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IN D.O.

Report on Oil Engine Machinery.

No. 14912.

10 SEP 1946

Received at London Office

Date of writing Report. 13th August 1946. When handed in at Local Office. 6th Sept. 1946. Port of Gothenburg.

No. in Survey held at Trollhattan. Date, First Survey 6th February. Last Survey 2nd July. 1946.

Reg. Book.

Number of Visits 6.

38169 on the ~~XXXX~~ Single Screw vessel ~~XXXX~~ m/s "IVAN" Tons (Gross 554 Net 307)

Built at Kalmar By whom built Kalmar Vary Yard No. 355 When built 1946.

Engines made at Trollhattan By whom made Nydqvist & Holm AB. Engine No. 1149 When made 1946.

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

Brake Horse Power 510 Owners Rederi AB Ruth Port belonging to Gothenburg

Nom. Horse Power as per Rule 136 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 trunk engine 2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 9 1/16" Length of stroke 16 1/16" No. of cylinders 8 No. of cranks 8Mean Indicated Pressure 4.27 kg/cm² Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 350 mm. Is there a bearing between each crank Yes

Revolutions per minute 325 Flywheel dia. 900 mm. Weight 260 kg. Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, Solid forged dia. of journals as fitted 160 mm. Crank pin dia. 160 mm. Crank Webs Mid. length breadth 230 mm. Thickness parallel to axis —

Flywheel Shaft, diameter as per Rule — Intermediate Shafts, diameter as fitted — Thrust Shaft, diameter at collars as fitted 140 mm.

Tube Shaft, diameter as per Rule — Screw Shaft, diameter as fitted 146 mm. Is the screw shaft fitted with a continuous liner No

Bronze Liners, thickness in way of bushes as per Rule — Thickness between bushes as fitted — 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 oil gland Length of Bearing in Stern Bush next to and supporting propeller 700 mm.

Propeller, dia. 1900 mm. Pitch 1170 mm. No. of blades 3 Material S.M. steel Whether Moveable No Total Developed Surface 1.35 sq. metres

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 22 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. 1 & 900 fire pump the sea provided with an efficient strainer which can be cleared within the vessel —

Bilge Pumps worked from the Main Engines, No. 1 Diameter 100 mm. Stroke 70 mm. D.A. 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 —

Ballast Pumps, No. and size — Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 & 85 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 — In Pump Room —

In 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 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 —

Are all Sea Connections fitted direct on the skin of the ship — Are they fitted with Valves or Cocks —

Are they fixed sufficiently 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 —

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 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 —

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

Starting Compressor, No. 1 No. of stages 2 Diameters 150/60 mm. Stroke 160 mm. Driven by Main engine

Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —

Small Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —

What provision is made for first Charging the Air Receivers —

Scavenging Air Pumps, No. 1 Diameter 610 mm. D.A. Stroke 420 mm. Driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule — Position —

Have the Auxiliary Engines been constructed under special survey — Is a report sent here with —

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AIR RECEIVERS:—Have they been made under survey.....**Yes**.....State No. of Report or Certificate.....
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.....**500 litres**.....Internal diameter.....**480 mm.**.....thickness.....**11 mm.**.....
Seamless, lap welded or riveted longitudinal joint.....**E.V.**.....Material.....**S.M.Steel**.....Range of tensile strength.....**41-47 kg/mm²**.....Working pressure by Rules.....**29.3 kg/cm²**.....Actual.....**25 kg/cm²**.....
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 e approved plans forwarded herewith for Shafting.....**8.5.1946**.....Receivers.....**8.5.1946**.....Separate Fuel Tanks.....
(If not, state date of approval)
Donkey Boilers.....General Pumping Arrangements.....Pumping Arrangements in Machinery Space.....
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 particulars of the installation as fitted are as approved for torsional vibration characteristics.

NYDQVIST & HOLM AKTIEBOLAG

Konstruktionskontoret

Manufacturer.

Dates of Survey while building { During progress of work in shops.....**6th February - 2nd July, 1946.**
During erection on board vessel.....
Total No. of visits.....**Six**

Dates of Examination of principal parts—Cylinders.....**15.3.46**.....Covers.....**15.3.46**.....Pistons.....**6.2.46**.....Rods.....Connecting rods.....**6.2.46**.....
Crank shaft.....**15.3.1946**.....Flywheel shaft.....Thrust shaft.....**30.3.1946**.....Intermediate shafts.....Tube shaft.....
Screw shaft.....**15.3.46**.....Propeller.....**3.5.46**.....Stern tube.....**21.2.46**.....Engine seatings.....Engines holding down bolts.....
Completion of fitting sea connections.....Completion of pumping arrangements.....Engines tried under working conditions.....**3.5.1946**.....
Crank shaft, Material.....**S.M.Steel**.....Identification Mark.....**LLOYD'S 2111 SJ 8.11.45**.....Flywheel shaft, Material.....Identification Mark.....
Thrust shaft, Material.....**S.M. Steel**.....Identification Mark.....**LLOYD'S 2112 SJ 30.3.46**.....Intermediate shafts, Material.....Identification Marks.....
Tube shaft, Material.....Identification Mark.....Screw shaft, Material.....**S.M.Steel**.....Identification Mark.....**LLOYD'S 2111 SJ 15.3.46**

Identification Marks on Air Receivers.....
No. 801-802
LLOYD'S TEST 41 KG.
WP 25 KG.
SW 19.6.46

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.....
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.....**Yes**.....
Is this machinery duplicate of a previous case.....**Yes**.....If so, state name of vessel.....**M.S. "Vestria", Gethenborg report No. 14459.**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This main engine has been built under special survey in accordance with the Rules and approved plans. The workmanship and materials are good and test sheets for the shafting and certificate of air receivers are attached. The torsional vibration characteristics approved as per Secretary's letter dated the 7th June 1946, initialled "T".

The engine was examined under full working conditions in the shop and found in order and will be eligible, in my opinion, to be classed +LMC with date when it has been securely fitted on board the vessel to the surveyor's satisfaction.

The amount of Entry Fee.....£.....When applied for,
Special.....**Kr. 430:00**.....**6.9.19.46.**
Donkey Boiler Fee.....£.....When received,
Travelling Expenses (if any).....**Kr. 62:60**.....**19.....**

FRL 27 SEP 1946

COMMITTEE'S MINUTE.....

ASSIGNED.....**See F.E. machy. rpt.**

Sten Johansson
Engineer Surveyor to Lloyd's Register of Shipping.

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