

Report on Oil Engine Machinery.

Received at London Office

Date of writing Report **31st Dec 1944** When handed in at Local Office **8th Jan. 1945** Port of **Gothenburg**

No. in Survey held at **Gothenburg** Date, First Survey **1st March** Last Survey **9th Dec. 1944**
Reg. Book. Number of Visits **59**

92569 on the ~~Ship~~ ~~Motor~~ ~~Steamship~~ ~~Motorship~~ ~~Steamship~~ Screw vessel **"WILHELMINA"** Tons ^{Gross} **2076**
_{Net} **1040**

Built at **Gothenburg** By whom built **Eriksbergs Mek. Verkst. AB** Yard No. **327** When built **1944-12**

Engines made at **Gothenburg** By whom made **Eriksbergs Mek. Verkst. AB** Engine No. **354** When made **1944-12**

Donkey Boilers made at **Gothenburg** By whom made **Eriksbergs Mek. Verkst. AB** Boiler No. **724** When made **1944**

Brake Horse Power **2440** Owners **Rederi A-B. Fredrika** Port belonging to **Stockholm**

Nom. Horse Power as per Rule **607** Is Refrigerating Machinery fitted for cargo purposes **Yes** Is Electric Light fitted **Yes**

Trade for which vessel is intended **Open sea service**

OIL ENGINES, &c.—Type of Engines **B&W-type, trunk piston, solid injection** 4 stroke cycle **2** Single or double acting **Single**

Maximum pressure in cylinders **48 kg/cm²** Diameter of cylinders **500 mm** Length of stroke **900 mm** No. of cylinders **9** No. of cranks **9**

Mean Indicated Pressure **6.5 kg/cm²** **19.11/16"** **35.7/16"**

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **704 mm** Is there a bearing between each crank **Yes**

Revolutions per minute **130** Turning wheel dia. **1652 mm** Weight **882 kgs** Means of ignition **Compression** Kind of fuel used **Diesel oil**

Crank Shaft, ^{as per Rule} ~~xxxx~~ dia. of journals ^{as fitted} **appd. 344 mm** ^{as fitted} **344 mm** Crank pin dia. **344 mm** Crank Webs ^{Mid. length breadth} ~~---~~ ^{Thickness parallel to axis} **214 mm**
_{All built} ^{Mid. length thickness} ~~---~~ ^{Thickness around eye-hole} **194 mm**

Flywheel Shaft, diameter ^{as per Rule} ~~---~~ ^{as fitted} ~~---~~ Intermediate Shafts, diameter ^{as per Rule} ~~---~~ ^{as fitted} **appd. 272 mm** Thrust Shaft, diameter at collars ^{as per Rule} ~~---~~ ^{as fitted} **appd. 306 mm**
_{as fitted} ^{as fitted **272 mm** _{as fitted} **306 mm**}

Tube Shaft, diameter ^{as per Rule} ~~---~~ ^{as fitted} ~~---~~ Screw Shaft, diameter ^{as per Rule} ~~---~~ ^{as fitted} **appd. 330 mm** Is the ~~xxxx~~ shaft fitted with a continuous liner **Yes**
_{as fitted} _{as fitted} **330 mm**

Bronze Liners, thickness in way of bushes ^{as per Rule} **17.7 mm** Thickness between bushes ^{as per Rule} **12 mm** Is the after end of the liner made watertight in the
_{as fitted} **18.5 mm** _{as fitted} **17 mm** 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 **---**

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 **---**

Propeller, dia. **13'-6"** Pitch **11.8 (mean)** No. of blades **4** Material **Stainless steel** whether Moveable **No** Total Developed Surface **67.4** sq. feet

Method of reversing Engines **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 **33.5-36 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 funnel**

Cooling Water Pumps, No. **Two 1750 liter/Min.** Is the sea provided with an efficient strainer which can be cleared within the vessel **Yes**

Bilge Pumps worked from the Main Engines, No. **One** Diameter **150 mm** stroke **175 mm** Can one be overhauled while the other is at work **---** **1 direct driven**

Pumps connected to the Main Bilge Line ^{No. and Size} **1 ballast pump 120 tons/hour, 1 sep. bilge pump, 30 t/h., bilge pump 20t/h.** ^{How driven} **Electrically Electrically Main engine**

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 **One 120 tons/hour** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **Two 1750 lit/min.**

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 **4-2 1/2" and 1 2"**, bore **2"** from RMC space, **1-2 1/4"** for tunnel well In Pump Room **---**

In Holds, &c. **No. 1 hold - Two 2 1/2"**, No. 2 hold - **Two 2 1/2"** from each refr. room, No. 3 hold - **Two 2 1/2"**, No. 4 - **Four 2 1/2"**

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **One 3 1/2" and one 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 **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 coal bunkers** How are they protected **---**

What pipes pass through the deep tanks **No deep tanks** 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 **A platform above 2nd deck**

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 **250&280 mm** Stroke **190 mm** Driven by **Aux. engines**

Small Auxiliary Air Compressors, No. **1** No. of stages **2** Diameters **32&80 mm** Stroke **140 mm** Driven by **Manual**

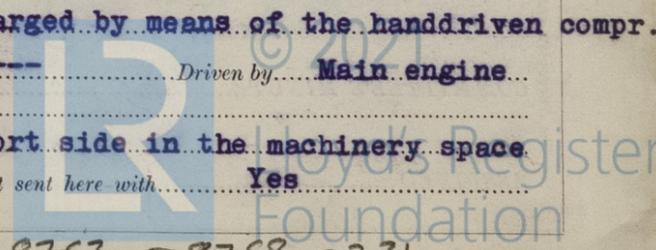
What provision is made for first Charging the Air Receivers **Aug. starting air bottle to be charged by means of the handdriven compr.**

Scavenging Air Pumps, No. **2 blowers** Diameter **Rotary type** Stroke **---** Driven by **Main engine**

Auxiliary Engines crank shafts, diameter ^{as per Rule} ~~xxxx~~ **approved 150 mm** No. **3**

_{as fitted} **150 mm** Position **On port side in the machinery space**

Have the Auxiliary Engines been constructed under special survey **Yes** Is a report sent here with **Yes**



AIR RECEIVERS:—Have they been made under survey..... **Yes**..... State No. of Report or Certificate..... **Nos. 1104, 1105 & 1021.**
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule. **Main-yes (Aux.-fusible plug & safety valves on compr.)**...
 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.....
Starting Air Receivers, No. 1 aux. 2 main..... Total cubic capacity..... **180 litres**..... Internal diameter..... **370 mm.**..... Working pressure Actual..... **14 mm.**
 Seamless, lap welded or riveted longitudinal joint..... **El. welded**..... Material..... **S.M. Steel**..... Range of tensile strength..... **41-47 kg/mm²**..... Working pressure by Rules..... **53.8 & 25.5**
 Actual..... **40 & 25**
 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..... **Got. 12&13.5.42**..... Receivers..... **Got. 28.7.1942**..... Separate Fuel Tanks..... **Got. 13.5.42**
 (If not, state date of approval) Plan 'as fitted' attached.
 Donkey Boilers..... **Got. 14.10.42**..... General Pumping Arrangements..... **(Got. 20.4.42)**..... Pumping Arrangements in Machinery Space..... **Got. 20.4.42**
 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 cylinder cover, 1 cylinder liner with cooling jacket, 7 complete sets of fuel valves, 5 complete sets of exhaust valves, 1 piston with gudgeon pin, 4 sets of pistons rings, 1 connecting rod.**

The foregoing is a correct description.

Åne Rindh, Manufacturer.

Dates of Survey while building { During progress of work in shops..... **1st March 1944 - 5th December 1944.**
 { During erection on board vessel..... **18th August 1944 - 9th December 1944.**
 Total No. of visits..... **59**
 Dates of Examination of principal parts—Cylinders..... **27&29.9.**..... Covers..... **27&29.9.**..... Pistons..... **14.10.**..... Rods.....
 Crank shaft..... **26.8.**..... Flywheel shaft.....
 Thrust shaft..... **26.8.**..... Intermediate shafts..... **16 & 18.9.**..... Tube shaft.....
 Screw shaft..... **25.8&16.9.**..... Propellers..... **22.9, 28.9,**..... Stern tube..... **2.8.**..... Engine seatings..... **23.10.**..... Engines holding down bolts..... **8.11.**
 Completion of fitting sea connections..... **9.10.1944**..... Completion of pumping arrangements..... **6.12.**..... Engines tried under working conditions..... **9.11.**
 Crank shaft, Material..... **S.M. Steel**..... Identification Mark..... **LLOYDS 2206/7**..... Flywheel shaft, Material.....
 Thrust shaft, Material..... **S.M. Steel**..... Identification Mark..... **LLOYDS 2208**..... Intermediate shafts, Material..... **S.M. Steel**..... Identification Marks..... **See below**
 Tube shaft, Material..... Identification Mark..... Screw shaft, Material..... **S.M. Steel**..... Identification Mark..... **LLOYDS 1341& SA 16.9.44**

Identification Marks on Air Receivers.....
 Main rec. **Nos. 1104 & 1105**..... **LLOYDS TEST 41 KG.**..... WP 25 KG..... SJ 15.5.43
 Aux. rec. **No. 1021**..... **LLOYDS TEST 80 KG.**..... WP 40 KG..... FC 5.3.42
Lloyds 1396, 1426/7..... **SA 16.9.44**..... **14 SA 16.9.44**

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 the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with..... **Yes**
 Is this machinery duplicate of a previous case..... **Yes**..... If so, state name of vessel..... **U.S. "Fylgia", Got. rpt. No. 13676.**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)..... **The main and auxiliary engines of this vessel have been constructed under special survey in accordance with the Rules and approved plans. The workmanship and materials are good and test sheets for the shafting, donkey boiler material and air receiver are attached.**

The machinery has been securely fitted in the vessel under my inspection and to my satisfaction and has been tested under full power conditions on a trial trip and found to work satisfactorily.

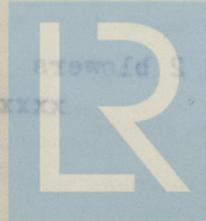
The propellers of stainless steel were made by A/S Strømmens Verksted, Strømmen, and tested by the Society's former surveyors at Oslo in January 1943. Brinell check tests and chemical analysis were carried out on same with satisfactory results. The remaining important forgings and castings are of Swedish make.

The amount of Entry Fee..... **Kr. 114:00**..... When applied for.....
 Special..... **Kr. 2001:65**..... **29/12 1944.**
 Donkey Boiler Fee..... £..... When received,
 Travelling Expenses (if any) £..... **29/12 1944.**

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

COMMITTEE'S MINUTE.

ASSIGNED



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