

# REPORT ON OIL ENGINE MACHINERY.

No. 86122  
28 AUG 1930

Received at London Office

Date of writing Report 19. When handed in at Local Office 16 Aug 1930 Port of Newcastle-on-Tyne  
No. in Survey held at Reg. Book. Wallsend-on-Tyne. Date, First Survey 6 Sept. 1929 Last Survey 15 Aug 1930  
Number of Visits 77.

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel "Lucerna" Tons <sup>Gross</sup> 6556 <sub>Net</sub> 3928

Built at Jarrow. By whom built Palmers S B & J Coy Ltd. Yard No. 998 When built 1930  
Engines made at Wallsend By whom made Wallsend Shipways & Co Ltd Engine No. 894 When made 1930  
Donkey Boilers made at Wallsend By whom made Wallsend Shipways & Co Ltd Boiler No. 894 When made 1930  
Brake Horse Power 2400 Owners J. E. Moss & Co. Port belonging to Liverpool  
Nom. Horse Power as per Rule 449. Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which vessel is intended Carrying petroleum in bulk.

**OIL ENGINES, &c.**—Type of Engines Wallsend Sulzer 2 or 4 stroke cycle 2 Single or double acting S.A.  
Maximum pressure in cylinders 570. Diameter of cylinders 680 mm (26 3/4") Length of stroke 1200 mm (47 1/4") No. of cylinders 6 No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 935 mm Is there a bearing between each crank yes  
Revolutions per minute 98 Flywheel dia. 6'-8" Weight 4114 lbs Means of ignition Compression Kind of fuel used F.P. above 150° F.  
**Crank Shaft**, dia. of journals as per Rule 438 mm as fitted 460 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth various Mid. length thickness 290 mm shrunk Thickness parallel to axis 290 mm  
**Flywheel Shaft**, diameter as per Rule 438 mm as fitted 460 mm **Intermediate Shafts**, diameter as per Rule 13.45" as fitted 19" **Thrust Shaft**, diameter at collars as per Rule 438 mm as fitted 680 mm  
**Tube Shaft**, diameter as per Rule 15.14" as fitted 19" Is the <sup>tube</sup> screw shaft fitted with a continuous liner yes  
**Bronze Liners**, thickness in way of bushes as per Rule 80 as fitted 15/16" Thickness between bushes as per rule 60 as fitted 1/16" 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 ✓  
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 or other appliance fitted at the after end of the tube shaft Newark sand excluder

**Propeller**, dia. 14'-0" Pitch 13'-3" No. of blades 4 Material Bronze whether Moveable no Total Developed Surface 91 sq. feet  
Length of Bearing in Stern Bush next to and supporting propeller 6'-0" (ignum vitae bush)

**Method of reversing Engines** compressed air Is a governor or other arrangement fitted to prevent racing of the engine when detached yes Means of lubrication forced. Thickness of cylinder liners 53 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material yes. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being siphoned back to the engine up funnel

**Cooling Water Pumps**, No. 1 salt water 9x6x6, 1 fresh water 7x10x8 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. one Diameter 5" Stroke 18" Can one be overhauled while the other is at work ✓  
**Pumps connected to the Main Bilge Line** { No. and Size 2 @ 5x5x6 1 @ 8x9x10 How driven Steam. ✓

**Ballast Pumps**, No. and size 1 @ 8x9x10 **Lubricating Oil Pumps**, including Spare Pump, No. and size 2 M.E. 6 1/2 x 5 1/2 x 1 dkey 8 x 7 x 18. X heads 1 on M.E. 2 1/2 x 5 1/2 x 1 dkey 4 x 8 x 12  
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 3 @ 3 1/2" dia 2 @ 2 1/2" dia oil ludge 1 @ 2 1/2" cofferdam.  
In Holds, &c. 2 @ 2 1/2" fwd hold. 1 @ 4" fwd cofferdam.

**Independent Power Pump Direct Suctions** to the Engine Room Bilges, No. and size 1 @ 5"  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions 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 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

What pipes pass through the bunkers none How are they protected ✓  
What 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 ✓  
If 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. one No. of stages 3 Diameters 150 480 510 Stroke 600 mm Driven by main engines  
**Auxiliary Air Compressors**, No. two No. of stages 3 Diameters 33 10 3/4, 13 1/2 Stroke 8" Driven by Steam  
**Small Auxiliary Air Compressors**, No. none No. of stages - Diameters - Stroke - Driven by ✓  
**Scavenging Air Pumps**, No. two (Yandem) Diameter 1400 mm Stroke 450 mm Driven by main engines  
**Auxiliary Engines** crank shafts, diameter as per Rule all steam driven as fitted ✓

**AIR 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 & handholes  
Is there a drain arrangement fitted at the lowest part of each receiver yes

**High Pressure Air Receivers**, No. two Cubic capacity of each 1 @ 17.6 cu ft 1 @ 5.3 cu ft Internal diameter 14 5/8" & 200 mm thickness 1/6" & 15 mm  
Seamless, lap welded or riveted longitudinal joint seamless Material steel Range of tensile strength 28 to 32 tons Working pressure by Rules 1330 & 11 00 lbs  
**Starting Air Receivers**, No. 2 @ 600 lbs & 1 @ 400 lbs Total cubic capacity 215 cu ft each Internal diameter 4'-0" thickness 1 1/8"  
Seamless, lap welded or riveted longitudinal joint riveted. Material S.A. steel Range of tensile strength 28 & 32 tons Working pressure by Rules 627.4 & 11

IS A DONKEY BOILER FITTED? *yes two*

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

Donkey Boilers *yes* General Pumping Arrangements *yes*

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

Receivers *no. copy - similar to those fitted & approved for the Zealand* Separate Tanks *yes*

Oil Fuel Burning Arrangements *yes*

SPARE GEAR *In accordance with and in excess of the Rules as per enclosed list.*

The foregoing is a correct description,  
FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.

*Wainwright* Manufacturer.

Dates of Survey while building  
 During progress of work in shops -- 1929 *Feb. 6, 16, 24, Oct. 9, 15, 31, Nov. 7, 18, Dec. 2, 11, 19, 1930 Jan. 8, Feb. 4, 17, Mar. 3, 7, 10, 11, 12, 13, 14, 17, 18, 20, 21, 24, 25, 26*  
 During erection on board vessel -- *27, 31, Apr. 1, 2, 3, 4, 7, 9, 10, 14, 23, 25, 28, 30, May 5, 6, 7, 9, 12, 14, 15, 16, 21, 26, 27, 28, 29, 30, June 2, 4, 5, 6, 11, 12, 13, 16*  
 Total No. of visits *77*

Dates of Examination of principal parts -- Cylinders *10-3-30* Covers *10-3-30* Pistons *9-5-30* Rods *10-4-30* Connecting rods *10-4-30*  
 Crank shaft *26-2-30* Flywheel shaft *3-4-30* Thrust shaft *3-4-30* Intermediate shafts *3-4-30* Tube shaft *✓*  
 Screw shaft *30-4-30* Propeller *23-4-30* Stern tube *9-4-30* Engine seatings *24-5-30* Engines holding down bolts *8-4-30*  
 Completion of fitting sea connections *27-5-30* Completion of pumping arrangements *25-4-30* Engines tried under working conditions *2-8-30*  
 Crank shaft, Material *O.H. Steel* Identification Mark *9620 A.S.* Flywheel shaft, Material *O.H. Steel* Identification Mark *3345 WTB*  
 Thrust shaft, Material *O.H. Steel* Identification Mark *3345 WTB* Intermediate shafts, Material *O.H. Steel* Identification Marks *3345 WTB*  
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *O.H. Steel* Identification Mark *3345 WTB*

Is the flash point of the oil to be used over 150° F. *yes*  
 Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Luxor*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The Machinery of this vessel has been built under Special Survey. Materials & workmanship good. Hydraulic tests satisfactory. The whole of the machinery has been efficiently installed & fixed in the vessel and tried under full working conditions and manoeuvred as required by the Rules and is in good & safe working condition & eligible in my opinion to be classed and have records **✠ LMC 8-30** Tail shaft C.L. in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. + LMC 8-30*

*oil begins 25CSA. 6cy. 26 3/4 - 47 1/4 200, 120 lb. cl.*

*William Butler*  
 Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 6 - -  
 Special ... £ 112 9 - -  
 Donkey Boiler Fee ... £ 14 8 - -  
 Travelling Expenses (if any) £ 9 9 - -  
 When applied for, **27 AUG 1930**  
 When received, *25-9-30*

Committee's Minute **FRI 5 SEP 1930**  
 Assigned *+ L.M.C. 8-30 oil Eng. 200, 120 lb. C.L.*  
**CERTIFICATE WRITTEN.**

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