

# REPORT ON OIL ENGINE MACHINERY.

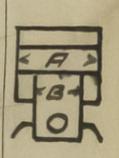
Received at London Office

JUL 17 1937

Date of writing Report 5<sup>th</sup> July 1937 When handed in at Local Office 10 Port of Copenhagen  
 No. in Survey held at Copenhagen Date, First Survey 10<sup>th</sup> October 1936 Last Survey 1<sup>st</sup> July 1937  
 Reg. Book. Number of Visits 56

on the Single Twin Triple Quadruple Screw vessel "REGINA" Tons { Gross 9545.16 Net 5695.13  
 Built at Copenhagen By whom built Carl. Burmeister & Wain's Maskin- og Skibsbyggeri Yard No. 625 When built 1937  
 Engines made at Copenhagen By whom made Carl. Burmeister & Wain's Maskin- og Skibsbyggeri Engine No. 2640 When made 1937  
 Donkey Boilers made at Aalborg By whom made Aalborg Værft A/S Boiler No. 181 When made 1937  
 Brake Horse Power 5250 Owners Slansen - Tangen Port belonging to Prishansand  
 Nom. Horse Power as per Rule 946 943 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 Trade for which vessel is intended Carrying Petroleum in bulk, open sea service.

**OIL ENGINES, &c.**—Type of Engines Vertical Diesel trunk piston Solid cylinder or 4 stroke cycle 2 Single or double acting single  
 Maximum pressure in cylinders 49 kg/cm<sup>2</sup> Diameter of cylinders 19 1/2" 500 mm Length of stroke 900 mm No. of cylinders 2 x 7 No. of cranks 2 x 7  
 Mean Indicated Pressure 7.5 kg/cm<sup>2</sup> Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 698 mm Is there a bearing between each crank yes  
 Revolutions per minute 155 3600 kg/m<sup>2</sup> 50<sup>2</sup> 4235 kg/m<sup>2</sup> Means of ignition compression Kind of fuel used Crude oil  
 Crank Shaft, { Solid forged 331 mm dia. of journals as per Rule 340 mm Crank pin dia. 340 mm Mid. length breadth 850 mm Thickness parallel to axis 208 mm  
 { Cast iron 340 mm as fitted 115 mm Crank Webs 208 mm Mid. length thickness 208 mm Thickness around eye-hole 165 mm  
 { All built 115 mm as fitted 115 mm Thrust Shaft, diameter at collars as per Rule 278 mm as fitted 306 mm  
 Flywheel Shaft, diameter as per Rule 264 mm Intermediate Shafts, diameter as per Rule 266 mm as fitted 266 mm  
 Tube Shaft, diameter as per Rule 292 mm Screw Shaft, diameter as per Rule 295 mm Is the shaft fitted with a continuous liner { yes  
 as fitted 295 mm as fitted 295 mm Is the after end of the liner made watertight in the propeller boss yes  
 Bronze Liners, thickness in way of bushes as per Rule 16.5 mm as fitted 19 mm Thickness between bushes as per Rule 12.4 mm as fitted 14 mm  
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner no  
 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 yes  
 If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no  
 If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 1240 mm  
 Propeller, dia. 3950 mm Pitch 2980 mm No. of blades 3 Material Brass whether Moveable no Total Developed Surface 4.93 m<sup>2</sup>  
 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 33.5 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 to funnel  
 Cooling Water Pumps, No. 2 off 2306 rpm each 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. 2 off Diameter 215 mm Stroke 200 mm Can one be overhauled while the other is at work yes  
 Pumps connected to the Main Bilge Line { No. and Size 2 off 28 mm each | 2 off 26 mm each | 1 off duplex 9" x 10" x 10"  
 { How driven main engines | electrically | Steam  
 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 no  
 Ballast Pumps, No. and size 1 off duplex 9" x 10" x 10" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off 200 rpm each  
 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 off 3 1/2" Coffey class 1/2" suction on fuel oil line In Pump Room 2 off 3" off 4"  
 In Holds, &c. 1 off 3 1/2" Coffey class | 1 off 3" chain locker | 1 1/2" hand pump suction  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one off 8" 2 off 3" + 2 off portable hose suction  
 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 valves  
 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 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 none How are they protected no  
 What pipes pass through the deep tanks none Have they been tested as per Rule no  
 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 no worked from no  
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no  
 Main Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —  
 Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 200 mm 250 mm Stroke 190 mm Driven by aux. engines  
 Small Auxiliary Air Compressors, No. one No. of stages 2 Diameters 110/45 mm Stroke 70 Driven by hand  
 What provision is made for first Charging the Air Receivers hand driven compressor  
 Scavenging Air Pumps, No. 2 off 114 rpm/minute each diameter — Stroke — Driven by the main engines  
 Auxiliary Engines crank shafts, diameter as per Rule 124 mm No. 2 Position engine room  
 as fitted 150 mm 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* Are reports or certificates now forwarded *yes*  
 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*  
**EMERGENCY INJECTION Air Receivers, No.** *one* Cubic capacity of each *250 litres* Internal diameter *380 mm* thickness *11 mm*  
 Seamless, lap welded or riveted longitudinal joint *lap welded* Material *S.M. Steel* Range of tensile strength *43.1 kg/mm<sup>2</sup>* Working pressure by Rules *36.3 kg/cm<sup>2</sup>*  
 Actual *28 kg/cm<sup>2</sup>*  
**Starting Air Receivers, No.** *one* Total cubic capacity *350 cbf.* Internal diameter *6'-0"* thickness *1"*  
 Seamless, lap welded or riveted longitudinal joint *triple* Material *S.M. Steel* Range of tensile strength *28 kg/cm<sup>2</sup>* Working pressure by Rules *25.6 kg/cm<sup>2</sup>*  
 Actual *25 kg/cm<sup>2</sup>*

**IS A DONKEY BOILER FITTED?** *yes - two off* If so, is a report now forwarded? *yes*  
 Is the donkey boiler intended to be used for domestic purposes only *yes*  
**PLANS.** Are approved plans forwarded herewith for Shafting *23/7-29-9/12-36* Receivers *26/11-36* Separate Fuel Tanks *26/11-17/12-36*  
 (If not, state date of approval)  
 Donkey Boilers *8/7-36* General Pumping Arrangements *24/7-36* Pumping Arrangements in Machinery Space *31/8-36*  
 Oil Fuel Burning Arrangements *✓*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *yes*  
 State the principal additional spare gear supplied *1 propeller shaft & 1 cast iron propeller.*

The foregoing is a description of  
**BURMEISTER & WAINSKIN, OG SKIBSBYGGERI**  
*A. Hornum* Manufacturer.

Dates of Survey while building  
 During progress of work in shops—*October: 10-27-30, November: 3-6-11-16-25-27-30, December: 21-22-1936, January: 4-5-6-22-30, February: 2-4-6-18-22-24-25-26*  
 During erection on board vessel—*March: 11-14-18-20-24-30, April: 2-6-7-10-14-27, May: 5-10-12, June: 14-15-1937*  
 Total No. of visits *56.*

Dates of Examination of principal parts—Cylinders *and* Covers *22/1-14/6* Pistons *24/1-13-7/4* Rods *✓* Connecting rods *3/11-27/11-4/1-6/1*  
 Crank shaft *5/1-22/1* Flywheel shaft *✓* Thrust shaft *4/11-11-5/1-22/1* Intermediate shafts *6/11-11/11-11/3* Tube shaft *✓*  
 Screw shaft *3/11-11/11-30/1-5/1* Propeller *5/15-10/5-11/6* Stern tube *7/2-27/4-10/5* Engine seatings *27/4-13/5* Engines holding down bolts *1/6*  
 Completion of fitting sea connections *27/4-10/5-11/6* Completion of pumping arrangements *15-16-16-16-21/6* Engines tried under working conditions *22/2-24/2-16/3-18/3-24/3-30/3-21/6-25/6*  
 Crank shaft, Material *S.M. Steel* Identification Mark *C.V. 22-1-37* Flywheel shaft, Material *C.V. 5-1-37* Identification Mark *✓*  
 Thrust shaft, Material *S.M. Steel* Identification Mark *LLOYD'S NO: 3470 & 3477* Intermediate shafts, Material *S.M. Steel* Identification Mark *LLOYD'S NO: 3584-5-6 & 7*  
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.M. Steel* Identification Mark *C.V. 11-3-37*  
 Identification Mark *LLOYD'S NO: 3644-5-6*  
 Identification Mark *C.V. 5-5-37*

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 *✓* 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 *no* If so, state name of vessel *✓*

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The above machinery has been constructed and fitted onboard under special survey in accordance with the Rules the approved plans and the requirements contained in the Secretary's letters dated 8/7-23/7-24/7-31/8-5/9-24/11-9/12-17/12 1936-1/3-20/4-24/5-1937.*  
*The material used in construction has been tested as required by the Rules and the workmanship is good.*

Recommend the vessel's machinery to have notation in the Register  
**Book of 4<sup>th</sup> LMC-1.37, 2DB-180 lbs, OIL ENGINES, C.L.**

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

The amount of Entry Fee	134.40	When applied for,	13-7-1937
Special	2939.52		
Starting air receiver	94.08		
Donkey Boiler Fee	300.00	When received,	22-9-37
Travelling Expenses (if any)	8.50		
LATE FEES	60.00		
Committee's Minute			

*A. H. Westbury*  
 Engineer Surveyor, Lloyd's Register of Shipping.

Assigned *+LMC 7.37 CL*  
*2DB 180 lb*

