

# REPORT ON OIL ENGINE MACHINERY.

No. 931

Received at London Office 28 AUG 1929

Date of writing Report 22nd Aug. 1929 When handled in at Local Office 24th Aug. 1929 Port of *Malmö*

No. in Survey held at *5400* on the *Single* *Twin* *Triple* *Quadruple* Screw vessel *"SVEADROTT"*

Tons Gross *4842* Net *2719*

uilt at *Malmö* By whom built *Hockymms Mek. V. AB* Yard No. *161* When built *1929*

Engines made at *Malmö* By whom made *Hockymms Mek. V. AB* Engine No. *39 & 40* When made *1929*

Monkey Boilers made at *✓* By whom made *✓* Boiler No. *✓* When made *✓*

Indicated Horse Power *3200* Owners *Hockholms Rederiaktiebol. Sora* Port belonging to *Hockholm*

Indicated Horse Power as per Rule *778* Is Refrigerating Machinery fitted for cargo purposes *Yes* Is Electric Light fitted *Yes*

Intended for which vessel is intended *✓*

**ENGINES, &c.**—Type of Engines *Diessel H.A.N.* 570 1000 2 or 4 stroke cycle *4* Single or double acting *Single*

Maximum pressure in cylinders *35 kg/cm<sup>2</sup>* Diameter of cylinders *22 7/16"* Length of stroke *39 3/8"* No. of cylinders *2 × 8 = 16* No. of cranks *2 × 8 = 16*

Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge *770 mm* Is there a bearing between each crank *Yes*

Revolutions per minute *135* Flywheel dia. *2093 mm* Weight *5885 kg* Means of ignition *Diessel syst.* Kind of fuel used *Diessel Oil*

Crank Shaft, dia. of journals *as per Rule 3575 mm* Crank pin dia. *360 mm* Crank Webs *as per Rule 249.2 mm* Mid. length breadth *750 mm* Thickness parallel to axis *225 mm*

Intermediate Shafts, diameter *as per Rule 250 mm* Thrust Shaft, diameter at collars *as per Rule 262.5 mm*

Propeller Shaft, diameter *as per Rule 275 mm* Is the *screw* shaft fitted with a continuous liner *Yes*

Oil Liners, thickness in way of bushes *as per Rule 16 mm* Thickness between bushes *as per Rule 12.5 mm* Is the after end of the liner made watertight in the

bell boss *Yes* If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *✓*

Is 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 *✓*

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

of the tube shaft *Yes* Length of Bearing in Stern Bush next to and supporting propeller *1250 mm*

Propeller, dia. *3500 mm* Pitch *3500 mm* No. of blades *3* Material *Bronze* whether Moveable *No* Total Developed Surface *2.392 = 78.4* sq. feet

Method of reversing Engines *H.A.N. system* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *Yes* Means of lubrication *✓*

Thickness of cylinder liners *Top 49 mm Bottom 32 mm* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with

conducting material *Both* 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*

Working Water Pumps, No. *2* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Yes*

Engine 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 *3 Two 2-1/2" single acting D=150 S=220 mm. One 2-1/2" dbl. acting (Ballast pump) D=200 S=300 mm.* How driven *By electric motors.*

Ballast Pumps, No. and size *One 2-1/2" dbl. act. D=200 S=300 mm* Lubricating Oil Pumps, including Spare Pump, No. and size *2 70 m<sup>3</sup>/hour.*

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 *4-3 1/2" 1-3 1/2" from tunnel well.*

Holds, &c. *2-3 1/2" in Nos. 1, 2 & 3 holds. 4-3 1/2" in No. 4 hold and 2-3 1/2" in No. 5 hold.*

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1-5"*

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Yes* Are the Bilge Suctions in the Machinery Spaces

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 *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 *✓*

Are pipes pass through the bunkers *✓* How are they protected *✓*

Are pipes pass through the 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

partment to another *Yes* Is the Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Upper eng. platform.*

Is the wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *✓*

**RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*

Are the internal surfaces of the receivers be examined *Yes* What means are provided for cleaning their inner surfaces *Injection Soda & compr. air.*

Is there a drain arrangement fitted at the lowest part of each receiver *Yes*

High Pressure Air Receivers, No. *3* Cubic capacity of each *1 × 400 l. 2 × 200 l.* Internal diameter *448 mm* thickness *26 mm*

Are they seamless, lap welded or riveted longitudinal joint *Lap welded* Material *Steel* Range of tensile strength *37.5-40.8 kg/mm<sup>2</sup>* Working pressure by Rules *74.5 & 73.6 kg/cm<sup>2</sup>*

Working Air Receivers, No. *2 (on also kept on)* Total cubic capacity *2 × 13.5 = 27 m<sup>3</sup>* Internal diameter *1850 mm* thickness *25.5 mm*

Are they seamless, lap welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength *44.50 kg/mm<sup>2</sup>* Working pressure by Rules *25.5 kg/cm<sup>2</sup>*

Marks on shafts.

LLOYD'S	LLOYD'S
No. 5674/5	No. 8361
P.I. 31.10.28 A	U.B. 4.9.28 A

Removed 1038

Solid cup when fitted

002385-002400-024212



IS A DONKEY BOILER FITTED? NoIf so, is a report now forwarded? ✓PLANS. Are approved plans forwarded herewith for Shafting 2/12/28, 2/6/28 Receivers 3/17/28, 7/8/28 Separate Tanks 2/12/29Donkey Boilers ✓ General Pumping Arrangements 26/4/28 Oil Fuel Burning Arrangements ✓

SPARE GEAR Main engines:- 1 cylinder cover. 12 exhaust or air inlet valves with 12 extra seats and valves. 6 complete fuel valves with 8 extra valves and 6 seats. 2 complete starting air valves. 2 safety valves. 2 cylinder liners. 2 pistons complete and 5 sets of piston rings for one piston. 6 telescopic pipes. 1 set of cog & skew wheels for the cam shaft drive for one engine and 1 roller and pin each size. 2 bolts with nuts for cylinder covers (No studs used). 4 crosshead bearing bolts and nuts and 2 halves of bearings. 2 crank pin bearing bolts and nuts and 2 halves of bearings. 2 main bearing bolts and nuts and 1 lower bearing half. 1 set of coupling bolts each size. 1 propeller shaft. 2 cast iron propellers. 1 set of all working parts for one fuel pump.

Main engine air compressors:- 1 air cooler. 2 sets of piston rings for each stage. 1 set of complete suction and delivery valves and in addition 2 sets of single valves for each stage for one compressor. 1 extra set of springs for one compressor. Crosshead and crank bearings and 2 crank bearing bolts and nuts.

The foregoing is a correct description,

KOCKUMS MEKANISKA VERKSTADS

AKTIEBOLAG

Manufacturer.

Dates of Survey while building  
During progress of work in shops:-  
During erection on board vessel:-  
Total No. of visits. 91

Dates of Examination of principal parts—Cylinders 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Covers 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Pistons 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Rods 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Connecting rods 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29

Crank shaft 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Flywheel shaft 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Thrust shaft 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Intermediate shafts 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Tube shaft 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29

Screw shaft 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Propeller 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Stern tube 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Engine seating 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29 Engines holding down bolts 2/12/28, 2/6/28, 3/17/28, 7/8/28, 2/12/29

Completion of fitting sea connections 1/5-29 Completion of pumping arrangements 2/8/29 Engines tried under working conditions 1/6-29

Crank shaft, Material Steel Identification Mark 4605-11, 4605-12, 4605-13, 4605-14, 4605-15, 4605-16, 4605-17, 4605-18, 4605-19, 4605-20, 4605-21, 4605-22, 4605-23, 4605-24, 4605-25, 4605-26, 4605-27, 4605-28, 4605-29, 4605-30, 4605-31, 4605-32, 4605-33, 4605-34, 4605-35, 4605-36, 4605-37, 4605-38, 4605-39, 4605-40, 4605-41, 4605-42, 4605-43, 4605-44, 4605-45, 4605-46, 4605-47, 4605-48, 4605-49, 4605-50, 4605-51, 4605-52, 4605-53, 4605-54, 4605-55, 4605-56, 4605-57, 4605-58, 4605-59, 4605-60, 4605-61, 4605-62, 4605-63, 4605-64, 4605-65, 4605-66, 4605-67, 4605-68, 4605-69, 4605-70, 4605-71, 4605-72, 4605-73, 4605-74, 4605-75, 4605-76, 4605-77, 4605-78, 4605-79, 4605-80, 4605-81, 4605-82, 4605-83, 4605-84, 4605-85, 4605-86, 4605-87, 4605-88, 4605-89, 4605-90, 4605-91, 4605-92, 4605-93, 4605-94, 4605-95, 4605-96, 4605-97, 4605-98, 4605-99, 4605-100

Thrust shaft, Material Steel Identification Mark 4605-11, 4605-12, 4605-13, 4605-14, 4605-15, 4605-16, 4605-17, 4605-18, 4605-19, 4605-20, 4605-21, 4605-22, 4605-23, 4605-24, 4605-25, 4605-26, 4605-27, 4605-28, 4605-29, 4605-30, 4605-31, 4605-32, 4605-33, 4605-34, 4605-35, 4605-36, 4605-37, 4605-38, 4605-39, 4605-40, 4605-41, 4605-42, 4605-43, 4605-44, 4605-45, 4605-46, 4605-47, 4605-48, 4605-49, 4605-50, 4605-51, 4605-52, 4605-53, 4605-54, 4605-55, 4605-56, 4605-57, 4605-58, 4605-59, 4605-60, 4605-61, 4605-62, 4605-63, 4605-64, 4605-65, 4605-66, 4605-67, 4605-68, 4605-69, 4605-70, 4605-71, 4605-72, 4605-73, 4605-74, 4605-75, 4605-76, 4605-77, 4605-78, 4605-79, 4605-80, 4605-81, 4605-82, 4605-83, 4605-84, 4605-85, 4605-86, 4605-87, 4605-88, 4605-89, 4605-90, 4605-91, 4605-92, 4605-93, 4605-94, 4605-95, 4605-96, 4605-97, 4605-98, 4605-99, 4605-100

Intermediate shafts, Material Steel Identification Mark 4605-11, 4605-12, 4605-13, 4605-14, 4605-15, 4605-16, 4605-17, 4605-18, 4605-19, 4605-20, 4605-21, 4605-22, 4605-23, 4605-24, 4605-25, 4605-26, 4605-27, 4605-28, 4605-29, 4605-30, 4605-31, 4605-32, 4605-33, 4605-34, 4605-35, 4605-36, 4605-37, 4605-38, 4605-39, 4605-40, 4605-41, 4605-42, 4605-43, 4605-44, 4605-45, 4605-46, 4605-47, 4605-48, 4605-49, 4605-50, 4605-51, 4605-52, 4605-53, 4605-54, 4605-55, 4605-56, 4605-57, 4605-58, 4605-59, 4605-60, 4605-61, 4605-62, 4605-63, 4605-64, 4605-65, 4605-66, 4605-67, 4605-68, 4605-69, 4605-70, 4605-71, 4605-72, 4605-73, 4605-74, 4605-75, 4605-76, 4605-77, 4605-78, 4605-79, 4605-80, 4605-81, 4605-82, 4605-83, 4605-84, 4605-85, 4605-86, 4605-87, 4605-88, 4605-89, 4605-90, 4605-91, 4605-92, 4605-93, 4605-94, 4605-95, 4605-96, 4605-97, 4605-98, 4605-99, 4605-100

Screw shaft, Material Steel Identification Mark 4605-11, 4605-12, 4605-13, 4605-14, 4605-15, 4605-16, 4605-17, 4605-18, 4605-19, 4605-20, 4605-21, 4605-22, 4605-23, 4605-24, 4605-25, 4605-26, 4605-27, 4605-28, 4605-29, 4605-30, 4605-31, 4605-32, 4605-33, 4605-34, 4605-35, 4605-36, 4605-37, 4605-38, 4605-39, 4605-40, 4605-41, 4605-42, 4605-43, 4605-44, 4605-45, 4605-46, 4605-47, 4605-48, 4605-49, 4605-50, 4605-51, 4605-52, 4605-53, 4605-54, 4605-55, 4605-56, 4605-57, 4605-58, 4605-59, 4605-60, 4605-61, 4605-62, 4605-63, 4605-64, 4605-65, 4605-66, 4605-67, 4605-68, 4605-69, 4605-70, 4605-71, 4605-72, 4605-73, 4605-74, 4605-75, 4605-76, 4605-77, 4605-78, 4605-79, 4605-80, 4605-81, 4605-82, 4605-83, 4605-84, 4605-85, 4605-86, 4605-87, 4605-88, 4605-89, 4605-90, 4605-91, 4605-92, 4605-93, 4605-94, 4605-95, 4605-96, 4605-97, 4605-98, 4605-99, 4605-100

Is the flash point of the oil to be used over 150° F. 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 auxiliary machinery of this vessel

consists of three 4-cylinder 2-stroke single acting Diesel engines manufactured by Atlas.

Atlas-Diesel of Stockholm. Diam. of cyl. = 250 mm. stroke 420 mm and rev. per min. = 300.

The engines are of the solid injection type and each is working a dynamo of 120 K.W.

(See Stern reports Nos 3106/7/8 attached herewith).

The main and auxiliary engines of this vessel have been built under special survey

in accordance with the Rules and the approved plans.

The materials fulfil the Rule requirements and the workmanship is good.

The shaftings as per forging reports attached.

The main and auxiliary engines and pumps have been tested under working conditions

and found working satisfactory.

The machinery of this vessel is eligible, in my opinion, to be classed

in the Register Book of this Society, viz. -  $\otimes$  LNC 8.29.

The amount of Entry Fee ...  $\pounds$  109.20

Special ...  $\pounds$  207.98

Donkey Boiler Fee ...  $\pounds$  152.88

Travelling Expenses (if any)  $\pounds$  :

Committee's Minute

Assigned

Oil Engines

CERTIFICATE WRITTEN

Oil Engines

Oil Engines

Oil Engines

Oil Engines

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Oil Engines

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Malmro

Continuation of Report No. 931 dated 24<sup>th</sup> Aug, 1929 on the1/2 "SUEADROTT", No 35400 in the Register Book.

Spare gear. Auxiliary Diesel engines:- 1 cylinder. 1 cylinder cover. 1 set of cylinder cover studs and nuts. 1 piston. 12 piston rings. 1 set of valves for one cylinder including starting air valve and in addition 3 safety valves. 9 fuel valves. 9 nozzles. 9 burners and nuts. 1 complete fuel pump for 1 cylinder. 2 fuel pump plungers. 6 valves and 6 seats for fuel pump.

Crank pin and 1 crosshead bearing complete with bolts and nuts. 2 main bearing bolts and nuts and a half of bearing. 3 piston rings for the scavenge air pumps. 36 scavenge air pump valves and 36 scavenge air pipe valves. Springs, packings etc.

Auxiliary compressor:- 1 set of piston rings for each stage. 1 complete set of suction and delivery valves and in addition 2 sets single valves and springs. 1 safety valve spring.

Auxiliary pumps:- 1 set of valves for the bulge pumps. 1/2 " " " " " ballast "

General:- Lengths of pipes for the fuel delivery to main and auxiliary engines, also injection air pipes for main engines and air delivery pipes from main and auxiliary compressors to air receivers.

A quantity of assorted bolts and nuts. A number of tubes for the lubricating oil coolers. Packings etc. for main and auxiliary engines, compressors and pumps.

In addition to the pumps specified above the following are also installed:-

1 rotary oil transfer pump of 23 in<sup>3</sup>/hr. Electric driven.

1 " fresh water " " 1 m<sup>3</sup>/hour. " "

Two 1-cyl. single acting sanitary pumps 150 x 220 mm built together with the bulge pumps.

Asundén

It is submitted that  
this vessel is eligible for  
THE RECORD. 7<sup>th</sup> Dec 8.29. CL.

Oil Engines 4 sets.

16 Key. 227/6 - 393/8.

778/N.P.

Rockums M.V. Malmro

24/8/29