

REPORT ON OIL ENGINE MACHINERY.

No. 5694.

-6 OCT 1925

t. 4b.

Received at London Office

Writing Report *Oct 5th 1925* When handed in at Local Office *Oct 5th 1925* Port of *Manchester* -6 JAN 1926
 in Survey held at *Manchester* Date, First Survey *March 3rd 1925* Last Survey *Sept 21st 1925*
 Book. Number of Visits *18*
 on the *Proctor S. Southgate* Tons { Gross *143.43*
 { Net *54.98*
 ter. Built at *Amble* By whom built *Amble S.B.C. Ltd Yard No. 39* When built
 ines made at *Manchester* By whom made *L Gardner & Sons Ltd* Engine No. *96397* When made *1925*
 key Boilers made at By whom made Boiler No. When made
 ke Horse Power *140* Owners *Anglo American Oil Co Ltd* Port belonging to
 m. Horse Power as per Rule *40* Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted *Yes*



ENGINES, &c.—Type of Engines *Vertical Semi-Diesel Crank Case Compression* 2 or 4 stroke cycle *2* Single or double acting *Single*
 ium pressure in cylinders *300* No. of cylinders *4* No. of cranks *4* Diameter of cylinders *11 1/2"*
 th of stroke *12 1/2"* Revolutions per minute *320* Means of ignition *Hot Bull (Starting)* Kind of fuel used *Heavy oil*
 ere a bearing between each crank *Yes* Span of bearings (Page 92, Section 2, par. 7 of Rules) *17 1/2"*

nce between centres of main bearings *24"* Is a flywheel fitted *Yes* Diameter of crank shaft journals as per Rule *4.95"*
 as fitted *5.125"*
 eter of crank pins *5 1/8"* Breadth of crank webs as per Rule *6.6"* Thickness of ditto as per Rule *3.77"*
 as fitted *6.75"* as fitted *3.0"*
 eter of flywheel shaft as per Rule *3.43"* Diameter of thrust shaft as per Rule *3.6"*
 as fitted *3 1/2"* as fitted *95%*

eter of screw shaft as per Rule *3.97"* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes but in 3 pieces*
 as fitted *4.0"* If the liner is in more than one length are the joints burned *No*
 e after end of the liner made watertight in the propeller boss *Yes*
 e 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
 oo liners are fitted, is the shaft lapped or protected between the liners *Lining Butted & rolled* If without liners is the shaft arranged to run in oil *Yes*

e of outer gland fitted to stern tube *Vickers* Length of stern bush *19"* Diameter of propeller *54"*
 h of propeller *37* No. of blades *3* state whether moveable *No* Total surface *8 ft²* square feet
 hod of reversing *Adjustable* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Thickness of cylinder liners *✓*
 e cylinders fitted with safety valves *No* Means of lubrication *Main Bearings forced, Remainder forced Sight Dip* Are the exhaust pipes and silencers water cooled or lagged with
 conducting material *Yes* 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 *one on engine* 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 *1 3/4"* Stroke *3"*
 a one be overhauled while the other is at work *✓* No. of auxiliary pumps connected to the main bilge lines How driven
 es of pumps No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room
 d in holds, etc. No. of ballast pumps How driven Sizes of pumps

the ballast pump fitted with a direct suction from the engine room bilges State size Is a separate auxiliary pump suction fitted in
 gine Room and size Are all the bilge suction pipes fitted with roses Are the roses in Engine Room always accessible
 e the sluices on Engine Room bulkheads always accessible Are all connections with the sea direct on the skin of the ship
 e they valves or cocks Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates
 e the discharge pipes above or below the deep water line Are they each fitted with a discharge valve always accessible on the plating of the vessel
 e all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Are the bilge suction pipes, cocks and valves arranged so as to prevent any
 mmunication between the sea and the bilges Is the screw shaft tunnel watertight Is it fitted with a watertight door

orked from If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
 Vo. of main air compressors *one* No. of stages *one* Diameters *6"* Stroke *3"* Driven by *Main Ch. Sh. by Tennant*
 Vo. of auxiliary air compressors *one* No. of stages *one* Diameters *3 1/2"* Stroke *2"* Driven by *Gardner 3DEE Engines*
 Vo. of small auxiliary air compressors No. of stages Diameters Stroke Driven by
 Vo. of scavenging air pumps Diameter Stroke Driven by
 Diameter of auxiliary Diesel Engine crank shafts as per Rule *3.000, 2.02, 2.166"* Are the air compressors and their coolers made so as to be easy of access
 as fitted *2.25, 2.175"*

IR RECEIVERS:—No. of high pressure air receivers *3* Internal diameter *8 3/8"* Cubic capacity of each *30ft 13.00 1/4th*
 material *Seamless, lap welded or riveted longitudinal joint* Range of tensile strength *25 1/2, 13.5"* Saled
 thickness *working pressure by Rules* No. of starting air receivers *3* Internal diameter *1 7/8, 10.0"* drawn
 Total cubic capacity *17.0 ft³* Material *Mild Steel* Seamless, lap welded or riveted longitudinal joint *Seamless*
 Range of tensile strength *28/30 tons/sq. in* thickness *1/4"* Working pressure by rules *463 lbs/sq. in* Is each receiver, which can be isolated,
 fitted 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
 inner surfaces *3 Gas Screwed Plug in one end* Is there a drain arrangement fitted at the lowest part of each receiver *Yes*

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	22.5.25	300 lbs./i ²	600 lbs./i ²	Fl	
COVERS	3.6.25	"	"	"	
JACKETS.....	22.5.25 + 3.6.25	✓	50 lbs./i ²	"	
PISTON WATER PASSAGES.....	✓	✓	✓	✓	
MAIN COMPRESSORS—1st STAGE.....	✓	✓	✓	✓	
2nd	✓	✓	✓	✓	
3rd	✓	✓	✓	✓	
AIR RECEIVERS—STARTING	14.8.25 + 20.8.25	250 lbs./i ²	500 lbs./i ²	Fl	
INJECTION	✓	✓	✓	✓	
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER	✓	✓	✓	✓	
WATER JACKET	29.5.25	✓	50 lbs./i ²	Fl	(tested by Linsell)
SEPARATE FUEL TANKS	4.9.25	✓	15 lbs + 7 lbs	C.W.R.	(See letter attached)

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

Yes 26.5.25

Receivers

Yes 26.5.25 Separate Tanks

Yes 12

SPARE GEAR

See Attached list

L GARDNER & SONS, LIMITED.

The foregoing is a correct description,

William Gardner. DIRECTOR.

Manufacturer.

Dates of Survey while building

During progress of work in shops -- *1925 March 3, 9, 18, April 16, May 1, 8, 22, June 3, July 1, 15, Aug 5, 6, 10, 14, 20, Sept*

During erection on board vessel --

Total No. of visits

Dates of Examination of principal parts—Cylinders *22.5.25* Covers *3.6.25* Pistons *8.5.25* Rods ✓ Connecting rods *22.5.25*

Crank shaft *16.4.25* Thrust shaft *18.3.25* Tunnel shafts *16.9.25* Screw shaft *15.9.25* Propeller Stern tube Engine seatings

Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions

Completion of fitting sea connections Stern tube Screw shaft and propeller

Material of crank shaft *Mild Steel* Identification Mark on Do. *6 Fl* Material of thrust shaft *Mild Steel* Identification Mark on Do. *917*

Material of tunnel shafts *Mild Steel* Identification Marks on Do. *13 Rm.* Material of screw shafts *Mild Steel* Identification Marks on Do. *1014*

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

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, etc. *The above main engine of Gardner Type 4TB and Auxiliary engines of Gardner Type 3D.C.R. + 2Y have been built under special survey and the materials tested in accordance with the rules of this Society. The materials and workmanship so far as can be seen are good, and the main engine proved satisfactory under shop test. The following is a description of the Aux. 1-30CR Gardner 450SA Engine No 26423 Clutch coupled to Clarke Chapman Generator 6995 110volts 55amps. 800RPM Clutch coupled on other end of crank with interlocking clutch gear to pinion for Cargo pump & again clutch coupled beyond to a Gardner 3 1/2 x 2 1/2 No 360 Air Compressor. 1-2Y Gardner 450SA Engine No 26522 direct coupled to chain sprocket for pump & again clutch coupled beyond this to a 2nd sprocket for ballast pumps.*

The above engines are in my opinion eligible for the notation +-L.M.S. with date subject, to the running test of the 2 sets being satisfactory, and to being fitted on board in accordance with the Requirements of the Society

The amount of Entry Fee ... *4/5 13 : 12 : 0*

Special ... *£ 25 : 0 : 0*

Donkey Boiler Fee ... *£ ✓*

Travelling Expenses (if any) ... *£ ✓*

Amount charged to L. Gardner & Sons Ltd. *4/6 - 8/17.0.0 = 13-12.0*

When applied for, *Oct 5 1925*

When received, *as per letter from N.W.S. 30 Nov 1925*

Alfred H. Lane
Engineer Surveyor to Lloyd Register of Shipping

Committee's Minute **FRI. 8 JAN 1926**

Assigned

