

## REPORT ON OIL ENGINE MACHINERY.

No. 19510.

12 JAN 1953

Received at London Office

Date of writing Report 2nd Jan. 1953 When handed in at Local Office 9th Jan. 1953 Port of Gothenburg

No. in Survey held at Gothenburg Date, First Survey 30.10.51 Last Survey 20.12. 1952  
Reg. Book. Number of Visits 8795496 on the ~~Double~~ <sup>Single</sup> Screw vessel Motor Tanker "PETRA DAN" Tons Gross 10843  
Net 6146

Built at Gothenburg By whom built AB Lindholmens Varv Yard No. 1028 When built 1952

Engines made at Gothenburg By whom made AB Lindholmens Varv Engine No. 1315 When made 1952

Donkey Boilers made at Gothenburg By whom made AB Lindholmens Varv Boiler No 2957-58 When made 1952

Brake Horse Power { Maximum 6000 Owners Rederi Ocean A/S Port belonging to Esbjerg  
Service -M.N. as per Rule (1120)  $\frac{BHP}{5} = 1200$  Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended General

IL ENGINES, &c. — Type of Engines Diesel and heavy oil DM 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 49 Diameter of cylinders 680 mm. Length of stroke 1500 No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 6.75 Span of bearings (i.e., distance between inner edges of bearings in  
way of a crank) 974 mm. Is there a bearing between each crank Yes Revolutions per minute { Maximum 112  
Service -  
kgs. cm. sec 2  
Flywheel dia. 2136 mm. Weight 4100 kgs. Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 32100 Means of ignition Compr. Kind of fuel used Diesel or  
heavy oil

Crank ~~shaft~~ <sup>shaft</sup> dia. of journals ~~480/130~~ <sup>appr. 480/130</sup> mm. Crank pin dia. 480/105 mm. Crank webs Mid. length breadth - Thickness parallel to axis 300 mm.  
~~480/130~~ <sup>appr. 480/130</sup> mm. Mid. length thickness - shrunk Thickness around eye-hole 245 mm.

Flywheel Shaft, diameter as per Rule - Intermediate Shafts, diameter as fitted 392 mm. Thrust Shaft, diameter at collars as fitted 480 mm.  
as fitted -

Propeller Shaft, diameter as per Rule - Screw Shaft, diameter as fitted 437 mm. Is the ~~shaft~~ <sup>screw</sup> shaft fitted with a continuous liner { Yes  
as fitted -

Bronze Liners, thickness in way of bushes as per Rule 21 mm. Thickness between bushes as fitted 21 mm. Is the after end of the liner made watertight in the  
as fitted -

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

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

of stern tube - If so, state type - Length of bearing in Stern Bush next to and supporting propeller 2256 mm.

Propeller, dia. 5400 Pitch 316 mm. No. of blades 4 Material Bronze whether moveable No Total developed surface 10.07 sq. m.

Moment of inertia of propeller including entrained water (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) - Kind of damper, if fitted None

Method of reversing Engines compr. air Is a governor or other arrangement fitted to prevent racing of the engine 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

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

to the engine led to funnel Cooling Water Pumps, No. and how driven 3 el-driven Working F.W. 1x4600 l/min.

1x4600 l/min. Spare F.W. 1x4 and 1x4600 l/min. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Water 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 1 x 80 ton/hour 1 x 150 tons/hour

How driven El-driven Steam

Is 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 -

Oil Pumps, No. and capacity 1x150 tons/h. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x 230 m<sup>3</sup>/h.

Two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions -

and size: In machinery spaces 2x75 mm; 3x90 mm.; CD 3 x 50 mm.; Aft CD 1 x 150 mm. In pump room 4 x 4" fwd. 1 x 2"

and size: Dry cargo hold 2 x 2.5" fwd. CD 1 x 5" F.P.T. 1 x 5"

Bilge Suctions to the engine room bilges, No. and size 1 x 110 mm.; 1 x 150 mm.; 1 x 200 mm.

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

On welded

Sea Connections fitted direct on the skin of the Ship recesses Are they fitted with valves or cocks Valves 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 above

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 pipes pass through the bunkers No coal bunkers How are they protected -

Do pipes pass through the deep tanks Heating coils Have they been tested as per Rule Yes

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

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

or from one compartment to another Yes Is the shaft tunnel watertight aft Is it fitted with a watertight door - worked from -

Machinery

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -

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

163.7 Auxiliary Air Compressors, No. Two No. of stages 2 diameters 9 1/4" - 4" stroke 7 1/2" driven by El-motor

202.2 Small Auxiliary Air Compressors, No. One No. of stages 2 diameters - stroke - driven by El-motor

20.1 What provision is made for first charging the air receivers By the small aux. air compressor supplied by the Harbour light

generator or steam generator.

Scavenging Air Pumps or Blowers, No. 8, plus underside of How driven By a lever from each crosshead, and also by

M.E. piston

Have they been made under survey Yes Engine Nos. 63, 64 and 65

Auxiliary Engines Makers name AB Hédemora Verkstäder Position of each in engine room 1x140 KW. on port side

2nd 2x140 KW. on starb. side on the engine room floor. 1x40 KW. on Report No. SKM. report No. 8934

platform p.s. 1x30 KW. on engine room floor port side.

004003-004008-0117



AIR RECEIVERS:—Have they been made under survey. Yes ✓ State No. of report or certificate  
State full details of safety devices Safety valves on receivers and pipe lines ✓  
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. — Date of work  
Seamless, welded or riveted longitudinal joint. — Material. — Range of tensile strength. — Working pressure. —  
Starting Air Receivers, No. Two ✓ Total cubic capacity. 22 m<sup>3</sup> Internal diameter. 1840 thickness. 30 mm. No. in Reg. Book  
Seamless, welded or riveted longitudinal joint. E.W. Material. SM Steel Range of tensile strength. 44-50 Working pressure. Actual 25 95496

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, also for auxiliary machinery and heating coils  
PLANS. Are approved plans forwarded herewith for shafting. 26.1.51 - 28.11.51 Receivers. 28.11.50 Separate fuel tanks. 22. Engines  
Donkey boilers. 8.12.50 General pumping arrangements. 22.9.52 Pumping arrangements in machinery space. 3.5.52 Boilers m  
Oil fuel burning arrangements. 12.3.51  
Have Torsional Vibration characteristics been approved. Yes Date and particulars of approval. 18.1.52 Nominal

### SPARE GEAR.

Has the spare gear required by the Rules been supplied. Yes ✓ State if for "short voyages" only. —  
State the principal additional spare gear supplied. One propeller shaft with nut

### AKTIEBOLAGET LINDHOLMENS VARV

The foregoing is a correct description of the machinery. Manufacturer.

Dates of Survey while building  
During progress of work in shops - - 30.10.51  
During erection on board vessel - - 20.12.52  
Total No. of visits. 87 31/7-4/8-6/8-  
Dates of examination of principal parts—Cylinders. 7/8 1952 Covers. 19.8.52 Pistons. 20.5.52 Rods. 20.5.52 Connecting rods. 20.5.52  
Crank shaft. 9.6.52 Flywheel shaft. — Thrust shaft. 9.6.52 Intermediate shafts. 4.9.52 Tube shaft. —  
Screw shaft. 4.9.52 Propeller. 4.9.52 Stern tube. 30.10.51 Engine seatings. 1.10.52 Engine holding down bolts. 22-23/1  
Completion of fitting sea connections. 17.9.52 Completion of pumping arrangements. 20.12.52 Engines tried under working conditions. 20.12.52  
Crank shaft, material. SM Steel Identification mark. LL.No. 7896-97 Flywheel shaft, material. — Identification mark. LL.No. 611  
Thrust shaft, material. SM Steel Identification mark. GA 9.6.52 Intermediate shafts, material. SM Steel Identification mark. NF.4.9  
Tube shaft, material. — Identification mark. — Screw shaft, material. SM Steel Identification mark. NF.4.9  
Identification marks on air receivers. LL. test 41 kg. LV.No. 2967-68 Small star. up bottle WP. 40 kg/cm  
WF. 25 kg. W.L.No. 5953  
NF. 10.9.52

Welded receivers, state Makers' Name. Messrs. AB Linchholmens Varv  
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 ✓ Steam smothering in pump rooms. Steam  
Full description of fire extinguishing apparatus fitted in machinery spaces. 1x3000 litres foam. 1x110 l. port foam. 3 hoses in  
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. —  
If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with. Yes ✓  
Is this machinery duplicate of a previous case. — If so, state name of vessel. —

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.) The main and auxiliary engines of this vessel  
have been built under Special Survey (Please see Stockholms rpt No. 8934 on the aux. engine.) The workmanship and material  
used are good and el. welding of the ME bedplate and entablatures has been carried out to our satisfaction. Test sheers  
in respect of crank- thrust- intermediate and screw shafts, air receivers materials and propellers are attached. The  
machinery has been examined under full working power on a trial trip and found to works satisfactorily. An exhaust  
economiser of AB. Götaverken's multitubular type has been built under Special Survey in accordance with Rules and a  
plans, and has been securely fitted onboard. A plan showing the position of the machinery details attached. This machine  
is eligible in our opinion to be classed Lloyd's + LMC 12,52 with notation of T.S. fitted with C.L. and 2 DB & 150 l

The amount of Survey Fee ... Kr. 5680:00  
E.W. of bedplate etc. ... Kr. 580:00  
Special ...  
Start air receiver fee ... Kr. 330:00  
Donkey Boiler Fee ...  
Exh. gas economiser ... Kr. 150:00  
Travelling Expenses (if any) ...  
Butterworth heater & cooler ... Kr. 120:00  
Committee's Minute

When applied for 9th Jan. 19 53.  
When received 19

Engineer Surveyor to Lloyd's Register of Shipping

Lloyd's Register Foundation