

# REPORT ON OIL ENGINE MACHINERY.

No. 87874

21 DEC 1931

Received at London Office

19 DEC 1931

Port of

NEWCASTLE-ON-TYNE

ting Report

When handed in at Local Office

Date, First Survey

3-anie 130

Last Survey

11 Dec 1931

Number of Visits

90

Survey held at

on the <sup>Single</sup> ~~Twin~~ Screw vessel **M. V. CARDIUM.**

Tons <sup>Gross</sup> 8236  
<sup>Net</sup> 4828

Wallsend. By whom built **Luan Humei, W R & Co** Yard No **1635** When built **1931**

made at **St. Peter's** By whom made **Hawthorn Leslie & Co** Engine No **3784** When made **1931**

Boilers made at **St. Peter's** By whom made **Hawthorn Leslie & Co** Boiler No **3784** When made **1931**

orse Power **4000** Owners **Anglo Saxon Pet Co.** Port belonging to **London**

e Power as per Rule **412** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**

which vessel is intended **Carrying Petroleum in bulk**

INES, &c.—Type of Engines **Hawthorn Leslie & Co 2 or 4 stroke cycle** Single or double acting **Single**

ssure in cylinders **500 lb** Diameter of cylinders **630** Length of stroke **1100** No. of cylinders **6** No. of cranks **6**

ngs, adjacent to the Crank, measured from inner edge to inner edge **840** Is there a bearing between each crank **yes**

er minute **135** Flywheel dia. **2800** Weight **6 Tons** Means of ignition **Comp.** Kind of fuel used **Diesel Oil**

t, dia. of journals **as per Rule 398** Crank pin dia. **410** Crank Webs **Mid. length breadth 440** Thickness parallel to axis **240**

shaft, diameter **as per Rule 398** Intermediate Shafts, diameter **as per Rule 10.55** Thrust Shaft, diameter at collars **as per Rule 11.645**

t, diameter **as per Rule 11.633** Screw Shaft, diameter **as per Rule 11.633** Is the after end of the liner made watertight in the

ers, thickness in way of bushes **as per Rule 0.656** Thickness between bushes **as fitted 1.5** Is the after end of the liner made watertight in the

yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

oes 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

s are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of the tube

If so, state type Length of Bearing in Stern Bush next to and supporting propeller **1600**

dia. **6050** Pitch **3150** No. of blades **3** Material **M. B.** whether Moveable **no** Total Developed Surface **53.3** sq. feet

reversing Engines **Low Air** Is a governor or other arrangement fitted to prevent racing of the engine when decelerated **yes** Means of lubrication

thickness of cylinder liners **55** Are the cylinders fitted with safety valves **yes** Are the exhaust pipes and silencers water cooled or lagged with

material **lagged** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **yes**

ater Pumps, No. **two each engine** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **yes**

ps worked from the Main Engines, No. **1** Diameter **150** Stroke **254** Can one be overhauled while the other is at work **yes**

ected to the Main Bilge Line No. and Size **2 - 8" x 8" x 10"** How driven **Steam**

umps, No. and size **2 - 8" x 8" x 10"** Lubricating Oil Pumps, including Spare Pump, No. and size **2 Rotary 6" x 4" x 10"**

pendent means arranged for circulating water through the Oil Cooler **yes** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

and size:—In Machinery Spaces **2-3 1/2" ER up, 2-3 1/2" ER. 10, 2-3 1/2" up, 1-5" Direct** In Pump Room **3-3"**

c. **2-2 1/2", aft Cofferdam 1-4", 2nd up, 1-5" 800 peak 2-2 1/2"** See plan

ent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1-5" 16 8" x 8" x 10" pumps**

Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **yes** Are the Bilge Suctions in the Machinery Spaces

sily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges **yes**

Connections fitted direct on the skin of the ship **yes** Are they fitted with Valves or Cocks **Valves**

d sufficiently high on the ship's side to be seen without lifting the platform plates **yes** Are the Overboard Discharges above or below the deep water line **Above**

h fitted with a Discharge Valve always accessible on the plating of the vessel **yes** Are the Blow Off Cocks fitted with a spigot and brass covering plate **yes**

pass through the bunkers **Cofferdam Suctions** How are they protected

pass through the deep tanks **none** Have they been tested as per Rule

es, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **yes**

ngement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

t to another **yes** Is the Shaft Tunnel watertight **none** Is it fitted with a watertight door **—** worked from **—**

essel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Compressors, No. **1 - each engine** No. of stages **3** Diameters **130, 110, 110** Stroke **450** Driven by **Main engine**

Air Compressors, No. **one** No. of stages **3** Diameters **see Attached Report** Driven by **Steam**

Auxiliary Air Compressors, No. **none** No. of stages **—** Diameters **—** Stroke **—** Driven by **—**

nging Air Pumps, No. **none** Diameter **—** Stroke **—** Driven by **—**

ary Engines crank shafts, diameter **as per Rule 3** **See Ans Rept 12376**

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **yes**

e internal surfaces of the receivers be examined and cleaned **yes** Is a drain fitted at the lowest part of each receiver **yes**

Pressure Air Receivers, No. **two** Cubic capacity of each **14 c.f.** Internal diameter **450** thickness **2 1/4**

ss, lap welded or riveted longitudinal joint **Seamless** Material **8** Range of tensile strength **32/36 T** Working pressure **1460**

ng Air Receivers, No. **one** Total cubic capacity **1400 c.f.** Internal diameter **4-10 1/4** thickness **4/8**

ss, lap welded or riveted longitudinal joint **Seamless** Material **8** Range of tensile strength **28/32 T** Working pressure **390**

Actual **350**

00401-00415-0062

00401-00415-0064



IS A DONKEY BOILER FITTED?

yes

If so, is a report now forwarded?

yes

Is the donkey boiler intended to be used for domestic purposes only

no

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

yes

Receivers

yes

Separate Tanks

yes

Donkey Boilers

yes

General Pumping Arrangements

yes

Oil Fuel Burning Arrangements

yes

### SPARE GEAR.

Has the spare gear required by the Rules been supplied

as per Society's Rules, attached list

State the principal additional spare gear supplied

For

R. & W. HAWTHORN, LESLIE & Co. LTD.

The foregoing is a correct description,

R. B. Johnson

GENERAL MANAGER

Manufacturer.

1930  
Dates of Survey while building  
During progress of work in shops - Apr 3. 8. 15. 28. May 7. 30. June 12. July 15. 31. Aug. 6. 11. 18. Sep. 9. 15. Oct. 7. 10. 20.  
During erection on board vessel - 7. 13. 14. 18. 20. 24. Dec. 19. 1930. Jan. 19. 21. 26. Feb. 2. 5. 9. 18. 23. 27. Mar. 4. 6. 16. 23. 30. Apr. 8. 15. 18. 21. 28. 29. June 4. 8. 17. 29. July 3. 10. 14. 16. 21. 24. 27. 28. 30. Aug. 21. 22. 24. 27. 31. Sep. 22. 23. 28. 29. Oct. 1. 7. 15. 21. 28. 30. Nov. 9. 19. 20. 24. 30. Dec. 1. 9. 10. 11.  
Total No. of visits 90.

Dates of Examination of principal parts - Cylinders 27/31, 18/31, Covers 27/31, Pistons 15/31, Rods 15/31, Connecting rods 15/31, Crank shaft 27/31, Flywheel shaft 27/31, Thrust shaft 27/31, Intermediate shafts 23/31, Tube shaft 23/31, Screw shaft 23/31, Propeller 23/31, Stern tube 23/31, Engine seatings 16/9/31, Engines holding down bolts 30/31.

Completion of fitting sea connections 18/9/31. Completion of pumping arrangements 10/10/31. Engines tried under working conditions 10/10/31.

Crank shaft, Material as per attached mark Depart. Flywheel shaft, Material 5 Identification Mark F.A.F. 27/31.

Thrust shaft, Material 5 Identification Mark F.A.F. 27/31. Intermediate shafts, Material 5 Identification Marks 5/2/31.

Tube shaft, Material - Identification Mark - Screw shaft, Material 5 Identification Mark 5/2/31.

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with yes

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo 4000 lbs. If so, have the requirements of the Rules been complied with -

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with -

Is this machinery duplicate of a previous case yes If so, state name of vessel Bardilla, Caprella, Capo

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery has been built under special survey accordance with the Rules of the Society, the approved plans & has been securely fitted on board the vessel. It has been tried under full working conditions & found satisfactory. The workmanship & materials are of good quality throughout.

The Machinery of this vessel is eligible, in my opinion to have notation + L.M.C. 12/31 + T. 5/12/31.

The amount of Entry Fee .. £ 6 : -  
Special ... .. £ 110 : 13 : 6  
Donkey Boiler Fee ... .. £ 15 : 4 : -  
Travelling Expenses (if any) £ 16 : 16 : -  
When applied for, 5/12/1931  
When received, 8/12/1931

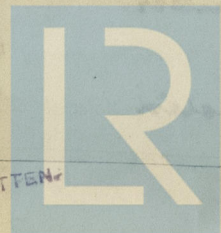
Committee's Minute TUE. 22 DEC 1931

Assigned + L.M.C. 12/31 C.L.

Oil Eng. 2 R.B. 150 lb.

Yves A. Ferguson

Engineer Surveyor to Lloyd's Register of Shipping



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CERTIFICATE WRITTEN

NEWCASTLE-ON-TYNE

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