

REPORT ON OIL ENGINE MACHINERY.

No. 2970.

Received at London Office **2 JUL 1951**

Date of writing Report 28/6 19 51 When handed in at Local Office 29/6 19 51 Port of M A L M Ö.

No. in Survey held at M A L M Ö. Date, First Survey 26/10-1950 Last Survey 21/6 19 51

Reg. Book. 96235 Suppl. Single on the Twin Triple Quadruple Screw vessel m/t "S V I T H I O D" Number of Visits 98

Built at Malmö. By whom built Kockums Mek. Verkstads A.-B. Yard No. 325 When built 1951.

Engines made at Malmö. By whom made Kockums Mek. Verkstads A.-B. Engine No. 550 When made 1951.

Donkey Boilers made at Wallsend-on-Tyne By whom made Wallsend Slipway & Eng. Co. Ltd. Boiler No. 426 B When made 1949.

Brake Horse Power 6000 Owners Stockholms Rederi A.-B. Svea Port belonging to Stockholm.

C.N. Power as per Rule 1686 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended -

MAIN ENGINES, &c. — Type of Engines MAN D6 Z 72/120 2 or 4 stroke cycle 2 Single or double acting Double.

Maximum pressure in cylinders 50 kg/cm² Diameter of cylinders 720 mm. Length of stroke 1200 mm. No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 5.5 kg/cm² Ahead Firing Order in Cylinders 1t, 4b, 3b, 6t, 2t, 5b. Span of bearings, adjacent to the crank, measured from inner edge to inner edge 1110 mm. Is there a bearing between each crank Yes. Revolutions per minute 110

Flywheel dia. 2682 mm. Weight 7700 kg. Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 32.795x10⁶ Means of ignition Compr. Kind of fuel used Heavy oil

Crankshaft Solid forged dia. of journals as per Rule 500 mm. Crank pin dia. 500 mm. Crank webs Mid. length breadth 800 mm. Thickness parallel to axis 320 mm.

Flywheel Shaft, diameter as per Rule 500-414 mm. Intermediate Shafts, diameter as per Rule 394 mm. Thrust Shaft, diameter at collars as fitted 414 mm.

Tube Shaft, diameter as per Rule - Screw Shaft, diameter as fitted 438 mm. Is the tube shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 21.5 mm. Thickness between bushes as fitted 16.5 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 -

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 tube shaft - If so, state type - Length of bearing in Stern Bush next to and supporting propeller 1845 mm.

Propeller, dia. 5460 mm. Pitch 4360 mm. No. of blades 4 Material Bronze whether moveable No. Total developed surface 9.81 m² Moment of inertia of propeller (lbs. in² or Kg. cm.²) 108.891x10⁶ Kind of damper, if fitted -

Method of reversing Engines Direct with compr air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication Forced. Thickness of cylinder liners 45 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled Yes.

Are they lagged with non-conducting material Yes. If the exhaust is led overboard near the waterline what means are arranged to prevent water from being syphoned back to the engine 1 salt water pumps each of 200 m³/H. 1 fresh water pumps each of 220 m³/H. 1 salt water pump of 36 m³/H. 1 fresh water pump 36 m³/H. (For aux. oil eng.) 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 2 - 1 of 100 m³/H, 1 of 70 m³/H. How driven 1 steam 1 el. 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 - 100 m³/H. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 each of 180 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 - 90 mm. 2-90 mm. in aft main cofferdam. In pump room Main: - 2-3 1/2" Fwd.: - 1-3 1/2"

holds, &c. 2-3 1/2" in dry cargo hold, 2-3 1/2" in fwd. main cofferdam.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 - 125 mm.

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes. Are the bilge suction pipes 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, or on welded steelboxes Are they fitted with valves or cocks Both. Are they fixed efficiently 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 Suctions from aft cofferdam. 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 None. Is it fitted with a watertight door - worked from -

On 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 driven by Aux. oil eng.

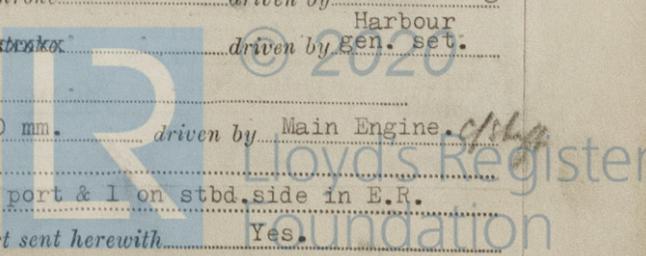
Small Auxiliary Air Compressors, No. 1 Williams & James No. C 4315 diameters - stroke - driven by Harbour gen. set.

What provision is made for first charging the air receivers Small compressor.

Recharging Air Pumps, No. 2 tandem diameter 1650 mm. stroke 910 mm. driven by Main Engine.

Auxiliary Engines crank shafts, diameter as per Rule 170 mm. No. 2 Position 1 on port & 1 on stbd. side in E.R.

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 Nos. 188 and 189.
 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.
 Spare
 Injection Air Receivers, No. 1 Cubic capacity of each 200 lit. Internal diameter 474 mm. thickness 13 mm.
 Seamless, welded or riveted longitudinal joint El. welded. Material S.M. Steel. Range of tensile strength 44.4-47.7 kg/mm² Working pressure by Rules 30.0kg Actual 30.0kg
 Starting Air Receivers, No. 2 Total cubic capacity 20.4 m³ Internal diameter 1650 mm. thickness 27 mm.
 Seamless, welded or riveted longitudinal joint Riveted. Material S.M. Steel. Range of tensile strength 47.2-50.5 kg/mm² Working pressure by Rules 30.0kg Actual 30.0kg

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 2.6.49. Receivers 23.10.47. Separate fuel tanks -
 Forw. with Newcastle-on-Tyne Report No. 106837 (If not, state date of approval)
 Donkey boilers General pumping arrangements 23.8.50. Pumping arrangements in machinery space 20.7.50.
 Oil fuel burning arrangements 20.3.51.
 Have Torsional Vibration characteristics been approved Yes. Date of approval 2.6.49.

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes.
 State the principal additional spare gear supplied
 1 propeller shaft.
 1 bronze propeller.
 1 top and 1 bottom cylinder liner.
 1 " " " " " cover.
 1 complete piston with piston rod.

The foregoing is a correct description,
KOCKUMS Manufacturer.

Dates of Survey while building
 During progress of work in shops - - 26/10 1950 - 11/4 1951.
 During erection on board vessel - - 17/4 1951 - 21/6 1951.
 Total No. of visits 98
 Dates of examination of principal parts - - - - -
 Crank shaft 30.3.51. Flywheel shaft 22.12.50. Thrust shaft 12.6.51. Intermediate shafts 2.4.51. Tube shaft -
 Screw shaft 8.6.50. Propeller 20.6.51. Stern tube 13.3.51. Engine seatings 2.4.51. Engine holding down bolts 9.5.51.
 Completion of fitting sea connections 2.4.51. Completion of pumping arrangements 20.6.51. Engines tried under working conditions 21.6.51
 Crank shaft, material S.M. Steel. Identification mark LLOYD'S 3145/46 S.J.31.3.49. Flywheel shaft, material S.M. Steel. Identification mark LLOYD'S 7510
 Thrust shaft, material S.M. Steel. Identification mark LLOYD'S 154 AB.12.6.51. Intermediate shafts, material S.M. Steel. Identification marks LLOYD'S 1411
 Spare screw LLOYD'S 176
 Tube shaft, material S.M. Steel. Identification mark B-n.8.6.50. Screw shaft, material S.M. Steel. Identification mark LLOYD'S 175 B-n. 8.6.50.
 Identification marks on air receivers LLOYD'S TEST 44 Kg/cm², W.P. 30 Kg/cm², A.B. 13.11.50.

Welded receivers, state Makers' Name Degerfors Järnverks A.-B., Degerfors.
 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 Steam smothering under boilers and 6 Special-Skum-Kustos, Cap. 10 lit. each.
 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 -
 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 Messrs. Kockums M. Verkstad's Yard No 331 "Gimle".

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. The Workmanship is good and the material fulfill the Rule Requirements. Shafting as per forging reports enclosed.
 The machinery of this vessel is eligible, in my opinion, to be classed in the Register Book with record of LMC 6.51.

Working pressure of donkey boilers 171 lbs/sq" and of exhaust gas economiser 171 lbs/sq".

SS. of pumps, cond. & w. heater	Kr.	280	When applied for	29/6	1951.
Special ...	Kr.	6190	When received	19	
SS. of welded bed plate.	Kr.	360			
SS. of 2 start air receiv.	Kr.	300			
Additional spare parts.	Kr.	80			

A. Böning
 Engineer Surveyor to Lloyd's Register of Shipping
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Certificate (if required) to be sent to the Surveyors' Office, Malmo.

FRI. 20 JUL 1951
 Assigned + LMC 6.51 Del Eng.
 C.L. 203 17116