

Rpt. 4.

REPORT ON MACHINERY

No. 38173

Received at London Office WED. 25 SEP. 1918

Date of writing Report 19 When handed in at Local Office 19 Port of Glasgow 22nd Nov. 1918
 No. in Survey held at Glasgow Date, First Survey 27/6/17 Last Survey 17th Sept 1918
 eg. Book. on the Standard Vessel "WAR ASPEN" now Sutherland (Number of Visits 95-109 Gross 5277
 Tons Net 3191
 Master Young Built at Sunderland By whom built W. Doornik Sons (528) When built 1918
 Engines made at Glasgow By whom made Harland & Wolff (No 530) when made 1918
 Boilers made at Sunderland By whom made W. Doornik Sons (528) when made 1918
 Registered Horse Power Owners Sutherland & Co Port belonging to Newcastle
 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 Dia. of Screw shaft as per rule 14.7 Material of screw shaft as fitted 15.2 Material of screw shaft
 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
 the propeller boss Yes If the liner is in more than one length are the joints burned No 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 No Length of stern bush 5-0 1/2
 Dia. of Tunnel shaft as per rule 13.33 Dia. of Crank shaft journals as per rule 14 Dia. of Crank pin 14.2 Size of Crank webs 28x9 Dia. of thrust shaft under
 rollers 14.4 Dia. of screw 17-6 Pitch of Screw 16-6 No. of Blades 4 State whether moveable No Total surface 102.9
 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 18.5-14.5-14.5 No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room Four @ 3 1/2 In Holds, &c. No. 1. 2 @ 3 1/2 No. 2. 2 @ 3 1/2 No. 3. 2 @ 3 1/2
 No. of Bilge Injections 1 sizes 13 Connected to condenser or to circulating pump Yes 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 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 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 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
 Dates of examination of completion of fitting of Sea Connections 19. 9. 18 of Stern Tube 19. 9. 18 Screw shaft and Propeller 17. 10. 18
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from amid by trunk

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel James Smith
 Total Heating Surface of Boilers 7668 Is Forced Draft fitted Yes No. and Description of Boilers Three Single 9 and
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 23/9, 1/10, 3/10/18 No. of Certificate 3502, 3504, 3505
 Can each boiler be worked separately Yes Area of fire grate in each boiler 639 No. and Description of Safety Valves to
 each boiler 2 Spring valves Area of each valve 9.6 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 18 inches Mean dia. of boilers 18-6 Length 11-6 Material of shell plates S
 Thickness 1/4 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap & L
 Long. seams L & L W. Diameter of rivet holes in long. seams 1 5/8 Pitch of rivets 4 1/2 Lap of plates or width of butt straps 1 1/2
 Percentages of strength of longitudinal joint rivets 55-6 Working pressure of shell by rules 182 Size of manhole in shell 16 x 12
 Size of compensating ring None No. and Description of Furnaces in each boiler 3 Diagonal Material S Outside diameter 4-2 3/4
 Length of plain part top - bottom - Thickness of plates crown 3/19 bottom 3/32 Description of longitudinal joint Welded No. of strengthening rings -
 Working pressure of furnace by the rules 187 Combustion chamber plates: Material S Thickness: Sides 23/32 Back 1/16 Top 23/32 Bottom 23/32
 Pitch of stays to ditto: Sides 18 5/8 x 9 1/4 Back 8 3/4 x 10 1/4 Top 10 5/8 x 9 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180
 Material of stays S Diameter at smallest part 2.36 Area supported by each stay 98.2 Working pressure by rules 216 End plates in steam space:
 Material S Thickness 1 1/2 Pitch of stays 2 1/4 x 20 1/2 How are stays secured Nuts Working pressure by rules 190 Material of stays S
 Diameter at smallest part 8.29 Area supported by each stay 432 Working pressure by rules 186 Material of Front plates at bottom S
 Thickness 3/32 Material of Lower back plate S Thickness 27/32 Greatest pitch of stays 13 5/8 x 8 3/4 Working pressure of plate by rules 183
 Diameter of tubes 3/4 Pitch of tubes 4 + 3/2 Material of tube plates S Thickness: Front 31/32 Back 3/4 Mean pitch of stays 9 7/8
 Pitch across wide water spaces 13 5/8 Working pressures by rules 181 Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 10 x 1 3/4 Length as per rule 2-11 1/2 Distance apart 10 5/8 Number and pitch of stays in each 3. 9 1/2
 Working pressure by rules 187 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

1100-515M



VERTICAL DONKEY BOILER—

Manufacturer *Wolfe* Name *Wolfe*

No.	Description		When made	Where fixed
Made at	By whom made			
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
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
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, two bottom end connecting rod bolts + nuts, two main bearing bolts, one set coupling bolts, one set fuel + lift pump valves, assorted bolts and nuts, 2000 of various sizes, one propeller.*

WILLIAM DOXFORD & SONS, Limited.

The foregoing is a correct description,

A.R. Doxford
Director

H. B. Rebeck
Manufacturer.

Dates of Survey while building
 During progress of work in shops -- 1917 June 27, July 2, 7, 10, 12, 26, Aug. 1, 8, 9, 29, 30, 31, Sept. 8, 12, 18, 21, 27, Oct. 1, 11, 17, 26, 31, Nov. 3, 12, 13, 14, 20, 23, 27, Dec. 4
 During erection on board vessel -- 5, 8, 11, 13, 17, 18, 21, 24, 26, 29, 1918 Jan 5, 10, 16, 17, 22, 29, Feb 5, 8, 13, 20, 25, 26, Mar 7, 11, 13, 15, 19, 21, 22, 26, 28, Apr 5, 6, 11, 15, 17, 23, 30, May 8, 16
 Total No. of visits = 95. *109*

Dates of Examination of principal parts—Cylinders 3.6.18 Slides 3.6.18 Covers 3.6.18 Pistons 3.6.18 Rods 3.6.18
 Connecting rods 3.5.18 Crank shaft 12.6.18 Thrust shaft 3.7.18 Tunnel shafts 3.7.18 Screw shaft 3.7.18 Propeller 1.10.18
 Stern tube 17.9.18 Steam pipes tested 17.10, 28.10.18 Engine and boiler seatings 23.10.18 Engines holding down bolts 23.10.18
 Completion of pumping arrangements 4.11.18 Boilers fixed 4.11.18 Engines tried under steam 4.11.18
 Main boiler safety valves adjusted 4.11.18 Thickness of adjusting washers *5.13.18 5.13.18 5.13.18 5.13.18 5.13.18 5.13.18*
 Material of Crank shaft *Steel* Identification Mark on Do. 5301E Material of Thrust shaft *Steel* Identification Mark on Do. 3222JP810
 Material of Tunnel shafts *Steel* Identification Marks on Do. 1756JP1246, 2094RFM758, 1725JP3256, 3534RFM741, 1783JP1242, 3903JP2106
 Material of Steam Pipes *Iron* Identification Marks on Do. 1972JP1372
 Test pressure 540 lbs sq. in.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Engines have been built under Special Survey, the materials and workmanship are good. The Engines, with the exception of the engine stop valves, stem tube and propeller, have been forwarded to Sunderland.*

The whole of the machinery of this vessel has been built under special survey. The materials + workmanship are sound and good and the machinery has been fitted on board in a satisfactory manner and under the vessel ship in my opinion to have merit of 1st L.M.C. 11.18

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 11.18. F.D.
J.W.D. 27/11/18
A.P.R.

The amount of Entry Fee...
 Special...
 Donkey Boiler Fee...
 Travelling Expenses (if any) £...
 Committee's Minute GLASGOW 24 SEP 1918
 Assigned Transmit to London.

James Easthope & Co. Ltd.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 TUE 3 DEC 1918
 + L.M.C. 11.18
 F.D.

SUNDERLAND

