

Rpt. 4b

# REPORT ON OIL ENGINE MACHINERY.

No. 87052

Received at London Office 21 APR 1931  
NEWCASTLE-ON-TYNE

When handed in at Local Office 20/4/31 Port of 20/4/31  
Date, First Survey 3rd Feb 1930 Last Survey 16 April 1931  
Number of Visits 91

on the Tug *Helix* Screw vessel M/Y *Helix*. Tons Gross 3007 Net 1630  
By whom built *Hawthorn Leslie & Co. Ltd* No. 546 When built 1931  
By whom made *Hawthorn Leslie & Co. Ltd* Engine No. 3776 When made - do -  
Boilers made at *St. Pelis* By whom made *Hawthorn Leslie & Co. Ltd* Boiler No. 3776 When made - do -  
Horse Power 1400 Owners *Anglo Saxon Del. Co. Ltd* Port belonging to *London*.  
Horse Power as per Rule 380 Is Refrigerating Machinery fitted for cargo purposes 70 Is Electric Light fitted *yes*.  
Trade for which vessel is intended *Carrying Oil in Bulk* 35/116

L ENGINES, &c. Type of Engines *Twin Hawthorn Workshop* 2 or 4 stroke cycle 4 Single, or double acting *Single*  
Maximum pressure in cylinders 530 lbs Diameter of cylinders 46 1/2 in. Length of stroke 900 in. No. of cylinders 12 (2x6) No. of cranks 12  
Pitch of bearings, adjacent to the Crank, measured from inner edge to inner edge 640 in. Is there a bearing between each crank *yes*.  
Revolutions per minute 150 Flywheel dia. 5' 11 1/2" Weight 4.6 Tons Means of ignition *Camperdown* Kind of fuel used *Diesel oil*.  
Crank Shaft, dia. of journals as per Rule 292 in. as fitted 300 in. Crank pin dia. 300 in. Crank Webs Mid. length breadth 600 in. shrunk Thickness parallel to axis 300 in.  
Flywheel Shaft, diameter as per Rule 292 in. as fitted 300 in. Intermediate Shafts, diameter as per Rule 182 in. as fitted 215 in. Thrust Shaft, diameter at collars as per Rule 191 in. as fitted 215 in.  
Main Shaft, diameter as per Rule 292 in. as fitted 250 in. Screw Shaft, diameter as per Rule 202 in. as fitted 250 in. Is the tube shaft fitted with a continuous liner *yes*.  
Bronze Liners, thickness in way of bushes as per Rule 14 in. as fitted 20 in. Thickness between bushes as per rule - 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 junctions made by fusion through the whole thickness of the liner -  
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 -  
two liners 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 shaft. Length of Bearing in Stern Bush next to and supporting propeller 450 in.  
Propeller, dia. 9-6" Pitch 8-0" No. of blades 3 Material *M.B.* whether Moveable 70 Total Developed Surface 24 sq. feet  
Method of reversing Engines *Low Air* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *yes* Means of lubrication  
*yes* Thickness of cylinder liners 40 in. Are the cylinders fitted with safety valves *yes* Are the exhaust pipes and silencers water cooled or lagged with  
non-conducting 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 *tunnel*.

Cooling Water Pumps, No. 1 *each engine 2 spares* the sea suction provided with an efficient strainer which can be cleared within the vessel *yes*  
Bilge Pumps worked from the Main Engines, No. 1 *each* Diameter 90 in. Stroke 330 in. Can one be overhauled while the other is at work *yes*.  
Pumps connected to the Main Bilge Line No. and Size *Ballast, general service 8" 8" 10" each pump (2)*  
How driven *Steam*.  
Ballast Pumps, No. and size 1-8" 8" 10" Dup. Lubricating Oil Pumps, including Spare Pump, No. and size 3 *each engine 1*  
Are two independent means arranged for circulating water through the Oil Cooler *yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size:—In Machinery Spaces 2-3 1/2" F.D., 1-3" A.P.  
Holds, &c. *Main bilge 3-2" P.S.C. Fore hold bilge 2-2" Peak top 2-2 1/2" & Cofferdam 1-4"*

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-4" 18 Ballast pump & Pump room 1-2 1/2"  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *yes* Are the Bilge Suctions in the Machinery Spaces  
fitted from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *yes*  
Are all Sea Connections fitted direct on the skin of the ship *yes* Are they fitted with Valves or Cocks *Both*.  
Are they fixed 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*.  
Are they each 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*

That pipes pass through the bunkers *none* How are they protected -  
That pipes pass through the deep tanks *none* Have they been tested as per Rule -  
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *yes*  
Is the arrangement 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  
compartment to another *yes* Is the Shaft Tunnel watertight *none* Is it fitted with a watertight door - worked from -  
On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -

Main Air Compressors, No. 1 *each engine* No. of stages 3 Diameters 90 in. H.P. Stroke 330 in. Driven by *Main engine*  
Auxiliary Air Compressors, No. *one* No. of stages - Diameters 40 in. L.P. Stroke - Driven by *Motor*  
Small Auxiliary Air Compressors, No. *one* No. of stages - Diameters - Stroke - Driven by *Steam*  
Scavenging Air Pumps, No. *none* Diameter - Stroke - Driven by -

Auxiliary Engines crank shafts, diameter as per Rule - as fitted -  
R RECEIVERS:—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 *Manholes*.  
Is there a drain arrangement fitted at the lowest part of each receiver -

High Pressure Air Receivers, No. 2 Cubic capacity of each 10 cu. ft. Internal diameter 16 in. thickness 7/8 in.  
Seamless, lap welded or riveted longitudinal joint *Seamless* Material *S* Range of tensile strength 28/32 T. Working pressure by Rules 1000 lbs/sq. in.  
Starting Air Receivers, No. *Two* Total cubic capacity 600 cu. ft. Internal diameter 5-3 in. thickness 7/8 in.  
Seamless, lap welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength 29/33 T. Working pressure by Rules 350 lbs/sq. in.



IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded? *yes*

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

Receivers *yes*

Separate Tanks *yes*

Donkey Boilers *yes*

General Pumping Arrangements *yes*

Oil Fuel Burning Arrangements *yes*

SPARE GEAR *as per Society's Rules & attached list.*

The foregoing is a correct description,

R. & W. HAWTHORN, LESLIE & CO. LIMITED

Manufacturer.

DIRECTOR.

Dates of Survey while building  
During progress of work in shops - 1930  
Feb. 3. 6. 13. 20. 27. Mar. 11. 12. 18. 20. 26. 28. Apr. 3. 8. 28. May 7. 13. 16. 23. 30. June 12. 20. July 7. 14. 16. 18. 1931  
Aug. 6. 12. 15. 18. 19. 20. 22. 25. 27. 29. Sep. 2. 5. 9. 15. 26. Oct. 7. 10. 13. 15. 20. 27. 31. Nov. 7. 11. 14. 18. 20. 24. 26. Dec. 1. 5. 8. 17. 19. Jan. 1931  
During erection on board vessel - 14. 19. 21. 23. 26. 29. 30. Feb. 3. 5. 9. 18. 23. 24. 28. Mar. 3. 5. 6. 11. 16. 20. 23. 24. 30. 31. Apr. 1. 9. 14. 16.  
Total No. of visits *91.*

Dates of Examination of principal parts - Cylinders 14/18/11/30 Covers 14/18/11/30 Pistons 15.9.30 Rods 15.9.30 Connecting rods 15.9.30

Crank shaft *new cast* Flywheel shaft 21.5.30 Thrust shaft 15.9.30 Intermediate shafts 15.9.30 Tube shaft -

Screw shaft 15.9.30 Propeller 18.11.30 Stern tube 18.11.30 Engine seatings 18.11.30 Engines holding down bolts 6.3.31

Completion of fitting sea connections 18.11.30 Completion of pumping arrangements 16.3.31. Engines tried under working conditions 16.4.31

Crank shaft, Material *Steel* Identification Mark *Amo 18450* Flywheel shaft, Material *S.* Identification Mark *18451*

Thrust shaft, Material *Steel* Identification Mark *18452* Intermediate shafts, Material *Steel* Identification Marks *18453*

Tube shaft, Material *-* Identification Mark *-* Screw shaft, Material *Steel* Identification Mark *18454*

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 *-* If so, have the requirements of the Rules been complied with *-*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *M.V. Herpa.*

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

*The Machinery has been built under Special Survey in accordance with the Rules of the Society, the approved plans, & has been securely fitted on board the vessel tried under 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 T.L.M.E. 4, 31 & S. & C.L.*

The amount of Entry Fee ... £ *5. : -* When applied for,

Special ... £ *82. : -* *20 APR 1931*

Donkey Boiler Fee ... £ *5. : 12* When received,

Travelling Expenses (if any) £ *6 : 6* *22.4.31*

Committee's Minute *FRI. 24 APR 1931*

Assigned *+ L.M.C. 4.31 C.L.*

*Oil Eng. 150 lb.*

*Wm. A. Ferguson.*  
Engineer Surveyor to Lloyd's Register of Shipping.



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