland By whom made William Dorrard & Son L<sup>d</sup> when made 1918.  
 Registered Horse Power Owners Shipping Controller Port belonging to London  
 Nom. Horse Power as per Section 28 617. 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 45 Revs. per minute Dia. of Screw shaft as per rule 14.7 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 If the liner is in more than one length are the joints burned length If the liner does not fit tightly at the joints  
 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 as fitted 4 1/2 Dia. of Crank shaft journals as per rule 3.9 as fitted 4 1/2 Dia. of Crank pin 4 1/2 Size of Crank webs 9 thick Dia. of thrust shaft under  
 collars 1 3/4" Dia. of screw 7'-6" Pitch of Screw 16'-6" No. of Blades 4 State whether moveable Yes Total surface 102.5 sq ft  
 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 10" x 14" x 24" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room In Bilge Suction (1) 3 1/2" - Bilge Suction (4) 3 1/2" In Holds, &c. Fore Peak (1) 3 1/2" N<sup>o</sup> 1 hold (2) 3 1/2" N<sup>o</sup> 2 hold (2) 3 1/2"  
 N<sup>o</sup> 3 hold (2) 3 1/2" - N<sup>o</sup> 4 hold (1) 3 1/2" - Tunnel Well (1) 3"  
 No. of Bilge Injections 4 sizes 5 Connected to condenser, or to circulating pump Circulating 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 Yes  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 Are they sized 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 Suctions How are they protected Under casing and strong  
 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, ✓ of Stern Tube 22-4-18 Screw shaft and Propeller 22-4-18  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from deck by pump from deck  
 Boilers built under B.C. Survey.

**BOILERS, &c.**—(Letter for record) ~~Manufacturers of Steel~~ Boilers built under B.C. Survey.  
 Total Heating Surface of Boilers 7668 sq ft Is Forced Draft fitted No. and Description of Boilers  
 Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate  
 Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to  
 each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear  
 Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Len 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 plate or width of butt straps  
 Per centages of strength of longitudinal joint plate 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 bottom  
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back  
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads  
 Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules  
 Material Thickness Pitch of stays How are stays secured Working pressure by rules  
 Diameter at smallest part Area supported by each stay Working pressure by rules Material  
 Thickness Material of Lower back plate Thickness Greatest pitch of stays  
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front  
 Pitch across wide water spaces Working pressures by rules Girders to  
 thickness of girder at centre Length as per rule Distance apart No  
 Working pressure by rules Superheater or Steam chest; how connected to boiler  
 separately Diameter Length Thickness of shell plates Material  
 holes Pitch of rivets Working pressure of shell by rules Diameter of flue  
 stiffened with rings Distance between rings Working pressure by rules End plates  
 Area of end plates Area of safety valves to superheater Are they

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

005132-005140-0085



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No.	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 casing 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:— Two top end bolts and nuts. Two bottom end bolts and nuts. Two main bearing bolts. One set of coupling bolts. One set of Feed Valve pump valves. 1 set of Piston springs. A quantity of assorted bolts that is. Iron of various sizes. One Propeller. The foregoing is a correct description.

David Cowan & Co. Ltd. Manufacturer.

Dates of Survey while building	During progress of work in shops	1914 Aug. 15, 16, 19, 20, Oct. 1, 5, 7, 9, 12, 23, 29, Dec. 13, 1918 Jan. 4, 15 Feb. 5, Mar. 4, 12, 13, 14, 22, Apr. 3, 4
	During erection on board vessel	1918 Apr. 22, 29, May 8, 12, 14, 16
	Total No. of visits	24 30

Is the approved plan of main boiler forwarded herewith **No**  
" " " donkey " " "

Dates of Examination of principal parts—Cylinders	3/2/17 29/4/17	Slides	29/4/17	Covers	29/4/17	Pistons	29/4/17	Rods	29/4/17
Connecting rods	29/4/17	Crank shaft	9/4/17	Thrust shaft	14/3/18	Tunnel shafts	2, 3/18	Screw shaft	13, 3, 18
Stern tube	13/3/18	Steam pipes tested	14, 5, 18	Engine and boiler seatings	29, 5, 18	Engines holding down bolts	29, 4, 18		
Exhaust and pumping arrangements	16, 5, 18	Boilers fixed	13, 5, 18	Engines tried under steam	16, 5, 18				

Main boiler safety valves adjusted	16-5-18	Thickness of adjusting washers	3/16" Centre Port 3/8" Port 7/16" Port 1/2" Port 3/4"
Material of Crank shaft	Steel	Identification Mark on Do.	2/17
Material of Thrust shaft	Steel	Identification Marks on Do.	2, 3/18
Material of Screw shafts	Iron	Identification Marks on Do.	13, 3, 18
Material of Steam Pipes	Wrought Iron	Test pressure	540 lbs. sq"

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The engines have been built under special survey the materials and workmanship are of good description. They have now been forwarded to Messrs. Douglas & Co. of Sunderland where they are to be fitted on board a vessel. The machinery of this vessel has now been fitted and fixed on board in a satisfactory manner. The Hull, forecastle, and stern have been built to the B. C. Survey and a certificate will also be issued to that Society, a copy of which is sent in accordance with instructions contained in my letter of 16th March 1918.

As this vessel is not intended for classification, it is submitted, further action is unnecessary. JWD 28/5/18

The amount of Entry Fee..	When applied for, 28.5.18
Special .....	When received, 27.5.18
Donkey Boiler Fee .....	55.6.18
Travelling Expenses (if any) £	29.3.18
Committee's Minute	1918
Assigned	

A. McLeod, John A. L. ...  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Certificate (if required) (The Surveyors are requested not to write on or alter the pages for Committee's Minute.)