Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 16976.

Received at London Office 10 OCT 1949

Date of writing Report 3rd Oct. 1949. When handed in at Local Office 8th Oct. 1949. Port of Gothenburg.

No. in Reg. Book. 40015 on the Single ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel "PERICLES"

Survey held at Gothenburg Date, First Survey 9th September 1947 Last Survey 22nd September 1949. Number of Visits 63

Tons: Gross 9938 Net 5893

Built at Gothenburg By whom built A-B. Götaverken Yard No. 630 When built 1949

Engines made at Gothenburg By whom made A-B. Götaverken Engine No. 2038 When made 1949

Donkey Boilers made at Stockton-on-Tees By whom made Stockton C.E. & Riley Boilers, Ltd. Boiler No. 6992/3 When made 1947

Brake Horse Power 6000 ✓ Owners D/S A/S Eikland Port belonging to Oslo

M.N. Power as per Rule 1120 ✓ NHP=992 ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended General

OIL ENGINES, &c. —Type of Engines Heavy oil 2 or 4 stroke cycle 2 ✓ Single or double acting Single

Maximum pressure in cylinders 49 kg/cm² ✓ Diameter of cylinders 680 mm. ✓ (26 3/4" ~~(26.13/16")~~) Length of stroke 1500 mm. ✓ (59.1/16") No. of cylinders 8 ✓ No. of cranks 8 ✓

Mean Indicated Pressure 6.75 kg/cm² ✓ Ahead Firing Order in Cylinders 1-8-3-4-7-2-5-6 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 974 mm. ✓ Is there a bearing between each crank Yes Revolutions per minute 112 ✓

Flywheel dia. 2136 mm. Weight 1940 mm. Moment of inertia of flywheel (Kg.cm.sec²) ~~XXXXXXXXXXXXXX~~ 12740 Means of ignition Compr. Kind of fuel used Dieselcil

Crank Shaft, ~~XXXXXXXX~~ Semi built ~~XXXXXXXX~~ dia. of journals as ~~XXXXX~~ appd. 480/130 mm. as fitted 480/130 mm. Crank pin dia 480/105 mm Crank webs Mid. length breadth --- Mid. length thickness --- shrunk Thickness parallel to axis. 300 mm. Thickness around eyehole 245 mm.

Flywheel Shaft, diameter as per Rule --- as fitted --- Intermediate Shafts, diameter as ~~XXXXX~~ appd. 390 mm. as fitted 390 mm. ✓ Thrust Shaft, diameter at collars as ~~XXXXX~~ appd. 480 mm. as ~~XXXXX~~ fitted 480 mm.

Tube Shaft, diameter as per Rule --- as fitted --- Screw Shaft, diameter as ~~XXXXX~~ appd. 437 mm. as fitted 437 mm. Is the ~~XXXXX~~ screw shaft fitted with a continuous liner --- No

Bronze Liners, thickness in way of bushes as ~~XXXXX~~ appd. 21.5 & 24 mm. as fitted 21.5 & 24 mm. Thickness between bushes as ~~XXXXX~~ appd. 21-21.5 mm. as fitted 21-21.5 mm. 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 One length

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 Fits tightly 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 1750 mm.

Propeller, dia. 5330 mm. Pitch 4330/3559 mm. No. of blades 4 Material Bronze whether moveable No Total developed surface 11.65 sq. Metres Moment of inertia of propeller ~~XXXXXXXXXXXXXX~~ (Kg.cm.sec²) 19200 Kind of damper, if fitted None fitted

Method of reversing Engines Direct with compr. air Is a governor or other arrangement fitted to prevent racing of the engine ~~XXXXXXXXXXXX~~ Yes ✓ Means of lubrication Forced Thickness of cylinder liners 50 mm. Are the cylinders fitted with safety valves Yes ✓ Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Led to a funnel Cooling Water Pumps, No. 2 salt water a 4600 litres per minute, and 2 fresh water a 3750 litres per minute 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. None Diameter --- Stroke --- Can one be overhauled while the other is at work ---

Pumps connected to the Main Bilge Line: No. and size Ballast: 1 x 100 M³/h, Bilge: 1 x 25 M³/h, Bilge- and San: 1 x 25 M³/h, Cond. circ: 1x200 M³/h. ✓ How driven El.driven Steam driven El. driven Steam driven

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 size 1 á 100 M³/hour Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x 230 M³/hour ✓

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 5 x 3½", C/D 12-13: 1 x 3½", C/D 26-27: 1 x 3½", C/D 46-47: 1 x 3½".

Cargo holds, &c. Dry cargo hold: 2 x 2½", C/D 1 x 5". In main pump room: 3 x 3", In forward pump room: 1 x 2½".

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 x 5" ✓

Are all the bilge suction pipes in holds ~~XXXXXXXXXXXX~~ 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 1. Others on fabr.boxes ✓ 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 Small plates to be lifted ✓ Are the overboard discharges above or below the deep water line Both ✓ 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 No coal bunkers ✓ How are they protected ---

What pipes pass through the deep tanks Heating coils only ✓ 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 E.R.aft ✓ Is it fitted with a watertight door --- worked from ---

In 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. None ✓ No. of stages --- diameters --- stroke --- driven by ---

Auxiliary Air Compressors, No. 2 ✓ No. of stages 2 diameters 280/320 mm. stroke 150 mm. driven by El.motor

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

What provision is made for first charging the air receivers By the el. driven compressor. Current supplied by the steam driven generator. ✓

Scavenging Air Pumps, No. 1 x 8. Under side of the ME pistons, Also one separate pump to each cylinder. diameter 320 mm. stroke 1500 mm. driven by the engine

Auxiliary Engines crank shafts, diameter as ~~XXXXX~~ approved 160 mm. as fitted 160 mm. No. 2 heavy oil- and 1 steam engine Position 1 heavy oil- and 1 steam engine on port side, and 1 heavy oil engine on starboard side of the engine room floor.

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

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AIR RECEIVERS:—*Have they been made under survey* Yes ✓ *State No.* XXXXXXXXXXXXXXXXX 2097 - 2098

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* *by Rules* ---

Actual ---

Starting Air Receivers, *No.* 2 ✓ *Total cubic capacity* 22.6 M^3 *Internal diameter* 1800 mm. *thickness* 25 mm.

Seamless, welded or riveted longitudinal joint Riveted *Material* S.M.Steel *Range of tensile strength* 44-50 kg/cm^2 *Working pressure* appd. 25 kg

Actual 25 kg/

IS A DONKEY BOILER FITTED Yes ✓ *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* London 31.1.1946 *(If not, state date of approval)* *Receivers* London 14.1.1946 *Separate fuel tanks* 9.6.

Donkey boilers --- *General pumping arrangements* L. 19.5.1949 *Pumping arrangements in machinery space* London 27.5.1948

Oil fuel burning arrangements 19.4.1949

Have Torsional Vibration characteristics been approved Yes ✓ *Date of approval* 31.1.1946 ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓

State the principal additional spare gear supplied 1 propeller shaft with nut, 6 fuel needle valves, 3 exhaust gas valves, 4 spindles, 4 valve seatings for exhaust gas valves, 1 starting air valve, a number of piston rings, 1 complete main bearing and 8 casings, and plungers for the fuel oil pumps.

The foregoing is a correct description, and the particulars of the installation as fitted are as approved for torsional vibration characteristics.

AKTIEBOLAGET GÖTAVERKEN

Manufacturer.

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - - - 9th September, 1947 - 22nd September, 1949.

Total No. of visits 63

Dates of examination of principal parts—Cylinders 19/3, 24, 26, 31/5 1949 *Covers* 18-19-20.5.49 *Pistons* 20.5.1949 *Rods* 20.5.49 *Connecting rods* 20.5.1949

Crank shaft 30.3.1949 *Flywheel shaft* --- *Thrust shaft* 30.3.1949 *Intermediate shafts* 1-24.8.1949 *Tube shaft* ---

Screw shaft 26.7.1949 *Propeller* 22.8 & 5.9.1949 *Stern tube* 13.6.1949 *Engine seatings* 14.6.1949 *Engine holding down bolts* 13.8.1949

Completion of fitting sea connections 17.6.1949 *Completion of running arrangements* 17.9.1949 *Engines tried under working conditions* 27.6 & 22.

Crank shaft, material S.M. Steel *Identification mark* LL.No.654/55 BR 16.9.48 Lloyds No.656 BR 16.9.48

Intermediate shaft, material XXXXXX S.M.Steel *Identification mark* LL.No.46266 SB 24.8.49 LL.No.46271 OS 1.8.49

Thrust shaft, material S.M. Steel *Identification mark* LL.No.17545 HAI 20.5.48

Intermediate shaft, material S.M.Steel *Identification marks*

Tube shaft, material --- *Identification mark* ---

Screw shaft, material S.M. Steel *Identification mark* LL.No.18176 HAI 22.11.48

Identification marks on air receivers Nos. 2097 - 2098 LLOYD'S TEST 39 KGS. WP 25 KGS. SB 13.6.49

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 ✓

Description of fire extinguishing apparatus fitted 8 x 15 litres foam extinguishers, and Steam under boilers and ER floor plates. ✓

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 ~~XXXXXXXXX~~ similar to *a previous case* Yes *If so, state name of vessel* Öresundsvarvet A-B. Yard No.95, Gothen First Entry Report No. 16517.

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

This machinery has been built under special survey in accordance with the Rules and approved plans and has been securely fitted on board under our inspection and to our satisfaction. The workmanship and materials are good and test sheets in respect of the latter are attached.

The machinery has been tested under full working power condition on a trial trip and found to work satisfactorily.

A notice board has been fitted at the control station stating that the engine is not to be run continuously between 33 and 49 revolutions per minute.

An exhaust gas economiser of A-B. Götaverken's multitubular type has been built under special survey in accordance with the Rules and approved plan and has been securely fitted on board.

(Continued)

Gothenburg office.

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute)

The amount of Entry Fee ... £ --- : --- :

Special ... ... Kr. 5170:00 :

~~XXXXXXXXX~~ Fee ... Kr. 300:00 :

SS of Start.Air Rec. SS of Exh.Gas Econ. ~~XXXXXXXXXXXXXXX~~ Kr. 80:00 :

When applied for 8th Oct. 1949.

When received --- 19 -

Engineer Surveyor to Lloyd's Register of Shipping.

RM 18 NOV 1949

Committee's Minute

Assigned + LMC 9.49 Oil Eng Subject C.L. 2DB 150lb.

Rpt. 9a.

Port of Gothenburg. *Continuation of Report No.* 16976 *dated* 8th October, 1949, *on the*

oil engine machinery of the motor tanker "Pericles", of Oslo, No. 40015 in the Register Book.

This machinery is eligible, in our opinion, to be classed +LMC 9.49 with notations of Tail Shaft fitted with Continuous Liner, and 2 Donkey Boilers á 150 lbs. per square inch, subject to a 3rd lighting transformer being placed on board.

Note:

A 3rd lighting transformer showed on the approved plans has not yet been fitted.

The Builders state, however, that the same will be placed on board as soon as delivered by the Makers, probably at the end of October.