

Rpt. 4a.

REPORT ON MACHINERY.

No. 40971
WED. MAR. 23 1921

Received at London Office

Date of writing Report 21.3.21 When handed in at Local Office 21.3.21 Port of Glasgow
No. in Survey held at Dalmuir Date, First Survey 8th May 1919 Last Survey March 10th 1921
Reg. Book. 955 Cameronia (Number of Visits 81) Gross Tons Net
Master Built at Dalmuir By whom built Wm Beardmore Ltd (584) When built 1921
Engines made at Dalmuir By whom made Wm Beardmore Ltd (584) when made 1921
Boilers made at Dalmuir By whom made Wm Beardmore Ltd (584) when made 1921
Registered Horse Power Owners Port belonging to
Shaft Horse Power at Full Power 13500 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engines Brown Anti Turbine D.R. gear No. of Turbines (6) 2HP 21P 24P.
Diameter of Rotor Shaft Journals, H.P. 3 1/2" I.P. 4 1/4" L.P. 5 1/2" Diameter of Pinion Shaft H.P. 7" I.P. 5 1/2" L.P. 7"
Diameter of Journals H.P. 1 1/2" I.P. 2 1/4" L.P. 3 1/4" Distance between Centres of Bearings H.P. 11P 38 1/4" I.P. 38 1/4" L.P. 48 1/4" Diameter of Pitch Circle H.P. 11P 8 1/4" I.P. 13 7/16" L.P. 27 1/2" 26 1/4"
Diameter of Wheel Shaft 20" Distance between Centres of Bearings 7' 5 1/2" Diameter of Pitch Circle of Wheel 23 1/4" 23 1/4"
Width of Face 35 Diameter of Thrust Shaft under Collars 19 ✓ Diameter of Tunnel Shaft as per spec. 18 ✓
No. of Screw Shafts 2 with turn Diameter of same as fitted 19 1/2 ✓ Diameter of Propeller 20' 0" Pitch of Propeller 23' 6"
No. of Blades 4 State whether Moveable yes Total Surface 125 1/2 ft² each Diameter of Rotor Drum, H.P. ✓ L.P. ✓ Astern ✓
Thickness at Bottom of Groove, H.P. ✓ L.P. ✓ Astern ✓ Revs. per Minute at Full Power, Turbine H.P. 11P 3300 Propeller 82

PARTICULARS OF BLADING.

	H.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION									
2ND "									
3RD "									
4TH "									
5TH "									
6TH "									
7TH "									
8TH "									

No. and size of Feed pumps 1 main turbo pump 4" x 2 auxiliary feed pumps 1 1/2" x 1 1/2" x 26" ✓
No. and size of Bilge pumps 2 on each engine 7 1/2" x 15" and 1 independent ✓
No. and size of Bilge suction in Engine Room (6) 3 1/2" x (3) 2 1/2" in stokeholds (1) 6" x (2) 3 1/2" ✓
In Holds, &c. Two in each fore 5 1/2" fore peak (6) 3 1/2" ✓
No. of Bilge Injections 2 sizes 1 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine Room & size yes ✓
Are all the bilge suction pipes fitted with roses yes ✓ Are the roses in Engine room 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 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 fore bilge & ballast suction lines 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 ✓
Is the Screw Shaft Tunnel watertight yes ✓ Is it fitted with a watertight door yes ✓ worked from at Door or from C deck or bridge

BOILERS, &c.—(Letter for record (S) / Manufacturers of Steel W. Beardmore & Co. Ltd 3BB & 3SB
Total Heating Surface of Boilers 29163 1/2 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 3 D.E. multitubular
Working Pressure 220 lbs Tested by hydraulic pressure to 385 1/2 Date of test 10/3/20 14/20/15/20 No. of Certificate 1502 1524 15266
Can each boiler be worked separately yes Area of fire grate in each boiler 165 1/2 sq. ft. 83 50 (Total 744) No. and Description of Safety Valves to each boiler 1 triple spring loaded Area of each valve 12 1/2 sq. ft. Pressure to which they are adjusted 225 Are they fitted with easing gear yes ✓
Smallest distance between boilers or uptakes and bunkers or woodwork 20 1/2" Mean dia. of boilers 17' 6" Length 22' 6" Material of shell plates steel
Thickness 1 1/2" Range of tensile strength 30 to 34 tons Are the shell plates welded or flanged 220 Descrip. of riveting: cir. seams lap butt ✓
long. seams butt ✓ Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23 1/2"
rivets 92 0
Per centages of strength of longitudinal joint plates 84 2 Working pressure of shell by rules 230 Size of manhole in shell 16" x 12"
Size of compensating ring 40 x 30 1/2 x 1 3/4 No. and Description of Furnaces in each Boiler 8 Monousons Material steel Outside diameter 48 1/2"
Length of plain part top ✓ bottom ✓ Thickness of plates crown 4 ✓ bottom 16 ✓ Description of longitudinal joint welded No. of strengthening rings ✓
Working pressure of furnace by the rules 231 Combustion chamber plates: Material steel Thickness: Sides 23 1/32" Back 23 1/32" Top 23 1/32" Bottom 13 1/16"
Pitch of stays to ditto: Sides 9 3/8 x 9 3/8 Back 10 x 7 3/8 Top 9 3/8 x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 237
Material of stays steel Diameter at smallest part 2 03 1/2" Area supported by each stay 89 1/2" Working pressure by rules 230 End plates in steam space
Material steel Thickness 1 1/4" Pitch of stays 17 1/8 x 18 How are stays secured 2 nuts Working pressure by rules 221 Material of stays steel
Diameter at smallest part 7 06 1/2" Area supported by each stay 310 1/2" Working pressure by rules 231 Material of Front plates at bottom steel
Thickness 1" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
Diameter of tubes 2 3/4" Pitch of tubes 4 x 4" Material of tube plates steel Thickness: Front 1" Back 1 1/16" Mean pitch of stays 10"
Pitch across wide water spaces 13 3/4" with 1" double Working pressures by rules 292 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9 x 3 1/2 double Length as per rule 30 1/2 Distance apart 8 Number and pitch of stays in each (2) 9 3/8 x 21
Working pressure by rules 260 Steam dome: description of joint to shell none % of strength of joint ✓ Diameter ✓
Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diameter of rivet holes ✓ Pitch of rivets ✓
Working pressure of shell by rules ✓ Crown plates: Thickness ✓ How stayed ✓

00019-002313-0090

SUPERHEATER. Type "Schmidt" Date of Approval of Plan See Manchester Report Tested by Hydraulic Pressure to 660
Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes
Diameter of Safety Valve 2 1/2" Pressure to which each is adjusted 230 lbs Is Easing Gear fitted yes

IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— See list appended

The foregoing is a correct description, FOR WILLIAM BEARDMORE & CO., LIMITED

W. D. You

Manufacturer.

ENGINEERING MANAGER

Dates of Survey while building
During progress of work in shops -- 1919 May 26 30 Jun 27 July 3 Aug 1. 11. 19 Sep 9 16 23 Oct 2 14 28 Nov 5. 11. 17 20 Dec 8. 10. 22 23 (1920) Jan 12 18 27 Feb 2 5
During erection on board vessel -- Mar 1. 9. 10 17 31 Apr 1. 9. 15 21 26 May 1. 17. 11. 19. 20 21 25 Jun 1. 2. 4 15 22 26 30 July 2. 8 Aug 16 25 Sep 2. 14. 15. 17. 29 Oct 5. 14. 18 Nov 2. 9. 16 23
Total No. of visits 81 Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Casings 16/9/19 14/10/19 25/4/20 11/11/19 Rotors 1/4/20 Blading 1/4/20 Gearing 1/4/20

Rotor shaft 1/4/20 Thrust shaft 24/2/20 Tunnel shafts 24/2/20 Screw shaft 24/2/20 Propeller 11/5/20

Stern tube 8/12/19 Steam pipes tested 6/10/20 9/12/20 Engine and boiler seatings 5/11/19 17/11/19 Engines holding down bolts 4/11/20

Completion of pumping arrangements 1/3/21 Boilers fixed 4/3/21 Engines tried under steam 10/3/21

Main boiler safety valves adjusted 25/2/21 Thickness of adjusting washers AC 1 3/4 BC 3/4 CC 3/4 DS 3/4 ES 3/4 FS 3/4

Material and tensile strength of Rotor shaft Steel 34-38 tons per sq. in. Identification Mark on Do. * See below

Material and tensile strength of Pinion shaft Nickel Steel 40-45 tons per sq. in. Identification Mark on Do. * See below

Material of Wheel shaft Steel Identification Mark on Do. 2544. 2543 Material of Thrust shaft Steel Identification Mark on Do. 2673. 2674

Material of Tunnel shafts Steel Identification Marks on Do. See below * Material of Screw shafts Steel Identification Marks on Do. 2672. 2671

Material of Steam Pipes Lap welded P.S.D. Steel Test pressure 660

Is an installation fitted for burning oil fuel yes Is the flash point of the oil to be used over 150°F. yes

Have the requirements of Section 49 of the Rules been complied with yes

Is this machinery a duplicate of a previous case no If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. These engines and boilers have

been built under special survey, the materials and workmanship are of good description, they have been tested on board & tried under steam.
This machinery is in my opinion eligible to have notification of L.M.C. 3.21 and "Fitted for oil fuel F.P. above 150°F" in the Register Book.

* 2662 2665 2666
2657 2659 2661
2663 2664 2667
2668 2666 2655
2660 2669.

Rotor Shafts
2476 2475 2474
2473 2471 2472

Pinion Shafts
2540 2539 2541
2542 2575 2576
2577 2578.

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

The amount of Entry Fee ... £ 6 : :
Special ... £ 163 : 3 - 6 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 21/3/21
When received, 5-5-21

A. McKeand
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW. 22 MAR 1921

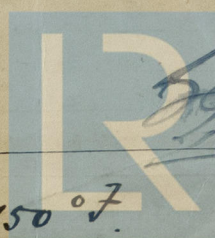
Assigned + LMC 3.21

MACHINERY CODE

WRITTEN 23/3/21

Issued 5/5/21

Fitted for oil fuel 3.21 F.P. above 150°F.



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