

# REPORT ON OIL ENGINE MACHINERY.

No. 8116

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Writing Report 16th July, 1951. When handed in at Local Office 19 Port of PLYMOUTH

Survey held at DARTMOUTH. Date, First Survey 24. 1. 51. Last Survey 19th June, 19. 51. Number of Visits 18.

on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw ~~vessel~~ Tanker "LANDAK"

at Dartmouth By whom built Philip & Son Ltd. Yard No. 1220 When built 6.51

Engines made at Openshaw By whom made Crossley Bros. Ltd. Engine No. 140975 When made 6.51

Boilers made at None By whom made --- Boiler No. --- When made ---

Horse Power 425 Owners The Shell Co. of Singapore Ltd. Port belonging to Singapore

Power as per Rule 105 NHP=97 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

for which vessel is intended Carrying petroleum in bulk

ENGINES, &c. — Type of Engines Heavy Oil (H.R.L. 5) 2 or 4 stroke cycle 2 Single or double acting S.A.

Mean pressure in cylinders 950 lbs/sq" Diameter of cylinders 10 1/2 Length of stroke 13 1/2 No. of cylinders 5 No. of cranks 5

Indicated Pressure 92 lbs/sq" Ahead Firing Order in Cylinders 1, 5, 2, 3, 4 Span of bearings, adjacent to the crank, measured inner edge to inner edge 14.11/16 Is there a bearing between each crank Yes Revolutions per minute 400

Wheel dia. 37 1/2 Weight 2166 lbs Moment of inertia of flywheel (16 lbs. in<sup>2</sup> or Kg.cm<sup>2</sup>) 500,000 Means of ignition Compn. Kind of fuel used Diesel

Wheel Shaft, diameter as per Rule On crank shaft Intermediate Shafts, diameter as per Rule Appd. Thrust Shaft, diameter at collars as fitted 4 3/4"

Screw Shaft, diameter as per Rule Appd. as fitted 5 1/2 at cone Is the tube shaft fitted with a continuous liner Yes

Liners, thickness in way of bushes as per Rule Appd. Thickness between bushes as per Rule Appd. Is the after end of the liner made watertight in the stern boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ---

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-toxic --- 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 shaft No If so, state type --- Length of bearing in Stern Bush next to and supporting propeller 20 1/2

Propeller, dia. 61" Pitch 38" No. of blades 3 Material Mang. Bronze whether moveable solid Total developed surface 9.04 sq. feet

Moment of inertia of propeller (16 lbs. in<sup>2</sup> or Kg.cm<sup>2</sup>) --- Kind of damper, if fitted ---

Means of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of reversing Forced Thickness of cylinder liners 7/8" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled with non-conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned from the engine Up Funnel Cooling Water Pumps, No. 2 = 1 ME + G.S. Pump 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 4 1/2" Stroke 3" Can one be overhauled while the other is at work ---

connected to the Main Bilge Line { No. and size One 4 1/2" x 3" 2800 galls/hr } One 20 ton/hr. } One 30 ton/hr. { How driven Main Engine } No. 1 Aux. Engine } Electric Motor

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 ---

Pumps, No. and size The above Aux. pumps Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 each 1176 galls/hr.

independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary pumps, No. and size:—In machinery spaces 1 @ 2 1/2" dia. In pump room 2" hand pump only

and, &c. None. / Cofferdams. One 2 1/2" & one 2" hand pump.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size One 3" + 1-2 1/2"

Are the bilge suction pipes in holds and tunnel well fitted with strum-boxes 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

Sea Connections fitted direct on the skin of the Ship Yes Are they fitted with valves or cocks Yes 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 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 ---

Do pipes pass through the bunkers None How are they protected ---

Do pipes pass through the deep tanks None Have they been tested as per Rule ---

Are pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are arrangements 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 from one compartment to another Yes Is the shaft tunnel watertight None Is it fitted with a watertight door --- worked from ---

Are means provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ---

Air Compressors, No. One No. of stages 2 diameters 5 3/4 & 2 1/2 stroke 4" driven by Main Eng.

Auxiliary Air Compressors, No. One No. of stages 2 diameters 4 1/2 & 1 1/2 stroke 3 1/2 driven by No. 2 Aux. Eng.

auxiliary Air Compressors, No. None No. of stages --- diameters --- stroke --- driven by ---

Is provision made for first charging the air receivers Aux. Air Comp. - Aux. engines are Electric and Hand starting.

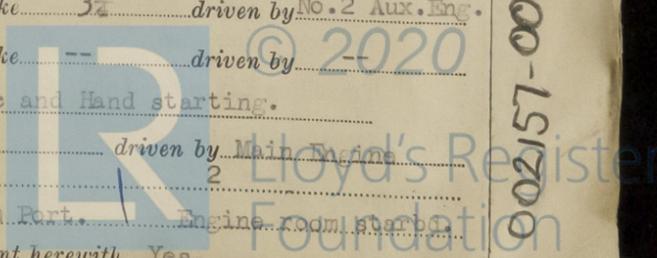
Hand Air Pumps, No. One D.A. Tandem diameter 20 1/2 stroke 6 1/2 driven by Main Eng.

Do auxiliary engines crank shafts, diameter as per Rule See Man. rpt. No. 14296 No. 1 Position Eng. Room Port. Engine room starboard

Have auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

Six 10/8/57

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**AIR RECEIVERS:**—Have they been made under survey.  Yes  No State No. of report or certificate. Not. C.10448 & C.4b.

Is each receiver, which can be isolated, fitted with a safety valve as per Rule  Safety valve on Air Compn.

Can the internal surfaces of the receivers be examined and cleaned.  Yes  No Is a drain fitted at the lowest part of each receiver.  Yes  No

**Injection Air Receivers, No.**  None  1 Cubic capacity of each. --- Internal diameter. --- thickness. ---

Seamless, welded or riveted longitudinal joint. --- Material. --- Range of tensile strength. --- Working pressure. ---

**Starting Air Receivers, No.**  2  1 Total cubic capacity. 30 cu. ft. Internal diameter. 24 1/8" thickness. 15/32. Ends 3/8"

Seamless, welded or riveted longitudinal joint.  Welded  Riveted Material.  Steel  Iron Range of tensile strength. --- Working pressure. ---

**IS A DONKEY BOILER FITTED**  No  Yes If so, is a report now forwarded. ---

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

**PLANS.** Are approved plans forwarded herewith for shafting. 2.3.49. & Line Shafting. 2.50. Receivers. See Not. rpt. Separate fuel tanks.

Donkey boilers. --- General pumping arrangements. 1.6.50. Pumping arrangements in machinery space. 1.6.50.

Oil fuel burning arrangements. ---

Have Torsional Vibration characteristics been approved.  Yes  No Date of approval. 1.3.50.

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied.  Yes  No

State the principal additional spare gear supplied. See List.

FOR PHILIP & SON, LIMITED,

The foregoing is a correct description, *Jas. Philip* Manufacturer.

**Dates of Survey while building**

During progress of work in shops. ---

During erection on board vessel. 1951. Jan. 24; Feb. 9, 14; Mar. 7, 14, 22; April. 18, 25; May. 2, 9, 16, 23, 30, June. 6, 11, 18.

Total No. of visits. 18.

**Dates of examination of principal parts**—Cylinders. Man. rpt. Covers. Man. rpt. Pistons. Man. rpt. Rods. --- Connecting rods. Man. rpt.

Crank shaft. Man. rpt. Flywheel shaft. --- Thrust shaft. Man. rpt. Intermediate shafts. Ips. rpt. Tube shaft. ---

Screw shaft. Lon. rpt. Propeller. Ips. rpt. & 6.6.51 Stern tube. 5. 2. 51. Engine seatings. 28.2.51. Engine holding down bolts. 25.4.51

Completion of fitting sea connections. 9.2.51. Completion of pumping arrangements. 13.6.51. Engines tried under working conditions. 19.6.51

Crank shaft, material. Steel Identification mark. T.H.S. 5.5.50. Flywheel shaft, material. --- Identification mark. ---

Thrust shaft, material. Steel Identification mark. B.G. 14970-B.B.430

Tube shaft, material. --- Identification mark. --- Intermediate shafts, material. Steel Identification marks. 4109

Screw shaft, material. Steel Identification mark. 4108 G.H.

**Identification marks on air receivers.** 81/480239 LLOYD'S TEST 700 lbs/sq" 13.3.50. T.O.S. - T.112

81/490190 " " " " 12.6.50. " T.142

Welded receivers, state Makers' Name. Ruston & Hornsby Lincoln

Is the flash point of the oil to be used over 150°F.  Yes  No

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with.  Yes  No

Description of fire extinguishing apparatus fitted. C.O<sub>2</sub> in Engine & Pump Room plus 2 - 2gall. Pyrene Fire Extinguishing & 1 Quest

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. ---

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. Standard Engine. If so, state name of vessel. ---

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

The machinery of this vessel, has been fitted on board under Special Survey in accordance with, or equivalent to approved plans, rule requirements and the Secretary's letters.

The workmanship and materials are good and when tried under full power the engines were found satisfactory in every respect.

In my opinion this installation is eligible for the notation in the Register Book + L.M.C. 6.51 and

C.L. 5 Cyl. 2 S.C.S.A. 10 1/2" x 13 1/2" 105 M.N.

The amount of Entry Fee ... £ : :  
 Special ... £ 14 : 0 : When applied for 19  
 Donkey Boiler Fee... £ : : When received 19  
 Travelling Expenses (if any) £ 9 : 12/6 :  
 Committee's Minute FRI, 17 AUG 1951  
 Assigned + LMC 651 Oil Eng.  
 CL

*D. J. ...*  
 Engineer Surveyor to Lloyd's Register of S  
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Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.