

# REPORT ON OIL ENGINE MACHINERY.

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13 SEP 1947

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Date of writing Report 17/9 When handed in at Local Office 19/9 Port of Stockholm

No. in Survey held at Stockholm and Lidingö. Date, First Survey 28/1 -46 Last Survey 23.8. 19 47

Reg. Book. 89472 on the Single Screw vessel "VATNAJÖKULL" Number of Visits 26 Tons <sup>Gross</sup> 939 <sub>Net</sub> 466

Built at Stockholm By whom built A/B Lidingöverken Yard No. 5 When built 1947

Engines made at Ditto By whom made A/B Atlas-Diesel Engine No. 86099 When made 1946

Donkey Boilers made at - By whom made - Boiler No. - When made -

Brake Horse Power 810 Owners H/F Jökjar Port belonging to Reykjavik

Nom. Horse Power as per Rule 157 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended General.

**OIL ENGINES, &c.** Type of Engines Heavy oil trunk piston  9 or 4 stroke cycle 2  Single or double acting S.A.

Maximum pressure in cylinders 60 kg/cm<sup>2</sup> Diameter of cylinders 340 mm Length of stroke 570 mm No. of cylinders 5 No. of cranks 5

Mean Indicated Pressure 6.98 kg/cm<sup>2</sup> Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 494 mm Is there a bearing between each crank Yes

Revolutions per minute 250 Flywheel dia. 1550 mm Weight 2580 kg Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, Solid forged dia. of journals as per Rule appd. & as fitted 235 mm Crank pin dia. 235 mm Crank Webs Mid. length breadth 324 mm Thickness parallel to axis -

Mid. length thickness 130 mm shrunk Thickness around eyehole -

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule appd. & as fitted 155 mm Thrust Shaft, diameter at collars as per Rule appd. & as fitted 260 mm

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule appd. & as fitted 185 mm Is the tube screw shaft fitted with a continuous liner No

Bronze Liners, 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 the tube shaft Yes

If so, state type Cedervall's Length of Bearing in Stern Bush next to and supporting propeller 800 mm

Propeller, dia. 2200 mm Pitch 1700 mm No. of blades 4 Material C. Steel whether Moveable No Total Developed Surface 1.9 m<sup>2</sup>

Method of reversing Engines Direct with comp. air Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication Forced

Thickness of cylinder liners 25.5 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 -

Cooling Water Pumps, No. two 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. 1 Diameter 100 mm Stroke 140 mm Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line No. and Size 1 x 21 tons/hour, 1x24 tons/hour, 1x35 tons/hour. How driven Main engine, Electrically, Electrically.

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 x 24 tons/hour Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1x350 lit/min. 1x400 lit/min.

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 2 x 2 1/2" In Pump Room -

In Holds, &c. 2 x 2 1/2" forward and 2 x 2 1/2" aft.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 x 3"

Are all the Bilge Suction pipes in Holds as per Rule 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 On welded stands Are they fitted with Valves or Cocks Valves

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates No 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 -

What pipes pass through the bunkers - How are they protected -

What 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 as per Rule 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. 1 No. of stages 2 Diameters 55, 135 mm Stroke 60 mm Driven by Main engine

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 40, 95 mm Stroke 125 mm Driven by Aux. engine

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 25, 70 mm Stroke 60 mm Driven by Hand

What provision is made for first Charging the Air Receivers The above hand compressor

Scavenging Air Pumps, No. 1 ahead, 1 astern Driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule appd. & as fitted 2 off 85 mm, 1 off 50 mm No. 2 + 1 Position 2 on P. side E.R., 1 forward of main eng.s.s.

Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith Yes.



AIR RECEIVERS: - Have they been made under survey... Yes State No. of Report or Certificate 4376 and 4379

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. None Cubic capacity of each - Internal diameter - thickness -

Seamless, lap welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules - Actual -

Starting Air Receivers, No. 2 Total cubic capacity 2 x 800 litres Internal diameter 650 mm thickness 14 mm

Seamless, lap welded or riveted longitudinal joint Riveted Material S.M. Steel Range of tensile strength 49.1/50.3 kg Working pressure by Rules - Actual 25 kg/cm²

IS A DONKEY BOILER FITTED? No 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 31.8.45 Receivers 19.1.43 Separate Fuel Tanks 4.11.46

Donkey Boilers - General Pumping Arrangements 6.5.46 Pumping Arrangements in Machinery Space 6.5.46

Oil Fuel Burning Arrangements -

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied -

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

AKTIEBOLAGET ATLAS DIESEL Kontrollavdelningen 9, 9 42 Manufacturer. A.-B. LIDINGÖVERKEN

Dates of Survey while building During progress of work in shops - 1946:- 28/1, 28/2, 1/3, 8 & 15/4, 31/5, 26/6, 11/7, 11 & 12/10, 18/12. During erection on board vessel - 1946:- 12 & 26/10, 1 & 11/11, 18/12, 1947:- 30/1, 4/3, 12/6, 1 & 30/7, 11, 14, 20, 22, 23/8. Total No. of visits 26

Dates of Examination of principal parts - Cylinders 28.2.46 Covers 28.2.46 Pistons 28.2.46 Rods - Connecting rods 28.2.46 Crank shaft 28.1.46 Flywheel shaft - Thrust shaft 28.1.46 Intermediate shafts 11.7.46 Tube shaft - Screw shaft 1.3.46 Propeller 12.10.46 Stern tube 31.5.46 Engine seatings 11.10.46 Engines holding down bolts 18.12.46 Completion of filling sea connections 12.10.46 Completion of pumping arrangements 14.8.47 Engines tried under working conditions 26.6.46, 11.8.47 Crank shaft, Material S.M. Steel Identification Mark LLOYD'S 9771 HBS 28.1.46 Flywheel shaft, Material - Identification Mark - Thrust shaft, Material S.M. Steel Identification Mark LLOYD'S 9644 HBS 28.1.46 Intermediate shafts, Material S.M. Steel Identification Mark LLOYD'S 1086 HBS 11.7.46 Tube shaft, Material - Identification Mark - Screw shaft, Material S.M. Steel Identification Mark LLOYD'S 9959 HBS 1.3.46 Identification Marks on Air Receivers NOS. 930 & 932 LLOYD'S TEST 50 KG. W.P. 25 KG. SA 21.11.44.

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 3 x 2 gallons Phenol and water fire service Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No 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 Yes Is this machinery duplicate of a previous case No If so, state name of vessel -

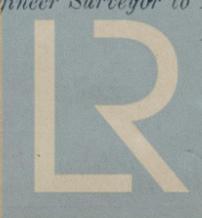
General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been built under special Survey in accordance with the Rules, approved plans and Secretary's letters. The workmanship and materials are good and forging reports in respect of the shafting are attached. The torsional vibration characteristics were approved in the Secretary's letter "E" of 31.8.45 and the torsigraph records taken during the trials were approved in the Secretary's letter "E" of 27.8.47.

The machinery has been securely fitted on board under my inspection and to my satisfaction, tested under full power conditions on a trial trip and found in order.

This machinery is eligible, in my opinion, to be classed +LMC 8.47 with notation of OG subject to safety valves being fitted to the cylinders of the two 90 B.H.P. aux. engines at the first available opportunity. Main engine not to be run continuously between 120 and 160 Rpm., a notice to which effect has been fitted at the controls.

The amount of Entry Fee .. £-, : : When applied for, Special 1/3. ... Kr. 350:- : 170 1947 Air compr. Fee ... Kr. 120:- : When received, Travelling Expenses (if any) Kr. 67:40 : 19

M.B. Rijn Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation

Committee's Minute Assigned +LMC 8.47 Oil Eng Subject O.G.

FRI 24 OCT 1947

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