

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		Glasgow		Date, First Survey		1st Dec 1919		Last Survey		3rd Dec 1921					
Reg. Book.		3305		on the		Twin		Screw vessels		"MALIA"		Number of Visits		44	
Master				Built at		Port Glasgow		By whom built		H. Hamilton & Co.		Yard No.		377	
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		124 x 2 = 248		Is Refrigerating Machinery fitted for cargo purposes		No		Is Electric Light fitted		Yes					

1. Name of vessel **Cammellaird Lullagar** 2 or 4 stroke cycle **2** Single or double acting **Single**  
 2. Maximum pressure in cylinders **550 lbs** No. of cylinders **4** No. of cranks **4** Diameter of cylinders **14"**  
 3. Length of stroke **20"** Revolutions per minute **MAX = 116 MIN = 40** Means of ignition **High compression** Kind of fuel used **Heavy Oil**  
 4. Is there a bearing between each crank **No** Span of bearings (Page 92, Section 2, par. 7 of Rules) **3'-8 1/2"**  
 5. Distance between centres of main bearings **4'-8 3/4"** Is a flywheel fitted **Yes** Diameter of crank shaft journals **as per Rule 9 1/2"**  
 6. Diameter of crank pins **9 1/2"** Breadth of crank webs **as per Rule 11 1/2"** Thickness of ditto **as per Rule 6"**  
 7. Diameter of flywheel shaft **as per Rule 8 1/8"** Diameter of tunnel shaft **as fitted 8 1/4" & 9 1/2"** Diameter of thrust shaft **as per Rule 9 1/2"**  
 8. Diameter of screw shaft **as per Rule 11 1/2"** Is the screw shaft fitted with a continuous liner the whole length of the stern tube **No**  
 9. 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 **No**  
 10. Does 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**  
 11. Are liners are fitted, is the shaft lapped or protected between the liners **Yes** If without liners, is the shaft arranged to run in oil **Yes**  
 12. Is the outer gland fitted to stern tube **No** Length of stern bush **48"** Diameter of propeller **10'-9"**  
 13. Diameter of propeller **10'-0"** No. of blades **4"** State whether moveable **No** Total surface **42 sq** square feet  
 14. Method of reversing **air** Is a governor or other arrangement fitted to prevent racing of the engine when decelerated **Yes** Thickness of cylinder liners **1 1/4"**  
 15. Are the cylinders fitted with safety valves **Yes** Means of lubrication **Forced** Are the exhaust pipes and silencers water cooled or lagged with insulating material **Both**  
 16. Is the exhaust led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **Yes**  
 17. Is the exhaust led up funnel **Yes** No. of cooling water pumps **2 Saltwater** Is the sea suction provided with an efficient strainer which can be cleared **Yes**  
 18. Is the vessel **Yes** No. of bilge pumps fitted to the main engines **None** Diameter of ditto **Stroke**  
 19. Can one be overhauled while the other is at work **Yes** No. of auxiliary pumps connected to the main bilge lines **Two** How driven **Electric**  
 20. No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps **In engine room 4 @ 3 1/2" 2 @ 3" 2 @ 2 1/2" 2 @ 2"**  
 21. No. of ballast pumps **1** How driven **Steam or air** Sizes of pumps **9" x 10" x 18"**  
 22. Is a ballast pump fitted with a direct suction from the engine room bilges **Yes** State size **6"** Is a separate auxiliary pump suction fitted in the Engine Room and size **Yes 3 1/2"**  
 23. Are all the bilge suction pipes fitted with roses **Yes** Are the roses in Engine Room always accessible **Yes**  
 24. Are the sluices on Engine Room bulkheads always accessible **None** Are all connections with the sea direct on the skin of the ship **Yes**  
 25. Are the key valves or cocks **Both** Are they fitted sufficiently high on the ship's side to be seen without lifting the floor plates **Yes**  
 26. 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**  
 27. 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**  
 28. Is the screw shaft tunnel watertight **Yes** Is it fitted with a watertight door **Yes**  
 29. Is the screw shaft tunnel fitted with a door from the upper deck level **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**  
 30. No. of main air compressors **One (or chain)** No. of stages **3** Diameters **16 1/2" x 14 1/4" x 3 1/2"** Stroke **14"** Driven by **Main Engine**  
 31. No. of auxiliary air compressors **Two** No. of stages **3** Diameters **10" x 6 3/4" x 3 1/8"** Stroke **5 1/2"** Driven by **Victrola Sutters Auxiliary**  
 32. No. of small auxiliary air compressors **One** No. of stages **1** Diameters **2 1/2"** Stroke **3"** Driven by **Electric Lighting set**  
 33. No. of scavenging air pumps **See Liverpool List** Diameter **Stroke** Driven by **Stroke**  
 34. Are the air compressors and their coolers made so as to be easy of access **Yes**

*RECEIVERS:—No of high pressure air receivers*

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 ..... Seamless, lap welded or riveted longitudinal joint .....

thickness ..... Working pressure by rules ..... Is each receiver, which can be isolated, .....

Can the internal surfaces of the receivers be examined ..... What means are provided for cleaning their .....

Is there a drain arrangement fitted at the lowest part of each receiver .....

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....					
"    "    COVERS .....					
"    "    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 .....					

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 16 Mar 18-25 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	Lpool Rpt	Covers	—	Pistons	Lpool Rpt	Rods	Lpool Rpt	Connecting rods	Lpool Rpt
Crank shaft	Lpool Rpt	Thrust shaft	Lpool Rpt	Tunnel shafts	11/8/3/21	Screw shafts	3/8/3/21	Propeller	25/26/3/21
Engines holding down bolts	Glenrock Rpt	Completion of pumping arrangements	29-9-21	Engines tried under working conditions	29-9-21	Stern tube	3-3-21	Engine seatings	Glenrock Rpt
Completion of fitting sea connections	Glenrock Rpt	Stern tube	Glenrock Rpt	Screw shaft and propeller	Glenrock Rpt				
Material of crank shaft	—	Identification Mark on Do.	—	Material of thrust shaft	—	Identification Mark on Do.	—		
Material of tunnel shafts	S	Identification Marks on Do.	See below	Material of screw shafts	S	Identification Marks on Do.	See below		
Is the flash point of the oil to be used over 150° F.	Yes								
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—Ayr, but 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 ... £	26 : 8	When applied for,	11.10.21
Special 1/5 ... £	6 : 0		
Donkey Boiler Fee ... £	:	When received,	13.10.21
Travelling Expenses (if any) £	:		

Committee's Minute

GLASGOW

11 OCT 1921

Assigned + LMC 10.21

Harry Clarke.

Engineer Surveyor to Lloyd's Register of Shipping



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