

# REPORT ON OIL ENGINE MACHINERY.

No. 73263

Received at London Office

Date of writing Report 19th Sept 1948. When handed in at Local Office 18 SEP 1948. Port of Glasgow. Date, First Survey 17.5.48. Last Survey 9.9.48. Number of Visits 7.

Survey held at Glasgow. Date, First Survey 17.5.48. Last Survey 9.9.48. Number of Visits 7. Single on the Twin Triple Quadruple Screw vessel M.V. "WARMIA". Tons Gross Net. Built at Glasgow. By whom built New Goolie Shipbuilding Co. Yard No. 441. When built 1948. Engines made at Glasgow. By whom made New British Pola Engine Ltd. Engine No. 643. When made 1948. Rank Boilers made at Glasgow. By whom made. Boiler No. When made. Brake Horse Power 980. Owners Gdynia - America Shipping Line Ltd. Port belonging to Gdynia. N. Power as per Rule 225. Is Refrigerating Machinery fitted for cargo purposes. Is Electric Light fitted. Trade for which vessel is intended Coasting.

ENGINES, &c. - Type of Engines Heavy oil M.S.B.M. type. 2 or 4 stroke cycle 2. Single or double acting Single. Maximum pressure in cylinders 853 lbs/sq. in. Diameter of cylinders 340. Length of stroke 570. No. of cylinders 6. No. of cranks 6. Mean Indicated Pressure 102 lbs/sq. in. Ahead Firing Order in Cylinders 62435. Span of bearings, adjacent to the crank, measured from inner edge to inner edge 494. Is there a bearing between each crank. Revolutions per minute 250. Flywheel dia. 1200. Weight 3040 lbs. Moment of inertia of flywheel (16 lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) 3115 lbs. in<sup>2</sup>. Means of ignition Comp. Kind of fuel used Diesel. Crank pin dia. 235. Crank webs Mid. length breadth 324. Thickness parallel to axis. Mid. length thickness 130. Thickness around eye-hole. Crank pin dia. 235. Intermediate Shafts, diameter as per Rule. Thrust Shaft, diameter at collars as per Rule 6.35. Propeller Shaft, diameter as per Rule. Screw Shaft, diameter as per Rule. Is the tube screw shaft fitted with a continuous liner.

Linings, thickness in way of bushes as per Rule. Thickness between bushes as per Rule. 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 or other appliance fitted at the after end of tube shaft. If so, state type. Length of bearing in Stern Bush next to and supporting propeller.

Propeller, dia. Pitch. No. of blades. Material. whether moveable. Total developed surface. sq. feet. Moment of inertia of propeller (16 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 when declutched. 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 with non-conducting material. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine. Cooling Water Pumps, No. One. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.

Bilge Pumps worked from the Main Engines, No. One. Diameter 110. Stroke 120. Can one be overhauled while the other is at work. Pumps connected to the Main Bilge Line. No. and size. How driven.

Is the cooling water led to the bilges. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements. Blast Pumps, No. and size. Power Driven Lubricating Oil Pumps, including spare pump, No. and size.

Are two independent means arranged for circulating water through the Oil Cooler. Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size: - In machinery spaces. In pump room.

Are the holds, &c. Independent Power Pump Direct Suctions to the engine room bilges, No. and size. Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes. 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.

Are all Sea Connections fitted direct on the skin of the Ship. Are they fitted with valves or cocks. Are they fixed efficiently high on the ship's side to be seen without lifting the platform plates. Are the overboard discharges above or below the deep water line.

Are they each fitted with a discharge valve always accessible on the plating of the vessel. Are the blow off cocks fitted with a spigot and brass covering plate. Do all pipes pass through the bunkers. How are they protected.

Do all pipes pass through the deep tanks. 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.

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. Is the shaft tunnel watertight. 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. One. No. of stages Two. diameters 55 134. stroke 56. driven by Gearing.

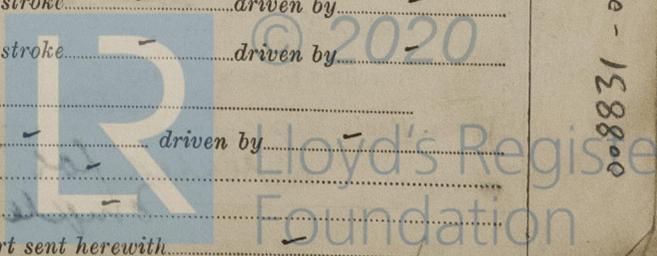
Auxiliary Air Compressors, No. No. of stages. diameters. stroke. driven by. All Auxiliary Air Compressors, No. No. of stages. diameters. stroke. driven by.

Is any special provision made for first charging the air receivers. Reversing Air Pumps, No. diameter. stroke. driven by. Auxiliary Engines crank shafts, diameter as per Rule. No. as fitted. Position.

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

12.10.48

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**AIR RECEIVERS:** —Have they been made under survey... *Yes* State No. of report or certificate... *C. 64660.*

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 and cleaned... *Yes* Is a drain fitted at the lowest part of each receiver... *Yes*

**Injection Air Receivers, No.** *✓* 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.* Total cubic capacity... *70 cu feet* Internal diameter... *2'-1 1/2"* thickness... *9/16"*

Seamless, welded or riveted longitudinal joint... *Riveted* Material... *Steel* Range of tensile strength... *28/52* Working pressure... *355*

**IS A DONKEY BOILER FITTED**... *✓* 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... *Yes* Receivers... *Yes* Separate fuel tanks... *✓*

Donkey boilers... *✓* General pumping arrangements... *✓* Pumping arrangements in machinery space... *✓*

Oil fuel burning arrangements... *✓*

Have Torsional Vibration characteristics been approved... *Yes* Date of approval... *22.1.47.*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied... *Yes*

State the principal additional spare gear supplied... *as required by owner.*

The foregoing is a correct description... *C. Scott BPE Ltd. Manufacturer.*

Dates of Survey while building... During progress of work in shops... *17.5.48. 18.6.48. 29.6.48. 2.7.48. 9.7.48. 9.9.48. 14.9.48*

Dates of examination of principal parts—Cylinders... *2.7.48.* Covers... *2.7.48.* Pistons... *18.6.48* Rods... *18.6.48* Connecting rods... *18.6.48*

Crank shaft... *27.2.48.* Flywheel shaft... *✓* Thrust shaft... *✓* Intermediate shafts... *✓* Tube shaft... *✓*

Screw shaft... *✓* Propeller... *✓* Stern tube... *✓* Engine seatings... *✓* Engine holding down bolts... *✓*

Completion of fitting sea connections... *✓* Completion of pumping arrangements... *✓* Engines tried under working conditions... *9.9.48*

Crank shaft, material... *Steel* Identification mark... *LLOYD'S T557 1.W. 872 27.2.48* Flywheel shaft, material... *✓* Identification mark... *✓*

Thrust shaft, material... *✓* Identification mark... *✓* Intermediate shafts, material... *✓* Identification marks... *✓*

Tube shaft, material... *✓* Identification mark... *✓* Screw shaft, material... *✓* Identification mark... *✓*

Identification marks on air receivers... *207 N: 64660 LLOYD'S T557 555 66/2 W.P. 365 A.R.S. 2.3.48 ✓*

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... *✓*

Description of fire extinguishing apparatus fitted... *✓*

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... *✓* If so, state name of vessel... *✓*

**General Remarks** (State quality of workmanship, opinions as to class, &c... *This engine has been built under Special Survey and in accordance with the Rules and approved Plans.*

*The materials used and workmanship are good, and on completion the engine was tried on the test bench at the makers' works with satisfactory results.*

*The engine has now been dispatched to Goolbs to be installed on board the M.S. "Wannia" Mess Goolbs Shipbuilding Co. Ltd. yard No. 441.*

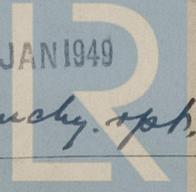
*The torsional vibration characteristics have been approved for a service speed 250 R.P.M. provided a notice beam be fitted at certain points, stating that the engine is not to be run continuously between 150 and 175 R.P.M. (See London letter of 22.1.47.)*

The amount of Entry Fee... £ : : Special... *2/3 Gov. 60 0 1/3 Hull 30 0* Donkey Boiler Fee... £ : : Travelling Expenses (if any) £ : :

Committee's Minute... Assigned... *Referred for completion*

20 SEP 1948

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



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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.

GLASGOW 29 SEP 1948

FBI 14 JAN 1948

*See F.E. Mackay, rpt.*