

REPORT ON OIL ENGINE MACHINERY.

No. 7777.

20 JAN 1930

Received at London Office

Date of writing Report 18th January 1930. When handed in at Local Office 18th January 1930. Port of **GOTHENBURG**No. in Survey held at **GOTHENBURG**Date, First Survey 17th July 1929 Last Survey 11th Jan 1930

Reg. Book.

Number of Visits 53

(SUPPLEMENT)

42777 on the ~~Single~~ ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel **"VASAHOLM"**Tons { Gross 4217
Net 2475Built at **GOTHENBURG**By whom built **AB. GÖTAVERKEN**

Yard No. 426 When built 1930-1

Engines made at **GOTHENBURG**By whom made **AB. GÖTAVERKEN**

Engine No. 860 When made 1930

Donkey Boilers made at **HALIFAX**By whom made **LUMBY'S LTD**

Boiler No. 3880 When made 1929

Brake Horse Power

Owners **AB. SVENSKA AMERIKA MEXIKOLINIEN** Port belonging to **GOTHENBURG**

Nom. Horse Power as per Rule 489

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 **One Diesel oil engine (Solid injection)** 2 or 4 stroke cycle **4** Single or double acting **single**Maximum pressure in cylinders **35 kg/cm²** Diameter of cylinders **740 mm [29 1/8"]** Length of stroke **500 mm [19 3/4"]** No. of cylinders **6** No. of cranks **6**Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **1004 mm** Is there a bearing between each crank **Yes**Revolutions per minute **110** Flywheel dia. **None** Weight **✓** Means of ignition **Diesel system** Kind of fuel used **Diesel oil**Crank Shaft, dia. of journals as per Rule **472 mm** as fitted **476 mm** Crank pin dia. **476 mm** Crank Webs Mid. length breadth **✓** Thickness parallel to axis **290-310 mm**Flywheel Shaft, diameter as per Rule **✓** as fitted **✓** Intermediate Shafts, diameter as per Rule **398 mm** as fitted **398 mm** Thrust Shaft, diameter at collars as per Rule **345 mm** as fitted **345 mm**Tube Shaft, diameter as per Rule **✓** as fitted **✓** Screw Shaft, diameter as per Rule **380 mm** as fitted **380 mm** Is the **tube** shaft fitted with a continuous liner **Yes**Bronze Liners, thickness in way of bushes as per Rule **19.2 mm** as fitted **20, 19.5 & 21 mm** Thickness between bushes as per rule **14.4 mm** as fitted **19.5 & 21 mm** Is the after end of the liner made watertight in thepropeller boss **Yes** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **Liner in 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 tubeshaft **No** If so, state type **✓** Length of Bearing in **Stern Bush** next to and supporting propeller **1900 mm****Propeller**, dia. **4877 mm** Pitch **3378 mm** No. of blades **4** Material **Bronze** whether Moveable **No** Total Developed Surface **7.35** sq. feet**Method of reversing Engines** **By H. system** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes** Means of lubrication**Forced** Thickness of cylinder liners **BETTER - 32 mm** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled or lagged withnon-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 a funnel****Cooling Water Pumps**, No. **Two 150 tons centrifugal pumps** 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** Diameter **187 mm** Stroke **256 mm** Can one be overhauled while the other is at work **✓****Pumps connected to the Main Bilge Line** { No. and Size **One 30 tons plunger pump, Two 20 tons piston pump, One 150 tons piston pump (Bilge & ballast)**How driven **Main engine** **Electric** **Electric****Ballast Pumps**, No. and size **One 150 tons** **Lubricating Oil Pumps**, including Spare Pump, No. and size **Two - 50 tons**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 **Two 3" thru 2 1/2"; One 4" in tunnel well (One 3" direct suction from main engine bilge pump)**In Holds, &c. **Two 3" in each hold****Independent Power Pump Direct Suctions** to the Engine Room Bilges, No. and size **Two - 6" & 3"**Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **Yes** Are the Bilge Suctions in the Machinery Spacesled 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** except **3rd cooling water inlet** 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** 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 **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 **top of engine casing**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. **3** No. of stages **2** Diameters **280 & 390 mm** Stroke **190 mm** Driven by **Small Diesel engine****Small Auxiliary Air Compressors**, No. **1** No. of stages **2** Diameters **35 & 106 mm** Stroke **80 mm** Driven by **Steam engine****Scavenging Air Pumps**, No. **None** Diameter **✓** Stroke **✓** Driven by **✓****Auxiliary Engines** crank shafts, diameter as per Rule **180 mm** as fitted **180 mm** **(3-ray engines)****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 **Yes** What means are provided for cleaning their inner surfaces **✓**Is there a drain arrangement fitted at the lowest part of each receiver **Yes****High Pressure Air Receivers**, No. **1** Cubic capacity of each **250 litres** Internal diameter **380 mm** thickness **15 mm**Seamless, lap welded or riveted longitudinal joint **Seamless** Material **L.M. Steel** Range of tensile strength **37.5-40.8 kg/cm²** Working pressure by Rules **6.4.8 kg/cm²****Starting Air Receivers**, No. **2** Total cubic capacity **2 x 15.5 = 31 cubic metres** Internal diameter **1800 & 1850 mm** thickness **25 & 25.5 mm**Seamless, lap welded or riveted longitudinal joint **Riveted** Material **L.M. Steel** Range of tensile strength **44.0-48.9 kg/cm²** Working pressure by Rules **25.4 kg/cm²**

IS A DONKEY BOILER FITTED?

PLANS. Are approved plans forwarded herewith for Shafting No. 14/28, 22/28, 7/1/28 Receivers 22/11/28, 10/6/29, 15/6/29
 Donkey Boilers Yes (13/2/29) General Pumping Arrangements No 19/12/28 Oil Fuel Burning Arrangements Yes

SPARE GEAR

For the Main Engine with pumps.
 1 cylinder cover, 1 complete set of all valves, valve casings, springs & other fittings for one cylinder and, in addition, 1 air inlet valve complete and 1 extra valve for same, 1 exhaust valve complete and 2 extra valves for same, 1 starting air valve complete and 5 fuel valves complete with 3 extra valves for same, 1 cylinder liner, 1 piston complete with piston rings and, in addition, 2 sets of piston rings for one piston, 1 telescopic connecting rod for one piston, 1 set of studs & nuts for one cylinder cover, 1 crosshead bearing bolts & nuts and 1 set of crank pin bolts & nuts and 2 halves of crank pin brasses, 1 main bearing bolts & nuts and 2 halves of main bearing brasses, 1 set of bolts & nuts for a crank shaft coupling, 1 set of bolts & nuts for an intermediate shaft coupling, 1 propeller shaft with 1 propeller, 1 cam roller with pin of each size for the valve gear, 3 ditto for the fuel pump gear, 1 fuel pump complete, 6 sets of working parts for the fuel pumps, 1 set of valves & seats for the bilge pump, 1 set of starting air slide valve with shut complete.
 For the auxiliary engines with compressors & pumps.
 1 cylinder cover & liner complete with studs & nuts, 1 complete set of all valves, valve casings, springs & other fittings for one cylinder and, in addition, 1 air inlet valve complete, 1 exhaust valve complete and 2 extra valves for same, 1 fuel valve complete and 2 extra valves for same, 2 sets of piston rings for one piston, 1 gudgeon pin with brasses, 2 crank pin bolts & nuts and 2 halves of crank pin brasses, 4 main bearing bolts & nuts and 4 halves of main bearing brasses, 1 cam roller with pin of each size for the valve gear, 1 set of all working parts for a fuel pump, 1 set of piston rings for one piston of each size used in air compressors, 1 set of motion & delivery valves for the compressors.
 For the auxiliary pumps.
 1 set of valves, seats & springs for each pump, 1 pinion for the ballast pump gear.
 For the donkey boiler:
 1 check valve, 1 safety valve spring.

General:
 1/2 length of pipe of each size used for the fuel delivery and injection air pipe to the main & auxiliary power cylinders and the air delivery from the main & auxiliary compressors, with unions & flanges suitable for each.
 The foregoing is a correct description,

James S. Medley
 Manufacturer.

Dates of Survey while building
 During progress of work in shops - 1929: July 17, 18, 26 Aug. 2, 15, 17, 26, Sept. 2, 5, 10, 11, 12, 16, 17, 18, 19, 25, 28, 30, Oct. 4, 7, 11, 13, 17, 23, 26, 31
 During erection on board vessel - 1929: Oct. 25, Nov. 12, 20, 30, Dec. 3, 5, 13, 18, 23, 30, 1930: Jan. 7, 8, 9, 11
 Total No. of visits 53

Dates of Examination of principal parts—Cylinders and Covers 21/27, 30, 5/2, 12/29
 Crank shaft 15/8/29 Flywheel shaft 19/9/29 Rods 19/9/29 Connecting rods 10/9/29
 Screw shaft 18/12/29 Propeller 26/10/29 Thrust shaft 23/10/29 Intermediate shafts 6/11/29 Tube shaft 20/11/29
 Completion of fitting sea connections 19/11/29 Completion of pumping arrangements 30/12/29 Engines holding down bolts 20/11/29
 Crank shaft, Material L.M. Steel Identification Mark PK 8004-95
 Thrust shaft, Material L.M. Steel Identification Mark LLOYDS 12 6538
 Tube shaft, Material L.M. Steel Identification Mark LLOYDS 12 8466
 Flywheel shaft, Material L.M. Steel Identification Mark LLOYDS 12 6532, 33, 34, 35
 Intermediate shafts, Material L.M. Steel Identification Marks LLOYDS 12 8466, 18467
 Screw shaft, Material L.M. Steel Identification Mark LLOYDS 12 6373, 74, 75
 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 Yes

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 Main & Auxiliary engines of this vessel have been built under Special Survey and all the Requirements of the Rules have been complied with.
 The shafting as per forging reports and starting air receiver material as per test sheets attached.
 The workmanship is good and the material fulfils the requirements of the Rules.
 The dimensions are as specified and in accordance with the Rules and approved plans.
 The auxiliary machinery consists of three 2 cyl., 4 stroke cycle, single acting Diesel oil engines (solid injection) of cyl. diam 380mm and stroke 450mm manufactured by Messrs W.B. Götz at this port and each working a dynamo of 66 Kw (220 volts & 300 amperes).
 The main and auxiliary engines have been tested under full working power on a six hours trial trip and found to work satisfactorily.

The Machinery of this vessel is eligible in my opinion to be classed in the Register Book of this Society with notation of + MC 1, 30.
 Working pressure of donkey boiler 85 lbs/sq

The amount of Entry Fee ... £ 91:00
 Special ... £ 1789:97
 Donkey Boiler Fee ... £ 152:88
 SUNDAY FEE ... £ 40:00
 Travelling Expenses (if any) £ :
 When applied for, 18th Jan 1930
 When received, 10.2.1930

Committee's Minute FRI. 24 JAN 1930
 Assigned + L.M.B. 1.30 oil Eng
 DB 85 lbs
 Lloyds Register Foundation

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