

REPORT ON OIL ENGINE MACHINERY.

No. 8216

Received at London Office - 7 MAR 1931

Date of writing Report 28 Feb. 1931 When handed in at Local Office 2 March 1931 Port of GOTHENBURG

No. in Survey held at GOTHENBURG

Date, First Survey 9th August 1930 Last Survey 26 Feb. 1931

Number of Visits 78

2455 on the Single
Twin
Triple
Quadruple
Screw vessel

"SVEABORG"

Tons { Gross 9076
Net 5258

Built at HAMBURG

By whom built BLOHM & VOSS

Yard No. 489 When built 1931

Engines made at GOTHENBURG

By whom made AB. GÖTAVERKEN

Engine Nos 969 When made 1931

Donkey Boilers made at HAMBURG

By whom made BLOHM & VOSS

Boiler Nos 1380 When made 1930

Brake Horse Power 9475

Owners STOCKHOLMS REDERI A.B. SVEA

Port belonging to STOCKHOLM

Nom. Horse Power as per Rule 408709

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 Two Diesel oil engines 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 630 mm [24 13/16"] Length of stroke 1300 mm [51 1/8"] No. of cylinders 12 No. of cranks 12

Position of bearings, adjacent to the Crank, measured from inner edge to inner edge 892 mm Is there a bearing between each crank Yes

Revolutions per minute 125 Turning wheel 1902 mm Weight 6375 mm Means of ignition Diesel system Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 404 mm as fitted 404 mm Crank pin dia. 404 mm Crank Webs Mid. length breadth 345 mm Mid. length thickness 345 mm Thickness parallel to axis 246-266 mm Thickness around eye-hole 185 mm

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule as fitted 345 mm

Screw Shaft, diameter as per Rule as fitted 363 mm Is the tube screw shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 18.5 mm as fitted 19 mm Thickness between bushes as per Rule 14 mm as fitted 18 mm 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 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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube

If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1726 mm

Propeller, dia. 3962 mm Pitch 3150 mm No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 8475.95 sq. feet

Method of reversing Engines Direct reversible by means of governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

Thickness of cylinder liners Top 46 mm Bottom 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 Induced draught

Cooling Water Pumps, No. Two centrifugal, 175 tons 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 Diameter 160 mm Stroke 260 mm Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line No. and Size Two direct driven pumps 33 tons each One separate bilge pump 20 tons The ballast pump 60 tons How driven By main engines Electric Electric

Ballast Pumps, No. and size One rotary pump in each space 75 tons Lubricating Oil Pumps, including Spare Pump, No. and size Two rotary pumps, 70 tons 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 Two 3 1/2", one 3", four 2 1/2" [Two 2 1/2" to cofferdams in way of main space] Pump Room None

Holds, &c. None [Two 2 1/2" to hold, one 2 1/2" to forward pump room and three 3 1/2" to pump room amidship connected to separate pumps]

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 3 1/2" to bilge pump & one 5" to ballast pump

Are all the Bilge Suction pipes in Hold and Turret Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

Fitted 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

That pipes pass through the bunkers No bunkers How are they protected

That pipes pass through the deep tanks Cargo oil pipes & heating coils Have they been tested as per Rule Yes

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 No tunnel Is it fitted with a watertight door Yes worked from

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. 2 No. of stages 3 Diameters 120, 540 & 600 mm Stroke 520 mm Driven by Main engines

Auxiliary Air Compressors, No. 3 No. of stages 3 Diameters 78, 285 & 318 mm Stroke 220 mm Driven by Main engines

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. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 170 mm as fitted 170 mm No. 3 Position Two on port & one on starboard side in eng. space

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 and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes

High Pressure Air Receivers, No. 7 Cubic capacity of each 12 of 400 litres Internal diameter 450 mm thickness 25.5 mm

Seamless, lap welded or riveted longitudinal joint 4 lap welded 3 seamless Material L.M. Steel Range of tensile strength 36.9-39.4 kg/cm² Working pressure by Rules 77.4 kg/cm² Actual 68.0

Starting Air Receivers, No. 2 Total cubic capacity 2 x 19.7 = 38.4 cub. met. Internal diameters 1800 & 1850 mm thickness 25.0 & 25.5 mm

Seamless, lap welded or riveted longitudinal joint Riveted Material L.M. Steel Range of tensile strength As per Rule Working pressure by Rules 25.4 kg/cm² Actual 25

IS A DONKEY BOILER FITTED? *Yes two boilers*

If so, is a report now forwarded? *No* [Please see Hamburg survey report.]

Is the donkey boiler intended to be used for domestic purposes only? *No*

PLANS. Are approved plans forwarded herewith for Shafting *11/12/29*, *20/1/30*, *13/1/29* Receivers *19/12/29*, *28/1/30* Separate Tanks *✓*
(If not, state date of approval)

Donkey Boilers *✓* General Pumping Arrangements *14/1/30* Oil Fuel Burning Arrangements *✓*

SPARE GEAR.

Has the spare gear required by the Rules been supplied? *Yes*

State the principal additional spare gear supplied

For the Main Engines: 10 exhaust valves complete, 10 fuel valves complete & 6 extra valves for same, 5 cam roller with pins for the exhaust valves, 3 ditto for the fuel valves, 1 ditto for starting air valves, 1 set of cross head brasses, 1 set of crank pin brasses, 1 set of main bearing brasses, 1 cylinder liner, 1 cooling jacket for same, 4 sets of piston rings for one piston, telescopic cooling pipes for 2 pistons, 1 propeller shaft with nut, 2 cast iron propellers, 12 safety cages for the fuel piping, 12 ditto for the starting air piping.

For the main engine compressors: 1 set of crank pin brasses, 1 set of suction & delivery valves, 1 set of piston rings, 1 HP air valve

For the auxiliary engines: 1 cylinder cover & liner, 1 exhaust valve complete & 2 extra valves for same, 1 fuel valve complete & 5 extra valves for same, 1 starting air valve complete, 1 cam roller with pin of each size, 1 set of gudgeon pin brasses, 1 set of crank pin brasses, 2 lower halves of main bearing brasses.

For the aux. engine compressors: 1 set of valves, 1 set of piston rings.

The foregoing is a correct description,

ASTEDOLAGET GÖTAVERKEN

Uus S. Meekus

Manufacturer.

Dates of Survey while building
During progress of work in shops -- *1930: Aug. 9, 14, 18, 19, 26. Sept. 13, 15, 19, 20, 22, 22, 23, 29, 30. Oct. 6, 6, 8, 9, 10, 10, 11, 13, 15, 16, 16, 17, 18, 20, 21, 22, 23, 24, 31. Nov. 1, 3, 5, 8, 11, 19, 20, 25, 27. Dec. 2, 3, 15, 18, 19, 19, 20, 27, 1931: Jan. 2, 4, 8, 9, 12, 21, 22, 24, 27.*
During erection on board vessel -- *1930: Nov. 11, 25, 27. Dec. 2, 13, 18, 29. 1931: Jan. 2, 5, 13, 23, 26, 29. Feb. 3, 5, 7, 26.*
Total No. of visits *78.*

Dates of Examination of principal parts—Cylinders *20/25/11/30* Covers *20/25/11/30* Pistons *11/10/30, 15/10/30* Rods *11/10/30, 15/10/30* Connecting rods *22/10/30*

Crank shaft *18/8/30* Flywheel shaft *✓* Thrust shaft *15/12/30* Intermediate shafts *19/12/30* Tube shaft *✓*

Screw shaft *19/22/9/30* Propeller *29/12/30* Stern tube *✓* Engine seatings *✓* Engines holding down bolts *13/12/30*

Completion of fitting sea connections *✓* Completion of pumping arrangements *26/1/31* Engines tried under working conditions *7/2/31*

Crank shaft, Material *L.M. Steel* Identification Mark *LLOYDS 65008/4 EN 9.7.30* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *L.M. Steel* Identification Mark *LLOYDS 124707-4708 EN 15-12-30* Intermediate shafts, Material *L.M. Steel* Identification Marks *LLOYDS 124707-4708 EN 15-12-30*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *L.M. Steel* Identification Mark *LLOYDS 124707-4708 EN 15-12-30*

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 *No*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *"Kaia Knudsen"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Main & Auxiliary engines of this vessel*

been built under Special Survey and all the requirements of the Rules have been complied with.

The shafting as per forging reports attached. Material of starting air receivers as per test sheets attached.

The workmanship is good & the material fulfils the requirements of the Rules & approved plans.

The auxiliary machinery consists of three 2 cyl. 4 stroke cycle, single acting Diesel oil engines, made

by Messrs. A.B. Götaverken of this port, each working a dynamo of 66 Kw. The main & auxiliary engines have

been tried under working conditions on a trial trip & found to work satisfactorily.

The donkey boilers have been fitted on board at Hamburg and found to be marked:

The cargo oil piping, heating coils, pumps & piping arrangements in pump room forward & amidship, engine

room & sea connections have been fitted at Hamburg. Please see the Hamburg surveyors report on this.

The Machinery of this vessel is eligible in our opinion to be classed in the Reg

Book of this Society with notation of + LCC 2.31. (Working pressure of donkey boilers 150 lb)

The amount of Entry Fee *£ 109.20* When applied for, *4th March 1931*

Special *£ 2009.28* When received, *30-3-1931*

Starting air receiver *£ 152.88*

Donkey Boiler Fee *£ 40.00*

Travelling Expenses (if any) *£*

Committee's Minute *FRI. 13 MAR 1931*

Assigned *+ Lmb. 2.31. Rl Sup*

CERTIFICATE WRITTEN.

E. Magnusson
Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 30 JUN 1931

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Foundation