

REPORT ON OIL ENGINE MACHINERY.

No. 42900

WED. JUL 25 1923

Received at London Office

Date of writing Report at 3rd Sea 1923 When handed in at Local Office 20. 7. 23 Port of Glasgow
No. in Survey held at Coatbridge & Bristol Date, First Survey 5. 5. 1921 Last Survey 13. 7. 1923
Reg. Book. 26772 on the Single Screw vessels MARGRETIAN Number of Visits 50

Master _____ Built at Bristol By whom built C. Hill & Sons Yard No. 148 When built 1923
Engines made at Coatbridge By whom made Wm Beardmore & Co. Ltd Engine No. 2101 When made 1923
Donkey Boilers made at Hutchin By whom made Spencer Brinegar & Co Boiler No. 1703 When made 1923
Brake Horse Power 1300 Owners S & W. Williams & Co. Port belonging to London
Nom. Horse Power as per Rule 238 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

OIL ENGINES, &c.—Type of Engines Semi Diesel Twin screw 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 450 No. of cylinders 6 each eng No. of cranks 6 each eng Diameter of cylinders 18"
Length of stroke 24" Revolutions per minute 180 Means of ignition Compression Kind of fuel used Diesel Oil
Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 1. 11 3/4"
Distance between centres of main bearings 2. 8 3/4" Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule approved 9 3/4"
Diameter of crank pins 9 3/4" Breadth of crank webs as per Rule approved 15 3/4" Thickness of ditto as per Rule approved 5"
Diameter of flywheel shaft as per Rule approved 8" Diameter of tunnel shaft as per Rule approved 4 1/2" Diameter of thrust shaft as per Rule approved 8"
Diameter of screw shaft as per Rule approved 8 1/2" 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 watertight 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 ✓ If without liners, is the shaft arranged to run in oil ✓
Type of outer gland fitted to stern tube ✓ Length of stern bush 2. 10" Diameter of propeller 8. 0"
Pitch of propeller 4. 0" No. of blades 4 state whether moveable No Total surface 24 square feet
Method of reversing Air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners ✓
Are the cylinders fitted with safety valves Yes Means of lubrication Forced Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine ✓

No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
No. of bilge pumps fitted to the main engines one each eng diameter of ditto 4 1/2" Stroke 6"
Can one be overhauled while the other is at work ✓ No. of auxiliary pumps connected to the main bilge lines one (ballast) How driven Steam
Sizes of pumps 6 x 7 x 7 No. and sizes of suction connections to both main bilge pumps and auxiliary bilge pumps:—In engine room 4 - 3 1/2"
and in holds, etc. 3 - 3 1/2" and 3 - 3 1/2" 4 in. No. of ballast pumps ✓ How driven ✓ Sizes of pumps ✓
Is the ballast pump fitted with a direct suction from the engine room bilges Yes 3 1/2" State size 3 1/2" Is a separate auxiliary pump suction fitted in engine room and size 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 ✓ Are all connections with the sea direct on the skin of the ship Yes
Are they valves or cocks Valves & cocks Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates Yes
Are the discharge pipes above or below the deep water line Above Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes
Are all pipes, cocks, valves and pumps in connection with the machinery 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 ✓
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓

No. of main air compressors ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
No. of auxiliary air compressors One No. of stages Three Diameters ✓ Stroke ✓ Driven by Steam
No. of small auxiliary air compressors One No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
No. of scavenging air pumps ✓ Diameter ✓ Stroke ✓ Driven by ✓
Diameter of auxiliary Diesel Engine crank shafts as per Rule as fitted Are the air compressors and their coolers made so as to be easy of access ✓

AIR RECEIVERS:—No. of high pressure air receivers ✓ Internal diameter ✓ Cubic capacity of each ✓
Material Seamless, lap welded or riveted longitudinal joint Range of tensile strength ✓
Thickness working pressure by Rules No. of starting air receivers 4 Internal diameter 3. 0"
Total cubic capacity 215 Cu. Ft. Material M. S. Seamless, lap welded or riveted longitudinal joint Riveted
Range of tensile strength 28 to 32 tons thickness 3/16 Working pressure by rules 500 lb/sq" Is each receiver, which can be isolated, provided with a safety valve as per Rule Yes Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their internal surfaces Manhole Is there a drain arrangement fitted at the lowest part of each receiver Yes

IS A DONKEY BOILER FITTED? *Yes*

The Cochran
The Waste Heat
 If so, report now forward.

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	<i>(5-2-23)</i> 13-11-22. 14-11-22.	450 lbs	645 lbs	<i>(H)</i>	
COVERS	28-12-22. 6-2-23.	"	"	<i>(H)</i>	
JACKETS	13-11-22.		50 lbs.		
PISTON WATER PASSAGES					
MAIN COMPRESSORS—1st STAGE					
2nd "					
3rd "					
AIR RECEIVERS—STARTING	31-10-21. 11-11-21. 8-11-21. 23-11-21.	500 lbs	400 lbs	15939. 15944 15945. 15960 <i>(H)</i>	
INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER					
WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting *Amst shaft.* Receivers *Yes* Separate Tanks

SPARE GEAR

As per rules & as per list attached

The foregoing is a correct description,

WILLIAM BEARDMORE & CO., LIMITED

W. J. Morrison per *P*

Manufacturer.

Dates of Survey while building	1921 May 5, 9, 17, 27 Aug 31 Sep 6, 14, 28 Oct 7, 12, 21 Nov 4 Dec 21 1922 May 11 Oct 10, 31 Nov 2, 8, 13, 14 Dec 1, 4, 11, 18, 27, 28 1923 Jan 1, 8, 15, 22, 29 Feb 5, 12, 19, 26 Mar 5, 12, 19, 26 Apr 2, 9, 16, 23, 30 May 7, 14, 21, 28 Jun 4, 11, 18, 25 Jul 2, 9, 16, 23, 30 Aug 6, 13, 20, 27, 3, 10, 17, 24, 31 Sep 7, 14, 21, 28 Oct 5, 12, 19, 26, 31 Nov 2, 9, 16, 23, 30 Dec 7, 14, 21, 28
Dates of Examination of principal parts—Cylinders	14-11-22. Covers 6-3-23. Pistons 1-3-23. Rods 27-12-22. Connecting rods 1-3-23
Crank shafts	14-11-22. Thrust shafts 17-2-23. Tunnel shafts 17-2-23. Screw shafts 4-12-22. Propellers 17-2-23. Stern tube 17-2-23. Engine seatings 31-7-23
Engines holding down bolts	30-7-23. Completion of pumping arrangements 14-11-23. Engines tried under working conditions 14-11-23
Completion of fitting sea connections	18-5-23. Stern tube 18-5-23. Screw shaft and propeller 19-6-23
Material of crank shafts	M.S. Identification Mark on Do. 6028 EEB 6029 8438 (H) 8439 (H)
Material of tunnel shafts	M.S. Identification Marks on Do. 8438 (H) 8439 (H)
Material of screw shafts	M.S. Identification Marks on Do. 8438 (H) 8439 (H)

Is the flash point of the oil to be used over 150° F. *Yes.*

Is this machinery 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 have been constructed under special survey in accordance with the rules and approved plans, and have been seen running satisfactorily under load on test bench. Materials workmanship are good. They have been forwarded to Bristol to be fitted on board; when this has been done and they have been satisfactorily tested under service condition they will be eligible in our opinion to be classed +LMC with date. oil engines. These engines have now been fitted & secured on board, tried for hours hours under light & loaded conditions with very satisfactory results & are now eligible in my opinion for class + L.M.C. 11-23.*

The amount of Entry Fee	£ 4 : 0
Special	£ 47 : 12
Donkey Boiler Fee	£ 11 : 18
Travelling Expenses (if any)	£ :

When applied for, *23/7/23*
 When received, *Sept 27 1923*

Harry Clarke, John Barr, John Gwynn
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW*
 Assigned *Deferred.*

TUE. 11 DEC. 1923
 + *Amst. 11. 23*
 Lloyd's Register Foundation

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