

REPORT ON OIL ENGINE MACHINERY.

No. 41414

Date of writing Report 10-10-21 When handed in at Local Office 10-10-21 Port of Glasgow Received at London Office WED. 12 OCT. 1921

No. in Survey held at Reg. Book. 3305 on the Twin Screw vessels "MALIA" Date, First Survey 1st Dec 1919 Last Survey 3rd Dec 1921 Number of Visits 44

Master: Built at Port Glasgow By whom built Hamilton & Co Yard No. 377 When built 1921
Engines made at Birkenhead By whom made Cammell, Laird & Co. Engine No. When made 1921
Donkey Boilers made at Glasgow By whom made D. Rowan & Co. Boiler No. 743 When made 1921
Brake Horse Power Owners T. & J. Brocklebank. Port belonging to Liverpool
Nom. Horse Power as per Rule 1242-248 Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

OIL ENGINES, &c.—Type of Engines Cammell Laird Fullagar 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 550 lbs No. of cylinders 4 No. of cranks 4 Diameter of cylinders 14"
Length of stroke 20" Revolutions per minute MAX = 116 MIN = 140 Means of ignition High Compression Kind of fuel used Heavy Oil
Is there a bearing between each crank No Span of bearings (Page 92, Section 2, par. 7 of Rules) 3'-8 1/4"

Distance between centres of main bearings 4'-8 3/4" Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule approved as fitted 9 1/2"
Diameter of crank pins 9 1/2" Breadth of crank webs as per Rule approved as fitted 11 1/2" Thickness of ditto as per Rule approved as fitted 6"
Diameter of flywheel shaft as per Rule 8-18 1/2" Diameter of tunnel shaft as per Rule 8 1/4" & 9 1/2" Diameter of thrust shaft as per Rule approved as fitted 9 1/2"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No
If the liner is in more than one length are the joints turned 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 No
If without liners, is the shaft arranged to run in oil Yes
If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Yes
Exhaust led up funnel

No. of cooling water pumps 2 Salt water
No. of bilge pumps fitted to the main engines none Diameter of ditto Stroke
No. of auxiliary pumps connected to the main bilge lines Two How driven Electric
No. and sizes of suction pipes connected to both main bilge pumps and auxiliary bilge pumps In engine room 4 @ 3 1/2" - 3 @ 3 1/2" - 2 @ 3 1/2" - 1 @ 3 1/2"

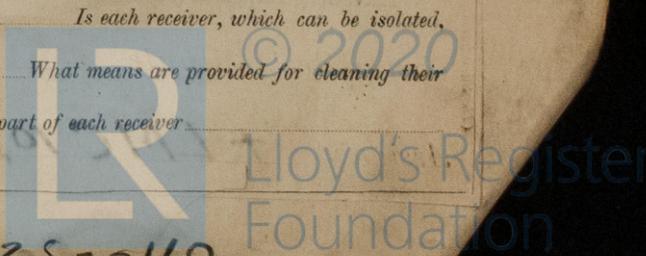
No. of ballast pumps 1 How driven Steam or air Sizes of pumps 9" x 10" x 18"
Is a separate auxiliary pump suction fitted in the Engine Room and size Yes 3 1/2" Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine Room always accessible Yes
Are all connections with the sea direct on the skin of the ship Yes
Are they fired 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 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
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes

Number of main air compressors One (overboard) No. of stages 3 Diameters 16 1/2" x 14 1/4" x 3 1/2" Stroke 14" Driven by Main Engine
Number of auxiliary air compressors Two No. of stages 3 Diameters 10" x 6 3/4" x 3 3/8" Stroke 5 1/2" Driven by Victoria Pumps Auxiliary
Number of small auxiliary air compressors One No. of stages 1 Diameters 2 1/2" Stroke 3" Driven by Electric Light set

Number of scavenging air pumps See Liverpool Rept. 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

RECEIVERS:—No. of high pressure air receivers Internal diameter Cubic capacity of each
Seamless, lap welded or riveted longitudinal joint Range of tensile strength
Working pressure by Rules No. of starting air receivers Internal diameter
Material See Liverpool Rept. Seamless, lap welded or riveted longitudinal joint
Thickness Working pressure by rules Is each receiver, which can be isolated, fitted with a safety valve as per Rule Can the internal surfaces of the receivers be examined What means are provided for cleaning their internal surfaces Is there a drain arrangement fitted at the lowest part of each receiver



IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
" " COVERS			"ALJAM"		
" " JACKETS.....					
" " PISTON WATER PASSAGES.....					
MAIN COMPRESSORS—1st STAGE.....					
" " 2nd					
" " 3rd					
AIR RECEIVERS—STARTING					
" " INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER					
" " WATER JACKET					
SEPARATE FUEL TANKS					

See Liverpool Report No 82673

PLANS. Are approved plans forwarded herewith for shafting
(If not, state date of approval)

Receivers

Separate Tanks

SPARE GEAR.— *As per enclosed list, except the cylinder jacket which it was stated would be put on board at Manchester. Surveyors advised.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building	During progress of work in shops—	(1919) Dec 1. 24 (1920) Jan 20 Feb 10 Mar 1. 8-12-25 Apr 19 May 17-26 27 Jun 21 July 2. 13 Aug 16 Oct 1. 8
	During erection on board vessel—	(1921) Jan 11 Feb 2. 25-28 Mar 1. 3. 4. 11. 18. 25-28-30 Aug 19 22-25-30 Sep 6. 7. 13. 16. 20. 21. 29 Oct 1. 3.
	Total No. of visits	44.

Dates of Examination of principal parts—	Cylinders <i>Lpool Rpt</i>	Covers	Pistons <i>Lpool Rpt</i>	Rods <i>Lpool Rpt</i>	Connecting rods <i>Lpool Rpt</i>
Crank shaft <i>Lpool Rpt</i>	Thrust shaft <i>Lpool Rpt</i>	Tunnel shafts <i>11/18/3/21</i>	Screw shafts <i>3/18/3/21</i>	Propeller <i>25/26/3/21</i>	Stern tube <i>3-3-21</i>
Engines holding down bolts <i>Greenock Rpt</i>	Completion of pumping arrangements <i>29-9-21</i>	Engines tried under working conditions <i>29-9-21</i>			
Completion of fitting sea connections <i>Greenock Rpt</i>	Stern tube <i>Greenock Rpt</i>	Screw shaft and propeller <i>Greenock Rpt</i>			
Material of crank shaft	Identification Mark on Do.	Material of thrust shaft	Identification Mark on Do.		
Material of tunnel shafts <i>S</i>	Identification Marks on Do <i>See below</i>	Material of screw shafts <i>S</i>	Identification Marks on Do <i>See below</i>		
Is the flash point of the oil to be used over 150° F. <i>Yes</i>					
Is this machinery duplicate of a previous case		If so, state name of vessel			

General Remarks (State quality of workmanship, opinions as to class, &c.)
These engines have been fitted on board in an efficient manner, tried under working conditions and found satisfactory and are eligible in our opinion to be classed with record of + L.M.C 10-21.

With regard to the auxiliary diesel engines these were made by Messrs Vickers - Sparrow, but not made under the supervision of the Society's Surveyors as the latter were not advised the engines were intended for a classed vessel. These engines were examined in position under conditions and were found satisfactory.

The amount of Entry Fee ... £	21 : 8	When applied for,	11.10.21
Special 1/5 ... £	6 : 0	When received,	13.10.21
Donkey Boiler Fee ... £	:		
Travelling Expenses (if any) £	:		

Harry Clarke
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 11 OCT 1921

Assigned + LMC 10,21

MACHINERY CERT. WRITTEN 27.10.21



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