

# REPORT ON OIL ENGINE MACHINERY

No. 5711

29 OCT 1925  
20 FEB 1926

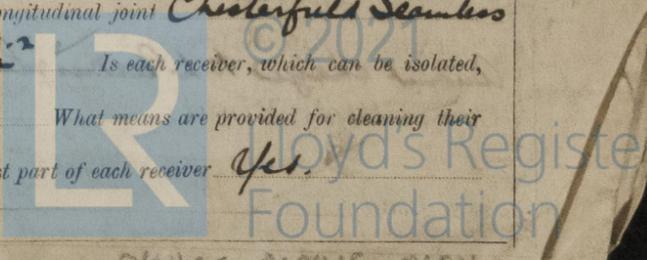
Received at London Office

Writing Report Oct 28 1925 When handed in at Local Office Oct 28 1925 Port of MANCHESTER  
Survey held at MANCHESTER Date, First Survey May 22 23 Last Survey Oct 20 25  
Number of Visits 16

on the Single Triple Double Compound Anglo American Oil Barge Tons Gross Net  
Built at Amble By whom built Amble S.S. Co Yard No. 40 When built  
Engines made at Manchester By whom made L. Gardner Sons Ltd Engine No. 9650 When made 1925  
Boilers made at \_\_\_\_\_ By whom made \_\_\_\_\_ Boiler No. \_\_\_\_\_ When made \_\_\_\_\_  
Horse Power 140 Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_  
Horse Power as per Rule 40 Is Refrigerating Machinery fitted for cargo purposes \_\_\_\_\_ Is Electric Light fitted \_\_\_\_\_

Vertical Semi Diesel Crank Case Compression  
Type of Engines Air Starting 2 ports in Cylinder 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 300 No. of cylinders 4 No. of cranks 4 Diameter of cylinders 11 1/2  
Length of stroke 12 1/2 Revolutions per minute 320 Means of ignition Hot Bull (Blow lamp) Kind of fuel used heavy oil  
Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 17 1/2  
Distance 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  
Diameter of crank pins 5 1/8 Breadth of crank webs as per Rule 6.6 as fitted 6.75 Thickness of ditto as per Rule 2.77 as fitted 3.0  
Diameter of flywheel shaft as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Diameter of tunnel shaft as per Rule 3.43 as fitted 3 1/2 Diameter of thrust shaft as per Rule 3.6 as fitted 95  
Diameter of screw shaft as per Rule 3.97 as fitted 4.0 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes but in 3 pieces  
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  
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 Fits tightly  
If liners are fitted, is the shaft lapped or protected between the liners Liners lapped If without liners, is the shaft arranged to run in oil Yes  
Is a gasket fitted to stern tube Vickers Length of stern bush 19 Diameter of propeller 52  
Diameter of propeller 36 No. of blades 3 state whether moveable No Total surface 8 ft<sup>2</sup> square feet  
Means of reversing Cum shaft Adjustment 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 No Means of lubrication Main Bearings forced Remainder forced Sight Trip Are the exhaust pipes and silencers water cooled or lagged with insulating 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 main engine Is the sea suction provided with an efficient strainer which can be cleared \_\_\_\_\_  
No. of bilge pumps fitted to the main engines one on main engine Diameter of ditto 1 3/4 Stroke 3  
Can they be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge lines \_\_\_\_\_ How driven \_\_\_\_\_  
No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room \_\_\_\_\_  
No. of ballast pumps \_\_\_\_\_ How driven \_\_\_\_\_ Sizes of pumps \_\_\_\_\_  
Is a ballast pump fitted with a direct suction from the engine room bilges \_\_\_\_\_ State size \_\_\_\_\_ Is a separate auxiliary pump suction fitted in \_\_\_\_\_  
Room and size \_\_\_\_\_ Are all the bilge suction pipes fitted with roses \_\_\_\_\_ Are the roses in Engine Room always accessible \_\_\_\_\_  
Are the sluices on Engine Room bulkheads always accessible \_\_\_\_\_ Are all connections with the sea direct on the skin of the ship \_\_\_\_\_  
Are valves or cocks \_\_\_\_\_ Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates \_\_\_\_\_  
Are 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 \_\_\_\_\_  
Are 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 communication between the sea and the bilges \_\_\_\_\_  
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 \_\_\_\_\_

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 3 Internal diameter 1 1/8 = 12.5  
Cubic capacity 17.0 ft<sup>3</sup> Material Mild Steel Seamless, lap welded or riveted longitudinal joint Chesterfield Seamless  
Tensile strength 28/35 tons / in<sup>2</sup> thickness 1/4 Working pressure by rules 463 lbs / in<sup>2</sup> Is each receiver, which can be isolated, \_\_\_\_\_  
Is there a safety valve as per Rule Yes Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their \_\_\_\_\_  
Are the faces 3.6 in Screwed Plug in each Is there a drain arrangement fitted at the lowest part of each receiver Yes



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 .....	5-8-25	300 lbs	600 lbs	Fl	
" " COVERS .....	5-8-25				
" " JACKETS.....					
" PISTON WATER PASSAGES.....	✓	✓	✓	✓	
MAIN COMPRESSORS—1st STAGE.....	✓	✓	✓	✓	
" 2nd " .....	✓	✓	✓	✓	
" 3rd " .....	✓	✓	✓	✓	
AIR RECEIVERS—STARTING .....	14-8-25 and 20-8-25	250 lbs	500 lbs	Fl	
" INJECTION .....	✓	✓	✓	✓	
AIR PIPES .....					
FUEL PIPES .....					
FUEL PUMPS .....					
SILENCER .....					
" WATER JACKET .....	28-5-25	✓	50 lbs	Fl	
SEPARATE FUEL TANKS .....	4-9-25	✓	150 lbs	C.W.R.	Tested at Liverpool. See sketch attached.

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

SPARE GEAR

The foregoing is a correct description,

*William Gardner.* DIRECTOR, Manufacturer.

Dates of Survey while building: During progress of work in shops-- 1925. May 22, 29, June 3, July 1, 9, 15, 23, Aug. 5, 6, 10, 14, 20, Sept 15, 21, 29, Oct 20  
 During erection on board vessel--  
 Total No. of visits

Dates of Examination of principal parts—Cylinders 5-8-25 Covers 5-8-25 Pistons 5-8-25 Rods ✓ Connecting rods 6-  
 Crank shaft 9-7-25 Thrust shaft 15-7-25 Tunnel shafts 15-9-25 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. *983 Fl* Material of thrust shaft *Mild Steel* Identification Mark on Do. *995*  
 Material of tunnel shafts *Mild Steel* Identification Marks on Do. *13 R.M.* Material of screw shafts *Mild Steel* Identification Marks on Do. *104*  
 Is the flash point of the oil to be used over 150° F. *"Southgate"*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *No 39. Amble S.B.C (Inch Rpt)*

General Remarks (State quality of workmanship, opinions as to class, &c. *The above main engine of Gardner Type 4TB and auxiliary engines of Gardner Type 30CR and 2V 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 be seen are sound and good, and the engines proved satisfactory under shop test. The following is a description of the 2 Amp. sets:- 1-30CR Gardner 45.5SA Engine No. 26505 clutch coupled to Clark Chapman 206994. 110 Volts. 55 amps. 800 R.P.M.; clutch coupled on other side with interlocking clutch gear to pinion pump & again clutch coupled beyond this to a Gardner 3 1/2" No 350 Air Compressor. 1-2V Gardner Engine No. 26523 clutch coupled to chain sprocket for bilge pump and again clutch coupled beyond this to sprocket for ballast pump. The above engines are in my opinion shippable for the notation + L. date when they are fitted on board the vessel in accordance with the Society's requirements.*

The amount of Entry Fee ... £ *2* : *0* : *0* When applied for, *Oct 28 1925*  
 Special ... £ *15* : *0* : *0*  
 Donkey Boiler Fee ... £ *13* : *12* : *0*  
 Travelling Expenses (if any) £ *0* : *0* : *0*  
 Amount charged to L. Gardner & Sons Ltd = *4/6* 2/17-0-0 = *13.12.0*  
 Committee's Minute **FBI. 26 FEB 1926**

*Alfred St. James*  
 Engineer Surveyor to Lloyd's Register of Shipping

Assigned

*See Avo J. L. rpt 80132*



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