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Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 1181 B

Received at London Office

JUN 15 1938

Date of writing Report 10-6, 1938 When handed in at Local Office 10-6, 1938 Port of Helsingborg

No. in Survey held a Sandskrona Date, First Survey 6-3-1937 Last Survey 1-6, 1938  
Reg. Book. Number of Visits 46

39222 on the Single Twin Triple Quadruple Screw vessel m/s MORVIKEN Tons { Gross 5008  
Net 2987

Built at Sandskrona By whom built Ceresundsvärdet Yard No. 49 When built 1938  
85599/600/601/602

Engines made at Stockholm By whom made A/B Atlas-Diesel Engine No. When made 1938

Donkey Boilers made at Halifax By whom made Lumbys Ltd. Boiler No. 5710 When made 1937

Brake Horse Power 4 x 1100 Owners A/S Wallem & Co. Port belonging to Bergen

Nom. Horse Power as per Rule 4 x 188 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 Polar Diesel Oil Eng. type M46M 2 or 4 stroke cycle  Single or double acting

Maximum pressure in cylinders  Diameter of cylinders  Length of stroke  No. of cylinders  No. of cranks

Mean Indicated Pressure  Span of bearings, adjacent to the Crank, measured from inner edge to inner edge  Is there a bearing between each crank

Revolutions per minute  Flywheel dia.  Weight  Means of ignition  Kind of fuel used

Crank Shaft, { Solid forged  Semi built dia. of journals as per Rule  as fitted  All built  Crank pin dia.  Crank Webs Mid. length breadth  shrunk  Thickness parallel to axis  Mid. length thickness  Thickness around eye-hole

Flywheel Shaft, diameter as per Rule  as fitted  Intermediate Shafts, diameter as per Rule 375  as fitted 375 Thrust Shaft, diameter at collars as per Rule 393  as fitted 395

Tube Shaft, diameter as per Rule  as fitted  Screw Shaft, diameter as per Rule 433  as fitted 433 Is the { tube  screw  shaft fitted with a continuous liner  Yes

Bronze Liners, thickness in way of bushes as per Rule 21  as fitted 21 Thickness between bushes as per Rule 21  as fitted 21 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 one length

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 No If so, state type  Length of Bearing in Stern Bush next to and supporting propeller 2000

Propeller, dia. 5490  Pitch 5290  No. of blades 4 Material Brass whether Moveable No Total Developed Surface 8.64  sq. feet

Method of reversing Engines  Is a governor or other arrangement fitted to prevent racing of the engine when declutched  Means of lubrication

Thickness of cylinder liners  Are the cylinders fitted with safety valves  Are the exhaust pipes and silencers water cooled or 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 led to a funnel

Cooling Water Pumps, No. 2  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.  Diameter  Stroke  Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size One; 110 tons/hour  How driven Electric  One; 72 tons/hour  Electric

Is the cooling water led to the bilges Cover board 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; 110 tons/hour  Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off; 97.2 tons/hour

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 2-3" & 3-2" 1 x 4" hose suction  In Pump Room

In Holds, &c. 2 x 3" in Nos. 1, 2, 3 & 4 holds; 2 x 3" & 1 x 3 1/2" in No. 5 hold; 1-3" funnel; 2-3 1/2" to connections between wing tanks  Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-5"

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 Yes

Are they fixed sufficiently 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 Both

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 No bunkers How are they protected

What pipes pass through the deep tanks None 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 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 Yes Is it fitted with a watertight door Yes worked from Upper ER platform

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.  No. of stages  Diameters  Stroke  Driven by

Auxiliary Air Compressors, No. 2  No. of stages 2  Diameters 70 & 180  Stroke 140  Driven by Electric motor

Small Auxiliary Air Compressors, No. 1  No. of stages 2  Diameters 30 & 80  Stroke 80  Driven by Heavy oil eng.

What provision is made for first Charging the Air Receivers Aux air compressor driven by a heavy oil engine

Scavenging Air Pumps, No.  Diameter  Stroke  Driven by

Auxiliary Engines crank shafts, diameter as per Rule  as fitted  No. 3 Position 2 on starboard side; 1 on port side in ER

Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith See Ship's report

Can be started by hand

377.0  
495.7  
7.28.28.  
7.10.11.13.  
24.25.27.  
96.

**AIR RECEIVERS:**—Have they been made under survey *Yes* ✓ State No. of Report or Certificate *See below.*

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 as per Gov. letter to Sect. of the 11.10.1937* Total cubic capacity *8 m<sup>3</sup>* Internal diameter *1100 mm* thickness *16 mm*  
 Seamless, lap welded or riveted longitudinal joint *DR DBS* Material *Steel* Range of tensile strength *46.5-49.8* Working pressure *by Rules* *✓*  
*Actual* *25 kg./cm<sup>2</sup>* *✓*

**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 *only for heating coils in the daily fuel oil tanks and report on oil deep & swing tanks.*

**PLANS.** Are approved plans forwarded herewith for Shafting *5.9.36* Receivers *✓* Separate Fuel Tanks *17-12-36*  
 (If not, state date of approval.)

Donkey Boilers *✓* General Pumping Arrangements *7-12-36* Pumping Arrangements in Machinery Space *7-12-36*  
 Oil Fuel Burning Arrangements *✓*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *Yes* ✓  
 State the principal additional spare gear supplied *Spare gears delivered as per Stockholm Surveyors' report, checked by me on board and found in order.*

*1 propeller shaft marked LLOYD'S No. 1136 T.W. 25.2.38.*  
*1 bronze propeller as per certificate attached.*

The foregoing is a correct description,  
**ÖRESUNDSVARVET**  
 AKTIEBOLAG *C. A. Ridell* Manufacturer.

Dates of Survey while building  
 During progress of work in shops-- *1937 March 6, June 3, Oct 12, 19, Nov. 3, 4, 16, 18, 24 Dec 27 1938 Jan. 7, 20, 31. MARCH 15, 21, 23, 29 APRIL 17, 22 MAY 2*  
 During erection on board vessel-- *1938 JAN. 13, FEBR 10 MARCH 1, 2, 11, 21, 23, 29. APRIL 1, 8, 13, 27. MAY 4, 9, 14, 16, 18, 19, 20, 24, 25, 28, 29, 30. JUNE*  
 Total No. of visits *46*

Dates of Examination of principal parts—Cylinders *✓* Covers *✓* Pistons *✓* Rods *✓* Connecting rods *✓*  
 Crank shaft *✓* Flywheel shaft *✓* Thrust shaft *23.4.37* Intermediate shafts *March 38* Tube shaft *✓*  
 Screw shaft *23.3.38* Propeller *15.3.38* Stern tube *31.1.38* Engine seatings *11.3.38* Engines holding down bolts *15.38*  
 Completion of fitting sea connections *24.5.38* Completion of pumping arrangements *20.5.38* Engines tried under working conditions *29.5.38*

Crank shaft, Material *✓* Identification Mark *✓* Flywheel shaft, Material *✓* Identification Mark *LLOYD'S No. 4904 PS 21.3.38 R*  
 Thrust shaft, Material *S.M. Steel* Identification Mark *LLOYD'S No. 1208 E.B. 23.4.37* Intermediate shafts, Material *S.M. Steel* Identification Mark *LLOYD'S No. 290, 115, 1151 PS 23.3.38 R*  
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.M. Steel* Identification Mark *LLOYD'S No. 4903 PS 29.3.38 R*  
 Identification Marks on Air Receivers *MAIR eng.* *LLOYD'S No. 1137 PS. 19.4.38 R*  
*LLOYD'S No. 238 R.C. 14.1.38*

No. 381 No. 382  
 LLOYD'S TEST 42 KG  
 WP 25 KG  
 G.H. 29.4.37

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 *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 *✓*

Is this machinery duplicate of a previous case *Yes* ✓ If so, state name of vessel *m/s Dagmar Salen*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These main- and auxiliary engines have been built in accordance with the approved plans and instructions under special survey as per enclosed certificates and have been installed on board and tested under my supervision and to my satisfaction, with complying of all the Rule requirements regarding Heavy oil engines. The workmanship and materials are good. Forgings as per certificates attached.*

The machinery of this vessel is eligible in my opinion to be classed in the Society's Register Book with record of *\*LMC 6.38*, and the notations of *CL; DBS 85 lbs; Coil Eng.* subject to the shaft coll being examined every three months.

The amount of Entry Fee .. \$ 114:00 :  
 Special ... .. \$ 713:13 :  
 Donkey Boiler Fee ... \$ ✓ :  
 Travelling Expenses (if any) \$ ✓ :  
 When applied for, *10.6.1938*  
 When received, *20.6.1938*

*P.O. Sjögren*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI, 24 JUN 1938*  
 Assigned *Tank 6.38 - DB. 85 lbs Oil Eng.*



Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minutes.)