

REPORT ON OIL ENGINE MACHINERY.

No. 93191

21 JAN. 1928

Received at London Office
LIVERPOOL

Date of writing Report *21 JAN. 1928* When handed in at Local Office *25 JAN 1928* Port of *LIVERPOOL*

No. in Survey held at *Northwich* Date, First Survey *Sept 22nd/27* Last Survey *Jan 16th 1928*

Reg. Book. *Northwich* Number of Visits *6*

on the *Single* } Screw vessels *m.v. 'Castlegate'* Tons } Gross *51*
Double } Net *28*
Triple }

Master _____ Built at *Northwich* By whom built *W. J. Gardner & Sons. Ltd* Yard No. *372* When built *1927*

Engines made at *Manchester* By whom made *L. Gardner & Sons. Ltd* Engine No. *23536* When made *1927*

Donkey Boilers made at *✓* By whom made *✓* Boiler No. *✓* When made *✓*

Brake Horse Power *55* Owners *The Anglo American Oil Co. Ltd* Port belonging to *Liverpool*

Nom. Horse Power as per Rule *16* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*

OIL ENGINES, &c.—Type of Engines *Gardner Paraffin, vert. non-reversing, 2 or 4 stroke cycle* Single or double acting

Maximum pressure in cylinders _____ No. of cylinders _____ No. of cranks _____ Diameter of cylinders _____

Length of stroke _____ Revolutions per minute _____ Means of ignition _____ Kind of fuel used _____

Is there a bearing between each crank _____ Span of bearings (Page 92, Section 2, par. 7 of Rules) _____

Distance between centres of main bearings _____ Is a flywheel fitted _____ Diameter of crank shaft journals *as per Rule* _____
as fitted _____

Diameter of crank pins _____ Breadth of crank webs *as per Rule* _____ Thickness of ditto *as per Rule* _____
as fitted _____ *as fitted* _____

Diameter of flywheel shaft *as per Rule* _____ Diameter of tunnel shaft *as per Rule* _____ Diameter of thrust shaft *as per Rule* _____
as fitted _____ *as fitted* _____ *as fitted* _____

Diameter of screw shaft *as per Rule* *2.46* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *yes ✓*
as fitted *2.5/8*

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 *✓*

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 *Gardner's O.G. ✓* Length of stern bush *11" ✓* Diameter of propeller *2'-8" ✓*

Pitch of propeller *1'-10" ✓* No. of blades *4 ✓* state whether moveable *no ✓* Total surface *3.06 ✓* square feet

Method of reversing _____ Is a governor or other arrangement fitted to prevent racing of the engine when declutched _____ Thickness of cylinder liners _____

Are the cylinders fitted with safety valves _____ Means of lubrication _____ Are the exhaust pipes and silencers water cooled or lagged with non-conducting material _____

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 _____ Is the sea suction provided with an efficient strainer which can be cleared in the vessel _____

No. of bilge pumps fitted to the main engines *one ✓* Diameter of ditto *3" ✓* Stroke *4" ✓*

Can be overhauled while the other is at work _____ No. of auxiliary pumps connected to the main bilge lines *one ✓* How driven *aux. motor*

Sizes of pumps *3" Dia x 4" stroke ✓* No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room *one, 2" ✓*

in holds, etc. _____ No. of ballast pumps _____ How driven _____ Sizes of pumps _____

Is the ballast pump fitted with a direct suction from the engine room bilges _____ State size _____ Is a separate auxiliary pump suction fitted in engine room and size *yes, suction, 1 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 ~~water~~ cocks *yes ✓* 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 *yes ✓* 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 _____ 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 _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____

No. of small auxiliary air compressors _____ 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* _____ Are the air compressors and their coolers made so as to be easy of access *as fitted* _____

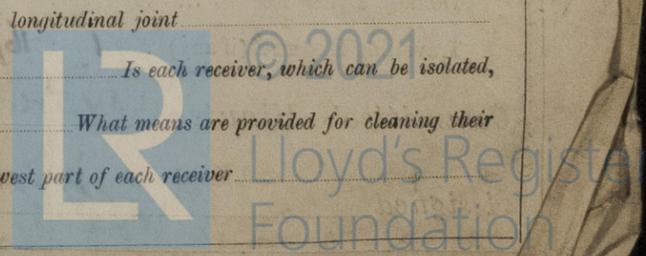
RECEIVERS:—No. of high pressure air receivers _____ Internal diameter _____ Cubic capacity of each _____

Material _____ Seamless, lap welded or riveted longitudinal joint _____ Range of tensile strength _____

Thickness _____ working pressure by Rules _____ No. of starting air receivers _____ Internal diameter _____

Total cubic capacity _____ Material _____ Seamless, lap welded or riveted longitudinal joint _____

Range of tensile strength _____ 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 inner surfaces _____ Is there a drain arrangement fitted at the lowest part of each receiver _____



IS A DONKEY BOILER FITTED? *no*

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	18.10.27	2 lbs	7 lbs	CNS	

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

Receivers

Separate Tanks *yes*

SPARE GEAR

The foregoing is a correct description,

W. J. YARWOOD & SONS, LTD. Manufacturer.

For W. J. YARWOOD & SONS, LTD.

Albert Yarwood DIRECTOR

Dates of Survey while building
 During progress of work in shops - 1927
 During erection on board vessel - Sept 22, Oct 7, Nov 24, Dec 14, 30, 1928, Jan 16, 1929
 Total No. of visits 6

Dates of Examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓
 Crank shaft ✓ Thrust shaft ✓ Tunnel shafts ✓ Screw shaft 22.9.27, 7.10.27 Propeller 7.10.27 Stern tube 22.9.27 Engine seatings 7.10.27
 Engines holding down bolts 24.11.27 Completion of pumping arrangements 14.12.27 Engines tried under working conditions 30.12.27
 Completion of fitting sea connections 7.10.27 Stern tube 7.10.27 Screw shaft and propeller 7.10.27
 Material of crank shaft ✓ Identification Mark on Do. ✓ Material of thrust shaft ✓ Identification Mark on Do. ✓
 Material of tunnel shafts ✓ Identification Marks on Do. ✓ Material of screw shafts M.S. Identification Marks on Do. 1786

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 *yes*

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special survey; the workmanship & materials are good. The engines & auxiliaries have now been fitted on board in an efficient manner & are now eligible for record of +LMC 1.2B. Approx. speed 7 knots; lowest revs. 300 p.m.

It is submitted that this vessel is eligible for THE RECORD. + LMC 1.2B. CL. Oil Engines 4 SC. SA. 16 NH. 3 Cy 8"-9"

The amount of Entry Fee ... £ : : When applied for, 21 JAN. 1928
 1/5 Special ... £ 3 : 8 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ 1 : 16/4 : When received, 25.1.28

P. Leonard 27/1/28
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 24 JAN. 1928

Assigned + LMC. 1.28. Cl. Elec Light



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