

REPORT ON OIL ENGINE MACHINERY.

No. 20274
15 SEP 1954

Received at London Office

Port 3rd Sept 1954. When handed in at Local Office 14th Sept 1954 Port of MIDDLESBROUGH.
Survey held at Haverton Hill & Hartlepool. Date, First Survey 14th December 1953 Last Survey 26th August, 1954.
Number of Visits 112

Single Double Screw vessel m.v. "CYGNUS". Tons Gross 10608. Net 6168.
Built at Haverton Hill on Tees. By whom built Furness Shipbuilding Co. Ltd. Yard No. 463. When built 1954.
Made at Hartlepool. By whom made Richardson Westgarth (Hpl) Ltd. Engine No. 3242. When made 1954.
Made at Newcastle. By whom made North Eastern Marine Eng. Co. (1938) Ltd. Boiler No. 3242. When made 1954.
Owner Sociedad Transoceanica Canopus S.A. Port belonging to Monrovia.
Maximum Service 5500 1100. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.
Vessel is intended Carrying petroleum in bulk.

ES, &c. — Type of Engines Opposed Piston, airless injection, 4 stroke cycle. Single or double acting Single.
Diameter of cylinders 16.5". Length of stroke 16.5". No. of cylinders 4. No. of cranks 4.
Is there a bearing between each crank Yes. Span of bearings (i.e., distance between inner edges of bearings in line) 16.5".
Revolutions per minute 1600. Kind of fuel used Heavy Oil.

Weight 16000 lbs. Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 16000. Means of ignition Electric. Kind of fuel used Heavy Oil.
Crank pin dia. 16.5". Crank webs 16.5". Thickness parallel to axis 16.5". Thickness around eye-hole 16.5".
Intermediate shafts, diameter 16.5". Thrust Shaft, diameter at collars 16.5".
Screw Shaft, diameter 17". Is the tube shaft fitted with a continuous liner Yes.

Shafts, thickness in way of bushes 13/16". Thickness between bushes 11/16". Is the after end of the liner made watertight in the stern tube Yes.
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes.
If two liners are fitted, is the shaft lapped or protected between the liners Yes. Is an approved Oil Gland fitted at the after end of the stern tube Yes.
Length of bearing in Stern Bush next to and supporting propeller 5'8".
No. of blades 4. Material Bronze. Whether moveable No. Total developed surface 5.19 sq. feet.
Kind of damper, if fitted detuner.

Reversing Engines 1. Is a governor or other arrangement fitted to prevent racing of the engine Yes. Means of reversing Chain.
Thickens of cylinder liners 13/16". Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled Yes.
If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned 1-ME. 4 independent working F.W. driven.
Cooling Water Pumps, No. and how driven 1-ME. 4 independent working F.W. driven.
Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.

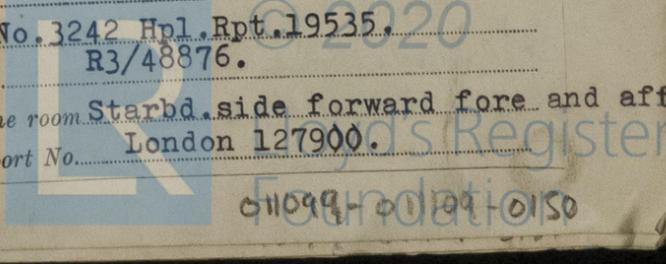
Chain driven. Spare F.W. 250 T. S.W. 410T & 330T. Main Engines, No. and capacity 1-420 ton, 1-330 tons, 2-75 tons.
No. and capacity of each 1-420 ton, 1-330 tons, 2-75 tons.
How driven all steam driven reciprocating pumps.
Is water led to the bilges No. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping all steam driven reciprocating pumps.

Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1-75. 1-420 1-330. M.E. driven. 1-75 tons & 1-55 M.E. driven.
Independent means arranged for circulating water through the Oil Cooler Yes. Branch Bilge Suctions 2-4".
In machinery spaces 2-3 1/2" 2-2 1/2" to E.R. cofferdams. In pump room 2-4".
F & A Peaks 4" fwd. cfd. 1-2 1/2" F.P. flat 2 1/2" Hold. 2-2 1/2" sections & 2-2" ejectors. Ford. B & Ballast 2 1/2"

Bilge Suctions to the engine room bilges, No. and size 1-10" 1-5" 1-3 1/2". Are the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes.
Are the bilge suction pipes in the machinery spaces led from easily accessible points Yes.
Connections fitted direct on the skin of the Ship No. Are they fitted with valves or cocks valves and cocks. Are they fixed 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 below.
Are the blow off cocks fitted with a spigot and brass covering plate Yes.
How are they protected Yes.
Have they been tested as per Rule Yes.

Are valves, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes.
Is the shaft tunnel watertight Yes. Is it fitted with a watertight door worked from.
Means provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes.
Compressors, No. none. No. of stages 3. diameters 33571/U 33571/V. stroke 10". driven by st. engine.
Air Compressors, No. two. No. of stages 3. diameters 33571/U 33571/V. stroke 10". driven by st. engine.
Auxiliary Air Compressors, No. none. No. of stages 3. diameters 33571/U 33571/V. stroke 10". driven by st. engine.

Provision is made for first charging the air receivers Yes. How driven Main engine No. 3242 Hpl. Rpt. 19535.
Air Pumps one. How driven R3/48876.
Have they been made under survey Yes. Engine Nos. Starbd. side forward fore and aft.
Makers name W.H. Allen, Sons & Co. Bedford. Position of each in engine room London 127900. Report No. 2020



AIR RECEIVERS:—Have they been made under survey... **Yes.** ✓ State No. of report or certificate... **Nwc.0**
 State full details of safety devices... **Relief valve on each receiver with safety discy and fusible pl**
 Can the internal surfaces of the receivers be examined and cleaned... **Yes** Is a drain fitted at the lowest part of each receiver...
 Injection Air Receivers, No. **None.** Cubic capacity of each... Internal diameter... thickness...
 Seamless, welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure...
 Starting Air Receivers, No. **Two** ✓ Total cubic capacity **300 cu.ft.** Internal diameter **48 1/2"** ✓ thickness **1.3 1/2"** ✓
 Seamless, welded or riveted longitudinal joint... rivetted ✓ Material **steel.** ✓ Range of tensile strength **29/33.** Working pressure...
IS A DONKEY BOILER FITTED **2 Yes.** If so, is a report now forwarded... **Yes Nwc. Report No.111314.**
 Is the donkey boiler intended to be used for domestic purposes only... **No.**

PLANS. Are approved plans forwarded herewith for shafting... **Yes.** Receivers... Separate
 (If not, state date of approval)
 Donkey boilers... **Yes** General pumping arrangements... **Yes** Pumping arrangements in machinery space...
 Oil fuel burning arrangements... **Yes.**
 Have Torsional Vibration characteristics been approved... **Yes** Date and particulars of approval **5/5/53 barred rang**

SPARE GEAR.
 Has the spare gear required by the Rules been supplied... **Yes** State if for "short voyages" only... **deep sea.**
 State the principal additional spare gear supplied... **spare screwshaft No.26598.**
spare C.1 propeller.

The foregoing is a correct description,
Lumiss Shipbuilding Co Ltd Manufacturer. *Alison* - Chief Mech. Eng.

Dates of Survey while building	During progress of work in shops -	1953. Dec. 14. 1954. Jan. 19. 20. 22. 25. Feb. 3. 5. 8. 10. 11. 19. 22. 25. Mar. 1. 2. 3. 5. 10. 11. 12.
	During erection on board vessel -	4. 6. 7. 10. 11. 13. 17. 18. 19. 21. 25. 26. 28. 31. June. 1. 2. 3. 4. 8. 10. 14. 15. 17. 19. 20. 22. 23. 26. 27. 28. 29. 30. July. 1. 2. 5. 6. 7. 8. 9. 13. 15. 16. 20. 22. Aug. 10. 11. 13. 19. 20. 23. 25. 26. 28. 30. W.Hpl. Dates. (1954) June. 22. July. 8. 12. 19. 20. 22. 23. 27. Aug. 9. 10. 11. 15. 16. 17. 19. Total. 16.
Total No. of visits		16

Dates of examination of principal parts—Cylinders... Covers... Pistons... Rods... Connecting rods...
 Crank shaft... Flywheel shaft... Thrust shaft... Intermediate shafts... 23.3.54. Tube shaft...
 Screw shaft... 2.3.54. Propeller... 3.3.54. Stern tube... 22.2.54. Engine seatings... 3.6.54. Engine holding down bolts...
 Completion of fitting sea connections... 3.3.54. Completion of pumping arrangements... Engines tried under working conditions...
 Crank shaft, material... Identification mark... Flywheel shaft, material... Identification mark...
 Thrust shaft, material... Identification mark... Intermediate shafts, material... **steel.** Identification marks...
 Tube shaft, material... Identification mark... Screw shaft, material... **steel.** Identification mark...
 Identification marks on air receivers... **C.3242 No.1 & 2 LT.800 WP.600. W.N. 8.2.54.** ✓

Welded receivers, state Makers' Name...
 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.** ✓
 Full description of fire extinguishing apparatus fitted in machinery spaces... **steam smothering ER & BR 2-10 gal. 8-2 gal. Main P.R. 2 Portable 2 Gal.**
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo... **oil tanker.** If so, have the requirements of the Rules been complied with... **4 hydrants.**
 What is the special notation desired...
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with... **none.**
 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, Speed restrictions, &c... **The Engines, Boilers and**
 which have been built under Special Survey (West Hartlepool Report 19535 Nwc. Rpt.111314,
 and certificates) have been installed in this vessel in accordance with Rule Requirements
 approved plans.
 Main and auxiliary machinery was seen under working conditions, and basin and sea trials
 several hours duration were carried out with satisfactory results. The safety valves of
 boilers were adjusted to 150lbs/sq.inch. ✓
 Subsequent to sea trials the vessel was examined in drydock at Palmers - Hebburn. See Nwc
 Report No.111720.

In our opinion the machinery of this vessel is eligible for record of +LMC 8.54 and TS (CI
 fitted for burning oil fuel 8.54 Flash point over 150°F. The engines are not to be operat
 continuously between 63 and 75 rpm
 The amount of Entry Fee Install £ 125 - - - - -
 Mdb. £93:15:0d. Special ... £ When applied for 14/9/ 1954.
 W. Hpl. £31:5:0d. Donkey Boiler Fee... £ When received 19
 Travelling Expenses (if any) £
 Engineer Surveyors *H. A. W.*

Committee's Minute **FRIDAY 15 OCT 1954**
 Assigned **+LMC 8.54 (with Torsional End!)**
2 DB 150 lb.
CL.



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