Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 2350.

Received at London Office 29 MAY 1946

Date of writing Report 18th May 1946. When handed in at Local Office 22nd May 1946. Port of Malmö.

Date, First Survey 15th Sept. 1945. Last Survey 10th May 1946. Number of Visits 105.

No. in Reg. Book 39732 on the Single / ~~Twin~~ / ~~Triple~~ / ~~Quadruple~~ Screw vessel "SECURUS"

Tons Gross 8615 Net 5137.

Built at Malmö. By whom built Kockums Mek. V. A.-B. Yard No. 286. When built 1946.

Engines made at Malmö. By whom made Kockums Mek. V. A.-B. Engine No. 406. When made 1946.

Donkey Boilers made at Malmö. By whom made Kockums Mek. V. A.-B. Boiler No. 1015/16. When made 1946.

Brake Horse Power 4500. Owners Rederi A.-B. Saturnus. Port belonging to Stockholm.

Nom. Horse Power as per Rule 1361 ✓ Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended ✓ MN = 1361 no change to NHP

OIL ENGINES, &c.—Type of Engines MAN. D72U 60/110. 2 or 4 stroke cycle 2 ✓ Single or double acting Double. ✓

Maximum pressure in cylinders 50 kg. cm.² ✓ Diameter of cylinders 600 mm. ✓ Length of stroke 1100 mm. ✓ No. of cylinders 7 ✓ No. of cranks 7 ✓

Mean Indicated Pressure 5.5 kg. cm.² ✓ = 78.16

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 860 mm. ✓ Is there a bearing between each crank Yes. ✓

Revolutions per minute 110 ✓ Flywheel dia. 2093 mm. Weight 3950 Kgs. Means of ignition Diesel system Kind of fuel used Heavy oil.

Crank Shaft, dia. of journals as Rule 420 mm. ✓ as fitted 420 mm. ✓ Crank pin dia. 420 mm. ✓ Crank Webs Mid. length breadth 700 mm. ✓ Mid. length thickness 265 mm. ✓ shrunk Thickness parallel to axis 265 mm. ✓ Thickness around eyehole 200 mm. ✓

Flywheel Shaft, diameter as Rule 420-372 mm. ✓ as fitted 420-372 mm. ✓ **Intermediate Shafts,** diameter as Rule 354 mm. ✓ as fitted 354 mm. ✓ **Thrust Shaft,** diameter at collars as Rule 375 mm. ✓ as fitted 375 mm. ✓

Tube Shaft, diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as Rule 395 mm. ✓ as fitted 395 mm. ✓ Is the tube / screw shaft fitted with a continuous liner Yes. ✓

Bronze Liners, thickness in way of bushes as Rule 20 mm. ✓ as fitted 20 mm. ✓ Thickness between bushes as Rule 15 mm. ✓ as fitted 15 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 ✓

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 ✓ 1570 kg/Mar

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 ✓ If so, state type ✓ Length of Bearing in **Stern Bush** next to and supporting propeller 1520 mm.

Propeller, dia. 5000 mm ✓ Pitch 4050 mm ✓ No. of blades 4 ✓ Material Stainless steel. whether Moveable No ✓ Total Developed Surface 8.07 sq. feet

Method of reversing Engines Direct ✓ Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes ✓ Means of lubrication forced ✓ Thickness of cylinder liners 41.5 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 Led to the funnel.

Cooling Water Pumps, No. 2. 1 of 35 m³/H for aux. eng. each of 220 m³/H. ✓ 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 ✓ 1 in main pump room 1 in pump room fwd.

Pumps connected to the **Main Bilge Line** No. and Size 3. 1 of 100 m³/H., 1 of 40 m³/H, 1 of 36 m³/H. 1 of 180 m³/H. 1 of 30 m³/H. ✓ How driven One steam driven, two elec. driven. Steam driven. Steam driven.

Is the cooling water led to the bilges Lead overboard 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. 100 m³/H. ✓ **Power Driven Lubricating Oil Pumps,** including Spare Pump, No. and size 2. each of 135 m³/H. ✓

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 3-3½", 1-2", 2-3½" in aft. coffrd. 2-3½" in main pump room in Pump Room fwd. 1-3½". ✓

In Holds, &c. 2-3½" in dry cargo hold. 2-3½" in forward coffrdam. ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-5", 1-4" & 1-3½". ✓

Are all the Bilge Suction pipes in Holds and Tunnel Well 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 Yes ✓ 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 Yes. or by lifting special covers. 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 Yes ✓

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

What pipes pass through the deep tanks Suction pipes from after coffrd. 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 No tunnel 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. None ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Auxiliary Air Compressors, No. 2 ✓ No. of stages 2 ✓ Diameters 300 & 110 mm ✓ Stroke 220 mm ✓ Driven by Aux. oil eng. ✓

Small Auxiliary Air Compressors, No. 1 ✓ No. of stages 2 ✓ ~~Diameters~~ Size 1.5 m³ atm. air/H ✓ Stroke ✓ Driven by Aux. generator, steam driven. ✓

Scavenging Air Pumps, No. 2 Tandem. ✓ Diameter 1380 mm. ✓ Stroke 970 mm. ✓ Driven by main engine. ✓

Auxiliary Engines crank shafts, diameter as per Rule 152 mm. ✓ as fitted 170 " ✓ LLOYD'S No. 6457/58. GA 22.12.44. ✓ No. 2 ✓ Position Engine Room. ✓

© Lloyd's Register Foundation

AIR RECEIVERS:—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

~~High Pressure~~ Small Start. Air Receivers, No. 1 Cubic capacity of each 200 lit. Internal diameter 476 mm. thickness 13 mm.

Seamless, lap welded or riveted longitudinal joint El. welded Material S.M. Steel Range of tensile strength 47.1-47.4 Working pressure by Rules 47.5 kg. cm² Actual 30. "

Starting Air Receivers, No. 2. Total cubic capacity 12 m³ Internal diameter 1450 mm. thickness 25 mm.

Seamless, lap welded or riveted longitudinal joint Riveted Material S.M. Steel Range of tensile strength 42.8-46.2 kg./mm² Working pressure by Rules 31.2 kg. cm² Actual 30. "

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 (If not, state date of approval) 8.8.1944 Receivers 25.9.1944 Separate Fuel Tanks 29.1.1945.

Donkey Boilers 4.7.1944 General Pumping Arrangements 22.2.1945 Pumping Arrangements in Machinery Space 29.1.1945.

Oil Fuel Burning Arrangements ✓

SPARE GEAR.

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

State the principal additional spare gear supplied 2 top & 2 bottom cylinder covers. 1 top & 1 bottom cylinder liner 1 complete piston with piston rod. 1 complete fuel pump. 1 propeller shaft.
Add. pumps - In motor space:- 1 sanitary pump of 20 m³/H. Elec. driven. 2 ditto of 3 m³/H. elec. driven. 1 oil transfer pump of 23 m³/H. Elec. driven. 1 ditto of 20 m³/H. Steam driven. 1 fire pump 80 m³/H. Steam driven. 1 cool. water pump for nozzles 3 m³/H. Elec. driven. 2 units of oil fuel pumps for D. boilers. 2 feed pumps 8 m³/H. Steam driven.
In main pump room: 2 cargo pumps 325 m³/H. Steam driven

The foregoing is a correct description,

KOCKUMS MEKANISKA VERKSTADS AKTIEBOLAG

[signature] Manufacturer.

Dates of Survey while building	
During progress of work in shops	From 15th Sept. 1945 to 7th March, 1946.
During erection on board vessel	" 11th March, 1946 " 10th May, 1946.
Total No. of visits	105.

Dates of Examination of principal parts—Cylinders 15/9 - 22/11. 1945. (9 visits.) Covers 30/11.45 - 15/4.46. (7 visits) Pistons 29/11 - 14/12. 1945. (5 visits) Rods 30/11. 1945 Connecting rods 13/10-1945.

Crank shaft After trial in shop: 10-5-1946 Flywheel shaft 19-2-1946 Thrust shaft 26-1-1946 Intermediate shafts 26-1-1946 Tube shaft -

Screw shaft 7-9-1945 Propeller 16-1-1946 Stern tube 28-12-1945 Engine seatings 9-12-1945 Engines holding down bolts 23-3-1945.

Completion of fitting sea connections 8-5-1946 Completion of pumping arrangements 8-5-1946 Engines tried under working conditions 9-5-1946.

Crank shaft, Material S.M. Steel Identification Mark 48791. PK. 20.2.45 Flywheel shaft, Material S.M. Steel Identification Mark 2634. AB. 19.2.46

Thrust shaft, Material " " Identification Mark 6465 AO. 26.1.46 Intermediate shafts, Material " " Identification Mark 6455. AO. 26.1.46

~~Tube~~ Spare screw shaft, Material " " Identification Mark 284. AS. 7-9-45 Screw shaft, Material " " Identification Mark 285. AS 7-9-45.

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.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Oil tanker. If so, have the requirements of the Rules been complied with Yes.

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 Yes If so, state name of vessel M/T "SVEABORG", Mmo. 1st E. Rpt. 2217

General Remarks (State quality of workmanship, opinions as to class, &c.) The main & aux. engines of this vessel have been built under Special Survey in accordance with the Rules and approved plans. The material fulfil the Rule requirements and the workmanship is good. The shafting as per forging reports enclosed.
The machinery of this vessel is eligible, in our opinion, to be classed in the Reg. Book of this Society with record of ✠ LMC. 5.46, subject to "Indit" bearing in stern bush being examined after one year's service. Working pressure of donkey boilers 171 lbs./□".
The crank shaft is made by Messrs. Skodawerke, Pilsen and tested by Schiffbaustahlinspektion P. Kutcher 20.2.1945 and check tested by the Brinell-method at Malmö with satisfactory results.
The propeller is made in Norway and tested by L.R. 11.45.
The remaining important parts are made in Sweden.
The torsional characteristics of machinery approved 18.8.44

Certificate (if required) to be sent to Surveyors' Office Malmö

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

The amount of Entry Fee	Kr.	114.-	When applied for, 22-5-1946
Special	Kr.	2546.-	
S.S. of 2 start. air recs. ~~Donkey Boiler Fee~~	Kr.	120.-	When received, 19
Test. & insp. of forgings ~~Travelling Expenses (if any)~~	Kr.	40.-	

A. Börring A. Ohn[illegible]
Engineer Surveyors to Lloyd's Register of Shipping.

FRI. 28 JUN 1946

Committee's Minute

Assigned ✠ LMC 5,46 Oil Eng. Subject
C.L. 22B 17/16.

© 2021 Lloyd's Register Foundation