

# REPORT ON OIL ENGINE MACHINERY

No. 19748.

Date of writing Report 6th Oct. 1952. When handed in at Local Office 20th Oct. 1952 of MIDDLESBROUGH. Received at London Office 22 Oct 1952

No. in Survey held at Middlesbrough. Date, First Survey 8th June 1950 Last Survey 10th Sep. 1952.

Reg. Book. Single Screw vessel m.v. "LUCERNA". Number of Visits 82.

Built at South Bank. By whom built Smith's Dock Co. Ltd., Yard No. 1215. When built 1951

Engines made at Newcastle on Tyne. By whom made R & W Hawthorn Leslie & Co. Id., Engine No. 4084. When made 1952.

Donkey Boilers made at West Hartlepool. By whom made Central Marine Engine Works. Boiler No. R.418. When made 1952.

Brake Horse Power { Maximum 5500 Max. & Service Owners H.E. Moss & Co's Tankers (Holdings) Ltd. Port belonging to Liverpool.

M.N. as per Rule 1100 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

Trade for which vessel is intended Open Sea Service. Tanker.

## OIL ENGINES, &c. —Type of Engines

Maximum pressure in cylinders 2 or 4 stroke cycle. Single or double acting Single or double acting

Mean Indicated Pressure \_\_\_\_\_ Diameter of cylinders \_\_\_\_\_ Length of stroke \_\_\_\_\_ No. of cylinders \_\_\_\_\_ No. of cranks \_\_\_\_\_

Span of bearings (i.e., distance between inner edges of bearings in way of a crank) \_\_\_\_\_ Is there a bearing between each crank \_\_\_\_\_ Revolutions per minute { Maximum \_\_\_\_\_ Service \_\_\_\_\_

Flywheel dia. \_\_\_\_\_ Weight \_\_\_\_\_ Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) \_\_\_\_\_ Means of ignition \_\_\_\_\_ Kind of fuel used \_\_\_\_\_

Crank Shaft, { Solid forged \_\_\_\_\_ dia. of journals as per Rule \_\_\_\_\_ Crank pin dia. \_\_\_\_\_ Crank webs { Mid. length breadth \_\_\_\_\_ Mid. length thickness \_\_\_\_\_ Thickness parallel to axis \_\_\_\_\_ Thickness around eye-hole \_\_\_\_\_

Flywheel Shaft, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Intermediate Shafts, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Thrust Shaft, diameter at collars \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_

Tube Shaft, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Screw Shaft, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Is the { tube \_\_\_\_\_ screw \_\_\_\_\_ shaft fitted with a continuous liner { \_\_\_\_\_

Bronze Liners, thickness in way of bushes \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Thickness between bushes \_\_\_\_\_ as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Is the after end of the liner made watertight in the propeller boss \_\_\_\_\_

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

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 \_\_\_\_\_

If two liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Is an approved Oil Gland fitted at the after end of stern tube \_\_\_\_\_ If so, state type \_\_\_\_\_

Propeller, dia. \_\_\_\_\_ Pitch \_\_\_\_\_ No. of blades \_\_\_\_\_ Material \_\_\_\_\_ whether moveable \_\_\_\_\_ Total developed surface \_\_\_\_\_ sq. feet

Moment of inertia of propeller including entrained water (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) \_\_\_\_\_ Kind of damper, if fitted \_\_\_\_\_

Method of reversing Engines \_\_\_\_\_ Is a governor or other arrangement fitted to prevent racing of the engine \_\_\_\_\_ Means of lubrication \_\_\_\_\_ Thickness of cylinder liners \_\_\_\_\_ Are the cylinders fitted with safety valves \_\_\_\_\_ Are the exhaust pipes and silencers water cooled \_\_\_\_\_

Are the exhaust pipes and silencers water cooled \_\_\_\_\_ Are the exhaust pipes and silencers water cooled \_\_\_\_\_ what means are arranged to prevent water from being syphoned back to the engine \_\_\_\_\_

1-steam \_\_\_\_\_ 1 Cooling Water Pumps, No. and how driven 5 { 2-M.E. Driven. Working F.W. 2-M.E. driven. 2-steam driven.

W2-M.E driven \_\_\_\_\_ Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Bilge Pumps worked from the Main Engines, No. and capacity None Can one be overhauled while the other is at work \_\_\_\_\_

Pumps connected to the Main Bilge Line { No. and capacity of each 2-8" x 9" x 10" How driven steam.

Is the cooling 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 arrangements \_\_\_\_\_

Ballast Pumps, No. and capacity 1-8" x 9" x 10" Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2-M.E Driven

Are two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions 3-10" x 9" x 24"

No. and size:—In machinery spaces 3-3 1/2" 3-2" Cofferdam. In pump room Ford. 1-2 1/2"

holds, &c. 1-7" Fore Peak, 1-3 1/2" Aft Peak, 2-7" Deep tank 2-7" Cofferdam 2-2 1/2" D.T. top. 2-2 1/2" store

Direct Bilge Suctions to the engine room bilges, No. and size 1-9" & 2-6"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-bozes Yes Are the bilge suction in the machinery spaces led 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 efficiently 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 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

Do all pipes pass through the bunkers None How are they protected \_\_\_\_\_

Do all pipes pass through the deep tanks Suction Pipe to Fore Peak. Have they been tested as per Rule Yes

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 \_\_\_\_\_

Are all wood vessels, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork \_\_\_\_\_

Auxiliary Air Compressors, No. None No. of stages \_\_\_\_\_ diameters \_\_\_\_\_ stroke \_\_\_\_\_ driven by \_\_\_\_\_

Primary Air Compressors, No. 2. Reavell. No. of stages Two. diameters 4 1/2 & 10 1/2 stroke 8" driven by steam (reader)

All Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ diameters \_\_\_\_\_ stroke \_\_\_\_\_ driven by \_\_\_\_\_

Is provision made for first charging the air receivers Steam Driven Compressors.

Refrigerating Air Pumps or Blowers, No. One. How driven M.E. Crankshaft.

Auxiliary Engines \_\_\_\_\_ Have they been made under survey \_\_\_\_\_ Engine Nos. \_\_\_\_\_ Makers name See London Report No. 123700 Position of each in engine room \_\_\_\_\_ Report No. \_\_\_\_\_

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**AIR RECEIVERS:**—Have they been made under survey..... State No. of report or certificate.....  
 State full details of safety devices.....  
 Can the internal surfaces of the receivers be examined and cleaned..... Is a drain fitted at the lowest part of each receiver.....  
 Injection Air Receivers, No..... Cubic capacity of each..... Internal diameter..... thickness.....  
 Seamless, welded or riveted longitudinal joint..... SEE NEWCASTLE REPORT No. 109240..... Material..... Range of tensile strength..... Working pressure.....  
 Starting Air Receivers, No..... Total cubic capacity..... Internal diameter..... thickness.....  
 Seamless, welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....

**IS A DONKEY BOILER FITTED** Yes -2 ✓ 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..... No. Receivers..... No Separate fuel tank..... Yes  
 (If not, state date of approval)  
 Donkey boilers..... No. General pumping arrangements..... Yes Pumping arrangements in machinery space..... Yes  
 Oil fuel burning arrangements..... Yes  
 Have Torsional Vibration characteristics been approved See Newcastle Report No. 109240..... approval

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied..... Yes ✓ State if for "short voyages" only..... No.  
 State the principal additional spare gear supplied..... Tail Shaft & Propeller. ✓

See also attached List of Spare Gear.

**FOR SMITH'S DOCK CO., LTD.**

The foregoing is a correct description, *A. Warley* Manufacturer.

Dates of Survey while building	1950.		1951.		1952.	
	During progress of work in shops - -	During erection on board vessel - -	During progress of work in shops - -	During erection on board vessel - -	During progress of work in shops - -	During erection on board vessel - -
	June 8.	Feb. 11, 27, 29.	Mar. 4, 5, 7, 11, 12, 18, 19, 20, 21, 25, 27.	Apr. 3, 4, 7, 8, 9, 10, 15, 17.	June 4, 5, 9, 10, 11, 13, 16, 18, 19.	July 3, 4, 8, 9, 14, 22, 24, 25, 28, 31.
	28, 29.	May 2, 5, 6, 7, 9, 12, 15, 19, 20, 22, 23, 26, 27, 28, 30.	Aug. 15, 19, 20, 21, 22, 25, 27, 28.	Sept. 2, 4, 5, 8, 9, 10.		
	Total No. of visits..... 82.					

Dates of examination of principal parts—Cylinders..... Covers..... Pistons..... Rods..... Connecting rods.....  
 Crank shaft..... Flywheel shaft..... Thrust shaft..... Intermediate shafts..... Tube shaft.....  
 Screw shaft 7.3.52. Propeller 7.3.52. Stern tube 5.3.52. Engine seatings 12.5.52. Engine holding down bolts 12.5.52.  
 Completion of fitting sea connections 12.3.52. Completion of pumping arrangements 5.9.52. Engines tried under working conditions 8 & 10.9.  
 Crank shaft, material..... Identification mark..... Flywheel shaft, material..... Identification mark.....  
 Thrust shaft, material..... Identification mark..... Intermediate shafts, material..... Identification marks.....  
 Tube shaft, material..... Identification mark..... SEE NEWCASTLE REPORT No. 109240. Screw shaft, material..... Identification mark.....  
 Identification marks on air receivers.....  
 " " " Propeller 3048 Lloyd's J.L.W. 20.7.51.  
 Welded receivers, state Makers' Name..... See Newcastle Report No. 109240.

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 in Engine & Boiler Rooms. ✓  
 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.....  
 What is the special notation desired..... Not desired.  
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with..... not desired.  
 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.....) These engines and boilers have fitted aboard this vessel in accordance with the approved plans and Rule requirements and on completion the machinery was tried under working conditions and found satisfactory.  
 In my opinion this vessel is now eligible for a record of LMC 9.52 and Notation of TS(CL) 9.52.

Installation  
 The amount of Entry Fee ... £ 125 - - -  
 Special ... .. £ : :  
 Donkey Boiler Fee... .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for 21.10. 19 52.  
 When received 19 .....

*J.C. Smith*  
 Engineer Surveyor to Lloyd's Register of Shipping

TUES. 30 DEC 1952

Assigned + LMC 9.52 Oil Eng. CL 2DB 180/16 (with torsional endorsement)

# 23.10.52  
 Certificates (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

